Beltway Operational Improvements Project
(SR 58 Gap Closure Project)

City of Bakersfield and Kern County, CA

District 6-KER-58-PM R52.3 to PM R55.4

District 6-KER-99-PM 22.1 to PM 22.7

PN: 06-1400-0064

EA: 06-48461

SCH No.: 2013121029

Initial Study
with Negative Declaration

Prepared by the
State of California Department of Transportation

January 2014

General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans) prepared a Negative Declaration, which examines the potential environmental impacts of alternatives being considered for the project in Kern County, California. The document describes the project, the existing environment that could be affected by the project, potential impacts from the project, and avoidance, minimization, and/or mitigation measures.

The Initial Study and proposed Negative Declaration were circulated to the public from December 11, 2013, to January 10, 2014. Comment letters were received on the draft environmental document. Responses to the circulated document are shown in Appendix C, Comments and Responses, which has been added since the draft document. Elsewhere throughout this document, a line in the right margin indicates a change made since circulation of the draft document.

What happens after this?

The project has completed environmental compliance after circulation of this document. When funding is approved, Caltrans, as assigned by the Federal Highway Administration (FHWA), can design and build all or part of the project.

This document can also be accessed electronically at the following Web site: http://www.dot.ca.gov/dist6/environmental/envdocs/d6/.

For individuals with sensory disabilities, this document is available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Ms. Jennifer H. Taylor, Central Region, Environmental Southern San Joaquin Valley, 855 M Street, Suite 200, Fresno CA 93721; (559) 445-6455, Telecommunication Devices for the Deaf (TDD) users or individuals with hearing or speech disability may contact the California Relay Services (TRS) to use a telephone system through a text phone (TTY) by dialing 711 from any telephone.

CEQA Environmental Checklist

PROJECT DESCRIPTION AND BACKGROUND

Project Title:	Beltway Operational Improvements Project (SR 58 Gap Closure Project)
Lead agency name and address:	California Department of Transportation, District 6 855 M Street, Suite 200 Fresno, CA 93721
Contact person and telephone number:	Ms. Jennifer Taylor (559) 445-6455
Project Location:	The project is located in the city of Bakersfield and unincorporated areas of Kern County. Operational improvements are east of State Route (SR) 99 along SR 58, and within the general area of the SR 99/ Ming Avenue interchange. Post miles (PM) for the project area consist of the following segments: • District 6-KER-58-PM R52.3 to PM R55.4 • District 6-KER-99-PM 22.1 to PM 22.7
Project sponsor's name and address:	City of Bakersfield 1715 Chester Avenue Bakersfield, CA 93301
General plan description:	As described in the Metropolitan Bakersfield General Plan Circulation Element Designation, the project limits are identified as a Freeway. Adjacent areas are described as: residential, commercial, and industrial.
Zoning:	The project limits are identified as a transportation facility. Adjacent areas are zoned as: high medium density residential, low medium density/low density residential, general commercial and heavy industrial.
Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for project implementation.)	Construct operational improvements along segments of SR 99 and SR 58. Operational improvements include: (1) construction of auxiliary lanes, (2) ramp interchange improvements, (3) soundwalls, and (4) retaining walls to accommodate auxiliary lanes and other operational improvements. Project features are illustrated in Figure 2, and a further description of the project is provided in Appendix A.
Surrounding land uses and setting: (Briefly describe the project's surroundings)	The project area surrounding land uses include residential, commercial, and industrial.
Other public agencies whose approval is required (e.g., permits, financial approval, or participation agreements):	No permits are required to construct this project.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project. Please see the checklist beginning on page 7 for additional information. Any boxes *not* checked represent issues that were considered as part of the scoping and environmental analysis for the project, but for which no adverse impacts were identified. Regarding boxes not checked, no further discussion of these issues is in this document.

☐	Aesthetics	☐	Agriculture and Forestry	☐	Air Quality
☒	Biological Resources	☐	Cultural Resources	☐	Geology/Soils
☐	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials	☐	Hydrology/Water Quality
☐	Land Use/Planning	☐	Mineral Resources	☒	Noise
☐	Paleontology		Population/Housing	☐	Public Services
☐	Recreation		Transportation/Traffic	☐	Utilities/Service Systems
☐	Mandatory Findings of Significance				

DETERMINATION:

On the basis of this initial evaluation, check one of the boxes below:

☒	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☐	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR) is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project.

Signature: Jennifer H Taylor	**Date:** 1/27/14
Printed Name: Jennifer H. Taylor	

Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to construct operational improvements along State Route (SR) 58 from east of SR 99 to Cottonwood Road and SR 99 from Wilson Road to north of Ming Avenue in the city of Bakersfield.

Determination

Caltrans has prepared an Initial Study for this project and, following public review, has determined from this study that the project would not have a significant effect on the environment for the following reasons.

The project would have no effect on agriculture and forest resources, air quality, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, population/housing, public services, recreation, transportation/traffic, and utilities and service systems.

The project would have no significant effect on aesthetics and biological resources.

The project would have no significant adverse effect on noise because the following mitigation measures would reduce potential effects to insignificance:

- Noise would be mitigated by the construction of soundwalls and implementing standard best management practices during construction.

Jennifer H. Taylor

Ms. Jennifer Taylor, Office Chief
Environmental Southern San Joaquin Valley
California Department of Transportation, District 6

1/27/14

Date

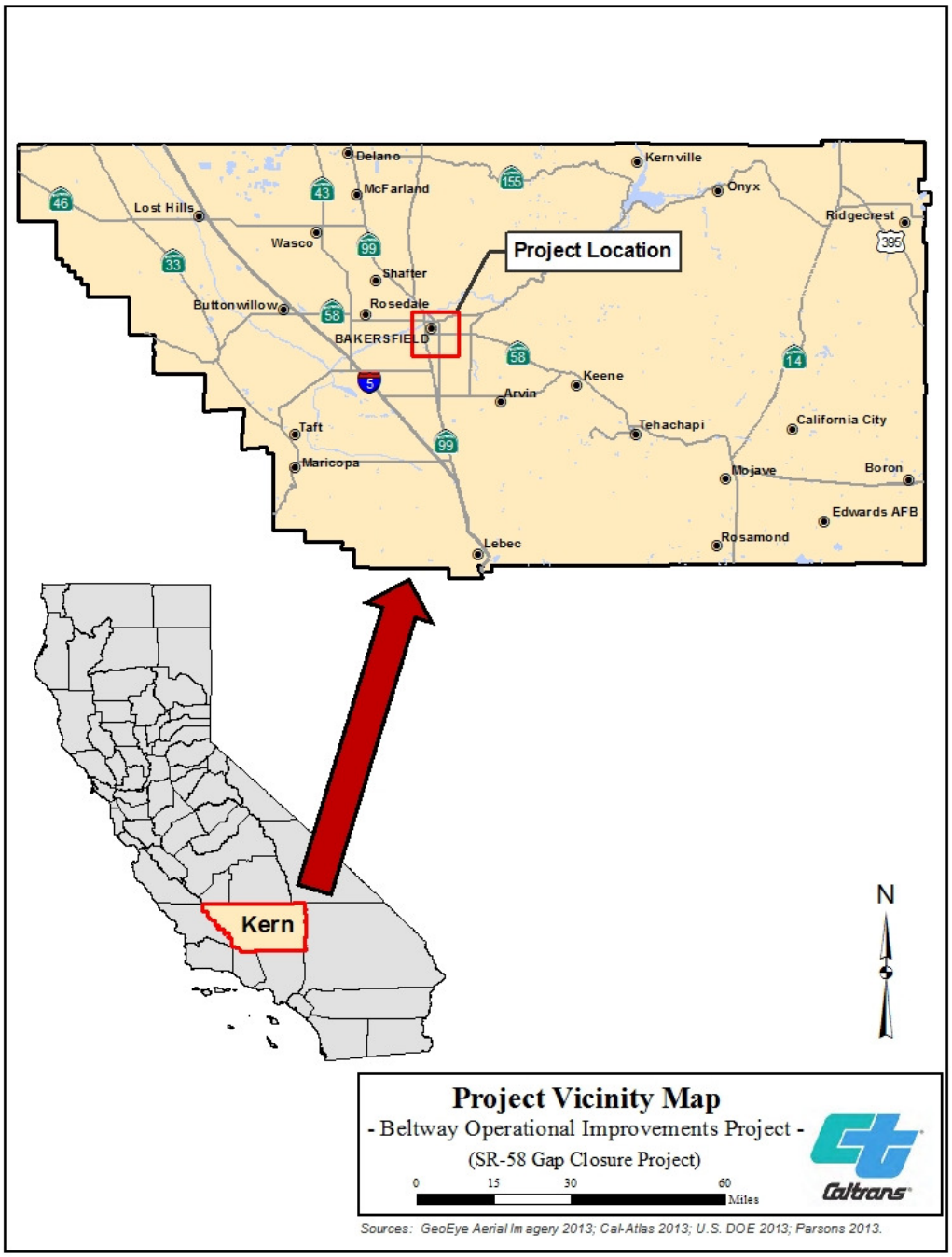


Figure 1 Project Vicinity Map

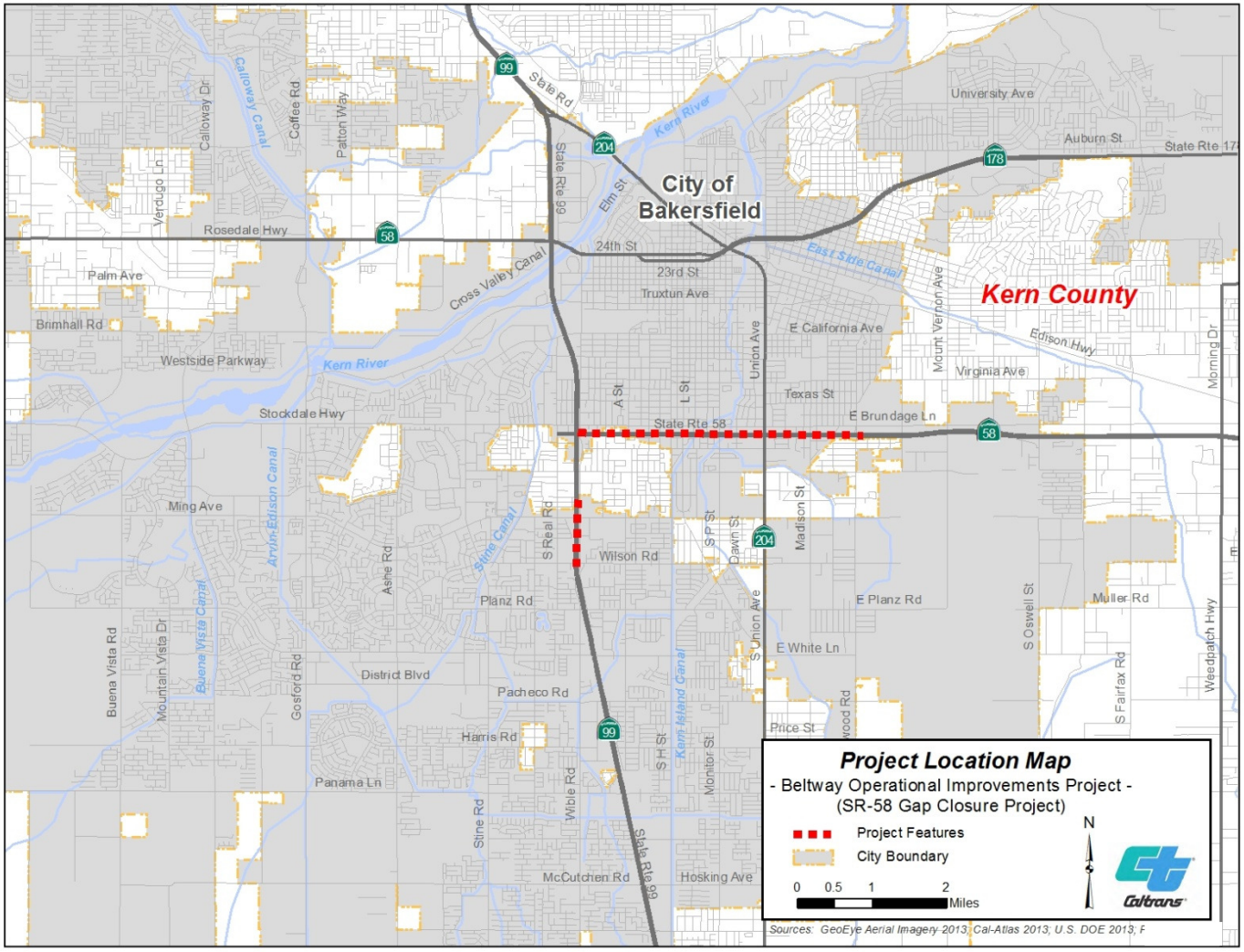


Figure 2 Project Location Map

Section 1 Impacts Checklist

CEQA Environmental Checklist

06-KER-58 06-KER-99	PM R52.3 to PM R55.4 PM 22.1 to PM 22.7	EA: 06-48461
Dist.-Co.-Rte.	P.M/P.M.	E.A.

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where a clarifying discussion is needed, the discussion either follows the applicable section in the checklist or is placed within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA—not NEPA—impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

The project area is located at the southern end of the San Joaquin Valley in west-central Kern County, which has relatively flat topography. SR 58, at this location, is four lanes with a metal beam guardrail median barrier and scattered median planting. Freeway planting exists along the side slopes. The project area is highly urbanized with little topographic variation and limited middle-ground or background vistas. According to the *Centennial Corridor Project Visual Impact Assessment* (March 2013), construction of project features would not degrade or substantially alter the visual character of the site and/or surroundings. There are no recognized scenic vistas within the project vicinity; therefore, the project would not have a substantial effect on any scenic vistas.

The construction of soundwalls and retaining walls would be visually apparent; however, they would not be considered substantial, nor would they affect the overall character of SR 58 and SR 99. The project improvements would be in line with what freeway users traveling through the project area at a relatively high speed with destinations outside the project area, would expect as they travel through the project area. The project would be compatible with the urban character of SR 58 and SR 99 within the city of Bakersfield.

Aesthetics treatments would be included in the soundwall/retaining wall designs, which may include planting vines that would climb the side of proposed soundwalls to soften their appearance. Vines would also reduce the opportunity for graffiti and minimize maintenance associated with graffiti removal. Where feasible, landscaping along wall alignments would be incorporated to shield soundwalls and create a landscape buffer along the highway corridor. Planting concepts and hardscape aesthetic design treatments consistent with Caltrans landscaping requirements would minimize effects on overall visual quality associated with soundwalls.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FOREST RESOURCES:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	☐	☐	☐	☒
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

VII. GREENHOUSE GAS EMISSIONS: Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project.

The proposed operational improvements are noncapacity-enhancing features. The Beltway Operational Improvements Project (SR 58 Gap Closure Project) is anticipated to relieve traffic congestion by enhancing operations along SR 58 and at four ramp interchange locations at SR 58 and SR 99. The proposed auxiliary lanes are also anticipated to enhance safety for merging vehicles along SR 58 and at certain ramp interchange locations on SR 58 and SR 99. Additional turn lanes would be constructed at ramp interchanges on SR 58 to provide additional storage capacity for turning vehicles, thereby alleviating long queues and reducing vehicle idling. The operational improvements are anticipated to reduce greenhouse gas emissions. Other than emissions during construction, these improvements are not anticipated to significantly produce greenhouse gas emissions.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒

X. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

XI. MINERAL RESOURCES: Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

XV. RECREATION:

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

XVI. TRANSPORTATION/TRAFFIC: Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Additional Explanations for Questions in the Impacts Checklist

This chapter explains the potential impacts that the project may have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project, potential impacts of the Build Alternative, and proposed avoidance, minimization, and/or mitigation measures.

The project limits of the Beltway Operational Improvements Project (SR 58 Gap Closure Project) are contained within the study areas analyzed in the *State Route 58 (SR 58) Gap Closure Initial Study with Mitigated Declaration/ Environmental Assessment with Finding of No Significant Impact* (September 2012) and the following technical studies conducted for the Centennial Corridor Project:

- *Centennial Corridor Project Natural Environment Study* (March 2013)
- *Centennial Corridor Project Visual Impact Assessment* (March 2013)
- *Centennial Corridor Project Noise Study Report* (January 2013)
- *Centennial Corridor Project Noise Abatement Decision Report* (May 2013)
- *Historic Property Survey Report* (January 2013)

The aforementioned technical studies were utilized to assess potential impacts for the Beltway Operational Improvements Project (SR 58 Gap Closure Project) because the operational improvements are the same project features proposed in the Centennial Corridor Project and its similarities include location of the features, horizon year conditions, and magnitude of impacts.

IV. Biological Resources (checklist questions a and d)

A Natural Environment Study (March 2013) was prepared for the Centennial Corridor Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS). The SR 58 Gap Closure Initial Study (IS) with Mitigated Negative Declaration (MND) Environmental Assessment (EA) with Finding of No Significant Impact (FONSI) (September 2012) was also referenced for this section. The proposed project is located within the Biological Study Area (BSA) of both the Centennial Corridor and SR 58 Gap Closure Projects. The BSA includes the existing SR 58 and SR 99 plus a 500-foot buffer area on each side of the right-of-way (ROW).

In spring/summer 2008 and spring/summer 2009, biological surveys were conducted to document the existing biological conditions within the BSA. Focused surveys were conducted for burrowing owl *(Athene cuniculari),* a California Department of Fish and Wildlife (CDFW) Species of Special Concern, Swainson's hawk *(Buteo swainsoni),* a CDFW threatened species, and San Joaquin kit fox (*Vulpes macrotis*

mutica), a federally endangered and state threatened species. A jurisdictional delineation was prepared to identify the extent of jurisdictional wetlands and waters within the BSA.

Affected Environment

The BSA is in the southern portion of the San Joaquin Valley, the southernmost basin of the Great Central Valley of California. Topography in the area is generally flat, with elevation ranging from about 310 to 400 feet above mean sea level. Most of the BSA is highly urbanized; however, biological resources may be found in unlined canals that cross under SR 58 or in existing detention basin areas.

The BSA is located within the Metropolitan Bakersfield Habitat Conservation Plan. Though outside the BSA, the Kern River is a regional wildlife corridor that provides wildlife movement through the Metropolitan Bakersfield Habitat Conservation Plan area.

The BSA for the Beltway Operational Improvement Project is generally limited to the Caltrans ROW, including existing roadway surfaces. The following vegetation types occur within the BSA: detention basin and disturbed/ruderal; however, most of the BSA's vegetation is classified as developed/ornamental. The project area consists of recently graded, disturbed areas and cleared roadsides. These areas generally lack vegetation or have a sparse cover of ornamental or weedy species.

The Kern Island Canal, Central, and East Branch Canals are present in the BSA. These canals are unlined with varying amounts of upland vegetation and provide limited cover for use by wildlife. The canals are within the jurisdiction of the U.S. Army Corps of Engineers (USACE), CDFW, and Regional Water Quality Control Board (RWQCB). Canals may serve as wildlife movement corridors, especially in urbanized areas. The proposed project would not disturb the canals within the BSA and would continue to facilitate wildlife movement within the area. Urbanized areas contain limited wildlife habitat, and animals that are present are tolerant of the urban setting.

Detention or sediment basins, constructed as flood-control or water catchment basins associated with residential developments or other urban infrastructures, occur in the BSA. These isolated areas may contain riparian or wetland species such as willow, mule fat, and cattails; however, detention basins are regularly maintained, and these vegetation communities are not present within the BSA.

Environmental Consequences

Natural Communities of Special Concern

The project would not impact any natural communities of special concern. Construction of the operational improvements would mostly occur within existing State ROW, which mostly consists of disturbed and non-native vegetation. Existing basins adjacent to the project area that may contain riparian vegetation and canal features would not be impacted by the proposed project.

Plants

Thirty-two (32) special-status plant species are known to occur in the region (i.e., the 10-mile radius surrounding the BSA); of these, 25 have potential to occur in the BSA. The following vegetation types may occur within the limits of the project area: developed/ornamental, detention basin, and disturbed/ruderal. The BSA consists mostly of existing roadway features within State ROW.

For the Beltway Operational Improvements Project (SR 58 Gap Closure Project), there were no sensitive plant species observed. Ferris's goldfields *(Lasthenia ferrisiae),* a California Native Plant Society (CNPS) List 4.2 species (plants that are limited in distribution in California; fairly endangered in California with 20-80% of occurrences threatened) was observed in the BSA for the Centennial Corridor Project; however, given the scope of the proposed project, historical species occurrences, and work anticipated within the State ROW, Ferris's goldfields is not anticipated to occur within the BSA for the Beltway Improvements Project (SR 58 Gap Closure Project). Subsequent surveys for this species are not anticipated, and no critical habitat for special-status plant species is present in the BSA.

Animals

Wildlife species surveys of the BSA were completed in 2008 and 2009 as part of the Centennial Corridor Project. Forty (40) special-status wildlife species are known to occur in the project region; of these, seventeen (17) have potential to occur in the BSA.

The burrowing owl, a California Species of Special Concern, may occur throughout the BSA for foraging and nesting. Several burrowing owl burrows are found in the BSA in undeveloped areas. No burrowing owls were observed during the spring/ summer 2008 survey; however, there was an individual observed during in 2009 that

did not winter at the site. This species, if it occurs in the future, has potential to forage in very small patches of undeveloped vegetation in the BSA.

The loss of habitat for nonlisted special-status wildlife species would be limited relative to the availability of similar habitat in the region. This effect is considered less than substantial given the limited amount of suitable foraging and nesting habitat within the immediate project area and its proximity to the existing freeway.

No Swainson's hawks were observed during focused surveys. Swainson's hawk has limited potential to nest along the Kern River, outside of the project limits. The project area contains primarily disturbed vegetation typical of roadside conditions.

The project could directly affect nesting birds or raptors if vegetation were removed during the nesting season (February 1 – August 31), and it could indirectly affect nesting raptors if work occurred next to large trees during the raptor nesting season.

Bats may use any portion of the BSA as foraging habitat. Cavities in trees or structures, such as culverts or bridges, in the vicinity of the BSA, may provide potential roosting habitat.

Night lighting during construction could spill over into canal areas and could have adverse effects on the foraging activities of nocturnal species (e.g., burrowing owl, bats, and other small mammals) and may also increase predation on small mammals.

Western spadefoot toad, western pond turtle, silvery legless lizard, and coast horned lizard may occur in unlined canals and detention basins. The project does not impact these features, and focused surveys for these species are not anticipated.

Threatened and Endangered Species

A species list was obtained from the United States Fish and Wildlife Service (USFWS) on September 18, 2013. Twenty-four (24) threatened or endangered plant and wildlife species are known to occur in the region; however, no threatened or endangered plants were present during surveys, and no critical habitat for threatened or endangered plant or wildlife species is present in the BSA.

Focused surveys for San Joaquin kit fox (kit fox) dens and sign were conducted in the BSA. The BSA was surveyed on September 17, 2008. All accessible habitat within a 250- to 500-foot boundary from the ROW was surveyed. Data collected during the surveys included potential dens, natal dens, and kit fox observations.

According to the Centennial Corridor Project surveys, suitable habitat for kit fox is present within the BSA and this species is known to occur in the BSA. Survey results were positive for a species sighting and the presence of multiple dens. Four kit fox road kills were reported along the Kern River Canal (south of the Kern River), outside of the BSA; however, indicating that canals are used by kit fox. The project would contribute to the regional ongoing loss of foraging/denning habitat in the project region (i.e., the 10-mile radius surrounding the BSA); however, impacts to kit fox habitat would not be considered substantial given that the proposed project is impacting roadway surface and not undeveloped areas. As mentioned previously, kit fox may utilize existing basins and canals within the immediate area of the project. Based on the current project layout, existing basins would not be removed and construction within the canals is not anticipated; therefore, impacts to kit fox habitat are not anticipated.

The proposed project would construct walls and fencing that would assist in preventing kit fox from crossing SR 58 or SR 99. The project, however, would not fragment habitat because the project area contains existing roadway under crossings along SR 58 and SR 99 that allow for wildlife movement. The Kern River Canal would not be impacted by the project and would continue to be used as a conduit for wildlife. The San Joaquin kit fox is exposed to traffic along existing roadways, but the project is not capacity-enhancing, so there would be no additional increases in potential road kill impacts to kit fox on the existing highways when the project features are implemented.

Kit foxes in Bakersfield have been found to move along linear habitat features (i.e., canals, railway ROWs, Kern River corridor, roads), moving from one patch of open space to another. Construction of the proposed project would incorporate several features to allow continued kit fox movement, such as maintaining the existing canals (as movement corridors along existing linear features), and placing wall structures to prohibit kit fox onto the road itself. In general, the BSA occurs within a developed setting, which constrains wildlife movement to areas of open space that are connected mainly by existing canals; therefore, the project would not change movement patterns along canals in the BSA for kit fox. The kit fox may continue to utilize the canals within the BSA as a wildlife corridor.

Night lighting during construction or operation of the project could spill over into the adjacent open space and could have adverse effects on the foraging activities of nocturnal species (e.g., San Joaquin kit fox, burrowing owl, bats, and other small

mammals) and may also increase predation on small mammals; therefore, the project's night lighting may affect nocturnal wildlife.

Caltrans shall include appropriate design and structural elements for the project, such as ROW or exclusionary fencing/undercrossing structures (i.e., culverts), depending on roadway design, to facilitate safe kit fox crossing and to reduce the potential for kit fox vehicular-related mortality. The location and specifications of structural elements (e.g., crossing structures and exclusionary/permeable fencing) shall be developed during the design phase by Caltrans for review and approval by USFWS and CDFW.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance, minimization, and mitigation measures would be implemented to ensure that impacts to biological resources are less than significant:

B-1 Per the Metropolitan Bakersfield Habitat Conservation Plan, payment of a one-time mitigation fee for each undeveloped acre impacted by the project would mitigate for all species covered by the plan. The Beltway Operational Improvements Project (SR 58 Gap Closure Project) would implement pertinent measures required for the project to minimize potential impacts to species covered under the plan.

B-2 Burrowing Owl

- A pre-construction survey shall be conducted by a qualified biologist no more than 30 days before initial ground-disturbing activities. Any active burrow found during pre-construction survey efforts shall be mapped and provided to the construction foreman.
- No disturbance shall occur within 160 feet of occupied burrows during the non-breeding season (September 1 through January 31) or within 250 feet during the breeding season (February 1 through August 31).
- If owls must be moved away from the disturbance area, passive relocation is preferable to trapping. Relocation shall be implemented only during the non-breeding season by a qualified biologist and would occur in coordination with the CDFW. Owls shall be excluded from burrows in the immediate impact zone by installing one-way doors in burrow entrances. One-way doors shall be left in place for 48 hours to ensure owls have left the burrow before excavation.
- Compensatory mitigation for the San Joaquin kit fox shall also mitigate for the loss of burrowing owl habitat.

B-3 Nesting Birds

- Trees, shrubs and other vegetation will be removed before the nesting season of migratory birds. If nest removal is necessary, removal will occur when nests are not used (September 2 to February 14).
- A preconstruction survey for migratory birds and bats will be done 14 to 30 days before construction starts. If an active nest or roost is detected, the California Department of Fish and Wildlife will be consulted, and an environmentally sensitive area around the nest or roost site may be established to prevent nesting disturbance. Work may be temporarily suspended if nesting or roosting activity cannot be prevented.
- Standard specifications will be included in the construction bid package to avoid impacts to migratory birds.

B-4 Caltrans initiated Formal Section 7 consultation with USFWS to determine the appropriate conservation measures to mitigate for impacts to kit fox. The Biological Opinion, dated December 20, 2013, is included in Appendix D. The project will follow and implement conditions indicated in the USFWS Biological Opinion.

XII Noise (checklist questions a and b)

Regulatory Setting

The National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and foster a healthy environment; however, the requirements for noise analysis and consideration of noise abatement and/or mitigation differ between NEPA and CEQA.

California Environmental Quality Act

CEQA requires a strictly baseline-versus-build analysis to assess whether a project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then the act dictates that mitigation measures must be incorporated into the project unless such measures are not feasible.

National Environmental Policy Act and 23 Code of Federal Regulations 772 Analysis

For highway transportation projects with Federal Highway Administration (FHWA) (Caltrans, as assigned) involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement

of traffic noise impacts. Regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a traffic noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 A-weighted decibels [dBA]) is lower than the NAC for commercial areas (72 dBA). Table 1 lists the NAC for use in the NEPA 23 CFR 772 analysis.

Figure 3 shows a range of noise levels for common activities so that a comparison can be made between the predicted traffic noise levels discussed in this section with common activities.

According to Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011*, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12-decibel [dB] or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dB of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

Table 1 Noise Abatement Criteria

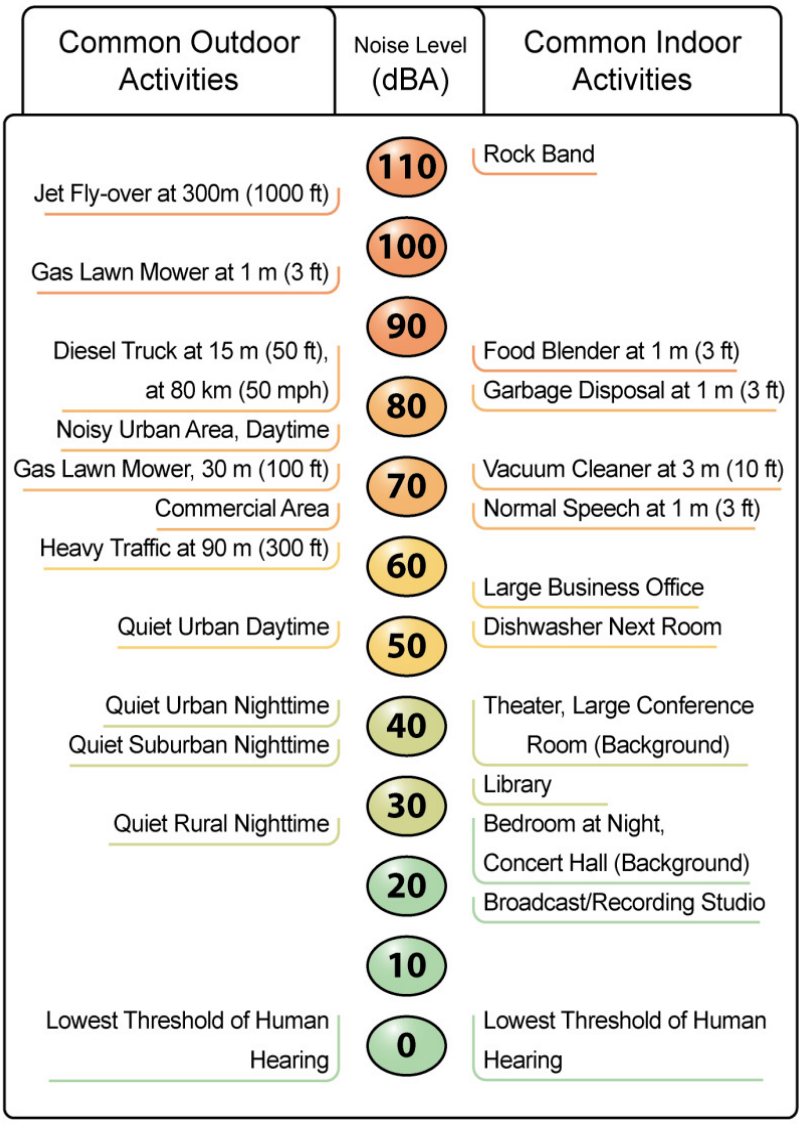
Activity Category	Noise Abatement Criteria, Hourly A-Weighted Noise Level, $L_{eq(h)}$	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	67 (Exterior)	Residential.
C[1]	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No Noise Abatement Criteria (reporting only)	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (e.g., water resources, water treatment, electrical), and warehousing.
G	No Noise Abatement Criteria (reporting only)	Undeveloped lands that are not permitted.

L_{eq}: Sound Equivalent Noise Level

[1] Includes undeveloped lands permitted for this activity category.

Source: *23 CFR 772,* 2011.

Figure 3 Noise Levels of Common Activities



Caltrans' *Traffic Noise Analysis Protocol* (2011) sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5-dB reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is based on three factors, including the noise reduction design goal (7-dB reduction at least at one receiver), the cost of noise abatement, and the viewpoints of benefitted land use (including property owners and residents of the benefitted land use).

Affected Environment

This section of the IS discusses the predicted traffic noise levels under existing and 2038 design-year conditions (Build and No Build) and identifies areas within the project area that would be potentially impacted. Noise data and technical noise analysis results provided in this section were derived from the completed *Noise Study Report, Centennial Corridor Project* (January 2013) and the *Noise Abatement Decision Report*, *Centennial Corridor Project* (May 2013). These technical studies were utilized to assess potential noise impacts of the Beltway Operational Improvements Project (SR 58 Gap Closure Project) because the noise study from the Centennial Corridor project analyzes the same features within the project limits as the proposed Build Alternative. The existing and opening year conditions are similar for both projects.

The *Noise Study Report* provides traffic noise impact analyses for areas within the Beltway Operational Improvements Project (SR 58 Gap Closure Project) along SR 58 east of SR 99, and along SR 99 south of SR 58. No analysis was done in areas that lacked areas with frequent outdoor human use. Mapping provided in Appendix B illustrates the locations that were analyzed, as well as receiver and proposed soundwall locations.

State Route 58

SR 58, between SR 99 and Cottonwood Road, is currently a four-lane roadway. The project lies in an urban setting with residences set back about 50 to 100 feet on the north and south sides of the highway. The terrain along SR 58 is mainly flat and surrounded by various land uses such as residential, commercial, churches, and emergency services. The following adjacent land uses occur within the Beltway with the corresponding activity category, as previously discussed in Table 1:

- Category B – single-family and multi-family residences
- Category C (exterior) – Central Bakersfield Community Center/Clinica Sierra Vista; and six places of worship
- Category D (interior) – Bakersfield fire station
- Category E – various commercial uses

State Route 99

SR 99, between Wilson Road and Ming Avenue along SR 99, is currently an eight-lane freeway. In the northbound direction, the area is largely commercial with four

single-family residences (Activity Category B) exposed to the freeway and the Garden Suites Inn (Activity Category E). In the southbound direction of this segment, a mix of single-family residences along with the Casa Real Apartment complex (Activity Category B) and a K-Mart are in this area. An existing 10-foot 6-inch high soundwall within the right-of-way protects the residential land uses in this area. The freeway is depressed in this segment of the freeway in both directions.

SR 99, between Ming Avenue and Belle Terrace along SR 99, is currently an eight-lane freeway. The land use within the northbound direction consists primarily of commercial establishments as well as two single-family residences (Activity Category B), California Best Inn (Activity Category E), Ramada Inn, and the Knights Inn and Suites. The Ramada Inn and Knights Inn and Suites have not been considered Activity Category E because there are no outdoor use areas associated with these properties. An existing 10-foot high soundwall within the right-of-way is just north of Wood Lane ending at Belle Terrace. In the southbound direction of this segment, Activity B land uses in this area consist of single-family and multi-family residences along with two commercial establishments. An existing 9-foot 6-inch to 11-foot 6-inch high soundwall in the right-of-way provides traffic noise abatement for all the residential land uses in this area. The highway is generally depressed in this area compared to the residences and motels.

SR 99, between Belle Terrace and SR 58 along SR 99, is currently an eight-lane freeway. The land uses within the northbound direction consists of mostly single-family residences with two multi-family residences (Activity Category B) and a few commercial establishments at the south end of the area. An existing 10-foot high soundwall in the right-of-way is in this area beginning at Belle Terrace and ends south of Terrel Court. In the southbound direction, the area consists predominantly of single-family residences (Activity Category B) and includes the Montessori Children's Center (Activity Category C). There is an existing 9-foot 6-inch high soundwall within the right-of-way that protects all the land uses in this area. Along this area, the freeway elevation is depressed compared to the residences.

Environmental Consequences

The project is proposing to construct braided ramps from SR 99 to EB SR 58, auxiliary lanes and ramp interchange improvements. These improvements are considered as Type I features according to 23 CFR 772. The following paragraphs explain the steps in predicting traffic noise levels along the Beltway as a result of the

proposed improvements to the existing SR 58 and SR 99. Results of noise prediction are also presented.

Existing Noise-Level Measurements

Existing noise measurements data within the project area were derived from the Centennial Corridor Noise Study Report (January 2013). Short-term noise monitoring performed in October 2011 lasted 20 minutes at 44 locations. Long-term noise monitoring was performed in January 2010 at two locations and 28 locations in October 2011.

Future Noise-Level Modeling

FHWA's Traffic Noise Model Version 2.5 was used for the noise computations. Receivers, defined as single points, were at frequent outdoor use areas such as residences, schools, and recreational areas.

Results of the traffic noise analysis for the No Build Alternative and Build Alternative are presented in Table 2. A comparison of current noise levels to the projected noise levels in 2038 under the No Build Alternative and the Build Alternative is provided. Comparison to existing conditions (2008) indicates traffic noise impacts to receptors; comparison of the build and no-build conditions indicates the direct effect of the project.

Where noise levels met the NAC, soundwalls were evaluated to determine if they were reasonable and feasible. The criteria for determining when an abatement measure is reasonable and feasible are provided above in the Regulatory Setting.

Reasonableness of noise abatement for each noise barrier found to be acoustically feasible must then be determined based on the cost allowance calculation procedure identified in the *Caltrans Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects*. A soundwall is considered reasonable if it costs less than the reasonable allowance for that barrier (described in more detail in the December 2013 *Noise Abatement Decision Report*, *Beltway Operational Improvement Project*), meets the design goal, and the viewpoints of benefited receivers have been taken into consideration. The preliminary determination of reasonableness is discussed later in this section.

No Build Alternative and Build Alternative Traffic Noise Analysis Results

As shown in Table 2, the *Centennial Corridor Project Noise Study* examined 170 receptors along SR 58. Existing noise levels for about 105 of the analyzed receptors

are currently at or above the NAC 66 dBA. Without the project in future 2038, only 40 receptors would remain under that level; with the project, 27 of the receptors would remain under that level. Comparing the No Build Alternative and Build Alternative in the future, 153 of the receptors would not experience increases of more than 5 dBA with the project, and only 3 receptors would increase by 6 to 7 dBA.

Noise level increases at receptors along SR 58 are not substantial (i.e., substantial relates to any increase of more than 12 dBA); however, as mentioned above, most of the analyzed receptors along the SR 58 would meet the threshold of the NAC for the Build Alternative by the design year (2038).

In addition to analyzing receptors along SR 58, the *Centennial Corridor Project Noise Study* also examined 44 receptors within the project limits along SR 99 from Wilson Road to SR 58. Table 3 summarizes the results of the noise study for existing and future with/without project conditions. Existing noise levels for about 11 of the analyzed receptors are currently at or above 66 dBA. Without the project in future 2038, only 22 of the 44 analyzed receptors would remain under that level. Under future 2038 conditions with the project, 14 of 44 analyzed receptors would remain under the NAC criteria at or above 66 dBA. Comparing the No Build Alternative and Build Alternative in the future, 38 of the receptors would not experience increases of more than 5 dBA with the project, and only 6 receptors would increase more than 6 dBA. Most of the analyzed receptors would meet the threshold of the NAC for the Build Alternative by the design year (2038).

Table 2 Traffic Noise Impact Analysis SR 58 East of SR 99

Noise Receiver[1]	Existing Noise Level (dBA)	Predicted Noise Level with No Build Alternative (dBA)	Predicted Noise Level with Build Alternative (dBA)	Noise Impact Requiring Abatement Consider-ation	Barrier ID	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible?
						8-foot Wall	10-foot Wall	12-foot Wall	14-foot Wall	16-foot Wall	
R58-1	70	73	76	Yes	S45	72	69	68	67	66	Yes
R58-2	68	71	75	Yes	S45	70	68	67	66	65	Yes
R58-3	70	73	77	Yes	S45	70	68	67	66	65	Yes
R58-4	67	70	74	Yes	S45	68	67	65	64	63	Yes
R58-5	60	63	67	Yes	S45	65	64	63	62	61	Yes
R58-6	58	61	65	No	S45	61	60	59	59	58	Yes
R58-7	67	70	74	Yes	S45	68	67	66	65	65	Yes
R58-7A	61	64	68	Yes	S45	65	64	63	62	62	Yes
R58-8	68	71	75	Yes	S45	69	67	66	65	64	Yes
R58-9	65	70	75	Yes	S45	67	66	64	63	62	Yes
R58-10	65	70	74	Yes	S45	66	65	64	63	62	Yes
R58-11	67	70	69	Yes	S194	68	66	64	63	63	Yes
R58-12	65	68	69	Yes	S194	66	64	62	61	60	Yes
R58-13	65	66	67	Yes	S194	65	64	61	60	60	Yes
R58-15	69	70	70	Yes	S194	67	64	63	62	61	Yes
R58-16	71	72	71	Yes	S194	68	65	63	62	62	Yes
R58-17	66	67	68	Yes	S194	66	65	62	61	60	Yes
R58-18	67	70	73	Yes	S106	70	69	67	65	64	Yes
R58-19	57	60	65	No	S106	62	61	60	59	58	Yes
R58-20	62	65	72	Yes	S106	66	65	64	63	62	Yes
R58-20A	65	68	76	Yes	S106	69	67	66	65	64	Yes
R58-21	66	69	76	Yes	S106	67	66	65	64	63	Yes
R58-22	59	62	66	Yes	S106	63	63	62	61	60	Yes
R58-23	52	55	58	No	S106	57	56	56	55	55	No
R58-24	56	59	61	No	S106	60	60	60	59	58	No
R58-24A	65	68	71	Yes	S106	66	66	65	65	64	Yes
R58-25	57	60	63	No	S71	61	61	61	60	60	No
R58-26	57	60	63	No	S71	61	61	60	60	60	No
R58-27	57	60	63	No	S71	61	61	60	60	59	No
R58-28	66	69	71	Yes	S71	66	65	65	64	63	No
R58-29	59	62	65	No	S71	62	61	61	60	60	No
R58-30	58	61	62	No	S71	58	57	57	57	56	No
R58-32	59	62	64	No	S71	60	59	59	59	58	No
R58-33	71	74	76	Yes	S71	68	67	67	66	66	Yes
R58-34	66	70	73	Yes	S68	68	67	66	65	65	Yes
R58-35	66	70	74	Yes	S68	68	67	66	65	65	Yes
R58-36	68	72	76	Yes	S68	68	67	65	64	63	Yes
R58-37	58	58	59	No	S68	56	55	55	54	54	No
R58-37A	71	71	74	Yes	S68	67	66	66	65	64	Yes
R58-37B	69	69	71	Yes	S68	66	65	64	64	63	Yes
R58-38	57	57	59	No	S68	56	56	56	56	55	No
R58-39	63	63	65	No	S68	60	60	60	60	60	Yes
R58-40	72	72	76	Yes	S68	70	69	68	67	66	Yes
R58-41	68	68	71	Yes	S68	66	65	65	64	64	Yes
R58-42	62	62	65	No	S68	62	62	61	61	61	No
R58-42A	58	58	61	No	S68	60	60	60	59	59	No
R58-43	62	65	66	Yes	--	64	63	63	63	62	No
R58-44	62	65	67	Yes	--	64	64	64	64	64	No
R58-45	63	62	64	No	S93	61	60	60	59	59	Yes
R58-46	65	64	66	Yes	S93	62	61	61	60	59	Yes

Table 2 Traffic Noise Impact Analysis SR 58 East of SR 99

Noise Receiver[1]	Existing Noise Level (dBA)	Predicted Noise Level with No Build Alternative (dBA)	Predicted Noise Level with Build Alternative (dBA)	Noise Impact Requiring Abatement Consider-ation	Barrier ID	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible?
						8-foot Wall	10-foot Wall	12-foot Wall	14-foot Wall	16-foot Wall	
R58-47	61	60	62	No	S93	61	61	60	60	59	No
R58-48	65	64	66	Yes	S93	63	62	61	61	60	Yes
R58-49	69	72	73	Yes	S107	67	65	65	64	63	Yes
R58-50	68	71	71	Yes	S107	68	67	66	65	65	Yes
R58-51	60	63	64	No	S107	62	60	59	58	57	Yes
R58-52	65	68	68	Yes	S107	66	63	62	61	60	Yes
R58-54	69	72	72	Yes	S107	68	67	66	65	64	Yes
R58-55	64	67	67	Yes	S107	65	62	61	60	59	Yes
R58-56	70	72	72	Yes	S107	68	67	66	65	64	Yes
R58-57	70	72	73	Yes	S107	68	67	66	65	65	Yes
R58-58	62	64	65	No	S107	63	61	60	59	58	No
R58-59	69	71	72	Yes	S119	67	66	65	64	64	Yes
R58-60	66	69	70	Yes	S119	66	65	64	63	63	Yes
R58-61	71	71	73	Yes	S119	68	67	66	65	64	Yes
R58-62	71	71	73	Yes	S119	68	67	66	65	65	Yes
R58-63	72	72	73	Yes	S119	69	67	67	66	65	Yes
R58-64	63	66	68	Yes	S119	66	64	63	62	62	Yes
R58-65	67	70	72	Yes	S119	69	67	66	65	65	Yes
R58-66	67	70	72	Yes	S119	69	66	65	65	64	Yes
R58-67	66	68	70	--	--	--	--	--	--	--	--
R58-68[2]	43	45	46	No	--	--	--	--	--	--	--
R58-69	62	65	68	Yes	--	66	66	65	65	65	No
R58-71	61	64	67	Yes	S108	64	64	64	64	64	No
R58-73	68	71	73	Yes	S108	68	67	66	65	64	Yes
R58-74	67	70	73	Yes	S108	70	68	66	64	63	Yes
R58-75	73	76	79	Yes	S108	74	70	69	68	67	Yes
R58-76	69	72	74	Yes	S108	71	68	66	65	64	Yes
R58-77	65	68	68	Yes	S108	66	63	62	61	60	Yes
R58-78	66	69	69	Yes	S108	66	65	63	61	60	Yes
R58-79	63	66	67	Yes	S108	65	64	62	61	60	Yes
R58-80	70	70	70	Yes	S108	68	65	64	63	62	Yes
R58-81	73	73	73	Yes	S108	69	67	66	66	65	Yes
R58-82	64	64	65	No	S108	63	60	59	59	58	Yes
R58-84	72	72	73	Yes	S108	*68*	*67*	*66*	65	65	Yes
R58-85	72	72	73	Yes	S108	68	67	66	65	64	Yes
R58-86	64	64	66	Yes	S108	64	61	60	59	59	Yes
R58-87	71	71	73	Yes	S108	68	66	66	65	64	Yes
R58-88	68	68	70	Yes	S108	65	63	62	61	60	Yes
R58-89	66	66	67	Yes	S108	64	62	61	60	60	Yes
R58-90	67	67	68	Yes	S108	67	64	63	62	61	Yes
R58-91	67	67	68	Yes	S108	66	64	62	61	60	Yes
R58-92	71	71	73	Yes	S108	67	66	65	65	64	Yes
R58-93	70	70	72	Yes	S108	67	66	65	64	63	Yes
R58-94	69	69	70	Yes	S108	68	65	63	62	61	Yes
R58-95	67	67	68	Yes	S108	67	63	62	61	60	Yes
R58-96	72	72	73	Yes	S108	68	67	66	65	64	Yes
R58-97	69	69	69	Yes	S108	66	64	63	62	61	Yes
R58-98	74	74	74	Yes	S108	70	68	67	66	65	Yes
R58-99	67	67	69	Yes	S108	67	65	64	63	63	Yes
R58-100	66	66	67	Yes	S108	65	64	63	62	62	Yes

Table 2 Traffic Noise Impact Analysis SR 58 East of SR 99

Noise Receiver[1]	Existing Noise Level (dBA)	Predicted Noise Level with No Build Alternative (dBA)	Predicted Noise Level with Build Alternative (dBA)	Noise Impact Requiring Abatement Consider-ation	Barrier ID	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible?
						8-foot Wall	10-foot Wall	12-foot Wall	14-foot Wall	16-foot Wall	
R58-101	62	66	68	Yes	S147	64	63	62	61	60	Yes
R58-102	70	74	77	Yes	S147	69	67	66	65	64	Yes
R58-103	59	63	65	No	S147	62	61	60	58	57	No
R58-104	62	66	68	Yes	S147	64	63	62	61	60	Yes
R58-105	59	63	64	No	S147	63	62	61	60	58	No
R58-106	75	78	79	Yes	S147	72	70	67	65	64	Yes
R58-107	67	71	73	Yes	S147	70	69	66	64	62	Yes
R58-108	72	75	77	Yes	S165	72	72	67	66	65	Yes
R58-109	72	75	77	Yes	S165	72	71	67	66	65	Yes
R58-110	66	70	72	Yes	S165	70	69	66	64	62	Yes
R58-111	73	76	77	Yes	S165	74	71	69	68	67	Yes
R58-112	72	75	77	Yes	S165	71	69	68	67	66	Yes
R58-113	71	74	75	Yes	S165	72	71	67	65	65	Yes
R58-114	70	73	75	Yes	S165	73	69	67	66	65	Yes
R58-115	71	74	76	Yes	S165	71	69	68	67	66	Yes
R58-116	70	73	75	Yes	S165	73	69	67	66	65	Yes
R58-117	67	70	72	Yes	S165	70	66	64	63	62	Yes
R58-118	70	73	75	Yes	S165	70	68	67	66	65	Yes
R58-119	66	69	71	Yes	S165	69	65	63	62	61	Yes
R58-120	66	69	72	Yes	S165	69	65	63	62	62	Yes
R58-121	67	70	72	Yes	S165	70	66	64	63	62	Yes
R58-122	70	73	74	Yes	S165	70	68	67	66	65	Yes
R58-123	65	68	70	Yes	S165	68	67	63	62	61	Yes
R58-124	66	69	71	Yes	S165	69	68	64	63	62	Yes
R58-125	67	70	71	Yes	S165	67	66	65	65	65	Yes
R58-126	65	68	70	Yes	S165	69	64	63	63	62	Yes
R58-127	66	69	71	Yes	S165	69	66	65	65	65	Yes
R58-128	65	69	70	Yes	S144	67	66	65	64	63	Yes
R58-129	59	63	64	No	S144	64	63	63	63	63	No
R58-131	65	69	70	Yes	S144	65	64	63	62	61	Yes
R58-132	57	61	62	No	S144	59	58	58	56	56	No
R58-133	69	73	75	Yes	S144	68	67	66	65	64	Yes
R58-134	70	74	75	Yes	S144	69	69	67	66	65	Yes
R58-135	58	62	63	No	S144	61	60	59	57	57	No
R58-136	70	72	74	Yes	S144	68	66	65	64	63	Yes
R58-137	58	60	61	No	S144	59	58	57	56	54	No
R58-138	63	65	67	Yes	S144	65	64	61	62	58	Yes
R58-139	70	72	74	Yes	S144	68	66	64	63	61	Yes
R58-140	74	76	78	Yes	S164	72	70	67	65	64	Yes
R58-141	67	69	71	Yes	S164	68	67	63	61	60	Yes
R58-142	66	68	70	Yes	S164	68	67	64	62	61	Yes
R58-143	73	75	77	Yes	S164	71	67	65	64	63	Yes
R58-144	70	72	73	Yes	S164	70	69	65	63	62	Yes
R58-145	67	70	71	Yes	S164	69	68	64	62	61	Yes
R58-146	64	67	69	Yes	S164	67	66	63	61	60	Yes
R58-147	68	71	72	Yes	S164	69	68	64	62	61	Yes
R58-148	70	72	73	Yes	S164	71	67	65	64	63	Yes
R58-149	69	71	73	Yes	S164	71	66	65	64	63	Yes
R58-150	67	69	71	Yes	S164	69	67	63	62	61	Yes
R58-151	65	68	70	Yes	S164	67	67	63	62	61	Yes

Table 2 Traffic Noise Impact Analysis SR 58 East of SR 99

Noise Receiver[1]	Existing Noise Level (dBA)	Predicted Noise Level with No Build Alternative (dBA)	Predicted Noise Level with Build Alternative (dBA)	Noise Impact Requiring Abatement Consider-ation	Barrier ID	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible?
						8-foot Wall	10-foot Wall	12-foot Wall	14-foot Wall	16-foot Wall	
R58-152	69	71	72	Yes	S164	68	66	65	64	63	Yes
R58-153	69	71	73	Yes	S164	68	66	65	64	63	Yes
R58-154	69	71	73	Yes	S164	67	66	65	64	63	Yes
R58-155	64	67	70	Yes	S164	67	67	63	62	61	Yes
R58-156	65	68	70	Yes	S164	66	65	62	61	60	Yes
R58-157	68	70	72	Yes	S164	66	65	63	63	62	Yes
R58-158	67	69	70	Yes	S164	69	64	63	62	61	Yes
R58-159	69	71	72	Yes	S164	67	65	64	63	62	Yes
R58-160	65	68	70	Yes	S164	67	66	62	61	60	Yes
R58-161	65	68	70	Yes	S164	66	66	62	61	60	Yes
R58-162	65	68	69	Yes	S164	66	66	62	61	60	Yes
R58-163	62	65	67	Yes	S164	64	63	60	58	58	Yes
R58-164	68	70	72	Yes	S164	67	65	64	63	62	Yes
R58-165	68	70	72	Yes	S164	67	65	64	63	62	Yes
R58-166	63	66	68	Yes	S164	65	63	61	60	59	Yes
R58-167	66	68	70	Yes	S184	67	63	63	62	61	Yes
R58-168	66	68	70	Yes	S184	66	63	63	62	61	Yes
R58-169	66	68	70	Yes	S184	66	64	63	62	61	Yes
R58-170	66	68	70	Yes	S184	66	64	63	62	61	Yes
R58-171	67	69	70	Yes	S184	68	65	64	63	62	Yes
R58-172	67	69	70	Yes	S184	69	66	65	64	64	Yes

dBA: A-weighted decibels.

--: Not evaluated

Notes:
1 – Receivers that are noise measurement sites that are not located at an outdoor use area, or those subject to acquisitions, are not listed in this table because they do not represent a future outdoor use area and do not qualify for noise abatement.
2 – Representative of an interior noise level because there were no exterior outdoor use areas.

Source: Developed from the *Noise Study Report*, 2013.

Table 3 Traffic Noise Impact Analysis SR 99 South of SR 58

Noise Receiver[1]	Existing Noise Level (dBA)	Predicted Noise Level with No Build Alternative (dBA)	Predicted Noise Level with Build Alternative (dBA)	Noise Impact Requiring Abatement Consideration	Barrier ID	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible?
						8-foot Wall	10-foot Wall	12-foot Wall	14-foot Wall	16-foot Wall	
R99-1	59	63	63	No	--	62	62	62	62	62	No
R99-2	67	68	68	Yes	--	67	67	67	66	66	No
R99-3	58	59	59	No	--	57	56	56	56	56	No
R99-4	66	67	67	Yes	--	--	--	67	66	66	No
R99-5	65	66	66	Yes	--	--	--	66	65	65	No
R99-6	66	67	67	Yes	--	--	--	66	65	65	No
R99-7	66	67	67	Yes	--	--	--	66	64	64	No
R99-8	65	66	66	Yes	--	--	--	65	64	63	No
R99-9	62	63	63	No	--	--	--	--	--	--	--
R99-10	59	60	60	No	--	--	--	--	--	--	--
R99-10A	57	58	58	No	--	--	--	--	-	--	--
R99-11	60	63	67	Yes	--	62	62	62	62	61	No
R99-12	70	73	74	Yes	--	70	69	69	69	69	No
R99-13	68	71	74	Yes	--	69	69	68	68	68	No
R99-14	69	72	73	Yes	--	--	--	71	70	70	No
R99-15	62	65	69	Yes	--	--	--	68	68	68	No
R99-16	60	64	64	No	--	--	--	64	63	63	No
R99-17	64	68	68	Yes	--	--	--	67	66	65	No
R99-18	65	69	69	Yes	--	--	--	68	67	66	No
R99-19	65	68	69	Yes	--	--	--	68	67	67	No
R99-20	56	59	59	No	--	--	--	59	59	59	No
R99-20A	62	65	65	No	--	--	--	64	64	63	No
R99-21	58	61	62	No	--	--	--	--	61	60	No
R99-21A	61	64	67	Yes	--	--	--	--	65	64	No
R99-21B	65	68	69	Yes	--	--	--	--	67	67	No
R99-21C	61	64	65	No	--	--	--	--	64	64	No
R99-22	60	63	64	No	--	--	--	--	63	63	No
R99-23	62	65	72	Yes	--	69	68	68	67	67	No
R99-25	64	67	75	Yes	--	71	70	70	70	69	No
R99-26	61	66	69	Yes	--	--	--	68	68	68	No
R99-27	60	65	68	Yes	--	--	--	68	67	67	No
R99-28	61	66	66	Yes	--	--	--	66	65	65	No
R99-29	56	61	61	No	--	--	--	61	61	61	No
R99-30	57	62	62	No	--	62	61	61	61	60	No
R99-31	68	73	73	Yes	S676	66	65	64	63	63	Yes
R99-32	68	73	70	Yes	S676	65	64	63	63	62	Yes
R99-33	70	75	72	Yes	S676	65	63	62	61	60	Yes
R99-34	62	67	62	No	S676	61	60	60	58	57	No
R99-36	64	69	67	Yes	S676	64	63	63	62	60	Yes
R99-37	68	73	72	Yes	--	66	64	63	62	61	Yes
R99-40	59	63	72	Yes	--	68	67	67	67	66	No
R99-41	58	62	73	Yes	--	68	67	66	66	65	No
R99-43C	58	62	75	Yes	--	68	67	66	65	65	No
R99-43A	57	61	70	Yes	--	65	65	64	64	63	No

dBA: A-weighted decibels.

--: Not evaluated

Notes:

1 – Receivers that are noise measurement sites that are not located at an outdoor use area, or those subject to acquisitions, are not listed in this table because they do not represent a future outdoor use area and do not qualify for noise abatement.

2 – Representative of an interior noise level because there were no exterior outdoor use areas.

Source: Developed from the *Noise Study Report*, 2013.

Summary of Preliminary Noise Abatement Decision Report

The noise study analyzed noise barriers with heights from 8 to 16 feet to determine the feasibility of noise abatement. The results of the analysis identified 13 new soundwalls within the project limits that are feasible and have a total combined length of approximately 24,300 feet. The soundwalls will provide feasible noise abatement at areas of frequent human use. The Noise Abatement Decision Report (NADR) for the project documents the preliminary noise abatement decision based on acoustical and nonacoustical feasibility factors and the relationship between noise abatement allowances and the engineer's cost estimate. The NADR analyzed the reasonableness of the soundwall by comparing the noise abatement allowances and the engineer's cost estimate.

The wall construction cost estimates are based on masonry soundwall construction in accordance with standard plans and specifications. Cost estimates are derived from the Caltrans Cost Database (CCD) (Caltrans 2008-2010), which calculates an average unit cost of construction-related items from recent state transportation projects. Cost calculations for soundwalls include the cost of the wall, footing/piles, concrete barrier, earthwork, traffic control, permanent easements, and temporary construction easements (TCE). The final cost estimate also includes a 10 percent contingency.

Table 4 summarizes key information for the preliminary abatement decision and shows that the estimated abatement costs are within the associated cost allowance for all reasonable soundwalls. The preliminary noise abatement decision presented in this report is based on preliminary project alignments and profiles, which may be subject to change. As such, the physical characteristics of noise abatement described herein also may be subject to change. If pertinent parameters change substantially during the final project design, the preliminary noise abatement decision may be changed to include abatement in the final project design. A final decision on whether and how to construct noise abatement will be made upon completion of the project design.

Table 4 Summary of Abatement Key Information

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance ($)	Masonry Estimated Construction Cost ($)	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S45	8	Yes	8	440,000	729,000	No	Yes
	10	Yes	19	1,045,000	862,000	Yes	
	12	Yes	20	1,100,000	978,000	Yes	
	14	Yes	22	1,210,000	1,094,000	Yes	
	16	Yes	22	1,210,000	1,227,000	No	
S68	8	Yes	15	825,000	721,000	Yes	Yes
	10	Yes	15	825,000	852,000	No	
	12	Yes	15	825,000	970,000	No	
	14	Yes	16	880,000	1,090,000	No	
	16	Yes	16	880,000	1,220,000	No	
S71	8	Yes	2	110,000	54,000	Yes	Yes
	10	Yes	10	550,000	542,000	Yes	
	12	Yes	10	550,000	624,000	No	
	14	Yes	13	715,000	707,000	Yes	
	16	Yes	13	715,000	801,000	No	
S93	8	No	NA	NA	NA	NA	Yes
	10	Yes	2	110,000	229,000	No	
	12	Yes	5	275,000	266,000	Yes	
	14	Yes	7	385,000	303,000	Yes	
	16	Yes	7	385,000	345,000	Yes	
S106	8	Yes	7	385,000	412,000	o	Yes
	10	Yes	7	385,000	491,000	No	
	12	Yes	15	825,000	559,000	Yes	
	14	Yes	16	880,000	628,000	Yes	
	16	Yes	16	880,000	707,000	Yes	
S107	8	Yes	6	330,000	332,000	No	Yes
	10	Yes	15	825,000	405,000	Yes	
	12	Yes	20	1,100,000	475,000	Yes	
	14	Yes	20	1,100,000	546,000	Yes	
	16	Yes	20	1,100,000	619,000	Yes	
S108	8	Yes	16	880,000	734,000	Yes	Yes
	10	Yes	49	2,695,000	876,000	Yes	
	12	Yes	57	3,135,000	1,017,000	Yes	
	14	Yes	58	3,190,000	1,158,000	Yes	
	16	Yes	58	3,190,000	1,296,000	Yes	
S119	8	Yes	4	220,000	218,000	Yes	Yes
	10	Yes	12	660,000	261,000	Yes	
	12	Yes	12	660,000	303,000	Yes	
	14	Yes	12	660,000	346,000	Yes	
	16	Yes	12	660,000	387,000	Yes	
S144	8	Yes	5	275,000	355,000	No	Yes
	10	Yes	5	275,000	432,000	No	
	12	Yes	8	440,000	498,000	No	
	14	Yes	18	990,000	565,000	Yes	
	16	Yes	18	990,000	642,000	Yes	

Table 4 Summary of Abatement Key Information

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance ($)	Masonry Estimated Construction Cost ($)	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S147 S165	8	Yes	18	990,000	985,000	Yes	Yes
	10	Yes	46	2,530,000	1,157,000	Yes	
	12	Yes	67	3,685,000	1,318,000	Yes	
	14	Yes	67	3,685,000	1,480,000	Yes	
	16	Yes	69	3,795,000	1,643,000	Yes	
S164 S184	8	Yes	14	770,000	1,056,000	No	Yes
	10	Yes	39	2,145,000	1,217,000	Yes	
	12	Yes	71	3,905,000	1,379,000	Yes	
	14	Yes	71	3,905,000	1,541,000	Yes	
	16	Yes	71	3,905,000	1,691,000	Yes	
S194	8	No	NA	NA	NA	NA	Yes
	10	Yes	7	385,000	395,000	No	
	12	Yes	12	660,000	447,000	Yes	
	14	Yes	12	660,000	500,000	Yes	
	16	Yes	12	660,000	548,000	Yes	
S676	8	Yes	7	385,000	320,000	Yes	Yes
	10	Yes	7	385,000	370,000	Yes	
	12	Yes	7	385,000	416,000	No	
	14	Yes	9	495,000	462,000	Yes	
	16	Yes	13	715,000	510,000	Yes	

According to 23 CFR 772, the regulation requires the identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project. Input received from affected property owners and the public through the environmental review process is also considered in the noise abatement decision. Based on the information that was summarized in the NADR, 13 soundwalls constructed with regular masonry block and located within State ROW were found to be reasonable and feasible: S45, S68, S71, S93, S106, S107, S108, S119, S144, S147/S165, S164/S184, S194, and S676 (as shown in Appendix B). The Department is required to consult with these owners for comment and opinion on whether soundwalls will be built as part of the project.

The Department's *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects* (2011) indicates that the viewpoints of benefited residents must be considered. A request for a position from residents either in favor of or in opposition to the proposed noise abatement by a specified deadline must be provided. If more than 50 percent of the votes from responding benefited receptors oppose the abatement, the abatement will not be considered reasonable.

Property owners and non-owner occupants of benefited receptors are required to be surveyed. For owner-occupied dwelling units, the property owner gets one vote. For nonowner-occupied dwelling units, the renter gets 10 percent of one vote and the owner gets 90 percent of one vote.

On December 11, 2013, a Sound Barrier Survey was mailed to all homeowners and/or residences where potential soundwalls will be considered. Follow-up soundwall survey letters were sent on December 27, 2013, and January 15, 2014. Door-to-door surveys of residents were also conducted during a 3-day period from January 8 to 11, 2014. An additional soundwall survey was also conducted on January 17, 2014. The purpose of the Sound Barrier Survey was to inform the property owner and/or the resident about the project, obtain a vote, and solicit comments about the proposed soundwall.

After reviewing the completed Sound Barrier Surveys from the responding affected property owners/residents, it was determined that the proposed soundwalls at S45, S68, S71, S93, S106, S107, S108, S119, S144, S147/S165, S164/S184, S194, and S676 will be constructed because the Sound Barrier Survey results received the required 50 percent consensus for construction of each soundwall.

Construction Noise

Noise from construction activities may intermittently dominate the environment in the immediate area of construction. The degree of construction noise impacts may vary for different areas of the project site and may vary depending on the type and intensity of construction activities. Table 5 shows noise levels produced by construction equipment commonly used on roadway construction projects.

Table 5 Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoes	80
Pneumatic Tools	85
Concrete Pumps	82

dBA: A-weighted decibels
Source: *Federal Transit Administration,* 2006.

Equipment involved in construction is expected to generate noise levels ranging from 80 to 89 dBA at a distance of 50 feet. Noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance. More precise construction noise levels cannot be calculated at this time, because some of the necessary data, such as the type of equipment, effective usage factor, and number of each equipment type, have not yet been designated.

Construction noise varies greatly depending on the construction process, type, and condition of equipment used, as well as layout of the construction site. Many of these factors are traditionally left to the contractor's discretion, which makes it difficult to accurately estimate levels of construction noise. Temporary construction noise impacts would be unavoidable at areas right next to the project alignment.

The noise level requirement specified here shall apply to the equipment on the job or related to the job, including, but not limited to, trucks, transit mixers, or transient equipment that may or may not be owned by the contractor.

Sound control shall conform to the provisions in Section 14-8.02, "Noise Control," of the Standard Specifications and Section 14-8.02, "Noise Control," of the Standard Special Provisions. According to requirements of these specifications, construction noise cannot exceed 86 dBA at 50 feet from the jobsite activities from 9:00 p.m. to 6:00 a.m.

It is possible that certain construction activities could cause intermittent localized concern from vibration in the project area. During certain construction phases, processes, such as earth moving with bulldozers, the use of vibratory compaction rollers, impact pile driving, demolitions, or pavement breaking, may cause construction-related vibration impacts such as human annoyance or, in some cases, building damage. Implementation of minimization measures indicated in Minimization Measure N-2 would eliminate or minimize vibration impacts during construction activities.

No Build Alternative

Traffic noise impacts would occur along SR 58 and SR 99 even without project implementation, as previously shown in Table 2 and Table 3 ("Predicted Noise Level with No Build Alternative" column), because traffic noise levels would approach or exceed the NAC; however, no noise abatement would be considered without the project.

Avoidance, Minimization, and/or Mitigation Measures

Noise abatement is considered for locations where traffic noise levels would approach or exceed the NAC or there is a noise level increase of 12 dB. A barrier must meet both the feasible and reasonable criteria to be built. Feasibility of noise abatement is an engineering concern. A minimum 5-dB reduction in the future noise level must be achieved for an abatement measure to be considered feasible. The preliminary reasonableness determination is made first by achieving the noise reduction design goal of at least 7 dB of noise reduction at one or more benefited receptors. Second, the construction cost must be within the established allowance per benefited receptor. Finally, the viewpoints of benefitted receptors, including property owners and residents of the benefited receptors, must be taken into account.

Based on the noise abatement study, 13 soundwalls identified under the Build Alternative would provide feasible abatement for frequent outdoor use areas identified in the figures provided in Appendix B.

The following noise abatement would apply to the project:

N-1 Based on the studies completed, Caltrans intends to incorporate noise abatement in the form of soundwalls that meet the criteria for reasonableness and feasibility. The recommended soundwalls would reduce the traffic noise levels by at least 5 dB at the impacted receivers, would meet the design goal by providing a 7-dB reduction for at least one receiver, and would cost less than the reasonableness cost allowance. If, during final design, conditions have substantially changed, noise abatement may not be necessary. The final decision of the noise abatement will be made upon completion of the project design and the public involvement processes.

Prior to the formal selection of the Preferred Alternative and approval of the project, all property owners of the benefited receptors located adjacent to each of the proposed soundwalls will be given an opportunity to vote if they want the soundwall to be constructed to abate the traffic noise in their area. For soundwalls located within State ROW, if more than 50 percent of the votes from responding benefited receptors oppose the abatement, the abatement will not be considered reasonable and will not be built. If the soundwall is to be located on private property (or properties), 100 percent of the property owners must vote in favor of the soundwall for it to be constructed; however, at this time, none of the recommended soundwalls are on private property.

The *Noise Abatement Decision Report, Beltway Operational Improvement Project* (November 2013) determines the reasonableness of the feasible soundwalls presented in the *Noise Study Report, Centennial Corridor Project*. When cost allows during the reasonableness determination, the minimum heights shown in the *Noise Study Report* may be raised. Raising the heights of soundwalls may increase the number of benefited receivers. All benefited areas, even nonimpacted areas, with feasible abatement contribute to the calculation of the reasonableness allowance of a feasible soundwall. Soundwalls that are reasonable are recommended for the project.

Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of soundwalls ranging in height from 8 to 16 feet at 13 locations for the Build Alternative for a total of approximately 24,300 feet in length. Calculations based on preliminary design data indicate that the proposed soundwalls would reduce noise levels by at least 5 dB and would meet the design goal of 7-dB reduction at least at one receiver per soundwall. The estimated cost of soundwalls for the Build Alternative is $8,716,500. If conditions have substantially changed during final design, noise abatement may not be necessary. The final decision of the noise abatement will be made upon completion of the project design and the public involvement processes.

Soundwall S194

Soundwall S194 is located on the edge of the shoulder along the SR 99/SR 58 northbound-to-eastbound connector and would provide feasible traffic noise abatement for 12 single-family residences near Stephens Drive along SR 58 (see Figure 1 in Appendix B; Receivers R58-11 through R58-17). Existing traffic noise levels in this area are 65 to 67 dBA. Future traffic noise levels at these locations, without the project, are predicted to be 66 to 70 dBA. Future traffic noise levels at these locations, with the project, are predicted to be 67 to 69 dBA. Because all predicted future traffic noise levels meet or exceed 67 dBA, which is the NAC for residential uses, receivers in this area would be impacted by traffic noise levels. A 12-foot-high soundwall would be needed to achieve feasible and reasonable traffic noise abatement at Receivers R58-11 through R58-17. The total cost allowance for this soundwall, calculated in accordance with the Caltrans Traffic Noise Analysis Protocol, is $660,000. The current estimated cost of the soundwall is $447,000; therefore, this soundwall is recommended.

Soundwall S106

Soundwall S106 is located on the existing ROW along eastbound SR 58 and would provide feasible traffic noise abatement for 15 single-family residences and a recreational area near Hughes Lane along SR 58 (see Figure 2 in Appendix B; Receivers R58-18 through R58-24A). Existing traffic noise levels in this area are 52 to 66 dBA. Future traffic noise levels at these locations, without the project, are predicted to be 55 to 69 dBA. Future traffic noise levels, with the project, are predicted to be 58 to 76 dBA. Receivers in this area for which the predicted future traffic noise level approaches or exceeds 67 dBA, which is the NAC for residential uses, would be impacted by traffic noise levels. A 14-foot-high soundwall would be needed to achieve feasible and reasonable traffic noise abatement at Receivers R58-18 through R58-24A. The total cost allowance for this soundwall, calculated in accordance with the Caltrans Traffic Noise Analysis Protocol, is $880,000. The current estimated cost of the soundwall is $628,000; therefore, this soundwall is recommended.

Soundwall S45

Soundwall S45 is located on the ROW line along westbound SR 58 and would provide feasible traffic noise abatement for 17 single-family residences and 5 multi-family residences between Hughes Lane and SR 99 along SR 58 (see Figures 2 and 3 in Appendix B; Receivers R58-1 through R58-10). The existing traffic noise levels in this area range from 58 to 70 dBA. The future traffic noise level at these locations without the project is predicted to range from 61 to 73 dBA. The future traffic noise level at these locations with the project is predicted to range from 65 to 77 dBA. Because all but one of the predicted future traffic noise levels approach or exceed 67 dBA, which is the NAC for residential uses, these receivers, except Receiver R58-6, would be impacted by traffic noise levels. A 12- to 14-foot-high soundwall would be needed to achieve feasible and reasonable traffic noise abatement for the Build Alternative at Receivers R58-1 through R58-10. The total cost allowance for this soundwall is $1,210,000. The current estimated cost is $994,000; therefore, this soundwall is recommended.

Soundwall S68

Soundwall S68 is located on the ROW line along eastbound SR 58 and would provide feasible traffic noise abatement for 11 single-family residences and 4 multi-family residences between Hughes Lane and H Street along SR 58 (see Figure 3 in Appendix B; Receivers R58-34 through R58-42A). The existing traffic noise levels in this area

range from 58 to 72 dBA. The future traffic noise level at these locations without the project is predicted to range from 58 to 72 dBA. The future traffic noise level at these locations with the project is predicted to range from 59 to 76 dBA. Receivers with predicted future traffic noise levels that approach or exceed 67 dBA, which is the NAC for residential uses, would be impacted by traffic noise levels. An 8- to 10-foot-high soundwall would be needed to achieve feasible and reasonable traffic noise abatement at Receivers R58-34 through R58-42A. The total cost allowance for this soundwall for the Build Alternative, calculated in accordance with the Caltrans Traffic Noise Analysis Protocol, is $825,000. The current estimated cost of the soundwall is $739,000; therefore, this soundwall is recommended.

Soundwall S71

Soundwall S71 is located on the ROW line along westbound SR 58 and would provide feasible traffic noise abatement for two single-family residences between Houchin Road and H Street along SR 58 (see Figure 4 in Appendix B; Receiver R58-33). The existing traffic noise level in this area is 71 dBA. The future traffic noise level at these locations without the project is predicted to be 74 dBA. The future traffic noise level at these locations with the project is 76 dBA. Receivers with predicted future traffic noise levels that approach or exceed 67 dBA, the noise abatement criterion for residential uses, would be impacted by traffic noise levels. An 8-foot-high soundwall would be needed to achieve feasible and reasonable traffic noise abatement at Receiver R58-33. The total cost allowance for this soundwall, calculated in accordance with the Caltrans Traffic Noise Analysis Protocol, is $110,000. The current estimated cost of the soundwall is $54,000; therefore, this soundwall is recommended.

Soundwall S93

Soundwall S93 is located on the ROW line along westbound SR 58 and would provide feasible traffic noise abatement for seven single-family residences between Chester Avenue and Vernal Place along SR 58 (see Figure 4 in Appendix B; Receivers R58-45 through R58-48). The existing traffic noise levels in this area range from 61 to 65 dBA. The future traffic noise level at these locations without the project is predicted to range from 60 to 64 dBA. The future traffic noise level at these locations with the project is predicted to range from 62 to 66 dBA. Predicted future traffic noise levels at Receivers R58-46 and R58-48 approach or exceed 67 dBA, which is the NAC for residential uses, so the receivers would be impacted by traffic noise levels. A 16-foot-high soundwall would be needed to achieve feasible and

reasonable traffic noise abatement at Receivers R58-46 and R58-48. The total cost allowance for this soundwall under the Build Alternative, calculated in accordance with the Caltrans Traffic Noise Analysis Protocol, is $385,000. The current estimated cost of the soundwall is $345,000; therefore, this soundwall is recommended.

Soundwall S107

Soundwall S107 is located on top of a retaining wall at the edge of the shoulder along westbound SR 58 and westbound Chester Avenue off-ramp and would provide feasible traffic noise abatement for 18 single-family residences for the Build Alternative between Vernal Place and P Street along SR 58 (see Figures 5 and 6 in Appendix B; Receivers R58-49 through R58-59). The existing traffic noise levels in this area range from 60 to 70 dBA. The future traffic noise level at these locations without the project is predicted to range from 63 to 72 dBA. The future traffic noise level at these locations with the project is predicted to range from 64 to 73 dBA. Receivers where the predicted future traffic noise level approaches or exceeds 67 dBA, which is the NAC for residential uses, would be impacted by traffic noise levels. A 10- to 12-foot-high soundwall would be needed to achieve feasible and reasonable traffic noise abatement at Receivers R58-49 through R58-59. Under the Build Alternative, the total cost allowance for this soundwall, calculated in accordance with the Caltrans Traffic Noise Analysis Protocol, is $990,000. The current estimated cost is $421,000; therefore, this soundwall is recommended.

Soundwall S108

Soundwall S108 is located on top of a retaining wall at the edge of the shoulder along eastbound SR 58 and eastbound Chester Avenue on-ramp. This soundwall would provide feasible traffic noise abatement for 34 single-family residences and 24 multi-family residences between Chester Avenue and Union Avenue along SR 58 (see Figures 5 and 6 in Appendix B; Receivers R58-71 through R58-100). The existing traffic noise levels in this area are 61 to 74 dBA. Future traffic noise levels at these locations, without the project, are predicted to be 63 to 76 dBA. Future traffic noise levels at these locations, with the project, are predicted to be 65 to 79 dBA. Except for Receiver R58-82, all of the predicted future traffic noise levels approach or exceed 67 dBA, which is the NAC for residential uses for receivers in this area, so the receivers would be impacted by traffic noise levels. A 12- to 14-foot-high soundwall would be needed to achieve feasible and reasonable traffic noise abatement at Receivers R58-71 through R58-100. The total cost allowance for this soundwall, calculated in accordance with the Caltrans Traffic Noise Analysis Protocol, is

$3,190,000. The current estimated cost of the soundwall is $1,036,000; therefore, this soundwall is recommended.

Soundwall S119

Soundwall S119 is located on the shoulder along westbound SR 58. This soundwall would provide feasible traffic noise abatement for 12 single-family residences between P Street and Union Avenue along SR 58 (see Figure 4 and in Appendix B; Receivers R58-60 through R58-66). Existing traffic noise levels in this area range from 63 to 72 dBA. Future traffic noise levels at these locations, without the project, are predicted to be 66 to 72 dBA. Future traffic noise levels at these locations, with the project, are predicted to be 68 to 73 dBA. Because all of the predicted future traffic noise levels exceed 67 dBA, which is the NAC for residential uses, these receivers would be impacted by traffic noise levels. A 10- to 12-foot-high soundwall would be needed to achieve feasible and reasonable traffic noise abatement at Receivers R58-60 through R58-66. The total cost allowance for this soundwall for the Build Alternative, calculated in accordance with the Caltrans Traffic Noise Analysis Protocol, is $660,000. The current estimated cost of the soundwall is $276,000; therefore, this soundwall is recommended.

Soundwall S144

Soundwall S144 is located on the ROW line along eastbound SR 58 Union Avenue on-ramp and would provide feasible traffic noise abatement for eight single-family residences between Bliss Street and Union Avenue along SR 58 (see Figure 5 in Appendix B; Receivers R58-128 through R58-139). Existing traffic noise levels in this area are 57 to 70 dBA. Future traffic noise levels at these locations, without the project, are predicted to be 60 to 74 dBA. Future traffic noise levels, with the project, are predicted to be 61 to 75 dBA. Based on the NAC for residential uses, receivers where predicted future traffic noise levels approach or exceed 67 dBA are anticipated to be impacted by traffic noise levels. A 10- to 12-foot-high soundwall would be needed to achieve feasible and reasonable traffic noise abatement at Receivers R58-128 through R58-139. The total cost allowance for this soundwall, calculated in accordance with the Caltrans Traffic Noise Analysis Protocol, is $440,000. The current estimated cost of the soundwall is $445,000; however, this soundwall is recommended because the estimated construction cost is only 1 percent higher than the total reasonable allowance, which is within the margin of error for the calculation.

Soundwalls S147 and S165

Soundwalls S147 and S165 work as a system and are located on the ROW line at the Union Avenue off-ramp and the shoulder along westbound SR 58. These soundwalls would provide feasible traffic noise abatement for 31 single-family residences, 10 multi-family residences, and 22 mobile homes between Liggett Street and Cottonwood Road along SR 58 (see Figures 5 and 6 in Appendix B; Receivers R58-101 through R58-127). Existing traffic noise levels in this area range from 59 to 75 dBA. The future traffic noise levels at these locations, without the project, are predicted to range from 63 to 78 dBA. Future traffic noise levels at these locations, with the project, are predicted to range from 64 to 79 dBA. Except for Receivers R58-103 and R58-105, all predicted future traffic noise levels for the remaining receivers in this area exceed the NAC of 67 dBA; hence, receivers would be impacted by traffic noise levels. A 10-foot-high soundwall (S147) and 12-foot-high soundwall (S165) would be needed to achieve feasible and reasonable traffic noise abatement for the effected receivers. The total cost allowance for this soundwall system for all alternatives, calculated in accordance with the Caltrans Traffic Noise Analysis Protocol, is $3,465,000. The current estimated cost of the soundwall is $1,540,500; therefore, this soundwall system is recommended.

Soundwalls S164 and S184

Soundwalls S164 and S184 work as a system and are located along eastbound SR 58 at the shoulder and ROW line, respectively. These soundwalls would provide feasible traffic noise abatement for 67 single-family residences and 4 multi-family residences between Bliss Street and Cottonwood Road along SR 58 (see Figures 5 and 6 in Appendix B; Receivers R58-140 through R58-172). Existing traffic noise levels in this area range from 62 to 74 dBA. The future traffic noise levels at these locations, without the project, are predicted to range from 65 to 76 dBA. Future traffic noise levels at these locations, with the project, are predicted to range from 67 to 78 dBA. Because all of the predicted future traffic noise levels exceed 67 dBA, which is the NAC for residential uses, the receivers in this area would be impacted by traffic noise levels. A 10- to 14-foot-high soundwall (S164) and a 12-foot-high soundwall (S184) would be needed to achieve feasible and reasonable traffic noise abatement at Receivers R58-144 through R58-172. The total cost allowance for this soundwall system, calculated in accordance with the Caltrans Traffic Noise Analysis Protocol, is $3,905,000. The current estimated cost of the soundwall is $1,365,000; therefore, this soundwall system is recommended.

Soundwall S676

Soundwall S676 is located on the ROW line along northbound SR 99 and would provide feasible traffic noise abatement for nine single-family residences (Receivers R99-30 through R99-37). Existing traffic noise levels in this area are 57 to 70 dBA. Future traffic noise levels at these locations, without the project, are predicted to be 62 to 75 dBA. Future traffic noise levels at these locations, with the project, are predicted to be 62 to 73 dBA. Since all the predicted future traffic noise levels except for Receiver R99-30 approach or exceed 67 dBA, the noise abatement criterion for residential uses, these receivers would be impacted by traffic noise levels. A 12- to 14-foot-high soundwall would be needed to achieve feasible and reasonable traffic noise abatement at Receivers R99-31 through R99-33 and R99-35 through R99-37.The total cost allowance for this soundwall is $495,000. The current estimated cost of the soundwall is $426,000. Therefore, this soundwall is recommended.

Areas without Feasible or Reasonable Abatement

There were locations where it was not possible to provide feasible traffic noise abatement (a 5-dB reduction). Most of these areas are located behind existing soundwalls. Below is a list of the receivers at these locations:

Receivers R58-43 and R58-44. Traffic noise impacts would occur at the frequent outdoor use areas of one single-family residence and two multi-family residential units along westbound SR 58 (see Figure 3 in Appendix B). Because of local traffic contributions from the frontage road between South Chester Avenue and H Street, a soundwall placed in the ROW would not provide a 5-dB or more traffic noise reduction at these residences; therefore, the soundwall would not be feasible.

Receiver R58-69. Traffic noise impacts would occur at the frequent outdoor use areas of one single-family residence along eastbound SR 58 (see Figure 3 in Appendix B). Because of local traffic noise contributions from the frontage road between H Street and South Chester Avenue, a soundwall placed in the ROW would not provide a 5-dB or more traffic noise reduction at this residence; therefore, the soundwall would not be feasible.

Minimization Measures

N-2 During construction of the proposed project, work would be done in accordance with Caltrans Standard Specifications Section 14-08.02 and applicable local noise standards. Construction noise would be short term,

occasional, and overshadowed by local traffic noise. The following measures would minimize the temporary noise impacts during construction:

- All equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.
- As directed by Caltrans, the contractor will implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

Appendix A Beltway Operational Improvements Project (SR 58 Gap Closure Project) Description

PROJECT DESCRIPTION

The Beltway Operational Improvements Project (SR 58 Gap Closure Project) proposes to construct operational improvements and soundwalls along State Route (SR) 58 between SR 99 and Cottonwood Road and at the SR 99 Ming Avenue interchange.

It is proposed to braid the SR 99 to eastbound (EB) SR 58 branch connector with the South H Street off-ramp to eliminate the short, nonstandard weaving length between the two interchange ramps. The proposed braided ramps would improve operations by eliminating weaving on EB SR 58, from traffic originating at Real Road, with traffic on the SR 99 connector ramps going to the South H Street off ramp. This improvement would also enhance safety by eliminating all conflicting weaving and merging traffic movements between the SR 99 connector ramps and the EB SR 58 off-ramp to South H Street. A single-lane slip ramp would be provided from the SR 99 branch connector to the South H Street off–ramp to facilitate access. The braided ramps would require construction of retaining walls along both the branch connector and South H Street off-ramp.

It is proposed to construct 1,300-foot-long auxiliary lanes in advance of the EB SR 58 off-ramp to Union Avenue and in advance of the westbound (WB) SR 58 off-ramp to Chester Avenue. Within the SR 99 portion of the project, it is proposed to construct a 1,300-foot-long auxiliary lane in advance of the northbound (NB) SR 99 off-ramp to Ming Avenue. Each auxiliary lane component would terminate as a “trap” lane to a single-lane off-ramp at each location. These improvements are expected to improve operational characteristics along the two mainline segments of SR 58 and SR 99 within the Beltway system by facilitating weaving and deceleration of exiting traffic and by providing additional vehicle storage off the mainline freeway lanes.

Additional operational improvements are proposed along the Beltway system at three SR 58 interchanges and two SR 99 interchanges, as described below:

- The Chester Avenue on-ramp to EB SR 58 would be realigned and reconstructed to accommodate a ramp metering system (RMS) and California Highway Patrol (CHP) enforcement area. These improvements would enhance operations along EB SR 58 by metering the flow of traffic entering the mainline freeway during peak travel times.
- The Union Avenue off-ramp from EB SR 58 would be reconstructed beyond the exit nose to provide a second lane along the length of ramp for storage and an additional left-turn pocket beginning at approximately the midpoint along the length of ramp to the terminus at Union Avenue. These improvements

would enhance operations by providing one additional left-turn lane at the intersection with Union Avenue and by increasing storage capacity along the length of the off-ramp to better manage traffic queues from extending back onto the mainline freeway during peak traffic hours.

- The Cottonwood Road off-ramp from EB SR 58 would be reconstructed beginning at the approximate midpoint along the length of ramp to the terminus at Cottonwood Road to provide a second lane for storage and a third lane to accommodate an additional left-turn pocket at Cottonwood Road. This improvement would enhance operations along EB SR 58 by providing one additional left-turn pocket at the intersection with Cottonwood Road and by increasing storage capacity along the length of the off-ramp to better manage traffic queues from extending back onto the mainline freeway during peak traffic hours.
- The Ming Avenue on-ramp to SB SR 99 would be realigned and reconstructed to include an RMS and CHP enforcement area. These improvements would enhance operations along SB SR 99 by metering the flow of traffic entering the mainline freeway during peak travel times.
- A portion of the Ming Avenue on-ramp to NB SR 99 would also be reconstructed to provide standard shoulder widths and improve an existing lane drop to a standard 30:1 taper to improve operations.

In addition to the proposed operational improvements, the Beltway Operational Improvements Project (SR 58 Gap Closure Project) also proposes to construct soundwalls along both sides of the SR 58 corridor between SR 99 and Cottonwood Road, and along NB SR 99 between the Belle Terrace overcrossing (OC) and SR 58. A Noise Abatement Decision Report (NADR) has been prepared for the Beltway Operational Improvements Project (SR 58 Gap Closure Project). The proposed soundwalls would provide noise attenuation for areas of frequent human use based on existing and expected future year 2038 traffic noise levels.

The Kern Council of Governments (COG) included the Beltway Operational Improvements Project (SR 58 Gap Closure Project) in Amendment No. 12 to the 2013 Federal Transportation Improvement Program (FTIP). Construction capital and support costs for the Beltway Operational Improvements Project (SR 58 Gap Closure Project) are proposed to be funded in the 2013/2014 fiscal year using federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) Section 1301, Projects of National and Regional Significance (PNRS) and by the City of Bakersfield and Kern County using local funds for the required 20 percent funding match.

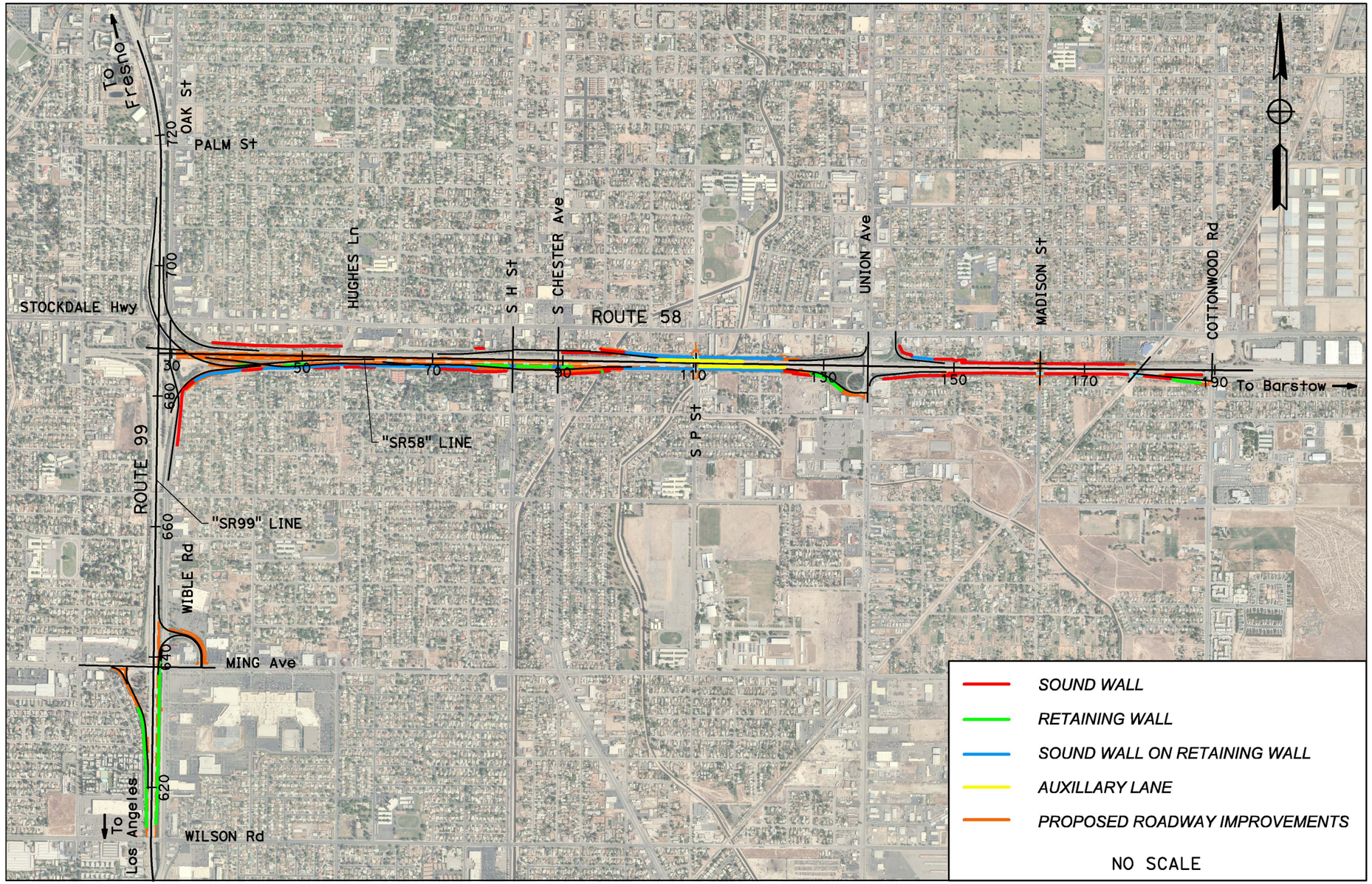


Figure A-1: Beltway Operational Improvements Project (SR 58 Gap Closure Project) Features

Appendix B Noise Receptor and Proposed Soundwall Locations

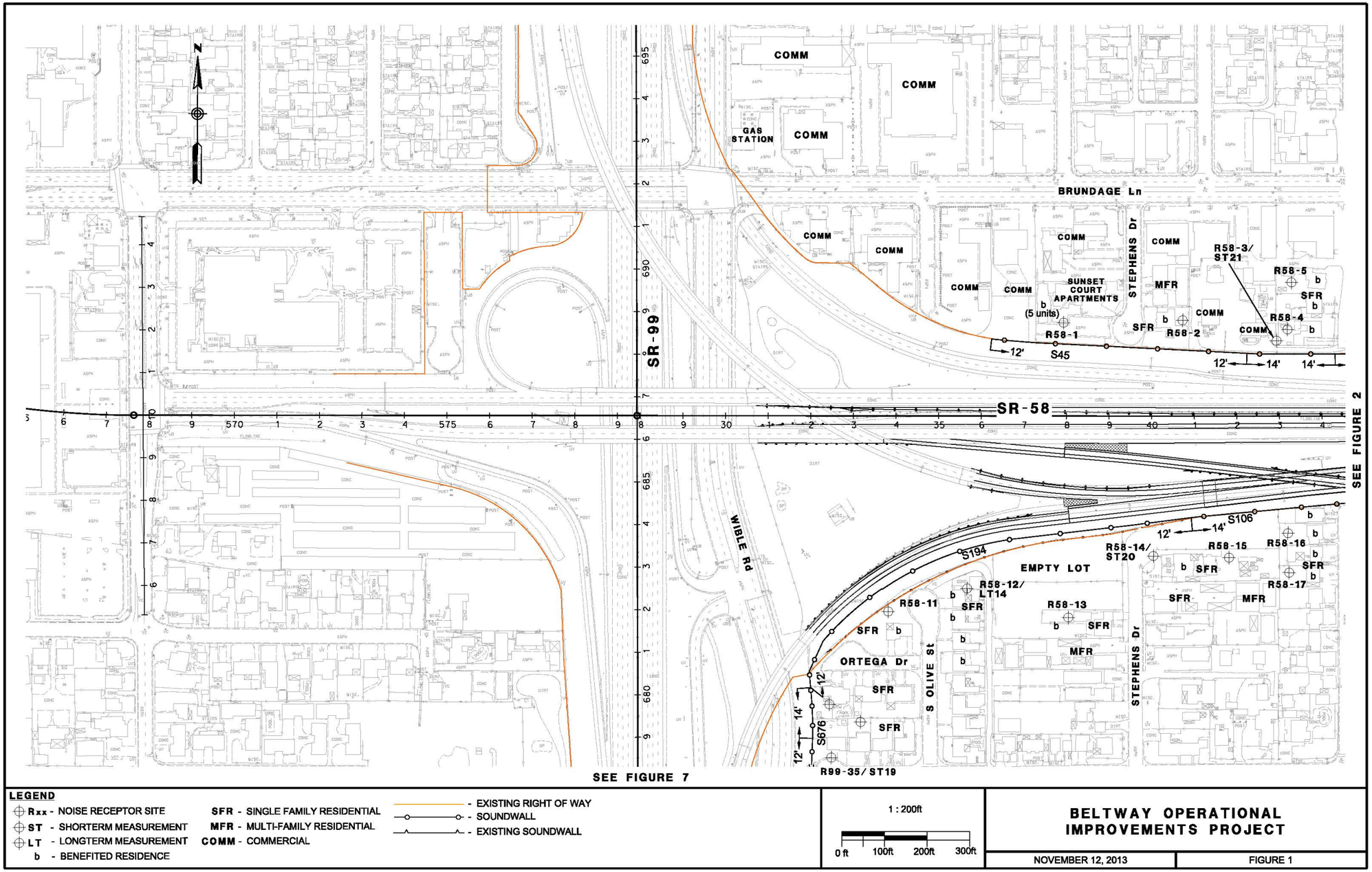


Figure B-1: Noise Receptors and Proposed Soundwall Locations

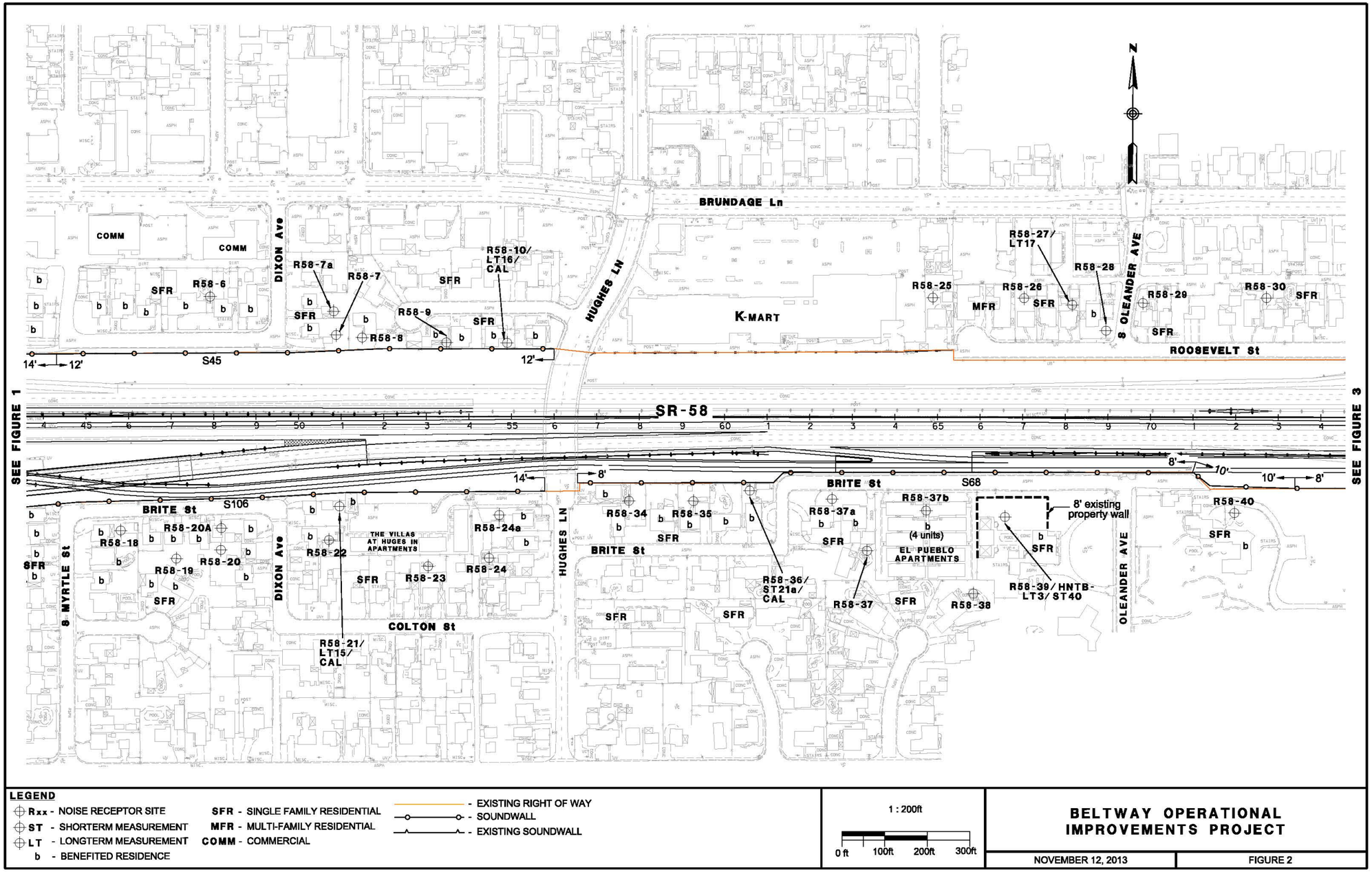


Figure B-2: Noise Receptors and Proposed Soundwall Locations

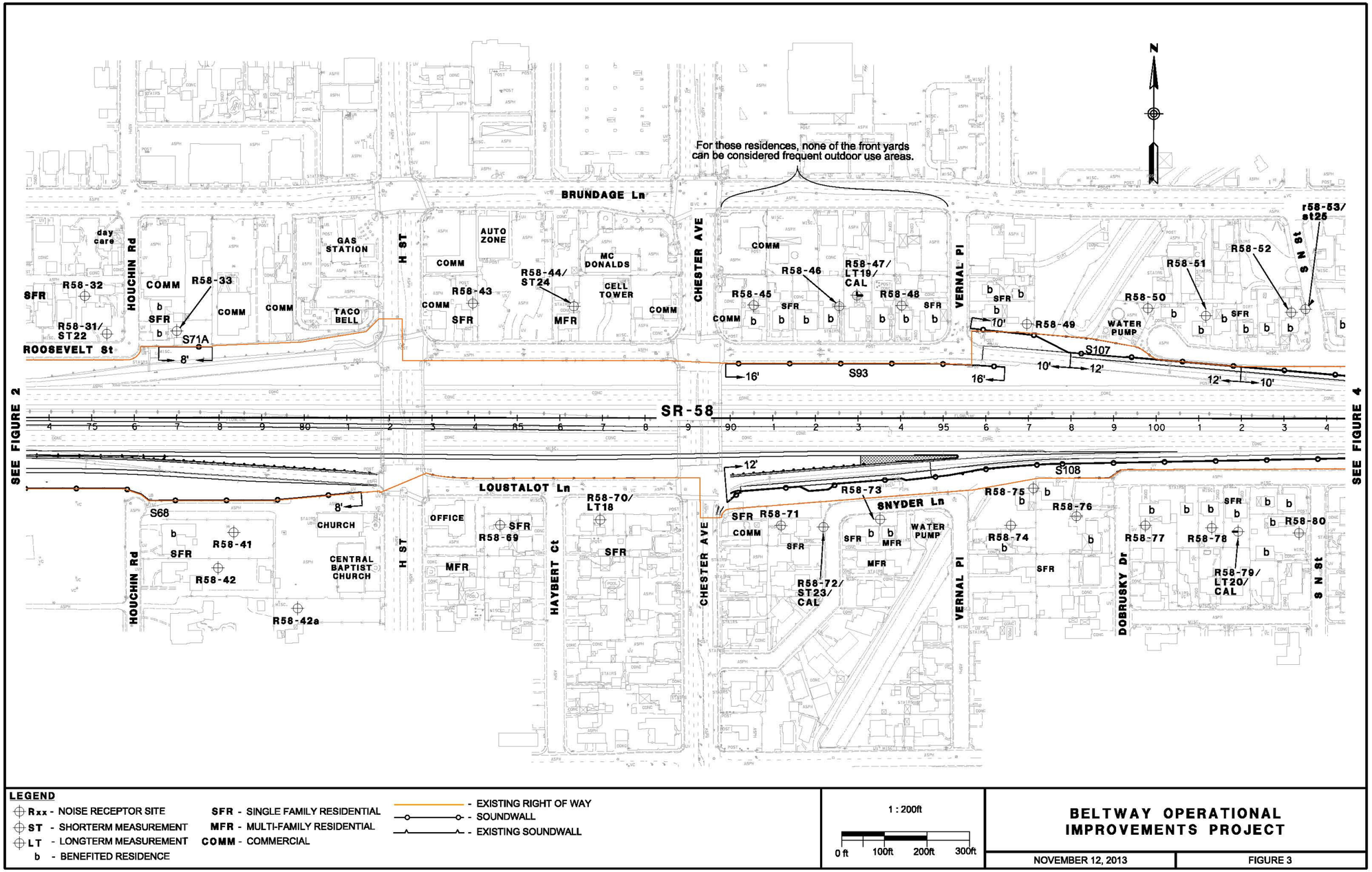


Figure B-3: Noise Receptors and Proposed Soundwall Locations

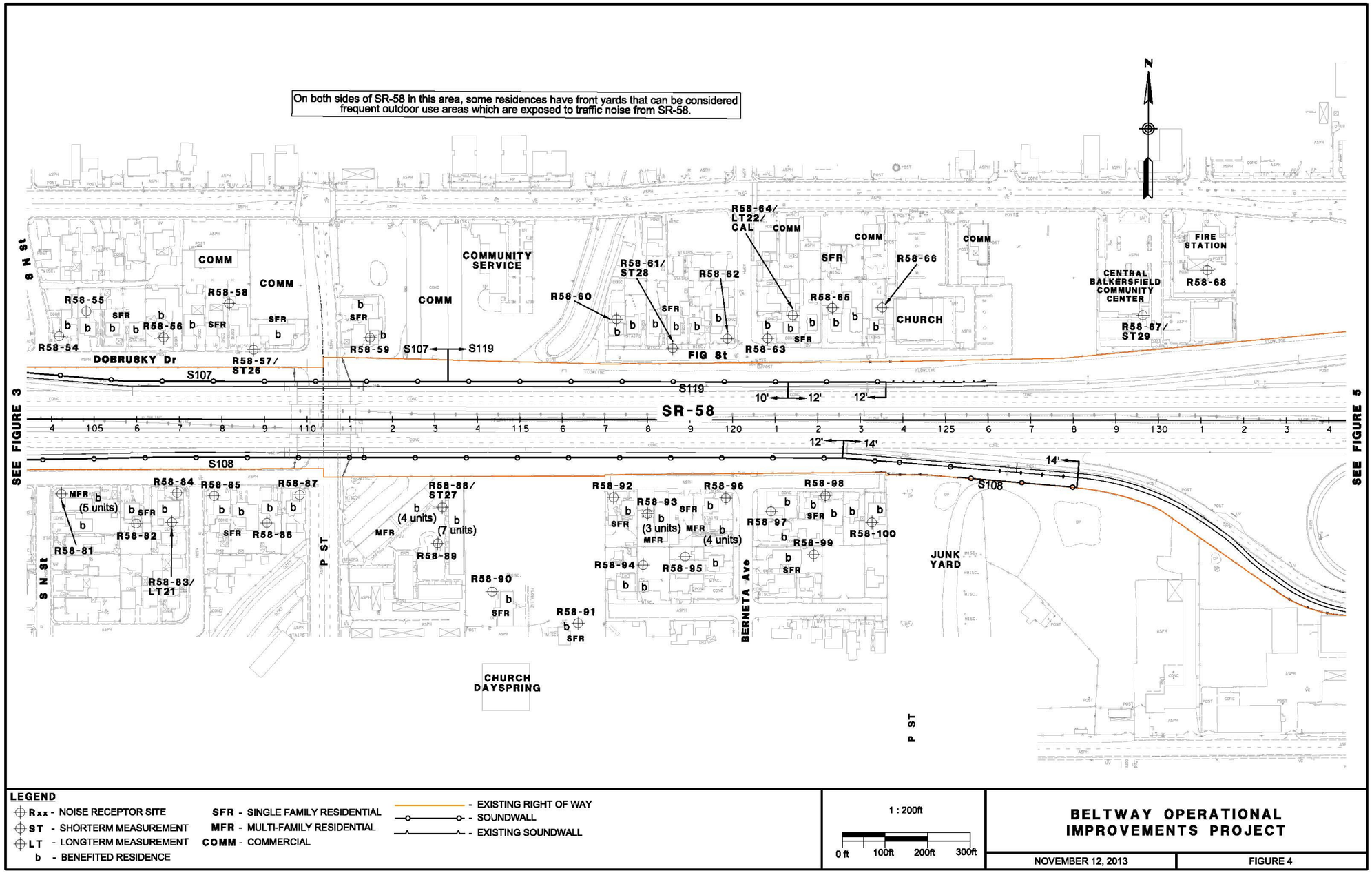


Figure B-4: Noise Receptors and Proposed Soundwall Locations

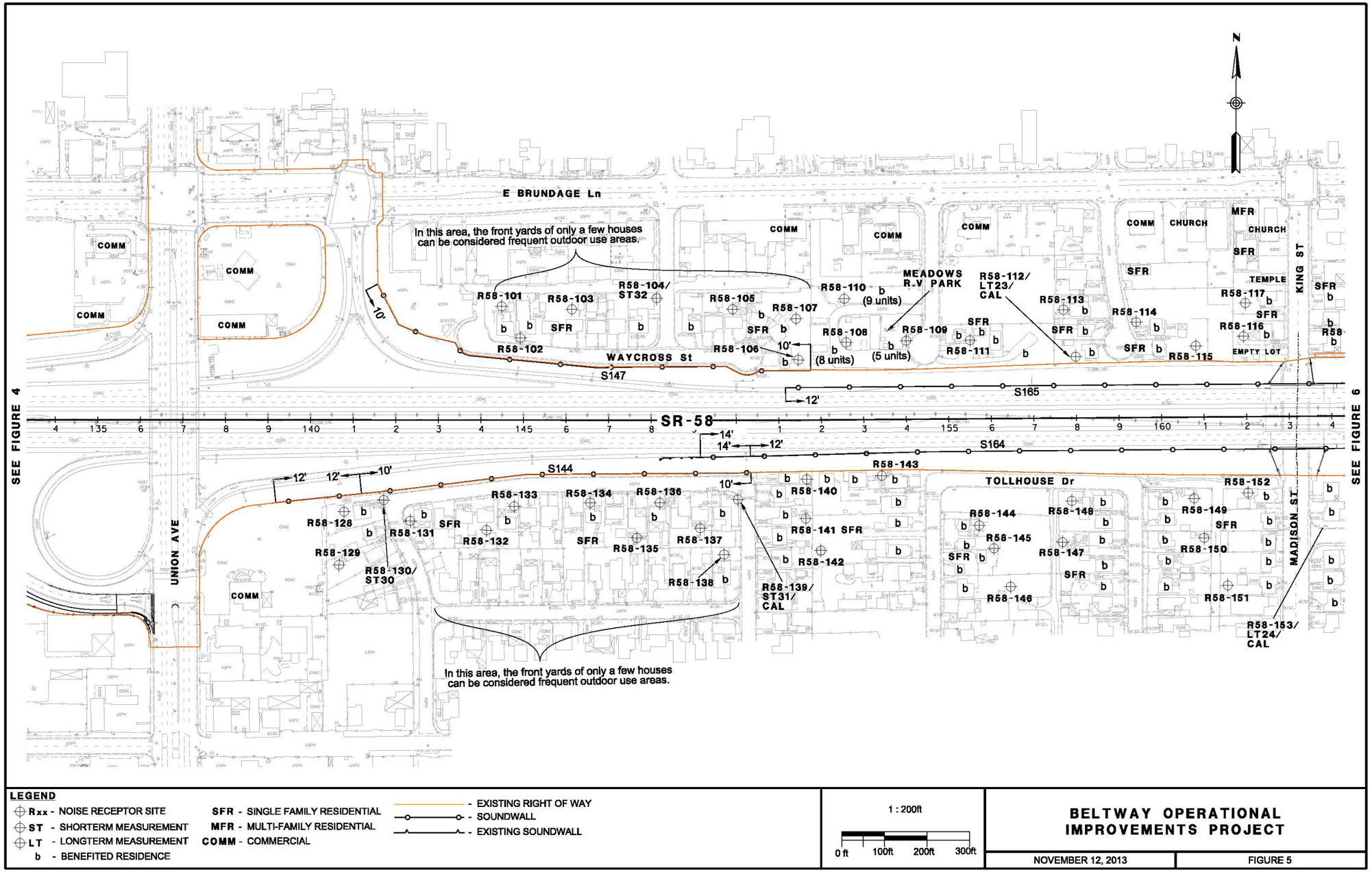


Figure B-5: Noise Receptors and Proposed Soundwall Locations

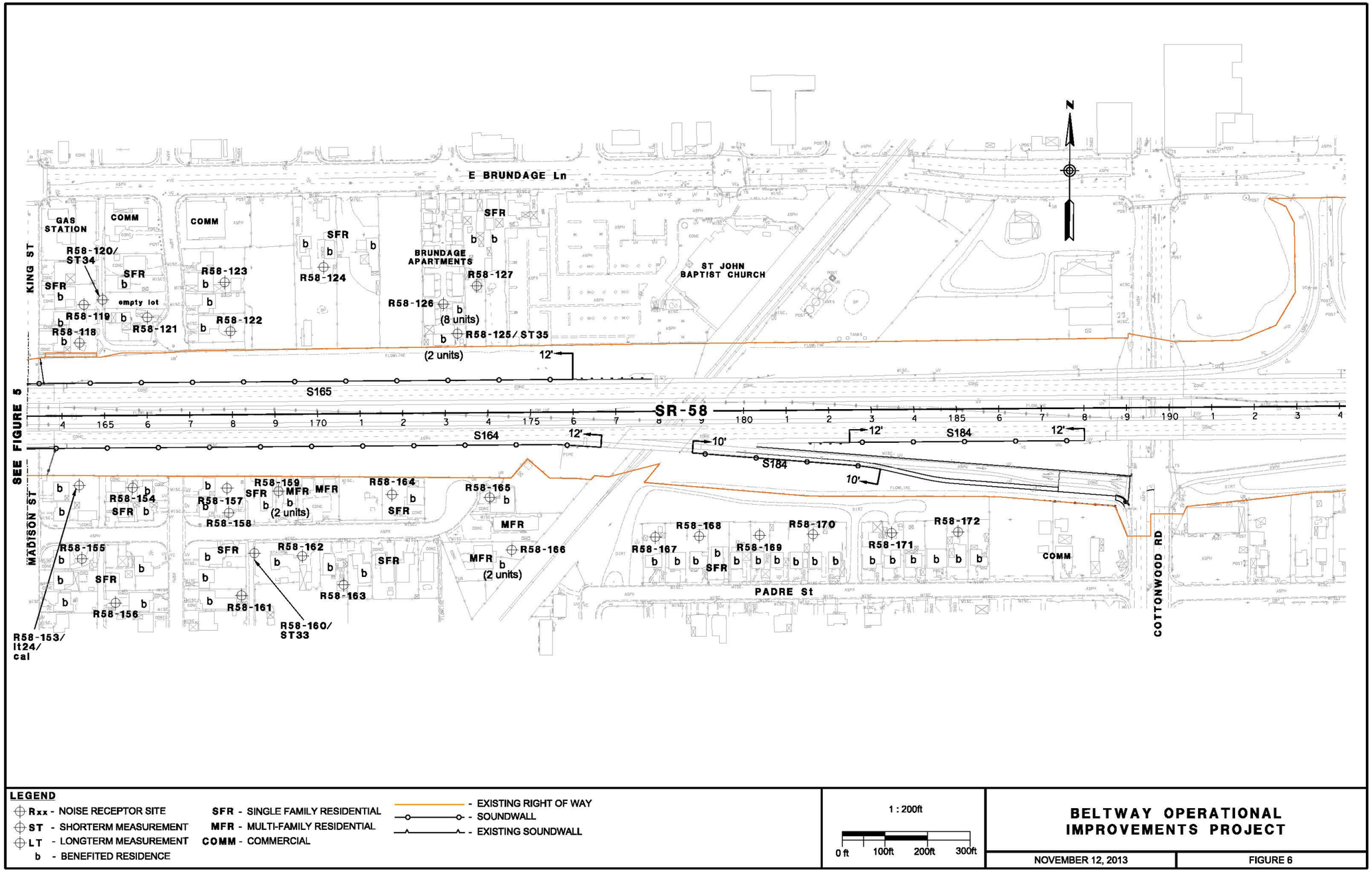


Figure B-6: Noise Receptors and Proposed Soundwall Locations

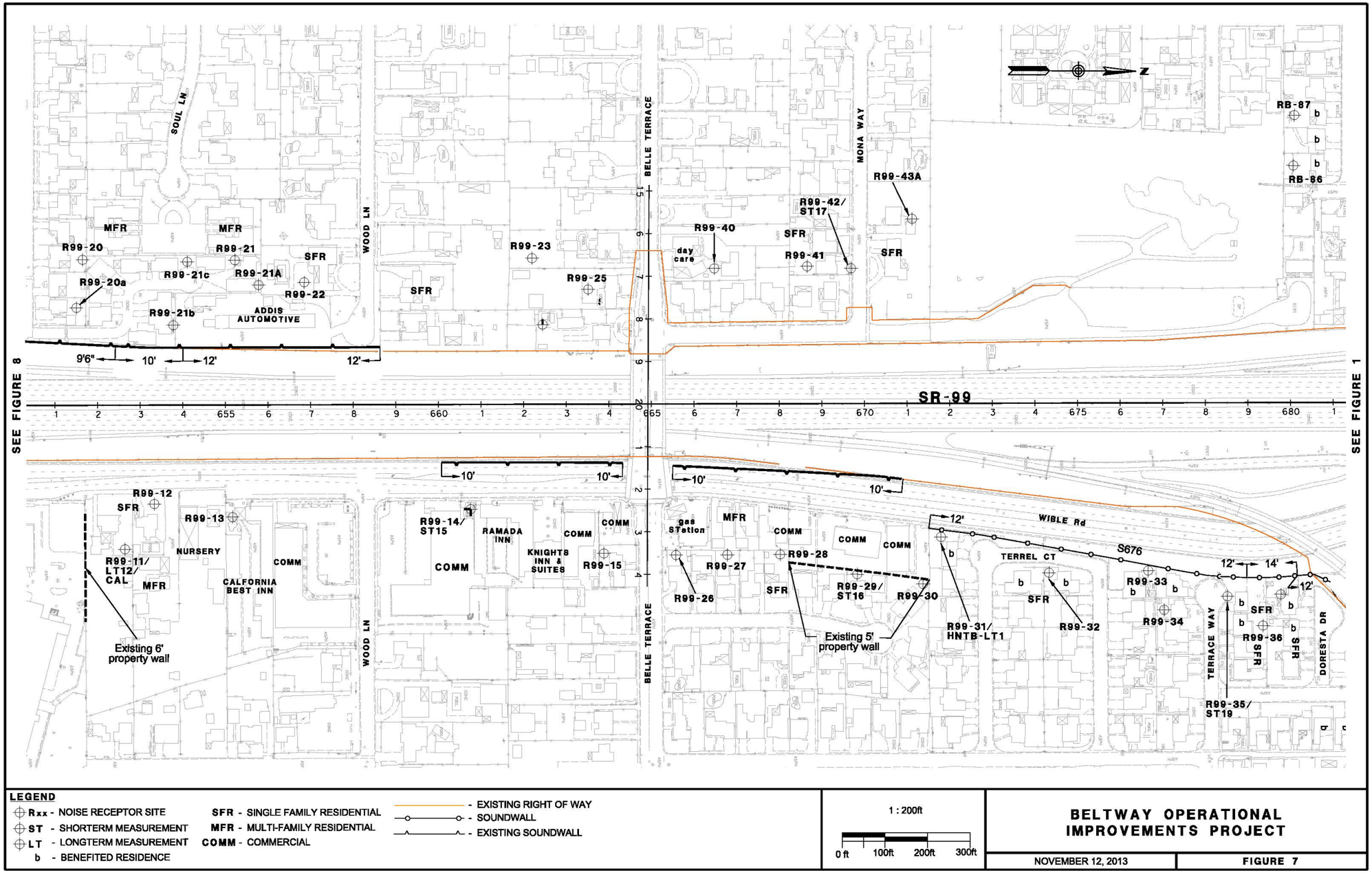


Figure B-7: Noise Receptors and Proposed Soundwall Locations

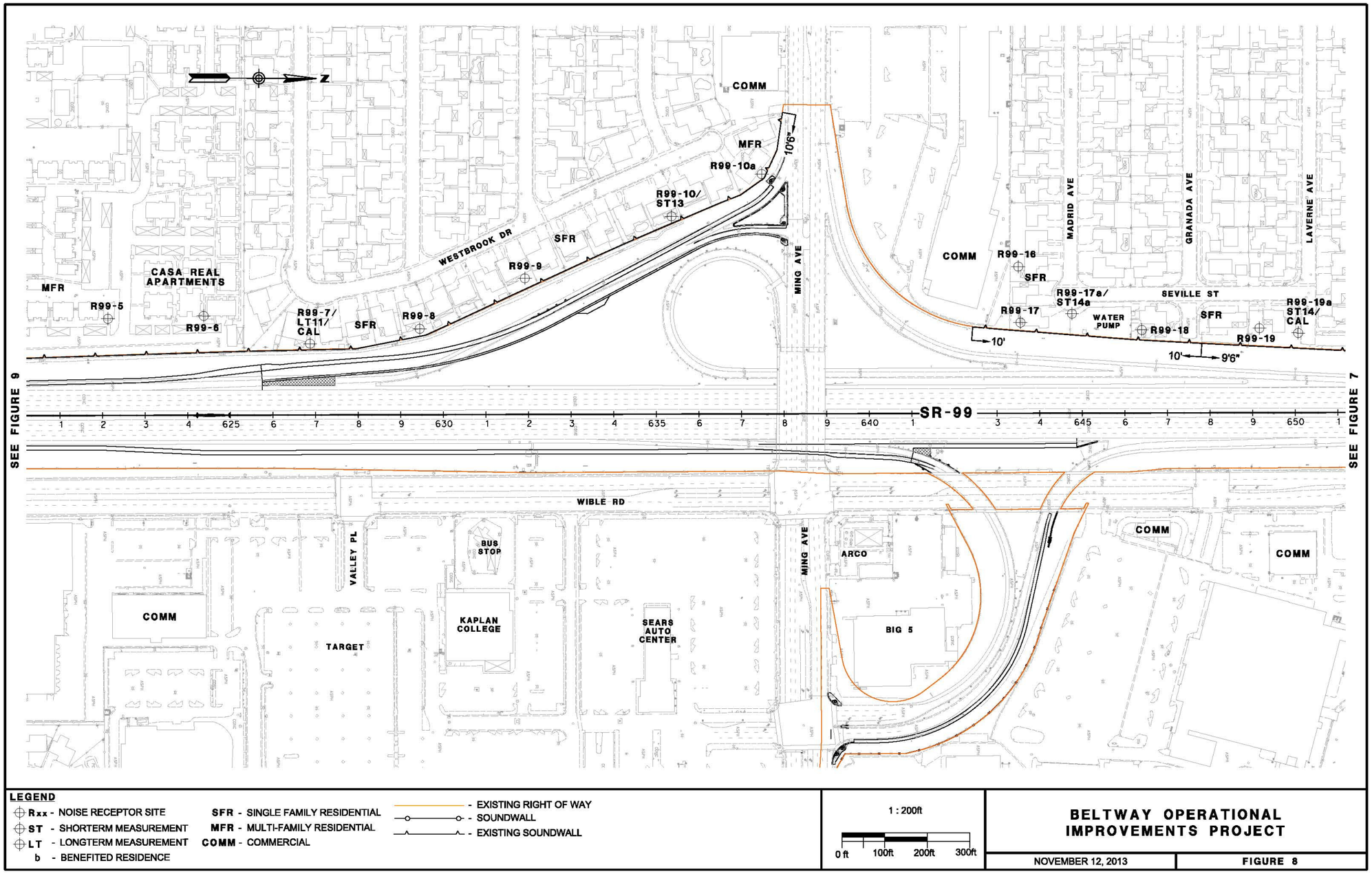


Figure B-8: Noise Receptors and Proposed Soundwall Locations

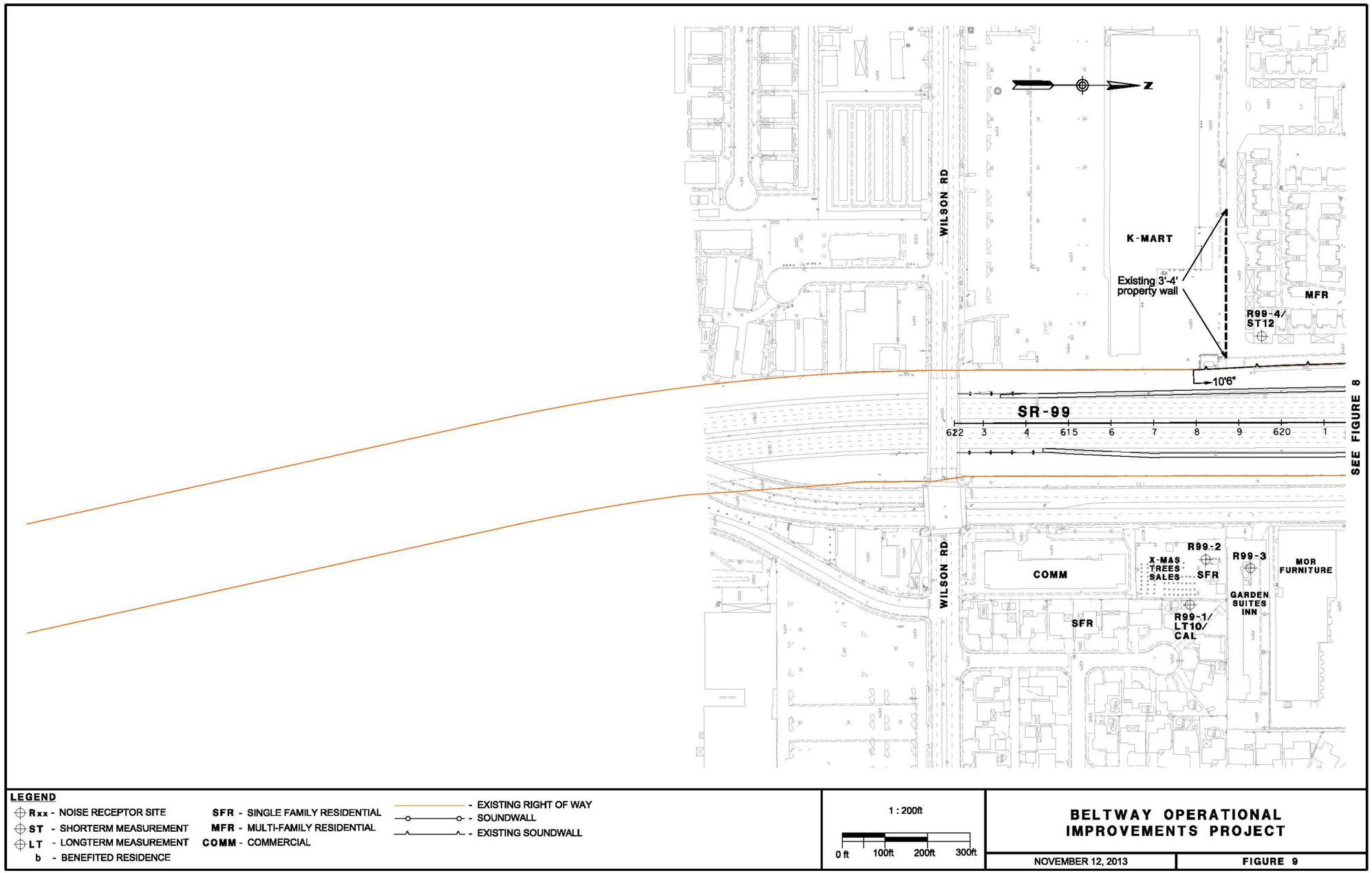


Figure B-9: Noise Receptors and Proposed Soundwall Locations

Appendix C Comments and Responses

This appendix contains the comments received during the public circulation and comment period from December 11, 2013, to January 10, 2014. A Caltrans response follows each comment presented here.

Summary of Public Comments and Responses

Comment ID	Commenter Name/ Agency	Date of Comment
A	State Clearing House and Planning Unit	January 8, 2014
B	Native American Heritage Commission	December 10, 2013
C	State of California Public Utilities Commission	January 14, 2014

State Clearinghouse and Planning Unit
Date of Comment Letter: January 8, 2014

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

January 8, 2014

Kelly J. Hobbs
California Department of Transportation, District 6
855 M Street, Suite 200
Fresno, CA 93721

Subject: Beltway Operational Improvements Project
SCH#: 2013121029

Dear Kelly J. Hobbs:

A-1

The State Clearinghouse submitted the above named Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on January 7, 2014, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

State Clearinghouse and Planning Unit (Continued)
Date of Comment Letter: January 8, 2014

Document Details Report
State Clearinghouse Data Base

SCH# 2013121029
Project Title Beltway Operational Improvements Project
Lead Agency Caltrans #6

Type Neg Negative Declaration

Description Construct operational improvements along SR 58 from east SR 99 to Cottonwood Road and SR 99 from Wilson Road to north of the Ming Avenue interchange in the city of Bakersfield.

Lead Agency Contact

Name Kelly J. Hobbs
Agency California Department of Transportation, District 6
Phone 559 445 5286 **Fax**
email
Address 855 M Street, Suite 200
City Fresno **State** CA **Zip** 93721

Project Location

County Kern
City Bakersfield
Region
Lat / Long 35° 21' 9.54" N / 119° 1' .76" W
Cross Streets SR 58 from east of SR 99 to Cottonwood Rd, SR 99 from Wilson Rd to north Ming Ave
Parcel No.
Township 30S **Range** 28E **Section** 6 **Base** MDB&M

Proximity to:

Highways SR 58 and 99
Airports Bakersfield Municipal
Railways BNSF and Amtrak
Waterways Kern River
Schools 39 Schools
Land Use Transportation

Project Issues Biological Resources; Noise

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 4; Department of Parks and Recreation; Department of Water Resources; Caltrans, Division of Aeronautics; Air Resources Board; Regional Water Quality Control Bd., Region 5 (Fresno); Native American Heritage Commission; Public Utilities Commission

Date Received 12/09/2013 **Start of Review** 12/09/2013 **End of Review** 01/07/2014

State Clearinghouse and Planning Unit
Date of Comment Letter: January 8, 2014

Response

A-1 Comment is noted. All public comments received will be included in the Final IS/ND.

Native American Heritage Commission
Date of Comment Letter: December 10, 2013

Ms. Renee Morquecho, PlannerSTATE OF CALIFORNIA
Edmund G. Brown, Jr.Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
(916) 373-3715
Fax (916) 373-5471
Web Site www.nahc.ca.gov
Ds_nahc@pacbell.net
e-mail: ds_nahc@pacbell.net

December 10, 2013

Mr. Kelly J. Hobbs, Environmental Planner
California Department of Transportation – District 6
855 "M" Street, Suite 200
Fresno, CA 93721

RE: SCH#2013121029; CEQA Notice of Completion; proposed Negative Declaration for the **"Beltway Operational Improvements Project;"** located in the City of Bakersfield; Kern County, California

Dear Mr. Hobbs:

The Native American Heritage Commission (NAHC) has reviewed the above-referenced environmental document.

B-1 The California Environmental Quality Act (CEQA) states that any project which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA guidelines 15064.5(b). To adequately comply with this provision and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

Contact the appropriate Information Center for a record search to determine :If a part or all of the area of project effect (APE) has been previously surveyed for cultural places(s), The NAHC recommends that known traditional cultural resources recorded on or adjacent to the APE be listed in the draft Environmental Impact Report (DEIR).

B-2 If an additional archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey. We suggest that this be coordinated with the NAHC, if possible. The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure pursuant to California Government Code Section 6254.10.

Native American Heritage Commission (Continued)
Date of Comment Letter: December 10, 2013

B-3 A list of appropriate Native American Contacts for consultation concerning the project site has been provided and is attached to this letter to determine if the proposed active might impinge on any cultural resources. Lack of surface evidence of archeological resources does not preclude their subsurface existence.

California Government Code Section 65040.12(e) defines "environmental justice" to provide "fair treatment of People…with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations and policies" and Executive Order B-10-11 requires consultation with Native American tribes their elected officials and other representatives of tribal governments to provide meaningful input into the development of legislation, regulations, rules, and policies on matters that may affect tribal communities.

B-4 Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, pursuant to California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities. Also, California Public Resources Code Section 21083.2 require documentation and analysis of archaeological items that meet the standard in Section 15064.5 (a)(b)(f).

Lead agencies should consider first, avoidance for sacred and/or historical sites, pursuant to CEQA Guidelines 15370(a). Then if the project goes ahead then, lead agencies include in their mitigation plan provisions for the analysis and disposition of recovered artifacts, pursuant to California Public Resources Code Section 21083.2 in consultation with culturally affiliated Native Americans.

Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Dave Singleton
Program Analyst

CC: State Clearinghouse

Attachment: Native American Contacts list

Native American Heritage Commission
Date of Comment Letter: December 10, 2013

Response

B-1 The project limits of the Beltway Operational Improvements Project (SR 58 Gap Closure Project) are contained within the study areas analyzed in the SR 58 Gap Closure Initial Study with Mitigated Declaration/Environmental Assessment with Finding of No Significant Impact. The Beltway Operational Improvements Project (SR 58 Gap Closure Project) has reviewed recent cultural, archaeological, and historical reports covering the project limits. Cultural resources records were searched at the Southern San Joaquin Valley Information Center and three properties are determined to be eligible for the National Register of Historic Places. The Section 106 consultation process is ongoing for these potentially eligible resources. The Beltway Operational Improvements Project (SR 58 Gap Closure Project) avoids impacts to these eligible properties. Project features are anticipated to be constructed within the State ROW.

B-2 Three archaeological/historical resources records searches were conducted at the Southern San Joaquin Valley Information Center. Four cultural resources were recorded within 0.5-mile of the archaeological project area. None of the known archaeological sites are within the project area itself. In addition, archaeological field surveys were completed, with no archaeological sites found during the survey. The Beltway Operational Improvements Project (SR 58 Gap Closure Project) does not impact archaeological resources.

B-3 Consultation with the Native American Heritage Commission began in June 2007. This consultation involved requests for a search of the Sacred Lands File and a contact list of potentially interested Native American representatives. The Native American Heritage Commission responded by letter on June 21, 2007, and stated that the Sacred Lands File search does not show the presence of Native American cultural resources in the immediate project area. The commission provided a contact list of 12 Native American groups and individuals who may have knowledge of Native American cultural resources not formally listed in any database. Those individuals were contacted, as was a second group of individuals identified as

potentially interested but not listed by the Native American Heritage Commission. Several responses were received as a result, and three requested additional information. On December 21, 2011, at the request of Mandy Marine, Caltrans District 6 Native American Coordinator, these three individuals were sent an updated informational letter describing the current Centennial Corridor Project.

B-4 The Beltway Operational Improvements Project (SR 58 Gap Closure Project) avoids impacts to cultural resources. Caltrans standard plans and specifications include measures for the identification and evaluation of accidentally discovered archaeological resources, along with provisions for discovery of Native American human remains.

State of California Public Utilities Commission
Date of Comment Letter: January 14, 2014

STATE OF CALIFORNIA EDMUND G. BROWN JR., *Governor*

PUBLIC UTILITIES COMMISSION
320 WEST 4TH STREET, SUITE 500
LOS ANGELES, CA 90013

January 14, 2014

Mr. Kelly J. Hobbs
California Department of Transportation
855 M Street, Suite 200
Fresno, California 93721

Dear Mr. Hobbs:

Re: SCH 2013121029 Caltrans-6 Bellway Operational Improvement Project – DND

The California Public Utilities Commission (Commission) has jurisdiction over the safety of highway-rail crossings (crossings) in California. The California Public Utilities Code requires Commission approval for the construction or alteration of crossings and grants the Commission exclusive power on the design, alteration, and closure of crossings.

C-1

The Commission's Rail Crossings Engineering Section (RCES) is in receipt of the *Draft Negative Declarations (DND)* for the proposed California Department of Transportation District 6 (Caltrans-6) Beltway Operational Improvement Project from the State Clearinghouse. According to the DND, Caltrans-6 proposes to construct operation improvements along State Route (SR) 58 from east SR 99 to Cottonwood Road in the City of Bakersfield. Within the project area, SR 58 crosses over the San Joaquin Valley Railroad (SJVR) tracks. This grade separated crossing is identified as CPUC ID 103BT-315.44-A and DOT No. 757217F.

Any modification of existing public crossings is typically authorized through the Commission's General order (GO) 88-B process. If interested parties do not reach agreement regarding proposed modifications, a Formal Application to the Commission will be required in order to obtain authorization to implement the modifications. Prior to submission of a GO 88-B request for authorization, Caltrans-6 should discuss with Commission staff, SJVR and all interested parties for relevant safety issues at the public crossing location. Please continue to keep RCES informed of the project's development. The following link provides more information on the Commission's GO 88-B and formal crossing application process: http://www.cpuc.ca.gov/PUC/safety/Rail/Crossings/index.htm.

If you have any questions, please contact Ken Chiang at (213) 576-7076 or ykc@cpuc.ca.gov, or Oliver Garcia at (213) 576-5766 or oliver.garcia@cpuc.ca.gov.

Sincerely,

Ken Chiang, PE
Utilities Engineer
Rail Crossings Engineering Section
Safety and Enforcement Division

CC: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044

State of California Public Utilities Commission
Date of Comment Letter: January 14, 2014

Response

C-1 Based on the preliminary project layout, there are no proposed modifications to existing railroad crossings or construction activities that would affect railroad operations within the project limits. If railroad crossings are modified and/or construction activities affect railroad operations, Caltrans will coordinate with the appropriate parties and initiate the Commission's GO 88-B process.

Appendix D USFWS Biological Opinion

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
08ESMF00-2013-F-0373

DEC 20 2013

Mr. Javier Almaguer
Chief, Central Region Biology South Branch
California Department of Transportation, District 6
855 M Street, Suite 200
Fresno, California 93721

Subject: Formal Consultation for the Centennial Corridor Project (part of the Thomas Roads Improvement Program [TRIP]), City of Bakersfield, Kern County, California (California Department of Transportation EA 06-48460; 06-KERN-58-PM T31.7 to PM 55.6; 06-KERN-99-PM 21.2 to PM 26.2)

Dear Mr. Almaguer:

This is the U.S. Fish and Wildlife Service's (Service) response to the California Department of Transportation's (Caltrans) request for initiation of formal consultation on the proposed Centennial Corridor Project (project) in Kern County, California.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law on July 16, 2012. Caltrans was approved to participate in the MAP-21 Surface Transportation Project Delivery Program through the National Environmental Policy Act (NEPA) assignment Memorandum of Understanding (MOU) between the Federal Highway Administration (FHWA) and Caltrans (effective October 1, 2012), as codified in 23 U.S.C. 327. The MOU allows Caltrans to assume the FHWA's responsibilities under NEPA as well as FHWA's consultation and coordination responsibilities under Federal environmental laws for the majority of transportation projects in California.

This project is part of the larger Thomas Roads Improvement Program (TRIP), a collection of six road improvement projects designed to meet the long-term transportation needs of the greater City of Bakersfield (City) area; four projects have already completed consultation and one other is beginning consultation. TRIP is a cooperative effort between the City, County of Kern, Caltrans, and the Kern Council of Governments. Your letter, dated July 16, 2013, providing additional information and requesting the initiation of formal consultation, was received in this office on July 22, 2013. At issue are potential effects to the federally-listed as endangered San Joaquin kit fox (*Vulpes macrotis mutica*). This document represents the Service's biological opinion on the effects of the proposed project on the listed species. This document has been

prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*) (Act).

The findings and recommendations of this biological opinion are based on: (1) the consultation between Caltrans and the Service; (2) the biological opinions for the first four TRIP projects for which consultation has been completed: the *Morning Drive/State Route 178 Interchange Project*, issued to Caltrans on August 18, 2011, the *State Route 58 Rosedale Highway Widening Project*, issued to Caltrans on April 24, 2012, the *SR 178 Widening Project*, issued to Caltrans on August 10, 2012, and the *24th Street Improvement Project*, issued to Caltrans on September 21, 2012; and (3) other information available to the Service.

Caltrans has determined that the project is likely to adversely affect the San Joaquin kit fox. The Service has reviewed the proposed project and concurs with Caltrans' determination.

Caltrans has determined that the proposed project will have no effect on the California jewelflower (*Caulanthus californicus*), the Kern mallow (*Eremalche kernensis*), the San Joaquin woolly-threads (*Monolopia congdonii*), and the Bakersfield cactus (*Opuntiabasilaris* var. *treleasei*) based on the results of botanical surveys and the distance of recorded occurrences from the project footprint. Focused botanical surveys were conducted for the corridor portion of the project first in 2008 on March 24, 27, and 28, and on May 15, 21, and 22; and then in 2009 from March 24-27 and from May 5-7. Additional, more recent focused botanical surveys were conducted at the Stockdale Highway/State Route 43 (Enos Lane) intersection portion of the project on March 27 and June 4, 2012. No detections of the species were made at either location. Surveys were conducted in the appropriate blooming periods and followed standard methods in accordance with the California Department of Fish and Wildlife's (CDFW; formerly the California Department of Fish and Game [CDFG]) revised 2009 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*, and the California Native Plant Society's 2001 *Botanical Survey Guidelines*.

According to the California Natural Diversity Database (CNDDB; CDFW, 2013), the closest recorded historic occurrence of the California jewelflower to the project footprint is approximately 4.5 miles (mi) away. Additionally, the closest two recorded occurrences of the Kern mallow (dating from 1994 and 2008) are approximately 1.4 mi and 1.6 mi from the project footprint, respectively; the closest recorded occurrence of the San Joaquin woolly-threads (dating from 2009) is approximately 1.4 mi from the footprint; and the closest recorded occurrence of the Bakersfield cactus (dating from 1989) is approximately 4.2 mi from the project footprint.

Because habitat in the project area is still considered to be marginally suitable and provides the potential for these species to establish in the future, Caltrans has incorporated an additional minimization measure specifically addressing these plants. The measure is further described under the *Proposed Avoidance and Minimization Measures* section.

If changes are made to the proposed project or if new information becomes available such that adverse effects to the California jewelflower, the Kern mallow, the San Joaquin woolly-threads, and the Bakersfield cactus have occurred, or are likely to occur, then Caltrans must initiate

formal consultation for these listed plant species. The remainder of this biological opinion will address the effects of the proposed project on the San Joaquin kit fox.

Consultation History

TRIP background and coordination

November 20, 2007. The Service, Caltrans, AECOM, Parsons/TRIP, the CDFW, and the City (participating agencies) met. Parsons/TRIP requested that AECOM develop a strategy memo addressing compliance with the Act; Caltrans and the Service agreed that TRIP should take a project-specific approach. All participants agreed that a San Joaquin kit fox technical study for all TRIP projects should be conducted by AECOM, in conjunction with support from the Endangered Species Recovery Program (ESRP); such a study would be useful for supporting conclusions in future TRIP project BAs.

August 26, 2008. AECOM presented preliminary results of the San Joaquin kit fox surveys to the participating agencies. This included a presentation of the methodologies, data, and effects analysis strategy and mitigation options. The Service identified habitat connectivity and the maintenance of corridors connecting San Joaquin kit fox populations as a major issue facing the species in Bakersfield. Participants discussed potential compensatory mitigation options, including culverts, refugia, and artificial kit fox dens.

September 10, 2009. The participating agencies met. Discussion focused on the early July 2009, *Draft Thomas Roads Improvement Program San Joaquin Kit Fox Life History, Effects Analysis, and Conceptual Mitigation Strategy* (2009 Draft Strategy Plan).

October 7, 2009. The Service issued a concurrence letter approving the conceptual framework for the San Joaquin kit fox compensation strategy plan outlined in the 2009 Draft Strategy Plan.

February 26, 2010. The Service received two hard copies of the comprehensive February 2010 *Draft Thomas Roads Improvement Program San Joaquin Kit Fox Effects Analysis, Mitigation Strategy, and Implementation Plan* (2010 Draft Implementation Plan).

March 11, 2010. The participating agencies met at the CDFW office in Fresno to discuss the 2010 Draft Implementation Plan; topics included an overview of the 2010 Draft Implementation Plan, potential issues with the Metro-Bakersfield Habitat Conservation Plan (MBHCP) expiration date, and funding for the proposed Sump Habitat Program (SHP).

April 12-13, 2010. AECOM sent an electronic-mail (e-mail) to the Service and the CDFW to request guidance on what AECOM could use as a template for developing a long term management plan for the SHP. AECOM suggested using the U.S. Army Corps of Engineers' (Corps) template. The Service replied on April 13 to confirm that this was acceptable, and provided a management plan outline illustrating what the Service would expect to see in a potential management plan.

May 5, 2010. An informal conference call was held between AECOM and the Service to discuss recent developments that would be covered in the upcoming meeting that the Service would be unable to attend: Parsons/TRIP had successfully presented the six projects to the MBHCP Trust Group; the real estate meeting between AECOM and the City resulted in the discovery that easements on four of the 19 sumps were owned outright by the City, four were owned by the City but had deed restrictions; and 11 were not owned by the City. AECOM also had specific questions regarding what the Service would look for in the upcoming BA.

May 11, 2010. The participating agencies met at the CDFW office in Fresno to discuss the SHP.

July 14, 2010. A meeting was held at the SFWO amongst all the participating agencies. Parties agreed on the content of the project BA regarding avoidance and minimization measures and a general description of the SHP, compensation, eventual inclusion of a third chapter in the 2010 Draft Implementation Plan describing the finalized SHP in detail, endowment/easement updates, and schedules.

August 18, 2010. The participating agencies met at the CDFW's Fresno office to discuss the latest developments in compliance, BA preparation, and the SHP. Major topics included TRIP eligibility for participation in the MBHCP, BA content, and further details concerning the SHP (e.g. easement and program management, endowments, and sump selection).

September 15, 2010. The CDFW contacted the Service with information concerning language in accordance with the California Endangered Species Act (CESA) that the CDFW would like to see included in the project biological opinion so that it would be able to issue a Consistency Determination (CD) and avoid undertaking a lengthier 2081 Incidental Take Permit process. The Service responded to discuss this information with the CDFW.

September 30, 2010. The Service, AECOM, Parsons/TRIP, and Caltrans held a conference call to discuss paying MBHCP compensation fees for the six TRIP projects in advance of the 2014 MBHCP expiration. Although the construction schedule for at least one project is not anticipated to begin until after 2014, it still could be compensated for prior to the expiration date. In a revised September 1, 2010, letter which included details of all six projects and compensation ratios, a blanket concurrence from the MBHCP Trust Group to use the MBHCP was given to the City and Caltrans. The Service suggested that an MOU with all parties involved could be implemented for paying fees in advance and provided an MOU template to AECOM.

October 22, 2010. The Service met internally to discuss the need for an MOU/memorandum of agreement (MOA) between the Service, Caltrans and the City regarding MBHCP compensation. It decided that it would be more appropriate to have an agreement between the City and Caltrans and the MBHCP Trust Group to avoid pre-decisional commitments by the Service.

December 8, 2010. The Service e-mailed Caltrans to request a copy of the *Draft Thomas Roads Improvement Program Mitigation for Cumulative Effects to the San Joaquin Kit Fox* (Draft SHP Plan), dated September 2, 2010, which outlines the basic conceptual framework for the proposed SHP. Caltrans e-mailed a copy and stated this would later be incorporated into a third chapter in the 2010 Draft Implementation Plan.

January 20, 2011. The Service e-mailed Caltrans and AECOM to provide them with an update on what the SFWO had concluded regarding the concerns with CDs, CESA language, and BOs: the Service stated it would not include the CDFW's conditions in the Terms and Conditions of its biological opinions; however, the CDFW's conditions could be included in the project description and conservation measures. The Service does not have the authority to use the type of language the CDFW is looking for (e.g. financial assurances, letters of credit) as terms and conditions to minimize incidental take.

January 25, 2011. E-mails were exchanged between AECOM, the CDFW, and the ESRP concerning fence design for the SHP. The CDFW was concerned that the proposed 8x8 inch gaps were too big and would allow predator species in the sump locations. The CDFW suggested that 4x6 inch or 5x5 inch gaps would be more appropriate. The ESRP responded that 4x6 inch openings would be fine, but 6x6 inch openings would be better for the San Joaquin kit fox and would still exclude predators. AECOM noted that the gap design objective for the sumps was different from that for the road design modifications (keeping predators out versus maintaining movement and permeability).

March 21, 2011. Caltrans informed the Service that following a meeting with the CDFW to discuss the project, Caltrans had decided not to pursue a 2081 Incidental Take Permit or a CD under CESA with the CDFW, as it had determined that take of the San Joaquin kit fox, as defined under CESA, could be avoided.

June 22, 2011. A meeting was held at the SFWO and attended by the Service, AECOM, Parsons/TRIP, the City, and Caltrans. Participants discussed updates regarding the status of the TRIP projects, the SHP, conservation easements and endowments, future work products, and possible additional funding support for the TRIP projects.

July 1, 2011. AECOM e-mailed draft notes from the June 22 meeting for circulation and comment.

January 30, 2012. A meeting was held at the SFWO and attended by the Service, AECOM, Parsons/TRIP, the City, and Caltrans. Participants discussed updates regarding the status of all the TRIP projects, the resolution of encumbrances, options for providing long-term conservation assurances, potential funding mechanisms, the proposed schedule for continued development and eventual implementation of the SHP, and preparation of the Long-Term Management Plan.

February 20, 2012. AECOM e-mailed draft notes and action items from the January 30 meeting for circulation and comment.

<u>Project-specific coordination</u>

April 16, 2013. The Service received a letter from Caltrans requesting initiation of formal consultation for the current project. The request included a biological assessment (BA) titled *Centennial Corridor Project, State Route 99 to Interstate 5 Biological Assessment,* dated March 2013, and prepared by the consultant, BonTerra Consulting.

May 16, 2013. The Service emailed Caltrans to inquire why three different alternatives were presented in the BA. The Service emphasized that it could not consult on multiple alternatives and therefore consultation could not proceed until an alternative was selected and a specific project defined.

May 20 - June 3, 2013. The Service and Caltrans continued to discuss the issue of the alternatives.

June 5, 2013. Caltrans informed the Service that it had selected Alternative B.

June 18, 2013. The Service emailed Caltrans with a request for additional information and clarifications regarding the BA.

July 22, 2013. The Service received a letter from Caltrans responding to the Service's June 18 request for additional information and inquiring if the project was now deemed complete such that Caltrans could initiate formal consultation. Included with the letter were a comment resolution form and a revised copy of the BA.

July 24, 2013. The Service confirmed with Caltrans that the project initiation package was considered complete and that formal consultation was initiated on July 22.

November 21, 2013. The Service emailed Caltrans to follow-up with several project clarification questions.

December 6, 2013. Caltrans emailed the Service the consultant's responses to the Service's November 21 request.

BIOLOGICAL OPINION

Proposed Project

The City, in coordination with Caltrans, proposes to construct a new freeway corridor connecting the eastern end of a local freeway, known as the Westside Parkway, to the existing State Route (SR) 58 (East) freeway. In conjunction with this, the project also proposes to improve the intersection at Stockdale Highway and SR 43 (known locally as Enos Lane) in order to accommodate additional traffic. The purpose of the project is to improve route continuity along SR 58 between SR 99 and Interstate (I)-5 within Metropolitan Bakersfield and wider Kern County. SR 58 is a critical highway in the State transportation network used by interstate travelers, commuters, and truckers, but it currently lacks continuity in central Bakersfield, which results in severe traffic congestion and reduced levels of service on adjoining highways and local streets.

Centennial Corridor (Segment 1)

Caltrans has selected the approximately 8.6 mi long Alternative B as the build alternative for the corridor construction. This will involve building a six-lane freeway heading west from the

Centennial Corridor (Segment 1)

Caltrans has selected the approximately 8.6 mi long Alternative B as the build alternative for the corridor construction. This will involve building a six-lane freeway heading west from the existing SR 58/SR 99 interchange for approximately 1,000 feet (ft.) along an alignment situated south of Stockdale Highway, then heading northwest and spanning Stockdale Highway/Stine Road, California Avenue, Commerce Drive, Truxtun Avenue, and the Kern River, and finally joining the east end of the Westside Parkway between the Mohawk Street and Coffee Road interchanges. The segment of SR 58 between California Avenue and Ford Avenue will be depressed (the roadway will be below grade) in order to minimize the visual effects of the corridor on the surrounding neighborhood. Overcrossings are proposed at Marella Way and La Mirada Drive to facilitate improved traffic circulation.

Alternative B also includes adding connections to SR 99 and improvements to SR 99 and the existing segment of SR 58. Linkages will be provided from northbound SR 99 to westbound SR 58 and from eastbound SR 58 to southbound SR 99 via high-speed connectors. Southbound SR 99 will be widened to accommodate additional traffic heading from eastbound SR 58 to the southbound SR 99 connector. The limits of widening on SR 99 will extend to the Wilson Road overcrossing. Ramps will need to be realigned to accommodate the additional constructed lanes. Several on- and off-ramps (e.g. Wible Road, south of the SR 58/SR 99 interchange; Stockdale Highway, on southbound SR 99 to eastbound SR 58 connector) are presently in conflict with Caltrans' standards of interchange spacing, and so will be removed.

Excavation associated with Alternative B will reach a maximum depth of 25 ft. near SR 58 between Stephens Drive and H Street in order to accommodate the widened ramps, as well as between California Avenue and Ford Avenue where the freeway will be constructed below the existing grade. On SR 99, the maximum depth of excavation will be approximately 18.5 ft. between Belle Terrace and Ming Avenue.

Stockdale Highway/SR 43(Enos Lane) Interchange

Improvements will include widening the intersection and adding signals to control traffic. This intersection currently operates at a deficient level of service due to its existing configuration. When the corridor segment of the project connects to the Westside Parkway, traffic volumes will increase on Stockdale Highway, so the improvements at this intersection are needed to accommodate the anticipated additional traffic demand. SR 43 will be expanded to add a dedicated left-turn lane in both directions, while Stockdale Highway will be widened to add a dedicated left-turn lane and a shared through/right-turn lane in both directions.

Other Project Elements

Detours, utilities, and drainage: Traffic detours will be implemented on existing streets; further details regarding these routes will be developed during later project design phases. The relocation and reconstruction of utilities and drainage facilities within the project right-of-way (ROW) will include power poles, underground utilities, and storm drains. Utility relocations are expected to be done without interruption to services and drainage improvements will involve

operational Best Management Practices (BMPs). Eight new drainage basins will be installed throughout the project area to retain stormwater while six existing basins will be modified.

Borrow, Staging and Access: All borrow, disposal, vehicle access, staging, storage, utility relocations, and other construction activities will occur within the defined limits of disturbance, i.e. the project footprint.

Scheduling: According to Caltrans' anticipated project schedule, design was expected to begin in mid-2013 and be completed by mid-2015. Construction is then anticipated to start in 2016 and continue year-round through 2018.

Proposed Avoidance and Minimization Measures

According to the BA, the Draft SHP Plan, the 2010 Draft Implementation Plan, and measures previously established in the Morning Drive/SR 178 Interchange Project, SR 58 Rosedale Highway Widening Project, SR 178 Widening Project, and 24th Street Improvement Project biological opinions, in addition to further discussion with Caltrans, the City and Caltrans propose to implement protection provisions in order to minimize adverse effects to the San Joaquin kit fox. Several of these are developed, in part, from the Service's most recent guidelines; currently, this is the January 2011 *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (Recommendations). Additional measures are developed to be project- or program-specific:

1. Caltrans will include Special Provisions that include the avoidance and minimization measures of this biological opinion when soliciting contractor bid packages.

2. Prior to project groundbreaking, a Service-approved biologist(s) will conduct updated protocol-level botanical surveys within the project footprint during the appropriate blooming periods for the following four species: the California jewelflower, the Kern mallow, the San Joaquin woolly-threads, and the Bakersfield cactus. Surveys will be conducted in accordance with the most current protocols accepted by the Service. The intention will be to discover any changes in, or new additions to, the floristic composition of federally-listed plant species at the project site.

3. Caltrans and the City will follow the construction and on-going operational requirements described in the Service's Recommendations.

4. No less than 30 days but no more than 60 days prior to road construction, a Service-approved biologist(s) will conduct preconstruction surveys for San Joaquin kit fox dens both in the project footprint and within 200 ft. of the footprint, inclusive of any utilities relocations. A letter report and map of known and potential San Joaquin kit fox dens will be submitted to the Service prior to the start of ground disturbance and/or construction activities. Repeat clearance surveys will be conducted no more than 14 days before construction or after any delays in construction of over two weeks. Any new known or potential San Joaquin kit fox dens identified in the interim will be reported to the Service in a letter report and map. If no new known or potential San Joaquin kit fox dens are

approved biologist(s), and general survey findings. Records will be submitted to the Service upon request.

5. Disturbance to all San Joaquin kit fox dens will be avoided to the maximum extent possible. If known or potential dens are identified within the footprint during the 60-day and/or 14-day preconstruction surveys, Caltrans will request to monitor and excavate those dens that are expected to be affected directly by the project and cannot be avoided. Active dens will not be excavated during the natal season (approximately January 1 - June 30). The Service-approved biologist(s) will monitor potential dens for three consecutive nights using tracking medium and/or a remote sensor camera, will submit monitoring results in a letter report to the Service, and also will oversee the hand excavation of dens that have been determined vacant following approval by the Service. The Service-approved biologist(s) also will submit results of den excavation and exclusion activities in a letter report to the agencies. The following measures will be applied to dens that are not excavated:

    a. Dens that are identified during preconstruction surveys of the project footprint boundary and a 200 ft. area outside of the project footprint will be monitored and protected by an exclusion zone around dens, as measured outward from the entrance or cluster of entrances of each den.

        i. Potential and atypical dens within 50 ft. of the project footprint will be protected with a 50 ft. zone delineated by flagged stakes;

        ii. Known dens within 100 ft. of the project footprint will be protected with a 100 ft. zone. To ensure protection, the exclusion zone will be demarcated by fencing/flagging that does not prevent access to the den by the San Joaquin kit fox. Acceptable designs will have openings for San Joaquin kit fox ingress/egress but will keep humans and equipment out, e.g. wooden posts connected with caution tape; orange construction cones; orange construction fencing with a mesh size less than 2 inches in diameter (to prevent the San Joaquin kit fox from becoming entangled in the fencing) with gaps every 50 ft. Fencing/flagging will be maintained until all construction-related disturbances have been terminated. At that time, all fencing/flagging will be removed to avoid attracting subsequent attention to the dens.

    b. If natal/pupping dens are discovered either within the project footprint or within 200 ft. of the project footprint, Caltrans will immediately notify the Service.

6. The Service-approved biologist(s) will conduct a worker environmental awareness program for all construction crews prior to ground-disturbing activities, with the purpose of informing all crew members of the potential for the San Joaquin kit fox to occur on-site, the effects on the species from construction activities, how to minimize effects to the species, and the penalties for non-exempted take. The training will be repeated to all new

crew members and annually to all crew members working in San Joaquin kit fox habitat. Crew members will sign an attendance sheet and confirm that they understand the protection measures and construction restrictions. Training materials and records of attendees will be submitted to the Service.

7. The Service-approved biologist(s) will monitor road construction on a daily basis and will verify that construction complies with the measures laid out in this biological opinion. The Service-approved biologist(s) will maintain a log of daily monitoring notes that can be summarized and transmitted to the Service by request.

8. Permeable fencing will be installed along the proposed ROW in all areas where there is known San Joaquin kit fox activity and lower traffic speeds/volumes. Permanent exclusionary fencing will be installed along the proposed ROW in high-density residential areas and/or in areas with higher traffic speeds/volumes. In all areas in need of new permeable fencing, at least one design option featured below will be adopted to provide the San Joaquin kit fox with passage and movement opportunities, and to minimize the potential to disrupt species movement and habitat fragmentation of the project area:

    a. Elevate the bottom of the fence 5 inches above ground to allow unobstructed movement by the San Joaquin kit fox under the fence.

    b. Install ground-level 8 x 8 inch wide gaps no more than 100 ft. apart along the length of the fence to allow for San Joaquin kit fox movement at regular intervals along the ROW.

    c. Install fencing with a minimum mesh size of 3.5 x 7 inches, preferably 5 x 12 inches, to allow unlimited movement through the fence.

9. Curbed medians will be used as part of the project design and their height will be no greater than 10 inches. Either 6-inch high curbed medians with low vegetation or 10-inch high un-vegetated curbed medians will be constructed so as not to obstruct the visual field of the San Joaquin kit fox near the roadway. Curbed medians less than 10 inches in height and which require landscaping will be planted with low-level vegetation (i.e. less than 6 inches tall at maturity), or be mowed frequently to prevent overgrowth and provide an unobstructed line of sight for the species, or will have gaps installed measuring no less than 4 ft. wide every 12 ft. in areas landscaped with trees and shrubs.

    a. If required, landscaping will be designed in conjunction with the curbed median design in order to allow unobstructed visibility to the San Joaquin kit fox and to maintain and/or enhance opportunities for movement across the roadway.

10. Median barriers will be required in some areas of the project for the purpose of public safety. The Caltrans-designed modified median barrier type 60/S will be used. Caltrans' type 60/S design previously has been utilized in other projects (e.g. reinitiated Biological

Opinion for the State Route 99 Goshen to Kingsburg 6-Lane Project, in Tulare and Fresno Counties; Service File number 81420-2009-F-0752) and includes 9-inch radius openings (semicircular openings 9 inches high x 18 inches wide) spaced every 150 ft. to allow passage by the San Joaquin kit fox. Maintaining permeability in this manner will also reduce the potential to disrupt species movement and connectivity in the project area.

11. In areas of known San Joaquin kit fox activity and high traffic volumes and/or speeds, existing San Joaquin kit fox movement corridors like the canal channels and the Kern River, as well as railroad ROWs (e.g. BNSF), will be preserved through the use of bridges and/or culverts to facilitate crossings. Some segments of the canals under the new roadways will be converted from trapezoidal channels to box culverts; other segments of the canals with existing box culverts will be extended. Toe-of-road fill and bridge support walls will be maintained and new walls will be designed no less than 20 ft. from the centerlines of canal access roads and railroads.

    a. An elevated bridge currently exists at the location where the Westside Parkway crosses the trapezoidal channel of the Friant-Kern Canal. Species access will continue to be provided along an elevated access road located parallel to the canal.

    b. An above-grade bridge will be constructed over the trapezoidal channel of the Stine Canal. This will allow the species to move freely below the roadway.

    c. An above-grade bridge (westbound Mohawk St. off-ramp) will be constructed over the Cross Valley Canal, which exists as a double box culvert. The Kern River corridor is located proximate to the canal and so it provides existing access for the species in the area; no additional crossing features are proposed at this canal site.

    d. Two design options are proposed for the location where the new roadway will cross the Carrier Canal: 1) box culvert → if this design is chosen, a crossing structure (with proposed 5 x 5 inch mesh size and 10 inch diameter escape pipes within a 60 inch diameter crossing culvert) will be installed to connect the access roads on the north side of the canal; 2) bridge → if this design is chosen, no additional crossing features will be necessary since the elevated bridge above the trapezoidal canal will allow the species to move freely below the roadway.

The MBHCP Trust Group provided a letter to the City, dated December 3, 2010, in which it approved the ongoing use of the MBHCP for proposed compensation obligations for all TRIP projects; it also permitted payment to occur on an individual project basis after the approval of the final environmental document (FED) for each project. The City will pay the appropriate fee amount to the Trust Group and the Trust Group will acquire the required acreage amounts to be protected in perpetuity.

12. Caltrans will verify that the City compensates for the permanent loss of 11.28 ac and temporary disturbance to 65.55 ac of habitat consisting of non-native grassland, riparian woodland/Great Valley cottonwood riparian forest, ruderal/disturbed areas, desiccated waterways, detention basins, and agricultural land suitable for the San Joaquin kit fox by purchasing 105.95 ac (using a 3:1 compensation ratio for permanent effects and 1.1:1 compensation ratio for temporary effects) through the MBHCP.

    a. Prior to construction, the limits of affected habitat acreage by vegetation type will be verified and delineated on a map, and submitted for approval to the Service. This will be done prior to its submittal to the City Planning Department for fee payment.

13. Upon completion of project construction, all areas subject to temporary ground disturbance, including storage and staging areas, will be restored to original grade and contour. Appropriate methods and plant species used to re-vegetate will be determined on a site-specific basis in consultation with re-vegetation experts.

14. To minimize opportunistic predatory effects to the San Joaquin kit fox, the City and Caltrans will condition contracts with contractors to require that trash be removed at least once daily from project areas and disposed of off-site so as not to attract predator species like coyotes (*Canis latrans*) and bobcats (*Lynx rufus*) to the project area.

15. The City and Caltrans will condition contracts with contractors to require that contained water sources, which are inaccessible to the San Joaquin kit fox (e.g. elevated water trucks), be used for dust control and other construction water activities.

The SHP will provide long-term habitat conservation for the urban San Joaquin kit fox population in the metro-Bakersfield area by focusing on sumps (i.e. stormwater drainage basins); sumps in Bakersfield are a functional habitat type for the species and many sumps are either currently known to support San Joaquin kit fox dens or offer potential denning opportunities. The City, in coordination with Caltrans, proposes to utilize the SHP to minimize collective effects to the San Joaquin kit fox engendered by all six TRIP road improvement projects. Conservation measures of the SHP include the installation of artificial dens in selected sumps, the enhancement of San Joaquin kit fox habitat by controlling vegetation in and around dens, the increase of San Joaquin kit fox accessibility to sumps through installation of fence/gate openings (with proposed dimensions of 6 x 6 inches to exclude predators like coyotes and medium- to large-sized dogs), and the reduction in the potential for effects to the species associated with regular maintenance activities and predation. The City provided a letter of commitment to the Service, dated August 10, 2010, fully supporting and providing assurance of the implementation and management of the SHP and its conservation efforts.

16. The basic conceptual framework for the SHP is described in the September 2010 Draft SHP Plan, which addresses five core conservation goals in detail that are integral to the implementation and success of the SHP: 1) the selection of sumps that maintain San Joaquin kit fox accessibility and/or habitat (i.e. those of high/medium conservation

priority based on the relative potential for minimizing program-level effects); 2) the installation and maintenance of San Joaquin kit fox enhancement features (i.e. fence/gate gaps, artificial dens, conservation zones, signs, and enhancement maintenance and repair); 3) the management of sump vegetation compatible with San Joaquin kit fox presence and/or use (i.e. performance of routine maintenance outside the San Joaquin kit fox natal season and the use of hand tools in conservation zones and new active dens); 4) the biological monitoring and reporting of results (i.e. pre-maintenance surveys; den monitoring and supervised den excavation; environmental awareness training; maintenance monitoring; annual enhancement inspection; annual San Joaquin kit fox sump use monitoring; and annual reporting); and 5) the provision of long-term conservation assurances (i.e. individual conservation easements for each sump; a perpetual non-wasting endowment for management, maintenance, and monitoring costs associated with ongoing implementation; and a Service-approved Long-Term Management Plan. The proposed easement and endowment holder(s) will be Service-approved third-party organizations). Further details in regards to these five core measures can be found in the Draft SHP Plan.

a. The SHP will continue to be updated, refined, and ultimately finalized through an ongoing collaborative consultation process involving Caltrans, the City, Parsons/TRIP, and the Service over the course of the final remaining TRIP project.

b. The finalized SHP will be established and implemented within one year of the approval of the FED for the last of the six TRIP projects; the City will fully fund the SHP within one year of this approval. Caltrans and the City will share responsibility for the SHP; Caltrans will adhere to the proposed avoidance and minimization measures and terms and conditions of this biological opinion and will be responsible for the overall implementation of the SHP, while the City will be responsible for enhancing sumps and conducting long term management of the SHP. A Service-approved third-party will be responsible for administering endowment funds and providing compliance oversight with the terms of the conservation easements for each sump in the SHP.

Action Area

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area for this project is composed of the project footprint, which includes the limits of construction for the proposed freeway corridor (alternative B) and the Stockdale Highway/SR 43 intersection within the existing and proposed Caltrans ROW, plus a temporary construction area extending 25 ft. out from the edge of the construction boundaries to allow for equipment maneuvering. Habitat types within the footprint include non-native grassland, riparian woodland/Great Valley Cottonwood riparian forest, disturbed/ruderal land, agricultural areas, developed/ornamental areas, waterways (e.g. segments of the Kern River and canals), and detention basins. The action area also includes portions of these lands that extend approximately 200 ft. from the project

footprint which will experience further-reaching effects of new road construction and intersection improvements such as noise and visual disturbance.

Analytical Framework for the Jeopardy/No Jeopardy Determination

In accordance with policy and regulation, the following analysis relies on four components to support the jeopardy/no jeopardy determination for the San Joaquin kit fox: (1) the *Status of the Species*, which evaluates the species' range-wide conditions, the factors responsible for those conditions, and its survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of the species in the action area, the factors responsible for that condition, and the role of the action area in the species' survival and recovery; (3) the *Effects of the Action*, which determines the direct and indirect effects of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and (4) *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the species.

In accordance with policy and regulation, the jeopardy/no jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the species' current status, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the San Joaquin kit fox in the wild.

The following analysis places an emphasis on consideration of the range-wide survival and recovery needs of the species and the role of the action area in meeting those needs as the context for evaluating the significance of the effects of the proposed Federal action, combined with cumulative effects, for purposes of making the jeopardy/no jeopardy determination. In short, a non-jeopardy determination is warranted if the proposed action is consistent with maintaining the role of habitat for the species' populations in the action area for the survival and recovery of the species.

Status of the Species

Refer to the *San Joaquin Kit Fox (Vulpes macrotis mutica) 5-Year Review: Summary and Evaluation* (Service, 2010) for the current Status of the Species. The 5-Year Review provides a description of the species, including its distribution, habitat requirements and other life history information, current threats, an analysis of progress made in recovering the species, and recommendations for recovery actions over a future five year period.

The urban Bakersfield San Joaquin kit fox population is the only substantial population of the species known to occur outside the core areas of western Kern, Carrizo Plain Natural Area, and Ciervo-Panoche (Cypher and Warrick, 1993; Cypher *et al.*, 2000), which contain significantly greater areas of less disturbed natural habitat. The Bakersfield population therefore comprises a important satellite population also identified as significant for recovery of the species.

According to the CNDDB (2013) there are 48 recorded occurrences of the San Joaquin kit fox within the Gosford, Lamont, Tupman, and Stevens United States Geological Survey (USGS) 7.5 minute quadrangles, in which the action area is located; these numerous species observations are

located all around the project site. The closest record is from 2006 and is located approximately 0.7 mi from the project footprint. Within the vicinity of the action area, one potential den, four presumed active dens, and six incidences of San Joaquin kit fox sign were identified during a survey conducted in September 2008 by AECOM; these were all found in open spaces along the Kern River between approximately Mohawk Street and 24th Street. Data adapted from Bjurlin *et al.* (2005) in the 2010 Draft Implementation Plan also identified three nearby instances of San Joaquin kit fox vehicle-related mortalities on the south side of the Kern River near Mohawk Street and Truxtun Avenue.

As an area where the San Joaquin kit fox has adapted to the urban environment, traffic-related incidents have been and will continue to be the primary source of mortality in Bakersfield (Cypher, 2000; Bjurlin *et al.*, 2005). Other dangers posed by the urban environment of the metro-Bakersfield area include predation from domestic dogs and entanglement in playing field and schoolyard equipment like soccer nets. We are aware of eight separate Federal actions concerning effects to the San Joaquin kit fox, located in the immediate vicinity of the action area, that have previously completed consultation with the Service: the Westside Parkway Project (Service file number 1-1-98-F-0139; as reinitiated and amended 1-1-00-F-0185, 1-1-04-F-0194, 81420-2008-F-0368-27, 81420-2008-F-0368-28); the reinitiation of Phase 4 of the Westside Parkway Project (Service file number 81420-2008-F-0368-R001-1); the California Avenue On-Ramp Project (Service file number 81420-2011-I-0527-1); the SR 58 Rosedale Highway Widening Project (Service file number 08ESMF00-2012-F-0049); the 24th Street Improvement Project (Service file number 08ESMF00-2012-F-0290); the Cawelo Water District Calloway Canal Lining Project (Service file number 08ESMF00-2013-I-0135); the Big West-Flying J Clean Fuels Refinery Upgrade Project (Service file number 81420-2008-F-0616); and the Bakersfield Emergency Bridge and Utility Repair Project (Service file number 08ESMF00-2012-IE-0601).

Environmental Baseline

Contiguous tracts of undisturbed habitat suitable for the San Joaquin kit fox existed in the action area to a greater extent prior to the origination and expansion of urban development in central Bakersfield. It is reasonably likely that the conversion of natural lands to residential, industrial, commercial, and agricultural areas and the introduction of transportation infrastructure such as the initial construction of SR 99 and SR 58, in addition to networks of arterial roads, have affected the species. Ongoing urbanization has continued to result in habitat loss and fragmentation while roadway- and vehicle-related risks pose threats of injury and mortality to the species. Of the habitat types that will be affected directly by the project, non-native grassland comprises approximately 66 percent of the total action area acreage still considered to be suitable for use by the San Joaquin kit fox; ruderal/disturbed areas comprise approximately 23 percent of the total acreage; and segments of waterways (e.g. the Kern River channel and canal beds), riparian woodland/Great Valley Cottonwood riparian forest, three detention basins, and agricultural lands make up the remaining total habitat.

Despite the continuation of these effects, the action area nevertheless provides suitable denning and foraging habitat for the San Joaquin kit fox; furthermore, San Joaquin kit fox sign has been

identified in the action area. Although the CNDDB (2013) has no records of the species or its sign within the action area, information from the MBHCP database, as illustrated in the 2010 Draft Implementation Plan, shows that there are multiple San Joaquin kit fox records documented within the proposed corridor footprint. The corridor portion of the project was surveyed on September 17, 2008, and the Stockdale Highway/SR 43 intersection portion was surveyed more recently on April 4, 2012 since this additional component of the project was added after the initial surveys were conducted. Surveys followed a methodology established for all of the TRIP projects and approved by the Service and the CDFW as described in the 2010 Draft Implementation Plan. These surveys identified three potential dens in the corridor portion of the project along the Kern River near Mohawk Street and adjacent grasslands and in City Basin 143, as well as two incidences of San Joaquin kit fox sign.

San Joaquin kit foxes in Bakersfield have been found to move along linear habitat features. The Kern River corridor is an established natural movement corridor that the San Joaquin kit fox utilizes in the action area. The river channel consists of an open, sandy wash, with segments either sparsely vegetated or else devoid of vegetation. Segments of five constructed, unlined canals and one concrete-lined canal run through the action area; according to the 2010 Draft Implementation Plan, these canals (Cross Valley, Carrier, Stine, Kern Island, Central Branch Kern Island, and Friant-Kern) also serve as recognized movement corridors for the San Joaquin kit fox. At the time of vegetation mapping surveys in the spring of 2008 and 2009, four of these canals, with the exceptions of the Cross Valley and Friant-Kern Canals, did not contain water, but signs indicated that they do so intermittently. They also appeared to be regularly maintained by disking or mowing.

The Service anticipates that the San Joaquin kit fox is reasonably certain to occur in the action area based on the biology and ecology of the species; the presence of suitable habitat for denning and foraging, and known corridors for movement; and the documentation of San Joaquin kit fox sign in the action area.

Effects of the Proposed Action

Habitat Loss and Disturbance

The proposed project is likely to result in a number of adverse effects to the San Joaquin kit fox. Construction work, such as the excavation, filling, and paving activities associated with constructing the new freeway corridor, adding connections to SR 99, improving existing segments of SR 99 and SR 58, and improving the Stockdale Highway/SR 43 intersection will result in the permanent loss of 11.28 ac of suitable habitat for the San Joaquin kit fox; there also will be temporary disturbance to 65.55 ac of suitable habitat due to activities such as grading, staging, and access. Temporary disturbance is defined here as a short-term event in which effects do not degrade the habitat beyond its ability to recover after completion of project construction. Because the project is anticipated to last for significantly longer than one year, the disturbance to habitat areas will be ongoing and therefore the habitat will likely take longer to recover. Therefore, it is reasonable to expect this disturbance to result in harm to the San Joaquin kit fox.

Based on currently available information, there are three potential dens within the project footprint that are likely to be permanently eliminated during construction. If a large number of known or potential dens are identified in the project footprint during preconstruction surveys and require excavation (following appropriate monitoring), their destruction would remove shelter and cover for the species. This would be reasonably likely to adversely affect local San Joaquin kit fox survival by reducing the number and distribution of escape refuges from predators.

To offset the loss of habitat, the City, through participation in the MBHCP, will purchase conservation land that is of commensurate or higher quality to the habitat lost due to project construction, ensuring that the species can continue to breed, feed, shelter, and meet all its life cycle functions. The MBHCP's goal is to acquire, preserve, and enhance large, contiguous native habitats that support listed and sensitive species like the San Joaquin kit fox. The City, in coordination with Caltrans, is also developing the SHP, a comprehensive and extensive conservation plan specifically designed to address habitat loss and effects to the San Joaquin kit fox. The SHP will reduce and minimize the collective construction effects deriving from the six TRIP projects in the metro-Bakersfield area by protecting and enhancing sumps (identified as a crucial habitat type for the urban Bakersfield San Joaquin kit fox population) located throughout the City through easement holdings. Participation in the MBHCP and implementation of the SHP will preserve and enhance suitable San Joaquin kit fox habitat and will contribute to protecting and managing the habitat for the conservation of the species in perpetuity. These lands also will help maintain the geographic distribution of the species and will contribute to the recovery of the species.

Entombment and Strikes

Since suitable denning habitat and potential San Joaquin kit fox dens exist in the action area, it is important that effects are reduced to the greatest extent possible. With the implementation of proposed conservation measures such as preconstruction surveys, den monitoring, exclusion zones, and hand excavation of vacant dens, the risk of crushing or entombing the San Joaquin kit fox in dens (natural and man-made) during groundbreaking activities and construction is not reasonably likely to occur.

The proposed conservation measures are designed to minimize the risk of construction vehicle strikes. Therefore, it is not reasonably likely that the species will be hit by project equipment or vehicles while occupying or moving through the action area.

Road Mortality

Injury and mortality are likely to occur to the San Joaquin kit fox when individuals attempt to cross roads. Each highway and roadway associated with the construction of the new corridor and the accompanying improvements (e.g. SR 99, SR 58, Westside Parkway) is already an existing hazard for this widely ranging, dispersing species, and each highway/roadway will continue to be a hazard for the San Joaquin kit fox. With the creation of the Centennial Corridor, this too will introduce hazards to the species and it is reasonably likely that the species will be struck by vehicles on the new roadway.

However, to reduce the risk of injury and mortality to the San Joaquin kit fox that will stem specifically from vehicle strikes on the new roadway, Caltrans has developed the best available information to incorporate into the project through discussions with the ESRP, the Service, the CDFW, the City, and a previous consultant, AECOM. Using various methods of on-site project design modifications relating to permeability and connectivity, Caltrans has integrated measures believed to present the greatest value to the species in the context of the project. Because the action area is known to be used by the San Joaquin kit fox, and a portion of the new corridor alignment is within a known San Joaquin kit fox concentration area (Cypher, pers. comm., 2009a), the primary objectives of these modifications are to provide opportunities for the San Joaquin kit fox to cross the roadway in spite of construction effects; to minimize the potential for an increase in vehicular injury and mortality (although it is not possible to quantify the extent to which these will be minimized); and to maintain San Joaquin kit fox movement through preserving existing physical corridors such as the Kern River and canals that the species can safely continue to utilize.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The Service is not aware of any future non-Federal actions currently planned specifically in the action area that will further directly affect the San Joaquin kit fox or remove or disturb its habitat.

Conclusion

Conservation measures set forth for implementation before, during, and following project work; project design modifications; and the SHP, which is intended to address the collective effects resulting from this and five other TRIP projects in the metro-Bakersfield area, will all serve to minimize both program- and project-level effects and the extent of take associated with the San Joaquin kit fox. After reviewing the current status of the San Joaquin kit fox, the environmental baseline for the action area for the species, the effects of the proposed project on the species, and the cumulative effects, it is the Service's biological opinion that the project, as proposed, is not likely to jeopardize the continued existence of the San Joaquin kit fox.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by FWS regulations at 50 CFR 17.3 as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the same regulations

as an act which actually kills or injures wildlife. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described are nondiscretionary, and must be undertaken by Caltrans for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans (1) fails to assume and implement the terms and conditions, or (2) fails to require any of its contractors to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)].

Amount or Extent of Take

It is infeasible for the Service to quantify the exact number of San Joaquin kit foxes that will be taken as a result of the proposed action because the number of individuals in the action area is unknown and estimates of population density in the action area are unavailable. In instances in which the number of individuals that may be taken cannot be determined, the Service may quantify take in the amount of lost or disturbed habitat as a result of the project action; since take is expected to result from these effects to habitat, the quantification of habitat becomes a direct surrogate for the species that will be taken. Therefore, the Service anticipates take incidental to the project as the 76.83 ac of suitable San Joaquin kit fox habitat that will be lost and disturbed. Dens may be destroyed as a result of project construction and a small number of dens could also be disturbed by activities associated with the SHP. Upon implementation of the *Reasonable and Prudent Measures*, *Terms and Conditions*, and the *Proposed Avoidance and Minimization Measures* considered herein, incidental take within this acreage in the form of harm due to new freeway construction, freeway and intersection improvements, sump activities, and other associated construction work leading to habitat loss and disturbance, as well as den excavation and destruction; and in the form of injury and mortality due to vehicle strikes on the new freeway, will become exempt from the prohibitions described under section 9 of the Act.

Effect of the Take

The Service has determined that the level of anticipated take is not likely to jeopardize the continued existence of the San Joaquin kit fox.

Reasonable and Prudent Measures

The following reasonable and prudent measure is necessary and appropriate to minimize the effects of the proposed action on the San Joaquin kit fox.

1. All of the conservation measures proposed in the BA, the Draft SHP Plan, the *Project Description*, and as supplemented and modified in the Terms and Conditions below, must be fully implemented.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans, the City, as well as any contractor acting on the City's behalf, must comply with the following Terms and Conditions, which implement the reasonable and prudent measure described above. These Terms and Conditions are nondiscretionary.

The following Terms and Conditions implement Reasonable and Prudent Measure one:

1. Caltrans shall be responsible for implementing all measures described in this biological opinion. Term and Condition 3.b., which applies to contractor activities, shall be conditioned in contracts for the work.

2. In order to promote both effective communication and implementation of the terms and conditions, the lead Service-approved biologist shall meet weekly with the Resident Engineer and contractor to review the week's upcoming ground-disturbing activities - including any possible changes from the project as analyzed in this biological opinion - as well as the measures that will be implemented to minimize effects to listed species. These meetings shall be documented and reported every two weeks to Caltrans; Caltrans in turn will report this information to the Service, as described in Term and Condition 3a.

3. In order to monitor whether the amount or extent of incidental take anticipated from implementation of the project is approached or exceeded, Caltrans shall adhere to the following reporting requirements. Should this anticipated amount or extent of incidental take be exceeded, Caltrans must immediately reinitiate formal consultation as per 50 CFR 402.16.

    a. For those components of the action that will result in habitat loss or degradation whereby incidental take in the form of harm is anticipated, Caltrans shall provide updates every two weeks to the Service with a precise accounting of the total acreage of habitat affected and the number of dens lost. Updates also shall include any information about changes in project implementation that result in habitat disturbance or other effects to the species not described in the *Project Description* and not analyzed in this biological opinion.

    b. For those components of the action that result in direct encounters between listed species and project workers and their equipment whereby incidental take in the

form of harassment, harm, injury, or death is likely, Caltrans shall immediately contact the Service's SFWO at (916) 414-6600 to report the encounter. If an encounter occurs after normal working hours, Caltrans shall contact the SFWO at the earliest possible opportunity the next working day. When injured or killed individuals of the listed species are found, Caltrans shall follow the steps outlined in the *Salvage and Disposition of Individuals* section.

c. Before construction starts on this project, the Service shall be provided with the final documents related to protection of conservation acres, including MBHCP fee payment of habitat conservation acreage. Easement and endowment documentation for each sump included in the SHP will be established following the approval of the FED for the last of the six TRIP projects. The City will fully fund the SHP within one year of that approval.

d. A post-construction report detailing compliance with the project design criteria and proposed conservation measures described under the *Project Description* section of this biological opinion shall be provided to the Service within 60 calendar days of completion of the project. The report shall include: (1) dates of project groundbreaking and completion; (2) pertinent information concerning the success of the project in meeting the conservation measures; (3) an explanation of failure to meet such measures, if any; (4) known project effects on the San Joaquin kit fox, if any; (5) observed incidences of injury to or mortality of the San Joaquin kit fox, if any; (6) the number of dens lost, if any; and, (7) any other pertinent information.

Salvage and Disposition of Individuals

In the case of an injured and/or dead San Joaquin kit fox, the Service shall be notified of events within one day and the animal shall be handled only by a Service-approved biologist. Injured animals shall be cared for by a licensed veterinarian or other Service-approved person. In the case of a dead San Joaquin kit fox, the animal shall be preserved, as appropriate, and shall be bagged and labeled (i.e. species type; who found or reported the incident; when the report was made; when and where the incident occurred; and if possible, cause of death). Carcasses shall be held in a secure location, such as a freezer or cooler, until instructions are received from the Service regarding the disposition of the specimen or until the Service, or another appropriate agency or Service-approved person, takes custody of the specimen. Caltrans must report to the Service within one calendar day any information about take or suspected take of federally-listed species not exempted in this opinion. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal. The Service contacts are Daniel Russell, Deputy Assistant Field Supervisor, Endangered Species Program, Sacramento, at (916) 414-6600 and the Service's Law Enforcement Division at (916) 569-8444.

Any contractor or employee who, during routine operations and maintenance activities inadvertently kills or injures a listed wildlife species must immediately report the incident to his

representative at his contracting/employment firm and to Caltrans. This representative must contact the Service within one calendar day.

CONSERVATION RECOMMENDATIONS

Conservation recommendations are suggestions of the Service regarding discretionary measures to minimize or avoid further adverse effects of a proposed action on listed, proposed, or candidate species or on designated critical habitat, or regarding the development of new information. They may also serve as suggestions on how action agencies can assist species conservation in furtherance of their responsibilities under section 7(a)(1) of the Act, or recommend studies improving an understanding of a species' biology or ecology. Wherever possible, conservation recommendations should be tied to tasks identified in recovery plans. The Service is providing you with the following conservation recommendations:

1. Caltrans should continue to include culverts, tunnels, or other structures along roads and highways, particularly in core and satellite population areas to allow for the safe passage of the San Joaquin kit fox. Crossing structures contribute to creating safe dispersal corridors for multiple wildlife species, and will help reduce wildlife road mortalities and enhance public safety. Caltrans is encouraged to explore designs and include photos, plans, and other information in its BAs concerning the incorporation of wildlife passageway designs into its projects.

2. Caltrans should report new sightings of the San Joaquin kit fox or its dens to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location in which the animals were observed also should be provided to the Service.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION—CLOSING STATEMENT

This concludes the Service's review of the proposed Centennial Corridor Project, as outlined in your letter. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained or is authorized by law and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or an extent not considered in this biological opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

Please contact Jen Schofield, Fish and Wildlife Biologist, or Thomas Leeman, Chief, San Joaquin Valley Division, at the letterhead address or at (916) 414-6600 if you have any questions regarding this letter.

Sincerely,

Jennifer Norris
Field Supervisor

cc:
Annee Ferranti, California Department of Fish and Wildlife, Fresno, California

Literature Cited

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Personal Communications

Cypher, B.L. 2009a. Research ecologist. Endangered Species Recovery Program, California State Universities, Stanislaus and Bakersfield, California. June 2, 2009 – meeting with Stephanie Coppeto of AECOM to discuss San Joaquin kit fox concentration areas, movement corridors, and potential mitigation for the conceptual strategy.