PUBLIC NOTICE

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LOS ANGELES DISTRICT

OCEAN VIEW CHANNEL REPAIR PROJECT

The U.S. Army Corps of Engineers, Los Angeles District (Corps) has completed a draft Environmental Assessment (EA) for the Ocean View Channel Repair Project pursuant to the National Environmental Policy Act. The project entails the repair of an eroded 0.5 mile-long segment of Ocean View Channel downstream of Beach Boulevard in Huntington Beach, California.

The Corps is authorized under PL 84-99, Flood Control and Coastal Emergencies Act to restore storm-damaged flood risk minimization infrastructure to pre-damage status.

The Corps is soliciting comments from the public; Federal, state, and local agencies and officials; and other interested parties on the attached draft EA.

Comments will be accepted from August 15, 2013 to September 15, 2013.

Comments should be mailed to:

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Los Angeles, CA 90017

Alternatively, comments can be sent electronically to: kenneth.wong@usace.army.mil

US Army Corps of Engineers®

OCEAN VIEW CHANNEL
CHANNEL REPAIR PROJECT

ORANGE COUNTY, CALIFORNIA

DRAFT ENVIRONMENTAL ASSESSMENT

Prepared by

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Los Angeles District
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August 2013

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1.0 INTRODUCTION

This EA has been prepared by the U. S. Army Corps of Engineers (Corps) for the repair of Ocean View Channel, Orange County, California, in compliance with the National Environmental Policy Act (NEPA) (42 USC 4321 et seq.) and the Council on Environmental Quality regulations published at 42 CFR part 1500.

1.1 Location

The Ocean View Channel is located in northern Huntington Beach, Orange County, California see Figures 1-1 and 1-2. Access is off Beach Boulevard between Heil and Warner Avenues. The project area contains approximately a half-mile portion of Ocean View Channel from Beach Boulevard to the confluence with East Garden Grove - Wintersburg (EGGW) Channel.

1.2 Background

Ocean View Channel extends approximately 4 miles west from Newhope Street to the confluence with the EGGW channel. A maintenance road parallels the south embankment of the channel. The channel provides flood damage reduction to approximately 0.78 square miles of residential or industrial areas in the cities of Fountain Valley and Huntington Beach, California.

The approximately 3.5-mile reach upstream of Beach Blvd. consists of a riprap-lined channel. The 0.5-mile reach downstream of Beach Blvd. is compacted earth. Storm flows from December 2010 to January 2011 eroded the 0.5-mile long earthen channel. Approximately 30 feet of the project reach immediately downstream of Beach Boulevard is an earthen trapezoidal channel armored with riprap. Downstream of the armored section, the project reach is an earthen channel with the exception of hard structures where storm water outfalls are located. The downstream terminus of the project reach, at the EGGW confluence, is a rectangular concrete channel. The project reach varies from a base width of 8 to 19 feet; 14.5 to 15.5 feet in height; and 19 to 52 feet in width at the channel top. The side slopes are 1.5:1 (horizontal: vertical).

The Orange County Flood Control District constructed the channel in 1962. The channel was enrolled in the Corps' Rehabilitation and Inspection Program in 2010 pursuant to PL 84-99.

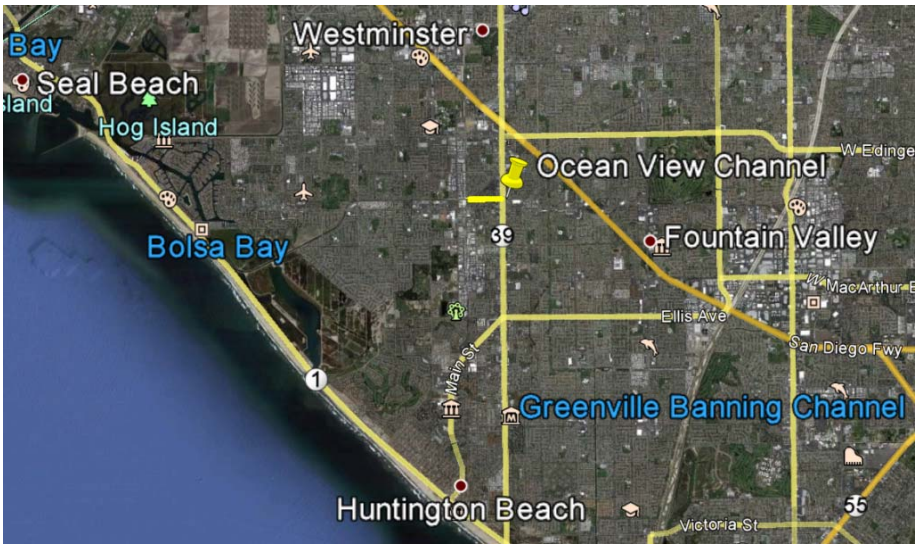

Figure 1-1 Ocean View Channel Location

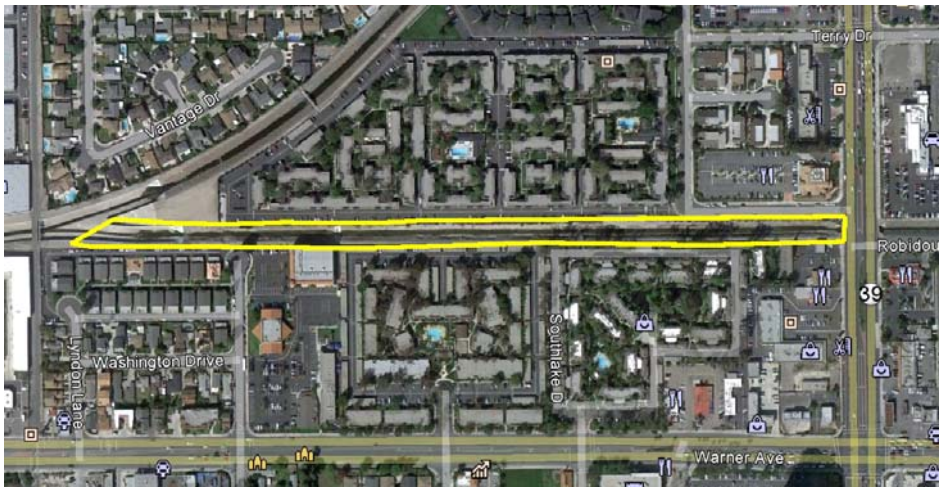

Figure 1-2 Ocean View Channel Project Site

1.3 Authority

The Corps is authorized under PL 84-99, Flood Control and Coastal Emergencies Act to restore storm-damaged flood risk minimization infrastructure to pre-damage status. All flood infrastructure considered eligible for PL 84-99 rehabilitation require successful enrollment in the Corps' Rehabilitation and Inspection Program prior to the flood event. Acceptable operation and maintenance by the public levee sponsor are verified by levee inspections conducted by the Corps on a regular basis.

The Orange County Flood Control District constructed the Ocean View Channel in 1962. The channel was enrolled in the Rehabilitation and Inspection Program in 2010.

1.4 Purpose and Need

Statement of Need

Storm flows from December 2010 to January 2011 eroded a 30-foot area on each side of the channel in the project area. The channel invert scoured approximately 1.5 feet into the sides. The channel banks have scoured and the side slopes have steepened from the original design side slope of 1.5:1 to about 1:1 from the storm events. The land use adjacent to the project area consists of a mix of residential and commercial uses with associated parking spaces. Under the damaged condition, a 1 percent exceedance (100-year) event could cause the loss of 2 structures, 8 apartment/condominium garages, 2 private roadways, and an 8-lane public street. The estimated value of this loss is $6,621,069. Therefore, maintaining the integrity of the Ocean View Channel is critical to protecting life and property.

Statement of Purpose

The purpose of the proposed action is to restore the flood conveyance capacity of the Ocean View Channel to the level that existed prior to the 2010 and 2011 storm season.

2.0 ALTERNATIVES

No Federal Action

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three alternatives described below. Any type or scope of repair would entail discharge of earthen fill, riprap, or concrete.

Alternative 1: Repair Earthen Channel to Original Grade

Under Alternative 1, the Corps would undertake a like-for-like restoration of the channel to its original design and configuration using compacted earth. Alternative 1 will require approximately 8,940 cy of import fill and grading. The approximate project cost for this alternative is about $375,800, including contingency and construction management, preliminary engineering design (PED).This section is shown below in **Figure 2-1**.

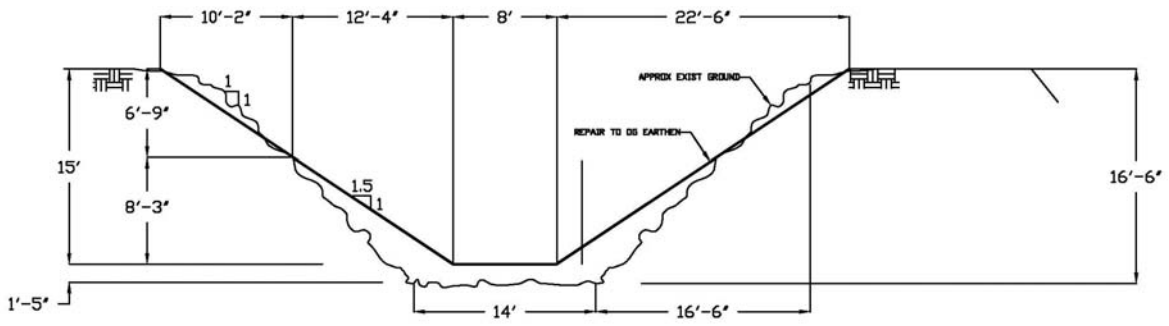

Figure 2-1. Alternative 1: Repair Earthen channel to Original Grade

Alternative 2: 18-inch Light Class Riprap

Under Alternative 2, the Corps would undertake repairs similar Alternative 1, but with the addition of 18-inch thick riprap revetment along the channel banks and invert. The riprap channel will maintain the original design and configuration and will allow for the infiltration of storm flows into the ground. This section is shown below in **Figure 2-2**.

Alternative 2 will require approximately 6,800 cy of light class riprap and 2,600 cy of import fill and grading. The approximate project cost for this alternative is about $896,900 including contingency and construction management, PED, and environmental mitigation.

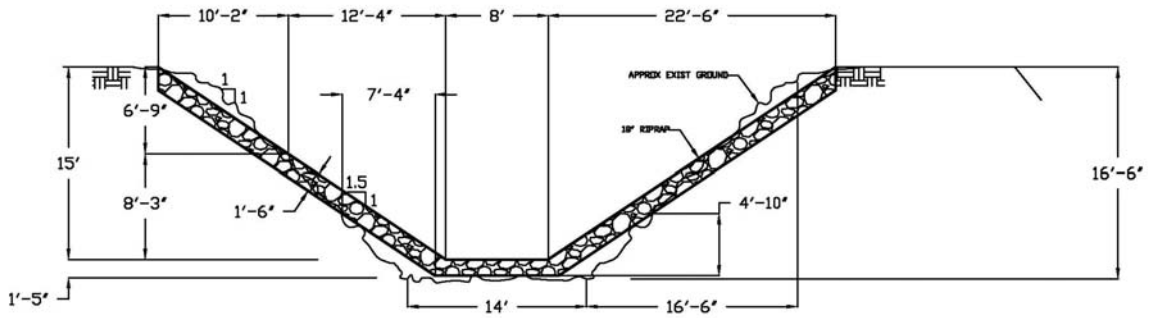

Figure 2-2. Alternative 2: 18-inch Light Class Riprap

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Alternative 3 repairs are similar to Alternative 1, but with the addition of a concrete lining of the channel banks and invert. The concrete channel will maintain the original design and configuration, but will not allow for the infiltration of flows into the ground. This section is shown below in **Figure 2-3**.

Alternative 3 will require approximately 2,350 cy of concrete and 6,590 cy of import fill and grading. The approximate project cost for this alternative is about $642,500 including contingency and construction management, PED, and environmental mitigation.

The Orange County Flood Control District the local entity which maintains the channel has identified Alternative 3 as the locally preferred plan.

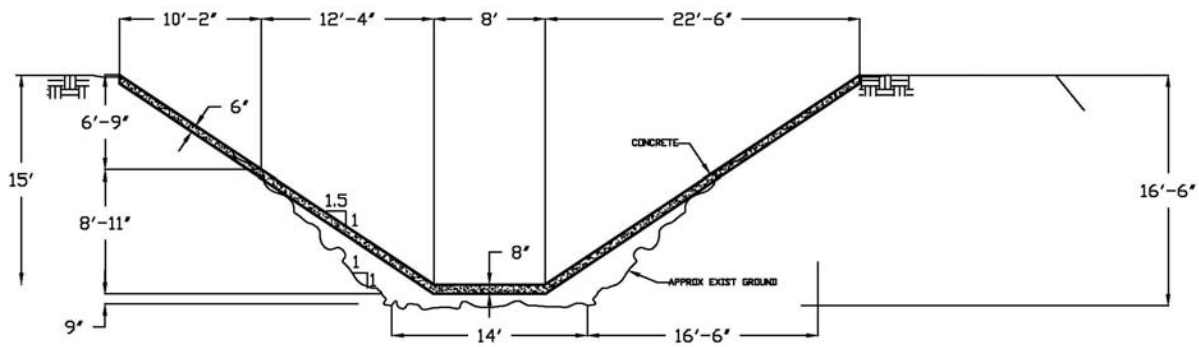

Figure 2-2. Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Alternative Analysis

The National Environmental Policy Act requires an evaluation of reasonable alternatives including the No Federal Action Alternative.[1] When an EA is prepared, the action agency is required to consider alternatives where resource conflicts exist.

Because of the limited sensitive environmental resources from the project area, and because all three alternatives would require similar amounts of import fill, all alternatives would entail similar environmental impacts. Alternative 3, however, would remove approximately 0.66 acres of channel invert otherwise available for groundwater recharge. All alternatives would share the same level of logistical requirements. Alternative 1 is the least costly and yields the most net annual benefits and highest benefit-to-cost ratio. Alternative 2 is the most costly and yields the least net annual benefits and lowest benefit-to-cost ratio.

Table 1: Comparison of Alternatives

	Alt. 1 - Earthen Fill	Alt. 2 - Rip Rap	Alt. 3 - Concrete
Amount of Fill	8,940 cy	9,400 cy	8,940 cy
Type of Fill	earth	earth & riprap	earth and concrete
Meets Purpose and Need?	Yes	Yes	Yes
Significant Environmental Impacts?	No	No	No
Differences in logistical difficulties?	No	No	No
Construction Cost	$540,013	$1,274,763	$923,874
Net Annual Benefits	$41,073	$6,871	$23,204
Benefit/Cost Ratio	2.63	1.11	1.54

[1] 40 CFR 1502.14

All three alternatives described above would satisfy the statement of purpose and need and are feasible. Therefore, all three alternatives are carried forward for further analysis.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 LAND USE

Affected Environment:

The landuse adjacent to the project area is urbanized. It consists of a mix of residential and commercial developments. A 0.69-acre brown field is located at the confluence of Ocean View Channel and EGGW Channel.

Significance Threshold:

Based on the existing conditions discussed above, impacts would be considered significant if the alternative results in:

- Permanent changes to the existing land uses.

Environmental Consequences:

No Federal Action Alternative

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three action alternatives. Therefore, impacts to land use would be similar to those characterized for Alternatives 1, 2, and 3 below.

Alternative 1: Repair Earthen Channel to Original Grade

Alternative 1 would mostly entail in-channel work. Temporary staging areas may need to be established in the uplands. The maintenance road adjacent to the channel could be used as staging and storage areas. Alternatively, a staging area could be located in the 0.69-acre brown field at the confluence of the EGGW Channel. Furthermore, staging areas could be established within a portion of parking areas within the vicinity of the channel. The areas would be restored and returned to their original uses upon completion of construction. Therefore, there would be no impacts to land use. Therefore, Alternative 1 would entail less than significant impact on land use.

Alternative 2: 18-inch Light Class Riprap

Impacts for Alternative 2 will be the same as those for Alternative 1.

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Impacts for Alternative 3 will be the same as those for Alternative 1.

3.2 SOILS AND SUBSTRATE

Affected Environment:

In general, the project area is situated on a coastal plain, underlain by deep alluvium and marine terrace deposits. Locally, the soils within the channel consist mainly of compacted gravel, sand, and clay. The embankment is composed of compacted earthen fill with the exception of the upstream and downstream termini, which also contain concrete and riprap, respectively.

Significance Threshold:

Based on the existing conditions discussed above, impacts would be considered significant if the alternative results in:

- Long term loss of substrate from the project reach.

Environmental Consequences:

No Federal Action Alternative

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three action alternatives. Therefore, impacts to soils and substrate would be similar to those characterized for Alternatives 1, 2, and 3 below.

Alternative 1: Repair Earthen Channel to Original Grade

Alternative 1 would entail placement of approximately 8,940 cy of compacted earthen fill (consistent with the existing fill) and grading. Though compacted fill would be stable, it is prone to erosion during large storms resulting in per periodic loss of compacted earthen substrate from the project reach. Alternative 1 would not lead to long-term loss of substrate from the project reach.

Alternative 2: 18-inch Light Class Riprap

Alternative 2 would entail placement of approximately 6,800 cy of riprap and 2,600 cy import fill. The riprap would be more effective at resisting erosion compared to compacted earthen fill. However, given sufficiently large storms, the riprap could also erode. However, there would be no long term loss of substrate from the project reach. Alternative 2 would be more effective than

Alternative 1 in preventing loss of substrate. Therefore, Alternative 2 would have less than significant impact on soils and substrate.

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Alternative 3 would entail placement of approximately 2,350 cy of concrete and 6,590 cy of import fill. Concrete lining would be most effective in resisting erosion compared to compacted earthen fill and riprap lining. However, given sufficiently large storms, the concrete could also fail leading to erosion. However, there would be no long term loss of substrate from the project reach. Therefore, Alternative 3 would have less than significant impact on soils and substrate.

3.3 WATER QUALITY

Affected Environment:

Groundwater

Groundwater quality in Orange County and the Westminster watershed is degraded by infiltration of chemicals and salts from agricultural operations, saltwater intrusion, and the poor quality of imported water and surface runoff used for recharge of the groundwater basins. The major surface water drainages overlying this groundwater basin are the San Gabriel and Santa Ana Rivers, as well as San Diego and Santiago Creeks. Surface water from the Ocean View Channel drains into this groundwater basin.

Surface Water Quality

Specific water quality data for Ocean View Channel is not available. Ocean View Channel is not listed on the CWA 303(d) list of impaired waters. However, the Ocean View Channel conveys runoff from an urban area. Thus, waters conveyed by the Ocean View Channel are expected to contain pollutants associated with urban runoff such as bacteria, nitrates, ammonia, and organic compounds from oil and grease. The EGGW channel, the receiving waters for Ocean View Channel has been proposed for the CWA 303(d) list for ammonia.

Significance Threshold:

Based on the existing conditions discussed above, impacts would be considered significant if the alternative:

- Substantially reduces the ability to recharge the underlying aquifer, causes substantial groundwater contamination, or substantial groundwater depletion.
- Creates long-term violations of RWQCB water quality standards or objectives or causes impairment of beneficial uses of water.

Environmental Consequences:

No Federal Action Alternative

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three action alternatives. Therefore, impacts to land use would be similar to those characterized for Alternatives 1, 2, and 3 below.

Alternative 1: Repair Earthen Channel to Original Grade

Alternative 1 would entail placement of 8,940 cy of fill to repair the channel invert and bank scour. The fill to be discharged would be of the same soil type; therefore, the soil would remain permeable, and the drainage character of the soils would not change. Therefore, there will be no impact to groundwater or groundwater recharge capacity. Active construction areas would be dewatered to minimize turbidity. Construction would occur over a three-month period, most likely during the dry season when the amount of flow would be minimal. All water quality parameters would return to baseline levels upon completion of construction. Therefore, Alternative 1 would entail less than significant impact on water resources.

Alternative 2: 18-inch Light Class Riprap

Alternative 2 would entail placement of approximately 6,800 cy of riprap and 2,600 cy of earthen fill. The ungrouted riprap design will allow infiltration of surface water to the ground water. Therefore, there will be no impact to groundwater or groundwater recharge capacity. Active construction areas would be dewatered to minimize turbidity. Construction would occur over a three-month period, most likely during the dry season when the amount of flow would be minimal. All water quality parameters would return to baseline levels upon completion of construction. Therefore, Alternative 2 would entail less than significant impact on water resources.

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Alternative 3 would entail placement of approximately 2,350 cy of concrete and 6,590 cy of import fill. The entire channel would be lined with concrete. Lining the entirety of the channel with concrete would permanently remove approximately 0.66 acres of channel invert otherwise available for groundwater recharge. However, since Ocean View Channel's primary function is to convey storm and nuisance flows, the permanent loss of 0.66 acres of channel invert would not substantially reduce the groundwater recharge capacity for the area. Active construction areas would be dewatered to minimize turbidity. Construction would occur over a three-month period, most likely during the dry season when the amount of flow would be minimal. All water quality parameters would return to baseline levels upon completion of construction. Therefore, Alternative 3 would entail less than significant impact on water resources.

3.4 AIR QUALITY

Affected Environment:

Climate

The climate of the project area is typical of the Mediterranean climate of coastal California, which is characterized by cool, dry summers and mild, wet winters. The hottest month is August, with an average maximum temperature of 74˚F and December is the coldest month with an average minimum temperature of 64˚F. Precipitation averages 10.69 inches annually, with February as the wettest month.

Air Quality

The project area is within the South Coast Air Basin which includes Los Angeles, Orange, and portions of Riverside, and San Bernardino Counties. Air quality within the project area is governed by the South Coast Air Quality Management District (AQMD). The attainment status of the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) are shown below:

Table 2: 2013 South Coast Air Basin Attainment Status

Pollutant	National AAQS	California AAQS
Carbon Monoxide (CO)	Attainment	Attainment
Ozone (O3) (1-hour standard)	Nonattainment	Nonattainment
Ozone (O3) (8-hour standard)	Nonattainment	Nonattainment
Nitrogen Dioxide (NO2)	Attainment	Nonattainment
Sulfur Dioxide (SO2)	Attainment	Attainment
Particulate Matter (PM10)	Nonattainment	Nonattainment
Particulate (PM2.5)	Nonattainment	Nonattainment
Lead	Attainment	Attainment
Source: http://www.arb.ca.gov/desig/adm/adm.htm		

Significance Threshold:

Based on the existing conditions discussed above, impacts would be considered significant if the alternative generated:

- Air emissions that would exceed any AQMD daily construction significance thresholds.
- Air emissions that would exceed Federal General Conformity Rule de minimis thresholds.

Environmental Consequences:

No Federal Action Alternative

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three action alternatives. Therefore, impacts to air quality would be similar to those characterized for Alternatives 1, 2, and 3 below.

Alternative 1: Repair Earthen Channel to Original Grade

The maximum amount of fill required to repair the project reach was used to calculate air quality impacts. The maximum amount of fill that would be imported for the repair of the channel is approximately 9000 cy.

- Off-road emissions were calculated using the AQMD's 2013 Off-Road Emissions Factors in combination with the following assumptions:
  - one 500 hp excavator operating six hours per day
  - one 500 hp grader operating six hours per day
  - two 15 hp compactors operating six hours per day

- On-road emissions were calculated using the AQMD's 2013 On-Road Emissions Factors in combination with the following assumptions:
  - maximum fill required for import is approximately 9,000 cy
  - fourteen 10 cy trucks would import approximately 136 cy of fill over 66 days
  - each round-trip between the source site and the project site would be approximately 60 miles
  - total on road miles per day would be approximately 840 miles

Daily estimated emissions based on the assumptions are provided below and compared to the AQMD's daily significance threshold.

Table 3: Comparison of Daily Estimated Emissions to AQMD Daily Thresholds

Pollutant	On Road Emissions (lb/day)	Off Road Emissions (lb/day)	Total Emissions (lb/day)	AQMD Threshold (lb/day)
CO		1	9	550
NOx	23	19	42	55
ROG	2	2	4	55
SOx	0	0	0	150
PM10	1	1	2	150
PM2.5	1	1	2	55

Annual estimated emissions based on the assumptions are provided below and compared to the Clean Air Act General Conformity de minimis thresholds.

Table 4: Comparison of Annual Estimate Emissions to CAA de minimis Thresholds		
Pollutant	Estimated Emissions (tons/year)	CAA de minimis Thresholds (tons/year)
VOC	2	10
NO2	2	10
PM10	5	70
PM2.5	2	100
CO	18	100

Based on the above, air quality impacts associated with Alternative 1 would not exceed daily AQMD emissions thresholds or the CAA annual General Conformity thresholds. Therefore, Alternative 1 would entail less than significant impacts to air quality.

Alternative 2: 18-inch Light Class Riprap

Impacts for Alternative 2 will be the same as those for Alternative 1.

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Impacts for Alternative 3 will be the same as those for Alternative 1.

3.5 NOISE

Affected Environment:

Ocean View Channel is adjacent to a variety of land uses, including residential, commercial, and a school. Residential areas dominate the land uses adjacent to the channel. The distance of residential complexes from the Ocean View Channel ranges from 50 to 100 feet. The project area is adjacent Beach Boulevard, an eight-lane road, on the eastern end of the project. Therefore, the ambient noise levels in the project area would consist of traffic noise and noise associated with residential and commercial operations. Therefore, noise levels near 70dB may best characterize ambient noise levels throughout the project reach.

The noise ordinance for the city of Huntington Beach prohibits construction between the hours of 8 p.m. and 7 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.

Significance Threshold:

Based on the existing conditions discussed above, impacts would be considered significant if the alternative:

- Violates the city of Huntington Beach's noise ordinance.
- Permanently elevates noise levels above 70dBA within the vicinity of the project.

Environmental Consequences:

No Federal Action Alternative

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three action alternatives. Therefore, impacts to noise would be similar to those characterized for Alternatives 1, 2, and 3 below.

Alternative 1: Repair Earthen Channel to Original Grade

Alternative 1 would entail use of mechanical earth moving equipment on the channel maintenance road and within the channel. There would be a temporary increase in ambient noise from the construction equipment. Noise levels could reach up to 85 dBA at 50 feet from construction activity. Furthermore, spherically radiating point sources for noise emissions are atmospherically attenuated by a factor of 6 dB per doubling of the distance. Therefore, noise levels approximately 100 feet from the construction site would be approximately 79 dbA during construction. Noise levels would return to pre-project levels upon completion of construction. Furthermore, construction would comply with the city's noise ordinance. Thus, the impact to noise levels would be less than significant.

Alternative 2: 18-inch Light Class Riprap

Impacts for Alternative 2 will be the same as those for Alternative 1.

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Impacts for Alternative 3 will be the same as those for Alternative 1.

3.6 BIOLOGICAL RESOURCES

Affected Environment:

Existing Conditions

This biological section provides a preliminary assessment of the biological resources existing in the project boundary. The section identifies the plant and animal resources including potentially sensitive flora and fauna in the project area, an existing assessment of the project area for habitat value, which includes vegetation types as well as animal assemblages.

- ***Vegetation:*** In general, the vegetation is typical of constructed flood damage reduction channels located within an urban environment. In particular, the vegetation in the Ocean View Channel is indicative of an impoverished freshwater marsh composed of ruderal plant species including non-native grasses. Along the maintenance roads are landscape ornamental plants that are being used as screening on a chain link fence from the adjoining neighbors.

- ***General Wildlife:*** Wildlife viewed during the January 12, 2012 site visit were the mallard (*Anas platyrhynchos*) duck and a squirrel (*Sciurus sp*.). The only documentation found regarding wildlife species in Ocean View Channel was a record of the invasive African clawed frog (*Xenopus laevis*) (Somma 2012). The channel has very limited habitat to support a robust wildlife population. Other species that may occur in the project area include great blue heron (*ArEA herodias*), black-crowned night heron (*Nycticorax nycticorax*), snowy egret (*Egretta thula*), pied-billed grebe (*Podilymbus podiceps*), tricolored blackbird (*Agelaius tricolor*), red-winged blackbird (*Agelaius phoeniceus*), sora (*Porzana Carolina*), common yellowthroat (*Geothlypis trichas*), southwestern pond turtle (*actinemys marmorata pallida*), Pacific treefrog (*Hyla regilla*), western toad (*Bufo boreas*), garter snake (*Thamnophis* sp.), and various bats.

- ***Threatened and Endangered Species:*** The U.S. Fish and Wildlife Species (USFWS) list was reviewed to determine the species in the project area that are protected by the Federal Endangered Species Act. Because of the lack of habitat, there is no threatened or endangered species in the project area. The project area is not within a designated critical habitat. The nearest record for a listed species is the coastal California gnatcatcher that is 0.67 miles away.

Significance Threshold:

Based on the existing conditions discussed above, impacts would be considered significant if the alternative:

- Substantially reduces the population of an endangered or threatened species.
- Permanently and or substantially affects designated critical habitat.

Environmental Consequences:

No Federal Action Alternative

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three action alternatives. Therefore, impacts to biological resources would be similar to those characterized for Alternatives 1, 2, and 3 below.

Alternative 1: Repair Earthen Channel to Original Grade

Alternative 1 would entail grading and the discharge of 8,940 cy of fill and removing all the vegetation in the channel. However, this is impact is not significant because the current vegetation is ruderal and the impacts would be temporary because it is likely the existing vegetation would re-propagate via an in-situ seedbank, and recruitment. Thus, most of the habitat affected by the construction activities is expected to reestablish over time. Wildlife associated with the habitat would also be temporarily affected. However, wildlife is expected to return to Ocean View Channel upon reestablishment of vegetation. Furthermore, no federally listed threatened or endangered species are in the project area, and the project area is not within a designated critical habitat. Therefore, Alternative 1 would entail less than significant impacts to biological resources.

Alternative 2: 18-inch Light Class Riprap

Alternative 2 would entail placement of approximately 6,800 cy of riprap and 2,600 cy of earthen fill. Construction activities would remove all vegetation within the channel. Alternative 2 would cover the compacted earthen substrate with riprap, thus reducing the potential for vegetation regrowth. However, the vegetation in the channel is ruderal and very sparse. The waterfowl would continue to use the area for wading and uplands (maintenance road) would continue to be used by other species. Furthermore, no federally listed threatened or endangered species are in the project area, and the project area is not within a designated critical habitat. Therefore, Alternative 2 would entail less than significant impacts to biological resources.

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Alternative 3 would entail placement of approximately 2,350 cy of concrete and 6,590 cy of import fill, thus removing existing vegetation and prohibiting future vegetation growth. However, the vegetation in the channel is ruderal and very sparse. The waterfowl would continue to use the area for wading, and uplands (maintenance road) would continue to be used by other species. Furthermore, no federally listed threatened or endangered species are in the project area, and the project area is not within a designated critical habitat. Therefore, Alternative 3 would entail less than significant impacts to biological resources.

3.7 CULTURAL RESOURCES

Affected Environment:

No cultural resources listed on or eligible for the National Register of Historic Places are present within the project area. All work is within the previously disturbed channel area. The environment and setting for proposed construction is highly disturbed to such a degree that no significant cultural resources could remain. Therefore, in accordance with 36 CFR 800.3(a)(1), the proposed project does not have the potential to cause effects.

Significance Threshold:

Based on the existing conditions discussed above, impacts would be considered significant if the alternative results in:

- Permanent modification of characteristics and qualities of a resource listed or eligible for listing on the National Register of Historic Places.
- The removal or destruction of buried prehistoric cultural resources.

Environmental Consequences:

No Federal Action Alternative

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three action alternatives. Therefore, impacts to land use would be similar to those characterized for Alternatives 1, 2, and 3 below.

Alternative 1: Repair Earthen Channel to Original Grade

Alternative 1 would entail grading and the discharge of 8,940 cy of fill and removing all the vegetation in the channel. Due to the absence of cultural resources listed on or eligible for the National Register of Historic Places within the project area, and the disturbed nature of the project area, construction activities would not impact cultural resources.

Alternative 2: 18-inch Light Class Riprap

Impacts for Alternative 2 would be the same as those characterized for Alternative 1.

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Impacts for Alternative 2 would be the same as those characterized for Alternative 1.

3.8 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Affected Environment:

The project area is located in the city of Huntington Beach, Orange County, California. The demographic for Orange County and the city of Huntington Beach are shown below. In general, the city has a smaller percentage of minorities, a higher median household income, and lower percentage of persons below poverty when compared to Orange County.

Table 5: Socioeconomic Demographics for Orange County and City of Huntington Beach		
Demographics Parameters	Orange County	City of Huntington Beach
Total population	3,010,232	189,992
White	60.8%	76.7%
Black	1.7%	1%
Hispanic/Latino	33.7%	17.1%
Asian	17.9%	11.1%
Median Household Income	$74,344	$80,280
Persons below poverty	10.1%	7.0%

Significance Threshold:

Based on the existing conditions discussed above, impacts would be considered significant if the alternative results in:

- A substantial shift in population, housing, and employment.
- Disproportionate environmental impacts to minority or low-income populations.

Environmental Consequences:

No Federal Action Alternative

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three action alternatives. Therefore, impacts to land use would be similar to those characterized for Alternatives 1, 2, and 3 below.

Alternative 1: Repair Earthen Channel to Original Grade

Construction work associated with Alternative 1 would temporarily provide jobs for a limited number of earthmoving equipment operators, construction workers and truckers. The repair of an existing flood control structure would not increase development in the area or affect socioeconomic profile of the project area. The scope of construction would not alter regional economic trends. Based on the above data, the city of Huntington Beach has less low income or

minority populations than Orange County. Therefore, it is unlikely that environmental impacts associated with this alternative would be disproportionately borne by low income or minority populations. As a result, there would be less than significant impacts on socioeconomics and environmental justice.

Alternative 2: 18-inch Light Class Riprap

Impacts for Alternative 2 would be the same as those characterized for Alternative 1.

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Impacts for Alternative 2 would be the same as those characterized for Alternative 1.

3.9 RECREATION

Affected Environment:

Ocean View Channel intersects Mile Square Regional Park's Golf Course approximately 2.15 miles upstream of the project area. Mile Square Regional Park is an urban park located in the City of Fountain Valley and totals 640 acres. The park contains three golf courses, two soccer fields, nine baseball & softball fields, an archery range, and a wilderness area. Other nearby recreation facilities includes a recreation center (0.33 miles away) and a community park (0.76 miles away). There are no recreational facilities adjacent to the project reach.

Significance Threshold:

Based on the existing conditions discussed above, impacts would be considered significant if the alternative results in:

- Permanent removal of substantial recreational areas and critical recreational facilities.
- Increased usage that would result in substantial physical deterioration of the recreational area or facility.

Environmental Consequences:

No Federal Action Alternative

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three action alternatives. Therefore, impacts to land use would be similar to those characterized for Alternatives 1, 2, and 3 below.

Alternative 1: Repair Earthen Channel to Original Grade

Alternative 1 would mostly entail in-channel work. Temporary staging areas may need to be established in the uplands. Due to the distance between the existing recreational areas and the channel, it is unlikely that staging or storage areas would be established at the recreational areas within the vicinity of the channel. Therefore, Alternative 1 would entail less than significant impact on recreation.

Alternative 2: 18-inch Light Class Riprap

Impacts for Alternative 2 would be the same as those characterized for Alternative 1.

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Impacts for Alternative 2 would be the same as those characterized for Alternative 1.

3.10 AESTHETICS

Affected Environment:

The proposed project is located within a developed urban area. Views of the channel consist of an earthen trapezoidal channel with minimal ruderal vegetation. Views from the channel encompass residential and commercial land uses, and streets. Views are limited by landscaping and fencing along the channel.

Significance Threshold:

Based on the existing conditions discussed above, impacts would be considered significant if the alternative results in:

- A substantial modification of the scenic vista.

Environmental Consequences:

No Federal Action Alternative

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three action alternatives. Therefore, impacts to land use would be similar to those characterized for Alternatives 1, 2, and 3 below.

Alternative 1: Repair Earthen Channel to Original Grade

Alternative 1 would entail repair of damaged portions of the channel. Views of the channel would temporarily be affected during construction. During construction vegetation would be

removed from areas within and adjacent to the construction footprint. Construction equipment would also be temporarily present within the channel. However, the repair work would not extend beyond the existing footprint, or otherwise change the dimensions of the existing structure such that the existing vista would be reduced or modified. The material proposed for discharge would consist of alluvial fill material. Vegetation is sparse ruderal/non-native species that are expected to quickly recolonize. Therefore, the views of the channel would return to pre-project conditions upon completion of construction. Based on the above, there would be less than significant impacts to aesthetics.

Alternative 2: 18-inch Light Class Riprap

Impacts for Alternative 2 would be the same as those characterized for Alternative 1. The discharge of riprap could permanently prohibit the recolonization of ruderal vegetation post construction. However, impacts to aesthetics would be less than significant since the vegetation is ruderal.

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Impacts for Alternative 2 would be the same as those characterized for Alternative 1. The discharge of concrete would permanently prohibit the recolonization of ruderal vegetation post construction. However, impacts to aesthetics would be less than significant since the vegetation is ruderal.

3.11 TRAFFIC

Affected Environment:

The project area would likely be accessed using Interstate 405 Freeway, and Beach Boulevard. Beach Boulevard crosses the Ocean View Channel on the eastern end. The distance between the project entrance and I-405 on Beach Boulevard is approximately one mile. The average daily trips (ADTs) for the two primary arteries are indicated below.

Table 6: Average Daily Trips for Major Arteries Near Ocean View Channel

Artery	Average Daily Trips
Interstate 405 Freeway	246,000
Beach Boulevard	94,000

Significance Threshold:

Based on the existing conditions discussed above, impacts would be considered significant if the alternative results in:

- A substantial increase in ADTs of main arteries used to access the site.

Environmental Consequences:

No Federal Action Alternative

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three action alternatives. Therefore, impacts to land use would be similar to those characterized for Alternatives 1, 2, and 3 below.

Alternative 1: Repair Earthen Channel to Original Grade

The primary activity that could result in potential traffic impacts is the truck traffic associated with the import of fill material. The maximum amount of fill that would be imported for the repair of the channel is approximately 9000 cy. The duration of construction is approximately 3 months (or 66 working days). Thus, approximately 136 cy of fill would need to be imported daily. Assuming an average truck capacity of 10 cy, approximately 14 trucks would be required to import 136 cy of fill per day. The percent increase in ADTs is shown below.

Artery	ADT	% Increase in ADT
Interstate 405 Freeway	246,000	0.005%
Beach Boulevard	94,000	0.013%

The percent increase in ADTs is negligible. Furthermore, ADTs would return to baseline levels upon completion of construction. Therefore, the No Federal Action Alternative would result in de minimis impacts on traffic.

Alternative 2: 18-inch Light Class Riprap

Impacts for Alternative 2 would be the same as those characterized for Alternative 1.

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Impacts for Alternative 2 would be the same as those characterized for Alternative 1.

3.12 PUBLIC HEALTH AND SAFETY

Affected Environment:

The land use adjacent to the project area consists of a mix of residential, restaurants and a school that have parking garages or buildings immediately adjacent to the channel maintenance road. Storm flows from December 2010 to January 2011 eroded a 30-foot area on each side of the channel in the project area. The channel invert scoured approximately 1.5 feet into the sides. The channel banks have scoured and the side slopes have steeped from the original design side slope of 1.5:1 to about 1:1 from the storm events. Therefore, maintaining the integrity of the Ocean

View Channel is critical to protecting life and property. Unde r the existing damaged conditions, a 0.01 annual chance exceedance (ACE) (formerly called 100-year event) could cause the loss of 2 structures, 8 apartment/condominium garages, 2 private roadways, and an eight-lane public street. The estimated value of this loss is $6,621,069.

Significance Threshold:

Based on the existing conditions discussed above, impacts would be considered significant if the alternative results in:

- A substantial increase in the risk of flooding above the designed flood risk minimization level.

Environmental Consequences:

No Federal Action Alternative

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three action alternatives. Therefore, impacts to land use would be similar to those characterized for Alternatives 1, 2, and 3 below.

Alternative 1: Repair Earthen Channel to Original Grade

Alternative 1 would restore the damaged portions of the channel to its original design resulting in a level of flood protection that existed prior to December 2010 storm flows. Therefore, Alternative 1 would result in less than significant impacts to public health and safety.

Alternative 2: 18-inch Light Class Riprap

Impacts for Alternative 2 would be the same as those characterized for Alternative 1.

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Impacts for Alternative 2 would be the same as those characterized for Alternative 1.

3.13 HAZARDOUS AND TOXIC WASTES

Affected Environment:

There are no known hazardous waste sites in the vicinity of the project area.

Significance Threshold:

Based on the existing conditions discussed above, impacts would be considered significant if the alternative results in:

- Long-term exposure of humans, wildlife, wildlife habitat and the general environment to hazardous materials.

Environmental Consequences:

No Federal Action Alternative

In the absence of federal assistance, the Orange County Flood Control District would likely fund and undertake the repairs. Repairs would need to extend throughout the entire channel. The type of repairs may be subject to available local funding but in general would not substantially differ from the three action alternatives. Therefore, impacts to land use would be similar to those characterized for Alternatives 1, 2, and 3 below.

Alternative 1: Repair Earthen Channel to Original Grade

Alternative 1 will require the discharge of approximately 8,940 cy of clean earthen fill. The fill would be chemically inert and would not result in long-term exposure of humans, wildlife, wildlife habitat, and the general environment to hazardous materials

Alternative 2: 18-inch Light Class Riprap

Alternative 2 will require the discharge of approximately 9,400 cy of riprap. The fill would be chemically inert and would not result in long-term exposure of humans, wildlife, wildlife habitat, and the general environment to hazardous materials

Alternative 3: 6-inch Concrete Side Walls and 8-inch Concrete Invert

Alternative 3 will require the discharge of approximately 8,940 cy of riprap. The fill would be chemically inert and would not result in long-term exposure of humans, wildlife, wildlife habitat, and the general environment to hazardous materials

3.14 CUMULATIVE IMPACTS

Past

The Orange County Flood Control District constructed the channel in 1962. It is likely that the channel had multiple minor modifications subsequent to construction for utility crossings and construction of storm drain outfalls. The Orange County Flood Control District most likely undertook like-for-like repairs as needed to maintain the channel.

Present

The channel is currently surrounded by a developed urban landscape consisting of commercial and residential uses in adjacent areas. Current maintenance practices entail repair of damaged sections of the channel as needed. Repair and maintenance of bridges, utility lines, and storm drains may require occasional and limited work with the channel. Currently, the channel is an earthen channel prone to erosion during large storms. Therefore, there is a continued need to repair storm damages.

Future

Since the landscape is fully developed, with residential and commercial uses abutting the channel, it is unlikely that future projects would entail major modifications of the channel. The existing maintenance practices are expected to remain. Whether or not the existing damages are repaired with earthen fill, riprap, or concrete, there will be a need to repair damages from future storms. Discharge of riprap and concrete in the channel would be more effective at minimizing erosion in the channel, and reduce the frequency of maintenance activities.

Based on the limited or the absence of sensitive environmental resources such as wildlife and habitat from the channel, the proposed project would entail less than significant impacts individually and cumulatively.

4.0 CONSULTATION AND COORDINATION WITH OTHER AGENCIES

Based on the limited or the absence of sensitive environmental resources on site and the limited environmental impacts associated with the project, consultation with resource agencies such as the US Fish and Wildlife Service or the State Historic Preservation Office was not warranted. Upon receipt of full authorization to undertake the proposed federal action, the Corps would coordinate with and obtain permits from the following agencies:

- Santa Ana Regional Water Quality Control Board for a Water Quality Certification pursuant to Section 401 of the Clean Water Act.

5.0 APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

- **Clean Air Act of 1972, as amended, 42 U.S.C. 7401, et seq.** *Full compliance.* The project is not expected to violate any Federal air quality standards, exceed the U.S. EPA's general conformity de minimis threshold, or hinder the attainment of air quality objectives in the local air basin.

- **Clean Water Act of 1972, as amended, 33 U.S.C. 1251, et seq.** *Full compliance.* The project would entail a discharge fill into waters of the United States. Alternative 3, the locally preferred plan would qualify for authorization under Nationwide Permit 13. See Attachment A for Clean Water Act compliance documentation.

- **Endangered Species Act of 1973, as amended, 16 U.S.C. 1531, et seq.** *Full compliance.* The project would not affect any species or habitats protected under the Endangered Species Act.

- **National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321, et seq**. *Full compliance*. This EA has evaluated a reasonable range of alternatives and associated environmental impacts commensurate with the level of available information.

- **National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 et seq**. *Full Compliance.* The project area was extremely disturbed by the construction of the concrete channel. No cultural resources listed on or eligible for the National Register of Historic Places are present within the permit area/area of potential effects. Project activities will occur in previously disturbed areas. The environment and setting for proposed activities is disturbed and man-made to such a degree that no significant cultural resources could remain. Therefore, in accordance with 36 CFR 800.3(a)(1), the proposed project does not have the potential to cause effects.

- **Executive Order 11988: Floodplain Management.** *Full Compliance.* Executive Order 11988, signed by President Jimmy Carter on 24 May 1977, and published in 42 FR 26351. Its purpose is to "…avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative." The project entails repair of an existing channel. There is no practical alternative to on-site repair. Furthermore, the repair work would not support further development of the adjacent floodplain since the floodplain is already developed.

- **Executive Order 12898, Environmental Justice Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 11, 1994.** *Full Compliance.* Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations) was signed on February 11, 1994. This order directs Federal agencies to make achieving environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the U.S. Based on the evaluation above, the project would not result in disproportionate environmental impacts on low income and minority populations.

6. LIST OF PREPARERS

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