C.13 Wildfire Prevention and Suppression

This section describes effects on wildfire prevention and suppression that would be caused by implementation of the Project. The following discussion addresses existing environmental conditions in the affected area, identifies and analyzes environmental impacts for the alternatives, and recommends measures to reduce or avoid adverse impacts anticipated from the components of the Project or alternatives. In Section C.13.2, existing laws and regulations relevant to wildfire prevention and suppression are also described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with the implementation of the Project.

C.13.1 Affected Environment

The Wildfire Study Area is defined for the purposes of this report as the following:

- The direct and indirect protection zones that encompass the Reservoir, as determined by the Forest Service on NFS lands; and
- The dump truck routes and sediment storage/disposal sites that are located in Fire Zone 4 and Areas of High Fire Hazard, as defined by Los Angeles County.

The following discussion provides further detail on these zones.

C.13.1.1 Forest Service Protection Zones

In 2003, the Healthy Forests Restoration Act was enacted in order to expedite the preparation and implementation of hazardous fuels reduction projects on federal land. This act established the designation of Wildland/Urban Interface zones within national forests, which is defined as a variable width up to 1.5 miles from communities at risk or as defined in individual community fire protection plans (USFS, 2005c).

In order to apply the act to NFS lands within the ANF, the Forest Service's 2005 Land Management Plan identifies Wildland/Urban Interface (WUI) Defense Zones and WUI Threat Zones, which when combined are designed to make most structures more defendable:

WUI Defense Zone is defined as the area directly adjoining structures and evacuation routes that is converted to a less-flammable state to increase defensible space and firefighter safety. The minimum widths for this zone are determined by general vegetation type (i.e., grass, chaparral, or forest) (USFS, 2005c).

> ***Chaparral:*** *The Project Area on NFS land is characterized by desert scrub vegetation, which can be categorized as chaparral for the purposes of the WUI Defense Zone classifications. Generally, a width of 100 to 300 feet is sufficient in some chaparral conditions to provide community safety objectives. On steep slopes, a defense zone width of over 300 feet may be required. Defense Zone management activities take precedence over all other management activities within the Defense Zone, and Standard 8 (see Table C.13-1) would apply.*

WUI Threat Zone is defined as an additional strip of vegetation modified to reduce flame heights and radiant heat. This zone generally extends 1.25 miles out from the Defense Zone boundary, although the actual extent is based on fire history, local fuel conditions, weather, topography, existing and proposed fuel treatments, natural barriers to fire, and community protection plans. The object is to complete enough tree thinning and surface fuel management over time to reduce the potential for stand replacing fires. In vegetation types such as grass and chaparral, there may be no need to conduct extensive treatments in this zone (USFS, 2005c).

C.13.1.2 County of Los Angeles Fire Hazard Zones

The Safety Element of the County of Los Angeles General Plan (1990) describes the County as being at high risk of wildfires due to wet year-dry year climatic cycles, Santa Ana weather conditions (marked by hot, dry desert air), types of vegetation supported by Mediterranean climate, and the extreme inaccessibility posed by steep mountainous topography adjacent to developed areas.

The County identifies two high fire hazard areas that extend across multiple jurisdictions (e.g., city and federal) within the perimeter of the County. These areas are defined as the following:

Fire Zone 4 - This encompasses high fire hazard brush and woodland areas, areas of steep topography and little or no development. This area requires management strategies to enforce stringent fire enforcement measures including fire-resistive construction materials, brush clearance, fire breaks, and fuel load management requirements (County of Los Angeles, 1990b).

Additional Brush Fire Hazards Areas – This encompasses wildland areas outside of Fire Zone 4 that are within the jurisdiction of incorporated cities and have features similar to Fire Zone 4 (County of Los Angeles, 1990b).

The Wildfire Study Area is within both of these County high fire hazard zones. The Project components that occur south of the California aqueduct (i.e., grade control construction, sediment excavation, southern portion of the dump truck route) are located within a designated Fire Zone 4 (County of Los Angeles, 1990c). The Project components that occur north of the California aqueduct (i.e., northern portion of the dump truck route, sediment storage, and disposal) are located within an Additional Brush Fire Hazards Area (County of Los Angeles, 1990c).

C.13.2 Regulatory Framework

The Project and alternatives would traverse federal and local jurisdictions. The following discussion summarizes the associated laws, regulations and standards for these jurisdictions. Table C.13-1 provides a list of the specific policies that are applicable to wildfire prevention and suppression, and includes a discussion of the Project's consistency with each policy. An evaluation of applicable policies from the Forest Service Land Management Plan is included in Section C.9 (Recreation and Land Use).

Federal

- **National Fire Plan.** In 2000, the Secretaries of the USDA and the Department of the Interior (DOI) were directed to prepare a report recommending how to respond to severe, ongoing fire activity, reduce impacts of fires on rural communities and the environment, and ensure sufficient firefighting resources in the future. The report was the foundation for the National Fire Plan, which addresses the following five key points in wildfire management: firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability.
- The USDA and the DOI have continued to work with federal, state, local, and tribal governments, and non-governmental partners and public stakeholders to further develop a coordinated strategy to address wildland fire threats. In 2009, Congress passed the Federal Land Assistance, Management, and Enhancement Act (FLAME Act) that mandated the development of a national cohesive wildland fire management strategy. As directed by the FLAME Act, the USDA and the DOI established the Wildland Fire Leadership Council, which is an intergovernmental committee tasked with completing a three-phased planning and analysis process referred to as the Cohesive Strategy effort. The culmination of this effort was the creation of the following:

- **The National Strategy:** The Final Phase in the Development of the National Cohesive Wildland and Fire Management Strategy. The National Strategy describes how strategic investments across the nation can be focused to reduce the effects of wildfire on high risk areas. However, the guidance is not prescriptive in deciding which options to apply regionally or locally (USDA and DOI, 2014a). This document describes the following four challenges in wildfire management: (1) Managing vegetation and fuels; (2) Protecting homes, communities, and other values at risk; (3) Managing human-caused ignitions; and (4) Safely, effectively, and efficiently responding to wildfire.
- **National Action Plan**: This plan is a framework for implementing the National Strategy. For each of the four challenges outlined in the National Strategy, the National Action Plan describes a range of management options and the implementation planning guidance that is applicable at all levels of planning (USDA and DOI, 2014b).

■ While the Wildland Fire Leadership Council will continue to coordinate national wildfire issues, implementing the National Strategy and National Action Plan at a regional and local level is subject to the stakeholders' participation and the effectiveness of wildland fire management in local communities.

■ **Angeles National Forest Fire Management Plan (2009).** The Angeles National Forest Fire Management Plan (2009) is a fundamental strategic document that guides the full range of fire management-related activities within the Angeles National Forest.

Local

■ **County of Los Angeles General Plan Safety Element (Adopted 1990).** Section 3.4 of the County of Los Angeles Safety Element describes the wildland fire hazards within the County, which include the dry climate, Santa Ana weather conditions, and steep topography. The high fire hazard areas delineated on the Wildland and Urban Fire Hazards Map (County of Los Angeles, 1990c) indicate portions of the County that require innovative strategies to enforce stringent fire enforcement measures including fire-resistive construction materials, brush clearance, fire breaks, and fuel-load management requirements (County of Los Angeles, 1990b). Table C.13-1 lists the goals and actions from the County of Los Angeles Safety Element that are applicable to wildfire.

■ **City of Palmdale General Plan (January 1993).** There are two City of Palmdale General Plan elements that discuss high fire risk areas and fire protection services: the Safety Element and the Public Services Element, respectively. The City's fire protection services are provided by the Los Angeles County Fire Department, which has three stations located within the Palmdale Planning Area and five additional stations serving the outlying areas (City of Palmdale, 1993a). The Los Angeles County Fire Department also receives aid from the USDA Forest Service in firefighting resources. The City of Palmdale General Plan objectives and policies that are applicable to wildfire are listed in Table C.13-1.

Table C.13-1. Consistency with Applicable Wildfire Plans and Policies

Plan/Policy	Consistency	Explanation
County of Los Angeles General Plan Safety Element (December 1990)		
Goal 18: Expand and improve vegetation management efforts in wildland fire hazard areas.	Yes	The Project would restore disturbed vegetation with native seed mixes. With the incorporation of SPCs BIO-1a and BIO-2, Project activities would not affect the local vegetation, nor would they alter the fuel vegetation matrix at the Reservoir or along truck routes.

Table C.13-1. Consistency with Applicable Wildfire Plans and Policies

Plan/Policy	Consistency	Explanation
Goal 19: Promote improved watershed management practices to reduce the risk of damaging runoff and debris movement into urban areas.	Yes	The Project would restore the existing Reservoir to its 1992 design, which would improve its water storage capacity and reduce the risk of dam overflow.
Action 15.1: Continue to review all development projects proposed in Fire Zone 4 for availability of adequate emergency access and water supply for firefighting purposes. Improve the enforcement of the Water Code, including provision for periodic inspection of water utilities to verify compliance with code requirements.	Yes	The Project would not introduce new development into Los Angeles County. Use of County lands for sediment transport and temporary storage would not require designated emergency access or water supply.
Action 15.3: Continue to require property owners to undertake fuel load management practices such as brush clearance, erosion control, slope stabilization, and flammable rubbish removal. Also, continue to review development projects to ensure proper brush clearance, adequate requirements for emergency ingress and egress, and adequate fire flows for fire suppression.	Yes	The Project would not introduce new development into Los Angeles County. Use of the PWD-owned property on 47th Street for temporary sediment storage would require a conditional use permit from the County. Onsite activities would adhere to County requirements regarding brush clearance, erosion control, slope stabilization, and flammable rubbish removal.
Action 18.4: Improve wildland fire hazards assessment and rating to establish priority areas for the reduction of fire hazard to tolerable levels. Give consideration to such factors as vegetation type, slope, aspect, and proximity to development. Expand vegetation management activities to reduce fuel loading of highly flammable vegetation.	Yes	The Project would restore disturbed vegetation with native seed mixes. With the incorporation of SPCs BIO-1a and BIO-2, Project activities would not affect the local vegetation, nor would they alter the fuel vegetation matrix at the Reservoir or along truck routes.
Action 19.1: Continue to improved watershed management efforts in coordination with federal, state, and local agencies to reduce the frequency, size, and intensity of wildland fires and their related watershed damage. This includes the maintenance of fire and fuel breaks, the review of wildland fire events for potential erosion impacts, and the provision of emergency revegetation where appropriate.	Yes	The Project would not alter the amount of developed land or the designated use of the land at the Reservoir. Activities would be consolidated in paved or previously disturbed areas at the Reservoir, and would not alter established high fire hazard areas or the WUI Defense Zones and Threat Zones surrounding the Reservoir. The Project would restore disturbed vegetation with native seed mixes, and would incorporate SPCs BIO-1a and BIO-2.
Los Angeles County Code (Ordinance 2014-0040)		
Title: 32 (Fire Code), Section 4908.1: Fuel modification plan in high hazard severity zones A fuel modification plan shall be submitted and approved prior to any subdivision of land, or prior to issuing a permit for any permanent structure used for habitation, that is within a fire hazard severity zone.	Yes	Project use of the Palmdale Water District (PWD)-owned property on 47th Street for temporary sediment storage would be subject to a conditional use permit from the County. The Project would adhere to County requirements that are associated with permit approval, such as a fuel modification plan if required.
City of Palmdale General Plan Safety Element (January 1993)		
Objective S1.3: Ensure compatible development in areas within or adjacent to natural high risk fire areas (urban-wildland interface), and other high risk fire areas.	Yes	The Project would not alter the amount of developed land or the designated use of the land at the Reservoir. Project activities would be consolidated in paved or previously disturbed areas at the Reservoir, and would not alter established high fire hazard areas or the WUI Defense Zones and Threat Zones surrounding the Reservoir.

Source: City of Palmdale, 1993b; County of Los Angeles, 1990a, 1987.

C.13.3 Issues Identified During Scoping

There were no wildfire prevention and suppression issues identified during the public scoping period. See Appendix E for a summary of issues relevant to the entire Project that were raised during the scoping process.

C.13.4 Environmental Consequences

Significance Criteria. The following significance criteria for Wildfire Prevention and Suppression were derived from previous environmental impact assessments for similar projects, agency thresholds, and from the CEQA Guidelines (Appendix G, Environmental Checklist Form, Section IX). Impacts of the Project or alternatives would be considered significant and would require mitigation if:

- Criterion WF1: Project-related activities adversely affect fire prevention and suppression activities.
- Criterion WF2: Project-related activities or the presence of the Project expose communities, fire-fighters, personnel, and/or natural resources to an increased risk of wildfire.
- Criterion WF3: Project-related activities create a fuel vegetation matrix with an increased ignition potential and rate of fire spread.

Impact Assessment Methodology. The first step for this impact analysis is to establish baseline conditions for the affected environment (as described in Section C.13.1), including a summary of wildland fuels, climate, topography, high fire hazard areas, and fire protection zones. The biophysical, historical, and management characteristics of the Project area are defined by the ANF Fire Management Plan and the Los Angeles County Municipal Code (see discussion of applicable wildfire policies and fire hazard zones in Section C.13.2). The Project area is then evaluated based on its potential to be affected by design features or construction, operation, and maintenance activities related to the Project and alternatives.

C.13.4.1 Proposed Action/Project

Direct and Indirect Effects Analysis

Project-related activities adversely affect fire prevention and suppression activities (Criterion WF1)

Impact WF-1: Construction and excavation equipment and dump trucks would interfere with wildfire suppression activities.

The use and temporary storage of Project construction and excavation equipment would be consolidated within the paved and previously disturbed areas at the Reservoir. The closure of the Reservoir and the presence of Project-related equipment would not affect fire prevention activities or fire suppression work within the ANF outside of the Study Area.

Sediment removal operations may require traffic control along Forest Service roadways, specifically at the gated entrance to the Reservoir on Cheseboro Road and near the Reservoir's boat ramp. While these roadways would be closed to the public during the annual closure period, the presence of the equipment and trucks could create an obstacle for emergency fire crews in the event of a wildfire near the Study Area. The numerous dump truck trips (maximum of 945 per day) that would be required during the first 7 to 12 years of sediment removal, followed by the truck trips during operation and maintenance of the Reservoir, would also create an obstacle to wildfire crews accessing NFS lands along

public roadways near the Reservoir. The implementation of SPC FIRE-1, as provided in Appendix A, would avoid Project-related conflicts with wildfire suppression.

SPCs Applicable to Impact WF-1

SPC FIRE-1 (Curtailment of Activities)

CEQA Significance Conclusion

Implementation of SPC FIRE-1 (curtailment of activities) would avoid potential conflicts with fire suppression efforts in the event of a fire or during very high or extreme weather conditions, resulting in less than significant impacts (Class III).

Project-related activities or the presence of the Project expose communities, firefighters, personnel, and/or natural resources to an increased risk of wildfire (Criterion WF2)

Impact WF-2: Construction activities or personnel could inadvertently start a vegetation fire.

The Project would be located in a Fire Zone 4 and an Additional Brush Fire Hazards Area due to the chaparral vegetation that characterizes the site, the region's wet year-dry year climatic cycles, and the frequent Santa Ana weather conditions. High fire hazard zones require specific management strategies to minimize the risk of wildfire.

While historically, industrial operations in forests, rangelands, and watersheds have not resulted in an unusual number of wildfires compared to other causes, several large fires have been caused by operation of machinery (NWCG, 1999). Potential causes of wildfire from machine use include exhaust sparks, hot exhaust manifolds and pipes, fuel leaks, overheating, track and blade sparks, short circuits, brakes, belts and pulleys, accumulated debris, and broken hydraulic line spilling on hot engine parts (NWCG, 1999). A number of standards and practices that are effective in preventing wildfires have been identified by fire agency and operating company personnel, many of which have become requirements by law, regulation, or contract clause. Additional requirements to avoid a Project-related wildfire would be incorporated into the Project as SPCs FIRE-1 through FIRE-3.

SPCs Applicable to Impact WF-2

SPC FIRE-1 (Curtailment of Activities)

SPC FIRE-2 (Preparation of a Fire Plan)

SPC FIRE-3 (Spark Arrester Requirements)

CEQA Significance Conclusion

The implementation of SPC FIRE-1 (Curtailment of Activities), FIRE-2 (Preparation of a Fire Plan), and FIRE-3 (Spark Arrester Requirements) would establish protocols for equipment inspection and maintenance, permitted activities within the Project area, and procedures for detecting and reporting wildfires, thereby ensuring that potential impacts would be less than significant (Class III).

Project-related activities create a fuel vegetation matrix with an increased ignition potential and rate of fire spread (Criterion WF3)

Impact WF-3: Project activities could alter the fuel vegetation matrix, thereby contributing to an increased fire risk.

Following the excavation and removal of sediment from the Reservoir, areas that contain vegetation disturbed during the Project would be restored with native seed mixes and live plant material. In areas where any persistent native vegetation is removed for proposed activities, the area would be revegetated and restored to its previous state. Noxious weed controls including washing of ground disturbing equipment and removal of weeds prior to disturbance would be implemented to ensure that restored areas are not colonized by invasive plants. In addition, with the incorporation of SPCs BIO-1a and BIO-2, Project-related activities would not alter the fuel vegetation matrix within the Study Area, nor would it affect the local vegetation in a manner that would contribute to an increased ignition potential or rate of fire spread.

SPCs Applicable to Impact WF-3

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

CEQA Significance Conclusion

With implementation of SPCs BIO-1a and BIO-2, potential impacts to the fuel vegetation matrix would be less than significant (Class III).

C.13.4.2 Alternative 1: Reduced Sediment Removal Intensity

Direct and Indirect Effects Analysis

Project-related activities adversely affect fire prevention and suppression activities (Criterion WF1)

Impact WF-1: Construction and excavation equipment and dump trucks would interfere with wildfire suppression activities.

Alternative 1 would be identical to the Project in regards to the use and temporary storage of construction and excavation equipment, which would be consolidated within the paved and previously disturbed areas at the Reservoir. The closure of the Reservoir and the use of proposed equipment would not affect fire prevention activities or fire suppression work within the ANF outside of the Study Area.

Sediment removal operations that would occur under Alternative 1 would differ from the Project only in regards to the weekly construction schedule. The use of trucks and equipment along Forest Service and public roadways would create an obstacle to wildfire crews in the event of an emergency fire response that would be identical to the Project. The implementation of SPC FIRE-1 would avoid conflicts with wildfire suppression under Alternative 1.

SPCs Applicable to Impact WF-1

SPC FIRE-1 (Curtailment of Activities)

CEQA Significance Conclusion

Potential conflicts with fire suppression efforts would be identical to the Project, and implementation of SPC FIRE-1 is recommended to minimize these conflicts. With the application of SPC FIRE-1, impacts to wildfire suppression activities would be less than significant (Class III).

Project-related activities or the presence of the Project expose communities, firefighters, personnel, and/or natural resources to an increased risk of wildfire (Criterion WF2)

Impact WF-2: Construction activities or personnel could inadvertently start a vegetation fire.

The setting for Alternative 1 would be identical to the Project. As described in Section C.13.1, construction activities would be located in a Fire Zone 4 and an Additional Brush Fire Hazards Area, which require specific management strategies to minimize the risk of wildfire.

The type of construction activities and equipment that would be used for Alternative 1 is the same as for the Project, and the standards and practices for preventing wildfires that apply to the Project would also apply to this alternative. To avoid a construction-related wildfire, SPCs FIRE-1 through FIRE-3 would be incorporated into Alternative 1.

SPCs Applicable to Impact WF-2

SPC FIRE-1 (Curtailment of Activities)

SPC FIRE-2 (Preparation of a Fire Plan)

SPC FIRE-3 (Spark Arrester Requirements)

CEQA Significance Conclusion

The application of clearly defined standards and practices to avoid accidental vegetation fires (i.e., SPCs FIRE-1 through FIRE-3 would ensure that potential impacts would be less than significant (Class III).

Project-related activities create a fuel vegetation matrix with an increased ignition potential and rate of fire spread (Criterion WF3)

Impact WF-3: Project activities could alter the fuel vegetation matrix, thereby contributing to an increased fire risk.

Restoration activities under Alternative 1 would be identical to those activities under the Project. Following the excavation and removal of sediment from the Reservoir, areas in which vegetation was disturbed would be restored with native seed mixes and live plant material. In areas where any persistent native vegetation is removed for proposed activities, the area would be revegetated and restored to its previous state. Implementation of noxious weed controls (e.g., washing of ground-disturbing equipment, removal of weeds prior to disturbance) would ensure that restored areas are not colonized by invasive plants. SPCs BIO-1a and BIO-2 would also minimize the alternative's effects on native flora. As described for the Project, construction-related activities under Alternative 1 would not alter the fuel vegetation matrix within the Study Area, nor would the alternative affect the local vegetation in a manner that would contribute to an increased ignition potential or rate of fire spread.

SPCs Applicable to Impact WF-3

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

CEQA Significance Conclusion

With implementation of SPCs BIO-1a and BIO-2, potential impacts to the fuel vegetation matrix would be less than significant (Class III).

C.13.4.3 Alternative 2: No Action/No Project Alternative

Direct and Indirect Effects Analysis

Under the No Action/No Project Alternative, no construction or excavation activities would occur at the Reservoir should it be allowed to fill with sediment. Without these activities, the No Action/No Project Alternative would not impact or create a conflict with fire prevention and suppression activities. However, in the event the dam must eventually be removed for safety reasons, such a project would require the use of equipment and dump trucks at the Reservoir and along Forest Service and public roadways similar or greater than the proposed action and Alternative 1. Such a project would be greater in scale than the proposed action or Alternative 1. Under this scenario, Alternative 2 would likely introduce a larger temporary workforce that would need to be trained in fire prevention behavior and protocols. These activities at the Reservoir may result in an increased potential for wildfire risk when compared to the proposed action and Alternative 1. Therefore, under this Alternative 2 scenario, mitigation similar to that described for the proposed action would be required to reduce the potential for increasing the ignition potential and rate of fire spread within the Study Area.

CEQA Significance Conclusion

Should the Reservoir be allowed to fill with sediment and left alone, no impacts would occur. At some point in the future, should the dam be removed for safety reasons, potential impacts from the use of machinery in high fire hazard zones could be slightly greater under Alternative 2 as it would be for the Project. Through the application of clearly defined standards and practices to avoid accidental vegetation fires (i.e., SPCs FIRE-1 through FIRE-3; SPC BIO-1a, SPC BIO-2), the likelihood of a vegetation fire from construction-related activities would be minimized, thereby ensuring that potential impacts would be less than significant (Class III).

C.13.5 Impact Summary

Table C.13-2 summarizes the direct and indirect environmental impacts of the Project and the alternatives on wildfire prevention and suppression. Refer to Section C.13.4 for the entire environmental analysis and the full text of recommended mitigation measures.

Table C.13-2. Summary of Impacts and Mitigation Measures – Wildfire Prevention/Suppression

Impact	Impact Significance				Mitigation Measures/SPC
	Proposed Action	Alt.1	Alt.2: No Action	NFS Lands[1]	
WF-1: Construction and excavation equipment and dump trucks would interfere with wildfire suppression activities.	Class III	Class III	No Impact or Class III	Yes	SPC FIRE-1 (Curtailment of Activities)
WF-2: Construction activities or personnel could inadvertently start a vegetation fire.	Class III	Class III	No Impact or Class III	Yes	SPC FIRE-1 (Curtailment of Activities) SPC FIRE-2 (Preparation of a Fire Plan) SPC FIRE-3 (Spark Arrester Requirements)
WF-3: Project activities could alter the fuel vegetation matrix, thereby contributing to an increased fire risk.	Class III	Class III	No Impact or Class III	Yes	SPC BIO-1a (Provide Restoration/ Compensation for Impacts to Native Vegetation Communities) SPC BIO-2 (Prepare and Implement a Weed Control Plan)

Notes:
1 - Indicates whether this impact is applicable to National Forest System lands.