

CLEAN WATER ACT 404(B)(1) ALTERNATIVES ANALYSIS

The Proposal requires authorization by the USACE to place “fill” into “Waters of the U.S.” The Proposal does not qualify for authorization under the Nationwide Permit Program, therefore, the Proposal requires an Individual Permit under section 404(b)(1) of the Clean Water Act (33 U.S.C. 1344), also referred to herein as Guidelines.

For projects that impact special aquatic sites and are non-water dependent, the Guidelines presume that a practicable alternative exists that does not involve impacts to special aquatic sites or has a less adverse impact on the aquatic ecosystem than the proposed project. This “rebuttable presumption” requires an analysis of alternatives to determine the least environmentally damaging practicable alternative (LEDPA).

The Proposal is not subject to the rebuttable presumption because the Proposal is a water dependent project. Furthermore, Alternative 2A does not affect special aquatic sites. Alternative 2B is also a water dependent project, but it does impact a special aquatic site. While both Alternatives are not subject to the rebuttable presumption test, the Guidelines require an analysis of alternatives to determine the LEDPA, as well as an analysis to determine whether all practicable avoidance and minimization measures have been considered.

Appendices B1 and B2 provide an analysis of Alternatives 2A and 2B pursuant to the topics listed in the Guidelines.

Anticipated changes to the physical/chemical characteristics of the aquatic environment

1. Substrate: Alternatives 2A and 2B would affect the substrate of Cucamonga Creek for diversion of low flows. The area of effect is un-vegetated and concrete lined. The temporary impacts would total 0.40 acre of Waters of the U.S. (WUS).

Alternative 2B would affect the substrate of Mill Creek by creating a plunge pool and associated rock berm to divert flows to the braided wetland bioswales.

2. Currents, circulation or drainage patterns: Section 4.9 and the technical reports included in Appendices E, H, I, J and K analyzed potential affects to currents, circulation, and drainage patterns. Neither Alternative 2A nor 2B would cause adverse affects to the currents and circulation of Cucamonga and Mill Creek. Furthermore, neither Alternative would change the basic drainage patterns of the Proposal Site.
3. Suspended particulates; turbidity: Construction activities could result in short-term adverse affects to turbidity levels. However, implementation of BMP’s, as required by Mitigation Measure HYD 1: Water Quality, and further defined by the Stormwater Pollution Prevention Plan (SWPPP) would reduce the potential adverse affects to less than significant.
4. Water quality (temperature, salinity patterns and other parameters): The purpose of the Proposal is to provide regional water quality benefits.

5. Flood control functions: The Proposal Site is located within the Prado Dam inundation area. As such both Alternatives are required to meet flood storage requirements, as described in Section 4.9.
6. Storm, wave and erosion buffers: Not applicable to this Proposal.
7. Erosion and accretion patterns: Construction activities could result in short-term adverse affects from erosion. However, implementation of BMP's, as required by Mitigation Measure HYD 1: Water Quality, and further defined by the Stormwater Pollution Prevention Plan (SWPPP) would reduce the potential adverse affects to less than significant.
8. Aquifer recharge: The geotechnical analysis of the Proposal Site determined that a dense clay lens occurs approximately 30 feet below ground surface level and just above groundwater. This lens restricts percolation into the aquifer. Therefore, aquifer recharge on the Proposal Site is unlikely.
9. Baseflow: The average dry weather flow in Cucamonga/Mill Creek is approximately 35 cfs. Dry weather diversion for both Alternatives will range up to a maximum of 15 cfs. Section 4.3 analyzed the potential effects on vegetation from the dry weather diversion and concluded the potential effects would be less than significant. During the 100-year storm event, Alternative 2A would divert a maximum of 269 cfs and Alternative 2B would divert a maximum of 140 cfs from Cucamonga Creek. The flow during the 100-year storm event is predicted to be 32,000 cfs. Therefore, the diversion under either Alternative is minimal and would not cause an adverse effect.
10. Mixing zone, in light of depth of water at the disposal site; current velocity, direction and variability at the disposal site; degree of turbulence; water column stratification; discharge vessel speed and direction; rate of discharge; dredged material characteristic; number of discharges per unit of time; and any other relevant factors affecting rates and patterns of mixing: Not applicable. Mixing zones will not be created by the dry weather diversion or by the plunge pool proposed in Alternative 2B.

Anticipated changes to the biological characteristics of the aquatic environment

1. Special aquatic sites (wetlands, mudflats, coral reefs, pool and riffle areas, vegetated shallows, sanctuaries and refuges, as defined in 40 CFR 230.40-45): Alternative 2A would not adversely affect any special aquatic sites. Impacts to jurisdictional waters are limited to the dry weather diversion structure that is located in the lined portion of Cucamonga Creek. Alternative 2B would impact special aquatic sites as a result of the construction of the plunge pool in Mill Creek. The plunge pool is necessary to divert a portion of the dry weather flows into the braided wetland bioswales.
2. Habitat for fish and other aquatic organisms: Alternative 2A would not cause any direct or indirect adverse effects to habitat for fish or other aquatic organisms.

However, Alternative 2B could adversely affect fish and other aquatic organisms as a result of construction of the plunge pool. The plunge pool would require construction of a berm that would cause dry weather flows to pond, raising the water surface elevation approximately 1.5 feet to allow some flows to divert to the braided bioswale cells. The rock berm required to construct the plunge pool could restrict movement of fish and other aquatic organisms during the dry weather condition.

3. Wildlife habitat (breeding, cover, food, travel, general): Both Alternatives would affect existing habitat and create new habitat. Alternative 2A would primarily affect non-native vegetation, with lesser impacts to disturbed black willow scrub, black willow scrub, and riparian habitat. In place of these effects, Alternative 2A would create new habitat opportunities, including open waters, wetlands, riparian, transitional, grassland, and upland habitats. Alternative 2B would have similar effects on wildlife habitat, expect Alternative 2B would impact approximately 3.5 acres of riparian vegetation within CDFG jurisdiction. The affected vegetation provides habitat for a variety of wildlife species, including the state and federally listed least Bell's vireo.
4. Endangered or threatened species:

Listed endangered and/or Threatened Species or Designated Critical Habitat Present on Site: A portion of the Proposal Site is designated Critical Habitat for the least Bell's vireo (LBV) and LBV are known to occupy portions of the Study Area. The footprint of Alternative 2A avoids mapped LBV occurrences from the last six years. The footprint of Alternative 2B directly affects mapped LBV occurrences during the last six years. Section 4.3 and the technical studies included in Appendices B1 and B2 provide an assessment of effects to Critical Habitat and the LBV.

Proposed Listed Endangered and/or Threatened Species or Proposed Critical Habitat Present on Site: None.

Compliance with ESA—Formal/Informal Consultation of Conference: USACE has determined the Proposal would affect the LBV and therefore will initiate informal consultation with the USFWS for a Section 7 and CDFG for a 2080.1 concurrence.

5. Biological availability of possible contaminants in dredged or fill material, considering hydrography in relation to known or anticipated sources of contaminants; results of previous testing of material from the vicinity of the project; known significant sources of persistent pesticides from land runoff or percolation; spill records for petroleum products or designated (Section 311 of the CWA) hazardous substances; other public records of significant introduction of contaminants from industries, municipalities or other sources: An Initial Site Assessment for hazardous materials was conducted on the Proposal Site. The ISA did not identify any hazardous materials present on the Proposal Site or in close proximity. Alternative 2A proposes to modify a small strip of the existing

concrete lined invert of Cucamonga Creek in order to accommodate dry weather flows. Existing concrete would be removed and replaced with new concrete at a slightly lower elevation. There is no evidence the replacement concrete would have any possible contaminants.

Alternative 2B would also include the same replacement of concrete for the dry weather diversion. In addition, Alternative 2B includes construction of a plunge pool, which requires the construction of a berm that would raise the water surface elevation in the plunge pool approximately 1.5 feet during the dry weather condition. It is anticipated the berm would be constructed with rip-rap rock or equivalent. There is also no evidence the rip-rap rock would have any contaminants.

6. General Environmental Concerns: None.

Anticipated changes to the human use characteristic of the aquatic environment

1. Existing and potential water supplies; water conservation: The Proposal would not cause direct or indirect effects on municipal water supplies. The Proposal would rely on reclaimed water located in Chino Corona Road for construction and irrigation.
2. Recreational or commercial fisheries: Not applicable as no recreational or commercial fisheries are located on the Proposal Site or vicinity.
3. Other water related recreation: The Proposal Site does not contain water related recreation facilities. Recreation trails are included as part of the Proposal and will provide trail users with the opportunity for recreation activities including hiking, riding, and wildlife viewing. One of the beneficial uses of Mill Creek is Recreation, however no facilities or activities are established. The Proposal is to improve water quality, which benefits the Rec-1 beneficial uses.
4. Aesthetics of the aquatic ecosystem: Alternative 2A results in a temporary impact to "Waters of the U.S." (WUS) in the lined portion of Cucamonga Creek. This impact would not affect the aesthetics of the area. Alternative 2B includes the same temporary impact to WUS in the lined portion of Cucamonga Creek. In addition, Alternative 2B includes the construction of a plunge pool in Mill Creek. The plunge pool includes the placement of a rock berm to restrict dry weather flows for diversion into the wetland bioswales. The rock berm would also not adversely affect the aesthetics of Mill Creek.
5. Parks, national and historic monuments, national seashores, wild and scenic rivers, wilderness areas, research sites, etc.: No special management areas such as parks, national and historic monuments, national seashores, wild and scenic rivers, wilderness areas, or research sites exist on the Proposal Site or within the vicinity.
6. Traffic/transportation patterns: The Proposal includes two small trailhead parking lots that will generate a minor amount of new traffic. Furthermore, during

construction, Chino Corona Road would be closed, resulting in a detour of traffic. Section 5.4 analyzed the potential traffic affects and incorporated avoidance, minimization, and mitigation measures.

7. Energy consumption or generation: The Proposal would require a temporary increase in energy consumption during construction. However, the Proposal is designed as a gravity-fed system and therefore does not cause a permanent increase in energy.
8. Navigation: Not applicable since there are no navigable waters on the Proposal Site.
9. Safety: The temporary closure of Chino Corona Road could adversely affect roadway safety. As such, the Proposal includes avoidance, minimization, and mitigation measures to reduce that potential adverse affect to less than significant. Furthermore, the Proposal has been designed with other safety measures, such as locking the parking facilities and trails at dusk to prevent nighttime access. Additionally, in appropriate areas fencing would be installed around the basins to prevent trail users from falling into the wetland basins.
10. Air Quality: Potential adverse effects to air quality are analyzed in Section 4.2.
11. Noise: Potential adverse effects to noise are analyzed in Section 4.10.
12. Historic properties: Potential adverse effects to historic resources are analyzed in Section 4.4.
13. Land use classification: Potential adverse effects to land use are analyzed in Section 4.5.
14. Economics: The Proposal is anticipated to have a minor, temporary economic benefit through the creation of temporary jobs associated with the construction of the Proposal. The City of Ontario is responsible for the operation and maintenance of the Proposal, which includes minor amounts of maintenance. Therefore, no long-term effects to economics are anticipated.
15. Prime and unique farmland (7 CFR Part 658): The Proposal Site is not classified as prime or unique farmlands.
16. Food and fiber production: The Proposal Site does not include any food or fiber production facilities or resources.
17. General water quality: The purpose of the Proposal is to provide regional water quality benefits. Potential temporary water quality effects are analyzed in Section 4.9.
18. Mineral needs: The Proposal Site does not include any mapped mineral resources.

19. Consideration of private property: The Proposal does not require the relocation of residences or businesses. Minor portions of the Proposal Site are located on private property. Either fee ownership or access/construction easements would be required prior to construction of the Proposal.
20. Conservation: The Proposal would not affect any current conservation areas. As part of the avoidance, minimization, and mitigation measures, the Proposal must create new habitat that would be protected by a conservation easement.
21. Other: No other areas of concern relevant to the USACE's scope of analysis for this Proposal have been brought to the USACE's attention.

Other anticipated changes to non-jurisdictional areas that have been determined to be within the USACE's NEPA scope of analysis

No changes to the non-jurisdictional areas within the scope of analysis are anticipated other than those described in this EA.

Summary of indirect and cumulative effects from the Proposal

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this Proposal. The impact used in the cumulative impact analysis is the net impact (i.e. impact minus minimization and/or mitigation). If the Proposal fully offsets the impact, there is no contribution to cumulative impacts. Alternative 2A would only cause minor temporary effects to WUS. This potentially adverse affect would not be significant and does not require mitigation. Furthermore, adverse affects from vegetation removal would be fully mitigated onsite. Therefore, Alternative 2A would not contribute to cumulative impacts.

Alternative 2B would also fully offset adverse affects through mitigation. Therefore, Alternative 2B would also not contribute to cumulative impacts.

Other cumulative effects not related to the proposed permit action

1. Occurred on-site historically: The Proposal Site is vacant and has been subject to dumping of trash and debris. Habitat conditions vary on the Proposal Site with the majority of the vegetation on site non-native.
2. Likely to occur within the foreseeable future: The purpose of the Proposal is to provide regional water quality benefits for the City of Ontario's MS4 compliance area. Over time the vacant land within the City's MS4 compliance area will develop with residential and commercial uses and storm flows will discharge into Cucamonga/Mill Creek.
3. Contextual relationship between the proposed action and (A) and (B) above (occurred on-site/likely to occur): The No Action alternative would cause new development within the City of Ontario's MS4 compliance area to provide local water quality measures. These measures would provide the equivalent treatment

of 6% of the watershed. In contrast, the Proposal (Alternative 2A) would provide treatment of 10 – 18% of the watershed. In addition, the Proposal would convert primarily non-native vegetation that is currently subject to dumping to several types of native habitat that would support local wildlife.

Least Environmentally Damaging Practicable Alternative

Based on the analysis of both Alternatives 2A and 2B, Alternative 2A is the LEDPA for the following reasons:

- Alternative 2A avoids impacts to special aquatic sites compared to Alternative 2B, which would impact special aquatic sites.
- Alternative 2A minimizes impacts to riparian vegetation. Alternative 2A would impact 2.41 acres of well-established native habitat compared to Alternative 2B, which would impact 5.2 acres.
- Alternative 2A minimizes impacts to mapped Critical Habitat for the LBV. Alternative 2A would impact a total of 13.87 acres of Critical Habitat compared to Alternative 2B, which would impact 23.07 acres of Critical Habitat.
- Alternative 2A does not have known occurrences of LBV within the footprint of the Alternative compared to Alternative 2B, which has had known occurrences within the footprint of the Alternative each year since 2004, except 2008 and 2009.
- Alternative 2A provides substantially more water quality benefits, treating a total volume of 150 acre feet compared to 89 acre feet for Alternative 2B. Alternative 2A also treats an equivalent of 3,000 acres compared to Alternative 2B that treats an equivalent of 1,800 acres. Furthermore, Alternative 2A treats approximately 10 – 18% of all wet weather runoff in the watershed compared to Alternative 2B that treats approximately 6 – 12 % of all wet weather runoff in the watershed.

For the reasons stated above, Alternative 2A is the LEPDA and locally preferred Alternative.

Avoidance and Minimization

1. Avoidance, minimization, compensation sequence: Alternative 2A was designed to avoid impacts to WUS to the extent practicable. Alternative 2A is a water dependent project; therefore certain impacts to WUS are inevitable in order to divert water through the wetland/extended detention basins. Alternative 2A limits the impacts associated with the diversion of flows to temporary impacts located in the lined portion of Cucamonga Creek.

Inlet structures designed to accommodate diverted flows are proposed in the banks of Cucamonga Creek. As flows spread across the entire invert of Cucamonga Creek during storm events, the water surface elevation rises and flows can enter the inlet orifice connected to the conveyance pipe. However, during dry weather conditions, when flows do not span the invert of Cucamonga Creek, a mechanism is necessary to convey flows to the orifice located in the

western bank of the Creek. Several alternatives were considered. One alternative considered reconstructing the entire invert of Cucamonga Creek to tilt the invert to a low point along the western bank. Another alternative considered a mechanized berm that could raise and lower to direct low flows to the western bank. Finally, a permanent berm across the invert was considered to direct flows. The analysis of these alternatives considered impacts to WUS and maintenance of the facility. Berms, whether mechanical or fixed, result in substantial maintenance requirements to keep the dams free of debris and sediment. Therefore, these alternatives were eliminated as not practicable. The alternative to tilt the invert of Cucamonga Creek was also eliminated because of the substantial impacts to WUS. The remaining practicable alternative is the current Proposal, which includes a trapezoidal channel of variable depths with an invert approximately 1 foot lower than the invert of Cucamonga Creek and a fall of approximately 1 percent to the west bank. This Proposal is the least damaging practicable alternative.

Alternative 2A was also designed to avoid impacts to native habitat to the extent feasible. Alternative 2A sets back from Mill Creek, thereby avoiding impacts to the riparian vegetation located along the banks of Mill Creek and used as nesting and foraging habitat by the LBV. Impacts to the vegetation along the banks of Mill Creek would only occur at the outlet of the wetland/extended detention basins. This outlet was also designed to avoid permanent impacts to WUS.

2. Is mitigation used to reduce any impact to below significance? No mitigation is required for impacts to WUS because impacts are temporary in an unvegetated portion of Cucamonga Creek. Alternative 2A includes mitigation for impacts to vegetation located outside of USACE jurisdiction.

Environmental Laws and Compliance LFD11

1. Clean Water Act 33 U.S. C. 1251 et seq.

Section 401 of the Clean Water Act (CWA). Under section 401 of the CWA, every applicant for a federal license or permit for any activity that may result in a discharge into navigable waters must obtain a State Water Quality Certification (Certification) or waiver that the proposed activity will comply with state water quality standards (*i.e.*, beneficial uses, water quality objectives, and anti-degradation policy). The Santa Ana Regional Water Quality Control Board issues section 401 Water Quality Certifications for activities within Riverside and San Bernardino Counties.

The City of Ontario is required to obtain water quality certification, under Section 401 of the Clean Water Act, from the California Regional Water Quality Control Board. Section 401 requires that any applicant for an individual Section 404 permit provide proof of water quality certification to the USACE prior to permit issuance LFD21.

Section 404 of the Clean Water ACT authorizes the Secretary of the Army acting through the U.S. Army Corps of Engineers to issue permits for the discharge of dredged or fill materials into the waters of the United States, including wetlands, at specified disposal sites. The selection and use of disposal sites must be in accordance with guidelines developed by the Administrator of EPA in conjunction with the Secretary of the Army and published in 40 CFR Part 230 (known as the 404(b)(1) guidelines). Under the Section 404(b)(1) guidelines, the Corps shall examine practicable alternatives to the proposed discharge and permit only the Least Environmentally Damaging Practicable Alternative (LEDPA).

For Corps actions, the Corps does not issue permits, but demonstrates compliance, or “equivalency,” with Section 404 through a Section 404(b)(1) analysis. In addition, the requirements and conditions of nationwide permits and regional permits may be applied for Corps actions and thus considered when addressing compliance with Section 404. All other entities must obtain a Section 404 permit from the Corps before undertaking any discharge of dredged or fill materials into waters of the United States, unless determined to be exempt from regulation.

The City of Ontario is required to apply for a Section 404 permit if the Proposal is approved. The Proposal includes activities involving discharge of dredged or fill material in waters. The Individual Permit (IP) application was submitted on June 29, 2010. The Section 7 consultation was initiated with the US Fish and Wildlife Services (USFWS) on August 11, 2010 when a Draft Biological Assessment was submitted for consideration. Subsequent review of the Biological Assessment by and correspondence with the USFWS indicate that the USFWS has made a preliminary determination of “not likely to adversely affect”. The application is dependent on the NEPA Environmental Assessment for both NEPA compliance and the 404(b)(1) alternatives analysis. Once the EA is complete, the USACE will continue processing the IP. [LFD3]

2. Compliance with Section 106 of the National Historic Preservation Act: Section 106 of the National Historic Preservation Act (“NHPA”) requires any federal agency to take responsibility for the impact of the decisions on historic resources. Under § 106, federal agencies are prohibited from approving any federal “undertaking” (including the issuance of any license, permit, or approval), without (1) taking into account the effects of the undertaking on the historic properties, and (2) affording the Advisory Council on Historic Preservation (“ACHP”) a reasonable opportunity to comment on the undertaking. The NHPA forces an agency to stop and consider the consequences of its undertakings on any historic property, and assures that the agency does so by requiring it to receive comment from the ACHP, or agencies acting in its stead, and from the public before proceeding with any such undertaking. In order to comply with the NHPA, a federal agency considering an undertaking must go through the process outlined in the ACHP’s regulations at 36 C.F.R. Part 800. The Corps is required to obtain concurrence from the State Historic Preservation Office (SHPO). Section 106 of the National

Historic Preservation Act requires that any applicant for an individual Section 404 permit provide proof of consultation with SHPO prior to permit issuance.[LFD4]

3. Compliance with the Endangered Species Act: The Proposal is located within final critical habitat for the least Bell's vireo (LBV). Annual surveys have identified LBV occurrences outside of the Proposal footprint but within close proximity to both Alternatives 2A and 2B. Due to the presence of critical habitat and LBV in the area, the USACE will complete informal consultation under Section 7 of the Endangered Species Act with the U.S. Fish and Wildlife Service.
4. Compliance with Section 176(c) General Conformity Rule review of the Clean Air Act: The Proposal has met the requirements of Section 176(c) of the Clean Air Act. The USACE has determined that the activities proposed under this permit will not exceed de minimis levels of a criteria pollutant or its precursors and are therefore exempted by 40 CFR 93.153.
5. Noise Control Act of 1972, as amended (42 USC 4901 et seq.)

Section 4.10 of the EA addresses the Proposal's effects and compliance with the Noise Control Act of 1972, as amended.

Evaluation of Compliance with 404(b)(1) Guidelines (restrictions on discharge, 40 CFR 230.10). (A check in a block denoted by an asterisk indicates that the Proposal does not comply with the guidelines.)

Yes	No	
---	---	1. Alternative test.
*	X	a.) Based on the discussion in II B, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into "waters of the United States" or at other locations within these waters?
X	*	b.) Based on II B, if the Proposal is in a special aquatic site and is not water-dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?
---	---	2. Special restrictions. Will the discharge:
*	X	a.) Violate state water quality standards?
*	X	b.) violate toxic effluent or threatened species or their critical habitat?
*	X	c.) jeopardize endangered or threatened species or their critical habitat?

*	X	d.) violate standards set by the Department of Commerce to protect marine sanctuaries?
	*	<p>e.) Evaluation of the information in II C and D above indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s).</p> <p>(X) based on the above information, the material is not a carrier of contaminants</p> <p>() the levels of contamination are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas</p> <p>() acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site</p>
---	---	3. Other restrictions. Will the discharge contribute to significant degradation of “waters of the U.S.” through adverse impacts to:
*	X	a.) human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and special aquatic sites?
*	X	b.) life states of aquatic life and other wildlife?
*	X	c.) diversity, productivity and stability of the aquatic ecosystem, such as the loss of fish or wildlife habitat, or loss of the capacity of wetland to assimilate nutrients, purify water or reduce wave energy?
*	X	d.) recreational, aesthetic, and economic values?
X	*	4. Actions to minimize potential adverse impacts (mitigation). Will all appropriate and practicable steps (40 CFR 23.70-77) be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem? (Proposed Special Conditions follow table.)