

Appendix C Project Features

LA RIVER PATH



Metro

Appendix C, Project Features

Task 6.4

Prepared for:



Metro[®]

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APPENDIX C PROJECT FEATURES

Project features are design components, including standardized measures such as best management practices (BMPs), that are typically applied to most Los Angeles County Metropolitan Transportation Authority (Metro) projects. Project features also include measures required by law or permit approvals. These features are components of the La River Path Project (Project), including its options, Option 1 and Option 2. The development of these project features involved minimal discretion, as they are commonly applied across Metro projects or represent standard industry BMPs. Where relevant, project features are identified in the evaluation of the environmental resource areas in Chapter 3, *Environmental Settings, Impacts, and Mitigation*. The full set of project features is also provided here. For additional information, refer to the analysis of corresponding environmental resource topics in Chapter 3.

C.1 Aesthetics and Visual Resources

PF-AES-01, *Screen Direct Lighting and Glare for Nighttime Work*

When nighttime work is required, the construction contractor shall install temporary down lighting in a manner that directs light toward the construction area and away from residential units. The construction contractor shall install temporary shields as necessary so that light does not spill over into residential areas.

PF-AES-02, *Construction Lighting*

Construction-related light fixtures shall be equipped with glare diffusers and feature directional shielding to avoid the spillover of light onto adjacent residences.

PF-AES-03, *Construction Staging*

Construction staging shall be screened to minimize visual intrusion into the surrounding landscape. The screening shall be at a height and consist of a type of material that is appropriate for the context of the surrounding land uses. Lighting within construction areas shall face downward and shall be designed to minimize spillover lighting into adjacent properties.

PF-AES-04, *Permanent Lighting*

During final design, all new or replacement lighting shall comply with maximum allowable California Green Building Standards (CALGreen) glare ratings (Title 24 *California Building Standards Code* Part 11) and shall be designed to be directed away from residential units. Permanent operations-related light fixtures shall feature directional shielding to avoid the spillover of backlight and uplight onto adjacent residences. Screening elements, including landscaping, shall also be incorporated into the design, where feasible.

PF-AES-05, Aesthetic Treatments

Materials, color, artwork, murals, landscaping, or other aesthetic treatments shall be integrated into the design of the Project to minimize impacts, such as to limit the effects that lighting associated with the Project would have on the surround area, to limit new sources of glare, and to match or improve the aesthetic quality of the existing built environment.

C.2 Archaeological Resources

PF-AR-01, Inadvertent Discovery of Human Remains

In the event that human remains are encountered during construction activities, the human remains shall be treated in accordance with applicable state and local regulations and guidelines for disclosure, recovery, relocation, and preservation, as appropriate. California *Health and Safety Code* Section 7050.5, and California *Public Resources Code* (PRC) Sections 5097.94 and 5097.98 outline procedures to be followed in the event human remains are discovered during the course of California projects.

All construction affecting a discovery of human remains shall immediately cease until the Los Angeles County Medical Examiner-Coroner is contacted. The coroner must be contacted within 24 hours of the discovery of potential human remains as required by California Environmental Quality Act (CEQA) Guidelines Section 15064.5[e]. The Los Angeles County Medical Examiner-Coroner must determine, within 2 working days of being notified, if the remains are subject to their authority. PRC Section 5097.98 requires no further disturbance and adequate protection of the immediate vicinity where the discovery occurred according to generally accepted cultural and archaeological standards, and requires that any further activities consider the possibility of multiple burials. Adequate protection includes establishing a protective buffer around a discovery through exclusionary fencing or flagging.

If the remains are determined to be of Native American origin, the Los Angeles County Medical Examiner-Coroner shall contact the Native American Heritage Commission (NAHC) by telephone within 24 hours. The NAHC shall be asked to determine the most likely descendants, who are to be notified of a discovery and shall establish procedures for burial. All parties involved shall ensure that any such remains are treated in a respectful manner and that all applicable local, state, and federal laws are followed. This discovery protocol shall be included in the Cultural Resources Mitigation and Management Plan (CRMMP) described in MM-CUL-04, *Cultural Resources Mitigation Management Plan*.

Additional applicable project features related to cultural resources include the following. Refer to Section 3.2, *Aesthetics and Visual Resources*, for additional detail.

C.3 Biological Resources

PF-BIO-01a, Protected Tree and Shrub Permitting – City of Los Angeles

Trees and shrubs that are protected by the City of Los Angeles Preservation of Protected Trees regulations are listed in *Los Angeles Municipal Code* (LAMC) Section 46.01 and include oak (*Quercus* spp.), California bay (*Umbellularia californica*), Western sycamore (*Platanus racemosa*), and southern California black walnut (*Juglans californica*). Protected native shrubs include toyon (*Heteromeles arbutifolia*) and blue elderberry (*Sambucus nigra* ssp. *caerulea*). For trees and shrubs occurring within

the City of Los Angeles, the Project shall comply with the City of Los Angeles Preservation of Protected Trees Ordinance 186873, which requires a permit to be obtained through the Los Angeles Department of Public Works Bureau of Street Services Urban Forestry Division prior to relocation or removal of any protected native trees or shrubs having greater than a 4-inch cumulative diameter at 4.5 feet above the ground level. The term “removed” or “removal” shall include any act that will cause a protected tree or shrub to die, including but not limited to acts that inflict damage upon the root system or other parts of the tree or shrub by fire, application of toxic substances, operation of equipment or machinery, or by changing the natural grade of land by excavation or filling the drip line area around the trunk. Metro shall consult with the City’s Chief Forester and complete the Bureau of Street Services’ permit application process for any protected tree or shrub that will be removed or damaged as part of the Project. Protected trees and shrubs that will be removed or damaged shall be relocated or replaced, in accordance with the Bureau of Street Services’ permit requirements. The Bureau of Street Services requires that any protected tree or shrub that is removed or relocated be replaced within the property by at least four specimens of a protected variety included within the definition set forth in the ordinance. The size and number of replacement trees and shrubs shall be determined by the Bureau of Street Services and shall approximate the value of the tree or shrub to be replaced.

Consistent with the City of Los Angeles Tree Preservation Policy, Metro shall coordinate and consult with the City of Los Angeles Department of Recreation and Parks (LADRP) prior to the removal, relocation, or damage of any Heritage Tree as defined by LADRP, that occurs in the City of Los Angeles. Metro shall consult with and obtain recommendations from the LADRP Arborists, as well as obtain approval from the LADRP General Manager or their designee, before any alterations to a Heritage Tree is made that may cause the tree to become damaged, relocated, or removed.

PF-BIO-01b, *Protected Tree and Shrub Permitting—City of Vernon*

In the event that any tree that is protected by the City of Vernon Street Tree Ordinance or Tree Protection Bylaw 4152 is damaged, destroyed, or removed by Project construction activities within the city limits, the City of Vernon shall be consulted prior to an impact and the Project shall comply with any permitting or other requirements associated with impacts to protected trees. The City of Vernon’s Tree Protection Bylaw 4152 requires a permit prior to any activities that damage, destroy, or remove any tree, the stem of which exceeds 8 centimeters in diameter at 1 meter above the average ground level of the base of the tree. The bylaw also states that no person shall be issued a permit to destroy a tree growing within 15 meters of the natural boundary of a water course, except where a tree or the roots of a tree are blocking a water course or reducing its drainage capacity.

PF-BIO-01c, *Metro Tree Planting, Tree Maintenance, Protection of Urban Forest During Construction*

The Project shall comply with the Los Angeles County Metropolitan Transportation Authority’s (Metro) tree policy (October 2022). As required by the Metro tree policy, prior to construction Metro shall prepare a tree protection plan identifying tree protection zones for all trees designated for retention. During construction, Metro shall protect large trees and other significant site features from immediate damage during construction and from delayed damage due to construction activities, such as loss of root area or compaction of the soil by equipment. The policy requires a minimum tree replacement ratio of 2:1 (or 4:1 if the tree is considered a heritage tree), planting California-native or other drought-tolerant trees and collaborating with regional partners, local agencies and communities during the planning and design of capital projects.

PF-BIO-02, *Preconstruction Tree and Shrub Survey*

Prior to the start of construction, a certified arborist shall conduct a survey of all construction areas to identify and document any trees and shrubs protected by local ordinances that are within the construction footprint. A protected tree and shrub report shall be prepared to provide readily available information about existing protected trees and shrubs in the construction footprint prior to the start of construction. The report shall identify the location and property owner of any protected trees and shrubs within the construction footprint and provide (1) physical descriptions of each tree and shrub including species, approximate height and diameter, and overall condition, and (2) any trees and shrubs that would be disturbed including, but not limited to, tree trimming, tree relocation, tree or shrub removal, or trees with root zones that would be damaged through excavation activities. If it is determined that any protected tree or shrub that occurs within the boundaries of a jurisdiction along and within the construction footprint would be removed or disturbed by construction, the report information shall be submitted to the appropriate local jurisdiction for permitting consultation. All required tree or shrub removal permits shall be obtained prior to the removal of any trees and shrubs protected by local ordinances.

An additional applicable project feature related to biological resources includes the following. Refer to Section 3.10, *Hydrology and Water Quality* for additional detail.

- PF-HWQ-03, *Continued Los Angeles County Metropolitan Transportation Authority and US Army Corps of Engineers Engagement*

C.4 Geology, Soils and Paleontological Resources

PF-GEO-01, *Final Geotechnical Report*

As part of final design, the contractor shall provide Los Angeles County Metropolitan Transportation Authority (Metro) with a final geotechnical report prepared by a licensed geotechnical engineer registered in California. The final geotechnical report shall be prepared consistent with standard engineering practices and in accordance with the following:

- American Association of Highway and Transportation Officials (AASHTO) [Load and Resistance Factor Design \(LRFD\) with California Amendments](#) for Project bridges, and elevated path structures.
- California Department of Transportation (Caltrans) [Seismic Design Criteria](#) (SDC) for Project bridges and elevated path structures.
- Caltrans [Highway Design Manual](#) (HDM) for at-grade paths.
- California Building Code, Title 24, Part 2 for design of restroom buildings.
- US Army Corps of Engineers (USACE) engineering and design requirements (for example, for retaining walls using USACE [Engineer Manual 1110-2-2502, Retaining and Flood Walls](#)).

The report shall include a site description, a summary of the relevant geological and geotechnical context, the results of site-specific field investigations and laboratory testing, a description of key soil properties, groundwater conditions, seismic hazards, assessments of risks, and recommendations. Specific topics to be addressed in the final geotechnical report shall include, but may not be limited to, the following items.

- Soil Characterization, Settlement, Collapse, Bearing Capacity: The final geotechnical report shall include and/or address the following:
 - Soil Sampling and Analysis: Soil samples from various depths of the Project site shall be collected. These samples shall be analyzed to determine the soil type, grain size distribution, consolidation characteristics, moisture sensitivity, and other properties that influence settlement behavior.
 - Field Testing for Bearing Capacity: Site-specific field tests, such as standard penetration tests or cone penetration tests, shall be performed to evaluate the soil's bearing capacity and its ability to support Project loads without significant settlement. The tests shall be used to determine the soil's shear strength and potential to withstand the loads imposed by the Project.
 - Settlement Estimate: Based on soil properties and consolidation characteristics, the final geotechnical report shall provide estimates for both immediate and long-term settlement. This information shall be used to guide Project design to accommodate anticipated settlement without compromising the structural stability of the Project's structures, including bridges, elevated paths, retaining walls, and restroom buildings.
 - Groundwater Levels: Groundwater levels shall be evaluated and recommendations to address potential settlement caused by lowering of the groundwater table during construction activities shall be provided.
 - Shear Strength Analysis: The shear strength parameters of loose or saturated soil, including cohesion, angle of internal friction, and their variations shall be evaluated.
 - Compaction Characteristics: The compaction behavior of loose soils and compaction efforts and achieved densities shall be evaluated.
 - Subsidence Risk Assessment: The risk of caving, ground collapse, or subsidence based on the combination of geological, hydrological, and geotechnical factors shall be evaluated.
 - Recommended Settlement Reduction Measures: Engineering measures to address potential settlement shall be recommended; these may include techniques like preloading, surcharge placement, compaction, or the use of specialized foundation types.
- Recommended Measures for Loose and Saturated Soils: Soil improvement techniques, drainage strategies, and other measure to enhance stability and to address loose and saturated soils, such as shoring, casings, or other ground-stabilization techniques shall be provided. Recommendations shall be provided to prevent caving during drilling; the recommendations may include the installation of manufactured casing to support borehole walls, or the use of viscous nonhazardous and biodegradable fluids during drilling, which can also support borehole walls during construction.
 - Monitoring and Reporting: Settlement shall be monitored during construction and adjustments made if actual settlement deviations from predictions. Additionally, to detect caving and voids during construction, techniques such as borehole video logging or downhole cameras may be used to inspect boreholes for signs of voids, fractures, or caving.
 - Slope Stability: To provide a site-specific understanding of slope conditions and risks, and to guide design to ensure safe and stable slopes, the final geotechnical report shall address:
 - Soil Properties: Laboratory tests on soils shall be performed to determine properties such as shear strength, cohesion, angle of internal friction, permeability, and density, which can influence the stability of slopes.

- **Geotechnical Analysis:** A geotechnical analysis, such as limit equilibrium analysis or numerical modeling, shall be performed to assess factors affecting slope stability, including slope angle, soil properties, groundwater conditions (including depth, flow direction, and seasonal variations), and external forces, such as rainfall. The analysis shall also consider slope geometry, including site-specific measurements and assessments of the angle of slopes and configurations at the Project site.
 - **Slope Reinforcement:** Based on the site properties and geotechnical analysis, recommendations shall be provided for slope reinforcement, including retaining walls, as needed. **Construction Methods:** Recommendations on construction methods to minimize disturbance to slopes and reduce the risk of triggering instability during construction shall be provided.
 - **Monitoring and Warning System:** A plan for monitoring ongoing slope stability during construction to detect movement shall be included.
- **Appropriate Sources and Types of Fill:** The final geotechnical report shall include the following considerations with respect to identifying the appropriate source and types of fill:
 - **Material Characteristics:** The geotechnical investigation shall evaluate the physical and engineering properties of potential fill materials, including grain size distribution, plasticity index, compaction characteristics, strength, and permeability.
 - **Compatibility with Existing Soils:** The geotechnical investigation shall consider fill interaction with the existing soil on the Project site. The properties of the fill material selected shall complement and integrate with the natural soil to avoid differential settlement or instability. The extent to which potential fill materials are prone to volume changes due to moisture variation shall also be considered.
 - **Compaction Potential:** The final geotechnical report shall address the potential fill material's compaction potential and recommend a fill that achieves recommended density and stability and minimizes the risk of future settlement.
 - **Settlement Characteristics:** The final geotechnical report shall address the loads that the fill would be subjected to by the Project; fill materials selected shall exhibit minimal long-term settlement to ensure the stability of the Project's structures, including bridges, elevated paths, retaining walls, and restroom buildings.
- **Liquefaction and Lateral Spreading:** The final geotechnical report shall include the following to assess the potential for liquefaction and lateral spreading and make recommendations to avoid triggering these conditions.
 - **Evaluation:** Geotechnical investigations shall use empirical methods, such as the standard penetration test, to determine the potential for liquefaction based on factors like the cyclic stress ratio and fines contents. The investigation shall evaluate the potential for liquefaction and lateral spreading based on soil properties (for example, stiffness, density, and resistance), known and anticipated seismic hazards, slope stability, shear strength, the potential for ground movement, and groundwater levels, including groundwater depth and fluctuations.
 - **Recommendations:** Recommendations to reduce the risk of damage due to liquefaction and lateral spreading shall be provided. These recommendations may include installing ground improvement techniques, use of deep foundations, and implementing soil densification and stabilization methods, such as compaction, and proper construction sequencing.
- **Structural Foundations:** Based on site-specific characterizations, soil testing, slope stability analyses, and other information regarding site-specific conditions present at the Project site,

including ground movement, the final geotechnical report shall recommend appropriate foundation structures. Recommendations shall include:

- Foundation Design: Recommendations for elevated path, bridge, retaining wall, and restroom building foundation designs shall account for seismic forces, considering both vertical and horizontal loads. Recommended foundations may include deep foundations, pile groups, or caissons to anchor structures in stable soil or bedrock.
- Lateral Load Resistance: Foundations for elevated paths, bridges, and retaining walls shall be designed to include supports to resist lateral loads caused by ground shaking.
- Soil Structure Interaction: Recommendations for foundation design shall consider the interaction between soil and the Project structures during seismic events.
- Seismic Retrofitting: The need to retrofit existing structures within the Project footprint shall be evaluated to determine whether retrofitting is required or advisable. Such retrofitting could involve adding supplemental lateral support or strengthening key components.
- Seismic Design Codes and Regulations: Recommendations for foundation designs shall follow applicable seismic design codes and regulations, including AASHTO LRFD with California amendments and Caltrans SDC (for bridges and elevated path structures), Caltrans HDM (for at-grade paths), USACE design requirements (for example, compliance with USACE Engineer Manual 1110-02-2502, *Retaining and Flood Walls* for Project retaining walls, and the California Building Code for restroom buildings).
- Grading and Excavations Practices: Based on the site-specific characterizations, soil testing, slope stability analyses, cut-and-fill analysis, compaction requirements, drainage considerations and other site-specific conditions related to seismicity and soils, the final geotechnical report shall include recommendations for best grading and excavation practices. These recommendations shall include, but not be limited to the following:
 - Excavation Depth and Slope: The geotechnical investigation shall specify appropriate excavation depth and slope inclinations based on soil properties. Soil cohesion, angle of internal friction, and groundwater levels shall be considered in making the recommendations.
 - Compaction Requirements: The geotechnical investigation shall specify compaction requirements for materials to achieve sufficient density and stability depending on soil type.
 - Excavation Support: The geotechnical investigation shall determine the need for excavation support systems (for example, shoring, sheet piles) based on site-specific soil characteristics and the depth of excavation.
 - Groundwater Management: The geotechnical investigation shall consider groundwater levels and the potential for groundwater to interfere with excavation and grading. Recommendations for dewatering techniques shall be provided if needed to control water ingress.
 - Slope Erosion Prevention: Erosion control measures, such as geotextiles, grass seeding, or sediment basis, shall be provided to prevent soil erosion during and after grading.

The recommendations provided in the geotechnical design reports shall be incorporated into the Project's final design, plans and construction specifications.

PF-GEO-02, Construction Worker Safety

During Project construction, temporary conditions might arise that could result in potential impacts related to human injury. Worker health and safety plans specific to each of the major tasks involved in development of the Project shall be prepared in accordance with California Division of Occupational

Safety and Health (Cal/OSHA) requirements. Strict compliance with these worker health and safety plans will reduce the risks to workers.

PF-GEO-03, Compliance with Federal, State, Regional, and Local Agencies

Design of Project structures shall comply with the structural design criteria as required by affected federal, state, regional, and local agencies. These design criteria shall include, but not be limited to, the following:

- US Army Corps of Engineers (USACE) manuals and regulations such as the [Hydrology & Hydraulics \(H&H\) Branch Policy Memorandum #3, “Hydraulic Design and Criteria for Underpasses and Access Ramps”](#) (H&H Branch Policy Memo)
- American Association of Highway and Transportation Officials’ (AASHTO’s) [Load and Resistance Factor Design \(LRFD\) with California Amendments](#)
- California Department of Transportation’s (Caltrans’) [Seismic Design Criteria](#) (SDC) for bridges and elevated structures
- Caltrans’ [Highway Design Manual](#) (HDM) for at-grade pavement design
- *California Building Code* Title 24, Part 2 for restroom building design

PF-GEO-04, Construction Measures to Prevent Soil Caving

Based on the recommendations of the geotechnical report prepared in accordance with PF-GEO-01, *Final Geotechnical Report*, common construction techniques shall be implemented to prevent caving and protect adjacent improvements during drilling. Construction techniques to prevent caving could include the installation of manufactured casing to support the borehole walls, or the use of viscous nonhazardous and biodegradable fluids during drilling which can support borehole walls during construction. The geotechnical report construction recommendations shall also address temporary excavations and provide the estimated soil parameters needed for shoring or other ground-stabilization needs, which would be used to minimize impacts during excavations. Monitoring plans shall be required, as applicable, for both on- and offsite properties and existing improvements that could be impacted by an excavation.

Additional applicable project features related to geology, soils, and paleontological resources include the following; refer to Section 3.10, *Hydrology and Water Quality*, for additional detail:

- PF-HWQ-01, *Stormwater/Water Quality Management During Construction*
- PF-HWQ-02, *Low-Impact Design Requirements*

C.5 Hazards and Hazardous Materials

PF-HAZ-01, Hazardous Materials and Waste Plan

Prior to construction, the contractor shall prepare and provide Los Angeles County Metropolitan Transportation Authority (Metro) with a hazardous materials and waste plan describing responsible parties and procedures for handling, storage, and transport of hazardous waste and hazardous materials in a manner consistent with applicable state and federal regulations, including the Resource Conservation and Recovery Act (40 *Code of Federal Regulations* Part 263); Comprehensive Environmental Response, Compensation, and Liability Act (42 *United States Code* Chapter 103);

Hazards Materials Release Response Plans and Inventory Law (*California Health and Safety Code* Section 6.95); and Hazardous Waste Control Act (22 *California Code of Regulations* Section 4.5).

PF-HAZ-02, Contractor-Generated Waste Management Plan

Prior to the start of construction and consistent with Los Angeles County Metropolitan Transportation Authority (Metro) general requirement specifications, the contractor shall develop a Contractor-Generated Waste Management Plan that outlines provisions for hazardous wastes and solid wastes that are generated, released, or discharged by the contractor, contractor's agents, or subcontractors. The Contractor-Generated Waste Management Plan shall also include provisions for the handling and disposal of asbestos and lead. The Contractor-Generated Waste Management Plan shall be prepared in accordance with 22 *California Code of Regulations* Division 4.5 et seq., *California Health and Safety Code* Section 25100 et seq., 23 *California Code of Regulations*, and the requirements of the selected waste disposal facility or waste treatment facility, including publicly owned wastewater treatment facility.

PF-HAZ-03, Contaminated Substances and Hazardous Substances Disposal Plan

Prior to the start of construction and consistent with Los Angeles County Metropolitan Transportation Authority (Metro) general requirement specifications, the contractor shall prepare a Contaminated Substances and Hazardous Substances Disposal Plan that shall describe procedures for identifying, excavating, segregating, stockpiling, sampling, analyzing, measuring, transporting, and disposing of contaminated substances and wastes and/or hazardous substances and wastes (soil, groundwater, pavement stripes/markings, paint, Transit pipe, etc.) generated during construction or from known contaminated sites. This plan shall include oversight agency notifications prior to subsurface disturbance that shall occur at properties that have been identified by the US Environmental Protection Agency, the California Department of Toxic Substances Control, the State Water Resources Control Board, the Los Angeles Regional Water Quality Control Board, or a county, local, or state regulatory agency as an open environmental case or that includes a Land Use Covenant or deed restriction requiring agency notification.

PF-HAZ-04, Disposal of Groundwater

Prior to construction, if dewatering or other activities requiring dewatering necessitate the disposal of contaminated groundwater (known and undocumented), Los Angeles County Metropolitan Transportation Authority (Metro) shall consult with the Los Angeles Regional Water Quality Control Board (LARWQCB) to obtain the required permits, including the construction dewatering permit and waste discharge requirement permit. Since groundwater discharge and disposal requirements vary by agency, site location, chemicals of concern and concentration, Metro shall consult and coordinate with the County of Los Angeles Department of Public Works and all other applicable agencies prior to discharging groundwater into the sewer or stormwater systems to ensure that groundwater discharge and disposal comply with all applicable requirements.

PF-HAZ-05, Halt Construction Work if Potentially Hazardous Materials are Encountered

If potentially hazardous materials are encountered during construction, construction work shall stop. Contractors shall comply with all applicable federal, state, and local regulations regarding discovery, notification, response, disposal, and remediation for previously unidentified hazardous materials encountered during construction activities. Metro and construction contractors shall consult and coordinate with the appropriate regulatory agencies to determine the appropriate response for the encountered hazardous materials, including but not limited to remedial action.

PF-HAZ-06, Compliance with the City of Los Angeles Building Code Methane Regulations

Prior to final design, the Los Angeles County Metropolitan Transportation Authority (Metro) shall verify that the Project construction located within Methane Buffer Zones (as defined by Los Angeles Bureau of Engineering) comply with the City of Los Angeles Building Code regulations set forth in Ordinances 175790 and 180619. The ordinances require evaluation of methane hazards and mitigation of a methane hazard, if one exists, depending on the severity of the hazard.

Additional applicable project features related to hazards and hazardous materials include the following. Refer to Section 3.07, *Geology, Soils, and Paleontological Resources*; Section 3.10, *Hydrology and Water Quality*; Section 3.16, *Transportation*; and Section 3.18, *Utilities and Service Systems* for additional detail.

- PF-GEO-01, *Final Geotechnical Report*
- PF-PS-01, *Emergency Service Coordination*
- PF-UTL-01, *Utility Identification and Coordination*
- PF-HWQ-01, *Stormwater/Water Quality Management During Construction*
- PF-TR-01, *Prepare and Implement Transportation Management Plan*
- PF-TR-02, *Traffic Control Plan*

C.6 Hydrology and Water Quality

PF-HWQ-01, Stormwater/Water Quality Management During Construction

The construction phase shall comply with the Construction General Permit (CGP) requirements, including the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP shall be prepared by a Qualified SWPPP Developer (QSD). Implementation of the construction SWPPP would avoid or minimize the discharge of contaminants.

The CGP establishes three risk levels that are based on sediment and receiving water risk factors. A preliminary analysis indicated that the Project falls under Risk Level 2. Risk Level 2 measures consistent with the CGP shall be implemented throughout the Project's disturbance area and where construction activities are conducted within or immediately adjacent to sensitive environmental areas (for example, waters of the State/United States, and biological habitats).

Compliance with the CGP requires that, prior to construction, the SWPPP identify pollutant sources that could affect water quality and identify, implement, and maintain best management practices (BMPs) to reduce pollutants and non-stormwater discharges in construction site runoff. For example, good housekeeping BMPs, such as waste management, stockpile management, and trash enclosures, would minimize the exposure of construction materials, sediments, trash and debris, and potential contaminants to stormwater. The SWPPP would also include details on construction techniques required to minimize pollutant and other non-stormwater discharges directly to surface waters, such as using cofferdams for in-stream construction. Construction site perimeter controls, such as silt fence and fiber rolls, would minimize the discharge of contaminants in stormwater via sheet flow. Erosion on exposed slopes would be minimized using slope stabilization BMPs (for example, temporary hydraulic mulch). Sediment control BMPs, such as check dams in drainage ditches and inlet barriers, would minimize sediment discharge. The SWPPP would identify the regular maintenance schedule for construction site BMPs and sampling and monitoring plans. Further,

construction would comply with construction-related requirements specified in permits obtained from applicable resource agencies (for example, California Department of Fish and Wildlife [CDFW] and the US Army Corps of Engineers [USACE]). Compliance with the CGP would also require compliance other resource agency permits and final site stabilization.

The Project SWPPP shall also address the following:

- Where dewatering is required, construction activities shall be conducted in accordance with applicable orders and the appropriate permit(s), including the construction dewatering permit (Los Angeles Regional Water Quality Control Board [LARWQCB] Order R4-2013-0095/National Pollutant Discharge Elimination System [NPDES] Permit CAG994004), Waste Discharge Requirement (WDR) (LARWQCB Order 93-010), and LARWQCB Order 91-93.
- The Project shall prepare and implement a construction site BMP deployment plan that identifies site-specific plans and procedures to generation and potential release of pollutants. The plan shall be consistent with the [County of Los Angeles Department of Public Works Stormwater Best Management Practice Design and Maintenance Manual](#) and the [California Stormwater Quality Association's BMP handbooks](#) to prevent the generation and potential release of pollutants where to prevent the generation and potential release of pollutants where required.
- If an extreme storm event is anticipated, then temporary stormwater control measures would be implemented to avoid or minimize increases in peak flows from the construction zone. Stormwater control measures could include but would not be limited to interim onsite detention facilities, capture and reuse measures, and/or other measures approved by Los Angeles County, designed to maintain or reduce surface runoff to the public storm drain system.

PF-HWQ-02, Low-Impact Design Requirements

To protect surface water quality and maintain pre-development hydrology, the operational design of the Project shall comply with applicable local regulatory requirements, conditions, low-impact development (LID) standards and ordinances. The Project design shall meet stormwater regulatory requirements, including (1) minimizing or eliminating pollutant sources and (2) implementing structural and nonstructural best management practices (BMPs) to treat and control runoff from both developed and redeveloped areas.

The Project final design shall also comply with local LID ordinances stipulated by the Cities of Los Angeles and Vernon. These LID standards and ordinances were established by each jurisdiction to meet the requirements of the Municipal Separate Storm Sewer System (MS4) Permit. The Project final design shall include a site-specific LID plan that shall implement LID design standards such as incorporating structural and nonstructural BMPs to treat and control runoff from both developed and redeveloped areas.

PF-HWQ-03, Continued Los Angeles County Metropolitan Transportation Authority and US Army Corps of Engineers Engagement

Los Angeles Metropolitan Transportation Authority (Metro) has coordinated and continues to consult with the US Army Corps of Engineers (USACE) and the City of Los Angeles on the design and permitting process for the Project and the proposed alterations to the LA River flood control facility. The Project would require review and permissions from USACE pursuant to 33 *United States Code* (USC) Section 408 (Section 408) to construct the pedestrian and bicycling path within the LA River. Due to the interactions of the Project with the current and proposed LA River flood protection facilities, consultation between USACE, the City of Los Angeles, and Metro is expected to continue.

Continuing this consultation will allow these agencies to identify opportunities where the Project design could be refined to simultaneously meet multi-agency objectives, for example by providing enhanced public safety and emergency access to the channel.

C.7 Public Services and Safety

PF-PS-01, *Emergency Service Coordination*

Los Angeles County Metropolitan Transportation Authority's (Metro)'s contractor shall coordinate with police, fire, and emergency service providers prior to and during construction to maintain emergency access through construction work areas.

PF-PS-02, *Construction Safety Measures*

Los Angeles County Metropolitan Transportation Authority's (Metro)'s contractor shall provide safety and security measures at the construction sites and staging areas. Security measures would include barriers for excavations, installation of temporary barriers around perimeters, security patrols, and appropriate signage and lighting. The contractor shall provide a safety and security plan to Metro for review prior to the start of construction.

Additional applicable project features related to public services/safety and security include the following. Refer to Section 3.16, Transportation, for additional detail:

- PF-TR-01, *Prepare and Implement Transportation Management Plan*
- PF-TR-02, *Traffic Control Plan*

C.8 Transportation

PF-TR-01, *Prepare and Implement Transportation Management Plan*

During the final engineering phase and prior to construction, a construction Transportation Management Plan (TMP) shall be prepared by the contractor and reviewed and approved by the Los Angeles County Metropolitan Transportation Authority (Metro), Los Angeles Department of Transportation (LADOT), the California Department of Transportation (Caltrans) and affected cities, where applicable. The TMP shall address potential temporary impacts from construction activities on vehicular, transit, pedestrian, bicycle access and mobility, including but not limited to temporary short-term lane, sidewalk, crosswalk, on-street parking closures; increases in traffic volumes (construction traffic, construction equipment, materials delivery vehicles, waste/haul vehicles, and employee commutes); construction parking and emergency services (for example, fire, police, or ambulances). The development of the TMP shall be coordinated with Metro, local jurisdictions (cities and county), agencies, and other potentially affected parties (for example, school bus and transit and railroad operators and police, fire, and emergency service providers).

The TMP shall include specific strategies to address short-term temporary Proposed Project-related construction effects on traffic, bicyclists, pedestrians, and area residents and businesses. The TMP shall identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred staging locations and hours to avoid heavily congested areas during peak hours, where feasible. The TMP shall include, but not be limited to, the following provisions or strategies as appropriate:

- Reference to the construction staging plan identifying actions that shall be required to reduce effects on the surrounding community such as providing restrictions on construction hours, providing offsite parking for construction vehicles, and ensuring that roadways are always open and accessible to emergency services (for example, fire, police, and ambulances).
- An outline of the community strategy, providing the public, including emergency service and transit providers, with construction updates, alerts, and schedules. Communications shall be provided through the Proposed Project website, social media, and other forms of communication such as mailings and flyers to businesses and residences (typically within 0.25 miles of the construction zone).
- Coordination with nearby projects that have potential overlapping construction timeframes, to schedule vehicle movements to ensure construction vehicles are not impeding traffic flow on the surrounding streets.
- Coordination with railroad owners (Metro, Amtrak, Union Pacific, and BNSF Railway) for construction activities adjacent to railroad operations to minimize impedance to railroad operations.
- Reference to the traffic control plans that show the location of any roadway or sidewalk closures, traffic alternate and detour routes, pedestrian and bicycle detour routes, and haul routes. To provide safe travel for the public, the traffic control plans shall adhere to the affected city's transportation department design standards for appropriate signage, pavement delineations, and traffic control devices that would be needed to provide advisory warnings, regulatory directions, and supplemental guidance to drivers, bicyclists, and pedestrians traveling adjacent to the construction work areas. Traffic control plans shall be coordinated with the affected city's transportation department and adhere to their approval process.
- Reference to the haul route plan that identifies haul route roadways as well as locations of temporary staging areas and river construction access. The plan shall detail measures to ensure that trucks use the specified haul route, and do not travel through residential neighborhoods. The haul route plan shall be coordinated with affected city's transportation department and adhere to their approval process.

PF-TR-02, *Traffic Control Plan*

The Los Angeles County Metropolitan Transportation Authority (Metro) shall develop a traffic control plan (for local public streets in the project area) that shall be implemented by Metro and its contractors during construction of the Project. The traffic control plan shall include, but not be limited to:

- Traffic controls, flaggers, and other traffic safety measures to maintain proper traffic flow during temporary construction activities
- Maintaining access throughout the communities during construction as practical
- Providing signage to direct pedestrians and motorists around construction areas; around sidewalk, street, and lane closures; to entrances of businesses and community assets; and to maintain the flow of traffic around the construction area
- Providing appropriate signage, barriers, and fencing for pedestrian and bicycle detour routes, as necessary

The traffic control plans shall be developed in conjunction with the Transportation Management Plan, which would further enhance the construction strategies to minimize impacts.

C.9 Utilities and Service Systems

PF-UTL-01, *Utility Identification and Coordination*

Per Los Angeles County Metropolitan Transportation Authority's (Metro's) standards and general best practices, prior to the start of any demolition or construction activities, the construction contractor shall verify the locations of existing utilities potentially affected by construction activities. Existing aboveground and underground utilities include, but are not limited to, water piping, potable/fire water, storm and sanitary sewer lines, and electrical/telecommunication services. This shall include coordinating with all existing utility providers/owners for wet and dry utilities (for example, water, sewer, gas, electric, and telecommunications) to obtain documentation of existing utility locations that would be affected by the Project.

PF-UTL-02, *Development of a Utility Relocation Plan*

Before the start of construction-related activities, including the relocation of utilities, the contractor shall coordinate with Los Angeles County Metropolitan Transportation Authority (Metro) and affected utility providers/owners to prepare a Utility Relocation Plan. The contractor shall also coordinate with the utility providers/owners to minimize impacts to services throughout the Project and obtain Metro approval of the Utility Relocation Plan.

The Utility Relocation Plan shall be prepared, reviewed, and approved by a licensed civil engineer and, at a minimum, include the following:

- Plans that identify the utility infrastructure elements, including access for utility providers and easements, as applicable, that require relocation as a result of the Project.
- Plans that identify utilities that would be relocated, removed, or protected in place, due to Project implementation. Potential utility removals or relocations shall be conducted through standard engineering practices to avoid service interruptions, to the extent feasible.
- Utility relocation shall occur within the Metro ROW or other existing public rights-of-way (ROWs) and easements, to the extent feasible.
- Safety measures to avoid any human health hazards or environmental hazards associated with capping and abandoning some utility infrastructure, such as natural gas lines or sewer lines.
- Timing for completion of the utility relocation, which shall be scheduled to minimize disruption to the utility companies and their customers.
- Findings from site and geotechnical investigations conducted before and during final design.

PF-UTL-03, *Service Interruption Notification*

Per Los Angeles County Metropolitan Transportation Authority (Metro) standard practice, prior to the start of any demolition or construction activities, the construction contractor shall be responsible for coordinating with utility and service providers regarding potential utilities service interruptions due to relocation of existing utilities. The construction contractor shall develop a construction plan in coordination with utilities and service providers to minimize interruptions of utilities systems to the greatest extent feasible, including providing temporary connection for services that must be disconnected for extended periods of time. Further, the construction contractor shall develop a contingency plan in cooperation with the utility providers for emergency repairs of any utilities

unexpectedly found or that disintegrated because of age during excavations. The public shall be notified of areas where temporary utilities service interruptions are anticipated.

PF-UTL-04, *Solid Waste Diversion and Disposal*

Per Los Angeles County Metropolitan Transportation Authority (Metro) standard practice, the construction contractor shall be responsible for the management and reporting of soil and construction and demolition (C&D) waste, planning for waste storage, sorting, separating, salvaging, recycling, hauling, and disposing. All waste diversion and disposal conducted by the contractor shall comply with regulatory waste storage, transport, disposal and reporting regulations, requirements, and Metro policies. Prior to construction, the contractor shall prepare a Waste Management Plan to be approved by Metro.

C.10 Wildfire

PF-WF-01, *Los Angeles County LA River Master Plan Compliance*

Construction and operation of the Project shall comply with the wildfire mitigation strategies for natural habitats described in the Final *LA River Master Plan Appendix Volume I: Design Guidelines* (LACDPW 2022). This includes best practices such as removing invasive, non-native species; pruning dead plant material and removing plant debris to reduce fuel load; spacing of canopy trees and large shrubs far enough to reduce the spread of fire; maintaining vertical separation between lower and upper fuel layers; minimizing grasses and forbs (herbaceous flowering plant species); and reducing fuel load through mowing or machinery, grazing by animals, pruning, removal, chipping, masticating, and/or sparingly through prescribed burning.

Additional applicable project features related to wildfire include the following; refer to Sections 3.14, *Public Services/Safety and Security*, and 3.16, *Transportation*, for additional detail:

- PF-PS-01, *Emergency Service Coordination*
- PF-PS-02, *Construction Safety Measures*
- PF-TR-01, *Prepare and Implement Transportation Management Plan*
- PF-TR-02, *Traffic Control Plan*