4.13 Public Safety and Hazards

This section evaluates the potential impacts of the Moosa 100K Alternative related to public safety and hazardous materials. This evaluation includes an assessment of the direct, indirect, short-term, long-term, and cumulative effects of the Moosa 100K Alternative on potential use, transport, and release of hazardous materials; presence of hazardous materials sites in the study area; flooding, including the issue of dam failure; and recreational accidents. The hazardous materials evaluation is based on two hazardous materials reports prepared by Rincon Consultants (2006), which are included as Appendix F to this EIR/EIS.

4.13.1 Affected Environment

4.13.1.1 Environmental Setting

The following discussion describes the existing public safety conditions and hazardous materials within the Moosa 100K study area.

Dam Safety

A small dam that impounds Turner Reservoir currently exists on Moosa Creek upstream of Moosa Canyon. The dam is approximately 110 feet high with a reservoir storage capacity of approximately 1,700 acre-feet (AF). If Moosa Dam were constructed, Turner Reservoir and the existing dam would be inundated.

Moosa Creek merges with the San Luis Rey River approximately 10 miles downstream of the dam location. The upper part of Moosa Canyon is steep and narrow. Approximately 18 miles downstream of the dam location, the valley reaches its maximum width of several miles, after which it tapers and remains narrow until the river reaches the ocean. Two major transportation crossings downstream of the confluence of Moosa Creek and the San Luis Rey River are I-5 and the Atchison, Topeka, and Santa Fe Railroad. The total distance from the Moosa 100K Alternative location to the Pacific Ocean is about 24 miles.

Recreational Safety

There are no existing water-based recreational uses currently allowed at Turner Reservoir. Therefore, there would be no existing recreational safety concerns. The Valley Center Municipal Water District (VCMWD) has been working on long-term planning to introduce recreational activity to Turner Reservoir, subject to completion of planned facilities per the District’s adopted Master Plan, and obtaining all required regulatory permits and approvals for facility construction and recreation development.
Hazardous Materials

Hazardous materials in the Moosa 100K study area have the potential to occur as a result of existing hazardous materials associated current land uses within the Moosa 100K study area. Existing land uses in the Moosa 100K study area predominantly consist of agriculture with some residential and industrial land uses scattered throughout (refer to Section 4.9.1.1 [Land Use for the Moosa 100K Alternative] of this EIR/EIS). A closed landfill also exists within the Moosa 100K study area. A preliminary visual survey for hazardous materials existing in the Moosa 100K study area was conducted by Rincon Consultants in 2006 (refer to Appendix F to this EIR/EIS).

Valley Center Landfill

The closed Valley Center Landfill is located adjacent to the northeast portion of the Moosa Reservoir, immediately upgradient of the proposed Moosa 100K Alternative. The landfill site covers 42 acres and has a landfill area of 11 acres. The landfill received a total of approximately 130,000 tons of refuse. There is no record of the landfill having accepted chemical, hazardous, or toxic waste, septage, or infectious wastes. In general, waste disposal was limited to residential and commercial waste, primarily organic rubbish. The landfill site is currently used as an equestrian center and has no permanent structures on site.

Section 4.17.3.2 (Water Resources for the Moosa 100K Alternative) of this EIR/EIS discusses the potential water quality impacts associated with the proximity of the Valley Center Landfill to the Moosa Reservoir site.

4.13.1.2 Regulatory Setting

Regulatory information on public safety issues that apply to the Moosa 100K Alternative are the same as those for the Proposed Action and the SV 50K/Moosa 50K Alternative, as all alternatives are in California and are dam construction projects. Please refer to Section 3.13.1.2 (Public Safety for the Proposed Action) of this EIR/EIS for this regulatory information, including the Resource Conservation and Recovery Act (RCRA) of 1976; DSOD; and California Health and Safety Code, Section 115840 (incidental body contact with reservoir water).

4.13.2 Project Design Features

General Conditions and Standard Specifications that will be included in the project construction documents to reduce public safety and hazards impacts associated with construction and operation of the Proposed Action are summarized in Section 1.9.6 (Introduction, Public Safety and Hazards) of this EIR/EIS. Refer to Section 3.13.2 (Public Safety and Hazards) for a list of project design features that also apply to the Moosa 100K Alternative.
4.13.3 Direct and Indirect Effects

4.13.3.1 Thresholds of Significance

The thresholds of significance used to evaluate potential public safety impacts for the Moosa 100K Alternative are based on applicable criteria in the State CEQA Guidelines (CCR §§15000-15387), Appendix G; the ESP EIR/EIS; and the RWFMP PEIR. A significant public safety impact would occur if the Moosa 100K Alternative would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
3. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.
4. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.
5. Increase boating accidents due to increased recreational use of any reservoir.

4.13.3.2 Impact Analysis

Methodology

The methodology for assessing the public safety and hazardous waste impacts due to the implementation of the Moosa 100K Alternative is the same as that described for the Proposed Action in Section 3.13.3.2 (Public Safety for the Proposed Action) of this EIR/EIS. The following analysis is based on a review of historical land uses and reported hazardous waste sites and hazardous materials field reconnaissance conducted by Rincon Consultants.

Analysis

Threshold 1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

A limited amount of hazardous materials (paints, solvents, petroleum products, etc.) would be used or stored in association with construction and operation of the Moosa 100K Alternative. Transportation, use, or disposal of hazardous materials during construction, operation, and maintenance of the proposed facilities could pose potential health and safety hazards to construction and maintenance workers, nearby residents, and the environment. These impacts would be associated with the potential for spills on the construction site, during operation, or
along access roads, and improper disposal of hazardous materials. However, safety measures would be implemented in accordance with the Water Authority’s General Conditions and Standard Specifications (refer to Section 1.9.6 [Introduction, Public Safety and Hazards] of this EIR/EIS), and project design features would be incorporated into plans and specifications, as described above in Section 4.13.2 above. These measures would reduce the risk of upset during construction, including accidental explosions or releases of hazardous substances. Therefore, public safety or environmental impacts due to routine transport, use or disposal of hazardous materials during construction and operation of the Moosa 100K Alternative would be less than significant.

Any hazardous materials existing within the Moosa 100K project area (including those at the Valley Center Landfill and those associated with existing land uses) would need to be contained prior to inundation of the reservoir. Portable hazardous materials, such as household or agricultural hazardous waste would be removed and transported to a suitable disposal site prior to inundation. As discussed in the impacts analysis for Threshold 3 below, the closed Valley Center landfill could pose a particular hazard to public safety by impacting water quality within the proposed Moosa 100K reservoir. Any hazardous materials existing within the area (including those at the Valley Center Landfill) would either need to be removed and transported to a suitable disposal site or encapsulated on site prior to inundation.

Implementation of the general conditions and standard specifications that would be incorporated into any excavation and transport work conducted at the Moosa 100K Alternative site (see Section 1.9.6 [Introduction, Public Safety and Hazards] of this EIR/EIS) would reduce impacts from transport and disposal of these materials. Therefore, public safety or environmental impacts due to routine transport, use or disposal of hazardous materials during removal of hazardous materials from the inundation area of the Moosa 100K Alternative would be less than significant.

The Moosa 100K Alternative would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Safety measures would be implemented to control the routine transport, use, or disposal of hazardous materials during project construction and operation. Therefore, impacts of the Moosa 100K Alternative would be less than significant.

Threshold 2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment

As discussed in the impacts analysis for Threshold 3 below, to avoid impacts on the public or the environment, any identified hazardous material and/or contaminated soil within the Moosa 100K Alternative site would either need to be removed or contained in place prior to inundation of the area. In particular, any hazardous materials or contaminated soil that may exist within the closed Valley Center Landfill would be removed or contained on site prior to inundation of the reservoir.
Implementation of safety measures from the Water Authority’s General Conditions and Standard Specifications (Section 1.9.6 [Introduction, Public Safety and Hazards] of this EIR/EIS) would be incorporated into plans and specifications to reduce the risk of upsets during construction and transport of hazardous waste. Therefore, public safety or environmental impacts due to reasonably foreseeable upset and accident conditions of hazardous materials during the construction of the Moosa 100K Alternative would be less than significant.

As discussed under Threshold 1 above, a reasonable amount of hazardous materials would be associated with operation of the Moosa 100K Alternative, including gasoline, motor oil, grease, etc. However, the implementation of safety measures from the Water Authority’s General Conditions and Standard Specifications, and from the project design features (Sections 1.9.6 [Introduction, Public Safety and Hazards] of this EIR/EIS and 4.13.2 above), would be incorporated into plans and specifications to reduce the risk of upsets, including accidental explosions or releases of hazardous substances. Therefore, public safety or environmental impacts due to reasonably foreseeable upset and accident conditions of hazardous materials during the operation of the Moosa 100K Alternative would be less than significant.

The Moosa 100K Alternative would not create a significant hazard to the public or the environment as a result of hazardous materials use. Safety measures would be implemented to prevent upsets during construction and operation. Therefore, impacts of the Moosa 100K Alternative would be less than significant.

Threshold 3: Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment

Rincon conducted a review of pertinent hazardous materials lists, and a visual field reconnaissance of the Moosa 100K study area was completed in November 2006. Methods used to conduct a review of historical land uses and reported hazardous waste sites and visual field reconnaissance are the same as for the Proposed Action, and are described in Section 3.13.3.2 (Public Safety for the Proposed Action) of this EIR/EIS.

Based on the Rincon report, four facilities were found to have had a release or have the potential for a release of hazardous materials that may impact the soil and groundwater in the vicinity of Moosa 100K Alternative, including the presence or past presence of an underground storage tank (UST). An additional three are known to store, use, and dispose of hazardous materials. These reported facilities are as follows:

- **Betsworth 4 Bay (11580 Betsworth Road).** This facility is listed in the PERMITS database and reportedly stores propane and motor oil, and generates used oil filters and waste oil. The propane tank and waste oil could impact the water quality of the reservoir, if they are not removed prior to inundation.

- **Valley Center Landfill (28700 Aerie Road).** This facility is a former solid waste landfill and burn site for municipal waste. The former landfill could produce leachate...
with hazardous concentrations that could impact water quality of the reservoir if the landfill area is inundated and the identified hazardous material and/or contaminated soil within the Moosa 100K Alternative site is not removed or encapsulated prior to inundation.

- **Ernest J. Allen (12363 Betsworth Road).** The reported former UST at this facility is in an unknown location and it may have had a release of petroleum hydrocarbons that may have impacted the soil and groundwater at the site.

- **Circle R Ranch Trading Post (8751 Old Castle Road).** This facility has a reported Leaking Underground Storage Tank case that impacted the groundwater. This release case is closed; however, groundwater and soil adjacent to this site may have been impacted. The soil and groundwater within the pipeline portion of the site may have been impacted from this reported release.

- **Other Adjacent Facilities.** Three facilities (Janis Trucking, H/T Farms/McMillan Farm Management, and Castle Creek Country Club) that are adjacent to the project area reportedly store, use, and dispose of hazardous materials. The Castle Creek Country Club facility also has a reported release. These facilities may have impacted the soil or groundwater within the proposed inundation area.

Based on limited field reconnaissance, potential impacts in the vicinity of the Moosa 100K study area could also occur from residences, agriculture, and existing water district operations. These potential impacts include the following (Rincon, 2006):

- **Scattered Residences.** Residences scattered throughout the Moosa 100K study area were observed with the following uses that could create a significant hazard to the public or the environment:
  - Propane aboveground storage tanks
  - Septic systems
  - Transformers

- **Agricultural Activities.** Residences scattered throughout the Moosa 100K study area were observed with the following uses that could create a significant hazard to the public or the environment:
  - Pesticides and herbicides
  - Fuel tanks
  - Auto and equipment repair
  - Equipment storage yards
  - Smudge pots
  - Windmills
  - Greenhouses
  - VCMWD equipment area

Soil and groundwater could be impacted by the hazardous materials sites that are within the Moosa 100K study area. Any existing hazardous materials or contaminated soil would need to
be removed from the area prior to water impoundment. Disturbance of these materials would create a hazard. Therefore, impacts of the Moosa 100K Alternative would be significant.

*The Moosa 100K Alternative would create a significant hazard to the public and the environment due to contaminants that could be present in soil and/or groundwater.* Based on limited field reconnaissance and review of historic land use and hazardous material records, the potential is high for the presence of non-routine levels of hazardous materials in the Moosa 100K study area. Therefore, impacts of the Moosa 100K Alternative would be significant (*Impact M/HM 1*).

**Threshold 4: Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam**

Both the main dam and saddle dam for the Moosa 100K Alternative would be concrete-faced rockfill dams. In California, the DSOD is responsible for approving the design and monitoring the construction of new dams and expansion of existing dams. According to the DSOD, dams must meet stringent design criteria that cover a variety of possible conditions that could affect the dam, such as earthquakes and flood events (see Section 3.13.3.2 [Public Safety for the Proposed Action] of this EIR/EIS). Dam failure simulation was not conducted for the Moosa 100K Alternative, because it is not the Proposed Action.

If the Moosa 100K Alternative is selected, a dam failure simulation would be conducted. Section 3.13.3.2 (Public Safety for the Proposed Action) of this EIR/EIS describes the procedures and methods GEI Consultants used to conduct dam failure simulation and land use assessment for the Proposed Action. Similar methods would be used to conduct a dam failure simulation for the Moosa 100K Alternative. Given modern dam design methods and construction techniques, dam failure is extremely low. Historical dam failure frequencies in the U.S. have been estimated as 31 in a million for concrete dams and 35 in a million for rock-filled dams (GEI/CDM, 1996). The Moosa 100K Alternative proposed dam would be constructed to have a one in a million risk, which is well below the historical risk of failure in the U.S. Therefore, impacts from dam failure of the Moosa 100K Alternative would be less than significant.

Overtopping of the spillway may occur during years of extremely wet weather or during very large storms. However after completion of the dam, downstream flooding from any given storm would be less with the CSP than with today's condition. In addition, the water level in the Moosa Reservoir could be managed in order to reduce overtopping occurrences through development of a Reservoir Operating Plan. During wet years or when large storms are forecast the level of the reservoir would be drawn down so that excess runoff from the reservoir’s local drainage area could be captured. Even if the spillway were overtopped during large flows, the volume of water flowing downstream would not be greater than that what is currently experienced during natural storm events. Therefore impacts due to overtopping of the spillway would be less than significant.

*The Moosa 100K Alternative would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam*
or overtopping of the spillway. The Moosa 100K Alternative would be designed with a safety goal of one in a million, so catastrophic dam failure and associated downstream flooding would be extremely low. Therefore, impacts of the Moosa 100K Alternative would be less than significant.

**Threshold 5: Increase boating accidents due to increased recreational use of any reservoir**

As discussed in Section 4.15 (Recreation for the Moosa 100K Alternative) of this EIR/EIS, recreational uses associated with the Moosa 100K Alternative may include boating, fishing, and day uses such as picnic areas. Boating on the reservoir would be limited to sailboats, boats with one-half horsepower electric trolling motors, paddle boats, and canoes. No personal watercraft or waterskiing would be allowed, and the reservoir would provide the above boats through rental. Swimming or any other direct body contact to water would not be permitted.

Under the Moosa 100K Alternative, the new marina is anticipated to accommodate approximately 360 persons per day at maximum use. At least one safety officer would be needed to enforce visitor safety. In addition, because personal watercraft and waterskiing would not be allowed on the new reservoir, the rental boat operations staff would be able to exercise control over the use of boats with regards to number of people on board and the requirement for life jackets to be provided for each person on board. Therefore, the boating safety impacts due to the Moosa 100K Alternative would be less than significant.

Based on the estimated recreational usage of other reservoirs in San Diego County and the number of parking spaces that would be available at the Moosa Canyon reservoir, it was estimated that the reservoir would receive approximately 360 visitors per day on weekends during summer (May through September) and half that number during the rest of the year (Weber, 2006). Because swimming, personal watercraft and waterskiing would be prohibited at the new reservoir, the average annual risk of death from boating accidents would be expected to be similar that found at other reservoirs through California (i.e., 4.7 fatalities per 100,000 registered boats) (CDBW, 2006). Based on a projected annual number of visitors of 28,000, and assuming a maximum of four persons per boat, an estimated 0.34 boating fatalities per year would be expected. This estimate is conservative because of the limited types of low or no powered boats that would be allowed at the new reservoir with the Moosa 100K Alternative. Therefore the boating safety impacts due to the Moosa 100K Alternative would be less than significant.

The Moosa 100K Alternative would generate a negligible increase in boating accident potential. Boating on the reservoir would be limited to sailboats, boats with one-half horsepower electric trolling motors, paddle boats, and canoes. Therefore, impacts of the Moosa 100K Alternative would be less than significant.
4.13.3.3 Mitigation Measures

To reduce significant public safety impacts from the potentially high degree of non-routine levels of hazardous materials in the Moosa 100K Alternative (Impact M/HM 1), the Water Authority will implement the following mitigation measures:

**M/HM 1-1** Betsworth 4 Bay (11580 Betsworth Road)
- Review County of San Diego regulatory agency files to gain further information regarding this facility.
- Perform a site visit to ascertain the potential for a release or other impact to the soil and groundwater of the site.
- If necessary, conduct soil and groundwater sampling to determine the areas and concentrations of a potential release.
- If necessary, implement an appropriate remedial action (clean-up) plan prior to construction of the dam and inundation of the area.

**M/HM 1-2** Valley Center Landfill (28700 Aerie Road)
- Review County of San Diego regulatory agency files to determine the most recent ground water monitoring data and additional information regarding the former landfill. Conduct groundwater monitoring and soil testing to determine the type of material contained within the landfill and the potential for movement the material and contamination of groundwater or surface water.
- If hazardous material is found, the Water Authority will conduct a feasibility study and determine which of the following measures would be most appropriate:
  - Encapsulate the entire landfill area with a non-permeable barrier to prevent inundation of the landfill from reservoir water and to prevent leachate or other contaminants from flowing into the drinking water supply; or,
  - Construct an impermeable dam or other barrier between the inundation area and the former landfill area. This dam or wall is intended to prevent the inundation of the landfill area and migration of leachate or other potentially hazardous materials from migrating into the water of the proposed reservoir.

**M/HM 1-3** Ernest J. Allen (12363 Betsworth Road)
- Review County of San Diego regulatory agency files to gain further information regarding this facility and the UST at this facility.
- Perform a site visit to determine the location of the UST and the potential to impact the proposed inundation area.
- If necessary, conduct soil and groundwater sampling to determine if a release has impacted the soil and groundwater within the proposed inundation area.
- If necessary, implement an appropriate remedial action (clean-up) plan prior to construction of the dam and inundation of the area.

**M/HM 1-4** Circle R Ranch Trading Post (8751 Old Castle Road)
- Review County of San Diego regulatory agency files to gain further information regarding this facility and the reported release.
- Perform a site visit to ascertain the release location and the potential impact to the pipeline area of the site.
- If necessary, conduct soil and groundwater sampling in the area of the pipeline to determine if the release has impacted the soil that will be excavated as a part of the pipeline construction.
- If necessary, implement an appropriate remedial action (clean-up) plan prior to construction of the pipeline.

**M/HM 1-5** Other Adjacent Facilities (Janis Trucking, H/T Farms/McMillan Farm Management, and Castle Creek Country Club)
- Review County of San Diego regulatory agency files to gain further information regarding these facilities and the reported release.
- If necessary, conduct monitoring of soils for contamination during dam construction activities on the adjacent inundation and pipeline areas.

**M/HM 1-6** Scattered Residences
- Identify all residences and utility poles with transformers within the proposed inundation and pipeline areas. Identify and remove all propane storage tanks and septic tanks associated with the private residences. Identify and remove (or relocate) all pole mounted transformers and utility poles that are within the proposed inundation area.
- Test soil in the vicinity of the transformers for PCBs or other potential contaminants, and remove any contaminated soil.

**M/HM 1-7** Agricultural Activities
- Conduct a site reconnaissance at each farming and nursery facility within the proposed inundation area to assess the presence of fuel tanks, auto equipment repair areas, equipment storage areas, smudge pots, windmills, greenhouses, and the pesticide and herbicide storage areas.
• Conduct file reviews at the appropriate regulatory agencies (DEH, RWQCB, etc.) for the facilities within the proposed inundation area to determine the presences of USTs and for reported releases. Further file reviews can provide the quantities and locations hazardous materials generation and storage as well as the quantities of pesticides and herbicides used at each facility.

• Conduct soil sampling as necessary at facilities that are potentially impacted. Analyze samples to determine if petroleum hydrocarbons, metals, pesticides, or herbicides have contaminated the soils in the proposed inundation and pipeline areas.

• If the analysis indicates that soils or groundwater have been contaminated, implement appropriate remedial action (clean-up) plans prior to construction of the dam and inundation of the area.

M/HM 1-8 Equipment Area, Valley Center Municipal Water District

• Conduct a site reconnaissance at the facility to assess the area for the storage and use of hazardous materials.

• Conduct soil sampling if hazardous material storage, usage, or a release are identified. Analyze samples to determine if petroleum hydrocarbons, metals, pesticides, or herbicides have contaminated the soil in the vicinity of this facility.

• If the analysis indicates that soils have been contaminated, implement appropriate remedial action (clean-up) plans prior to construction of the dam and inundation of the area.

4.13.3.4 Residual Impacts after Mitigation

No residual impacts would remain after implementation of the standard conditions, planned project design features, and mitigation measures listed above.

4.13.4 Cumulative Effects

4.13.4.1 Other CIP Projects

As described in Section 4.2 (Cumulative Projects for the Moosa 100K Alternative) of this EIR/EIS, it was determined that Hubbard Hill Flow Regulatory Structure, North County Distribution Pipeline Flow Regulatory Structure, and Second Crossover Pipeline are the only CIP projects with the potential for cumulative impacts when combined with the Moosa 100K Alternative. The PEIR for the Regional Water Facilities Master Plan concluded that construction, operation, and maintenance of these Water Authority water infrastructure projects could pose a risk to public safety by increasing the potential for wildfires, exposing workers or the public to hazardous materials, and increasing the potential for acts of vandalism or sabotage.
to critical public facilities. The PEIR outlined several mitigation measures that would be implemented to reduce the potential significance of these to a less-than-significant level.

The potential for project-related fire hazards would be mitigated through the development and implementation of Fire Prevention Programs or Emergency Response Plans (ERP) for each project, as necessary, in consultation with local fire protection services. Risk of exposure to hazardous material would be mitigated through thorough investigation of potential project sites prior to construction; clean up of known contaminated sites; use of proper personal protective equipment; proper use, handling, and storage of hazardous materials to prevent spills; and adequate ERPs that would be implemented in the event of a release or spill. Sabotage and vandalism would be mitigated through implementation of security-related measures such as fencing, secured entryways, alarms and surveillance. The above conclusions are incorporated into the cumulative analyses in Section 4.13.4.2 below.

4.13.4.2 Other Planned Projects with CIP Projects

This section evaluates the cumulative public safety and hazardous materials impacts of the Moosa 100K Alternative when considered in conjunction with the other planned projects listed in Table 4.2-1 (Section 4.2 [Cumulative Projects] of this EIR/EIS), and incorporates the cumulative public safety and hazardous materials impacts associated with the CIP projects described in the above section. The following cumulative public safety and hazardous materials analysis addresses each of the five significance thresholds listed in Section 4.13.3 above.

Cumulative Threshold 1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

The Moosa 100K Alternative would implement safety measures to control and prevent upsets of hazardous materials transported, used, or disposed of during construction and operation. The cumulative projects in the vicinity of the Moosa 100K Alternative primarily include several small and large subdivisions, along with a few small commercial, institutional and industrial developments (see Table 4.2-1). As discussed in Section 4.2 (Cumulative Projects for the Moosa 100K Alternative) of this EIR/EIS, construction impacts related to these projects are assumed to occur within the same timeframe as construction of the Moosa 100K Alternative. These cumulative projects may pose a hazard to the public or the environment through the routine transport, use or disposal of hazardous materials. However, as with the Moosa 100K Alternative and the CIP projects, these cumulative projects would be required to comply with mitigation measures or regulations intended to avoid or mitigate short-term (construction related) and long-term (operational) significant public safety impacts. Therefore, cumulative public safety impacts due to the Moosa 100K Alternative, when combined with the construction and operational public safety impacts associated with the cumulative projects listed in Table 4.2-1 and the CIP projects described in Section 4.13.4.1 above, would be less than significant.
Cumulative Threshold 2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment

The Moosa 100K Alternative would implement safety measures to prevent upsets and control accident conditions during construction activities and operation of the reservoir. Therefore, impacts of the Moosa 100K Alternative would be less than significant. Therefore, cumulative public safety impacts due to the Moosa 100K Alternative, when combined with the construction and operational public safety impacts associated with the cumulative projects listed in Table 4.2-1 and the CIP projects described in Section 4.13.4.1 above, would be less than significant.

Cumulative Threshold 3: Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment

Based on limited field reconnaissance and review of historic land use and hazardous material records, the potential is high for the presence of non-routine levels of hazardous materials in the Moosa 100K study area. As described above in Section 4.13.3.2, a number of listed hazardous materials sites occur within the Moosa 100K study area. Construction of the Moosa 100K Alternative would result in the disturbance of these hazardous materials. Other cumulative projects in the area (Table 4.2-1), and the CIP projects described above in Section 4.13.4.1, may also have the potential to disturb non-routine levels of hazardous materials. Therefore, short-term (construction related) cumulative public safety impacts due to the Moosa 100K Alternative, when combined with short-term public safety impacts associated with the cumulative projects listed in Table 4.2-1 and the CIP projects described above in Section 4.13.4.1, would be significant.

Cumulative Threshold 4: Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam

The Moosa 100K Alternative would be designed with a safety goal of one in a million, so catastrophic dam failure and associated downstream flooding would be extremely low. The CIP projects described above in Section 4.13.4.1 and other cumulative projects in the vicinity of the Moosa 100K Alternative listed in Table 4.2-1 would not involve the construction of a levee or dam. As with the Moosa 100K Alternative and the CIP projects, these cumulative projects would be required to comply with mitigation measures or regulations intended to avoid or mitigate short-term and long-term significant public safety impacts as a result of flooding. Therefore, cumulative public safety impacts due to the Moosa 100K Alternative, when combined with short-term and long-term cumulative public safety impacts associated with the cumulative projects listed in Table 4.2-1 and the CIP projects described in above Section 4.13.4.1, would be less than significant.
**Cumulative Threshold 5: Increase boating accidents due to increased recreational use of any reservoir**

The Moosa 100K Alternative would generate a negligible increase in boating accident potential. The CIP projects described above in Section 4.13.4.1 above and the cumulative projects in the vicinity of the Moosa 100K Alternative listed in Table 4.2-1 do not involve the construction or creation of recreational boating opportunities. Therefore, cumulative public safety impacts due to the Moosa 100K Alternative would be less than significant.

The Moosa 100K Alternative would implement safety measures to control the transport, use, disposal or accidental release of hazardous materials. The Moosa 100K Alternative dam and marina facilities would be designed such that downstream flooding from overtopping of the spillway would be minimized. The Moosa 100K Alternative would generate a negligible increase in boating accident potential. Therefore cumulative impacts due to the Moosa 100K Alternative for these activities, when combined with the short-term (construction related) and long-term (operational) public safety impacts associated with the CIP projects listed above and planned cumulative projects listed in Table 4.2-1, would be less than significant.

The Moosa 100K Alternative would result in significant project-specific public safety impacts due to the disturbance of non-routine hazardous materials (Impact M/HM 1). The Water Authority will implement the Mitigation Measures M/HM 1-1 through M/HM 1-8, described in above Section 4.13.3.3 to reduce public safety to a less-than-significant level. Therefore, cumulative public safety impacts due to the Moosa 100K Alternative when combined with the construction-related public safety impacts associated with the CIP projects listed above and other cumulative projects listed in Table 4.2-1, would be less than significant (Impact M/HM 1C).