Attachment E

PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT (PEAR)

PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT

1. Project Information

District	County	Route	PM	EA
4	SM/SF	US 101/I-280	SM-101 PM 19.3/26.1 SF-101 PM 0.0/2.3 SF-280 PM 3.9/7.5	04-3J100K

Project Title: US 101 / I-280 Managed Lanes Project	
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2. Project Description

The California Department of Transportation (Caltrans); in cooperation with the San Francisco County Transportation Authority (SFCTA), the San Francisco Municipal Transportation Agency (SFMTA), and the San Mateo County Transportation Authority (SMCTA); propose to construct an approximately 11-mile managed lane (ML) facility on northbound and southbound US Route 101 (US 101) and Interstate 280 (I-280). The proposed project would provide a ML facility on US 101 and I-280 from just north of I-380 in San Mateo County to the terminus of I-280 at 5th and King Streets in the City of San Francisco.

The ML facility would dedicate one lane on portions of US 101 and I-280 within the project limits for High Occupancy Vehicles (HOV). Consistent with other carpool lanes in the Bay Area, these lanes could have occupancy requirements of either two or three people. Price management in the form of express lanes would also be used in conjunction with the HOV configuration. The HOV/express lanes would be free for eligible carpools and buses, while also being accessible to other vehicles by paying a fee which would vary based on demand.

Attachment A of the Project Study Report – Project Development Support (PSR-PDS) shows the location of the proposed project which would pass through the cities of South San Francisco, Brisbane, and the City of San Francisco.

Purpose and Need

This section summarizes the transportation purpose and need for the project. During the Project Approval/Environmental Document (PA/ED) phase, the Purpose and Need Statement may be refined over time to provide additional details and analyses regarding the existing and future needs, in accordance with Caltrans' Standard Environmental Reference (SER) guidelines.

Purpose

The purpose of the proposed project is to provide a ML facility in each direction of US 101 and I-280 from the terminus of the San Mateo 101 Express Lanes Project at I-380 and the I-280 terminus at 5th and King Streets in San Francisco that fulfills the following:

- Create a facility that extends the benefits achieved by the San Mateo 101 Express Lanes Project into San Francisco
- Increase person throughput
- Encourage carpooling and transit use
- Improve travel time and reliability for HOV and transit users
- Minimize degradation to general purpose lanes or local streets
- Optimize freeway system management and traffic operations

Need

All lanes on US 101 and I-280 experience congestion resulting in an overall degradation of operations throughout the corridor. Traffic flow is constrained at several bottlenecks where vehicular demand exceeds the capacity of the facility. All users traveling on US 101 and I-280, whether they are in single or multiple occupant vehicles or in buses, experience delays in both the northbound and southbound directions in the AM and PM peak hours, and at other periods during the week.

Description of Work

The project would construct a ML facility in the northbound and southbound direction of US 101 and I-280 extending from the terminus of the San Mateo County US 101 Express Lanes near I-380 to the terminus of I-280 at 5th and King Streets. Widening of existing paved surfaces would be required to construct the ML facility.

Alternatives

The PSR-PDS considers a No-Build Alternative along with two action alternatives: Alternative 1 (Maximum Geometric Design); and, Alternative 2 (Minimum Geometric Design). The action alternatives included in this PSR-PDS are intended to: 1)provide a range of improvements to evaluate during the PA&ED phase; 2) define an adequate footprint for environmental technical studies; 3) provide opportunities to meet geometric standard to the extent feasible; 4) minimize environmental impacts; and, 5) provide cost-effective solutions.

For study purposes, the project limits are divided into six segments described in **Table 1**. Plans and typical sections for each alternative are provided in Attachment D.

Table 1: Project Limit Segments

Segment	Description
1	On US 101 from one mile south of the US 101/I-380 Separation to the Colma Creek Bridge
2	On US 101 from Colma Creek Bridge to 0.5 miles north of the Sierra Point Overhead
3	On US 101 from 0.5 miles north of the Sierra Point Overhead to 0.3 miles south of the Bayshore Boulevard Overcrossing
4	On US 101 from 0.3 miles south of the Bayshore Boulevard Overcrossing to the south end of the double deck viaduct connector between US 101 and I-280
5	On I-280 from south end of double deck viaduct structure to Islais Creek Bridge
6	On I-280 from Islais Creek Bridge to the terminus of I-280 at 5th and King Streets

Action Alternatives

The PSR-PDS considers two action alternatives: Alternative 1 (Maximum Geometric Design); and, Alternative 2 (Minimum Geometric Design). Alternative 1 presents three design variations (A, B, and C) that would accommodate the construction of a new lane in each direction of US 101 that would serve as a ML facility. Alternative 2 presents two design variations (A and B) that would provide a ML facility in both directions of US 101 by converting the left general purpose (GP) lane to a ML within Segments 1, 2, and 3. Detailed descriptions of Alternatives 1 and 2 are provided further below.

Key Project Features Common to all Action Alternatives

Managed Lanes

The project proposes a continuous access design for motorists to openly access the ML facility from the general purpose lanes. However, a detailed traffic analysis would be completed during the PA&ED phase in order to substantiate the continuous access concept and identify any potential safety concerns. If required by the traffic analysis, designated ingress/egress locations may be provided at specific locations that require restricted vehicle movements to address safety concerns.

The managed lane in each direction would be 12 feet wide, where feasible, and designated using a dashed-stripe pavement marking.

Auxiliary Lanes

During the PA&ED phase, traffic studies would determine if auxiliary lanes[1] between interchanges would provide an operational benefit and should be added to the proposed project.

Structures

To accommodate the ML improvements, the structures listed in **Table 2** would be modified.

Table 2: Structures Requiring Modification

Structure	Bridge No.	Alt 1A	Alt. 1B, 1C	Alt. 2A	Alt. 2B
Colma Creek Bridge	35-0118	W	W	-	-
South SF Belt Railway OH	35-0121	W	W	-	-
South San Francisco OH	35-0094 (L&R)	W	W	-	-
Sierra Point OH	34-0165	W	W	-	-
3RD Street UC	34-0030S	W	W	-	W
Paul Avenue UC	34-0056	W	W	-	W
101-280 Managed Lane Connector Ramp Separation	TBD	-	N	-	N

Notes:
W = Widen
N = New

Other Improvements

The ML facility would include installation of static and dynamic signs, electronic tolling equipment, communications fiber backbone, and a toll collection system. California Highway Patrol (CHP) Observation and Median Enforcement Areas would be provided, where feasible, and if required and dictated by the traffic analysis. Existing ramp metering and TOS facilities would also need to be modified.

Retaining walls of differing styles, height, and length would be installed in areas where pavement widening is needed and space is restrictive. The use of retaining walls can effectively minimize earthwork and right-of-way acquisition required. The types of retaining walls proposed for this project will be determined based on preliminary

[1] Auxiliary lanes are travel lanes that extend from the on-ramp of an interchange to the off-ramp of the next interchange. Auxiliary lanes can allow for improved ingress and egress of automobiles and truck entering and exiting the freeway thereby improving operations and safety in some cases. Auxiliary lanes do not extend through the interchange area and thus do not increase the overall capacity of the freeway.

engineering which will be completed during the PA&ED phase. Similarly, the need for sound walls, either new or replacement of existing, would be determined during the PA&ED phase when detailed noise studies would be performed.

No-Build Alternative

Under the No-Build Alternative the freeway travel lanes along the US 101 and I-280 would remain as they currently exist, except for the planned and programmed improvements listed in **Table 3**. The No-Build Alternative is considered the environmental baseline against which potential environmental effects of the action alternatives would be considered.

Table 3: Other Planned Improvements Projects

Project Name	Description
US 101 Auxiliary Lanes from Oyster Point to San Francisco County Line (EA# 04-3G860)	Constructs auxiliary lanes on US 101 as follows: 1) Northbound – Between Sierra Point Parkway on-ramp and Candlestick Point off-ramp 2) Southbound – Between Candlestick Point on-ramp and Sierra Point Parkway off-ramp 3) Southbound – Between Sierra Point Parkway on-ramp and Oyster Point Blvd off-ramp
US 101 / Produce Avenue Interchange (EA 04-4H3600)	Reconstruct interchange including a new overcrossing

Alternative 1 (Maximum Geometric Design)

<u>San Mateo County</u>

To create the ML facility an additional lane would be added in each direction of US 101. This would require left shoulder conversion in Segments 1, 2, and 3 and widening US 101 to the outside in Segments 2 and 3. Standard lane and shoulder widths would be provided to the extent feasible. Undercrossing structures would be modified and extensive retaining walls would need to be constructed to minimize the need for additional right of way and reduce potential environmental impacts. New and replacement sound walls would be considered. Existing ramp metering and TOS facilities would need to be modified.

<u>San Francisco County</u>

In the southbound direction, the ML facility would be provided from near 6th Street on I-280 to the San Mateo/San Francisco County Line on US 101 by converting the existing shoulder in Segments 3, 4, 5, and 6 to provide an additional travel lane. Widening to the outside of the existing freeway would be required in Segments 3 and 4.

Three design variations are proposed in the northbound direction to create the ML facility in Segments 4 and 5:

- **Alternative 1A** would extend the northbound US 101/I-280 connector ramps southward as a barrier-separated collector-distributor (C-D) road to just north of the Bayshore Boulevard Overcrossing. To accommodate the C-D, US 101 would be widened eastward requiring acquisition and widening of a portion of Bayshore Boulevard. The northbound ML would terminate and transition to a General Purpose (GP) lane approximately 1,000 feet south of the Bayshore Boulevard Overcrossing. The ML would then be re-introduced on I-280 from 2,400 feet north of the US 101/I-280 connecter to the I-280 terminus at 5th/King Streets by shoulder conversion. There would be a 2.3-mile gap in in the northbound ML under this design variation.
- **Alternative 1B** would extend the northbound US 101 ML from the San Mateo/San Francisco County Line to just north of the Bayshore Boulevard Overcrossing by converting approximately 1,500 feet of GP lane. The ML would then enter an elevated direct connector structure beginning in the median of US 101 then aligning over northbound freeway lanes, along a portion of Bayshore Boulevard, and along the right side of the I-280 double-deck viaduct structure before touching down in the median of I-280 near 25th Street. To accommodate the connector structure, widening of Bayshore Boulevard similar to Alternative 1A would be required. A continuous northbound ML facility would be provided throughout the project limits for this option.
- **Alternative 1C** would be similar to Alternative 1B, with the exception of the following:
    - The ML direct connector structure would serve as a reversible lane facility.
    - A moveable barrier facility would be required at each end of the elevated structure.

  A continuous ML facility would be provided throughout the project limits under this design variation in the peak direction only. The off-peak direction would have a gap in the ML facility within Segments 4 and 5.

Alternative 2 (Minimum Geometric Design)

<u>San Mateo County</u>

The ML facility in both directions on US 101 within Segments 1, 2, and 3 would be created by converting the existing left GP lane to a managed lane. Standard lane and shoulder widths would be provided to the extent feasible. Existing ramp metering and TOS facilities would need to be modified.

<u>San Francisco County</u>

In the southbound direction, a continuous ML would be provided from near 6th Street on I-280 to the San Mateo/San Francisco County Line on US 101 by converting the existing left GP lane.

Two design variations are proposed for creating the ML facility in Segments 4 and 5:

- **Alternative 2A** would provide a continuous ML in the southbound direction with a shoulder conversion on the I-280/US 101 connector. The northbound ML would terminate and transition to a GP lane approximately 400 feet north of the Bayshore Boulevard Overcrossing. A ML would be re-introduced in the northbound direction from 400 feet north of the 18th Street overcrossing to the I-280 terminus at 5th/King Streets by lane addition. There would be a 3.5-mile gap in in the northbound ML for this option.
- **Alternative 2B** would provide a continuous ML in the southbound direction in the same manner as Alternative 2A except that a lane would an additional lane would be added to the connector for southbound I-280 to southbound US 101 via shoulder conversion. The northbound direction would be identical to Alternative 1B. A continuous ML facility would be provided throughout the project limits for this option in the peak direction only. The off-peak direction would have a gap in the ML facility within Segments 4 and 5.

For Alternative 2 to be viable, State legislation AB No. 798, Chapter 474, Section 64112 (b) of Division 3, Title 6.7 of the Government Code, would need to be changed to allow conversion of a GP lane to a managed lane. In addition, Title 23 of US Code, Section 129 (a) (1) (G) states that Federal participation shall be permitted on the same basis and in the same manner as construction of toll-free highways if the number of toll-free non-HOV lanes, excluding auxiliary lanes, after reconstruction, restoration, or rehabilitation is not less than the number of toll-free non-HOV lanes, excluding auxiliary lanes, before reconstruction, restoration, or rehabilitation.

Both alternatives will need to conform to the planned San Mateo County Express Lanes Project (EA 04-1J5600). Just south of I-380, San Mateo County will have one express lane with HOV 3+ configuration. It is anticipated that remaining express lanes in San

Mateo County and in San Francisco County will also need to be for HOV 3+ usage. For purposes of this PSR-PDS, it is assumed that all parties agree to HOV 3+ and that there will be no need for HOV 3+ to HOV 2+ transition zone in either direction.

3. Anticipated Environmental Approval

CEQA		NEPA	
Environmental Determination			
Statutory Exemption	☐		
Categorical Exemption	☐	Categorical Exclusion	☐
Environmental Document			
Initial Study or Focused Initial Study with proposed Negative Declaration (ND) or Mitigated ND	☒	Routine Environmental Assessment with proposed Finding of No Significant Impact Complex Environmental	☒

		Assessment with proposed Finding of No Significant Impact	☐
Environmental Impact Report	☐	Environmental Impact Statement	☐
CEQA Lead Agency (if determined): San Mateo County Transportation Authority (SMCTA)		California Department of Transportation, District 4	
Estimated length of time (months) to obtain environmental approval:		23 months	
Estimated person hours to complete identified tasks:		[Placeholder for Caltrans]	

4. Special Environmental Considerations

Although both action alternatives are largely confined to the existing State right-of-way (ROW), Alternative 1 represents a maximum footprint option that would have a greater potential to impact environmental resources when compared to Alternative 2.

Alternative 1 would construct a ML facility that would require left shoulder conversion and freeway widening. Standard lane and shoulder widths would be provided to the extent feasible. Though land acquisitions would be required, it would not involve displacement or relocation of existing businesses or residents. The freeway widening and bridge structure modifications required under Alternative 1 may result in impacts to biological and cultural resources adjacent to or that cross under the US 101 and the I-280 corridors. Such resources include special status wildlife species and associated habitat; wetlands and waters of the U.S.; and recorded/unrecorded Native American, archaeological and historic architectural resources. As such, Alternative 1 would likely entail state and federal consultation and permitting such as Sections 401 and 404 of the Clean Water Act (CWA), Section 7 of the Endangered Species Act, Section 106 of the National Historic Preservation Act (16 U.S.C. 470) and Section 4(f) of the Department of Transportation Act (49 U.S.C. 303). The need and extent of such consultation and permitting would be determined during the PA/ED phase as part of conducting various studies and reports including a jurisdictional delineation, a Natural Environmental Study (NES), and cultural resource technical reports. The time required for legal sufficiency review of these processes could impact the project schedule should the Section 404, Section 401, or Section 7 processes and/or an extensive Section 4(f) evaluation be required.

Alternative 2 would be largely confined to the existing paved areas of the US 101 and I-280 corridors. Given the use and paved nature of the existing freeway corridors, potential impacts to biological or cultural resources are likely to be minimal to none. While improvements proposed under Alternative 2 could require consultation and certification, this process would be expected to be minor and less time consuming when compared to Alternative 1.

5. Anticipated Environmental Commitments

Impacts to environmentally sensitive resources could occur as a result of the proposed project; however, it is anticipated that, based on existing conditions and proposed action alternatives, impacts could be mitigated to a less-than-significant level. In this case, the anticipated environmental document for the proposed project would be a Mitigated Negative Declaration/Finding of No Significant Impact (MND/FONSI). It is anticipated that the appropriate level of environmental documentation to be prepared during the PA&ED phase of project development would be an Initial Study/Environmental Assessment (IS/EA) to satisfy both CEQA and NEPA requirements.

It is anticipated that Caltrans District 4 Office of Environmental Analysis will make the class of action determination that the NEPA environmental document type for this project would be a routine EA for the following reasons. There does not appear to be a debate regarding the purpose and need for the project; the purpose and need is well defined and demonstrates independent utility. No individual Section 4(f) determination is anticipated. While the project may have affects to minor amounts of natural resources and may require Section 7 consultation, no significant unavoidable biological effects to species protected under the Endangered Species Act are anticipated. The proposed project would not result in significant visual resource impacts as the freeway corridor is not designated as a scenic highway and the proposed structures would replace existing structures of similar mass and height. Lastly, there does not appear to be numerous cumulative issues or high mitigation costs associated with the project, as the proposed improvements would not likely result in significant unavoidable impacts.

In the event that the design of Alternative 2 and technical studies determine that environmental impacts are minimal to none, the project may qualify for streamlined environmental review such as a Categorical Exclusion/Categorical Exemption.

SFCTA will be the implementing agency for PA&ED and Caltrans will act as the lead agency for CEQA and NEPA.

It is expected that the environmental technical reports and IS/EA would take approximately 23 months to prepare and process for final adoption/approval of the MND/FONSI, including time for review by the environmental division staff within Caltrans. This timeline does not include permitting by federal or state resource agencies, if required.

Attachment D contains estimated costs of environmental commitments identified in this Preliminary Environmental Analysis Report (PEAR) for each Build Alternative.

6. Permits and Approvals

Water Quality: The action alternatives are likely to utilize Caltrans' National Pollutant Discharge Elimination System (NPDES) permit during constriction. The NPDES permit includes measures that would be taken by the project to reduce or avoid runoff that would affect local storm water quality. Consistent with the NPDES permit, the project would require preparation and adoption of a Storm Water Pollution Prevention Program

(SWPPP). Additionally, the project would be required to file a Notice of Intent (NOI) to be covered under the State NPDES General Construction Permit for discharges of storm water association with construction activity.

Design features to address hydromodification mitigation requirements may be needed for the project. Alternative 1 would have to follow the local hydromodification standards and is expected to need a RWQCB 401 *Water Quality Certification* permit due to the widened structures that would be required over several waterways in order to accommodate the construction of an additional ML. However, if the detailed analysis conducted during PA&ED determines that the action alternatives could be designed to avoid significant impacts to wetlands and/or waters of the U.S. (i.e., by use of clear-spanning structures), neither alternative would require a RWQCB 401 *Water Quality Certification* permit. Without a RWQCB 401 *Water Quality Certification* permit the project would be required to meet the hydromodification requirements in accordance with NPDES Permit. This permit requires that all new development projects shall not cause a decrease in lateral and vertical stability in receiving stream channels.

Biological Resources: A windshield survey of the project corridor was completed in November 2018. Areas adjacent to the US 101 and I-280 freeways, within the project area, contain very little habitat for special-status plant species due to the high degree of disturbance associated with a highly urbanized area. However, the possibility of rare plants potentially occurring cannot be ruled out until more detailed investigations are completed. According to the CNDDB, four special-status wildlife species and one special-status fish species were also identified as having the potential to exist within project corridor. Based on this information, a Natural Environmental Study (NES) will be required in order to determine if the sensitive biological and natural resources are present within the project area and if so, could be adversely affected by the project. Depending on the findings of the NES, Section 7 compliance and approvals from the U.S. Fish and Wildlife Service (USFWS) may be required if protected species or their habitat is present and potentially affected by an action alternative.

Because Alternative 2 would result in a smaller area of disturbance, it would have a reduced potential for biological impacts when compared to Alternative 1. However, preparation of an NES would still be needed to fully determine if potential impacts would occur.

Cultural Resources: A records search was conducted at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) on October 17, 2018. The records search included the project corridor and a 500-foot buffer on either side of the project limits. Based on the results of the database search, two prehistoric sites have been documented within the project corridor; and five prehistoric resources and one historic-era resource have been recorded within 500 feet of the project corridor. In addition, 21 historic era built environment resources were identified within the 500-foot search extent. Although some of which are not eligible for listing in the National Register of Historic Places (NRHP), others would require an evaluation to determine if they are historic resources protected under Section 106.

Given the presences of prehistoric and historic-era resources in or near the project area, both action alternatives have the potential to impact cultural resources. Alternative 2 would have a somewhat reduced potential for impacts to cultural resources when compared to Alternative 1 because of its smaller footprint and reduced construction activity. Both alternatives would require preparation of an Area of Potential Effect (APE) map, Historic Property Survey Report (HPSR), Archeological Survey Report (ASR), and a Historic Resource Evaluation Report (HRER). These cultural resource studies will identify and evaluate cultural resources within the APE. The studies will also determine if additional investigations are necessary, and if consultation with the State Historic Preservation Officer (SHPO) is needed in accordance with Section 106 of the NHPA and the PA.

Attachment D of this PEAR provides a detailed environmental commitments cost estimate for each action alternative.

In the event that Alternative 2 can be designed so that all work would occur within existing paved areas and that no work would occur within CDFW jurisdiction (aquatic features with a distinct bed, bank, and channel, San Francisco Bay RWQCB jurisdiction (waters of the State), or USACE wetlands or waters of the U.S., then no permits would be required from these regulatory agencies.

7. Level of Effort: Risks and Assumptions

Risk management is the systematic process of identifying and planning for issues that, were they to occur, could have a positive or negative effect on the project objectives, including the timeline and/or budget for project implementation. Initial phases of project development include developing and regularly reviewing a risk management matrix prepared for the project. This PEAR is designed to provide an evaluation of the level of technical study and environmental documentation that would be required for the project.

This discussion of PEAR technical summaries below is based on windshield surveys of the project limits conducted in November 2018, existing public data including analysis and reports prepared for other projects in the region. Based on this information, the process of attaining full project approval would take approximately 23 months to complete.

Attachment C of this PEAR provides a sample schedule of the environmental review process for the project.

Assumptions

The following assumptions were made when evaluating the project:

- The community would be generally supportive of the need for the project
- Hazardous materials could be encountered during Phase I soils sampling and surveying of the bridge structures
- The project could result in impacts to wetlands and waters of the U.S. due to the proximity of the waterways creeks crossed by US 101 and I-280

- Special-status species (or associated habitat) could be affected by the project
- Cultural resources are present and may be affected by the project
- Section 4(f) resources may be present in the vicinity of the environmental study area. While no parks or recreational facilities would be affected, there may be cultural resources in the environmental study area subject to Section 4(f) evaluation. However, it is not anticipated that the action alternatives would result in a Section 4(f) use.

Risks

A risk is an uncertain event or condition that, if it occurs, has a positive or negative impact of at least one project objective: scope, cost, or schedule. **Table 4** defines the potential impact of risk on the project objectives (i.e., schedule, cost, and/or scope).

Table 4: Evaluation the Impact of a Risk on Project Objectives

Impact		Low	Moderate	High
Objectives	**Time**	Delivery Plan milestone delay within quarter	Delivery Plan milestone delay of one quarter	Delivery Plan milestone delay of more than 1 quarter
	Cost	<5% Cost Increase	5-10% Cost Increase	>20% Cost Increase
	Scope	Changes in project limits or features with <5% cost increase	Changes in project limits or features with 5-10% cost increase	Sponsor does not agree that scope meets the purpose and need

Based on the project's assumptions, the following risks were identified:

- If the community opposes the project, additional time for public involvement, outreach, and environmental documentation review may be needed, which would delay the project schedule. This risk is low because managed lanes such as those proposed here are now common throughout the Bay Area and would have a moderate impact on the schedule, and a low impact on scope and cost.
- If hazardous materials are encountered during Phase I soil sampling and bridge surveying in such high concentrations such that extensive remediation and re-testing would be required before project approvals could be obtained, the additional remediation work would delay the project schedule. This risk is moderate and would have a low impact on scope and schedule, and moderate impact on cost.

- If wetlands and/or waters of the U.S. are identified within the project limits, an avoidance alternative analysis for wetland impacts would need to be prepared in accordance with the U.S. Army Corps of Engineers. This risk is low and would have a high impact on schedule and cost, and moderate impact on scope.
- If habitat supporting special-status species is affected by the project, Section 7 Consultation would be required. This risk is high and would have a low impact on scope, and a moderate impact on schedule and cost.

8. PEAR Technical Summaries

In general, the design variations within each Alternative would be constructed within the same physical limits, and do not present project elements that represent significant differences in the potential environmental impacts. As such, this analysis evaluates the high-level environmental considerations for Action Alternative 1 and Action Alternative 2, inclusive of the respective design variations.

8.1 Land Use

The action alternatives would require preparation of a Community Impact Assessment (CIA) to document the project's consistency with local and regional planning documents, and to document any temporary or permanent land acquisitions. There would be no difference in the level of land use analysis required between the action alternatives.

The project would generally construct a ML facility within the US 101 and I-280 State right-of-way. However, both Alternatives would require land acquisitions at various locations throughout the project corridor in order to accommodate associated widening and restriping. Alternative 1 would require right of way to be acquired from 3 to 7 private properties, depending on the variation selected. Alternative 2 would require fewer acquisitions depending on the variation selected (0-2).

Although Alternative 1 and Alternative 2 would require acquisition of private property, neither would result in the displacement of residential or commercial structures. Moreover, potential acquisitions are not anticipated to alter community interaction patterns. The potential for significant land use and other related impacts would need to be investigated more fully in a Community Impact Assessment (CIA).

Section 4(f) of the Department of Transportation Act of 1966 is a policy that analyzes the potential effects of the project on parks, recreational facilities, wildlife and waterfowl refuges, and cultural resources within approximately 0.5 miles of all project alternatives. There are several publically-owned parks and recreational facilities located adjacent to (within 150 feet) the US 101 and I-280 corridors that are eligible for protection under the provisions of Section 4(f). However, these park and recreational facilities are far enough away that they would not be directly affected (no direct use or alteration of these parks would occur) and they are far

enough from US 101 and I-280 that no indirect effect such as increase noise or air quality effects would be anticipated. As a result a no use determination is anticipated for each action alternative with respect to park and recreational properties.

See **Section 8.6, Cultural Resources**, for a description of the cultural resources evaluation anticipated for the project and how the findings will be incorporated into the Section 4(f) evaluation. The closest property that acts as a wildlife refuge, the bayshore property, is located over one mile from the project area and thus would not be directly or indirectly affected by the project. Given the distance and intervening development, no direct effects to this refuge and would occur from the action alternatives.

8.2 Growth

The action alternatives would optimize and expand the capacity of the US-101 and I-280 corridors by adding a ML facility. A brief assessment in a CIA will be required to determine whether this expanded capacity would result in growth inducement or merely facilitate planned growth. The project is expected to demonstrate an operational improvement that would accommodate growth projections and would not induce growth. There would be no difference in the level of growth analysis required between the action alternatives.

8.3 Farmlands/Timberlands

No farmlands or timberlands are known to exist in or adjacent to the project limits. Therefore, no farmlands or timberland evaluation would be required.

8.4 Community Impacts

While the action alternatives would appear to have limited effects to local communities and community facilities, a CIA should be prepared to evaluate construction-period effects as well as confirm economic effects and impacts to community cohesion would be minimal.

The land uses along the US 101 corridor within the project limits are generally urban, planned development, heavy commercial, trade commercial, community commercial, business commercial, and mixed industrial. The land uses along the I-280 corridor within the project limits are generally industrial, residential, and commercial. It does not appear that either action alternative would involve the acquisition and displacement of any residential or commercial structures. Alternative 1 and Alternative 2 would not alter community interaction patterns and would not likely significantly affect public utilities or facilities such as overhead lines, pipelines, bike routes, or parklands, nor would they significantly affect emergency services (i.e., fire, police, or ambulance).

Although project construction would be temporary, it would take place over a period of years and could be disruptive to the local area. Lane closures, detours, and other construction over extended periods could impact local residents and

businesses and result in negative economic impacts as a result of lost business and/or increased commute times.

The project area includes communities with populations of minority and low income individuals based on data from the 2010 U.S. Census.[2] Further analysis will be required to determine if any of the affected census tracts qualify as environmental justice communities. Accordingly, both action alternatives would require further analysis to determine if the proposed project could disproportionally affect any qualifying environmental justice community.

8.5 Visual/Aesthetics

Although the project limits are not located within a designated state scenic highway, the City of Brisbane General Plan does recognize views of the San Francisco Bay and the City of San Francisco as recognized scenic vistas. Views of these scenic vistas are afforded to residents surrounding the project limits, as well as commuters traveling along US-101 and I-280.

The build alternatives would have somewhat similar visual effects. Both alternatives would require the installation of signage and tolling equipment within the existing US 101 and I-280 corridors, remove trees, modify bridge structures, and construct walls. The precise location of each improvement will need to be assessed for its potential to block views and alter the visual character of the corridor experienced by motorists. Alternative 1 would require widening of the US-101. This widening could represent one or more visual impediments, contingent on precise location relative to visual resources. To fully assess impacts to all potentially effected viewer groups, a Visual Impact Assessment (VIA) would be prepared. There would be no difference in the level of visual impact analysis required between the two alternatives.

8.6 Cultural Resources

A records search was conducted at the NWIC CHRIS on October 17, 2018. The records search included the project corridor and a 500-foot buffer on either side of the project limits. Based on the results of the database search, two prehistoric sites have been documented within the project corridor; and five prehistoric resources and one historic-era resource have been recorded within 500 feet of the project corridor. In addition, 21 built environment resources were identified within the 500-foot search extent. Although some of which are not eligible for listing in the National Register of Historic Places (NRHP), others would require an evaluation to determine if they are historic resources protected under Section 106. The buried site sensitivity assessment indicates that 66.8% of the project corridor exhibits a moderate potential for buried or submerged archeological resources.

[2] United States Census Bureau. 2010 Census Data Mapper. Available at https://datamapper.geo.census.gov/map.html. Accessed November 5, 2018.

There are three San Francisco Historic Landmark Districts that intersect or are adjacent to the I-280 corridor: Dogpatch, South End, and the Auxiliary Water Supply System. The only contributing elements of any of the districts or survey areas that are located within the current US 101 or I-280 right-of-way are Southern Pacific Railroad Tunnels #1, #2, and #4; and the 22nd and 23rd street bridges, which are discontiguous contributing elements of the Central Waterfront Historic Survey Area, as well as some components of the Auxiliary Water Supply System.

Both action alternatives have the potential to affect cultural resources that are located within or adjacent to the State right-of-way.

In fulfillment of NHPA requirements under Section 106, an Area of Potential Effect (APE) map would be prepared for the action alternatives, encompassing both the temporary and permanent project footprint. A Historic Property Survey Report (HPSR) would be prepared as the summary document for cultural resources studies that would include an Archaeological Survey Report (ASR) and a Historical Resources Evaluation Report (HRER). For the cultural resources identified in the APE the documentation would include an evaluation for the resource's eligibility for the National Register. Evaluations of historical archaeological resources and built environment resources would be presented in the HRER. The need for an Extended Phase I survey to complete identification of historic properties within the APE will be dependent upon what Alternative is selected and where the project related ground disturbances are planned in relationship to previously recorded archaeological resources and buried site sensitivity. There would be no difference in the level of cultural review required between the two alternatives.

California Assembly Bill 52 (AB 52) is intended to recognize and protect tribal cultural resources. Under AB 52, the CEQA Lead Agency must notify California Native American Tribes within 14 days of the decision to undertake a project. California Native American Tribes include both federally and non-federally recognized tribes in California. Under AB 52, tribes have 30 days to request consultation about any tribal cultural resources in the project area. The action alternatives would be required to conduct AB 52 outreach and consultation, if requested.

If no cultural resources are determined eligible for the National Register, the Section 106 responsibilities would be fulfilled. If any identified resources are determined eligible for the National Register, a Finding of Effect would be prepared to document the potential effects on the resource(s). If it is determined that there would be an adverse effect on the resource(s), a Memorandum of Agreement (MOA) and Historic Property Treatment Plan would be prepared to document mitigation measures agreed upon by the project proponent, Caltrans, and the State Historic Preservation Officer. Consulting Native American parties would also be invited to concur on the MOA, as appropriate.

8.7 Hydrology and Floodplain

A Location Hydraulic Study (LHS) is a preliminary study of base floodplain encroachments by the project, and will be performed by a registered engineer with hydraulic expertise. If, based on the results of the LHS, either: 1) a significant encroachment on a floodplain, 2) an inconsistency with existing watershed and floodplain management programs, or 3) uncertainty as to what impacts would occur exists, then a Floodplain Evaluation Report will be prepared. If no encroachment or impacts to the floodplain will occur, then a Summary Floodplain Encroachment Report will be prepared. Based on the findings of these efforts, the environmental document will incorporate appropriate mitigation measures related to construction in and near the floodplain. There would be no difference in the level of hydrological review required between the two alternatives.

The action alternatives would cross flood hazard zones designated by FEMA. Using the Caltrans Water Quality Planning Tool, several creek crossings occur within the project limits that would need to be evaluated when looking at potential improvements within associated 100-year floodplains (see **Table 5**).

Table 5: Potential Improvements within Associated 100-year Floodplains

Creek	Post Mile Limits
Unnamed Tributary to Lower San Francisco Bay/ San Bruno Channel	US 101; 20.653-20.579
Unnamed Tributary to Colma Creek	US 101; 21.135-21.111
Colma Creek	US 101; 21.618-21.604
Lower San Francisco Bay and Brisbane Lagoon	US 101; 23.94-24.637
Islais Creek	I-280; 5.547-5.471
Mission Creek	I-280; 7.247-7.182

In Segment 3, the northbound project corridor closely borders the San Francisco Bay, which is designated as a Zone A floodplain for approximately 1.6 miles (from approximately 0.2 miles north of Marina Boulevard to 2.4 miles south of the San Francisco County Border). Only the freeway shoulders are mapped within the 100-year floodplains in these few areas, with the exception of the segment near the Lagoon Road off-ramp where the northbound mainline is within the floodplain.

8.8 Water Quality and Storm Water Runoff

The project must comply with the Caltrans Statewide NPDES Permit. Temporary and permanent Best Management Practices (BMPs) that are required to comply with the permit will be presented in the project Water Quality Assessment Report during the PA&ED phase. There would be no difference in the level of initial water quality documentation required between the action alternatives, as described below.

The action alternatives would result in a soil disturbance of 1 acre or more for construction purposes. As such, the project must comply with the Statewide Construction General Permit; the Caltrans NPDES Permit references the Construction General Permit for regulation of stormwater discharges from all

Caltrans construction projects. For those alternatives that would also result in the addition of 1 acre or more of impervious area, measures to provide permanent stormwater treatment and mitigate for hydromodification impacts to receiving waterbodies would need to be incorporated into the project design. The stormwater treatment measures would be required to be designed in accordance with the Caltrans Project Planning and Design Guide, and the hydromodification analysis and mitigation measures would need to be in compliance with the San Francisco Bay Regional Water Quality Control Board Municipal NPDES Permit. As a matter of law, implementation of either action alternative would require the incorporation of design BMPs, as well as temporary BMPs to prevent effects to water quality during construction (such as excessive erosion or sedimentation). These BMPs are outlined in both Caltrans' Storm Water Management Plan (SWMP) and would be incorporated into the SWPPP. Incorporation of the measures outlined in the SWPPP would ensure that action alternatives would not adversely affect water quality in local waterways or groundwater quality. Refer to **Section 8.15, Biological Environment**, for a discussion of potential effects to local waterways.

8.9 Geology, Soils, Seismic and Topography

The project is located approximately 2.25 miles east of the San Andreas Fault and 1.47 miles east of the Sierra Fault.[3] According to the United State Geological Survey (USGS), the likelihood for the project area to experience damage from natural earthquakes is high.[4] A preliminary geotechnical report would be prepared to evaluated the potential for the action alternatives to result in impacts related to existing soil and/or seismic conditions. There would be no difference in the level of geotechnical documentation required between the action alternatives.

Prior to final design, field explorations will be required to fully document and evaluate subsoil conditions, groundwater conditions, and corrosion potential. Slope stability that would be potentially affected by the proposed alternatives should be analyzed so slope maintenance and protection are considered. Recommendation for foundation, embankment, and retained wall constructions will be made. The findings of these field explorations and detail study will be incorporated into the environmental document.

The project would be designed in accordance with the Caltrans' 2017 Deterministic Peak Ground Acceleration (PGA) map and ARS Online.[5] During the PS&E phase of the project, additional data should be collected to confirm site conditions and as the basis for appropriate mitigation measures. The action alternatives would have roughly the same risks associated with geology, soils, seismic, and topography as they both propose modified or new ramp structures.

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[3] USGS Fault Activity Map of California (2010). http://maps.conservation.ca.gov/cgs/fam/.
[4] USGS Forecast for Damage from Natural and Induced Earthquakes in 2017. https://earthquake.usgs.gov/hazards/induced/images/ProbDamageEQ_2017.pdf
[5] Deterministic PGA Map and Caltrans ARS Online Report, Caltrans: 2009. Accessed on October 26, 2018. http://dap3.dot.ca.gov/shake_stable/references/Deterministic_PGA_Map_and_ARS_Online_Report_071409.pdf.

8.10 Paleontology

Bridge and ramp modifications that would be constructed in deeper sediments not previously disturbed by the construction of the existing freeway infrastructure have the greatest potential to encounter undocumented paleontological resources. Because Alternative 1 and Alternative 2 both include construction activities that could encounter deeper sediments, there would be no difference in the level of initial paleontological evaluation required between the action alternatives, as described below.

A Paleontological Evaluation Report (PER) will be prepared to: (1) identify any known paleontological resources that exist in the study area (2) determine Caltrans' legal responsibilities; (3) decide the necessity for involving other agencies and/or stakeholders; (4) determine whether the resource can be avoided; and (5) determine the significance of the resource. If unrecorded paleontological resources are discovered within the environmental study area, construction monitoring by a qualified paleontologist may be required, and a curation program prepared for the project to create protocols for how to protect any resources discovered during construction, thus delaying project schedule and adding monitoring costs.

8.11 Hazardous Waste/Materials

As both action alternatives would be constructed on existing freeway lanes, an investigation for heavy metals/aerially deposited lead along with an Initial Site Assessment (ISA) would be required. Further, Preliminary Site Investigations (PSIs) would be needed for all proposed acquisition/widening areas. In addition, an asbestos and lead-based paint survey would be required prior to the modification of any bridge structures. While both action alternatives would require construction work in areas where potential soil and/or groundwater contamination exists, Alternative 2 would require the least amount of physical disturbance and therefore less potential risks associated with the release of or contact with hazardous materials.

8.12 Air Quality

The action alternatives are intended to reduce existing and future traffic congestion, which in turn should result in improved regional air quality. However, the action alternatives could cause minor shifts in traffic patterns which could result in localized air quality impacts.

Given the potential for Alternative 1 and Alternative 2 to result in modifications in traffic operations and Air Quality Study should be prepared to evaluate potential air quality impacts both in the near term and over the project planning horizon. As part of this analysis, the study will include a mobile source air toxics (MSAT) screening evaluation as well as a carbon monoxide hotspot analysis. The findings of the Air Quality Study will be incorporated into the environmental document.

The project is located in a nonattainment and maintenance area for criteria pollutants and is not exempt from either the regional or project-level conformity requirements. The project must conform to the Bay Area Air Quality Management District (BAAQMD) 2017 Clean Air Plan (CAP).The CAP is based on regional population, housing, and employment projections through 2050 complied by the Association of Bay Area Governments (ABAG). A project is considered to conflict with or obstruct implementation of a regional air quality plan if it would be inconsistent with the regional growth assumptions, in terms of population, employment, or regional growth in Vehicle Miles Travelled (VMT). As such, the Air Quality Study should include modeling and documentation of the project's conformity with ABAG's projections. As the action alternatives would potentially increase the capacity of I-280 and US 101, further analysis is needed to determine the potential for growth-inducing effects, a substantial change in VMT, and in turn, consistency with the CAP.

Because the action alternatives would affect highway operations, regional interagency consultation to discuss and gain consensus on conformity issues would be required, as defined by the Interagency Consultation requirements in the U.S. EPA Conformity Rule at 40 CFR 93.105. The project would be required to complete FHWA's Transportation Conformity and NEPA Assumption Questions and Answers forms, as well as the Conformity Analysis Documentation checklist.

Additionally, the San Francisco Bay Area is designated as nonattainment for the 24-hour PM2.5 standard. If the action alternatives are considered to require further evaluation of PM2.5, a PM2.5 hot-spot evaluation should be included as part of the Air Quality Study to ensure conformity with the Clean Air Act.

Construction of Alternative 1 and Alternative 2 would involve varying degrees of earth movement, pavement removal, installation of new pavement, and other associated activities. The Air Quality Study will include a quantification of construction period emissions for criteria pollutants, including that produced by construction equipment and fugitive dust. Avoidance measures, including but not limited to standard Best Management Practices established by the BAAQMD, is likely to be incorporated into the recommendations of the report in order to reduce construction emissions.

8.13 Noise and Vibration

The project is a type I project, as defined by 23 CFR 772, and must comply with applicable FHWA noise standards. As the action alternatives would increase the capacity of the US 101 and I-280 corridors, there is the potential for a change in existing noise patterns that could adversely affect both existing and planned sensitive receptors in the vicinity of the project limits. For example, widening associated with Alternative 1 could shift traffic closer to adjacent noise sensitive land uses, thus increasing the ambient noise environment in those areas. There would be no difference in the level of noise impact evaluation required between the alternatives, as described below.

A Noise Study Report (NSR) will be prepared to determine the full extent of noise impacts associated with Alternative 1 and Alternative 2. Should substantial noise increases be identified, abatement measures should be considered in terms of both feasibility and reasonableness, weighing cost to construct against the number of benefitted receivers.

Because the implementation of Alternative 1 and Alternative 2 is likely to require substantial construction activity over a period of many months, the NSR will include a construction noise assessments that evaluates potential noise and vibration effects, and if warranted, proposed appropriate measures to minimize temporary impacts. The NSR will comply with the Traffic Noise Analysis Protocol (TNAP) per Caltrans' Standard Environmental Reference (SER) guidelines.

8.14 Energy and Climate Change

At present, the US 101 and I-280 corridors experience significant congestion; such congestion can in turn increase emissions of carbon dioxide (CO2), a key greenhouse gas. To the extent a project relieves existing and projected future traffic congestion by enhancing operations and improving travel times in high congestion travel corridors, the action alternatives could result in CO2 emission reductions. An appropriate greenhouse gas emissions analysis should be prepared as part of the environmental document. The environmental document will include a quantitative analysis of the operation of the project relative to greenhouse gas emission and climate change effects. The analysis will be prepared in accordance with Caltrans' most current guidance at the time the environmental document is prepared. The environmental document will include Caltrans' boilerplate language regarding greenhouse gas emissions and will follow the most current methodology from Caltrans' SER materials.

8.15 Biological Environment

For the purposes of this preliminary assessment of biological resources, a conservative biological study area (BSA) was established that encompasses the maximum project footprint (all action alternatives). The information below presents the preliminary findings from the biological database reviews and literature research that was conducted for the project in November 2018. A Natural Environment Study (NES) will be prepared to determine the specific sensitive species in the BSA. An Aquatic Resources Delineation and report would be necessary, as it is likely that wetlands are present along the US 101 and I-280 corridors. There would be no difference in the level of biological evaluation required between the alternatives. However, Alternative 2 presents minimum footprint options that would likely have less direct and indirect impacts to natural resources than Alternative 1, which requires more freeway widening.

Trees may need to be removed for the widening of lanes and the construction of associated structures. A tree survey would be recommended for inclusion in the biological technical report.

The California Native Diversity Database (CNDDB, [2018]) was utilized to determine what special-status species could occur in the BSA. The majority of the BSA is located within a highly urbanized area with a network of heavily trafficked roadways. However, there are several natural areas along the freeway corridor may provide habitat for special-status wildlife species and one special-status fish species. **Table 6** provides a list of these areas and the segments in which they occur.

Table 6. Biologically Sensitive Areas within the Project Corridor

Segment No.	Natural Areas	Habitat Feature
1	San Bruno Channel	Tidally influenced channel
2	Colma Creek	Tidally influenced channel
2,3	San Bruno Mountain	Grasslands, coastal scrub
3	Brisbane Lagoon	Tidally influenced waters, remnant salt marsh
3	Bay shoreline	Open bay waters, sparse salt marsh
4	Bayview Park	Annual grassland, coastal scrub, sensitive plants
6	Islais Creek	Tidally influenced channel
6	Mission Creek	Tidally influenced channel

According to the CNDDB, four special-status wildlife species and four special-status fish species were identified as having the potential to exist within the BSA. In addition, the possibility of rare plants potentially occurring in the vicinity of San Bruno Mountain and Bayview Park cannot be ruled out.

American peregrine falcons (*Falso Peregrinus anatum*) have nested on structures at the San Francisco International Airport, and could nest on tall buildings in the BSA. There is abundant suitable nesting habitat for birds protected by the Migratory Bird Treaty Act (MBTA), including overcrossing structures and bridges, and vegetation along freeways. The widening of bridges, overcrossings, and undercrossing structures could also affect roosting bats which are protected under California law under *Fish and Game Code* Sections 20000, 2002, 2014, and 4150, as well as under *California Code of Regulations* Section 251.1. Freshwater marshes, ponds, canals, and grasslands could provide habitat for San Francisco garter snake.The San Bruno Mountains has populations of Mission blue butterfly (*Plebejus icariodes missionensis*) and Callippe silverspot butterfly (*Speyeria callippe callippe*). The San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) is listed as Federally Threatened (FT); Mission blue butterfly (*Plebejus icariodes missionensis*) is Federally Endangered (FE); and Callippe silverspot butterfly (*Speyeria callippe callippe*) is FE.

Tidally influenced creeks and waters of the San Francisco Bay provide habitat for longfin smelt (*Spirinchus thaleichthys*), a species that is known to occur in the San Francisco Bay. Other fish species that could occur in these areas during migration or foraging include green sturgeon (*Acipenser medirostris*), steelhead (*Ornchorynchus mykiss irideus*), and chinook salmon (*Ornchorynchus tshawytscha*). The longfin smelt (*Spirinchus thaleichthys*) is federally listed as a

species of special concern (FC); green sturgeon (*Acipenser medirostris*) is FT; steelhead (*Ornchorynchus mykiss irideus*) is FT; and chinook salmon (*Ornchorynchus tshawytscha*), FE.

Alternative 1

Segment 1: Most of the work in Segment 1 is proposed to occur in the existing paved roadways and shoulders. The West of Bayshore Property, a long-term conservation easement owned and managed by the San Francisco International Airport, supports populations of California red-legged frog (*Rana draytonii*) and San Francisco garter snake (*Thamnophis sirtalis tetrataenia).* There are natural areas (grassland and aquatic features) that are associated with this property. A utility corridor and vegetated natural areas around US 101 and the I-380 interchange extend along the west side of US 101 beginning at the southern end of Segment 1 and terminating just north of the U.S. Route 101/I-380 Interchange. There is also aquatic and natural vegetation on the east side of U.S. Route 101 in this area.

Segments 2, 3, 4, 5, and 6: Alternative 1 would require the widening of US 101 in these segments (some in only the northbound direction, and some in both directions). This could require impacts to some of the habitat features previously listed.

Alternative 2

Most work would occur in existing paved areas, however special-status species previously listed could be impacted and would need to be included in a biological resources technical study.

It is anticipated that the following regulatory permits/approvals would be required for project components that propose alterations to water crossings or impacts to adjacent natural habitat:

- CDFW 1602 Streambed Alteration Agreement permit
- San Francisco Bay RWQCB 401 Water Quality Certification permit
- U. S. Army Corps of Engineers (USACE) Section 404 permit
- San Francisco Bay Conservation and Development Commission Administrative Permit
- San Francisco Tree Preservation Ordinance No. 1271-2000, Municipal Code Chapter 13:30, Protected tree pruning or removal permit.
- Section 7 Consultation, U.S. Fish and Wildlife Service (USFWS).

8.16 Cumulative Impacts

Cumulative impacts occur as a result of the combined actions of multiple projects. Even when an individual project does not have significant impacts, in combination with other related projects, these cumulative effects may be considerable. The cumulative study area varies by topic area and should include a list of anticipated

future projects along the US 101 and the I-280 corridor. The project area consists of urbanized areas that are largely built-out or planned for future development, with the exception of open space, public facilities and parks land, and the marsh/lagoon/Bayfront areas within Brisbane. As such, the environmental document will have to establish a list of potentially approved future projects in the vicinity of the project limits that could cumulatively impact environmental resources.

Potential cumulative impacts for the action alternatives would generally be related to traffic, noise, and air quality/greenhouse gas emission issues resulting from regional growth. These cumulative impacts are therefore generally accounted for in the long-term scenarios of the noise, air quality, and greenhouse gas emissions technical reports, which would be based in part on the regional growth projected in the traffic operation analysis. Other cumulative impacts to which the action alternatives could contribute include the loss of biological resources or wetlands.

8.17 Context Sensitive Solutions

Caltrans uses Context Sensitive Solutions (CSS) to integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. CSS are reached through a collaborative, interdisciplinary approach involving all stakeholders, engaged through early coordination with agencies as well as early outreach to the community.

The two action alternatives have been proposed in part because of the issues of context sensitivity. Alternative 2 would meet the purpose and need of the project but would achieve this through more intensive use of the existing freeway right-of-way. In contrast, the Alternative 1 would also meet the purpose and need, but would require more intensive construction methods and right-of-way acquisitions to accommodate the freeway widening. Both alternatives would be carried through the environmental documents to clearly demonstrate the pros and cons of each relative to context sensitivity.

9. Summary Statement for PSR or PSR-PDS

Caltrans will act as the lead agency in the preparation of this joint NEPA/CEQA environmental document. Caltrans will serve as the NEPA lead agency under its assumption of responsibility pursuant to 23 U.S. Code 327. It is expected that the environmental technical reports and the IS/EA would take approximately 23 months (see **Attachment C**) to prepare and process for the final certification/approval including time for coordination with the partner agencies and the environmental division staff within Caltrans, but does not include time for permitting by federal or state resource agencies.

It is anticipated that multiple environmental studies and reports will be required for this project. Key issues include the potential adverse impacts to waters of the U.S. and natural habitat areas adjacent to the freeway corridors; property acquisitions (no

displacement); impacts to cultural resources; and water quality impacts. Alternative 1 is the most intrusive to the existing environment given the required freeway widening and structural improvements, with Alternative 2 being the least likely to impact resources within the project limits. Nonetheless, the technical studies that will be required are similar for both action alternatives. The Alternative 1 is likely to trigger the most substantial permitting and approval requirements associated to potential work within and surrounding the waterway crossings.

See **Attachment A** of this PEAR for the complete list of environmental studies and reports that would be prepared for this project.

10. Disclaimer

This PEAR provides information to support programming of the proposed project. It is not an environmental determination or document. Preliminary analysis, determinations, and estimates of mitigation costs are based on the project description provided in the Project Study Report (PSR). The estimates and conclusions in the PEAR are approximate and are based on cursory analyses of probable effects. A reevaluation of the PEAR will be needed for changes in project scope or alternatives, or in environmental laws, regulations, or guidelines.

11. List of Preparers

Cultural Resources specialist Barb Siskin, Far Western Anthropological Research Group, Inc. Meta Bunse, JRP Historical Consulting	Date: 11/5/2018 and 10/31/18
Biologist Sandy Etchell, WRECO/WMH	Date: 11/6/2018
Community Impacts specialist Nicole Cuevas	Date: 11/5/2018
Noise and Vibration specialist Nicole Cuevas	Date: 11/5/2018
Air Quality specialist Nicole Cuevas	Date: 11/5/2018
Paleontology specialist/liaison Nicole Cuevas	Date: 11/5/2018
Water Quality specialist Analette Ochoa, WRECO/WMH	Date: 11/6/2018
Hydrology and Floodplain specialist Analette Ochoa, WRECO/WMH	Date: 11/6/2018
Hazardous Waste/Materials specialist Nicole Cuevas	Date: 11/5/2018

Visual/Aesthetics specialist Nicole Cuevas	Date: 11/5/2018
Energy and Climate Change specialist Nicole Cuevas	Date: 11/5/2018
PEAR Preparer (Name and Title) Jennifer Gallerani, Senior Project Manager	Date: 11/9/2018

12. Review and Approval

I confirm that environmental cost, scope, and schedule have been satisfactorily completed and that the PEAR meets all Caltrans requirements. Also, if the project is scoped as a routine EA, complex EA, or EIS, I verify that the HQ DEA Coordinator has concurred in the Class of Action.

_____ Date: _____
Environmental Branch Chief

_____ Date: _____
Project Manager

REQUIRED ATTACHMENTS:

Attachment A: PEAR Environmental Studies Checklist
Attachment B: Estimated Resources by WBS Code [provided by Caltrans]
Attachment C: Schedule (Gantt Chart)
Attachment D: PEAR Environmental Commitments Cost Estimate (Standard PSR)

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Attachment A:
PEAR Environmental Studies Checklist

Attachment A: PEAR Environmental Studies Checklist

Rev. 08/2018

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
Land Use	☐	☐	☒	**L**	CIA
Wild and Scenic River Consistency	☒	☐	☐	**L**	
Coastal Management Plan	☒	☐	☐	**L**	
Growth	☐	☐	☒	**L**	CIA
Farmlands/Timberlands	☒	☐	☐	**L**	
Community Impacts	☐	☐	☒	**L**	CIA
Community Character and Cohesion	☐	☐	☒	**L**	CIA
Relocations	☒	☐	☐	**L**	
Environmental Justice	☐	☐	☒	**L**	CIA
Utilities/Emergency Services	☐	☐	☒	**L**	CIA
Visual/Aesthetics	☐	☐	☒	**L**	VIA
Cultural Resources:	☐	☐	☒	**M**	ASR, HASR, HRER, HPSR
Archaeological Survey Report	☐	☐	☒	**M**	ASR
Historic Resources Evaluation Report	☐	☐	☒	**M**	HRER
Historic Property Survey Report	☐	☐	☒	**M**	HPSR
Historic Resource Compliance Report	☒	☐	☐	**L**	
Section 106 / PRC 5024 & 5024.5	☐	☐	☒	**M**	HPSR
Native American Coordination	☐	☒	☐	**L**	Letters to Tribes
Finding of Effect	☐	☐	☒	**L**	FONAE
Data Recovery Plan	☒	☐	☐	**L**	
Memorandum of Agreement	☒	☐	☐	**L**	
Other: HASR	☒	☐	☐	**L**	HASR
Hydrology and Floodplain	☐	☐	☒	**L**	LHS
Water Quality and Stormwater Runoff	☐	☐	☒	**L**	WQR
Geology, Soils, Seismic and Topography	☐	☐	☒	**L**	PGR
Paleontology	☐	☐	☒	**L**	PER
PER	☐	☐	☒	**L**	PER
PMP	☒	☐	☐	**L**	
Hazardous Waste/Materials:	☐	☐	☒	**L**	ISA, PSI
ISA (Additional)	☐	☐	☒	**L**	ISA
PSI	☐	☐	☒	**L**	PSI
Other:	☒	☐	☐	**L**	
Air Quality	☐	☐	☒	**L**	AQ Study
Noise and Vibration	☐	☐	☒	**L**	NSR
Energy	☒	☐	☐	**L**	DED
Climate Change and Sea Level Rise	☒	☐	☐	**L**	DED
Biological Environment	☐	☐	☒	**L**	NES
Fish Passage	☐	☐	☒	**L**	
Wildlife Connectivity	☒	☐	☐	**L**	
Natural Environment Study	☐	☐	☒	**L**	NES
Biological Assessment Section 7:	☐	☐	☒	**L**	
Formal	☐	☐	☒	**L**	

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
Informal	☒	☐	☐	L	
No effect	☒	☐	☐	L	
Section 10	☒	☐	☐	L	
USFWS Consultation	☐	☐	☒	L	
NMFS Consultation	☐	☐	☒	L	
Species of Concern (CNPS, USFS, BLM, S, F)	☐	☐	☒	L	FC
Wetlands & Other Waters/Delineation	☐	☐	☒	L	
404(b)(1) Alternatives Analysis	☒	☐	☐	L	
Invasive Species	☒	☐	☐	L	
HMMP	☒	☐	☐	L	
CDFW Consistency Determination	☒	☐	☐	L	
2081	☒	☐	☐	L	
Other:	☒	☐	☐	L	
Cumulative Impacts	☒	☐	☐	L	DED
Context Sensitive Solutions	☒	☐	☐	L	DED
Section 4(f) Evaluation	☐	☐	☒	L	No Use
Permits:					
401 Certification Coordination	☐	☐	☒	L	
404 Permit Coordination, IP, NWP, or LOP	☐	☐	☒	L	
1602 Agreement Coordination	☐	☐	☒	L	
Local Coastal Development Permit Coordination	☒	☐	☐	L	
State Coastal Development Permit Coordination	☒	☐	☐	L	
NPDES Coordination	☐	☐	☒	L	NPDES Permit
TRPA	☒	☐	☐	L	
BCDC	☐	☐	☒	L	

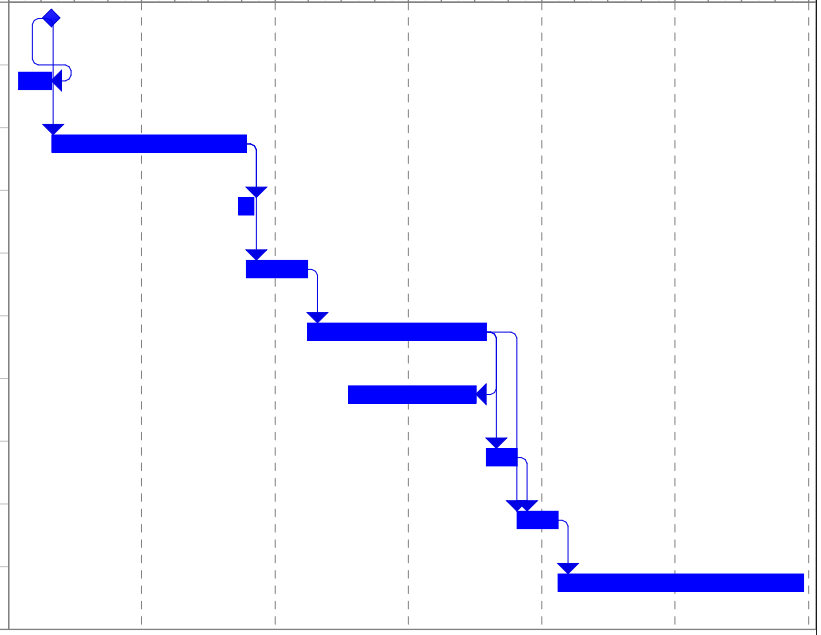
Attachment B:
Estimated Resources by WBS Code

Attachment C:
Schedule (Gantt Chart)

SFCTA US 101 / I-280 Managed Lanes
Conceptual Schedule

EA 04-3J100K

ID	Task Name	Duration	Start	Finish
1	Initiate PA&ED Phase	1 day	Mon 4/29/19	Mon 4/29/19
2	Early Technical Studies / Prepare Base Mapping	65 days	Mon 1/28/19	Mon 4/29/19
3	Technical Studies / Draft Environmental Document	380 days	Tue 4/30/19	Mon 10/12/20
4	Circulate DED	30 days	Tue 9/22/20	Mon 11/2/20
5	Final Environmental Document/Project Approval	120 days	Tue 10/13/20	Mon 3/29/21
6	PS&E / Permits	350 days	Tue 3/30/21	Mon 8/1/22
7	R/W Engineering	250 days	Tue 7/20/21	Mon 7/4/22
8	RTL	60 days	Tue 8/2/22	Mon 10/24/22
9	Advertise / Award	80 days	Tue 10/25/22	Mon 2/13/23
10	Construction	480 days	Tue 2/14/23	Mon 12/16/24



Printed Tue 11/20/18

Attachment D:
PEAR Environmental Commitments Cost Estimate

Attachment D: PEAR Environmental Commitments Cost Estimate

(Cost is the same for each Action Alternative)

PART 1 PROJECT INFORMATION *rev. 08/13*

District-County-Route-Post Mile 4 SF/SM US 101/I-280 SM-101 PM 19.3/26.1 SF-101 PM 0.0/2.3 SF-280 PM 3.9/7.5	EA: 04-3J100K
Project Description: The California Department of Transportation (Caltrans); in cooperation with the San Francisco County Transportation Authority (SFCTA), the San Francisco Municipal Transportation Agency (SFMTA), and the San Mateo County Transportation Authority (SMCTA); propose to construct an approximately 11-mile managed lane (ML) facility on northbound and southbound US Route 101 (US 101) and Interstate 280 (I-280). The proposed project would provide a ML facility on US 101 and I-280 from just north of I-380 in San Mateo County to the terminus of I-280 at 5th and King Streets in the City of San Francisco. The ML facility would dedicate one lane on portions of US 101 and I-280 within the project limits for High Occupancy Vehicles (HOV). Consistent with other carpool lanes in the Bay Area, these lanes could have occupancy requirements of either two or three people. Price management in the form of express lanes would also be used in conjunction with the HOV configuration. The HOV/express lanes would be free for eligible carpools and buses, while also being accessible to other vehicles by paying a fee which would vary based on demand.	
Form completed by (Name/District Office): Caltrans District 4	
Project Manager: Nidal Tuqan	Phone Number: (510) 286-5542
Date: 11/15/2018	

PART 2 PERMITS AND AGREEMENTS

	Permits and Agreements **($$)**
☒ Fish and Game 1602 Agreement	$5,000.00
☐ Coastal Development Permit	
☐ State Lands Agreement	
☒ Section 401 Water Quality Certification	$4,500.00
☒ Section 404 Permit – Nationwide (U.S. Army Corps)	$5,500.00
☐ Section 404 Permit – Individual (U.S. Army Corps)	
☐ Section 10 Navigable Waters Permit (U.S. Army Corps)	
☐ Section 9 Permit (U.S. Coast Guard)	
☒ Other: BCDC	$12,000
Total (enter zeros if no cost)	$27,000

PART 3. ENVIRONMENTAL COMMITMENTS FOR PERMANENT IMPACTS

To complete the following information:

- Report costs in $1,000s.
- Include all costs to complete the commitment:
  - O.K. to break down by phase: Design, ROW, Construction, and/or provide Sub-Total.
  - Capital outlay and staff support. Refer to Estimated Resources by WBS Code. For example, if you estimated 80 hours for biological monitoring (WBS 235.35 Long Term Mitigation Monitoring), convert those hours to a dollar amount for this entry. For current conversion rates from PY to dollars, see the Project Manager.
  - Cost of right of way or easements.
  - If compensatory mitigation is anticipated (for wetlands, for example), insert a range for purchasing credits in a mitigation bank.
  - Long-term monitoring and reporting
  - Any follow-up maintenance
  - Use current costs; the Project Manager will add an appropriate escalation factor.
  - This is an estimating tool, so a range is not only acceptable, but advisable.

Environmental Commitments For Action Alternatives					
	Estimated Cost in $1,000's				Notes
	Phases				
	Design	ROW	Construction	Sub-Total	
Noise abatement or mitigation					
Special landscaping					
Archaeological resources					
Biological resources	6,000				Mitigation
Historical resources					
Scenic resources					
Wetland/riparian resources	1,400				Mitigation
Res./bus. relocations					
Other:					
Total (enter zeros if no cost)	7,400				