CEQA FINDING NO. N-4

NOISE

Impact: **N-4: Noise levels from new equipment proposed for the Concord Station could result in noise levels exceeding 55 dBA L_{dn} at nearby noise sensitive areas.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

The proposed changes to the Concord Station would include a new surge pump, replacement shipping pumps, and a new hydraulic power system for the new surge system. The surge pump motor (1,200 horsepower) and other new systems could be substantial stationary sources of noise. If new stationary sources of noise would cause more than 55 dBA L_{dn} at the nearest noise sensitive area in Concord, at least one-quarter mile away, south of State Route 4, then a significant impact would occur. In order to meet this criterion, all new equipment would need to generate less than 75 dBA at the station. As such, the operational noise impacts from changes at the Concord Station would be potentially significant.

Mitigation Measure N-4a (Concord Station Noise Limits) requires SFPP to design the new equipment at the Concord Station to ensure compliance with the 75 dBA limit. When considering natural noise attenuation with distance, this measure forces the new stationary sources to cause less than 55 dBA at the nearest noise sensitive area in Concord.

Summary. This impact is found to be less than significant following mitigation.

CEQA FINDING NO. US-1

UTILITIES AND SERVICE SYSTEMS

Impact: **US-1: Pipeline construction could accidentally damage existing utilities lines.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

As a standard construction practice, SFPP will contact Underground Service Alert and manually probe for existing buried utilities in the Proposed Project pipeline corridor prior to any powered-equipment excavation. Given the large number of utilities that are present in the pipeline corridor, some service disruptions during construction are likely to be unavoidable at a few locations along the ROW. These disruptions could occur while the pipeline is laid in the trench and the interrupted utility reconnected around the new pipeline placement. Accidental outages can also occur, leaving adjacent homes and businesses without water, electricity, or phones for short periods of time. Accidental outages are considered to be potentially significant impacts.

Mitigation Measure US-1a (Protection of Underground Utilities) requires SFPP to research the locations of existing utilities and to gather construction plans that illustrate utility locations, to coordinate with local jurisdictions to ensure that existing facilities are avoided and protected, and to obtain proper permits and agreements with the utility operators. Mitigation Measure US-1a ensures that, utility service disruption during construction, primarily through avoidance, will occur less frequently and adjacent landowners will experience less inconvenience from the construction activities.

Summary. This impact is found to be less than significant following mitigation.

CEQA FINDING NO. US-2

UTILITIES AND SERVICE SYSTEMS

Impact: **US-2: Large quantities of water would be used during project construction for dust suppression and hydrostatic testing. The water demands of the project may burden the water supply of local water providers.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

Approximately 120,000 gallons of water per day during the eight-month construction period will be necessary for dust suppression and 5.4 million gallons of water will be required for hydrostatic testing. Several construction spreads will work simultaneously along the pipeline route. These operations could use either potable water or reclaimed water. This water demand can place a substantial burden on local water providers, a potentially significant impact.

Mitigation Measure US-2a (Use of Reclaimed Water) requires SFPP to make special provisions to obtain and use reclaimed water, where it is available. Local water supplies will be available as needed to other water users and construction water use will appropriately be served with non-potable water where it is available.

Summary. This impact is found to be less than significant following mitigation.

CEQA FINDING NO. T-1

TRAFFIC AND TRANSPORTATION

Impact: **T-1: The proposed pipeline would be installed within the public ROW in a number of roadways, causing traffic congestion and construction equipment safety hazards.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

The proposed pipeline would traverse a number of streets with varying degrees of daily through traffic volumes. Many arterial and collector roadways, as well as rural and local roadways may potentially be blocked for period of at least 48 hours. Therefore, the impacts of pipeline construction on roadway blockage and traffic congestion would be potentially significant.

During construction activities, a short-term increase in the potential for accidents involving motor vehicles, bicycles, and/or pedestrians would occur. Because of the temporary disruption to traffic flow, the removal of lanes, the presence of construction equipment in the public ROW, and the localized increase in traffic congestion, drivers will be presented with unexpected driving conditions and obstacles. This could potentially result in an increased occurrence of automobile accidents, a potentially significant impact.

Mitigation Measure T-1a (Limit Lane Closures) prohibits lane closures during rush hours in urban areas. Mitigation Measure T-1b (Traffic Control Plans) requires SFPP to develop and implement detailed and approved traffic control plans to address how construction would affect local transportation. This could lead to use of speed restrictions, flaggers, warning signs, and lights. Such measures will make motorists more aware of construction equipment and activities and slow traffic to protect both motorists and workers near and within the construction zone. Mitigation Measure T-1c (Construction Equipment Safety) requires SFPP to operate construction equipment in a manner that is street-legal, and within designated work areas, to avoid disrupting traffic and increase safety.

When taken together, Mitigation Measures T-1a, T-1b, and T-1c minimize impacts on roadway blockage, equipment safety, and traffic congestion, and they ensure that the potential for accidents will be reduced. See also CEQA Finding No. S-1.1 at page A-3.

Summary. This impact is found to be less than significant following mitigation.

CEQA FINDING NO. T-2

TRAFFIC AND TRANSPORTATION

Impact: **T-2: Construction could temporarily block access to and for parking adjacent businesses, residences, and/or other property.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

Construction equipment, activities, or the open trench could block access to a parking lot, parking structure, or a critical land use (such as a school, business, residence, other construction project, or recreation area). This impact would be potentially significant unless mitigation measures are implemented.

Mitigation Measures T-2a (Minimize Access Concerns) and T-2b (Notification of Roadway Construction) require scheduling construction to avoid the hours and days of week that is most likely to disrupt an adjacent land use. In all areas, the schedules for restricted access must be approved in advance by the local jurisdictions. Notification of potential obstruction of access and access alternatives will also be required. These measures also include steps to facilitate coordination between SFPP and adjacent land uses. These measures will minimize impacts to property access because they ensure that at least one access driveway is left unblocked during all business hours or hours of use, and they ensure coordination with landowners and business operators.

Summary. This impact is found to be less than significant following mitigation.

CEQA FINDING NO. T-3

TRAFFIC AND TRANSPORTATION

Impact: **T-3: Construction activities could block pedestrian access or established bicycle routes.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

Construction activity could block pedestrian or bicycle routes where they cross the alignment or are parallel to the alignment (i.e., sidewalks, shoulders, unpaved paths, and bike trails). Additionally, since construction could disrupt bicycle routes, sidewalks, shoulders, and pedestrian crossings, pedestrians and bicyclists may enter the affected streets and highways and risk a vehicular-related accident. This impact is considered to be potentially significant.

Mitigation Measure T-3a (Pedestrian/Bicycle Access) requires that SFPP provide alternative access routes that allow safe pedestrian and bicycle movement, and that such routes are identified with signs. Other measures, defined in Findings No. T-1 and T-2 above, would also improve safety for pedestrians and bicyclists because they require preparation of traffic control plans (Mitigation Measure T-1b) and notification regarding construction in roadways (Mitigation Measure T-2b). Implementation of these actions will ensure that pedestrians and bicyclists can safely travel through or avoid construction areas.

Summary. This impact is found to be less than significant following mitigation.

CEQA FINDING NO. T-4

TRAFFIC AND TRANSPORTATION

Impact: **T-4: Pipeline construction activities could block immediate access to emergency response traffic.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

Construction activities occurring in or adjacent to roadways could interfere with the travel of emergency response vehicles (ambulance, fire, paramedic, and police vehicles). The loss of lanes and the resulting increase in congestion could lengthen the response time required for emergency vehicles passing through the construction zone. Moreover, there is a possibility that emergency services may be needed at a location where access is temporarily blocked by the construction zone. This impact is considered to be potentially significant.

Mitigation Measure T-4a (Emergency Service Providers) requires that SFPP coordinate with the emergency service providers along the pipeline route at least 30 days before construction starts so providers can develop alternate routes. SFPP must also be prepared at the construction site to facilitate passage of emergency vehicles, such as quickly providing steel plates for covering open trench, and the identification of short detours or alternate routes. These provisions will allow emergency vehicles to pass through or across the construction area with a minimum of delay.

Summary. This impact is found to be less than significant following mitigation.

CEQA FINDING NO. T-5

TRAFFIC AND TRANSPORTATION

Impact: **T-5: Construction activities would generate additional traffic on roadways in the project area and use existing parking spaces.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

Construction activities result in the short-term addition of automobile traffic and truck trips because of workers commuting to construction yards and construction vehicles traveling to and from staging areas. In general, the short-term loss of parking spaces and minor traffic increases would not create significant impacts, but near staging areas where vehicles and traffic is more concentrated, greater disturbance would occur.

Mitigation Measure T-5a (Coordination on Staging Areas) requires that SFPP to submit the location of each staging area and its transportation access requirements for review and approval by each local jurisdiction. SFPP must submit detailed information on the proposed use of the site, including the number of vehicles to be parked, equipment to be stored, and the duration of site use. This information will allow local jurisdictions to determine the extent of site-specific disturbance and to recommend modifications to SFPP's plans to reduce traffic safety or parking concerns.

Other measures previously identified related to Traffic and Transportation would also minimize traffic safety and operational problems, for example, through development of the Traffic Control Plan (Mitigation Measure T-1a). With implementation of Mitigation Measures T-1a and T-5a, construction traffic and vehicle and equipment parking will occur in a safe manner that minimizes loss of parking.

Summary. This impact is found to be less than significant following mitigation.

CEQA FINDING NO. T-6

TRAFFIC AND TRANSPORTATION

Impact: **T-6: Pipeline construction could damage roadways.**

Class: II

Finding(s):

a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

b) Such changes or alterations are within the responsibility and jurisdiction of Caltrans and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

FACTS SUPPORTING THE FINDING(S)

Construction within or adjacent to roadways can damage or alter road surfaces, first as a result of trenching and repaving, and also as a result of heavy equipment traffic. In particular, road drainage features (e.g., structures or rolling dips in the road) and pavement can be damaged by construction vehicles or improper restoration techniques. This impact is considered potentially significant.

Mitigation Measure T-6a (Restoration of Roads) requires SFPP to repair all road surfaces damaged or disturbed by construction activities to the satisfaction of the local jurisdiction. The measure specifically requires protection of drainage structures and reconstruction of such structures so that drains function properly. With implementation of this measure, all damage to roads that occurs during construction will be repaired when construction is completed.

Summary. This impact is found to be less than significant following mitigation.

CEQA FINDING NO. T-7

TRAFFIC AND TRANSPORTATION

Impact: **T-7: Construction activities could physically block bus routes resulting in the disruption of transit services.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

Construction on or adjacent to roadways can require lane closure, blocking public transit from using the portions of those roadways that are normally used. Buses could continue to operate, as the streets would not be totally blocked; however, there may be traffic delays and some bus stops may be rendered temporarily inaccessible for a period of up to one week if they are located immediately adjacent to the pipeline route. Impacts on bus traffic could be potentially significant.

Mitigation Measure T-7a (Coordinate with Public Transit) requires SFPP to work with public transit operator to avoid disruption during construction. This coordination will allow development of solutions to identified transit problems (e.g., temporary relocation of bus stops and installation of appropriate notification signage).

Summary. This impact is found to be less than significant following mitigation.

CEQA FINDING NO. T-8

TRAFFIC AND TRANSPORTATION

Impact: **T-8: A rupture or leak of the proposed pipeline could result in the closure or restriction of use of a roadway.**

Class: II

Finding(s):

a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

b) Such changes or alterations are within the responsibility and jurisdiction of Caltrans and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

FACTS SUPPORTING THE FINDING(S)

In the event of a pipeline rupture or leak, cleanup activities and resulting construction could create blocked traffic lanes, restricted access, disruption of pedestrian/bicycle traffic, blocked emergency response, damage to road features and surfaces, and rail operations.

The disruption caused by accident clean up is would be reduced with the implementation of previously identified Mitigation Measures T-1a, T-1b, T-1c, T-2a, T-2b, T-3a, T-4a, T-6a, and T-7a. These measures define specific actions that SFPP must take to ensure traffic safety, minimize congestion, and reduce disturbance to traffic flow

Summary. This impact is found to be less than significant following mitigation.

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CEQA FINDING NO. T-9

TRAFFIC AND TRANSPORTATION

Impact: **T-9: Construction activities within the railroad ROW could disturb railroad operations.**

Class: III

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

Portions of the pipeline project will follow the Existing Pipeline ROW Alternative route, which is within the UPRR railroad ROW on which both AMTRAK and freight trains move. Construction in the rail ROW would have only minor effects on railroad operations because train movements would not be disrupted and all railroad safety requirements will be met. Passenger access will be maintained at all rail passenger stations during operating hours. As a result, the impact to rail operations would be an adverse but less than significant impact.

Although this is not a significant impact, Mitigation Measure T-9a (Coordinate with Rail Operators) is recommended because it would help to further reduce any potential impact to rail operations. The measure requires SFPP to coordinate rail ROW construction with rail operators to ensure that construction activities are consistent with continuing rail operations. This coordination will allow construction to be completed without disturbing or delaying train traffic in the ROW.

Summary. This impact is found to be less than significant.

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CEQA FINDING NO. RCF-1

RECREATIONAL AND COMMERCIAL FISHERIES

Impact: **RCF-1: Pipeline construction across waterways could temporarily limit access to waterways for fishing.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

The proposed pipeline will cross 28 waterways tributary to the Bay in Contra Costa and Solano Counties. These waterways provide shallow water habitat for resident and migratory fish targeted by anglers. The waterways of greatest concern include Grayson, Walnut, Pacheco Creeks, Peyton Slough, Sulphur Springs Creek, Cordelia Slough, Suisun Creek, Ledgewood Creek, and Peytonia Slough as they are identified as harboring specific migratory and resident fishes targeted by anglers. Construction will occur during the times of year most popular for fishing (spring, summer, and fall). In addition, Walnut Creek, Grayson Creek, Pacheco Creek, Carquinez Strait, and Cordelia Slough are navigable and potentially accessible by boat. Without measures to protect anglers, this impact would be potentially significant.

Mitigation Measure RCF-1a (Notification to Anglers) requires SFPP to notify fishing interests who may not live in proximity to the ROW of impending construction by posting notices and schedules near the work areas. Mitigation Measure LU-1a (Construction Notification, related to Land Use, Public Recreation, and Special Interest Areas) requires notification of all parties (including anglers) who reside along the construction ROW and staging areas of impending construction. Anglers who use fishing areas along the construction corridor will be aware of the location and duration of construction and can plan to avoid these areas.

Summary. This impact is found to be less than significant following mitigation.

CEQA FINDING NO. RCF-2

RECREATIONAL AND COMMERCIAL FISHERIES

Impact: **RCF-2: Pipeline construction across waterways could disturb fisheries habitat.**

Class: II

Finding(s):

a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

b) Such changes or alterations are within the responsibility and jurisdiction of the CSFM, CDFG, DTSC, and RWQCB and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

FACTS SUPPORTING THE FINDING(S)

Fishing opportunities could be lost or displaced due to construction disturbance at all water crossings, but this is particularly of concern at Walnut Creek, Grayson Creek, Pacheco Creek, Cordelia Slough, Suisun Creek, and Ledgewood Creek (waterways that are navigable and/or are habitat for steelhead and salmon). Adverse effects at all water crossings, regardless of construction method, include potential disturbance to riparian vegetation by grading and vegetation removal, erosion of soils into the waterways, disturbance of streambeds due to erosion (potentially resulting in release of non-project related contaminants into waterways), reduced water quality due to accidental release of drilling fluids (also called "frac-outs" because drilling fluids follow fractures in rock and sediments), and alteration of streambeds. At or around the water crossings, habitat will be disturbed, which could have significant long and short-term effects on fish and human health.

The following mitigation measures (described more fully in previous Findings) would reduce the potentially significant impacts to fish habitat: Mitigation Measures BW-1a (Pre-construction Surveys), BW-1b (Establish Buffer Zones), BW-1c (Conduct Worker Training), BW-1d (Confine Activity to Identified ROW), BW-1e (Minimize Disturbance at Water Crossings) related to Biological Resources; Mitigation Measures EC-1a (Medium Potential Impact Sites), EC-1b (High Potential Impact Sites), EC-1c (Unknown Soil or Groundwater Contamination) related to Environmental Contamination; and Mitigation Measures HS-1a (Prepare Plans for Water Crossings), HS-1b (Open Cut Crossing Methods), HS-1c (Erosion Control Procedures), HS-3a (Response to Unanticipated Release of Drilling Fluids), HS-4a (Adequate Pipeline Burial and Protection), HS-6a (Floodplain Protection) related to Hydrology and Water Quality. These measures would protect aquatic habitats by preventing construction in sensitive areas, reduce sediment flow into waterways, and reduce the likelihood of drilling fluid release (and ensure fast response to such releases to minimize effects on water quality). Protection of aquatic habitats ensures continued opportunities for recreational and commercial fishing.

Summary. This impact is found to be less than significant following mitigation.

CEQA FINDING NO. RCF-3

RECREATIONAL AND COMMERCIAL FISHERIES

Impact: **RCF-3: Accidents during construction could contaminate fish habitat.**

Class: II

Finding(s):

a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

b) Such changes or alterations are within the responsibility and jurisdiction of the CSFM and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

FACTS SUPPORTING THE FINDING(S)

Accidents during construction can affect fishing access (if construction equipment blocks access to fishing sites) and can reduce the quality of fish habitat from fuel spills, accidental disposal of debris or materials into waterways and at HDD sites, release of drilling muds from the bore hole, frac-outs, and releases from excavated mud pits. Mitigation can reduce the effects of such access blockages and construction accidents. Impacts are potentially significant and several mitigation measures are presented to reduce impacts to the extent feasible.

Mitigation Measure RCF-3a (Debris Disposal Prevention) will prevent the disposal of debris or construction materials into waterways and ensures the collection of such debris if disposal does occur as a result of debris accidentally entering a waterway. SFPP will develop debris disposal procedures to ensure proper disposal. Additionally, Mitigation Measure HS-3a (Response to Unanticipated Release of Drilling Fluids) defines procedures for safe drilling under waterways. With these measures, water quality will be maintained so that fishing resources continue to be available.

Summary. This impact is found to be less than significant following mitigation.

CEQA FINDING NO. RCF-4

RECREATIONAL AND COMMERCIAL FISHERIES

Impact: **RCF-4: Accidents during operation could restrict fishing access, contaminate fish habitat and fishing gear.**

Class: I

Finding(s):

a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

c) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

Pipeline spills resulting in petroleum product in waterways could reduce available fisheries. The severity of impacts will depend on the following: size of the spill, composition of the product, characteristics of the spill (instantaneous vs. prolonged discharge, surface vs. subsurface spill, and so forth), environmental conditions and effect of weathering on spill properties and effectiveness of response and clean-up operations.

Significant impacts to recreational and commercial fisheries (including access to fishing areas, fish habitat and fishing gear) would result from accidental contact with product from the proposed pipeline. Shore side fishing areas at highest risk of spill contamination are western Suisun Bay, Honker Bay, the mouth of the Sacramento River, and Carquinez Strait. Depending on water and weather conditions, areas upstream of the confluence of the Sacramento and San Joaquin rivers may also suffer harm. In addition, marinas, launch ramps, and fishing access points may be threatened, contaminated or closed.

Mitigation Measure RCF-4a (Notice to Anglers After Accident) requires that SFPP provide notification at spill sites and that it warns fishing interests of possibly contaminated sites. This would be accomplished by posting notices at the spill site and at nearby or affected marinas, launch ramps, and fishing access points. Mitigation Measure S-2a (Supplemental Spill Response Plan) would also help to minimize this impact by ensuring a timely and effective response to spills. Compliance with the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act would also ensure that spill response was fast and effective.

Spill impacts on fisheries could remain significant over the short and long term. Over the short term (less than a year), opportunities may be lost while fishing areas are inaccessible during spill clean up or subsequent area closure. These impacts may be especially acute for anglers who depend on fishing for a major source of food. Over the long term, both recreational and commercial fishing interests could lose fishing opportunities if, for example, areas remain closed due to contamination or public fears of eating contaminated fish result.

Summary. This impact is found to be significant following mitigation. See Exhibit C, Statement of Overriding Considerations.

CEQA FINDING NO. EJ-2

ENVIRONMENTAL JUSTICE

Impact: **EJ-2: Disproportionate Impacts From a Pipeline Accident.**

Class: Potentially significant

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effects as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

A large or very large accidental spill, and its associated effects on safety, water quality, land use, and fishing, could have a significant environmental impact should the spill occur in any of the census block groups through which it passes. An environmental justice impact would occur if accidents or spills occurred predominantly or repeatedly in areas of high-minority or low-income populations. The likelihood that such spills might occur disproportionately in such areas is no greater than in other areas along the route.

The impact of any pipeline accident can be minimized by ensuring that an affected population can react to the accident and its impacts in a manner comparable to other populations and that mitigation of impacts is implemented in a fair and equitable manner for all populations within the defined area of potential effects.

Mitigation Measure EJ-2a (Spill Containment and Response) ensures that the spacing of spill containment and response equipment along the pipeline is determined by the density of hazard factors and populations at risk along the pipeline route. This information is to be documented in the Supplemental Spill Response Plan. Implementation of this measure will allow spill response to be efficient and effective regardless of population distribution, reducing any potentially disproportionate impacts.

Summary. This impact is found to be less than significant following mitigation.

Exhibit C. Mitigation Monitoring

As the Lead Agency under CEQA, the CSLC is required to adopt a program for reporting or monitoring regarding the implementation of mitigation measures for this project to ensure that the adopted mitigation measures are implemented as defined in the Final EIR. This Lead Agency responsibility originates in Public Resources Code Section 21081.6(a) (Findings), and CEQA Guidelines Sections 15091(d) (Findings) and 15097 (Mitigation Monitoring or Reporting).

Mitigation Monitoring Tables

The following sections present the mitigation monitoring tables for each environmental discipline (as presented in Sections D.2 through D.14 of the Draft EIR, with revisions in Section 4 of the Final EIR). Each table lists the following information, by column:

- Impact (impact number, title, and impact class).
- Mitigation Measure.
- Location (where the impact occurs and the mitigation measure should be applied).
- Monitoring/reporting action (the action to be taken by the monitor or Lead Agency).
- Effectiveness criteria (how the agency can know if the measure is effective).
- Responsible agency.
- Timing (before, during, or after construction; during operation, etc.).

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Table F-1. Mitigation Monitoring Program – Pipeline Safety and Risk of Accidents

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
S-1.1: Construction activities could create traffic hazards. (Class II)	**T-1b:** Prepare traffic control plans for local jurisdictions. (See full text below)	See below	See below	See below	See below	See below
S-1.2: Construction activities can damage other substructures, causing contamination, injury or death. (Class II)	**S-1a:** Minimize Effect on Other Underground Facilities. The Applicant shall monitor the construction contractor's compliance with existing State law, including the advance marking of all proposed excavations, the dates of all Underground Service Alert (USA) calls, and on-site meetings held with underground facility owners. The Applicant shall also require the construction contractor(s) to clear the right-of-way using a hand held line locator prior to excavation. Should changes in the alignment be required, the Applicant shall ensure that the entire one-call notification process is repeated to ensure that any reroute is thoroughly investigated. Prior to digging over, or within three feet of a known substructure, the Applicant shall require the construction contractor(s) to probe the area to positively locate the facility and measure the depth of the substructure; the Applicant shall also require the use of hand digging (including the use of air tools and/or vacuum extraction) within two feet (horizontal and vertical) of any existing substructure and within five feet of any pedestal, closure, riser guard, pole, meter of other structure. When paralleling an existing underground facility (within 5 feet), the facility shall be exposed approximately every 50 feet (but no greater than every 100 feet) to positively verify the location and depth of the line. When boring or directionally drilling, the boring equipment shall be placed such that it is boring away from the majority of other underground facilities. When such facilities must be crossed, they shall be exposed unless specific exemption is provided by the utility owner to verify their location and depth. If encroachment permits require exposure, then owner exemption is not applicable. The results may require that the bore route or depth be changed to avoid potential damage to the existing facility. If exemptions are received, SFPP shall maintain a list of those exemptions and provide it to the CSLC monitor. If during the course of the work, unmarked pipelines are encountered, the Applicant shall take appropriate measures to identify the owner of the facility. This shall include, but is not limited to the following substructure research: USA notification; research of City, County, and State records; and communication with other utility owners in the area. If the owner of the facility cannot be determined, the proposed pipeline shall be lowered to avoid any conflict. If it is impossible to avoid an existing substructure of unknown ownership or use, the pipe contents shall be positively identified before any cutting of the substructure is allowed; this shall be done by tapping or other means. The substructure may not be cut or removed until a safe procedure for doing so has been developed; this procedure will vary, depending on the pipe contents and site conditions. Once the facility has	Entire alignment	Verify pre-construction coordination; observe construction.	Reduces damage to existing facilities.	CSLC	Before and during construction

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Table F-1. Mitigation Monitoring Program – Pipeline Safety and Risk of Accidents

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	been removed, the remaining ends shall be capped using the same construction techniques as the substructure's original construction to prevent leakage should the substructure be pressured. Cathodic protection tests shall also be conducted. If the facility is cathodically protected, a bonding cable shall be installed to maintain the integrity of the facility's cathodic protection system. To protect the City of Benicia's 36-inch diameter sole water supply pipeline which parallels the proposed route along Lopes Road, SFPP shall finalize an agreement that defines measures to insure that this facility is adequately protected during construction (e.g., lateral separation, vertical separation at crossings, blasting limitations, potholing plans, etc.), operation (e.g., unintentional releases, fires, explosions, etc.), maintenance (e.g., cathodic protection; see also Mitigation Measure S-2f), and emergency response. At least 30 days prior to beginning construction, the Applicant shall submit a report to the CSLC (and any other agency with permit jurisdiction) for review and approval the final agreement on protective design measures defined above.					
S-1.3: Construction activities can cause fires, resulting in property damage, injury, or death. (Class II)	**S-1b** Minimize Risk of Fire. During all construction activities, the Applicant shall: • Maintain all areas within the 100-foot construction ROW clear of vegetation and other flammable materials for at least a 30-foot radius of any welding or grinding operations. In areas where an open flame is used, dry vegetation shall be removed from at least a 50-foot radius. Clearing of vegetation shall not extend beyond the construction ROW. Hot work shall be conducted within the 100-foot construction ROW such that the stated clearances can be maintained without extending beyond the construction ROW limits. • Spray nearby vegetation with water, using a water truck or other suitable equipment, prior to any welding or grinding operations or the use of an open flame. • All equipment, gasoline-powered hand tools, and vehicles shall be equipped with spark arresters. • Equip all vehicles entering the right-of-way, welding trucks or rigs with minimal fire suppression equipment (e.g., ax, bucket, 5 pound fire extinguisher, shovels, etc.). • Park vehicles equipped with catalytic converters only in cleared areas. • Maintain at least one half-full water truck or water tanker at each rural work site during all periods of work and for one-hour after all work has ceased for the day. • Require the contractor to use dedicated fire watch during all hot work within existing operational stations (e.g., Concord or Sacramento Station).	Entire alignment	Observe construction activities to verify compliance.	Minimizes personal injury, death, or property damage from fire during construction.	CSLC	During construction
S-2: A pipeline accident could	**S-2a:** Supplemental Spill Response Plan. SFPP shall develop a Supplemental Spill Response Plan (SSRP). This document will be incorporated into appropriate sec-	Entire alignment	Review and approval of plan.	Minimize effects in the event of a	CSLC, CSFM	Prior to approval of

Table F-1. Mitigation Monitoring Program – Pipeline Safety and Risk of Accidents

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
result in injury or fatalities to nearby public. (Class I)	tions of SFPP's Integrated Contingency Plan (ICP). The SSRP shall be provided to the CSLC, the California State Fire Marshal, and all jurisdictions along the pipeline ROW for review and comment prior to its finalization, and it must be approved by CSLC in conjunction with the California State Fire Marshal prior to the start of pipeline operation. The SSRP shall include the following lists or information: • A listing of areas of archaeological sensitivity (if any) within the potentially affected spill area, incorporating any discoveries made during construction. If such areas are identified, a qualified archaeologist approved by CPUC shall monitor all cleanup activities that involve excavation or grading. If the archaeologist identifies resources that cannot be avoided, the specific measures described in Mitigation Measures C-1, C-2 and C-3 shall be implemented after containment of the spill is completed. • A listing of sensitive land uses within 500 feet of the pipeline route, including schools, residences, religious facilities, recreational lands, other land uses with large concentrations of people, and environmentally sensitive habitat areas. The SSRP shall also present two Response Strategies (similar to the existing response strategies included in SFPP's Oil Spill Core Plan) to address potential accidents in the Concord to Sacramento environment: • Pipeline Failure in an Urban Environment (applicable in the Cities of Suisun City, Benicia, Fairfield, and West Sacramento), specifically describing response strategies requiring traffic control/diversion, prevention of product flow into storm drains, recovery of spilled product from storm drains or river systems, crowd control, and protection of users of nearby sensitive land uses (schools, hospitals, etc.). The strategy for responding to an urban spill shall specifically address and define appropriate response to fire and/or explosion. Where aspects of emergency response are handled or directed by local Fire Departments or other agencies, those agencies shall be contacted for input into the SSRP. • Spill Reaching the Delta or Carquinez Strait, specifically identifying sensitive habitats with priority for protection, sensitive species and their potential locations in the affected Delta, marine and coastal environment. The response strategy shall list sensitive species potentially occurring in the waterway or in the Strait, and describe methods of protecting those species in the event of the worst-case spill event. It shall define specific cleanup methodology and techniques for containment and cleanup in the harbor and on the shoreline. SFPP or its spill response contractor shall use the SSRP to evaluate storing equipment within one-half mile of the pipeline route between MP 9 and MP 15 to allow fast response to a spill that could affect the slough/marsh areas east of the route. Prior to pipeline operation, SFPP shall submit to the CSLC and the California State Fire Marshal for review and approval the proposed location of the equipment and the proposed list of spill response equipment.			spill.		construction

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Table F-1. Mitigation Monitoring Program – Pipeline Safety and Risk of Accidents

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
S-2: A pipeline accident could result in injury or fatalities to nearby public. (Class I)	**S-2b**: Leak Detection. The Applicant shall perform regular shut-in leak detection tests routinely, when the line is not flowing. The Applicant shall also install and maintain a leak detection system that has the capability of detecting unintentional releases in accordance with Table D.2-26, or a leak of 0.9 percent of the maximum pipeline flow-rate (9550 BPH) in 20 minutes.	Entire alignment	Review regular test results.	Reduce the impacts associated with slow releases.	CSLC, CSFM	During and after construction
S-2: A pipeline accident could result in injury or fatalities to nearby public. (Class I)	**S-2c**: Valve Review. At least 60 days prior to beginning construction, SFPP shall provide to the CSLC and the California State Fire Marshal for review and approval the documentation on all pipeline valves (including those added as a result of analytical assessment of the fault crossings and ground settlement and mitigation measures in the EIR), locations, technical specifications, foundation design details and piping and instrumentation diagrams, etc. The submittal shall include the following: • A detailed pipeline profile that clearly illustrates the topography, valve locations, and proposed method of actuation, along the final route. • The Applicant shall analyze at least 50 low points along the pipeline. The analyses shall be similar to those provided in Section D.2.3.7 for four spill scenarios. Where manual valves are being proposed, the affect of converting the valve to remote or automatic operation shall be presented. Where converting a valve from manual to remote or automatic operation would result in a significant reduction in spill volume, the Applicant shall either convert the valve to remote or automatic operation, or provide a compelling feasibility discussion. (At least one low point shall be analyzed between each set of proposed valves. The points selected for analysis shall be representative and shall be spread relatively evenly along the pipeline. Environmentally sensitive receptors shall be analyzed.) Specific information on the location of the proposed check valve at MP 20.1. An analysis shall be conducted to determine if the check valve would be more effective if it were relocated upstream of the hill which rises to an elevation of about 80 feet.	Entire alignment	Review of Applicant's final pipeline design	Increase effectiveness of valves.	CSLC, CSFM	Prior to approval of construction
S-2: A pipeline accident could result in injury or fatalities to nearby public. (Class I)	**S-2d:** Prevent Third-Party Damage. Between Mileposts 24.5 and 28.3 (Fairfield/ Suisun City) and Mileposts 68.5 and 69.0, SFPP shall evaluate measures defined in API 1160 for prevention of third-party damage. SFPP shall propose specific design features for recommended implementation in these areas. This information shall be presented to the CSLC and the California State Fire Marshal for review and approval at least 60 days before the start of construction.	MP 24.5 to 28.3 (Fairfield/ Suisun City) and MP 68.5 to 69.0	Approval of plans to minimize third-party damage and monitoring of implementation.	Minimize risk of pipeline rupture due to third-party damage.	CSLC, CSFM	Prior to start of construction
S-2.1: External corrosion can result in pipeline leaks or ruptures. (Class I)	**S-2e:** Conduct Pipeline Inspections. The Applicant shall conduct an internal pipeline inspection, using a modern instrumented internal inspection device (smart pig) and a caliper tool within 90 days of initial pipeline operation startup. Subsequent internal inspections shall be conducted every five years, or in accordance with 49 CFR 195, whichever occurs first. Defects shall be repaired in accordance with applicable codes, industry standards, and regulations.	Entire alignment	Review inspection reports.	Minimize the likelihood of external corrosion caused releases.	CSLC, CSFM	During and after construction

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Table F-1. Mitigation Monitoring Program – Pipeline Safety and Risk of Accidents

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
S-2.1: External corrosion can result in pipeline leaks or ruptures. (Class I)	**S-2f:** Ensure Proper Cathodic Protection. The Applicant shall conduct a close interval survey or DCVG coating anomaly (pipe camp) survey over the entire length of the new pipeline within six months of the hydrostatic test performed prior to operation. The surveys shall be conducted in accordance with NACE standards. If inadequate cathodic protection levels, cathodic protection interference, or coating damage is identified, these situations shall be corrected. The Applicant shall submit a report, documenting the survey(s) and repair(s) to CSLC and Office of the California State Fire Marshal, Pipeline Safety Division (and any other agency with permit jurisdiction), within six months after completing the survey(s). To ensure protection of the City of Benicia's sole source water pipeline and to monitor potential effects, SFPP shall provide a list of two to three independent corrosion engineers for City concurrence and selection to review cathodic protection test data for a period of one year after installation of the new products pipeline. SFPP shall fund this part-time position and any costs to remedy any identified problems related to cathodic protection. (These requirements are more restrictive than the minimum requirements included in 49CFR 195.)	Entire alignment	Review inspection reports.	Ensure that adequate cathodic protection levels are maintained.	CSLC, CSFM	During and after construction
S-2.2: Internal corrosion could cause a pipeline accident. (Class II)	**S-2e:** Conduct Pipeline Inspections. (See full text above)	See above	See above	See above	See above	See above
S-2.3: Third party damage could cause a pipeline accident. (Class I)	**S-2g:** Pipeline Markers. The Applicant shall install and maintain durable line markers in accordance with 49 CFR 195 and in sufficient quantity and at such locations to ensure continuous line-of-site marking along the pipeline (two line markers visible from any one location); however, markers shall in no case be installed more than 1,000 feet apart. Markers shall also be installed and maintained on each side of all paved and unpaved road crossings, on each side of all railroad crossings, and on each side of all waterways. For new pipeline construction, a minimum 3 inches wide, 6 mil, polyethylene marking tape shall be installed 12 to 18 inches beneath the finished ground surface over the top of the pipeline. An appropriate warning shall be printed on the tape (e.g., "Warning – Hazardous Liquid Pipeline"). As an alternative, the Applicant may propose to the CSLC to install an optical or electronic intrusion detection system, increase the depth of cover, or increased wall thickness to mitigate the potential for third party incidents, as described in Section 10 of API Standard 1160, *Managing System Integrity for Hazardous Liquid Pipelines*. The Applicant shall also coordinate with federal, State, and local agencies conducting, or planning to conduct, construction activities in the area surrounding the pipeline (e.g. Caltrans, Solano Transportation Authority, cities, etc.) These agencies shall be included in the Applicant's Public Awareness Program, which is required by 49 CFR 195.	Entire alignment	Observe markers to verify compliance.	Minimize third-party damage.	CSLC, CSFM	During and after construction

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Table F-1. Mitigation Monitoring Program – Pipeline Safety and Risk of Accidents

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
S-2.5: Design flaws or incomplete/inadequate engineering can contribute to likelihood of a pipeline accident. (Class I)	**S-2h:** Design and Design Approval. a.) SFPP shall construct and operate the Proposed Project to meet the federal standards outlined in the U.S. Department of Transportation's (DOT) regulations in Title 49 CFR Part 195, transportation of Hazardous Liquids By Pipeline. SFPP shall also design all project facilities to meet or exceed the latest edition of Uniform Building Code (UBC). In California, the CSLC requires the incorporation of current seismological engineering standards such as the *Guidelines for the Design of Buried Steel Pipe* (by American Lifeline Alliance), *Guidelines for the Seismic Design of Oil and Gas Pipeline Systems* (by American Society of Civil Engineers, and other recognized industry standards for seismic resistant design at all fault crossings and liquefaction zones in California. The CSLC also requires all engineering design calculations and construction drawings, including pipeline alignment sheets, pipeline profile drawings wherever necessary, associated facilities and other appurtenances to be certified by California Registered Professionals (Civil/ Structural, Geotechnical, Mechanical and Electrical, etc.) licensed to practice in their jurisdiction. SFPP shall submit these design and drawings for review and approval by the CSLC and CSFM. b.) SFPP shall submit hydrotest profile drawings and detailed hydrotest procedure for each test segment for CSLC and CSFM review and approval. The procedure shall include but not be limited to quantitative method of analysis of the test results, test duration, test pressure, how long the pipeline segment will be allowed to reach temperature equilibrium, types of temperature and pressure recorders and their calibration, etc. c.) SFPP shall provide the following documents to the CSLC and CSFM within 120 days of the completion of the work: • a set of "as-built" construction drawings, certified by a California registered Civil/Structural engineer, showing all design changes or other amendments to the construction as originally approved; • certified copies of all completed pipeline integrity test results (hydrostatic tests, gauging runs, etc.) including copies of any failed tests with an explanation of the reason for failure; and • a post-construction written narrative report confirming completion of the project with discussion of any significant field changes or other modifications to the approved design or execution plan, and providing details of any extraordinary occurrences such as spill incidents and accidents involving serious injury or loss of life, and a summary of a quality control and weld inspection program including all failed and repaired welds.	Entire alignment	Review design calculations and construction drawings	Reduce likelihood of design flaw.	CSLC, CSFM	During and after construction

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Table F-1. Mitigation Monitoring Program – Pipeline Safety and Risk of Accidents

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
S-3: Improper pipeline abandonment or decommissioning could cause contamination, landslides, or erosion. (Class II)	**S-3a**: Pipeline Abandonment Procedures. Once the majority of the product has been removed, a series of foam pigs shall be pushed through the abandoned pipeline to remove any residual product. This process shall be repeated until the residual hydrocarbons in pipeline are reduced to a level acceptable by the permitting agencies. Generally, CSLC requires that prior to abandonment of the pipelines in its lease areas, the pipelines shall be cleaned of all hydrocarbons until the residual hydrocarbons are less than 15 parts per million unless other agencies such as Regional Water Quality Control Board or other permitting agencies require more stringent clean up level. Over time, local land uses and other site environments will change. As a result, it would be impossible to prepare a plan that would adequately cover future abandonment at this time. As a result, SFPP shall submit a site-specific detailed report including but not limited to pipeline integrity information, pipeline clean up procedures, pipeline abandonment procedures, anticipated frequency of future inspection, and spill containment, response and cleanup procedures, etc. to the CSLC and the California State Fire Marshal (CSFM), at least 60 days prior to pipeline abandonment/ removal, for their review and approval. The report shall evaluate any potential risks that could be imposed by the deteriorated pipe acting as an underground conduit and any potential negative effects of soil settlement, should the pipe be left to deteriorate. If the responsible agency determines that abandoning these segments in place may cause adverse effects to the specific land uses at certain locations, the abandoned sections shall be removed or shall be filled with concrete, grout, or clean drilling mud, to avoid potential impacts. The specific action shall be determined by the CSLC, in conjunction with the CSFM, after review of the Applicant's site-specific detailed report. With respect to the removal from service of the existing 14-inch pipeline, SFPP shall submit a written Reclassification Plan (consistent with CSFM requirements and the description in Draft EIR Section B.3.4) describing the process and schedule for removing that pipeline from service. The Draft Plan shall define anticipated future uses of the pipeline and shall be submitted to the CSFM and the CSLC for review and comment at least 120 days prior to operation of the new pipeline.	All pipeline abandonment areas	Review of abandonment procedures and identification of any sensitive land uses.	Minimize adverse effects on special land uses and potential soil contamination.	CSLC, CSFM	Prior to pipeline abandonment or decommissioning

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Table F-2. Mitigation Monitoring Program – Air Quality

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
A-1: Emissions of equipment exhaust could substantially contribute to existing violations of ozone standards during the construction period. (Class I)	**A-1a:** Control Equipment Emissions. SFPP or its construction contractor shall minimize NOx, VOC, and PM_{10} emissions from on-site construction equipment through the use of the strategies listed below, or similar strategies authorized by the applicable Air Quality Management District that result in an equivalent level of emission reduction. Each piece of equipment must be certified for compliance and documentation must be maintained at staging areas. • Use diesel engines that meet, at a minimum, 1996 CARB or U.S. EPA certified standards for off-road equipment that have a rating of more than 100 horsepower. This may be accomplished by installing high pressure diesel injectors and retard injection timing on any off-road equipment that was manufactured prior to 1996. • Use either ultra-low sulfur diesel fuel (15 parts per million sulfur content) or alternative fuels (for example, reformulated fuels, emulsified fuels, compressed natural gas, or power with electrification). Low sulfur diesel fuel (500 parts per million sulfur content) shall be used only if evidence is obtained and maintained from the fuel supplier(s) that ultra-low sulfur diesel fuel is unavailable. Alternative diesel fuels shall be used only if they have been verified for emission reductions by the California Air Resources Board. • Use only electric-powered mud tank cleaning systems including pumps. This would eliminate certain large diesel engines during directional drilling. • Operate any equipment associated with the hydrotest and pipeline cleaning phase only after major construction and excavation activities are completed. • Use catalyzed diesel particulate filters (soot filters) on diesel engines that have a rating of more than 100 horsepower, where feasible. • Maintain and operate all construction equipment so that exhaust emissions do not exceed 40% opacity for more than three minutes in any one-hour period. Equipment that exceeds this opacity standard shall be removed from operation and repaired upon the earliest safe opportunity. • Avoid prolonged idling of equipment unless necessary to maintain a safe construction environment. • Maintain all construction equipment in good condition and proper tune.	Entire alignment	Review construction vehicle documentation.	Exhaust emissions are minimized.	CSLC	Before and during construction

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Table F-2. Mitigation Monitoring Program – Air Quality

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
A-2: Emissions of airborne dust could substantially contribute to existing violations of PM_{10} standards during the construction period. (Class II)	**A-2a:** Control Dust and Particulate Emissions. SFPP or its contractor shall control airborne dust and PM_{10} by implementing the recommendations of the Bay Area Air Quality Management District and Yolo-Solano Air Quality Management District as listed below, or similar strategies authorized by the applicable Air Quality Management District that result in an equivalent level of emission reduction. • Water all active construction areas at least twice daily, as dictated by local soil and wind conditions to maintain continuously moist soil. • Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard. • Pave, apply water to maintain continuously moist soil, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, construction areas, and staging areas as needed. • Sweep daily (with water sweepers) all paved access roads, all active parking areas, and active staging areas, except where prohibited by local storm-water runoff and discharge ordinances or laws. • Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets, except where prohibited by local storm-water runoff and discharge ordinances or laws. • Hydroseed or apply (non-toxic) soil stabilizers to inactive construction sites greater than four acres in area (previously graded areas inactive for more than 10 days). • Enclose, cover, water twice daily or apply (non-toxic) soil binders to large exposed stockpiles (dirt, sand, etc.) as needed. • Limit traffic speeds on unpaved roads to 15 mph. • Install sandbags or other erosion control measures to prevent silt runoff to public roadways. • Replant vegetation in disturbed areas as quickly as possible, except where prohibited by landowner. • If necessary to prevent mud from tracking onto pavement, wash off the tires or tracks of all trucks and street-legal construction equipment leaving unpaved staging areas greater than four acres in area to paved roads. • If visible emissions of fugitive dust persist beyond a distance of 200 feet from the boundary of the construction site, all feasible measures shall be implemented to eliminate potential nuisance conditions at off-site receptors (e.g., increase frequency of watering or dust suppression, install temporary wind breaks where appropriate, suspend excavation and grading activity when winds exceed 25 mph).	Entire alignment	Observe construction activities to verify compliance.	Visible debris minimized.	CSLC	Before and during construction

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Table F-2. Mitigation Monitoring Program – Air Quality

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
A-3: Emissions of motor vehicle exhaust could substantially contribute to existing violations of ozone and PM_{10} standards during the construction period. (Class II)	**A-3a:** Transportation Management. SFPP or its construction contractor shall implement transportation management strategies that minimize the vehicle miles traveled and the number of vehicle trips necessary to mobilize the construction workforce and materials. Specific requirements are identified below, or SFPP may implement similar strategies authorized by the applicable Air Quality Management District that result in an equivalent level of emission reduction. • Provide, to the maximum extent feasible, carpooling and shuttling of workers from the staging areas to the work spreads. • Dispose of excess soil and broken asphalt by exporting it to the nearest feasible destination. • Obtain construction materials including heavy equipment, pipe, backfill, and asphalt from the nearest feasible location.	Entire alignment	Review transportation management plan.	Vehicle trips are minimized.	CSLC	Before and during construction

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
BW-1: Wildlife habitat removal from construction could remove existing habitat. (Class II)	**BW-1a:** Pre-Construction Surveys. The Applicant shall carry out pre-construction biological resource surveys to identify the location of sensitive biological resources. Pre-construction surveys will be consistent with all survey protocols and requirements stipulated by resource agencies as a condition of project approval, including those species addressed under a USFWS Biological Opinion. Sensitive resources shall be clearly mapped and marked on construction drawings or project maps before construction in these areas. If sensitive resources cannot be avoided, no work shall be authorized until the appropriate resources agencies (CDFG, USFWS, NOAA Fisheries) determine that the action will not result in significant biological impacts (see Mitigation Measure BW-3d).	Entire alignment	Map and mark sensitive resources on construction drawings or project maps. Compliance verified by Environmental Monitor.	Consistency with requirements stipulated by resource agencies.	CSLC	Prior to construction
BW-1: Wildlife habitat removal from construction could remove existing habitat. (Class II)	**BW-1b:** Establish Buffer Zones. Biological monitors employed by SFPP and approved in advance by the CSLC shall locate and stake identified sensitive resources before construction activities begin in specified segments. Monitors shall also inspect all areas with sensitive resources prior to construction to ensure that barrier fencing, stakes, and required setback buffers are maintained. Avoidance measures and buffer distances vary for each species and are specified for some species in Mitigation Measures BW-3a, BW-3b, and BW-3c. The specific buffer zone distance will be determined by the appropriate resource agencies (CDFG and USFWS).	Entire alignment	Locate and stake sensitive resources. Compliance verified by Environmental Monitor.	Sensitive resources are staked.	CSLC	Before and during construction
BW-1: Wildlife habitat removal from construction could remove existing habitat. (Class II)	**BW-1c:** Conduct Worker Training. The Applicant shall conduct *Worker Environmental Awareness Program* (WEAP) training for construction crews. All SFPP construction crews and contractors shall participate in WEAP training prior to starting work on the project and within two days of any new worker arrival. The program will consist of a briefing on environmental issues relative to the Proposed Project. Training will be conducted by the Environmental Monitor. A video presentation of this training may be used for some training sessions. The training program will include an overview of the legal status, biology, distribution, habitat needs, and compliance requirements for each special status species that may occur in the project area. The presentation will also include a discussion of the legal protection for endangered species under the FESA and CESA. A fact sheet conveying this information will be distributed to all personnel who enter the project site. Upon completion of the orientation, employees will sign a form stating that they attended the program and understand all mitigation measures. These forms will be filed at the SFPP's offices and will be accessible to the appropriate agencies. The WEAP training shall include a brief review of the special-status species and other sensitive resources that could exist in the project area (including their life history and habitat requirements), the locations of sensitive biological resources, and their legal status and protection under the U.S. and State Endangered Species Acts. The education program shall include materials describing sensitive	Entire alignment	All workers must complete training by Environmental Monitor.	Record of all personnel trained during the project is maintained and made available for compliance verification.	CSLC	Prior to construction

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	resources, resource avoidance, permit conditions, and possible fines for violations of State or federal environmental laws. The program shall cover the mitigation measures, environmental permits, and Proposed Project plans, reclamation plans, and any other required plans. The Applicant shall be responsible for ensuring that all project personnel and subcontractors adhere to the guidelines and restrictions. Additional training shall be conducted as needed — including morning "tailgate" sessions — to update crews as they advance into sensitive areas, and to educate new personnel brought on the job during the construction period. Project personnel will receive a hardhat sticker or be issued a card verifying compliance with the above mitigation measure. In addition, a record of all personnel trained during the project will be maintained and made available for compliance verification.					
BW-1: Wildlife habitat removal from construction could remove existing habitat. (Class II)	**BW-1d:** Confine Activity to Identified ROW. The Applicant shall confine construction equipment and associated activities to the approved 100-foot ROW in all areas that support sensitive resources (e.g., near areas that support riparian and wetland communities and special-status species adjacent to the work area), as defined on project maps (and as summarized in Mitigation Measure BW-1a). In sensitive areas that will be avoided by directional drilling and boring, drill rigs and equipment staging shall remain outside of sensitive habitats, with an adequate buffer, consistent with established resource agency guidelines to avoid potential adverse effects to the resource. Work area boundaries shall be delineated with flagging or other marking to minimize surface disturbance associated with vehicle straying and minimize the potential for inadvertent worker intrusion into sensitive areas. Special habitat features identified by the resource monitor shall be avoided and previously disturbed areas within the project ROW shall be utilized for stockpiling excavated materials, equipment storage, and vehicle parking. During WEAP training (required in Mitigation Measure BW-1c), construction personnel shall be informed of the importance of remaining within the designated ROW. The resource coordinator, with support from resource monitors, as necessary, will ensure that construction equipment and associated activities avoid any disturbance of sensitive resources outside the ROW.	Entire alignment	On-site confirmation by the Environmental Monitor.	Construction activity is confined to the identified ROW.	CSLC	During construction

Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
BW-1: Wildlife habitat removal from construction could remove existing habitat. (Class II)	**BW-1e:** Minimize Disturbance at Water Crossings. The Applicant shall perform no open trench crossings at any stream, wetland feature or other waters of the United States unless otherwise identified in an approved Streambed Alteration Agreement, U.S. Army Corps of Engineer 404 Permit, and/or any other required and approved permits. Such crossings shall be performed either by conventional directional bore or horizontal directional drilling. Where sensitive resources are identified within the ROW, such resources shall be avoided by minor rerouting of the pipeline, or construction during a time of year when sensitivity is low (e.g., to avoid nesting birds). Unless specifically approved by the CDFG, no construction activities shall be conducted within 15 feet of the top of bank or riparian stream or wetland vegetation. This 15-foot setback from riparian vegetation is considered an initial guideline that may be modified at specific sites following consultation with federal and State resource agencies, and as new information becomes available regarding wildlife habitat use. SFPP shall acquire all permits and authorizations required by federal, State, regional and local jurisdictions to construct near areas with sensitive biological resources. Throughout the life of the project, additional species may be listed or designated as special status, and SFPP shall comply with any new requirements of the USFWS or CDFG for such species. For directional bores at streams that do not support sensitive wildlife resources within 500 feet of the construction site (e.g., at channelized or unvegetated waterways), a qualified biological monitor (BW-2a) shall visit the site periodically (generally on a daily basis) while boring or HDD operations are active, and provide a report to the CSLC.	At all water crossings	Review of final proposed water crossing techniques for minimal disturbance.	Bore under streams that could support special status species or other resources of special value.	CSLC	Prior to construction
BW-2: The direct loss of wildlife could occur from construction activities and increased human activity. (Class II)	**BW-2a:** Reduce Direct Mortality to Wildlife. The Applicant shall impose the conditions defined below on all construction personnel. These requirements shall be addressed in the WEAP (Mitigation Measure BW-1c): • Vehicles shall not exceed 15 mph on non-paved portions of the ROW or along designated portions of access roads if approved by the CSLC monitor. These locations will be determined during pre-construction surveys and identified on project maps prior to construction. • Litter or other debris that may attract animals shall be removed from the project area; organic waste shall be stored in enclosed receptacles, removed from the project site daily, and disposed of at a suitable waste facility. • No pets will be allowed in the construction area, including access roads and staging areas. Construction crews will be educated regarding sensitive wildlife that could be encountered on highways and how to safely avoid them (BW-1c). Crew behavior shall be monitored by a qualified biologist from the CSLC (BW-2b, below).	Entire alignment	On-site confirmation by the Environmental Monitor.	Conditions are imposed on all construction personnel.	CSLC	During construction

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
BW-2: The direct loss of wildlife could occur from construction activities and increased human activity. (Class II)	**BW-2b:** Employ Biological Monitors. CSLC will provide qualified biologists and resource specialists to monitor construction activities where sensitive resources have been identified on project maps. A biological resource monitor shall be present constantly for all water crossing (bores) with sensitive in-stream or downstream resources, and in areas where the presence of special status species or their habitat is known or suspected. Monitors shall be hired and trained prior to construction and shall be responsible for pre-construction surveys, providing environmental awareness training to construction crews, staking sensitive resources, onsite monitoring, documentation of violations and compliance, coordination with contract compliance inspectors, and post-construction documentation. Resource monitors shall be familiar with the wildlife species and other sensitive biological resources in the general project area and qualified to recognize potential construction effects to these resources. Monitoring shall be particularly intensive near identified habitat for federal and State-listed species. CSLC will provide full-time biological monitoring during all construction activities at stream or channel crossings that contains flowing water, sensitive species or their habitat (e.g., riparian, and wetland habitats). The CSLC monitor shall ensure that State and/or federal wetland protection guidelines are followed and that an adequate setback of at least 15 feet (or other distance mandated by CDFG or USFWS) is observed at wetland and/or riparian (woody vegetation) edges that provide suitable habitat for special status species.	Entire alignment	Presence of monitor on-site during construction as approved by CSLC.	Monitors are hired, trained, and present.	CSLC	Before and during construction
BW-3: Construction and operation could cause habitat removal or disturbance of special status wildlife species. (Class II)	**BW-3a:** Protect Special Status Wildlife. Where construction will occur within or near known or potential special status species habitat, as defined below, the Applicant shall perform the actions defined in the following paragraphs unless they are inconsistent with project permits/approvals from the USACE, USFWS, NOAA Fisheries, and/or CDFG. In this event, the CSLC shall reconcile such conflicts and ensure that the resultant requirements are no less protective of the environment. Appendix A of the Final EIR provides the draft Biological Opinion from USFWS, which provides conservation measures and other measures to minimize incidental take to federal-listed vernal pool crustaceans, salt marsh harvest mouse, red-legged frog, giant garter snake, and delta smelt. • California Red-Legged Frog. In areas that are known to or could potentially support California red-legged frog habitat (identified in Appendix 1A), the Applicant shall perform pre-construction surveys (as required in Mitigation Measure BW-1a) to determine if this species is present at these and other locations that may support this species. Construction shall be timed to occur during the dry season (April 15 to October 15), or aestivation period to minimize take of dispersing frogs. If pre-construction surveys by the biological monitor identify red-legged frogs within or adjacent to the ROW,	Entire alignment	Confirmation by the Environmental Monitor.	Perform specified actions where construction occurs within or near known or potential special status species habitat.	CSLC	During construction and operation

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	immediately prior to ground disturbance in areas where they may occur, the construction contractor shall not proceed until the animals disperse away from the construction corridor. If red-legged frogs do not disperse readily on their own, then the biological monitor shall consult with USFWS for guidance on appropriate measures before construction proceeds. The captured individuals shall either be relocated to appropriate habitat outside of the disturbance corridor or shall be held in captivity until construction is completed through their habitat. The decision as to whether and where to relocate the animals shall be made by the wildlife biologist in consultation with the USFWS, based on site-specific conditions affecting the animals' safety. For the red-legged frog, mitigation activities would have to occur within the framework of the biological opinion (USFWS), a memorandum of understanding (between CDFG and USFWS), or other permit or instruction coming from USFWS or CDFG pursuant to federal or State endangered species legislation. The construction area shall be monitored during construction and appropriate measures taken to ensure that individuals do not move into the construction corridor. • Giant Garter Snake. In areas that are known to or potentially could support giant garter snake habitat (i.e., canal at MP 46.2, Water Crossing (WC) No. 30, and WC No. 31), the Applicant shall perform pre-construction surveys (as required in Mitigation Measure BW-1a) to determine if this species occurs in these areas. These surveys shall be conducted and coordinated within the guidelines and mandates provided in a Federal Biological Opinion for this species (as required in Mitigation Measure BW-3d). Construction in suitable uplands within 200 feet of aquatic habitat potentially occupied by giant garter snake shall be timed to occur between May 1 and October 1 when the garter snake is active to avoid direct take of individual snakes. SFPP shall implement USFWS's *Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake (Thamnophis gigas) Habitat* within identified habitat areas (http://sacramento.fws.gov/es/documents/ggs_appendix_c.htm). If pre-construction surveys by the biological monitor identify giant garter snake within or adjacent to the ROW immediately prior to ground disturbance in areas where they may occur, the construction contractor shall not proceed until the animals disperse away from the construction corridor. If giant garter snakes do not disperse readily on their own, then the biological monitor shall consult with CDFG and USFWS for guidance on appropriate measures before construction proceeds.. The captured individuals shall either be relocated to appropriate habitat outside of the disturbance corridor or held in captivity until construction is completed through their habitat. The decision of whether or not and where to					

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	relocate the animals shall be made by the wildlife biologist in consultation with the USFWS, based on site-specific conditions affecting the animals' safety. As with red-legged frogs, the mitigation activities for giant garter snake shall occur within the framework of the biological opinion (USFWS), a memorandum of understanding (between CDFG and USFWS), or other permit or instruction coming from USFWS or CDFG pursuant to federal or State endangered species legislation. The construction area shall be monitored during construction and appropriate measures taken to ensure that individuals do not move into the construction corridor. • Special Status Vernal Pool Branchipods. No construction activities will take place without authorization from the USFWS within 250 feet of occupied vernal pools or swales, as determined by the 2002 wet season protocol surveys (Appendix 1A) and the 2003 surveys currently being conducted by URS unless the pipeline ROW is separated from the occupied habitat by a well-defined physical/hydrologic barrier. The edge of the ROW adjacent to these locations will be flagged and/or staked (BW-1b) by the designated biological monitors (BW-2b) prior to approved construction activities. The findings of the 2003 wet season vernal pool branchipod surveys, and any proposed reroutes to avoid newly described populations, will be submitted to CSLC and the appropriate resource agencies prior to any construction-related activities (BW-3d). In areas that support vernal pool habitat within 250 feet of the ROW but were not surveyed due to access denial (i.e., the area east of Vanden Road between MP 30.7 and 33.2 and areas north of Hay Rd. between MP 37.2 and 41.9), presence of vernal pool branchiopods was assumed and mitigation will be provided in the project's Biological Opinion (BW-3d). • Swainson's Hawk. If project activities will occur during the breeding period (March 1 to September 15) qualified biologists shall conduct pre-construction surveys (BW-1a) within a 0.5 radius of the project ROW, at least two weeks prior to construction. If nesting Swainson's hawks are found, project activities within 0.25 miles of the project will be delayed until the young have fledged. Swainson's hawk nest sites within 0.5 miles of active construction (including those historic and recent observations near the ROW described in Table D.4-7), will be monitored by a qualified biologist to evaluate whether the construction activities are disturbing nesting hawks. If the nesting birds appear distressed, the monitor shall halt all construction activities within 0.5-mile of the nest site and CDFG will be contacted to identify appropriate contingency measures. If construction occurs between September 16 and February 28, no pre-construction surveys or other mitigation measures for Swainson's hawk will be necessary. The Applicant will consult with the CDFG to determine if mitigation for the temporary loss					

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	of Swainson's hawk foraging habitat will be required. CDFG considers loss of foraging habitat within a 10-mile radius of any active nest as an impact to this species. • Western Burrowing Owl. The Applicant shall perform pre-construction surveys (BW-1a) for burrowing owls in all habitats along the ROW that are known to, or potentially support burrowing owl nesting sites (e.g., annual grassland, ruderal herbaceous, and cultivated fields). Burrowing owl surveys shall be conducted at all locations where burrowing owls have historically and recently been near the ROW, including those described in Table D.4-7. Three owl burrows were observed within 250 feet of the ROW (URS 2002), and may be directly impacted by the Proposed Project. If pre-construction surveys determine that these or other owl burrows that occur within 250 feet of the project are active, SFPP will consult with CDFG as to the appropriate mitigation strategy and compensation ratio (as defined in the Burrowing Owl Mitigation Guidelines). Potential burrowing owl habitat shall be surveyed by a qualified biologist to determine the presence of nesting burrowing owls. No more than two weeks before construction, a qualified biologist shall conduct a survey for occupied owl burrows within 500 feet of the construction corridor in areas that support potential owl habitat. The survey shall conform to California Burrowing Owl Consortium protocol (April 1993), which includes up to four surveys on different dates if there are active owl burrows present. However, if owls have been passively excluded from potential nest sites prior to construction, as described below, the pre-construction survey would consist of one site visit conducted according to the protocol described above. If construction is determined to not adversely affect occupied burrows or disrupt breeding behavior, construction may proceed without seasonal timing restrictions, though other applicable mitigation measures shall still be implemented. If construction could adversely affect occupied burrows during the non-breeding season (August 31 through February 1), owls may be passively excluded from the burrow(s) using one-way doors. At least two suitable, unoccupied burrows (natural or artificial burrows — the latter constructed according to current design specifications) must exist within 300 feet of the occupied burrow before one-way doors are installed. Relocation burrows shall be in place at least one week before one-way doors are installed on occupied burrows. The one-way doors shall remain in place for 48 hours before burrows are excavated.					

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing

	If construction activities are found to temporarily impact occupied burrows so as to disrupt reproductive behavior during the nesting season (February 1 through August 31), construction within 250 feet of occupied burrows shall be delayed until it is determined that the subject owls are not nesting or until a qualified biologist determines that juvenile owls are self sufficient and no longer using natal burrows as their primary shelter.
	• Salt Marsh Harvest Mouse and Suisun Ornate Shrew. Where construction is proposed to occur within potential salt marsh harvest mouse habitat (i.e., salt marsh and alkali salt marsh habitat and areas described in Table D.4-7, the Applicant shall:
	  • Prepare a Vegetation-clearing Plan in salt marsh harvest mouse habitat approved by the CDFG prior to construction. The Vegetation-clearing Plan shall include, but not be limited to, delineating the vegetation types within areas identified as salt marsh habitat, method of vegetation removal for each of the vegetation types, pre-marking vegetation for approved varying methods of removal, installing exclusion fencing as appropriate, and biological monitoring and reporting.
	  • Remove vegetation with handtools.
	  • Segregate and replace topsoil.
	  • Implement habitat restoration.
	Vegetation within the construction ROW, pipe laydown areas, and directional drill work areas shall be removed using hand tools prior to the start of construction. Colonies of invasive species such as perennial peppergrass (*Lepidium latifolium*) and common reed (*Phragmites australis*) shall be cleared and grubbed to remove the tubers and roots. All invasive wetland plant material shall be collected and properly disposed in a suitable upland location.
	The upper six inches of soil excavated within salt marsh harvest mouse habitat shall be stockpiled separately and replaced on top of the backfilled material. All disturbed tidal marsh, brackish marsh and seasonal alkali marsh habitat shall be backfilled and graded to match the original elevations prior to construction.
	The mitigation activities for salt marsh harvest mouse shall occur within the framework of a USFWS Biological Opinion (BW-3d), a memorandum of understanding (between CDFG and USFWS), or other permit or instruction coming from USFWS or CDFG pursuant to federal or State endangered species legislation. SFPP shall work with the USFWS to determine compensation for impacts to salt mash harvest mouse habitat.					

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	• Western Pond Turtle. Where construction is to occur near known or potential habitat for western pond turtle (i.e., pipeline water crossing and near ponds), pre-construction surveys shall be conducted to determine the presence or absence of this species (BW-1a). If pond turtles are observed, a determination shall be made in consultation with CDFG as to whether or not construction will adversely impact this species and what measures shall be implemented. Potential impacts to this species shall be minimized through implementation of the proposed water crossing techniques (HDD, bore) outlined in Mitigation Measure BW-1e.					
BW-3: Construction and operation could cause habitat removal or disturbance of special status wildlife species. (Class II)	**BW-3b:** Protect Specified Bird Species. Where construction is proposed to occur near riparian or marsh habitats (e.g., tidal marsh, Alkali salt marsh, tidal sloughs, freshwater marsh) that support special-status bird species, as defined below, the Applicant shall limit construction periods to outside the respective breeding season of the affected species. • Tricolored Blackbird, Saltmarsh Common Yellowthroat, Suisun Song Sparrow. No more than two weeks prior to construction between March 1 and August 31, for project activities within 250 feet of potential nesting habitat of the tricolored blackbird, saltmarsh common yellowthroat and Suisun song sparrow, pre-construction surveys shall be conducted (BW-1a) to determine the presence of nesting birds. If pre-nesting or nesting activity is identified, a determination shall be made in consultation with CDFG as to whether or not construction will adversely impact nesting birds. If it is determined that construction will impact nests or nesting behavior, construction within 250 feet of the nesting locations shall be delayed until juvenile birds have fledged. The 250 feet buffer is considered an initial guideline that may be modified at specific sites following consultation with CDFG. • California Black Rail. To avoid disrupting nesting California black rails, construction activities in areas that provide potential habitat for these species (tidal marsh, Table D.4-7), shall occur outside of the nesting seasons for these species (March 1 through July 31). If construction activities take place during the nesting season and only after survey methodology is accepted by the USFWS, a qualified biologist shall conduct a pre-construction nest survey for the above-listed species, according to accepted protocols, within 700 feet of proposed construction activities. If active nests of either of the species are identified, construction within 700 feet of the nest(s) shall be delayed until the adult and/or juvenile rails are no longer using the nest as the center of their activity. Protocol-level presence/absence surveys may be required by the USFWS and/or CDFG.	Entire alignment	Review of pre-construction surveys and monitor-established buffer zones, confirmed by the Environmental Monitor.	Special status bird species are protected.	CSLC	During construction

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
BW-3: Construction and operation could cause habitat removal or disturbance of special status wildlife species. (Class II)	**BW-3c:** Protect Raptor Nests. The Applicant shall avoid disturbance to active raptor nests at all locations. Pre-construction surveys shall be performed in all areas to identify potential raptor nesting sites within or near the ROW. No pre-construction surveys shall be required if construction activities are to occur only during the non-breeding season (September 1 through January 31). If, however, construction activities are scheduled to occur during the breeding season (February 1 through August 31), pre-construction surveys of all potentially active nest sites within 500 feet of the construction corridor shall be conducted in areas that may potentially have nesting raptors, including ground nesting raptor species such as northern harrier and short-eared owl. If surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation shall be required. If active nests are found, a 500-foot, no-disturbance buffer shall be established around the active nest(s). The size of individual buffers can be adjusted, following a site evaluation by a qualified raptor biologist, which shall depend upon the presence of topographical features that obstruct the line of site from the construction activities to the nest or observations of the nesting pair during construction based on the level of ongoing disturbance (e.g., farming activities or road traffic) and the observed sensitivity of the birds. Site evaluations and buffer adjustments shall be made in consultation with the local CDFG representative. The portion of the project that is within the designated buffer shall be identified in the field by staking and flagging (BW-1b).	Entire alignment	Review and monitoring of compliance by the Environmental Monitor.	Perform pre-construction surveys and establish buffer zones protecting raptor nests.	CSLC	Before and during construction
BW-3: Construction and operation could cause habitat removal or disturbance of special status wildlife species. (Class II)	**BW-3d:** Consultation to Minimize Impacts. If avoidance of sensitive wildlife species habitat is not feasible (e.g., by modifying the route or boring), the Applicant shall develop appropriate mitigation in consultation with the resource agencies (CDFG and USFWS). No construction activity shall be permitted until the applicable resource agencies determine that the proposed mitigation (in the Biological Opinion) will result in less than significant impacts to the affected species.	Entire alignment	Develop appropriate mitigation in consultation with the resource agencies.	Review by appropriate agencies before construction approval.	CSLC	Before and during construction and operation
BW-4: Human disturbance during project construction or maintenance could cause temporary displacement of some wildlife, avoidance of preferred habitat areas or reduced reproductive success. (Class II)	**BW-1a:** Conduct pre-construction surveys to identify sensitive resources. **BW-1c:** Conduct Worker Environmental Awareness Program training. **BW-1d:** Confine activity to identified ROW. **BW-1e:** Minimize disturbance at water crossings. **BW-3a:** Protect special status wildlife. **BW-3b:** Protect special status bird species by limiting construction periods to outside the respective breeding season of the affected species. **BW-3c:** Protect raptor nests. (Note: See full text of the mitigation measures above.)	See above	See above	See above	See above	See above

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
BB-1: Erosion of clean and/or contaminated soils exposed during trenching or from deposition of hazardous substances could cause habitat degradation to sensitive plant species or within wetlands. (Class II)	**HS-1c:** Implement erosion control procedures. (See full text below.)	Entire alignment	Verification of specific conditions for erosion control. Specific procedures shall be developed by an engineer or other appropriate professional with expertise in the field of hydrology and sediment transport and will be confirmed by an environmental monitor.	Erosion and sedimentation are minimized.	CSLC, RWQCB	During and after construction
BB-2: Construction could result in the loss of individuals or known habitats of sensitive plant species or associated habitats. (Class II)	**BB-2a**: Rare Plant Avoidance or Potential Impact. SFPP shall avoid impacts to special status plant species by: • Conducting pre-construction surveys for special status plant species within un-surveyed locations of the proposed ROW (between MP 30.7 – 33.2 and 37.2 – 37.9) and for certain plant species that were not surveyed during the appropriate flowering period. • Flagging, mapping, and fencing to protect any special status plant species within the 100-foot-wide construction ROW and work areas, staging areas, and/or launcher/receiver stations during construction. Fencing shall be placed at the edge of the ROW in areas where special status plant species are present within 20 feet outside of the ROW. • Limiting all proposed roadway construction to the existing road ROW where adjacent special status plant species occur, i.e., adjacent Contra Costa goldfield populations at access road near Ornbaum Kennels (MP 19.7 – 19.8), Cordelia Road (MP 22.9 – 23.2), Walters Road (MP 28.1 – 28.7), Peabody Road (MP 29.8 – 23.2), and Carquinez goldenbush occurrences along Hay Road (MP 38.9). • A worker training program with regard to special status species (see BW-1c). • Supervision and verification of the implementation of these measures by an agency-approved Environmental Monitor (see BW-2b). Prior to construction, the location of special status plant species will be determined through appropriately-timed surveys according to California Native Plant Society (CNPS) protocol; this shall apply only to areas not surveyed during	All segments, except the Wickland Connection (Segment 7)	Review protocol-level surveys for rare plants and verify implementation of avoidance measures, such as fencing and worker training. Compliance supervised and verified by the Environmental Monitor. Coordinate mitigation or compensation for lost plants with CSLC and CDFG and/or USFWS, as appropriate, prior to any ground disturbance.	Total avoidance of impacts to rare plants.	The Environmental Monitor shall be a qualified biologist approved by USFWS and CDFG. Consultation with CSLC, CDFG and USFWS regarding compensation	Surveys and avoidance and/or compensation shall be completed prior to construction. Verification of measures implemented to occur during construction.

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	previous surveys that support potential habitat for any rare plant species. Determination of potential habitat for rare species, and surveys conducted for presence of rare plant species will be performed by a qualified botanist. These surveys will be appropriately timed to cover the blooming periods of the special status plant species with the potential to occur in the area. Any rare plant species within the 100-foot-wide ROW, 50-foot-wide buffer zone on each side of the ROW, work areas, staging areas, and/or launcher/ receiver stations will be flagged, accurately mapped on construction plans, and fenced to protect the area occupied by the species during construction. Installation of construction fencing shall be supervised by an Environmental Monitor (a qualified biologist approved by the CSLC, USFWS, and CDFG), and appropriate buffer distances from the rare plant population shall be determined on-site by the Monitor. The Monitor shall have the authority to require installation of silt fencing in highly sensitive areas or under certain conditions where potential erosion may impact a special status plant species or its habitat. In the unlikely event that through the pre-construction surveys the biological monitor identifies special status plant species within the ROW where the construction contractor cannot implement avoidance measures, SFPP shall provide compensation for impacted plants. SFPP shall coordinate mitigation or compensation for lost plants with CSLC and CDFG and/or USFWS, as appropriate, prior to any ground disturbance. Impacts to State or federally listed plant species would require consultation and/or a permit or Memorandum of Understanding from CDFG or the USFWS. Compliance with these measures prior to and during construction will be supervised and verified by the Environmental Monitor.					
BB-3: Upland vegetation removal during construction activities could result in temporary loss of vegetation, adversely impacting upland vegetation. (Class II)	**BB-3a:** Tree Avoidance and Replacement. SFPP shall avoid, minimize, and compensate for impacts to trees as identified in Table D.4-9, including those protected by local ordinances, by: • Pre-construction identification, fencing and avoidance of trees to the maximum extent during construction. • Consultation with local jurisdiction if unavoidable impacts to locally protected trees ("Protected Trees") are likely to occur. • Development and implementation of a Tree Replacement Plan for loss and/or significant damage to trees. • Supervision and verification of the implementation of these measures by the Environmental Monitor.	Segments 2, 3, and 5	Review mapping of trees in area and development of a tree replacement procedures for unavoidable impacts; monitor over a five-year period for tree survival.	Replacement of trees at a minimum 3:1 ratio (unless otherwise specified by permits).	Local jurisdiction (County or City); possibly CDFG	Mapping and plan approval prior to construction. Implement plan during and following construction.

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	The initial step for this measure shall be to determine the size and location of all native and protected trees located within and adjacent to the project right-of-way, work areas, staging areas, and launcher/receiver stations. These trees will be then assessed by a qualified biologist or arborist to identify and map Protected Trees.[1] If it is determined that the project will trim, remove, or damage the roots of Protected Trees, avoidance measures shall be taken. Avoidance will consist of installing protective fencing around the dripline of any Protected Tree. All construction activities, including excavation, grading, leveling, and disposal or deposition of harmful materials will be prohibited inside the dripline fence. Attachment of wires, ropes, or signs to native and Protected Trees shall also be prohibited. The approved Environmental Monitor (see BW-2b) shall supervise compliance with these protective measures prior to and during construction activities. If trimming, removal or root damage to a Protected Tree is unavoidable, the appropriate jurisdiction will be consulted. Further actions may require a permit that will include fees and/or replacement for affected trees. Contra Costa County and the City of West Sacramento require permits and associated variable fees to damage or remove certain Protected Trees. Proposed trimming or other damage to Protected Trees along the proposed route shall be evaluated by a qualified arborist, who shall identify appropriate measures to minimize tree loss and shall supervise all associated activities in accordance with permit conditions issued by the responsible jurisdiction.					

[1] Protected Trees are those protected under local ordinances and include the following: (1) Contra Costa County requires a permit and conditional mitigation for impacts to or removal of "Heritage Trees" and "Protected Trees", (2) Yolo County identifies a provision prohibiting the import or export of elm trees, (3) the City of Fairfield requires submission of a written request to remove any tree on private or public land, (4) the City of West Sacramento requires a permit and permittee-proposed mitigation measures for impacts to or removal of "Heritage Trees", "Landmark Trees", and "Significant Trees."

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	• Identification of proposed tree removal locations. • A discussion demonstrating how maximum avoidance has been accomplished and why the trees proposed for removal cannot be avoided. • Discussion of appropriate tree replacement ratios, as defined by the local jurisdiction, or, at a minimum, a 3:1 replacement to removed/impacted ratio for non-protected trees. • Identification of suitable tree replacement locations within or immediately adjacent to the original tree impact area. • Tree species and size specifications. • Proposed understory native seed mix composition and application methods. • Planting methodology, including spacing and proper timing of plant installation. • Description of protective staking and caging measures. • Description of irrigation and plant maintenance regime. • Description of five-year monitoring effort to measure replacement success. • Success criteria (including survival rates) and contingency measures in case of mitigation failure. • Submission of an annual monitoring report to responsible agencies evaluating mitigation success. Successful implementation of tree replacement shall be evaluated five years after all human support (e.g., replanting, fertilization, irrigation) has ceased. At that time, a report shall be submitted to the local jurisdiction, and CDFG, if requested, summarizing the results. A determination will be made by these agencies as to whether continued monitoring is required and/or whether implementation of contingency measures is required.					
BB-5: Construction in wetlands would result in vegetation removal within the project ROW or disrupt the hydrology of the wetlands. (Class II)	**BB-5a:** Wetland Avoidance and Restoration. SFPP shall avoid, minimize, and/or compensate for damage and/or loss of wetland vegetation types due to pipeline construction activities by completing the following: • Maximum avoidance of jurisdictional wetlands by fencing wetlands and appropriate buffer zones. • Restricted vegetation removal and topsoil storage and replacement. • Consultation with the USACE and RWQCB for any unavoidable wetland impacts. • Preparation and implementation of wetlands restoration for any unavoidable impacts to wetlands. • Supervision and verification of the implementation of these measures by the Environmental Monitor.	All segments, except Segment 4 and Segment 6	Consultation and implementation of avoidance measures during construction as verified by the Environmental Monitor over a five-year period. Review of permits from agencies with jurisdiction.	To restore the function of the affected wetland to pre-construction conditions.	USACE and RWQCB	Map wetlands, avoid impacts, review permits, and prepare plan for approval prior to construction. Implement plan during and following construction.

Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	Avoidance will consist of fencing the wetlands within the ROW, including appropriate buffer zones, to minimize impacts to wetland vegetation types. If construction work areas and/or associated overland travel in wetlands with pooled or ponded water is unavoidable, all equipment, vehicles and associated construction materials shall be placed on protective mats to avoid soil compaction, such that they do not make direct contact with the wetland. Vegetation clearing and/or installation of mats shall be conducted only from areas scheduled for immediate construction work (within 10 working days) and only for the width needed for active construction activities. Mats shall be removed immediately following completion of activities within each active construction area. During pipeline construction, the 6 inches of topsoil shall be salvaged, stored in an upland location, and replaced wherever the pipeline is trenched in wetlands. Prior to permit issuance and final design, project construction plans shall depict appropriate measures for topsoil protection and storage that will allow survival of native seed within the topsoil. Topsoil shall be placed at the surface on top of fill material and not be used to backfill the trench, and excavated trench spoils or excess fill shall be placed on top of the pipeline under topsoil and not dispersed onto the surface of the ROW. Implementation of these measures prior to and during construction will be supervised and verified by the Environmental Monitor (see Mitigation Measure BW-2b). Unavoidable direct impacts to wetland vegetation types during construction and/or associated overland travel will require consultation with the appropriate jurisdiction (USACE and RWQCB) and will likely require a permit (impacts to riparian scrub would likely need to be addressed in consultation with CDFG; see Mitigation Measure BB-5c). These impacts shall be mitigated by restoration of the affected area to pre-construction conditions in accordance with permits issued by the USACE and RWQCB. Consistent with requirements set forth in permits issued by the USACE and RWQCB for work in wetlands, and with other plans developed for the pipeline construction project, the following procedures shall be implemented: • A delineation of potentially affected wetlands for any areas not included in the jurisdictional delineation performed by URS (2003). • A discussion demonstrating how maximum avoidance has been accomplished and why the wetlands proposed to be impacted cannot be avoided. • Methods proposed for restoring the affected wetlands, including topsoil preservation and backfilling (see Mitigation Measure BB-5b), soil and grade preparation such that there is no change in pre-construction contours, regionally native seed and/or plant materials to be used and installation methods, and maintenance measures, including weed control.					

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	• Minimum 1:1 replacement ratio for area and function of temporarily damaged wetland areas. • A minimum five-year monitoring program with detailed success criteria regarding species cover, species composition, species diversity, wetland area and depth as compared with pre-construction conditions documented prior to construction by a qualified biologist such that the function of the affected wetland and hydrology is restored, the methods and results of which shall be described in the Plan. • Annual monitoring over a minimum five-year period to evaluate whether the pipeline installation is substantially altering surface or subsurface flow of water as determined through (1) topographic assessments of the pipeline sites and (2) assessments of vegetation and hydrology conditions within adjacent wetlands (as compared to pre-construction conditions). • Methods for correcting observed alterations to surface or subsurface flows. • Annual reporting requirements to responsible agencies. • Detailed contingency measures in case of restoration failure, as determined by the responsible agencies following the five-year monitoring period, requiring additional off-site wetland creation at a minimum ratio of 1:1 for created wetland acreage. • At least 30 days prior to the start of construction on the Proposed Project, the applicant shall provide CSLC with copies of all required permits from agencies identified herein as having jurisdiction over wetlands. SFPP shall mitigate for any temporal loss of wetland values (form and function) as required by such agencies. This mitigation is in addition to normal revegetation and restoration of the area disturbed during construction. The applicant shall commit to one or more of the following: enhancing or restoring wetlands on site or in the immediate area of the proposed pipeline (such as removal of exotic vegetation or improving hydrology); removal of existing obstructions within the control of the applicant that are located in areas analyzed in the EIR and which impede or reduce wetland values; payment of a mitigation fee; or by funding the acquisition and preservation of additional wetland area. The form and function of mitigation for impacted areas will be monitored until the approved mitigation and monitoring program is successfully implemented, but for not less than a period of five (5) years or until pre-construction wetland functions and values have been demonstrated for at least two (2) years. The restoration program and mitigation for temporal wetland loss will be approved and managed by the USACE, the USFWS, SFRWQCB, or the CDFG. • In the event that conditions in the USACE 404 permit and/or the USFWS Biological Opinion to be issued for this project conflict with mitigation measures in the EIR the CSLC shall reconcile such conflicts and ensure that the resultant requirements are no less protective of the environment.					

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
BB-5: Construction in wetlands would result in vegetation removal within the project ROW or disrupt the hydrology of the wetlands. (Class II)	**BB-5b:** Trench Backfill and Topographic Restoration. The purpose of this measure is to prevent temporary and permanent hydrologic alteration to wetlands and associated sensitive vegetation from backfill activities associated with pipeline installation by requiring: • Appropriately-timed work so that trenches are not excavated or backfilled during the wet season. • Preparation and implementation of soil and grade restoration measures including backfill and compaction methods and an annual monitoring program. • Supervision and verification of the implementation of these measures by the Environmental Monitor. Prior to construction, soil and grade restoration measures shall be provided to responsible agencies (including the RWQCB, CDFG, USACE, and County agencies). If a responsible agency indicates that these measures are not adequate, the Applicant shall revise the measures as required by the commenting agency. Restoration of wetlands directly impacted by pipeline construction is addressed in Mitigation Measure BB-5a. To prevent hydrologic impacts to wetlands and associated vegetation resulting from pipeline backfill activities the following procedures shall, at a minimum, be addressed, in accordance with any permit conditions issued by responsible agencies: • Excavation, soil storage and backfill methods to ensure that topsoil returned to the surface and is not be used to backfill the trench, and subsoil is not be dispersed onto the surface. • Requirements for the separation of topsoil and subsoil in upland storage locations. • Methods to ensure native seed survival within stored topsoil. • Circumstances requiring use of imported soils, proposed source of soil. • Backfill compaction specifications to ensure that changes in infiltration and lateral flow do not substantially alter subsurface hydrology. • Specifications for the restoration of pre-construction surface topography to ensure that mounds or berms, due to overfill, or trenches, due to soil settling, are not created that will substantially alter surface hydrology. Implementation of these measures during and after construction shall be supervised by the Environmental Monitor.	All segments, except Segment 6	Implementation of soil and topographic restoration measures monitored annually over a five-year period.	Restore topography to pre-construction conditions and ensure pre-construction functioning of impacted and adjacent wetlands.	RWQCB, USACE, CDFG and Counties	Prepare plan for approval prior to construction. Implement plan during and following construction.

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
BB-5: Construction in wetlands would result in vegetation removal within the project ROW or disrupt the hydrology of the wetlands. (Class II)	**BB-5c:** Riparian Avoidance and Restoration. SFPP shall avoid, minimize, and compensate for impacts to riparian forest during construction due to trenching, open cut crossings of streams, and pit excavation for bore crossings of streams by: • Identification and avoidance of riparian forest by boring under streams and riparian habitat in the margins of Suisun Creek, Putah Creek, and an unnamed slough connected to the Toe Drain on the east side of the Yolo Bypass (near MP 65.7). In streams where open cut crossings are proposed in Table B-3 and where water is present, a qualified biologist shall review the area prior to construction to determine if boring is necessary. • Consultation with CDFG to identify unavoidable impacts to riparian vegetation and to define appropriate restoration. • Fencing riparian vegetation adjacent to work areas to prevent impacts. • Preparation and implementation of riparian restoration, including replanting and monitoring elements. • Supervision and verification of implementation of these measures by the Environmental Monitor. Riparian forest within the ROW shall be identified by a qualified ecologist, mapped on construction plans and fenced prior to construction. These areas should be avoided to the maximum extent feasible. If riparian forest cannot be avoided by boring under the stream, the following impact minimization measures, at a minimum, shall be implemented during construction in accordance with any permit conditions imposed by responsible agencies: • The work area shall be limited to the minimum necessary and shall be fenced prior to construction. • Vegetation within the work area shall be cleared in a manner that does not damage the root system of adjacent remaining vegetation. • The upper 6 inches of topsoil shall be salvaged, stored at an upland location, and returned to the surface after trench backfilling is complete. • Existing vegetation shall be cleared only from areas scheduled for immediate construction work (within 10 working days). The approved Environmental Monitor shall supervise compliance with these protective measures prior to and during construction activities. Unavoidable direct impacts to riparian forest vegetation during construction will require consultation with the appropriate jurisdiction (CDFG) and will likely require a permit (portions of riparian forest may be considered jurisdictional wetlands and impacts to these areas would need to be addressed in consultation with USACE — see Mitigation Measure BB-5a). These impacts shall	Segments 2, 3, and 5	Review of map of riparian forest within construction areas and riparian restoration procedures for unavoidable impacts; monitor over a five-year period for replanted tree survival.	1:1 replacement ratio of habitat acreage and at least 3:1 replacement ratio of the number of trees and shrubs present prior to construction (unless otherwise specified by permits).	CDFG (possibly local jurisdiction)	Mapping and procedure approval prior to construction. Implement during and following construction.

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	be mitigated by restoration of the affected area to pre-construction conditions in accordance with permits issued by CDFG. A qualified ecologist shall dictate the following procedures to ensure that they will be consistent with applicable local jurisdiction requirements, such as County Tree Ordinances, and with any additional permit conditions imposed by the local agency as well as CDFG and other agencies. If a tree within the riparian forest to be removed qualifies as a Protected Tree under the local jurisdiction, Mitigation Measure BB-3a shall be applied and any mitigation standards shall default to the one requiring the higher standard. Riparian forest removal shall not be permitted until the following procedures are documented: • Identification of proposed riparian forest removal (and subsequent restoration) locations from URS's Jurisdictional Delineation Report. • A discussion demonstrating how maximum avoidance has been accomplished and why the riparian forest proposed for removal cannot be avoided. • Methods to restore streambanks to pre-construction conditions. • Discussion of appropriate replacement ratios (in accordance with issued permit conditions, or, at a minimum, a 1:1 replacement ratio of habitat acreage and at least 3:1 replacement ratio of the number of trees and shrubs present prior to construction). • Proposed native tree and shrub species matching pre-construction conditions. • Proposed understory native seed mix composition and application methods. • Planting methodology, including spacing and proper timing of plant installation. • Description of protective staking and caging measures for installed plants. • Description of irrigation and plant maintenance regime. • Description of five-year monitoring effort to measure replacement success. • Success criteria (including survival rates and habitat function as compared to pre-construction conditions) and contingency measures for off-site habitat creation in case of mitigation failure. • Submission of an annual monitoring report to responsible agencies evaluating mitigation success. Successful implementation of the riparian restoration procedures shall be evaluated five years after all human support (e.g., replanting, fertilization, irrigation) has ceased. At that time, a report shall be submitted to the responsible agencies summarizing the results and a determination will be made by these agencies as to whether continued monitoring is required and/or whether implementation of contingency measures is required.					

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
BB-6: Construction disturbance could provide an opportunity and seedbed for the invasion of weeds, adversely affecting special status plant species, upland vegetation, and/or wetlands. (Class II)	**BB-6a:** Weed Management. SFPP shall prevent invasion of invasive, non-native plant species into sensitive plant species habitats and vegetation types by conducting: • Implementation of measures during construction, such as cleaning vehicles prior to off-road use, using weed-free imported soil, restricted vegetation removal and requiring topsoil storage. • Development and implementation of weed management procedures to monitor and control the spread of weed populations along the pipeline. The following measures shall be implemented to control the introduction of weed[2] species within areas disturbed during pipeline construction; implementation of these measures during construction will be verified by the Environmental Monitor: • Vehicles used in pipeline construction will be cleaned prior to operation off of maintained roads each time they enter pipeline segments where sensitive natural communities are present. Segments with sensitive natural communities include the grassland and vernal pool habitats located from MP 44.6 to 45.3 and MP 52.7 to 53.9, the oak woodlands and grasslands between MP 12.8 and MP 14.7 and the grasslands in the watershed of the Contra Costa goldfields occurrence between MP 19.7 and MP 19.9. • Any imported fill material, soil amendments, gravel etc. required for construction/restoration activities and would be placed within 12 inches of the ground surface in non-urban settings shall be obtained from a source that can certify the materials as being "weed free." • Existing vegetation shall be cleared only from areas scheduled for immediate construction work (within 10 days) and only for the width needed for active construction activities. • During pipeline construction, the upper 6 inches of topsoil (or less depending on existing depth of topsoil) shall be salvaged and replaced wherever the pipeline is trenched through open land (not including graded roads and road shoulders). • Disturbed soils shall be revegetated with an appropriate seed mix that does not contain weeds (as defined below); revegetation in sensitive vegetation types shall adhere to the relevant mitigation measures: BB-3a, BB-5a, and/or BB-5c.	Entire alignment	Review and approval of weed management procedures and monitoring of the implementation of control measures.	Control establishment and spread of exotic non-native plants.	CSLC (and possibly USFWS, USACE and CDFG)	Before and during construction

[2] A "weed" is defined here as any plant species (1) included on the California Exotic Pest Plant Council List A or the Red Alert list of species which are serious problems in wildlands (CalEPPC, 1999), or (2) identified as a noxious weed with potential to damage agriculture by the California Department of Agriculture.

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
BB-7: Construction in native grasslands could cause vegetation removal and impacts to CDFG sensitive vegetation types. (Class II).	**BB-7a** Native Grassland Avoidance and Restoration. Since no native grassland was observed within the proposed pipeline ROW, this measure only applies to the Existing Pipeline ROW Alternative. SFPP shall avoid, minimize, and compensate for direct impacts to native grasslands, identified as sensitive communities by CDFG, due to pipeline construction activities by conducting: • Surveys and mapping of all native grasslands defined as sensitive by CDFG. • Maximum avoidance of sensitive communities by fencing. • Restricted vegetation removal and topsoil storage and replacement. • Consultation with the CDFG for any unavoidable sensitive community impacts. • Supervision and verification of the implementation of these measures by the Environmental Monitor. The initial step for this measure will be completion of surveys to identify and map native grasslands defined as sensitive by CDFG (grassland with greater than 20 percent cover of native grass species) within the pipeline right-of-way and associated work areas. These communities will be mapped and avoided to the maximum extent feasible. If construction work areas and/or associated overland travel in native grasslands is unavoidable, the following measures will be implemented during construction to minimize long-term impacts: (1) the upper 12 inches of topsoil shall be salvaged, stored in an upland location, and replaced; (2) project construction plans shall depict appropriate measures for topsoil protection and storage that will allow for survival of the native seed bank within the topsoil; (3) topsoil shall be replace at the surface and not used to backfill the trench, and excavated trench spoils or excess fill shall be placed over the pipeline under the topsoil and not dispersed onto the surface of the ROW. Implementation of these measures prior to and during construction will be supervised and verified by the Environmental Monitor (see Mitigation Measure BW-2b). Unavoidable direct impacts to native grasslands during construction and/or associated overland travel shall be mitigated by restoration of the affected area to pre-construction conditions. Procedures shall include, at a minimum, the following: • A map of affected native grassland communities to be impacted. • Measures demonstrating how maximum avoidance has been accomplished and why the proposed impact cannot be avoided.	Existing Pipeline ROW Alignment (near Travis Air Force Base and Dixon)	Review of map of native grassland within construction areas and restoration procedures; monitor over a five-year period for restored grass survival.	Restoration of native grasslands to pre-construction conditions.	CDFG	Mapping and procedure approval prior to construction. Implement during and following construction.

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	• Methods proposed for restoring the community, regionally native seed and/or plant materials to be used such that pre-construction species composition is restored, seed/plant installation methods, and maintenance measures (including weed control). • A minimum five-year monitoring program with detailed success criteria regarding species cover (such that the pre-construction percent cover of native grass species is restored), species composition, and species diversity as compared with pre-construction conditions documented prior to construction by a qualified biologist (the methods and results of which shall be described in the Plan). • Annual reporting to CDFG. • Detailed contingency measures in case of restoration failure (as determined by the responsible agencies following the five-year monitoring period), requiring remediation of the restored area with additional seeding and/or planting. Implementation of these measures shall be supervised and verified by the Environmental Monitor or other qualified biologist. NOTE: This Mitigation Measure will be effective only if adopted by the CSLC for this alternative alignment.					

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
BM-1: Pipeline construction could degrade aquatic habitat and temporarily disrupt fish movement (Class II/III).	**HS-1a:** Define water crossings in construction plans **HS-1b:** Open cut construction in streams shall be done using "in the dry" construction techniques. **HS-1c:** Implement erosion control procedures. **HS-1d:** Cross Pacheco Creek by HDD and/or boring if flowing water is present or expected to be present. **HS-2a**: Discharge hydrostatic test waters at appropriate waste facilities. **HS-3a:** Create contingency plan for unanticipated release of drilling fluids. (Note: See full text of the mitigation measures below)	See below	See below	See below	See below	See below
B-1: Pipeline spills could degrade or alter habitat for wildlife, aquatic habitats and organisms, special status plants and their habitat, upland vegetation, and/or wetlands. (Class I)	**B-1a:** Pipeline Spill Mitigation for Biological Resources. SFPP shall minimize pipeline spill impacts to sensitive plant species and communities and sensitive wildlife resource areas within the project area including lakes, tidally-influenced areas, and riparian and freshwater habitats by: • Development and implementation of spill cleanup measures to be incorporated as a supplement to the existing Emergency Response Plan (in conjunction with Mitigation Measure S-2d), including cleanup and containment procedures, restoration and monitoring requirements. • Supervision and verification of the implementation of these measures by the Environmental Monitor. Prior to operation of the pipeline, spill cleanup and restoration measures for vegetation and wetlands shall be incorporated as a supplement to the existing Emergency Response Plan. These measures shall be designed to protect special status plant species and sensitive vegetation types from spill damage, to minimize damage from response and repair operations, and to restore them to pre-spill conditions. These measures shall be consistent with, and incorporate relevant measures from, Mitigation Measures BB-2a through BB-6a. These measures shall discuss, at a minimum, the following: • Emergency diversion and containment measures to minimize the flow of product into known colonies of sensitive plant species or wetlands in the vicinity of the pipeline. • Equipment storage areas and mobilization procedures for each portion of the pipeline. • Non-destructive cleanup and restoration procedures. • All cleanup and restoration work shall be supervised and verified by the Environmental Monitor.	Entire alignment	Verification of incorporation of testing and spill restoration measures into existing Oil Spill Response Plan and Emergency Response Plan; monitoring of implementation.	To restore or recreate the affected vegetation type or special status plant population to pre-spill conditions.	USFWS , USACE, RWQCB and CDFG (possibly local jurisdictions)	Preparation and approval of measures prior to pipeline operation.

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	The extent of a spill shall be determined through water quality and soil contamination testing in order to determine the amount of sensitive vegetation types and species that may have been affected. To mitigate the potential loss of special status plant species resulting from a spill, a Rare Plant Mitigation Plan shall be developed in coordination with USFWS and CDFG to, at a minimum, re-establish known populations of special status plant species removed or damaged by the spill or cleanup activities, including areas outside the ROW. The plan shall include affected habitat monitoring for at least five years, or as specified by the responsible agencies, to evaluate habitat degradation and to determine if the population recovers from the spill. The plan will describe a contingency plan that, if the monitoring shows that the species population has been extirpated, a habitat restoration and species reintroduction program shall be implemented using the most suitable genetic source. The Emergency Response Plan shall also provide stipulations for development and implementation of site-specific Habitat Conservation Plans (HCPs) and other site-specific and species-specific measures appropriate for mitigating impacts on local populations of sensitive wildlife species. Access and egress points, staging areas, and material stockpile areas that avoid sensitive habitats shall be identified. The OSCP shall include species- and site-specific procedures for collection, transportation, and treatment of oiled wildlife, particularly sensitive species, and shall include provisions such as bonding to ensure funding for required cleanup measures. Describe in the Emergency Response Plan, where feasible, low-impact site-specific cleanup techniques such as hand-cutting contaminated vegetation and using low-pressure water flushing from boats to remove product from particularly sensitive wildlife habitats (e.g., tidal and freshwater marsh, riparian woodlands, lakes, and streams). More destructive techniques, such as shoveling, bulldozing, raking, and draglining can cause more damage to a sensitive habitat than the spill itself. The particular site-specific cleanup methods used in each case shall be determined by the Incident Commander in consultation with the appropriate agencies (e.g., USFWS and CDFG). The OSCP shall evaluate the no-cleanup option for ecologically vulnerable habitats, such as riparian.					

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	The Emergency Response Plan shall identify appropriately trained personnel and equipment to respond to a product spill, pursuant to 40 CFR 194 - *Response Plans for Onshore Pipelines*. In addition, pursuant to Title 14, Subdivision 4 (Office of Oil Spill Prevention and Response) of the California Department of Fish and Game Government Code, the OSCP shall discuss procedures that clearly outline how rehabilitation of oiled wildlife will be accomplished and assure by contract or other approved means, the equipment and personnel necessary to implement these procedures. The Emergency Response Plan shall incorporate wildlife contingency measures, including provision of: • Specifics of how to deal with oiled wildlife, both terrestrial and aquatic. • A list of names and telephone numbers of persons who are expert in the rehabilitation of oiled wildlife. • Locations and response times of facilities and persons for responding to oiled wildlife, creating facilities if necessary. • Indication of an ability to rehabilitate oiled wildlife over the long term, if necessary. To mitigate impact to wetlands, trees, and riparian vegetation due to a spill or cleanup activities, restoration and compensation measures described in Mitigation Measures BB-2a, BB-3a, BB-5a, and BB-5b shall be implemented to the maximum extent that they are in agreement with this mitigation measure. To mitigate for impacts to all vegetation types and sensitive plant species from weed invasion due to cleanup activities, weed monitoring and control measures described in Mitigation Measure BB-6a shall be implemented to the maximum extent that they are in agreement with this mitigation measure.					
B-2: Cleanup after a pipeline accident could affect wetlands, special status plants and wildlife, and upland vegetation (Class I/II).	**B-1a:** Implement pipeline spill clean up, containment, restoration, and prevention measures for biological resources. (See full text above.)	Entire alignment	Verification of incorporation of testing and spill restoration measures into existing Oil Spill Response Plan and Emergency Response Plan; monitoring of implementation.	To restore or recreate the affected vegetation type or special status plant population to pre-spill conditions.	USFWS , USACE, RWQCB and CDFG (possibly local jurisdictions)	Preparation and approval of measures prior to pipeline operation.

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Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
B-3: Overland travel during pipeline maintenance and repair could affect special status wildlife or plant species and upland vegetation or their habitats and/or to wetlands. (Class II)	**B-3a:** Pipeline Operations and Maintenance. SFPP shall avoid, minimize, and compensate for pipeline operation and maintenance impacts to sensitive plant species and vegetation types by: • Development and implementation of measures to avoid sensitive wildlife and plant species and habitats during pipeline operations and maintenance, to be incorporated as an addendum to the existing Operation and Maintenance Plan, including restrictions on off-road vehicular travel, mapping and avoidance of sensitive resources and record keeping of monitoring activities. • Restoration of sensitive vegetation types due to pipeline repair in accordance with other relevant mitigation measures. Prior to operation of the pipeline, measures to reduce and mitigate for pipeline operation and maintenance impacts to vegetation and wetlands shall be incorporated into the Operation and Maintenance Plan and approved by CSLC. These measures will be designed to avoid and minimize impacts to special status wildlife and plant species and sensitive vegetation types during routine monitoring of the pipeline and to restore these sensitive resources following necessary pipeline repair work. These measures shall be consistent with, and incorporate relevant measures from, Mitigation Measures BB-2a through BB-6a. Measures to minimize impacts to sensitive plant species and vegetation types, including wetlands, from overland travel during routine pipeline monitoring shall include, at a minimum, the following: • Develop routine pipeline monitoring methods, including proposed travel routes, that limit off-road vehicular travel. • Create a map of the pipeline route depicting the location of all special status plant species and wetlands to be used during necessary off-road vehicular travel to avoid these resources. • Off-road vehicular travel shall be prohibited during rainstorms or within a two-week period following any precipitation event. • Prohibit disturbance and clearing of riparian and wetland vegetation during inspections. To minimize impacts to biological resources and wetlands during planned pipeline repair work, travel and work areas shall be flagged and fenced prior to repair work to identify and avoid impacts to sensitive habitats as depicted on the pipeline map. In addition, Mitigation Measures BB-2a through BB-6a shall be applied to the extent that they are in agreement with this mitigation measure. SFPP shall maintain records of mitigation implementation on file at its pipeline maintenance office. To mitigate the loss of wetlands, trees, and riparian vegetation during pipeline repair work involving excavation, the restoration and compensation measures described in Mitigation Measures BB-2a, BB-3a, BB-5a and BB-5b shall be implemented during and after repair work.	Entire alignment	Update operations and maintenance procedures with verification of implementation by the Environmental Monitor.	Avoidance and maintenance of existing sensitive vegetation types and rare plants, and restoration of sensitive vegetation affected by pipeline repair to pre-construction conditions.	CSLC	Preparation and approval of measures prior to pipeline operation.

Table F-3. Mitigation Monitoring Program – Biological Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
B-4: Construction or operation and accident impacts on sensitive biological and water resources within Cordelia Marsh and Slough could affect areas of the marsh (Class I/II).	**B-4a:** Cordelia Mitigation Segment. In order to minimize impacts to the sensitive biological and water resources of the Cordelia Slough and Marsh, a mitigation segment is recommended. The 2.6-mile segment diverges from the proposed route at MP 17.6 and rejoins the proposed route at approximately MP 20.0. The Cordelia Mitigation Segment parallels Ramsey Road, until Cordelia Road, where it continues along Cordelia Road to the UPRR ROW where it rejoins the proposed route. This segment is illustrated in Figure D.4-3. NOTE: This Mitigation Measure will be effective only if adopted by the CSLC for this segment of the proposed pipeline.	Segment 3	Consider alternate pipeline alignment outside of known sensitive biological resources in the Cordelia Marsh and Slough.	Avoidance of Cordelia Slough and Marsh in final pipeline alignment.	CSLC	Prior to construction
B-5: Construction and potential accidents in Suisun Marsh (Class I)	**B-5a:** Mitigation Segment EP-1. As illustrated on Figure D.4-4, this mitigation segment would diverge from the Existing Pipeline ROW Alternative route near Pierce Lane along Goodyear Road. Where the Existing Pipeline ROW Alternative would follow the UPRR ROW and bear northeast across the Suisun Marsh and Slough, which is the largest managed marsh in the San Francisco estuary, as well as the Grizzly Island Wildlife Area, this mitigation segment would follow the route of the Proposed Project, continuing north paralleling access roads along I-680 until just north of Smith Drive on Ramsey Road. At this point, it would turn northeasterly and follow an existing transmission corridor and dirt roads through the Cordelia Marsh and across the Cordelia Slough. On the east side of the slough, the proposed route would briefly enter the City of Fairfield and would parallel the UPRR right-of-way until it would intersect with and turn east adjacent to Cordelia Road. The mitigation segment would return to unincorporated Solano County along Cordelia Road. Approximately 800 feet east of Pennsylvania Ave, the pipeline would cross the UPRR tracks where it would rejoin the Existing Pipeline ROW Alternative route. NOTE: This Mitigation Measure will be effective only if adopted by the CSLC for this alternative alignment.	Existing Pipeline ROW Alignment (near Suisun Marsh and Grizzly Island Wildlife Area)	Consider alternate pipeline alignment away from Suisun Marsh and Grizzly Island Wildlife Area in final pipeline alignment.	Avoidance of Suisun Marsh and Grizzly Island Wildlife Area in final pipeline alignment.	CSLC	Prior to construction

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Table F-4. Mitigation Monitoring Program – Cultural Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
Cul-1: Identified cultural resources within and adjacent to the project alignment may be damaged or destroyed by construction operations. (Class II)	**Cul-1a:** Archaeological Monitoring and Site Avoidance. Prior to commencement of grading, SFPP shall revise the alignment to the extent feasible to avoid all archaeological sites by at least 50 feet without exacerbating other environmental impacts. Archaeological sites within 100 feet of the alignment shall be barrier fenced or otherwise protected to prevent accidental disturbance during construction, and the Cultural Resources Monitor shall be present when construction is occurring within 200 feet of identified sites. The archaeological monitoring program shall include the following tasks: • Pre-construction Assessment and Construction Training (see Cul-1c). • Construction monitoring. • Site recording and evaluation. • Mitigation planning. • Curation. • Report of Findings.	Pipeline ROW and construction locations	Review design plans to check for avoidance; field review of alignment to check for barrier protection.	Damage to cultural sites is avoided.	CSLC	Before and during construction
Cul-1: Identified cultural resources within and adjacent to the project alignment may be damaged or destroyed by construction operations. (Class II)	**Cul-1b:** Approval of Erosion Control Procedures. The Cultural Resources Monitor shall review and approve any erosion control and revegetation procedures (as required in Mitigation Measure HS-1c) in the vicinity of a known significant site prior to the implementation of the erosion control and revegetation programs.	Pipeline ROW and construction locations	Archaeological review and approval of any erosion control and revegetation programs.	Damage to cultural sites is avoided.	CSLC	Before construction
Cul-1: Identified cultural resources within and adjacent to the project alignment may be damaged or destroyed by construction operations. (Class II)	**Cul-1c:** Cultural Resources Awareness Training. All construction personnel shall be trained by the Cultural Resources Monitor regarding the potential for exposing cultural resources, including prehistoric and historic resources during construction, the locations of potentially sensitive areas, and protocols to treat unexpected discoveries. Training shall be implemented prior to the initiation of construction or ground-disturbing activities. Training shall inform all construction personnel of the procedures to be followed upon the discovery of archaeological materials including Native American burials.	Pipeline ROW and construction locations	Verify that all workers complete workshop.	Damage to cultural sites is avoided.	CSLC	Before construction

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Table F-4. Mitigation Monitoring Program – Cultural Resources

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
Cul-2: Cultural resources that are presently unknown may be affected by project construction. (Class II)	**Cul-2a:** Archaeological Site Monitoring and Data Recovery. The Cultural Resources Monitor shall monitor all construction within 200 feet of archaeological sites and sensitive areas, including (a) all areas not surveyed, (b) areas determined to have a potential for buried cultural resources, and (c) traditional properties identified by local Native Americans. If cultural resources, such as lithic debitage or ground-stone, shell midden, historic debris, building foundations, or human bone, are discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the site until the Cultural Resources Monitor can assess the significance of the find and, if necessary, develop appropriate treatment measures in accordance with the CSLC, the State Historic Preservation Officer (SHPO), and other appropriate agencies.	Pipeline ROW and construction locations	Monitoring by a qualified archaeologist.	Cultural site damage does not occur; data recovery is complete.	CSLC	During construction
Cul-3: Project construction has the potential to expose Native American remains at both recorded and as yet unknown locations. (Class II)	**Cul-3a:** Native American Coordination. Native American remains shall be treated in accordance with State law. The disposition of Native American burials is governed by Section 7050.5 of the California Health and Safety Code and Sections 5097.94 and 5097.98 of the Public Resources Code, and falls within the jurisdiction of the Native American Heritage Commission (NAHC). Appropriate security measures shall be implemented to ensure that any remains are not disturbed prior to their removal.	Pipeline ROW and construction locations	Monitoring of treatment in accordance with State law and NAHC.	Native American remains are treated as required by law.	CSLC	During construction

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Table F-5. Mitigation Monitoring Program – Environmental Contamination and Hazardous Materials

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
EC-1: Pipeline construction through contaminated sites could cause health hazards to construction workers and the public. (Class II)	**EC-1a:** Medium Potential Impact Sites. SFPP shall thoroughly review current agency (e.g., Department of Toxic Substances Control [DTSC], Regional Water Quality Control Board, the appropriate County's Environmental Health Division or Fire Department) records for "medium" potential sites (as defined in Tables D.6-1 through D.6-7) followed by site-specific visual inspection of the pipeline route by a qualified environmental consultant approved by the CSLC. In addition, records of the U.S. Army Corps of Engineers shall be investigated for information on the Benicia Arsenal. Record review shall identify data confirming that no off-site contamination extends to the pipeline route, or that adequate remediation of the pipeline route has occurred, or agency certified closure of the site. Visual inspection shall be completed for the unpaved portions of the route and shall verify no evidence of off-site discharge, surface stains or unauthorized dumping. If results of the record review or visual inspection indicate that contamination is present in the pipeline route, medium potential sites shall be treated as high potential and the requirements of EC-1b shall be implemented. Record review of these potential sites must determine that the horizontal limits of soil or groundwater contamination do not extend near the proposed trench area. Where the limits of contamination are uncertain, a soil vapor survey, soil sampling, and/or groundwater sampling shall be conducted along the affected length of the proposed trench. Laboratory test results from these site investigations shall be reported to DTSC or the appropriate County's Environmental Health Division and shall include an assessment of the contamination potential in the trench area. Documentation of all site research and a copy of the DTSC or the appropriate County's Environmental Health Division approval letter must be provided to the CSLC 60 days prior to start of construction.	All medium potential sites as identified in Tables D.6.1 through D.6-7.	Review summary report. Confirm absence or evidence of offsite contamination at the pipeline alignment.	Hazardous conditions are not created.	CSLC, DTSC, County environmental health departments	Prior to construction
EC-1: Pipeline construction through contaminated sites could cause health hazards to construction workers and the public. (Class II)	**EC-1b:** High Potential Impact Sites. SFPP shall review current agency (e.g., Department of Toxic Substances Control [DTSC], Regional Water Quality Control Board, the appropriate County's Environmental Health Division or Fire Department) records of "high" potential sites (as defined in Tables D.6-1 through D.6-7) to design an investigation program to assess whether there is contamination in surface waste or debris and underlying soil and shallow groundwater. The review shall be performed by a qualified environmental consultant approved by the CSLC. If record review demonstrates that contamination from "high" sites does not extend off-site, or if remediation has been completed, and/or the agency has issued a case-closed status, the site may be downgraded to a "low" potential site and no further action is required. If the records review does not eliminate the possibility that contamination could extend off-site, an investigation shall be performed. The investigation shall include collecting samples for laboratory analysis and quantification of contaminant levels within the proposed excavation and surface disturbance areas. Subsurface investigation for high potential sites shall determine appropriate worker	All high potential sites as identified in Tables D.6.1 through D.6-7, and other high potential sites discussed in Segment 1 that are not included in the tables.	Review environmental contamination reports. Compare contaminant levels to appropriate threshold concentration levels and review adequacy of health and safety plan for existing contaminants.	Hazardous conditions are not created.	CSLC, DTSC, County environmental health departments	Prior to construction

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Table F-5. Mitigation Monitoring Program – Environmental Contamination and Hazardous Materials

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	protection and hazardous material handling and disposal procedures appropriate for the subject site. Areas with contaminated soil and groundwater determined to be hazardous waste shall be removed by personnel who have been trained through the OSHA recommended 40-hour safety program (29CFR1910.120) with an approved plan for groundwater extractions, soil excavation, control of contaminant releases to the air, and off-site transport or on-site treatment. Planning completed under this measure shall consider the potential for existing contamination to migrate along the pipeline route; if this is determined to be possible, impermeable backfill (i.e., cement slurry) shall be used around the pipe. Health and safety plans, prepared by a qualified and approved industrial hygienist, shall be developed to protect the general public and all workers in the construction area. Results shall be reviewed and approved by the appropriate County's Environmental Health Division or DTSC prior to construction. Documentation of all site research and a copy of the DTSC or appropriate County's Environmental Health Division approval letter must be provided to the CSLC 60 days prior to start of construction. If the approved route includes construction through any portion of the Peyton Slough Restoration and Remediation Project, SFPP shall coordinate with Rhodia Inc. and all involved agencies (RWQCB, CSLC, USACE) to define the location and dimensions of specific project components (e.g., bore pits, access roads, and work areas) in order to minimize impact to ongoing or completed remediation work and to minimize impacts to resources in the area (e.g., wetlands and sensitive species habitat).					
EC-1: Pipeline construction through contaminated sites could cause health hazards to construction workers and the public. (Class II)	**EC-1c:** Unknown Soil or Groundwater Contamination. During all project excavation activities, the contractor shall inspect the exposed soil for visual evidence of contamination. If visual contamination indicators are observed during excavation or grading activities, all work shall stop and an investigation shall be designed and performed to verify the presence and extent of contamination at the site. A qualified and approved environmental consultant shall perform the review and investigation. The investigation shall include collecting samples for laboratory analysis and quantification of contaminant levels within the proposed excavation and surface disturbance areas. Subsurface investigation shall determine appropriate worker protection and hazardous material handling and disposal procedures appropriate for the subject site. Areas with contaminated soil and groundwater determined to be hazardous waste shall be removed by personnel who have been trained through the OSHA recommended 40-hour safety program (29CFR1910.120) with an approved plan for groundwater extractions, soil excavation, control of contaminant releases to the air, and off-site transport or on-site treatment. A health and safety plan, prepared by a qualified and approved industrial hygienist, shall be used to protect the general public and all workers in the construction area. A report documenting investigation results and actions taken shall be submitted to the appropriate County's Environmental Health Division or DTSC for review and approval within 60 days of completion of pipeline construction at any location where contamination is identified.	Along all segments of the pipeline alignment.	Coordinate with monitoring personnel to confirm appropriate training and understanding of testing equipment, review weekly reports prepared by monitoring personnel. Conduct periodic site visits during construction to confirm that proper procedures are being implemented.	Hazardous conditions are avoided.	CSLC, DTSC, County environmental health departments	During construction

Table F-5. Mitigation Monitoring Program – Environmental Contamination and Hazardous Materials

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
EC-2: Landfills near the alignment could result in encountering methane or other flammable or toxic gases during construction. (Class II)	**EC-2a:** Landfill Gases. To assess the possibility that contamination from identified landfills (as shown in Tables D.6-1 through D.6-7) could affect the pipeline construction zone, DTSC and appropriate County Environmental Health Division record searches shall be completed to determine whether contamination could extend into the proposed trench. If records cannot confirm a gas-free landfill perimeter adjacent to the project, a soil vapor survey consisting of driving probes every 25 to 50 feet along the affected trench line shall be conducted. Vapor samples shall be tested for methane, other flammable gases, and volatile organic compounds. Laboratory test results shall be reported to DTSC or the appropriate County Environmental Health Division and shall include an assessment of the contamination potential in the trench area. Documentation of all site research and a copy of the DTSC or appropriate County's Environmental Health Division approval letter shall be provided to the CSLC prior to start of construction.	At landfill sites along Segments 1 and 5 pipeline alignments.	Review environmental contamination report. Compare contaminant levels to appropriate threshold concentration levels for existing contaminants.	Construction through/near landfills does not create hazardous conditions.	CSLC, DTSC, County environmental health departments	Prior to construction
EC-3: Construction could result in the release of natural gas from existing gas wells, causing an explosion or fire hazard and/or potential health hazards. (Class II)	**EC-3a**: Abandoned Natural Gas Wells. Prior to trench excavation and pipeline construction, the Applicant shall contact the California Department of Conservation, Division of Oil, Gas and Geothermal Resources for specific information on wells located in or near the pipeline route, including location and abandonment details. The Applicant shall make a diligent effort to avoid construction near abandoned natural gas wells. If the pipeline is located over or near (i.e., within 50 feet of the pipeline route) a plugged or abandoned well, or if an unrecorded well is encountered during construction, the Applicant shall coordinate with the Division of Oil, Gas and Geothermal Resources to ensure that the well is flagged for avoidance or is correctly abandoned.	Along Segment 5 pipeline alignment.	Review gas field data and verify that avoidance flags are placed.	Identified wells are avoided or correct abandonment is ensured.	CSLC, California Department of Conservation, Division of Oil, Gas & Geothermal Resources	Prior to construction
EC-5: Pipeline accidents could result in spills of refined petroleum products that would cause soil and potential groundwater contamination. (Class II)	**EC-5a:** Site Characterization After Accident. After a pipeline spill or leak has occurred, a site characterization shall be completed by SFPP to determine the lateral and vertical limits of contamination, concentration of contaminates in the soil or groundwater, and potential risk to the environment. Site characterization shall follow a workplan submitted to and approved by the local agency, the DTSC or RWQCB. Findings and recommendations for remedial action shall be presented to the oversight agency before proceeding with remediation.	Entire route	Review reports. Compare contaminant levels to appropriate threshold concentration levels and review adequacy of health and safety plan for existing contaminants.	Pipeline accidents are followed by thorough cleanup.	CSLC, DTSC, County environmental health departments	Prior to construction

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Table F-5. Mitigation Monitoring Program – Environmental Contamination and Hazardous Materials

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
EC-6: Spills of pigging waste could cause soil contamination at the pig receiver. (Class II)	**EC-5a:** Conduct a site characterization after an accident. (See full text above).	Entire route	Review reports. Compare contaminant levels to appropriate threshold concentration levels and review adequacy of health and safety plan for existing contaminants.	Pipeline accidents are followed by thorough cleanup.	CSLC, DTSC, County environmental health departments	Prior to construction

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Table F-6. Mitigation Monitoring Program – Geology, Soils, and Paleontology

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
G-2: Pipeline construction could expose and damage paleontological resources. (Class II)	**G-2a:** Paleontological Resource Procedures. Paleontological resources may exist at the locations where the proposed alignment crosses moderate to highly sensitive units as follows: Paleontological monitoring of excavation within Mileposts 11.0 to 15.5, 17.6 to 18.3, 26.1 to 30.8, 35.3 to 36.0, and 37.5 to 40.1 shall be completed by a qualified paleontologist. The paleontologist shall provide education and training of construction workers about potential paleontological resources that may be discovered and, subject to prior approval by the CSLC on a case-by-case basis, he/she will have the ability to stop construction if potentially significant resources are identified and threatened by the project. All specimens collected from public land shall be deposited at a curating institute such as the University of California at Berkeley Museum of Paleontology.	Segment 2: MP 11.0–15.5 Segment 3: MP 17.6–18.3, Segment 4: MP 26.1–30.8(end), Segment 5: MP 35.3–36.0, 37.5-40.1.	Paleontological monitoring and education of construction workers by a qualified paleontologist.	Monitoring and procedures are consistent with the Society of Vertebrate Paleontology guidelines (1995) and specimens collected from public land are deposited at a curating institute.	CSLC	Prior to ground disturbance, and construction monitoring during construction
G-3: Slope failures or downslope creep of unstable natural or man-made slopes along the pipeline could lead to substantial pipeline damage or failure. (Class II)	**G-3a**: Geotechnical Investigations at Landslide Crossings. Data generated from geotechnical investigations performed at all landslide crossings (MP 14.6 to 14.9, 15.1 to 15.3, and 19.81 to 19.83) shall be used to develop criteria to ensure that appropriate slope stabilization measures are included in the project design. These measures may include soil improvements, buttressing of the slopes, compaction of trench backfill, or deepening trenches to place the pipeline beneath potential slide activity. The results and recommendations of the geotechnical investigations shall be presented in a report to be delivered to the contractor prior to the final design of the pipeline. The recommendations of the geotechnical report shall be addressed and incorporated into the pipeline final design, and submitted to the CSLC and California State Fire Marshal (CSFM) for review and approval at least 60-days in advance of construction.	Segment 2: MP 14.6 to 14.9, 15.1– 5.3 Segment 3: MP 19.81–19.83	Review site-specific geotechnical study to verify that design recommendations are consistent with standard geotechnical engineering practice.	Risk of pipeline rupture at landslides is minimized.	CSLC, CSFM	Prior to project construction
G-3: Slope failures or downslope creep of unstable natural or man-made slopes along the pipeline could lead to substantial pipeline damage or failure. (Class II)	**G-3b**: Valves at Landslide Crossings. Motor operated valves (MOVs) and/or check valves shall be placed at either side of any recognized landslide hazard zone if identified by a geotechnical investigation or by the CSLC as being necessary to prevent excess spillage in the event of a landslide-caused rupture. Locations of all MOVs and/or check valves shall be presented in the final pipeline design, coordinated with the location of such valves at active fault crossings, and subject to approval of the CSLC in conjunction with the CSFM.	Entire alignment	Review final pipeline design to verify that design recommendations are consistent with standard geotechnical engineering practice.	Risk of pipeline rupture at landslides is minimized.	CSLC, CSFM	Prior to project approval

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Table F-6. Mitigation Monitoring Program – Geology, Soils, and Paleontology

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
G-4: There could be excavation failure where the proposed pipeline crosses beneath or adjacent to active highway or railroad ROW. (Class II)	**G-4a**: Construction Below Active Highways and Railroads. The minimum depth of cover underneath the highways and railroads shall be as per the applicable permitting agency requirements, typically 7 feet for highway crossings and 10 feet for railroad crossings. In areas where the pipeline excavation is within 10 feet of the centerline of an active railroad, a geotechnical investigation shall be performed to develop criteria for stabilizing the excavation. These criteria shall account for periodic surcharge loading due to railroad operations; completion of the investigation shall be documented and submitted to the CSLC for review prior to construction. All railroad crossings shall be permitted with the appropriate facility owner. Facility owner notification prior to construction will be as specified on the permit and proof of such notification shall be made available to the CSLC.	In areas where the pipeline excavation is within 10 feet of the centerline of an active railroad.	Review excavation and shoring procedures for compliance with local regulations and UPRR.	Shoring plans for excavations are consistent with accepted geotechnical engineering standards.	UPRR, CSLC, local jurisdictions, Caltrans, and county trenching codes	Prior to construction and during construction

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Table F-6. Mitigation Monitoring Program – Geology, Soils, and Paleontology

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
G-5: Active fault crossings could result in pipeline rupture. (Class I)	**G-5a**: General Fault Crossing Design Parameters. In order to develop site-specific measures for final pipeline design for individual fault crossings, the Applicant shall complete final assessment of fault data at the Concord, Green Valley, and Cordelia Fault crossings to determine the pipeline's capability to withstand worst-case fault displacements. In order to retain the pipeline's ductility, the pipeline shall be aligned to cross the fault with as close to a 90° angle as possible to avoid shortening or large compressive strains during fault movement. Other appropriate design and operational procedures to be considered for incorporation during final pipeline design include, but are not limited to, engineered backfill, thicker wall pipe, MOVs and/or check valves on either side of the fault crossings and/or use of seismic switches/alarms to minimize the potential impact of a sizeable seismic event. Final pipeline design with associated design mitigation measures shall be submitted to the CSLC and the California State Fire Marshal (CSFM) for approval and shall be made available to the affected counties' public works departments for review. The required Supplemental Spill Response Plan defined in Mitigation Measure S-2a (Section D.2) will include adequate specific measures for containment, cleanup/restoration of product spills resulting from pipeline rupture that could possibly reach surface water and/or identified sensitive habitat either directly or through any conduit including overland or subsurface flow. However, the site-specific content of the Supplemental Spill Response Plan due to pipeline rupture at the following fault locations cannot be known until final pipeline design and shutoff valves are determined. At a minimum, the Supplemental Spill Response Plan shall be revised as necessary to reflect final pipeline design in the vicinity of the listed faults; submitted to the CSLC for review and approval at least 60-days prior to placing the pipeline in service; and contain the following information: • Delineation of the extent of the maximum expected worst-case product spill at each fault location; • Characterization of the conditions and habitat value of the plants, animals, soil and water within the delineated area; • Placement of sufficient, centrally located, spill response resources to minimize ecological damage resulting from a potential spill at the listed fault locations; • A programmatic outline for the restoration of conditions and habitat values within the impacted area as characterized prior to the spill event; • A commitment to the satisfaction of the CSLC for the payment of a mitigation fee, in-kind restoration of like-habitat, or other similar measures equivalent to the temporary loss in habitat value occurring from the time of spill to successful restoration as determined by approved methodologies of the Department of Fish and Game, U.S. Fish & Wildlife Service, or other appropriate agency.	Segment 1: Concord Fault; Segment 2: Green Valley Fault; Segment 3: Cordelia Fault; Segment 5: Vaca Fault	Review alternative pipeline alignment perpendicular to fault orientation (and outside landslide area). Review trench design for fault hazard crossing.	Fault crossing design recommendations are consistent with standard engineering practice.	CSLC, CSFM and Contra Costa County Department of Public Works	Prior to project approval

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Table F-6. Mitigation Monitoring Program – Geology, Soils, and Paleontology

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	Concord Fault. Pipeline construction for the Concord Fault crossing, which will be accomplished by HDD, shall use a minimum 0.5 inch pipe wall thickness and shall include an MOV at MP 0.3 or at the Concord Station and an additional MOV at approximately MP 0.5. Green Valley Fault. Preliminary design for the Green Valley Fault crossings assumes there is the potential for pipeline rupture. This pipeline crossing shall utilize a 0.5 inch pipe wall thickness. An MOV at MP 9.77, a check valve at MP 10.28, and a check valve at MP 10.95 shall be installed to limit the volume of product released should rupture occur. Final design of the Green Valley Fault crossing may warrant additional valves and different locations for the valves. Cordelia Fault. The design analysis for the Cordelia Fault crossing indicates that there is an extremely low potential for pipeline rupture. Pipeline design shall follow the general parameters described above as appropriate. The crossing shall be constructed utilizing 0.5 inch pipe wall thickness.					
G-5: Active fault crossings could result in pipeline rupture. (Class I)	**G-5b**: Pipeline Operations Plan. At least 60-days prior to placing the proposed pipeline into service, SFPP shall submit to the CSLC and California State Fire Marshal (CSFM) for final review and approval, a revised Pipeline Operations and Maintenance Plan (POMP). The POMP shall address internal and external maintenance inspections of the completed facility, including details of the integrity testing methods to be applied, corrosion monitoring and testing of the cathodic protection system, leak monitoring, emergency response procedures and protocols. The POMP shall also include and address all applicable operational mitigation measures contained in this document including, but not limited to, geohazard analysis for monitoring fault crossings, procedures to be followed to assess the pipeline for continued safe operation, which may include hydrotesting, gauge pig runs, smart pigging, and other appropriate assessment methods and analyses, in the vicinity of fault crossings following a seismic event, liquefaction areas, landslide zones, and settlement. Within three months following promulgation of any new Federal or State regulation relating to issues and requirements contained in the approved POMP, SFPP shall update the POMP and submit a revised copy to the CSLC and CSFM for review and approval. SFPP shall incorporate the following practice into the POMP for review and approval by the CSLC at least 60-days in advance of construction: • Immediately following an earthquake within the parameters shown in the table below, that causes pipeline rupture, or that causes the pipeline to be shut-down, qualified SFPP operations personnel shall inspect all parts of the pipeline alignment that fall within the specified distance of the earthquake epicenter for evidence of ground deformation (e.g., cracks or displacements). If surface fault rupture is reported or observed, the pipeline alignment within at least 1,000 feet of the rupture shall be inspected. If any part of the pipeline	Entire alignment, especially Segments 1, 2, 3, and 5.	Incorporate into pipeline operations and maintenance procedures to inspect all parts of the pipeline alignment that fall within the specified distance of the earthquake epicenter after a seismic event.	Risk of pipeline accident is minimized.	CSLC, CSFM	After operation and following a seismic event

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Table F-6. Mitigation Monitoring Program – Geology, Soils, and Paleontology

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	has been subjected to ground displacement including settlement, liquefaction, lateral spreading, landsliding or fault rupture, or high levels of ground shaking (greater than 0.6g), those areas of the pipeline and 1,000 feet beyond shall be inspected. SFPP shall submit reports of its findings to the CSLC and CSFM. In the event of pipeline shut-down or rupture due to a seismic event, the pipeline shall not be re-operated without prior review and approval by the CSLC and CSFM. • Earthquake Magnitude (Richter scale), Epicentral Distance (miles) 6 5 6.5 10 7 15 7.5 20 SFPP shall prepare and submit for review and approval by CSLC and CSFM, a detailed post earthquake inspection and monitoring plans and procedures to assess the integrity of the pipeline meeting the seismic design criteria used in fault crossings and other seismic hazards, for continued safe operation of the pipeline.					
G-6: Strong earthquake-induced ground shaking could result in significant damage to above-ground structures and lead to failure of open trenches during construction. (Class II)	**G-6a**: Excavation Safety and Trench Design. In order to ensure the safety of excavations along the entire pipeline, OSHA-approved shoring shall be used at all times when shoring is required. Within the SFPP Concord Station, potential impacts of groundshaking shall be assessed to determine the adequacy of OSHA-approved shoring. Any necessary enhancements to OSHA-approved shoring within the Concord Station shall be incorporated into the final trench design.	Entire alignment	Review results and recommendations of the investigation and ensure they are incorporated into the final trench design.	Trench safety is maintained during construction.	CSLC	Prior to construction and during construction

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Table F-6. Mitigation Monitoring Program – Geology, Soils, and Paleontology

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
G-7: Liquefaction could result in loss of ground bearing capacity and/or lateral spreading, both of which could result in damage to pipeline. (Class II)	**G-7a**: Reduce Liquefaction Hazard. Final geotechnical analysis shall be conducted in areas underlain of medium and high liquefaction potential. The results and recommendations of the geotechnical analysis shall be incorporated into the final pipeline design. If moderate to high liquefaction potential is confirmed by geotechnical analyses, then design measures shall be implemented at the corresponding location. Appropriate design is dependent on site-specific conditions and could include the following specific options: • Burial of the pipeline in competent soil below the liquefiable soil layer prevents any liquefaction hazard to the pipeline. However, liquefiable soils often extend down to a depth of 20 to 50 feet. Therefore, it may be impractical to consider this mitigation in all circumstances. • Burial of the pipeline within the liquefiable layer often results in uplift forces on the pipeline. The impact of uplift on the pipeline can be mitigated through the use of densification techniques, such as stone columns, vertical anchors (tension piles), concrete coating on the pipe, or by use of thicker-walled, ductile steel pipe. • The impacts of lateral spreading in areas where the pipeline is buried in a competent layer above the zone of liquefiable soil can be mitigated through the use of the same design considerations that apply at fault crossings (see Mitigation Measure G-5a). The route should be selected to avoid large compressive strains; thick-walled, ductile steel pipe should be used; and the pipe should be buried in a shallow trench to limit the lateral and friction forces on the pipe. The final geotechnical studies and design recommendations that result from this mitigation measure shall be provided to the CSLC for review and approval at least 60 days before construction.	Segment 1: MP 0.30–0.9, 3.0–5.02, 6.1–6.33 Segment 2: MP 6.33–7.75, and WC 6–15, Segment 3: MP 18.9–19.7, 22.85–24.5, and WC 16A and 17, Segment 4: MP 24.5–24.85, Segment 5: MP 61.2–65.2 and all WC's, Segment 6: MP 65.2–66.6, 66.8–67.2, and 68.3–70, Segment 7: all	Review of geotechnical report by impacted counties for county approval regarding compliance with local regulations.	Pipeline damage by liquefaction is minimized.	Contra Costa, Solano and Yolo County Departments of Public Works, CSLC, CSFM	Prior to construction
G-8: A seiche could remove soil cover and damage the pipeline. (Class II)	**G-8a**: Protection from Seiche Inundation. An analysis to evaluate wave run-up and erosion potential shall be conducted to identify local conditions that may be impacted by a series of seiche waves on the order of 3 to 5 feet high. The report shall provide specific recommendations about where to place erosion protection for the buried pipeline. Possible forms of protection from the erosive action of seiche waves could include armoring of slopes facing the water by either paving or placement of rip-rap, or where the topography is very flat, placement of an armored berm over or across the pipeline. SFPP shall re-survey and submit a report to the CSLC describing the condition and depth of cover over the existing 14-inch pipeline at the crossing of Carquinez Strait. A minimum of 5-feet of cover shall be maintained to the satisfaction of the CSLC, unless an equivalent method of protection is approved.	Segment 1: MP 4.2 to 5.02, Segment 2: MP 6.13 to 7.36	Review of analysis of wave run-up.	Reduce likelihood of seiche damage to pipeline.	CSLC	Prior to construction

Table F-7. Mitigation Monitoring Program – Hydrology and Water Quality

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
HS-1: Construction activities including ROW clearing can disturb stream sediments and leave exposed soil that can be washed into nearby waterways. (Class II)	**HS-1a**: Construction Plans to Define Water Crossings. Construction work in stream channels shall follow construction plans and a schedule approved by the CSLC, applicable RWQCB, and California Department of Fish and Game submitted at least 60 days prior to the start of construction. Construction plans shall show, as applicable, stream plan view, stream cross section, location and burial depth of the pipeline, trench dimensions, location of access roads and spoil piles, stream crossing techniques, flood control structure and levee protection, culvert sizes, diversion structures, sediment control structures, equipment to be used, staging areas, and any other information relevant to the crossing as deemed appropriate by the reviewing agency. Plans showing typical rather than site-specific crossing techniques may be used for routine crossings of small drainageways at the discretion of the reviewing agency. No material that does not have a specific purpose related to pipeline construction within the stream shall be placed in the streambed. No material shall be left in the streambed after construction except as allowed by the approved plans. The channel cross section shall not be permanently altered except as allowed by the approved plans. Streambed construction shall be accomplished as quickly as possible as approved by the responsible agency and only during the period of stream low flow (generally mid-June to end of October). All work in the Suisun Marsh shall adhere to the October through April closure specified by the California Department of Fish and Game. The period of construction may be subject to further constraint in other environmental issue areas.	At all water crossings	Approval of construction plans and schedule for construction work in stream channels by appropriate agencies.	Minimal impacts to waterways with approval by appropriate agencies.	CSLC, applicable RWQCB, and CDFG	Prior to construction
HS-1: Construction activities including ROW clearing can disturb stream sediments and leave exposed soil that can be washed into nearby waterways. (Class II)	**HS-1b**: Open Cut Crossing Methods. Open cut construction in streams shall be done using "in the dry" construction techniques. "In the dry" construction consists of diverting the streamflow into a controlled channel or culverts (flume pipes) on one side of the streambed to provide a construction zone free of surface flow.	At all open-cut water crossings	Verify use of "in-dry" techniques for open-cut crossings. Confirmation by appropriate agency and Environmental Monitor.	Open cut crossings are "in the dry."	CSLC, RWQCB	Before and during construction

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Table F-7. Mitigation Monitoring Program – Hydrology and Water Quality

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
HS-1: Construction activities including ROW clearing can disturb stream sediments and leave exposed soil that can be washed into nearby waterways. (Class II)	**HS-1c**: Erosion Control Procedures. SFPP shall use erosion control procedures, including the provisions defined below. The specific procedures shall be developed by an engineer or other appropriate professional with expertise in the field of hydrology and sediment transport, and shall include the following items which shall be used during all construction activities: • Where the pipeline will be constructed on slopes of 15% or greater, permanent erosion control features shall be installed, such as terraces, to control long-term erosion. • Disturbed areas shall be restored to their original cross section and revegetated. • Specific best management practices (BMPs) for erosion and sediment-control techniques shall be used during construction (such as silt fences, straw bale dikes, diversion channels). • Permanent erosion control measures shall be included in project design (i.e., water bars, trench dams, diversion ditches, water bars, energy dissipators, dips, staked bales, erosion control mats, sediment basins, and berms). • Erosion-control structures (such as water bars and terraces) shall be left in-place on hillsides to control gully erosion after construction. • Streams be crossed at right angles, where possible, to minimize disturbance. If not possible, SFPP shall consult with the CSLC and other appropriate agency personnel for approval prior to construction of the stream crossing. • ROW drainage shall be directed away from stream crossing sites. • Stream channel disturbance shall be minimized by staying within the construction ROW. These procedures shall be implemented during construction, and compliance monitoring shall occur during and one year after construction of the project to ensure that erosion does not expose the pipeline. An annual report shall be submitted to the CSLC and applicable RWQCB describing status of erosion prevention and restoration/revegetation efforts one year after completion of construction.	Entire alignment	Verification of specific conditions for erosion control. Specific procedures shall be developed by an engineer or other appropriate professional with expertise in the field of hydrology and sediment transport and will be confirmed by an environmental monitor.	Erosion and sedimentation are minimized.	CSLC, RWQCB	During and after construction
HS-1: Construction activities including ROW clearing can disturb stream sediments and leave exposed soil that can be washed into nearby waterways. (Class II)	**HS-1d**: Pacheco Slough Crossing. If any flowing water is present or expected to be present during construction in Pacheco Slough, Pacheco Slough shall be crossed using directional drilling methods (HDD and/or boring), as approved by the CSLC and the appropriate jurisdictional agencies.	Segment 1	Verify use of directional drilling methods if water is present or expected to be present during construction in Pacheco Slough.	Sedimentation in Pacheco Creek is prevented.	CSLC, RWQCB	Before and during construction

Table F-7. Mitigation Monitoring Program – Hydrology and Water Quality

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
HS-2: Contaminants leaking from construction equipment or discharge of hydrostatic test or dust control water could degrade surface or groundwater quality. (Class II)	**HS-2a**: Hydrostatic Test Water. All hydrostatic test water shall be discharged to appropriate waste handling facility and not to surface waterbodies, unless otherwise approved by the applicable RWQCB.	Entire alignment	Monitoring of compliance.	All hydrostatic test waters are discharged at appropriate waste facilities.	CSLC, RWQCB	During construction
HS-3: Surface water can be contaminated during directional drilling if drilling fluid is released. (Class II)	**HS-3a**: Response to Unanticipated Release of Drilling Fluids. Sixty days prior to the commencement of directional boring activities near water crossings, SFPP shall prepare and submit for CSLC approval an HDD "frac-out" prevention and response plan which contains the following provisions (or similar measures which have the same effect): • HDD crews shall strictly monitor drilling fluid pressures. • Obtain site-specific geotechnical data at all water crossings where HDD is to be used. A minimum of 35-feet depth of cover from the lowest point/scour depth in the river bottom shall be used for the pipeline crossings installed by HDD unless the site-specific geotechnical investigation report recommends a more shallow depth. • Implement sizing techniques (move bores back and forth slowly to keep track of potential frac-outs) • Consider potential application of surface casings to add a protective outer layer. • Conduct Geotech bores in locations that would prevent drilling mud from escaping through boreholes. • No nighttime drilling shall be allowed unless required to maintain the integrity of the borehole or prevent the drill string from getting stuck. • Containment equipment for drilling fluids shall be maintained on site. • Turbidity downstream of the drill site shall be monitored. • Work shall be immediately stopped if a seep into a stream is detected such as by a loss in pressure or visual observation of changes in turbidity or surface sheen. • All bentonite seeps into waters of the State or sensitive habitat shall be immediately reported to the Project's resource coordinator, the CSLC, and the appropriate resource agencies (i.e., NOAA, USFWS, CDFG, Reclamation Board, USACE, applicable RWQCB's, applicable county [Contra Costa, Solano, Yolo], and DWR).	Entire alignment	Review and approval of procedures by appropriate agency.	"Frac-outs" are less frequent; response to accidents is fast and effective.	CSLC, RWQCB	Prior to construction

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Table F-7. Mitigation Monitoring Program – Hydrology and Water Quality

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	• If nighttime drilling is required, use non-toxic fluorescent dye in the drilling mud to allow easier identification of frac-outs. • On-site boats with monitors shall be maintained where appropriate. • In the event of a release during construction, SFPP shall assess the extent of potential damage to fisheries and carry out appropriate mitigation/compensation procedures. Impacts to consider include curtailment of access to fishing areas, contamination of fish and habitat, loss of income to commercial fishing interests and businesses. Procedures for assessing damage should include field surveys to determine extent of damage during and soon after the release, and long-term monitoring to determine long-term effects to habitat, fish, and fishing interests.					
HS-4: Streambed scour could potentially rupture the pipeline causing a release of petroleum products. (Class II)	**HS-4a:** Adequate Pipeline Burial and Protection. The minimum burial depth of the pipeline at stream crossings shall be equal to or greater than the 100-year depth of scour plus four feet, the 100-year depth of scour times 1.3 (whichever depth is greater), or such other minimum depth required by the CSFM or CSLC for waterway crossings within its jurisdiction based on the results of final geotechnical analysis. A registered civil engineer shall demonstrate the pipeline burial depth at each crossing to be at or below this depth. All pipeline burial plans, with backup engineering analysis and calculations, shall be reviewed and approved by the CSLC, in conjunction with the CSFM, and local flood control districts, 60 days prior to construction. SFPP shall monitor pipeline integrity and cover depth routinely and after floods or other high flow events at locations where the pipeline crosses under or immediately adjacent to streams. SFPP shall immediately correct improperly protected pipe, and record incidences of uncovered or thinly covered pipe near streams for future monitoring and maintenance. The minimum burial depth of the pipeline at stream crossings shall be extended laterally into the stream bank a distance beyond any bank erosion that can reasonably be expected to occur during a 100-year flood or during the life of the project as determined by a registered civil engineer, hydrologist, or other professional with expertise in stream mechanics. Bank protection may be substituted for burial below the depth of scour at the discretion of the CSLC. All plans for setbacks and/or bank protection, with backup engineering analysis and calculations, shall be reviewed and approved by the CSLC 60 days prior to construction. Except at stream crossings, the pipeline shall be located a sufficient distance from watercourses to avoid any bank erosion that can reasonably be expected to occur during a 100-year flood or during the life of the project as determined by a registered civil engineer, hydrologist, or other appropriate professional	In streambeds along the entire alignment	Review and approval of plans for pipeline burial, setbacks, and/or bank protection and monitor integrity.	Pipeline is protected from streambed scour during its operational life.	CSLC, RWQCB, CSFM, and local flood control districts	Before and during construction and operation

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Table F-7. Mitigation Monitoring Program – Hydrology and Water Quality

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
	with expertise in stream mechanics. If it is not practical to avoid anticipated bank erosion, the pipeline in those areas shall be buried to a depth below the 100-year depth of scour for the adjacent stream as defined above. Bank protection may be substituted for burial below the depth of scour at the discretion of the CSLC and the property owner. Plans for setbacks and/or bank protection, with backup engineering analysis and calculations, shall be reviewed and approved by the CSLC 60 days prior to construction.					
HS-5: Contamination of surface water could result from accidental rupture of the pipeline during operation or maintenance. (Class I)	**HS-5a**: Spill Response Plan to Protect Waterways. The Supplemental Spill Response Plan defined in Mitigation Measure S-2a (Section D.2) shall include specific measures for containment and cleanup of product spills that could possibly reach surface water either directly or through any conduit including overland and subsurface flow. This plan shall be submitted to the CSLC for review and approval 60 days prior to pipeline construction. The plan shall identify all local, State and federal agencies that may have an interest in specific spill cleanup activities, and identify methods for notification and coordination with these agencies in the event of a spill.	Entire alignment	Review and approval of plan.	Spill response is fast and effective.	CSLC, CSFM	Prior to construction
HS-6: The proposed pipeline could indirectly cause an increased risk of flooding and erosion. (Class II)	**HS-6a**: Floodplain Protection. No structure or permanent fill (including streambed protection devices such as riprap) may be placed within the floodplain of a river or stream unless the structure or fill can be clearly demonstrated by a professional civil engineer to meet the following requirements: • It must be essential in that location. • It must be the minimum size necessary to achieve its purpose. • It must be demonstrated to have no adverse flooding or erosion effect on adjacent property. • The natural or existing cross section of a stream may not be permanently altered by installation of above-ground facilities except as allowed under other mitigation measures. Valves, stations and other above-ground portions of the pipeline shall be placed outside the 100-year floodplain where possible, or floodproofed by fill or other appropriate means where placement within the floodplain cannot be avoided.	Entire alignment	Review and approval of plans by a professional civil engineer and/or the appropriate agencies.	Flood risk to existing structures is prevented.	CSLC	During construction and operation
GW-2: An accidental release of pollutants during construction activities could degrade groundwater quality. (Class II)	**HS-2a:** Discharge hydrostatic test waters at appropriate waste facilities. (See full text above.)	Entire alignment	Monitoring of compliance.	All hydrostatic test waters are discharged at appropriate waste facilities.	CSLC, RWQCB	During construction

Table F-7. Mitigation Monitoring Program – Hydrology and Water Quality

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
GW-3: Trenching and other construction activities increase the risk of accidental damage to a well or supply lines from a well by heavy equipment. (Class II)	**GW-4b:** Locate the pipeline and all construction activity at least 200 feet from any existing water well. (See full text below.)	Entire alignment	Review plan for compliance with law.	Drinking water is not contaminated.	CSLC, CSFM	During construction and operation
GW-4: Drinking water could be contaminated if product from a pipeline accident migrated to a well used for municipal or private drinking water purposes. (Class I)	**GW-4a:** Install Thicker-Wall Pipeline or Weight Coating in Strategic Areas. Where the pipeline is placed within a shallow aquifer with potential to submerge the pipeline, and consolidated backfill cannot adequately restrain the pipe , SFPP shall install a thicker walled pipe, river weights, or heavy coating (such as concrete) to the pipeline to mitigate buoyancy. These areas shall be identified by SFPP in a report submitted to the CSLC at least 60 days before construction showing all areas along the approved route with groundwater levels of less than 20 feet. In the event the pipeline temporarily does not contain fuel, SFPP shall monitor the route for potential seismic-induced liquefaction if a seismic event occurs.	Entire alignment in areas within a shallow aquifer, or in an area likely to be disturbed by future construction activity near municipal wells	Review and approval of report.	Drinking water is not contaminated.	CSLC, RWQCB, CSFM	Before and during construction
GW-4: Drinking water could be contaminated if product from a pipeline accident migrated to a well used for municipal or private drinking water purposes. (Class I)	**GW-4b:** Water Well Protection. During final pipeline design, SFPP shall identify and report to CSLC any existing public water supply well within 200 feet of the proposed pipeline centerline. Depending on the geology of any particular location, a greater separation or special pipeline design features (e.g., use of thicker-walled pipe to further protect against third-party damage) may be required. For any well within 200 feet of the proposed pipeline centerline, SFPP shall coordinate with the well owner and include protective measures (e.g. thicker-walled pipe) as necessary and agreed upon by the well owner and CSLC. In addition, in accordance with California Government Code Sections 51017.1 and 51017.2, if the pipeline is located within 1,000 feet of a public drinking water well, SFPP shall prepare a Pipeline Wellhead Protection Plan that describes SFPP's efforts to ensure pipeline integrity and response measures. A report on water wells, providing the information required in this measure shall be submitted to the State Fire Marshal and the CSLC for review and approval 60 days prior to the start of construction.	Entire alignment	Review plan for compliance with law.	Drinking water is not contaminated.	CSLC, CSFM	During construction and operation

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Table F-7. Mitigation Monitoring Program – Hydrology and Water Quality

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
GW-4: Drinking water could be contaminated if product from a pipeline accident migrated to a well used for municipal or private drinking water purposes. (Class I)	**GW-4c**: Groundwater Remediation Procedures. To facilitate effective emergency response to reduce or prevent groundwater contamination before drinking water is impaired, SFPP shall develop emergency response procedures that specifically addresses measures for groundwater remediation in the project area. These procedures shall include the following background information: a description of all wells potentially affected by an accident along the length of the pipeline (including map location, owner contact information, depth of well) and identification of alternative sources of drinking water for all well users that would be potentially affected by a pipeline accident. To prepare for a potential accident, SFPP shall develop an overview of hydrogeologic conditions throughout the length of the pipeline ROW, estimated local aquifer boundaries, groundwater flow directions, locations of stream crossings and probable direction of flow at waterway crossings. SFPP shall also outline applicable remediation approaches for areas potentially affected by a release throughout the length of the pipeline.	Entire alignment	Review emergency response procedures that specifically address measures for groundwater remediation.	Drinking water is provided after accident; cleanup is fast and effective.	CSLC, RWQCB	During operation

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Table F-8. Mitigation Monitoring Program – Land Use, Public Recreation, and Special Interest Areas

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
LU-1: Construction disturbances could create noise, dust, air emissions, odors, traffic congestion, limited parking, access detours, and utility disruptions. (Class II)	**LU-1a:** Construction Notification. SFPP or its construction contractor shall provide at least 30 days advance notice of the start of construction to all residents, occupants, and landowners along the construction ROW and staging areas. Notification shall be by mail or by posting notices along the construction ROW and shall be implemented more than 30 days before the start of construction in each area. The announcement shall state specifically where and when construction will occur in the area. If construction delays of more than 14 days occur, an additional notice shall be made, either along the construction ROW or by mail.	Entire alignment	Review written notice prior to mailing; verify mailing by reviewing mailing list.	Land use impacts are minimized.	CSLC	Before construction
LU-1: Construction disturbances could create noise, dust, air emissions, odors, traffic congestion, limited parking, access detours, and utility disruptions. (Class II)	**LU-1b**: Minimize Impacts to Schools and Day Care Facilities. SFPP shall limit construction hours where construction is located within 500 feet of a school or licensed day care facility (including Floyd's Day Care in Martinez, Armijo High School, Children's World Learning Center, Tolenas Elementary School, and Grandma Bunny's Home Day Care in Fairfield, Travis Community Day School in Solano County and any additional facilities identified by the Applicant). Limitations shall be based on hours of school operation, time of year, and acoustical factors. If construction cannot be avoided during school hours, the Applicant shall contact affected schools prior to the start of project construction and verify daily schedules. Construction shall be avoided adjacent to schools and day care facilities during hours of high activity as defined by school administration or day care operators.	Entire alignment where schools are within 500 feet	Review plans for noticing and schedule for construction near schools along the construction route.	Avoidance of construction near schools during school hours.	CSLC; School districts	Before and during construction
LU-1: Construction disturbances could create noise, dust, air emissions, odors, traffic congestion, limited parking, access detours, and utility disruptions. (Class II)	**LU-1c**: Provide Telephone Access. SFPP or its construction contractor shall establish a toll-free telephone number for receiving questions or complaints during construction and develop procedures for responding to callers. The telephone number and its purpose shall be included in the notices posted along the construction ROW or mailed notification (Mitigation Measure L-1a).	Entire alignment	Verify telephone line operation and responsiveness.	Complaints and questions are answered effectively.	CSLC	Before and during construction
LU-2: Construction impacts to agricultural land could result in loss of topsoil and/or farming income. (Class II)	**LU-2a**: Topsoil Preservation. The Applicant shall set aside at least eight inches of topsoil removed during pipeline construction on agricultural lands and preserve it for replacement and restoration to its prior location after construction for continued agricultural use.	Along agricultural segments of the pipeline route	Inspect pipeline construction activities on agricultural lands to ensure that topsoil is set aside and replaced as required.	Topsoils are replaced over the installed pipeline as prescribed.	CSLC	During construction

Table F-8. Mitigation Monitoring Program – Land Use, Public Recreation, and Special Interest Areas

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
LU-2: Construction impacts to agricultural land could result in loss of topsoil and/or farming income. (Class II)	**LU-2b**: Compensation to Land Owners. Prior to the start of construction, the Applicant shall negotiate an easement and submit an offer letter to each land owner and/or farmer, as appropriate, to provide fair compensation for the loss of income from cultivation of land taken out of production due to pipeline construction. The negotiated easement shall identify the pipeline route and depth.	Along agricultural segments of the pipeline route	Obtain copies of agreements signed between the landowners and the Applicant.	Agreements have been signed and are available.	CSLC	Before construction
LU-3: A pipeline accident could contaminate land and property or cause death or injury due to fire or explosion. (Class I)	**S-2a:** Prepare a Supplemental Spill Response Plan with resource information specific to approved route. **S-2b:** Perform leak detection. **S-2c:** Perform valve location review along entire route. **S-2d:** Prevent third party damage in most densely populated areas. (Note: See full text of the mitigation measures above.)	See above	See above	See above	See above	See above

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Table F-9. Mitigation Monitoring Program – Noise

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
N-1: Construction work would cause short-term noise. (Class II)	**N-1a**: Restrict Work Hours. SFPP or its construction contractor shall conduct all construction activities involving motorized equipment between the hours of 7 a.m. and 7 p.m. Monday through Saturday, or as stipulated in an applicable noise ordinance or an agreement with the local jurisdiction. SFPP shall incorporate these restrictions in all construction plans and scheduling prior to construction.	Entire alignment	Review noise ordinances and agreements with local jurisdictions.	Construction does not exceed relevant requirements.	CSLC and local agencies	During construction
N-4: Noise from new equipment proposed for the Concord Station could exceed 55 dBA at nearby noise sensitive receptors. (Class II)	**N-4a**: Concord Station Noise Limits. SFPP shall design the new pumping and power systems at the Concord Station so that the combined noise levels from the new equipment are less than 75 dBA L_{eq} at the Concord Station property line.	Concord Station	Review report of anticipated acoustic perform-ance of new equipment.	Station noise levels are minimized.	CSLC	Pre-construction

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Table F-10. Mitigation Monitoring Program – Utilities and Service Systems

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
US-1: Pipeline construction could accidentally damage existing utility lines. (Class II)	**US-1a:** Protection of Underground Utilities. Prior to the start of construction in each jurisdiction, the Applicant shall submit to the CSLC written documentation, including evidence of project review by the affected public works agencies for that jurisdiction, including the following: • Construction plans showing the dimensions of existing and proposed underground structures and illustrating the distance of the proposed pipeline from existing underground utilities. Specifically, where the pipeline crosses the City of Benicia raw water pipeline, there shall be at least 24 inches of separation between the two pipelines, with the products pipeline below the water pipeline. • Documentation that the Applicant provided the plans to affected jurisdictions (as identified in Table A-1) and that the plans were approved. • Copies of all required permits, agreements, or conditions of approval (as identified in Table A-1).	Entire pipeline route	Applicant's contractor to prepare construction plans. Offices of Emergency Services and Public Works Departments to review and approve revised Plans. Applicant to submit plans and documentation to CSLC.	Construction plans safeguard existing utility systems and the pipeline design meets all local requirements	Offices of Emergency Services, Public Works Departments	Prior to construction
US-2: Demand for large quantities of for dust suppression and hydrostatic testing during construction may burden the water supply of local water providers. (Class II)	**US-2a:** Use of Reclaimed Water. The Applicant shall coordinate with local water districts in advance in order to efficiently obtain reclaimed or potable water for delivery to the construction sites and to meet any restrictions imposed by them. The Applicant shall provide to the CSLC, a minimum of 60 days prior to the start of construction, a letter describing the availability of reclaimed water and efforts made to obtain it for use during construction.	Entire pipeline route	Review Applicant's efforts to obtain reclaimed water.	Assure that reclaimed water is available.	CSLC, Water Districts	Prior to construction

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Table F-11. Mitigation Monitoring Program – Traffic and Transportation

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
T-1: The proposed pipeline would be installed within the public ROW in a number of roadways, causing traffic congestion and construction equipment safety hazards. (Class II)	**T-1a:** Limit Lane Closures. SFPP shall restrict all necessary lane closures or obstructions on arterial and collector roadways to off-peak period in urbanized areas to mitigate traffic congestion and delays that would be caused by lane closures during construction and by exploratory excavations. Lane closures must not occur between 6:00 and 9:30 a.m. and between 3:30 and 6:30 p.m., or as directed in writing by the affected public agency. Alternatively, SFPP shall consider nighttime construction in areas where no residences or other noise sensitive land uses are located within 500 feet, and where traffic impacts could be reduced by avoidance of daytime construction.	All locations where pipeline construction or exploratory excavations would block or disrupt a public roadway classified as arterial and collector.	Review documentation of SFPP coordination with affected pubic agencies (city, county, or Caltrans) indicating that traffic management plans prepared by SFPP have been approved.	Construction activities and lane closures do not result in unreasonable traffic congestion or delays, as determined by the affected public agencies, and the resulting congestion or blockage does not create more than a five-minute delay for motorist.	CSLC and local jurisdictions	Prior to and during construction
T-1: The proposed pipeline would be installed within the public ROW in a number of roadways, causing traffic congestion and construction equipment safety hazards. (Class II)	**T-1b:** Traffic Control Plans. SFPP shall develop and implement detailed Traffic Control Plans (TCPs), prepared by a registered Traffic Engineer for the entire pipeline route at all locations where construction activities would affect the existing transportation system. Input and approval of TCPs shall be obtained from each responsible public agency; copies of approval letters from each jurisdiction must be provided to the CSLC 60 days prior to the start of construction within that jurisdiction. Temporary speed limit restrictions shall be considered within the construction zone. The TCP shall define the use of flaggers, warning signs, lights, barricades, cones, etc. according to standard guidelines required by the affected jurisdiction. Further, the Applicant shall maintain the work site(s), including traffic control, in a safe condition at all times, even outside of normal work hours.	All locations where pipeline construction or exploratory excavations would block or disrupt a public roadway.	Review documentation of input and approval from the responsible public agencies. Review documentation of approvals from each jurisdiction.	Construction activities and lane closures do not result in unreasonable traffic congestion or delays, as determined by the affected public agencies, and the resulting congestion or blockage does not create more than a 5-minute delay for motorists.	CSLC and local jurisdictions	Prior to construction
T-1: The proposed pipeline would be installed within the public ROW in a number of roadways, causing traffic congestion and construction equipment safety hazards. (Class II)	**T-1c:** Construction Equipment Safety. When working in or near existing roadways, the Applicant shall ensure that the construction contractor maintains all equipment within work areas designated by the traffic control devices. The Applicant shall also ensure that the construction contractor properly loads equipment onto appropriate trucks and trailers for transport to other work sites; the contractor(s) shall not be allowed to use active roadways to relocate construction equipment that are not licensed for use on public roads. (Backhoes, dozers, and other non-licensed equipment shall not be allowed to use active roadways to re-position themselves to support construction.)	All locations where pipeline construction or exploratory excavations would block or disrupt a public roadway and any location where construction equipment enters the public ROW.	CSLC monitor shall monitor construction activities within public road ROWs for compliance.	The construction activities do not cause traffic accidents.	CSLC and local jurisdictions	During construction

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Table F-11. Mitigation Monitoring Program – Traffic and Transportation

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
T-2: Construction could temporarily block access to and for parking adjacent businesses, residences, and/or other property. (Class II)	**T-2a:** Minimize Access Concerns. Prior to finalizing construction plans, SFPP shall work with each jurisdiction to identify all land uses and concurrent construction activities along the ROW with access concerns. SFPP shall develop construction scheduling in a manner that minimizes impacts to businesses, institutions, or residential areas, scheduling construction to avoid the hours or days of the week during which land uses receive the most activity, and avoiding peak traffic times adjacent to residential areas. In addition, construction activities shall be coordinated with other construction activities that may use the same roadways. Construction schedules for work that may restrict access to such land uses shall be approved by the applicable jurisdiction. In addition, SFPP shall ensure that at least one access driveway is left unblocked during all business hours or hours of use. Notices shall be posted along the construction ROW, or schedules shall be provided by SFPP to the landowners or tenants at least 30 days in advance of construction so that they can inform residents or customers. If access problems can be avoided by scheduling night construction in non-residential areas, this option should be considered (see Mitigation Measure T-1a).	Along the ROW, and all locations where access to adjacent land use is blocked.	Review documentation identifying land uses with access concerns and consultation efforts of SFPP with each jurisdiction.	Access needs of the adjacent land uses are met.	CSLC and local jurisdictions	Prior to and during construction
T-2: Construction could temporarily block access to and for parking adjacent businesses, residences, and/or other property. (Class II)	**T-2b**: Notification of Roadway Construction. Notices shall be posted along the construction ROW that explain the specific location and duration of the pipeline and construction activities within each roadway (e.g., which lane(s) will be blocked, at what times of day, and on what dates) at least 30 days in advance of construction. SFPP shall identify any potential obstructions to property access, and shall make alternative access provisions for each landowner if necessary. The notification shall include a toll-free telephone number and shall encourage affected parties to discuss their concerns with SFPP prior to the start of construction so individual problems and solutions can be identified. Alternative access provisions shall include SFPP-provided signage and alternate parking as provided and approved by local agencies.	Along the ROW, and all locations where access to adjacent land use is blocked.	Review documentation of SFPP written notification to affected property owners and tenants prior to blocking access to a property.	Access needs of the adjacent land uses are met.	CSLC and local jurisdictions	Prior to and during construction
T-3: Construction activities could block pedestrian access or established bicycle routes. (Class II)	**T-3a:** Pedestrian/Bicycle Access. SFPP shall provide alternative pedestrian/bicycle access routes to avoid obstruction to pedestrian/bicycle circulation. Where existing pedestrian circulation routes or bike trails would be obstructed by pipeline construction, alternative access routes shall be developed and signed/marked appropriately, in conjunction with local agencies.	All locations where a designated public pedestrian route is obstructed (sidewalks, recreational paths, etc.).	Review documentation of: SFPP coordination with affected public agencies; and SFPP conformation to all required conditions.	Construction activities do not totally block or unreasonably impair pedestrian movements or safety, as determined by the affected public agencies.	CSLC and local jurisdictions	Prior to and during construction

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Table F-11. Mitigation Monitoring Program – Traffic and Transportation

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
T-4: Pipeline construction activities could block immediate access to emergency response traffic. (Class II)	**T-4a:** Emergency Service Providers. SFPP shall coordinate at least 30 days in advance of construction with emergency service providers to avoid restricting movements of emergency vehicles. Police departments, fire departments, ambulance services, and paramedic services shall be notified in advance by SFPP of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact their effectiveness. At locations where access to nearby property is blocked, provisions shall be ready at all times to accommodate emergency vehicles, such as plating over excavations, short detours, and alternate routes in conjunction with local agencies. The Traffic Control Plans (Mitigation Measure T-1b) shall include details regarding emergency service provider coordination and procedures, and copies of the plans shall be provided to all relevant service providers. Documentation of coordination with service providers shall be provided to the CSLC 60 days prior to the start of construction.	All locations	Review SFPP notification and coordination with emergency service providers. Review SFPP demonstration of capability to provide immediate access across excavations, subject to approval by affected police, medical, and fire agencies.	Construction activities do not totally preclude access to any area emergency vehicles.	CSLC and affected emergency service providers (fire, police, sheriff, CHP, and ambulance services).	Prior to and during construction
T-5: Construction activities would generate additional traffic on roadways in the project area and use existing parking spaces. (Class II)	**T-5a:** Coordination on Staging Areas. SFPP shall submit the location of proposed staging area(s) to appropriate local jurisdictions for review and approval. SFPP shall state the size of the area, the purpose (e.g., storage of construction equipment and employee parking), the number of vehicles and pieces of equipment to be stored, and the duration (in number of days and number of hours per day) that each staging area will be used.	All proposed staging area locations	Review SFPP proposed staging area locations and specifications. Review documentation of input and approval from the responsible public agencies.	Construction traffic and vehicle parking do not disrupt local conditions.	CSLC and local jurisdictions	Prior to construction
T-6: Pipeline construction could damage roadways. (Class II)	**T-6a:** Restoration of Roads. Roads disturbed by construction activities or construction vehicles shall be restored to at least pre-construction conditions to ensure long-term protection of road surfaces unless otherwise directed and approved by the local jurisdiction. Care shall be taken to prevent damage to roadside drainage structures. Roadside drainage structures and road drainage features (e.g., rolling dips) shall be protected by regrading and reconstructing roads to drain properly. These measures shall be incorporated into an access agreement/easement with the applicable governing agency prior to construction.	All roads disturbed by pipeline construction activities.	Review documentation that SFPP obtained permits for construction within each road ROW prior to construction; and that each affected roadway has been satisfactorily restored and/or constructed within 30 days of roadway damage.	Restoration/maintenance of roads to pre-construction conditions as determined by the affected public agency.	CSLC, affected local jurisdictions, and Caltrans	After construction is completed on each affected roadway.

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Table F-11. Mitigation Monitoring Program – Traffic and Transportation

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
T-7: Construction activities could physically block bus routes resulting in the disruption of transit services. (Class II)	**T-7a:** Coordinate with public transit at least 30 days in advance to avoid disruption to transit operations in local jurisdictions. Public transit agencies that operate bus routes on the roadways potentially affected by the proposed construction activities shall be informed in advance of the pipeline project and the potential impacts at bus stop locations. Alternate pickup/dropoff locations shall be determined and signed appropriately. SFPP shall document coordination with transit agencies and provide documentation of this coordination to the CSLC 60 days prior to the start of construction.	All locations where construction would block a transit route or loading area.	Review SFPP documentation of written notification to all public transit agencies; and SFPP coordination with public transit agencies to alleviate conflicts to the satisfaction of the transit operator.	Safe and efficient transit operations are maintained, subject to approval by transit operators.	CSLC and affected transit agencies	Prior to and during construction.
T-8: A rupture or leak of the proposed pipeline could result in the closure or restriction of use of a roadway. (Class II)	**T-1a:** Limit lane closure. **T-1b:** Prepare traffic control plans for local jurisdictions. **T-1c:** Ensure that all equipment remains within work areas designated by the traffic control devices and that it is properly loaded. **T-2a:** Minimize access concerns **T-2b:** Notify of roadway construction along construction ROW. **T-3a:** Provide alternative pedestrian/bicycle access routes. **T-4a:** Coordinate with emergency service providers to avoid restricting movements of emergency vehicles. **T-6a:** Restore roads to at least pre-construction conditions. **T-7a:** Coordinate with public transit to avoid disruption to transit operations in local jurisdictions. (Note: See full text of the mitigation measures above.)	See above	See above	See above	See above	See above
T-9: Construction activities within the railroad ROW could disturb railroad operations. (Existing Pipeline ROW Alternative only). (Class III)	**T-9a:** Coordinate with Rail Operators. For construction of the Existing Pipeline ROW Alternative, SFPP shall coordinate issues of construction compatibility of rail operations with Amtrak and Union Pacific Railroad. SFPP and contractors shall plan and implement all activities within the railroad ROW with the appropriate railroad personnel. Railroad representatives shall be on site at all times during construction along active rail lines, if required. SFPP shall submit documentation of coordination with rail operators to the CSLC 60 days prior to construction. NOTE: The applicant has amended the original proposed project alignment in Segment 1 to utilize a portion of the Existing Pipeline ROW Alternative in the vicinity of Peyton Slough, which is not within the jurisdiction of the CSLC. This Mitigation Measure will be the responsibility of agencies with permitting authority in this area.	Existing Pipeline ROW Alternative in vicinity of active railroad lines	Railroad representatives shall be on site at all times during construction along active rail lines, if required and submission of documentation of coordination with rail operators	Construction creates minimal disturbance to rail operations.	Agencies with permitting authority and railroad operators	Prior to and during construction

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Table F-12. Mitigation Monitoring Program – Recreational and Commercial Fisheries

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
RCF-1: Pipeline construction across waterways could limit access to waterways for fishing. (Class II)	**RCF-1a:** Notification to Anglers. SFPP shall post construction notices and schedules two weeks prior to expected construction at all fishable pipeline water crossings. Notices shall include times/dates of restricted access, and contact person, with telephone number.	Bay and Delta Water Crossings	Field check for signage/Provide copies of notices/ signs to agency, including date posted.	Proof of signage; Reports from telephone contacts with anglers.	CSLC	During construction
RCF-2: Pipeline construction across waterways could disturb fisheries habitat. (Class II)	**BW-1a:** Conduct pre-construction surveys to identify sensitive resources. **BW-1b:** Establish buffer zones around sensitive resources. **BW-1c:** Conduct Worker Environmental Awareness Program training. **BW-1d:** Confine activity to identified ROW. **BW-1e:** Minimize disturbance at water crossings. **EC-1a:** Review agency records for medium potential impact sites. **EC-1b:** Review agency records for high potential impact sites. **EC-1c:** Review exposed soil or groundwater for contamination. **EC-3a:** Determine locations of abandoned natural gas wells. **HS-1a:** Define water crossing methods on construction plans. **HS-1b:** Open cut construction in streams shall be done using "in the dry" construction techniques. **HS-1c:** Implement erosion control procedures. **HS-4a:** Adequately bury and protect the pipeline **HS-6a:** Protect floodplains. (Note: See the full text of the mitigation measures above)	See above	See above	See above	See above	See above
RCF-3: Accidents during construction could contaminate fish habitat. (Class II)	**RCF-3a:** Debris Disposal Prevention. To limit adverse effects from accidental disposal of debris or construction materials into waterways, prior to construction, SFPP shall develop debris disposal procedures to ensure proper disposal. During construction, workers shall report any disposal of materials into waterways. After construction, measures shall be taken to retrieve materials from waterways and shore side areas.	All water crossings	Review debris disposal procedures and materials inventory; review post-construction inventory before operation.	No materials disposed into waterways.	CSLC	Before, during and after construction

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Table F-12. Mitigation Monitoring Program – Recreational and Commercial Fisheries

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
RCF-4: Accidents during operation could restrict fishing access and/or contaminate fish habitat and fishing gear. (Class I)	**RCF-4a:** Notice to Anglers After Accident. In addition to compliance with the Spill Prevention and Response Act and Mitigation Measure S-2a, SFPP shall provide notification at spill sites and nearby or affected marinas, launch ramps, and fishing access points that warn fishing interests of location of contaminated sites.	Bay and Delta marinas, launch ramps, fishing access points, and spill sites	Project proponent to alert agency of spills immediately after spill is detected; Agency monitors for compliance with fuel and drill mud spill response plans.	Accident response provides adequate notice to anglers.	CSLC	Before and during construction

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Table F-13. Mitigation Monitoring Program – Environmental Justice

Impact	Mitigation Measure	Location	Monitoring / Reporting Action	Effectiveness Criteria	Responsible Agency	Timing
EJ-2: Disproportionate impacts could result from accidental spills on the existing pipeline.	**EJ-2a:** Spill Containment and Response. The Applicant shall ensure that the spacing of spill containment and response equipment along the pipeline is determined by the density of hazard factors and populations at risk along the pipeline route. This information shall be documented in the Supplemental Spill Response Plan (see Mitigation Measure S-2d in Section D.2).	Entire alignment	Documentation in Supplemental Spill Response Plan	Spacing of spill containment and response equipment would be at the appropriate locations detailed in the plan so an accidental spill would not impact high-minority or low-income populations disproportionately.	CSLC	During construction and operation

Exhibit D.
Statement of Overriding Considerations

The California State Lands Commission (CSLC) adopts this Statement of Overriding Considerations with respect to the impacts identified in the Final Environmental Impact Report (EIR) that cannot be reduced, with mitigation stipulated in the EIR, to a level of insignificance. This includes the following impacts:

- S-2: A pipeline accident during operation could result in injury or fatalities to nearby public.
- A-1: Cumulative effects of emissions of equipment exhaust could substantially contribute to existing violations of ozone standards during the construction period.
- B-1: Pipeline spills could degrade or alter habitat for wildlife, aquatic habitats and organisms, special status plants and their habitat, upland vegetation, and/or wetlands.
- B-2: Cleanup after a pipeline accident could affect wetlands, special status plants and wildlife, and upland vegetation.
- B-4: Construction or operation and accident impacts on sensitive biological and water resources within Cordelia Marsh and Slough could affect areas of the marsh.
- G-5: Active fault crossings could result in pipeline rupture.
- HS-5: Contamination of surface water could result from accidental rupture of the pipeline during operation or maintenance.
- GW-4: Drinking water could be contaminated if product from a pipeline accident migrated to a well used for municipal or private drinking water purposes.
- LU-3: A pipeline accident could contaminate land and property or cause death or injury due to fire or explosion.
- RCF-4: Accidents during operation could restrict fishing access and/or contaminate fish habitat and fishing gear.

Specifically, the EIR found that pipeline rupture or accidental spills would cause significant adverse environmental effects, and significant adverse effects to air quality would occur during construction of the pipeline. Impacts from pipeline rupture or accidental spills were identified in the analyses for safety, biological resources, geology, water quality, land use, and fisheries.

The safety features, inspection and maintenance, and emergency response practices proposed by SFPP would reduce impacts related to pipeline rupture or accidental spills. The proposed features and procedures include cathodic protection, high-quality pipe coating, internal inspections by "smart pigs," adequate marking of the pipeline location, increased pipe wall thickness in certain areas, and valves at landslide and fault crossings. SFPP also proposed to manage air emissions from equipment during the construction period by electrifying certain operations.

A comprehensive set of additional mitigation measures is presented in the EIR, and those measures are adopted by the CSLC.

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Many of these measures would reduce the severity or frequency of a pipeline accident. These measures include, developing spill response and notification procedures for protection of biological resources, waterway protection, fisheries protection, and groundwater remediation, ensuring proper leak detection, cathodic protection, and marking, taking additional steps to protect the pipeline from accidental rupture, avoiding sensitive biological and water resources, adding design features for fault crossing, incorporating approved earthquake response practices, and locating the pipeline away from drinking water wells. Although impacts related to the risk of pipeline rupture or accidental spills would continue throughout the operational life of the pipeline, these impacts would be less than those that would occur under the No Project Alternative.

The significant air quality impacts of the Proposed Project would be confined to the planned eight-month construction phase, which would affect only one ozone season. Mitigation measures are presented to control equipment emissions, control dust and particulate emissions, and to manage transportation to minimize travel and trips.

The Concord to Sacramento Pipeline Project is designed to transport refined petroleum products from refineries and other sources in the San Francisco Bay Area to commercial and military markets in central California and northern Nevada. With a forecasted annual increase in demand of 2.5%, the capacity of the existing pipeline system would be reached in 2006. To respond to this demand, the proposed new pipeline would carry additional gasoline, diesel fuel, and jet fuel.

The CSLC hereby finds that the Concord to Sacramento Pipeline Project will have benefits to the State of California, including the following.

- The Project will provide increased pipeline capacity for the transport of refined petroleum products to central California and northern Nevada to meet projected demand.
- The Project will benefit regional transportation goals in that it will provide increased fuel deliveries to the Sacramento International Airport.
- The Project will minimize or eliminate the need for SFPP to use tanker trucks to supply its markets. The use of such trucks would have potentially greater impacts to safety, biological resources, water quality, fisheries, air quality, use of fuel, and transportation than the Project.
- The Project will remove from service a 36-year old 14-inch pipeline that presently travels through Cordelia Slough and near populated areas of the Cities of Suisun City, Dixon, and Davis and replace it with a modern facility designed to and governed by contemporary engineering and safety standards.
- The Project will provide additional construction jobs that will benefit the local economy. Specifically, the project will provide employment for approximately 270 workers during the peak construction period.
- The Project would provide approximately $ 168,000 annually in property tax revenues.

Furthermore, the CSLC finds that all feasible mitigation measures, developed in conjunction with State and federal resource management agencies and identified in the EIR, have been imposed to avoid or lessen impacts to the maximum extent possible.

The EIR evaluated two alternatives to the Proposed Project. The Existing Pipeline ROW Alternative analyzed the installation and operation of the new pipeline within the ROW of the present pipeline. The second alternative was the No Project Alternative. Three additional

alternatives were examined, but not carried forward to full analyses for the reasons stated in the EIR at pages C-3 through C-10.

The Proposed Project, as described in Calendar Item C04, October 20, 2003, was selected because of the lesser extent of significant adverse impacts that would result from project implementation and the extent to which the Proposed Project provides greater protection to the public and the environment over the No Project Alternative.

Based on the above discussion, the CSLC finds that the benefits of the Concord to Sacramento Pipeline Project outweigh the significant unavoidable impacts that could remain after mitigation is applied and considers such impacts acceptable.