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Section 1
Introduction

1.1 Background

This Feasibility Report was prepared in support of a Draft Environmental Impact Report (DEIR) prepared under the California Environmental Quality Act (CEQA) for the San Joaquin River Conservancy Fresno River West Eaton Trail Extension Project. It evaluates the viability of vehicular access to the proposed multipurpose Lewis Eaton Trail via five routes starting adjacent to or near the intersection of Nees and Palm Avenues. Each route was independently evaluated for feasibility in constructing a paved two-way road to provide public access to a parking area. This Feasibility Study recommends a single route for Alternative 5 of the EIR.

Alternative 5 was developed in support of the EIR to address limited public access to the San Joaquin River (River) for residents of a nearby disadvantage census tract and more broadly to Fresno residents due to the travel distance to access the proposed parking area via the Perrin Avenue entrance. This technical report considers five routes to provide public access to the proposed multiuse trail from a location near the intersection of North Palm and West Nees Avenues in Fresno, California.

The Alternative 5 area is located along the River west of Spano Park and is within the city limits of Fresno. It is generally delineated on the north by the River and on the south and east by commercially-developed parcels on the plateau above the steep river bluff. The commercially-developed parcels include the Park Place Shopping Center and the Palm Bluffs Corporate Center. On the plateau northeast and southwest of the subject area is residential development. Most of the subject area consists of open space or commercial land use.

The area encompasses about 65 acres on 10 parcels of land, all of which are privately owned. Table 1-1 identifies the individual parcels, size, land use and zoning and owner(s). A map of the parcels is presented in Figure 1-1. A private access road (referred to in this report as the paved or unpaved Gravel Haul Road) traverses through the Alternative 5 area (Assessor’s Parcel Numbers 40203063S, 40534018S, 40534019S, and 40553085S). State and local agencies have certain public access easements on these roads. Photographs 1, 2 and 3 below show Gravel Haul Road. Table 1-1 presents the size, land use, zoning and owners of the parcels of land that compose the Alternative 5 area.

A portion of Gravel Haul Road is paved and connects with the intersection of Palm and West Nees Avenues on the plateau overlooking the River. The paved portion ends on parcel 40534018S and then proceeds upriver as an unpaved road. The paved road is about 1,200 feet long and 27 feet wide; the unpaved road is about 640 feet long and 10 feet wide. Several nonpublic unpaved roads can be seen on aerial photographs of the site (Figure 1-1). An example of one of these roads is presented in Photograph 4. Access to the area is from the intersection of Nees and Palm Avenues. The entrance is blocked by a locked gate as seen in Photograph 5.
Table 1-1 Parcel Numbers, Size, Land Use and Owner(s) of Alternative 5 Area

<table>
<thead>
<tr>
<th>Assessor’s Parcel Number</th>
<th>Acreage</th>
<th>Existing Land Use Description</th>
<th>Planned Land Use Description</th>
<th>Zoning</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>40203063S</td>
<td>11.61</td>
<td>Open Space/ Multi-Use</td>
<td>Open Space/ Multi-Use</td>
<td>AE-5</td>
<td>SOB Enterprises</td>
</tr>
<tr>
<td>40203067S</td>
<td>4.52</td>
<td>Open Space/ Multi-Use</td>
<td>Open Space/ Multi-Use</td>
<td>AE-5</td>
<td>SOB Enterprises</td>
</tr>
<tr>
<td>40203043</td>
<td>1.19</td>
<td>Vacant</td>
<td>Commercial/ Special</td>
<td>SPLIT: AE-5 and AE-20</td>
<td>SOB Enterprises</td>
</tr>
<tr>
<td>40203070</td>
<td>3.06</td>
<td>Vacant</td>
<td>Commercial/ Special</td>
<td>SPLIT: AE-5 and AE-20</td>
<td>SOB Enterprises</td>
</tr>
<tr>
<td>40553085</td>
<td>11.66</td>
<td>Office/ Commercial</td>
<td>Commercial/ Office</td>
<td>C-2</td>
<td>Park Place</td>
</tr>
<tr>
<td>40534019S</td>
<td>0.70</td>
<td>Vacant</td>
<td>Open Space/ Multi-Use</td>
<td>AE-20</td>
<td>SOB Enterprises</td>
</tr>
<tr>
<td>40534018S</td>
<td>0.76</td>
<td>Open Space/ Multi-Use</td>
<td>Open Space/ Ponding Basin</td>
<td>AE-20</td>
<td>SOB Enterprises</td>
</tr>
<tr>
<td>40203064S</td>
<td>10.94</td>
<td>Vacant</td>
<td>Open Space/ Multi-Use</td>
<td>AE-20</td>
<td>SOB Enterprises</td>
</tr>
<tr>
<td>40534004</td>
<td>11.89</td>
<td>Vacant</td>
<td>Commercial/ Office</td>
<td>C-P</td>
<td>C&amp;A Farms, LLC; North Palm Partners</td>
</tr>
<tr>
<td>40534017S</td>
<td>8.75</td>
<td>Vacant</td>
<td>Open Space/ Multi-Use</td>
<td>AE-20</td>
<td>SOB Enterprises</td>
</tr>
<tr>
<td>Total Acres</td>
<td>65.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.2 Setting

The landform of the San Joaquin River plateau is a terrace escarpment composed of parent alluvial sediments of a Pleistocene geologic. It is referred to as the bluff in this report. In general the earth material profile of the bluff consists predominantly of near surface sandy silt in the upper 1 to 2 feet and underlain by layers of silty sand, poorly graded sand with varying silt content, and sandy silt. The relative consistency of the coarse grained soils range from medium to very dense, while the fine grained soils are medium stiff to hard.

The plateau or cliff area overlooks the River and consists of three slopes: an upper, central, and lower slope. The upper slope is separated from the central slope by a terrace with a depth of 8 feet while the lower slope is separated from the central slope by a terrace with a depth of approximately 25 feet. The upper slope is approximately a 1.3:1 (horizontal to vertical) slope with an overall height of about 20 feet. The slope is approximately 1:1 with an overall height of about 60 feet (client confidential data 2012) above the floodplain of the River.

Prior to 1937 the plateau was used for agriculture, primarily fig orchards and livestock grazing. Examination of an aerial photograph taken in 1937 reveals a fairly sharp bluff crest, with drainage incisions near to and within the Alternative 5 project site. Aerial photos from 1981 indicate that in some portions of the bluff crest had migrated forward (towards the San Joaquin River), as evidenced by the filling of drainages. Figure 2 presents a conceptual outline of the original bluff crest (1937) compared to the current crest based on tracings of USGS topographic maps.
Figure 1-1  Map of the Parcel Boundary by Accessors Parcel Number
Photograph 1. A view of the paved Gravel Haul Road located within parcel 40534019S. The paved road lies between parcels 40203064S and 40534017S.

Photograph 2. View of paved Gravel Haul Road facing the Park Place Shopping Center located on bluff.
Photograph 3. View of unpaved Gravel Haul Road. The unpaved road traverses across parcel 405340185 and continues to parcel 40203063S.

Photograph 4. View of nonpublic unpaved road. View is looking toward the east. The road traverses across parcel 40203064S.
From the early 1940s to mid-1970s, several locations on the subject parcels were used as open dumps or landfill. The earliest landfilling activity is associated with the United States Army’s Camp Pinedale. The camp was constructed in 1942 near the beginning of World War II and continued until 1947, when it was closed. A sewage treatment plant and associated treatment ponds were built to serve the camp. In 1962, the Pinedale Utility District took over the treatment plant and began landfilling activities or allowed landfilling activities by Mr. Clyde Kepley until 1977, when it was closed. Other areas within Alternative 5 were used for the disposal of concrete, asphalt, and construction and demolition wastes (AECOM 2016). Landfilling of organic wastes (domestic garbage) took place at the former Pinedale Dump (also known as Kepco Pinedale Landfill) along the bluffs of the subject property. The specific locations of the various landfills are not known. Figure 1-3 presents a conceptual footprint of former landfill disposal sites. The illustrated boundaries are approximate and are based on the review of data provided from a Phase I Environmental Site Assessment (AECOM 2016).

Mr. Kepley conducted Class II and III sanitary landfill activities from 1950 to 1978. Most fill was Class II and III sanitary landfill material, although some cutting, removal, and filling along Gravel Haul Road was performed during the construction of Nees Avenue. The Regional Water Quality Control Board (RWQCB) definitions of Class II and III landfill sites (in 1969, when the landfill operations were occurring) were as follows (The Foundation Engineers, Inc. 1981):

- **Class II** - Sites underlain by usable, confined or free groundwater when the minimum elevation can be maintained above anticipated high groundwater elevations, protected from surface runoff where surface drainage can be restricted to the site or discharged to a suitable wasteway. Limited to ordinary household or commercial refuse or trash, garbage, other decomposable organic refuse, and scrap metal deemed safe at levels above high ground water.

- **Class III** - Sites located with little or no protection of usable waters. Limited to non-decomposable inert solids, mainly construction materials.
Figure 1-2 Conceptual Outline of the Original Bluff Crest (circa 1937) vs Current Crest
Figure 1-3 Conceptual Footprint of Former Landfill Disposal Sites
Photographs 6, 7, and 8 are historic photographs of Kepco Landfill activities (locally known as the Pinedale Dump) from 1972. Most of the landfill material consisted of domestic waste (household wastes, paper, plastic bags, clothes, toys, cans, glass, metal, wire, and mixed organic matter) and landscape trimmings and construction debris that were covered with soil at the time of placement, so the landfill was interlayered at many locations (AECOM 2016). It is not known if the landfill material was compacted. Landfill activities of the former landfill disposal sites created the present artificial plateau of the Alternative 5 area.


Multiple Environmental Site Assessments (ESAs) have been performed within the Alternative 5 area over the years. An ESA is meant to identify the potential for contamination of a site by hazardous or toxic materials and to identify other possible environmental constraints on the site. Reviews of several ESAs were performed to identify the potential for environmental contaminants (AECOM 2016). Although the review was not a detailed comprehensive investigation based on quantitative or qualitative analytical data, Table 1-2 presents a list of chemical constituents that have been found in various soil borings taken from multiple locations the area. Trace concentrations of chemicals, referred to as volatile organic compounds (VOCs), have been detected. Some locations had concentrations that exceed the California Human Health Screening Levels (CHHSL) (AECOM 2016).

A contaminant of concern is a chemical or material characterized by a perceived, potential, or real threat to human health or the environment or by a lack of published health standards. Table 1-2 identifies chemical constituents detected from borehole drilling at several locations of the Alternative 5 area.

### Table 1-2 Chemical Constituents Detected at Alternative 5 Sites

<table>
<thead>
<tr>
<th>Site Investigations</th>
<th>Constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Foundation Engineers, Inc. (1981)</td>
<td>Methane concentration above 100% lower explosive limit with minor amounts of ethane and propane</td>
</tr>
<tr>
<td>Montgomery Watson (1995)</td>
<td>Cis-1,2 dichlorobenzene (DCB), cis-1,2-dichloroethene (DCE), tetrachloroethylene (PCB), 1,1-dichloroethylene (1,1-DCE), 1,1-dichloroethane (1,1-DCA), and 1,1,1-trichloroethane (1,1,1-TCA), along with chromium</td>
</tr>
<tr>
<td>The Twining Laboratories (1999)</td>
<td>Sec-butyl benzene, dichlorodifluoromethane, manganese,</td>
</tr>
<tr>
<td>SCS Engineers (2013)</td>
<td>Tetrachloroethene, vinyl chloride</td>
</tr>
</tbody>
</table>

Since the closure of the landfill activities, stockpiles of soils and concrete have occasionally been deposited in the Alternative 5 area. In 2016 the portions of the Alternative 5 area were graded. However, it is not known if the soil has been compacted and the degree of settling is not known. According to the U.S. Natural Resources Conservation Service, native soils of the Alternative 5 project area are the same as described for the project: Grangeville fine sandy loam, Hesperia sandy loam, Tujunga, and Riverwash.
Section 2
Feasibility Criteria

A feasibility study aims to objectively and rationally uncover the strengths and weaknesses of an existing business or proposed venture, opportunities and threats present in the environment and the resources required to carry through, and ultimately the prospects for success. The following criteria were used to evaluate the feasibility of four potential routes.

2.1 Emergency Vehicular Requirements

Emergency Vehicular Requirements refers to the Fresno Fire Department (FFD) Development Policies Section 401 to 409 and Fire Industry Bulletin 2016-004 provided below:

- Policy 2. Points of Access
  e. All types of access shall not exceed a 10 percent grade or contain any irregularity creating an angle of approach or departure in excess of 10 percent, except as approved by the Fire Marshal (or designee).

- Policy 5. Turnarounds
  a. Buildings and exterior storage areas with a single point of access in excess of 150 feet in length are required to be provided with approved turnarounds. Turnarounds shall be located within 150 feet of the termination of the single entry road. Portions of the road requiring fire apparatus to back up shall not include any turns or bends, except for the required turnarounds. The maximum length of a single point of access shall be 450 feet.
  b. Intermediate turnarounds shall be required for multiple points of access exceeding 700 feet in length.
  c. All turnarounds shall have a minimum 44-foot centerline turning radius with a minimum of 20 feet clear drive width. “T” turnarounds shall have a minimum clear drive width of 20 feet and shall be a minimum of 60 feet in length.

- Policy 8. Emergency Vehicle Access
  a. Emergency only access is dedicated for the exclusive use of fire department apparatus and is required where common vehicle access is either inadequate or unreliable. Emergency only access shall be a minimum of 20 feet in clear drive width. Additional clear widths may be required and must be approved by the Fire Marshal (or designee).
  b. Turnaround requirements for emergency vehicle access shall be the same as referred to in Section 5, Turnarounds.
  c. Gates, posts, or other barriers approved by the fire department shall be installed at each entrance to emergency only access points.
  f. Assurance of the integrity and reliability of emergency vehicle access points may require the dedication of a fire protection access easement to the City or County.
2.2 Geotechnical

Geotechnical considerations refer to the adequacy of actual ground conditions and slope stability. A route may conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015) and Section 15-1407 of the Citywide Development Code (dated March 31, 2015). The Bluff Protection Overlay District states: “No grading or modification of the existing landscape or alteration of existing topography or construction of any structures shall be permitted on the bluff face or air space above it.”

2.3 Environmental Constraints

Environmental contaminants of concern may be present at sites associated with the access roads and parking area. Contaminant constituents identified in Table 2 include but are not limited to cis-1,2 dichlorobenzene (DCB), cis-1,2-dichloroethene (DCE), tetrachloroethylene (PCB), 1,1-dichloroethylene (1,1-DCE), 1,1-dichloroethane (1,1-DCA), and 1,1,1-trichloroethane (1,1,1-TCA), along with chromium.

2.4 Trail Compatibility

Trail compatibility refers to the compatibility of the proposed route to visitor safety, recreation use, and the private landowners’ plans for future improvements.

2.5 Description of Proposed Routes

Five vehicle routes and public access, identified as routes 5a, 5b, 5c, 5d and 5e in this report, were considered for Alternative 5. Each possible route was developed to meet the Conservancy’s public access objectives, safety, provide equivalent public vehicle access and parking for 40 vehicle, public use amenities, and extend the proposed multiuse Trail for about 600 feet. Road feasibility studies (alignments, slopes, grading, soils, topography, etc.), review of land use and waste disposal history and investigations, and a Phase 1 Environmental Site Assessment (hazardous materials site assessment) was conducted to assess any significant engineering constraints, risks to public health and safety, or environmental liabilities. The five vehicle routes are described below.

- **Route 5a.** Access to the multipurpose trail would be provided by improving the two existing unpaved private access roads as depicted in a conceptual drawing in Figure 2-1. Each road would be paved and provide one-way vehicle traffic to a parking lot in river bottom. The proposed multipurpose trail would terminate at the new parking area and connect to the proposed project staircase to Spano Park. The outermost road begins at the Palm and Nees intersection. W. Nees Avenue continues downslope toward the river bottom where it meets an existing dirt road. The dirt road parallels the river and continues upstream toward a vacant private parcel where a proposed 40-stall parking lot would be constructed. The innermost road is a dirt road which parallels the outermost road and proceeds toward the proposed parking lot. Both roads would be used for one-way traffic to comply with the FFD roadway width of 20 feet for emergency service vehicles. About 2,200 feet of retaining walls would be constructed along both roads to stabilize the bluff face and underlying fill material. This route would proceed across five parcels of private property. The proposed parking lot and the outermost road lie within the 100-year floodplain boundary.

- **Route 5b.** Access to the multipurpose trail would be provided by the construction of a paved road from the cul-de-sac at Palm Avenue north of Nees Avenue, as depicted in a conceptual drawing (Figure 2-2). The road, with two 15-foot travel lanes, would be constructed across the face of the bluff slope at a downgradient greater than 10% toward the river bottom and then around the Fresno Metropolitan Flood Control District (FMFCD) basin. The proposed road would end at a...
proposed 40-stall parking lot in the same location as Route 5a. The proposed trail would terminate at the new parking area, along with the proposed trail to the staircase to Spano Park. About 700 feet of retaining wall would be constructed along the road to stabilize the buff face and underlying fill and organic wastes. This route would proceed across four parcels of private property and one parcel owned by the City of Fresno. The proposed parking lot and portions of the road lie within the 100-year floodplain boundary.

- **Route 5c.** Access to the multipurpose trail would be provided by the construction of a paved road from the corner of W. Alluvial and N. Harrison Avenues as depicted as a conceptual drawing (Figure 2-3). The road would have two 15-foot travel lanes and would be constructed with a 10% gradient and proceed across two parcels of land toward the top of the bluff. The road would end at a proposed 40-stall parking lot on the artificial plateau near the bluff crest. An ADA-compatible pedestrian trail would be constructed down the bluff face to the multipurpose trail. The pedestrian trial is illustrated as a series of switchbacks down the steep slope of the bluff.

- **Route 5d.** Access to the multipurpose trail would be provided via the existing Gravel Haul Road as depicted as a conceptual drawing (Figure 2-4). In this alternative the trail would be extended downriver from the end of the proposed trail near the FMFCD flood control basin. Public vehicle access to the river would be provided from the intersection of Palm and Nees Avenues along the Gravel Haul Road. A 40-stall parking lot would be constructed near the river. A physically separated pedestrian path and or bikeway would parallel the paved Gravel Haul Road. The paved road would lead to a turnaround near the parking lot. The turnaround would be designed to accommodate the turning radius of a FFD fire truck. The multiuse trail would extend from the proposed project site along the riverbank and end at a turnaround. Some of the proposed features would be located on state sovereign lands. Although there are limited public access easements on the private access roads, the underlying land is privately owned.

- **Route 5e.** Access to the multipurpose trail is similar to Route 5d and is depicted as a conceptual drawing (Figure 2-5). In this alternative the multiuse trail would be extended downriver from the end of the proposed trail near the FMFCD flood control basin. Public vehicle access to the river would be provided from the intersection of Palm and Nees Avenues via the existing Gravel Haul Road. A 40-stall parking lot would be constructed near the river bottom with two way vehicle access provided by the paved road. A physically separated pedestrian path and or bikeway would parallel the paved road. The paved road would lead to a turnaround near the parking lot. The turnaround would be designed to accommodate the turning radius of a FFD fire truck. The multiuse trail would extend from the proposed project site along the riverbank and end at the turnaround. Some of the proposed features would be located closer to the River. Although there are limited public access easements on the private access roads, the underlying land is privately owned. The proposed parking lot is located within the 100-year floodplain boundary.
Figure 2-1 Conceptual Illustration of Route 5a
Figure 2-2  Conceptual Illustration of Route 5b
Figure 2-3 Conceptual Illustration of Route 5c
Figure 2-4  Conceptual Illustration of Route 5d
Figure 2-5 Conceptual Illustration of Route 5e
Section 3
Results of Route Feasibility

The following analysis evaluated each route based on the standards described in Section 2 Feasibility Criteria of this report.

3.1 Route 5a Feasibility

3.1.1 Emergency Vehicular Requirements
Route 5a is inconsistent with the FFD Development Policies Section 401 to 409 and Fire Industry Bulletin 2016-004 regarding emergency vehicle access. The proposed route or point of access to the proposed parking area is greater than 10 percent grade and the route length is greater than the maximum length of 450 feet for a single access point.

3.1.2 Geotechnical
Currently there is an inadequate assessment of actual ground conditions and slope instability due to previous landfilling activities. Slope failure may occur as a result of inherent geological instability, soil erosivity or effects of road construction. Additional geological investigation of this route would be needed. The slope along the toe of the bluff is unstable due to past landfilling activities. A mechanical structure, such as a concrete retaining wall or a reinforced earth structure would be required along the portion of the route proposed along the toes of the bluff slope. The route would conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015). Section 15-1407 of the Citywide Development Code dated March 31, 2015 (Bluff Protection Overlay District) states: "No grading or modification of the existing landscape or alteration of existing topography or construction of any structures shall be permitted on the bluff face or air space above it."

3.1.3 Environmental Constraints
Postclosure plans must be prepared before disposal areas can be converted to other uses. A postclosure plan was never prepared for the unregulated landfill activities on and near the Alternative 5 site. The presence of the known contaminants in the Kepco Pinedale Landfill represent a Recognized Environmental Condition. Constructing a paved pedestrian/bicycle pathway along the existing road through the landfill, and a new parking lot at the base of the road, under Alternative 5 could expose construction workers and members of the public to hazardous materials (gases such as methane and volatile organic compounds such as vinyl chloride and benzene). Furthermore, construction activities at the former landfill could disturb drainage patterns or disturb cover, which could cause or allow the landfill materials to become wet. Over time, this condition would increase the potential for the presence of explosive and flammable gases and possible leachate movement and accumulation. Additionally, disturbed landfill soils could become mobilized, causing potential human health and pollution issues. Construction across the bluff face, potentially through the landfill materials, also presents a potential hazard from unstable soils that may be unsuitable for use as a base material.

Furthermore, regulatory agencies might require a Phase II or Phase III remediation before development. Environmental liabilities, such as public safety and costs associated with regulatory-mandated cleanup, disposal of regulated-waste and civil liability, would be required. Civil liability may occur when contaminants of concern migrate offsite.
3.1.4 Trail Compatibility

The outermost road is narrow (about 10 feet wide) and is constrained one side by the bluff slope and the river on the other. The distance from the cut edge of the bluff slope and the River is about 10 feet wide. The width of the outermost road is insufficient to accommodate both the trail extension and a new paved road, which would preclude extending the multipurpose trail to the Palm/Nees area. This would conflict with the objectives of the project (see Section 2.2, “Project Objectives” of the DEIR) and create a potential vehicle/pedestrian hazard (a safety issue), because pedestrians would likely use the roadways in any case. The outermost road at the riverbank could not be widened to accommodate both a road and the extended multipurpose trail because of the necessity to deposit fill in the regulated floodway and waters of the U.S. on the riverward side, and cut into the unconsolidated fill and organic waste materials on the bluff side.

3.1.5 Constructability Access

Compared to other routes, Route 5a would require the most road construction (several thousand feet of access road), all of which would be located in the former Pinedale Dump landfill area, which is composed of both construction debris and domestic waste. Moreover, the land is privately owned. Constraints associated with the private landowner’s plans for future improvement would conflict with developing Route 5a. Therefore, this route is significantly constrained and has been determined to be largely infeasible.

3.2 Route 5b Feasibility

3.2.1 Emergency Vehicular Requirements

Similar to Route 5a, Route 5b is inconsistent with the FFD Development Policies Section 401 to 409 and Fire Industry Bulletin 2016-004 regarding emergency vehicle access. The proposed route or point of access to the proposed parking area is along a grade greater than 10 percent with a route length greater than the maximum length of 450 feet for a single access point. The two 15-foot travel lane alignments are inconsistent with the 20–foot minimum “clear drive width” for dedicated emergency vehicle access.

3.2.2 Geotechnical

Route 5b crosses the same artificial plateau as Alternative 5a. Ground conditions are unknown and slope instability is possible due to previous landfilling activities. The slope along the toe of the bluff is unstable due to past landfilling activities. Slope failure is possible as a result of inherent geological instability or effects of new road construction. Additional geological investigation of this route would be needed. Also, as proposed for Route 5a, a mechanical structure, such as a concrete retaining wall or a reinforced earth structure would be required along the portion of the route proposed along the toes of the bluff slope. Route 5b could conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015).

Additional geological investigation of this route would be needed. Due to the proximity of the proposed route to a Fresno Metropolitan Flood Control (FMFCD) basin, there may additional geotechnical considerations to minimize impacts to the basin.

3.2.3 Environmental Constraints

Similar to Route 5a, environmental contaminants of concern are present along the Route 5b alignment. The two roads lie on and cut into unconsolidated fill material containing organic wastes. Extensive engineered retaining walls for both roadways would be necessary to attempt to stabilize the slope. The parking area would lie on a closed landfill and disposed construction debris. Furthermore, regulatory
agencies might require a Phase II or Phase III remediation before development. Environmental liabilities, such as public safety and costs associated with regulatory-mandated cleanup, disposal of regulated-waste and civil liability, would be required. As stated above, civil liability may occur when contaminants of concern migrate offsite of these parcels.

3.2.4 Trail Compatibility

The two roads would preclude extending the multipurpose downstream by creating a potential vehicle/pedestrian hazard (a safety issue). This would conflict with the objectives of the project (see Section 2.2, “Project Objectives” of the DEIR). The roads could not be widened to accommodate both a public road access and the extension of multipurpose trail because of the necessity to deposit fill in the regulated floodway and waters of the U.S. on the riverward side, and cut into the unconsolidated fill and organic waste materials on the bluff side. Moreover, the roads could cause a traffic-pedestrian safety conflict when vehicles cross the trail to enter the parking area.

3.2.5 Constructability Access

Route 5b would require less road construction than Route 5a. However, the alignment would be located in the former Pinedale Dump landfill area, which is composed of both construction debris and of domestic waste. Moreover, the land is privately owned. Constraints associated with the private landowner’s plans for future improvement would conflict with developing Route 5b. Therefore, this route is significantly constrained and has been determined to be largely infeasible.

3.3 Route 5c Feasibility

3.3.1 Emergency Vehicular Requirements

Route 5c is consistent with the FFD Development Policies Section 401 to 409 and Fire Industry Bulletin 2016-004 regarding emergency vehicle access. A new road with two 15-foot travel lanes would be constructed across parcel numbers 40534004 and consistent with the 20 feet minimum clear drive width for dedicated emergency vehicle access. The gradient varies but is less than or equal to a 10% slope.

3.3.2 Geotechnical

There is an inadequate assessment of actual ground conditions and slope instability due to previous landfilling activities. The alignment of Route 5c overlays the Kepco Pinedale Landfill which represents a Recognized Environmental Condition. Constructing a paved pedestrian/bicycle pathway along the existing road through the landfill and a new parking lot at the base of the road under Alternative 5 could expose construction workers and members of the public to hazardous materials (gases such as methane and volatile organic compounds such as vinyl chloride and benzene).

Additional geological investigation of this route would be needed. An ADA-compatible ramp or pedestrian trail would be constructed down the bluff face to the trail. This pedestrian trail could conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015). The slope along the toe of the bluff is unstable due to past landfilling activities. A mechanical structure, such as a concrete retaining wall or a reinforced earth structure, would be required along the portion of the pedestrian trail.

3.3.3 Environmental Constraints

Similar to Route 5a, environmental contaminants of concern are present at along the Route 5c alignment. The parking area would be located on an artificial plateau that overlays a closed landfill. Furthermore, regulatory agencies might require a Phase II or Phase III remediation before development. Environmental
liabilities, such as public safety and costs associated with regulatory-mandated cleanup, disposal of regulated-waste, and civil liability, would be required. As stated above, civil liability may occur when contaminants of concern migrate offsite of these parcels.

3.3.4 Trail Compatibility

This alternative is promotes visitor safety and use of the recreational amenities proposed for the multiuse trail. However, visitors could be exposed to environmental contaminants of concern associated with historic landfills activities. The land is privately owned. Constraints associated with the private landowner’s plans for future improvement would conflict with developing Route 5c.

3.3.5 Constructability Access

Constraints associated with the private landowner’s plans for future improvement would conflict with the alignment for this route. Therefore, Route 5c is significantly constrained and has been determined to be largely infeasible.

3.4 Route 5d Feasibility

3.4.1 Emergency Vehicular Requirements

Route 5d is consistent with FFD Development Policies Section 401 to 409 and Fire Industry Bulletin 2016-004 regarding emergency vehicle access. The route would follow the existing Gravel Haul Road. However, the existing road may be widened to meet FFD requirements. Alternative 5d would provide appropriate emergency-vehicle access (fire, police, and ambulance) via a paved road from the Palm and Nees Avenue entrance onto the project site, including the additional parking lot. This road would also provide additional emergency egress for members of the public using the trail. The Riverview Drive and Perrin Avenue entrances would also provide access for emergency vehicles. The trail leading from the Alternative 5 site to the trail extension would accommodate emergency response vehicles.

3.4.2 Geotechnical

The existing Gravel Haul Road would need to be widened by cutting into the bluff, which is composed of unconsolidated fill material containing organic wastes. Engineered retaining walls would be necessary to attempt to stabilize the slope. Additional geological investigation of this route would be needed. The route would conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015). The slope along the toe of the bluff is unstable due to past landfilling activities. A mechanical structure, such as a concrete retaining wall or a reinforced earth structure, would be required along the portion of the route proposed along the toes of the bluff slope.

3.4.3 Environmental Constraints

This alternative is promotes visitor safety and use of the recreational amenities proposed for the multiuse trail. Worker exposure to environmental contaminants of concern could be minimized with remediation during the widening of the Gravel Haul Road. However portions of the parking area and multiuse trail would be located within the designated floodway of the River.

3.4.4 Trail Compatibility

The existing paved roadway that would be used for the Palm and Nees Avenue access is 21 feet wide, which may be enough to meet the minimum standards required by the City of Fresno for emergency-vehicle access. However, this alternative would also entail constructing a paved, 5-foot-wide pedestrian/bicycle access path alongside the existing road. This path would connect the trail to existing
city streets for pedestrians and bicyclists, and would provide trail access for members of the public who may park along the top of the bluffs (e.g., in the parking area at Spano Park) when the proposed new parking lot at the base of the trail is full. Under Alternative 5d, the additional paved pedestrian/bicycle path would be constructed within deposits associated with the former Kepco Pinedale Landfill. The proposed new parking lot at the foot of the bluffs could also be constructed within these deposits from the former landfill.

3.4.5 Constructability Access

Although the land is privately owned State and local agencies have certain limited public access easements on these roads. Constraints associated with the private landowner’s plans for future improvement would conflict with the alignment for this route. The public access easements would need to be broadened to accommodate visitor access. Therefore Route 5d is constrained and may be feasible.

3.5 Route 5e Feasibility

3.5.1 Emergency Vehicular Requirements

Route 5e is consistent with FFD Development Policies Section 401 to 409 and Fire Industry Bulletin 2016-004 regarding emergency vehicle access. The route would follow the existing Gravel Haul Road. However, the existing road may be widened, to meet FFD requirements. Alternative 5e would provide appropriate emergency-vehicle access (fire, police, and ambulance) via a paved road from the Palm and Nees avenues entrance onto the project site, including the additional parking lot. This road would also provide additional emergency egress for members of the public using the trail. The Riverview Drive and Perrin Avenue entrances would also provide access for emergency vehicles. The trail leading form the Alternative 5 site to the trail extension would accommodate emergency response vehicles.

3.5.2 Geotechnical

The existing Gravel Haul Road would need to be widened by cutting into the bluff, which is composed of unconsolidated fill material containing organic wastes. Engineered retaining walls would be necessary to attempt to stabilize the slope. Additional geological investigation of this route would be needed. The slope along the toe of the bluff is unstable due to past landfilling activities. A mechanical structure, such as a concrete retaining wall or a reinforced earth structure, would be required along the portion of the route proposed along the toes of the bluff slope. The route would conflict with grading standards as described in Article 14 of the Bluff Protection Overlay District (City of Fresno 2015).

3.5.3 Environmental Constraints

This alternative is promotes visitor safety and use of the recreational amenities proposed for the multiuse trail. Worker exposure to environmental contaminants of concern could be minimized with remediation during the widening of the Gravel Haul Road. However, portions of the parking area and multiuse trail would be located within the designated floodway of the River.

3.5.4 Trail Compatibility

The existing paved roadway that would be used for the Palm and Nees Avenue access is 21 feet wide, which may be enough to meet the minimum standards required by the City of Fresno for emergency-vehicle access. However, this alternative would also entail constructing a paved, 5-foot-wide pedestrian/bicycle access path alongside the existing road. This path would connect the trail to existing city streets for pedestrians and bicyclists, and would provide trail access for members of the public who may park along the top of the bluffs (e.g., in the parking area at Spano Park) when the proposed new parking lot at the base of the trail is full. Under Alternative 5e, the additional paved pedestrian/bicycle path
would be constructed within deposits associated with the former Kepco Pinedale Landfill. The proposed new parking lot at the foot of the bluffs could also be constructed within these deposits from the former landfill. Moreover, the location of the proposed parking lot is within the 100-year floodplain.

3.5.5 Constructability Access

Although the land is privately owned, state and local agencies have certain limited public access easements on these roads. Constraints associated with the private landowner’s plans for future improvement would conflict with the alignment for this route. The public access easements would need to be broadened to accommodate visitor access. Therefore, Route 5e is constrained but may be feasible.

Table 3-1 presents a comparison of possible constraints for Routes 5a through 5e. Routes 5a through 5c are constrained by private landowners’ plans for future development and significant exposure of hazardous materials to the public. Route 5e is constrained by the location of the proposed parking lot within the 100-year floodplain.

Table 3-1 Comparison of Constraints for Routes 5a through 5e

<table>
<thead>
<tr>
<th>Is the Route Constrained by</th>
<th>Route 5a</th>
<th>Route 5b</th>
<th>Route 5c</th>
<th>Route 5d</th>
<th>Route 5e</th>
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<tr>
<td>Emergency Vehicular Requirements</td>
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<td>Yes</td>
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<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Geotechnical</td>
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<td>No</td>
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<tr>
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<td>No</td>
<td>No</td>
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<tr>
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<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<td>No</td>
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</tr>
</tbody>
</table>

Route 5d should be evaluated in the DEIR as Alternative 5 because the site is located at the base of the bluff, is relatively flat, and is accessible via the paved Gravel Haul Road. The trail and the widening of the additional paved pedestrian/bicycle path would be constructed within deposits associated with the former Kepco Pinedale Landfill. However, a full environmental analysis under CEQA would identify potential significant impacts.
Section 4

References


SCS Engineers. 2013. Vapor Intrusion Health Risk Assessment for Proposed Development, Northwest of Intersection of West Nees Avenue and North Palm Avenue, Fresno, California. October.