3.8 Hydrology and Water Quality

This section presents details about the existing setting and the regulatory for hydrology and water quality. It also presents an analysis of the hydrology and water quality impacts that would result from implementing the Clay Pit SVRA General Plan, including constructing and operating the headquarters facilities.

3.8.1 Existing Setting

This section includes additional setting information to supplement the hydrology and water quality setting information provided in Section 2.3.1, "Physical Resources," of the Clay Pit SVRA General Plan. The General Plan describes the surface water resources near and on Clay Pit SVRA, including a description of culverts and surface flows that drain into the SVRA, a drainage canal that runs through the SVRA to an outlet at its eastern boundary, a series of ditches and gullies that drain surface flows into the main drainage canal, and the outlet of all drainage into a remnant oxbow of the Feather River. The General Plan also describes surface water management in the area, groundwater resources and their management, water supply and demand, and surface water quality. General Plan Section 2.3.2, "Biotic Resources," and Section 3.5, "Biological Resources" in this DEIR contain additional details regarding wetlands and vernal pools on the project site.

3.8.2 Regulatory Setting

Section 2.7, "Planning Influences," of the Clay Pit SVRA General Plan summarizes the planning and regulatory information related to hydrology and water quality at the SVRA. Specifically, Section 2.7.1, "Systemwide Planning," includes a summary of the *2008 Soil Conservation Standard and Guidelines* (State Parks 2008) and the OHV BMP Manual (State Parks 2007). Section 2.7.3, "Regulatory Influences," includes a summary of Sections 401 and 404 of the CWA, California Fish and Game Code 1602, and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

Federal Plans, Policies, Regulations, and Laws

Federal Clean Water Act of 1972

In 1972, the Federal Water Pollution Control Act (later referred to as the Clean Water Act [CWA]) was amended to require National Pollutant Discharge Elimination System (NPDES) permits for the discharge of pollutants to waters of the U.S. from any point source. In 1987, the CWA was amended to require that EPA establish regulations for permitting of municipal and industrial storm water discharges under the NPDES permit program. EPA published final regulations regarding storm water discharges on November 16, 1990. At that time, NPDES regulation was promulgated to the SWRCB. The regulations require that discharges to surface waters from municipal separate storm [water] sewer system (MS4) be regulated by a NPDES permit. Permitting occurred in two phases: Phase I covered operators of medium and large MS4s, that is, those that generally serve populations of 100,000 or greater; the Phase II Final Rule, published in

the Federal Register on December 8, 1999, required NPDES permit coverage for storm water discharges from municipalities not previously covered under Phase I. The following CWA sections are most relevant to this analysis:

- Section 401 of the CWA requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. obtain a state certification that the discharge complies with other provisions of the CWA. The SWRCB administers the certification program through its nine RWQCBs.

- Section 404 of the CWA established a program to regulate the discharge of dredged or fill materials into waters of the U.S., including wetlands. This program is administered by USACE.

- Section 303(d) of the CWA requires states to develop a list of water bodies that are considered to be "impaired" from a water quality standpoint, as described below.

Clean Water Act Section 303(d) List of Water Quality Limited Waterways

Under Section 303(d) of the CWA, each state is required to develop a list of surface water bodies that are impaired for water quality. The waters on the list are designated as not meeting water quality standards, even after water pollution control measures have been implemented at pollution point sources. The law requires that waters on the list be ranked for the development of action plans, including total maximum daily load (TMDL) pollution thresholds, to improve the water quality (SWRCB 2007). TMDLs are a calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards.

The Lower Feather River (Lake Oroville Dam to Confluence with Sacramento River) is listed as impaired in the final 2008 California 305(b)/303(d) integrated report list for chlorpyrifos, Group A pesticides, mercury, polychlorinated biphenyls (PCBs), and unknown toxicity (SWRCB 2009). The current TMDLs for the Marysville hydrological unit are:

- Chlorpyrifos: 0.025 micrograms per liter (µg/l); 1-hour average (acute) 0.015 µg/l; 4-day average (chronic)

- Diazinon: 0.16 µg/l; 1-hour average (acute) 0.10 µg/l; 4-day average (chronic)

These pesticide objectives are not to be exceeded more than once in a 3-year period (State Parks 2011; SWRCB 2008). TMDLs for all other listed pollutants are proposed to be completed between 2011 and 2021.

State Plans, Policies, Regulations, and Laws

OHV BMP Manual for Erosion and Sediment Control

The OHV BMP Manual was prepared for the OHMVR Division to provide guidelines for selecting and implementing BMPs to prevent impacts to water quality from OHV trail construction projects; the construction and maintenance of low-volume access roads; the creation of new buildings, campgrounds, and other visitor facilities; special OHV events; and routine park maintenance. The OHV BMP Manual was compiled for specific use by SVRAs, but also provides BMP selection and design guidance useful statewide.

The OHV BMP Manual provides methods to minimize the impacts of erosion and sedimentation on water quality, including guidance for selecting appropriate BMPs for storm water pollution prevention plans (SWPPPs) required by the NPDES permit for construction activity. There is also guidance on designing and building trails and roadways in a manner that will minimize watershed and water-quality impacts.

To comply with existing water-quality and erosion-control regulations, goals outlined in the OHV BMP Manual are as follows (State Parks 2007):

1. Minimize soil erosion and compaction of soils resulting in loss of soil productivity and sedimentation to waterways.

2. Minimize disturbance and sedimentation to riparian areas, wetlands, and waterways adversely impacting amphibians and wildlife.

3. Minimize spread of invasive, nonnative, and noxious weeds along travel routes, and minimize disturbance to botanical resources.

4. Prevent the creation of additional routes in Environmentally Sensitive Areas.

Statewide General NPDES Permit for Construction Activity

The State of California adopted a new Construction General Permit on September 2, 2009, and enforcement began on July 1, 2010. SWRCB Water Quality Order 2009-0009-DWQ (Construction General Permit) regulates construction site storm water management. Dischargers whose projects disturb 1 or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the Construction General Permit for discharges of storm water associated with construction activity. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

Permit applicants are required to submit a notice of intent to SWRCB and to prepare a SWPPP. The SWPPP identifies BMPs that must be implemented to reduce construction effects on receiving water quality based on pollutants anticipated at the construction site. The BMPs identified are directed at implementing both sediment- and erosion-control measures and other measures to control potential chemical contaminants. The SWPPP also includes descriptions of postconstruction BMPs intended to reduce pollutants in storm water discharges after all construction phases have been completed.

Central Valley Basin Plan

Section 13240 of the Porter-Cologne Act requires each RWQCB to formulate and adopt water quality control plans, or basin plans, for all areas within the region. The Basin Plan for the Central Valley Basin (Central Valley RWQCB Region 5), revised September 2009, establishes water-quality objectives for constituents that could potentially cause an adverse effect or impact on the beneficial uses of water (Central Valley RWQCB 2009). Specifically, the Central Valley Basin Plan is designed to accomplish the following:

(1) designate beneficial uses for surface and ground waters;

(2) set the narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to California's anti-degradation policy;

(3) describe implementation programs to protect the beneficial uses of all water in the region; and

(4) describe surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan.

The Central Valley Basin Plan incorporates by reference all applicable SWRCB and RWQCB plans and policies.

3.8.3 Thresholds of Significance

The significance criteria for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. Implementation of the Clay Pit SVRA General Plan, including construction and operation of the headquarters facilities, would have significant environmental impacts related to hydrology and water quality if it would:

- violate any water quality standards or waste discharge requirements;
- substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop

to a level which would not support existing land uses or planned uses for which permits have been granted);

- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- otherwise substantially degrade water quality;
- place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- place within a 100-year flood hazard area structures which would impede or redirect flood flows; or
- 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 by seiche, tsunami, or mudflow.

Because Clay Pit SVRA contains very impervious soils, it does not allow a substantial amount of infiltration for groundwater recharge. This issue is not discussed further in this DEIR.

Because no storm drain systems exist at the SVRA, implementation of the General Plan would not create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems. This issue is not discussed further in this DEIR.

Because implementation of the General Plan would not involve the construction of housing, it would not place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. This issue is not discussed further in this DEIR.

Although portions of Clay Pit SVRA are located within a 100-year flood hazard area, construction of facilities envisioned and proposed in the General Plan would not obstruct flood flows that already exist and are anticipated to continue across the project site. This issue is not discussed further in this DEIR.

Because existing flood patterns are anticipated in the planning and design of facilities proposed and envisioned in the General Plan, and because flooding as a result of the failure of a levee or dam, or by seiche, tsunami, or mudflow is not anticipated, implementing the Clay Pit SVRA General Plan would not expose people or structures to a significant risk of loss, injury or death involving flooding. This issue is not discussed further in this DEIR.

3.8.4 Environmental Evaluation

Evaluation Methodology

This analysis of potential impacts on hydrology and water quality resources resulting from implementation of the Clay Pit SVRA General Plan is based on a review of documents containing information on existing hydrology, water supply, and water quality resources on or near the project site. Information sources include publically available reports and documents, state water resource and ecosystem online databases, resource-specific reports and databases, and a Ph.D. dissertation. The analysis also included review of documentation regarding reconnaissance-level survey for vernal pools and review of wetland delineation documentation at the project site. Standards and guidelines for soil conservation and best management practices for erosion and sediment control were also reviewed.

Relevant documents that were reviewed during preparation of this analysis include:

- California 303(d) list of water quality limited segments, Category 5, 2008 (SWRCB 2009);
- California State Water Project – Oroville Complex – Thermalito Facilities (DWR 2010);
- "Characterization of Heavy Metal Particles Embedded in Tire Dust" (Adachi and Tainosho 2004);
- Clay Pit SVRA Watershed Analysis and Action Plan (State Parks 2011);
- Draft Preliminary Delineation of Waters of the U.S., Including Wetlands. Clay Pit State Vehicular Recreation Area Project in Oroville, California (AECOM 2010);
- Basin Management Objective, Butte County, Sub-Inventory Unit, Thermalito (BMO 2010);
- Butte County Groundwater Management Plan, Thermalito Sub-Area (Butte County 2005);
- Butte County Operational Plan 2009–2010 (Butte County 2010);
- Explorer - Online encyclopedia of plants, animals, and ecosystems of the U.S. and Canada (NatureServe 2010);
- Geotechnical Investigation, Clay Pit SVRA, Oroville, Butte County, California (Geocon 2010);

- Impact of Turfgrass Systems on the Nutrient Status of Surface Water, and Ground Water (Zwierschke 2009);
- Lower Feather Watershed – 18020106, Lower Feather Watershed Profile (EPA 2011);
- OHV BMP Manual for Erosion and Sediment Control (State Parks 2007);
- Oroville Reservoir and Thermalito Facilities, Northern California Water Association (NCWA 2010);
- Proposed 2006 CWA Section 303(d) List of Water Quality Limited Segments, Central Valley Regional Board (SWRCB 2007);
- Resolution No. 2008-0013, Sacramento and Feather River Diazinon and Chlorpyrifos TMDL (SWRCB 2008);
- 2008 Soil Conservation Standard and Guidelines (State Parks 2008);
- Special Status Shrimp Reconnaissance Surveys at Clay Pit OHV Park (EcoAnalysts 2010);
- The Lower Feather River HUC/Honcut Creek Watershed Existing Conditions Assessment, Sutter County Resource Conservation District (Foothill Associates 2010);
- The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board – Central Valley Region, fourth edition, revised September 2009 (Central Valley RWQCB 2009);
- University of California Santa Barbara Biogeography Lab Website (2011); and
- Watershed Browser (CDC 2010).

General Plan Impact Analysis

IMPACT 3.8-1 Changes in Drainage Patterns or Amount of Surface Runoff That Could Result in Flooding or Erosion and Sedimentation

Constructing the facilities envisioned and proposed in the Clay Pit SVRA General Plan, including the headquarters facilities, would provide or upgrade park facilities related to administration, maintenance operations, and recreation opportunities.

New development often increases the amount of impervious surfaces across a project site. Because impervious surfaces preclude the infiltration of water into the ground, they often increase

the amount of runoff across a project site. An increase in runoff can pose risks associated with flooding, and erosion and sedimentation.

New development also often requires changing drainage patterns across a project site to accommodate new facilities. Changing drainage patterns can change the rate or amount of surface runoff, which can also pose risks associated with flooding, erosion and sedimentation.

Some of the improvements proposed and envisioned in the General Plan, such as the headquarters building, roads, and parking areas, would result in an increase in impervious surfaces (e.g., rooftops, pavement). Others, such as the maintenance yard, unpaved staging areas, and OHV tracks, would be covered with road base and other somewhat pervious surfaces, and would not be expected to substantially change the permeability of these surfaces. Because the size of new impervious surfaces would be small in comparison to the 220-acre project site (Figure 2-3), the relative increase in impervious surfaces would be minimal. In addition, the soil at the Clay Pit SVRA site has a high clay content and is already very impermeable, so the addition of impervious surfaces would have little effect on water infiltration and surface runoff. Implementing the General Plan would result in a very limited increase in impervious surfaces and associated increased runoff.

Many of the improvements proposed and envisioned in the General Plan, such as the headquarters building, roads, parking areas, and OHV tracks may require small alterations in local surface water drainage patterns as flows are directed around these facilities. However, ultimately these flows would flow to the main drainage canal that runs through the project site, consistent with existing drainage patterns. Therefore, these small changes in drainage patterns would have a negligible effect on the flooding characteristics of the site. In addition, the General Plan calls for the construction of sediment traps and basins to accompany the envisioned recreation facilities (e.g., OHV tracks). These facilities would treat surface flows that may contain sediment and other pollutants onsite. Because the project site does not currently contain any facilities to prevent erosion and sedimentation, the addition of these treatment facilities is expected to improve erosion and sedimentation conditions over existing conditions.

According to Clay Pit SVRA General Plan Soil Guidelines 1.1, 1.2, and 1.3 all facility improvements would comply with the *2008 Soil Conservation Standard and Guidelines*, and the OHV BMP Manual. Furthermore, consistent with Water Guidelines 2.1 and 2.2, operation-related (post construction) BMPs such as vegetated swales and infiltration basins or trenches would also be implemented where appropriate. These efforts would further mitigate increases in the rate or amount of runoff and the resulting potential for erosion and sedimentation.

Because the amount of new impervious surface created would be relatively small, because the majority of the site already exhibits a restrictive soil layer, and because appropriate water quality regulations and BMPs would be followed, potential flooding and erosion impacts related to

drainage patterns and runoff associated with implementation of the General Plan, including constructing and operating the headquarters facilities, would be ***less than significant.***

Mitigation Measures: No mitigation is required.

IMPACT 3.8-2 Reduced Surface Water Quality Caused by Erosion, Sedimentation, and Polluted Runoff

The potential for erosion generally increases as a result of human activity, primarily through developing structures and other impervious surfaces and removing vegetative cover. Erosion may also occur where unprotected surfaces are exposed to regular or continual disturbance. The degree of erosion these activities cause often depends on the frequency of disturbance, soil conditions, and climate. The geology and soils sections of this DEIR and the Clay Pit SVRA General Plan include discussions of the potential for the native soils at the SVRA to erode.

Implementation of the General Plan would have a potential to cause an increase in erosion and sedimentation affecting surface water quality as a result of construction activities and increased vehicular traffic. During construction, grading activities required for elements such as building pads, roads, staging areas, and tracks would change ground surface contours and drainage patterns, and loosen surface soils, making them more susceptible to erosion. The mechanical energy of vehicle tires turning on soil also loosens surface soils, making them more susceptible to erosion by wind and water. Vehicle tires can also remove vegetative cover thus decreasing the vegetation's function in helping to stabilize soils. An increase in OHV activity at the SVRA would increase this potential for erosion.

At Clay Pit SVRA, sheet flow and/or concentrated flows of water can pick up eroded soils and transport suspended sediments through the SVRA. Vehicle use creates depressions in the basin, and runoff flows into these depressions, creating drainage connections between vernal pools and gullies throughout the SVRA. Eventually, water drains to the main drainage canal and then off-site to the abandoned oxbow of the Feather River along the eastern property boundary. The transport and deposition of such sediments can decrease water quality within the various drainages (particularly the main drainage canal) and vernal pools within the SVRA, and within water features located downstream and off-site (State Parks 2011).

Implementation of the General Plan would also have a potential to cause an increase in the accidental or incidental release of other pollutants to surface waters as a result of construction activities and increased vehicular traffic. Pollutants such as sewage, and lubricants and fuels associated with vehicle operation, fueling, and maintenance can be dripped or spilled during construction activities, OHV recreation activities, and maintenance activities. Runoff and drainage flows can transport such pollutants throughout Clay Pit SVRA and then off-site, thus decreasing water quality. The increased use of these materials that would result from proposed and

envisioned construction activities, maintenance activities, and OHV recreation activities would also increase the potential for water quality degradation.

However, implementation of the General Plan would be subject to compliance with all federal, regional, and state water quality standards, as stated in the basin plan for the Central Valley Region, and as implemented through the Central Valley RWQCB (2009).

In addition, the General Plan contains extensive goals and guidelines designed to eliminate or minimize the potential for increased soil erosion and sedimentation, the discharge of other pollutants into waterways, and potential resulting water quality degradation. Although other sections of this DEIR generally do not quote Goals and Guidelines directly but instead summarize their content, the entire content of all relevant Goals and Guidelines is provided below to clearly demonstrate the degree of emphasis given to water quality improvement in the General Plan. The following goals and guidelines from the Clay Pit SVRA General Plan directly address these issues in various ways:

Drainage Management Area (DMA) Goal 1: Develop a parkwide water quality management plan to improve the quality of all surface waters entering Clay Pit SVRA, traveling through Clay Pit SVRA, and leaving Clay Pit SVRA through the Drainage Management Area.

- **DMA Guideline 1.1:** Coordinate with the Butte County Division of Environmental Health, State Water Resources Control Board, Central Valley RWQCB, Oroville Municipal Airport, and Table Mountain Golf Course to identify potential sources of pollutants, including nonpoint sources, entering Clay Pit SVRA from off-site. Develop management strategies for control of these pollutants, including sediment, lubricants, debris from tire wear, heavy metals, fertilizers, and herbicides related to operations at the airport and the golf course, and runoff from Larkin road.

- **DMA Guideline 1.2:** Identify, design, and implement measures that would eliminate or minimize potential impacts on water quality, including erosion and sedimentation. Define or outline all practices to be used parkwide that could affect water quality. These practices could include practices to be used at fueling and maintenance sites; cleanup practices in case of accidental release of pollutants; maintenance practices for sediment traps, basins, and swales; and steps to follow when adaptive management requires temporary or permanent closures of sensitive areas.

- **DMA Guideline 1.2:** Incorporate practices related to water quality that are developed to satisfy Water Goals 1 and 2 and associated guidelines; Water Guidelines 4.1 and 4.2; DMA Goal 2 and associated guidelines; Plant Guideline 1.3; Soils Guidelines 1.1, 1.2, and 1.3; NRM Guidelines 2.1 and 2.2, OM Guideline 1.5, OM Guideline 4.5, and DU Guideline 3.1.

DMA Goal 2: Implement actions within the Drainage Management Area to improve water quality and to meet water quality standards.

- **DMA Guideline 2.1:** To reduce erosion and sedimentation, rehabilitate degraded areas of the main drainage canal that have experienced substantial erosion from surface water runoff (e.g., the head cut at the beginning of the canal, areas of deep incision). Implement rehabilitation concepts for these features as described in the *Clay Pit SVRA Watershed Analysis and Action Plan* (State Parks 2011).

- **DMA Guideline 2.2:** Rehabilitate native vegetation in the Drainage Management Area to serve as filter of sediment and other pollutants that enter this area.

- **DMA Guideline 2.3:** Construct bridges, culverts, and/or low-flow crossings across the main drainage canal. Restrict OHV use in the Drainage Management Area.

Water Goal 1: Manage Clay Pit SVRA for the protection of jurisdictional waters of the U.S., including wetlands, while maintaining a quality OHV recreational experience.

- **Water Guideline 1.1:** Avoid or minimize locating facilities in areas delineated as jurisdictional waters of the U.S., including wetlands.

- **Water Guideline 1.2:** If impacts on jurisdictional features cannot be fully avoided, determine the acreage of direct impacts (i.e., fill of wetlands) and indirect impacts (i.e., alterations to wetland hydrology) that would result from project implementation. Obtain a CWA Section 404 permit from USACE, CWA Section 401 certification from the Central Valley RWQCB, a Section 1602 Streambed Alteration Agreement from DFG, and hold a Section 7 Consultation with the USFWS, as appropriate. Implement all conditions of these agreements such that the acreage of all affected wetlands and other waters of the U.S. are replaced, restored, or enhanced on a "no net loss" basis, in accordance with CWA Sections 404 and 401 requirements, the California Fish and Game Code, and the ESA. Restore, enhance, and/or replace wetland habitat acreage at a location and by methods agreeable to USACE, the Central Valley RWQCB, DFG, and/or USFWS as appropriate and depending on agency jurisdiction.

Water Goal 2: Manage Clay Pit SVRA for the protection of water quality while maintaining a quality OHV recreational experience.

- **Water Guideline 2.1:** Before, during, and following the construction of facilities proposed and envisioned in this General Plan, implement all water quality control measures required under the National Pollutant Drainage Elimination System (NPDES) Construction General Permit (2009-0009-DWQ). Develop a storm water pollution prevention plan, including the

identification of BMPs that must be implemented to reduce water quality degradation of receiving waters during and following construction activities. Incorporate construction BMPs from the OHV BMP Manual as appropriate.

- **Water Guideline 2.2:** When developing detailed plans for facilities proposed and envisioned in this General Plan, incorporate permanent water quality control features, as appropriate. Construct sediment traps, sediment basins, and bioswales as described in *Clay Pit SVRA Watershed Analysis and Action Plan* (State Parks 2011) to treat runoff from developed OHV facilities, such as tracks. Incorporate information from the OHV BMP Manual and the *2008 Soil Conservation Standard and Guidelines* as appropriate to designs. Select water quality control features appropriate to site conditions at Clay Pit SVRA (e.g., relatively impervious soils).

- **Water Guideline 2.3:** To reduce erosion and sedimentation, improve degraded areas that have experienced substantial erosion from surface water runoff (e.g., gullies that concentrate surface water flows toward the central drainage canal). Implement rehabilitation concepts for these features as described in the *Clay Pit SVRA Watershed Analysis and Action Plan* (State Parks 2011).

- **Water Guideline 2.4:** Support the efforts of the Sacramento Valley Water Quality Coalition and the Butte/Yuba/Sutter Water Quality Coalition to implement a BMP program and a program to monitor BMP effectiveness to protect regional water quality (SCRCD 2010a; SWRCB 2008).

- **Water Guideline 2.5:** Restrict temporary disturbances related to construction activities in drainage areas to the dry season.

- **Water Guideline 4.1:** If groundwater is encountered during construction of facilities proposed and envisioned in this General Plan, conduct dewatering activities in compliance with the NPDES Construction General Permit to avoid flooding in excavated areas.

- **Water Guideline 4.2:** When developing detailed plans for facilities envisioned in this General Plan, consider known areas of localized seasonal flooding at Clay Pit SVRA and avoid locating new facilities in such areas.

- **Plants Guideline 1.3:** For landscaping, use drought-tolerant plants, and as feasible, use plants and materials native to the site. Select plants that require little or no irrigation. If irrigation is required for plant establishment, use temporary irrigation methods that allow a gradual tapering of water over a 3–5 year period. Regulate water pressure at a level that applies sufficient water without causing erosion, damage to plants, or runoff.

- **Soils Guideline 1.1:** Manage Clay Pit SVRA recreation facilities to meet the 2008 Soil Conservation Standard:

  > Off-highway vehicle (OHV) recreation facilities shall be managed for sustainable long-term prescribed use without generating soil loss that exceeds restorability, and without causing erosion or sedimentation which significantly affects resource values beyond the facilities. Management of OHV facilities shall occur in accordance with Public Resources Code, Sections 5090.2, 5090.35, and 5090.53.

- **Soils Guideline 1.2:** Develop an adaptive management plan for soil resources consistent with California PRC Section 5090.35(a) and the 2008 Soil Conservation Standard. Incorporate the tools and techniques identified in the *2008 Soil Conservation Standard and Guidelines* as appropriate to site conditions at Clay Pit SVRA. Also incorporate other tools and techniques that may apply to specific facility conditions and management structure at Clay Pit SVRA.

- **Soils Guideline 1.3:** Incorporate the guidance provided in the *OHV BMP Manual for Erosion and Sediment Control* (OHV BMP Manual) (State Parks 2007) when planning for the development of new OHV facilities. Select, implement, and maintain best management practices (BMPs) during and following construction activities to avoid soil loss and potential resulting air pollution or degradation of water quality.

- **NRM Guideline 1.4:** Implement the OHMVR Division's habitat management system consistent with biological provisions in the Off-Highway Motor Vehicle Recreation Act to monitor and manage natural processes of vegetation succession, to control the spread of noxious and invasive weeds, and to protect natural wildlife habitat. Select scientifically accepted techniques and measures appropriate for the unique habitats found within Clay Pit SVRA. Develop protocols for baseline studies, focused studies, monitoring, and surveys. Use the habitat management system as a tool to aid in the development of park-specific monitoring plans and management techniques.

- **NRM Guideline 2.1:** Develop an adaptive management plan for biological resources that combines the results of monitoring implemented through the habitat management system (NRM Guideline 1.4) and monitoring for soil conservation (Soils Guideline 1.2). Identify and establish Adaptive Management Opportunity Zones in areas of high-quality natural habitat (e.g., remnant vernal pool grassland) and sensitive habitat (e.g., particular vernal pools), around areas showing indications of natural succession toward a desirable natural community type (e.g., volunteer cottonwood seedling growth), or where populations of special-status native wildlife and special-status plant species occur or could occur (e.g., elderberry shrub). Implement management actions to protect these zones from activities

that could disturb sensitive resources or to enhance/restore them as part of the adaptive management process, should resource degradation be detected during monitoring.

- **NRM Guideline 2.2:** Consider temporary or rotating closures around Adaptive Management Opportunity Zones and around areas experiencing heavy use to allow for natural regenerative processes to occur before degradation of resources requires more restrictive management actions. Consider the use of directional signage to inform visitors of sensitive and closed areas. (See IE Guideline 3.3).

- **OM Guideline 1.5:** Construct and design vault toilets that provide sufficient capacity to store wastewater to accommodate visitor needs and meet all related wastewater disposal regulatory requirements. Before constructing new vault toilets, confirm with the Sewerage Commission—Oroville Region (SCOR) that adequate treatment capacity still remains at the SCOR wastewater treatment plant at the time that new vault toilets would be built.

- **OM Guideline 4.5**: Anticipate and accommodate an increased need for restroom facilities during special events.

- **DU Guideline 3.1:** Design and construct the on-site septic system at the headquarters facilities to provide sufficient wastewater treatment capacity to accommodate proposed uses at the headquarters facilities and to meet all related septic system regulatory requirements as may be applicable.

IE Goal 3: Expand understanding of ecological relationships and heighten awareness of and sensitivity to human impacts.

- **IE Guideline 3.1:** Work with interested parties to provide education about the natural ecosystem processes at Clay Pit SVRA. Seek assistance in developing creative interpretive programming from organizations such as Tread Lightly.

- **IE Guideline 3.2:** Provide opportunities for visitors to gain an understanding of Clay Pit SVRA's natural resources, including vernal pools and grasslands. Interpret vernal pool ecology and explain sensitivities to human impacts.

- **IE Guideline 3.3:** Highlight opportunities for OHV riders to minimize their impacts on natural resources through engaging, creative interpretive programming. Provide information about temporary and rotating closed areas to encourage visitors to allow natural regenerative processes to occur in these areas. (See NRM Guideline 2.2.)

- **IE Guideline 3.4**: Provide directional signage indicating the location of fueling and maintenance sites within Clay Pit SVRA, and provide educational information regarding the use and need for these facilities. (See DU Guideline 1.4.)

- **IE Guideline 3.5:** Provide opportunities for visitors to gain an understanding of regional and local water quality issues, including the importance of implementing good water quality practices at Clay Pit SVRA. Interpret the on-site surface water drainage system and include information on potential water quality pollution sources, about infiltration properties of the local soils, and about the importance of on-site treatment measures (e.g., sediment basins, vegetative buffers).

With implementation of these Clay Pit SVRA General Plan goals and guidelines, and with compliance with all pertinent federal, state, and regional water quality standards and laws, water quality impacts related to erosion, sedimentation, and polluted runoff would be ***less than significant***.

Mitigation Measures: No mitigation is required.

IMPACT 3.8-3 Inadequate Water Supply or Depletion of Groundwater

No water supply currently exists at Clay Pit SVRA. Implementation of the Clay Pit SVRA General Plan would require water for landscape irrigation, dust control on unpaved roads and track areas, and for restroom facilities at the headquarters. The majority of the water demand would be to control dust. Water would be stored in one or more aboveground tanks, which would be used to fill water trucks, and could also provide water pressure for piped water uses (e.g., irrigation).

The amount of water required for implementation of the General Plan is estimated to equal or be less than that used at the Prairie City SVRA in Rancho Cordova. The amount of water used in 2009 at the Prairie City SVRA was approximately 24,500,000 gallons, or 75 acre-feet. The highest water use is from March through October, when use is about 50–70% greater than during November through February. In summer, watering takes place 10 to 12 hours per day Friday through Sunday at a rate of about 12,000 to 15,000 gallons per track. During the driest parts of the year the highest daily usage at Prairie City SVRA is approximately 178,000 gallons; the highest monthly usage is approximately 3,124,600 gallons (9.59 acre-feet). Water demand does not exceed a maximum of 125 gallons per minute.

Water supplies in the area of Clay Pit SVRA include both surface water and groundwater. The headquarters facilities will obtain water through the construction of a new on-site well. Because the water supply source that will be used to support future development envisioned in the General Plan has not yet been determined, both surface water and groundwater are evaluated herein.

Using groundwater as a water supply would depend on the ability of the supply to meet both short-term (daily use) and long-term (expected life of the project) project needs without causing the supply to be depleted (i.e., a net deficit of aquifer volume or a lowering of the local groundwater table level). Groundwater depths in the East Butte Subbasin have remained fairly stable over time. Review of well data from the California Department of Water Resources indicates that depth to groundwater near the Clay Pit SVRA site varies seasonably from approximately 30 to 45 feet below ground surface (Geocon 2010). Shallow wells can yield large quantities of water, reported from 200 to 2,000 gallons per minute (SCRCD 2010). Long-term observations of nearby wells suggest that periodic declines in groundwater elevations are climate related and not the result of overusing groundwater resources. See Section 2.3.1, "Physical Resources," of the Clay Pit SVRA General Plan for additional discussion of groundwater resources. Based on this groundwater data, the groundwater supply within the area of the SVRA appears to have adequate production rates and adequate supply for the long-term water demand required to implement the General Plan without causing a net deficit of aquifer volume or a lowering of the local groundwater table level.

An alternative to developing an on-site groundwater supply would be purchasing water from Butte County. This water could be conveyed to the Clay Pit SVRA site from facilities that supply water to the nearby Oroville Municipal Airport. The SVRA is located in an area of abundant surface water resources with Lake Oroville and the Feather River located nearby. Since Butte County became a State Water Project contractor in the1960s, the County has sought to find in-county uses for its entire allocation. However, because water costs and water infrastructure costs are high, Butte County has been unable to use the entire 27,500 acre-foot allocation within the County. Although the in-county utilization doubled in 2008-2009, the Butte County Department of Water and Resource Conservation (Department) is continuing a feasibility study to investigate options for the use of their entire contracted allocation. Until full in-county utilization can be achieved, the Department will continue to pursue opportunities that allow for the management of surplus water (Butte County 2010). See Section 2.3.1, "Physical Resources," of the General Plan for additional discussion of surface water resources. Because Butte County has historically had a surplus of water allocated through the State Water Project, this water would be suitable to meet the long-term water demand required to implement the General Plan.

In addition, Clay Pit SVRA General Plan Water Guideline 3.1 requires that when the OHMVR Division is developing detailed plans for facilities envisioned in the General Plan, they assess available water sources that will yield sufficient water supplies needed for operation and maintenance of facilities, and that they develop this water supply as appropriate in compliance with state regulatory requirements at that time. This would account for any change in water supply or water supply regulation between now and when facilities proposed or envisioned in the General Plan are constructed.

Because information regarding groundwater and surface water supplies indicate that these supplies would be adequate to meet the long-term needs of Clay Pit SVRA following implementation of the General Plan, and because Water Guideline 3.1 addresses potential changes in this supply, impacts related to inadequate water supply or the depletion of groundwater would be ***less than significant***.

Mitigation Measures: No mitigation is required.

IMPACT 3.8-4 Violation of Water Quality Standards or Waste Discharge Requirements

The Lower Feather River (Lake Oroville Dam to the confluence with Sacramento River), located approximately 0.5 mile east of Clay Pit SVRA, is listed as impaired on the current Section 303(d) list. All surface water from the watershed drains through the SVRA to the Lower Feather River during high flow events via an abandoned oxbow on the east.

All federal, regional, and state water quality standards, as stated in the basin plan for the Central Valley Region, are implemented through the Central Valley RWQCB (2009). These standards have been set to control both point and nonpoint sources of water pollution.

As described in Impact 3.8-2 above, implementation of the General Plan would have a potential to increase the amount of pollutants entering water features within the Clay Pit SVRA area. However, consistent with Clay Pit SVRA General Plan Soils Guidelines 1.1 through 1.3, Water Guidelines 1.1, 1.2, 2.1, 2.2, and 4.1, all development associated with the General Plan would conform to water quality standards enforced by the SWRCB, through compliance with the newly adopted NPDES Construction General Permit, Sections 401 and 404 of the CWA, all State Parks and OHMVR Division standards and guidelines, and all other relevant standards and regulations described above and in Section 2.7.3, "Regulatory Influences," of the General Plan.

Because implementation of the General Plan would adhere to pertinent federal, state, and regional water quality standards, no water quality standards would be violated and this impact would be ***less than significant***.

Mitigation Measures: No mitigation is required.

Headquarters Facilities Impact Analysis

The impact analyses described above under "General Plan Impact Analysis" address potential impacts related to all aspects of the General Plan, including constructing and operating the headquarters facilities. No potential impacts associated with construction or operation of the headquarters facilities would be in addition to or otherwise different from the potential impacts described above; therefore, no additional analysis related to the headquarters facilities is necessary.

3.8.5 Summary of Significant Impacts

Adoption of the Clay Pit SVRA General Plan and implementation of resulting actions would not result in significant impacts on hydrology and water quality resources. Constructing and operating the headquarters facilities also would not result in significant impacts on hydrology and water quality resources.

3.8.6 Mitigation Measures

No significant impacts on hydrology and water quality would result with implementation of the Clay Pit SVRA General Plan, including construction and operation of the headquarters facilities, and no mitigation is required.

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