

# Chapter 4. Environmental Consequences

## 4.1 Introduction

### 4.1.1 Overview of the Impact Analysis

The Contra Loma RMP is a programmatic, planning-level document that provides management direction at a broad scale and is not intended to provide project-level detail of future management actions or projects. For this reason, the EIS evaluates the environmental impacts of each RMP alternative in a programmatic manner. Future actions carried out under the purview of the RMP beyond the programmatic analysis presented in the EIS would be subject to project-level NEPA analysis and compliance.

The Environmental Consequences chapter evaluates the environmental impacts that would result from implementing each of the alternatives. The chapter is organized in sections by resource topic. Each resource section begins with a brief description of the resources addressed within the section and the types of activities that could affect the resource, followed by a list of assumptions upon which the analysis is based. The impacts of activities common to all of the alternatives are then discussed, followed by a discussion of impacts unique to each alternative. Where appropriate and if feasible, the EIS then describes mitigation measures that would avoid and/or minimize impacts to the resource.

### 4.1.2 Cumulative Effects

Cumulative effects are discussed at the end of each resource. Cumulative effects are defined as the direct and indirect effects of a proposed alternative's incremental impacts when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action (40 CFR, Part 14 1508.7). Guidance for implementing NEPA requires that Federal agencies specify the time frame and geographic boundaries within which they evaluate potential cumulative effects of an action and the specific past, present, and reasonably foreseeable projects that will be analyzed. Effects of past actions and activities on resources are manifested in the current condition of the affected resources, as described in Chapter 3 (Affected Environment) for resources on Reclamation-administered lands.

Public documents and data prepared by Federal, state, and local government agencies are the primary information sources for past, present, and reasonably foreseeable future actions and for identifying reasonable trends in resource conditions and land uses. Actions undertaken by private persons and entities are assumed to be captured in the information made available by such agencies. Actions included in the cumulative impact analysis do not affect all resources equally: some resources would be affected by several or all of the described activities, while others would be affected very little or not at all. The actions that make up the cumulative effect scenario were analyzed in conjunction with the effects of each alternative to determine if they would have any additive or interactive effects on a particular resource.

The cumulative impact analysis provided in this EIS is general because decisions about other actions in the vicinity of Contra Loma would be made by various public and private entities, and the location, timing, and magnitude of these actions are not well known at this time. The actions and trends with the highest potential to cumulatively affect the resources discussed in this EIS include:

- Improvements at Contra Loma that may be implemented concurrent with preparation of the RMP (i.e., improvements to sports fields 4 and 5 and the boat launch area upgrades to the restroom and fish cleaning station).
- Reclamation's issuance of a new license to the City to allow continued use of 5.7 acres of land on the eastern side of Contra Loma for golf course use.
- Buildout of the City, the County, and other nearby cities in accordance with their adopted general plans. The City and County general plans are described below.

### ***Antioch General Plan***

The City's General Plan EIR was prepared in 2003 and the City's General Plan was adopted in 2003. The planning horizon for the General Plan is 25 years (i.e., 2003-2028). According to the General Plan EIR:

- The City has a relatively large amount of open land available for future development. Approximately 38 percent of the land within the City (6,383 acres) and nearly 46 percent of the land within the unincorporated portion of the General Plan study area (2,240 acres) were vacant in 2003.
- General Plan build out would result in construction of about 52,000 new dwelling units.
- Between 2010 and 2025, the City's population is expected to increase by 15 percent, an increase of 15,900 people.
- General Plan build out would result in more daily vehicular trips within the Planning Area, non-peak hour travel will increase in relation to peak hour traffic, and the "peak hour" of traffic will lengthen over several hours. However, the transportation policies in the General Plan would be very effective in maintaining acceptable levels of service on the City's roads and highways (City of Antioch 2003b).

### ***Contra Costa County General Plan***

The County's General Plan was adopted in 2005. The planning horizon for the General Plan is 15 years (i.e., 2005-2020; Contra Costa County 2005). The General Plan Housing Element was updated in 2009 (Contra Costa County 2009). According to the General Plan:

- The County's population is expected to grow by almost 19 percent from 2000 to 2020, an increase of 179,984 people (Contra Costa County 2005).
- Much of the future growth in the County is planned for the Pittsburg-Antioch-Oakley areas of East Contra Costa County (Contra Costa County 2005).

- In 2000, County residents generated approximately 2 million vehicle trips per day; by 2020, County residents will generate approximately 2.8 million trips per day (Contra Costa County 2005).

According to the Housing Element Update:

- The County's population is projected to grow by almost 9 percent from 2010 to 2020, an increase of 95,100 people. The population in the unincorporated areas of East Contra Costa County is expected to grow by almost 20 percent from 2000 to 2020, an increase of 9,569 people (Contra Costa County 2009).

#### ***Other Cities in Northeastern Contra Costa County***

In addition to Antioch, several other cities are located in the northeastern portion of the County. These cities include Pittsburg, Brentwood, Oakley, Martinez, Clayton, Concord, and Walnut Creek. Each of these cities has its own general plan, and the population of each city is expected to continue growing in the future. The increased population growth within these cities would increase the amount of land converted to urban uses and the number of vehicles travelling on regional roadways. The growth estimates for population and traffic are included in the estimates presented above for the County.

#### **4.1.3 Issues Considered But Eliminated from Further Study**

##### ***Indian Trust Assets***

As a Federal land management agency, Reclamation is responsible for identifying and considering potential impacts of its plans, projects, programs, or activities on Indian Trust Assets (ITA). ITA are legal interests in property held in trust by the U.S. for Indian Tribes or individuals. As the nearest ITA to the Action area is the Lytton Rancheria, located in San Pablo, California, approximately 28 miles west of Contra Loma, none of the alternatives have the potential to affect ITA.

##### ***Indian Sacred Sites***

As a Federal land management agency, Reclamation is required to accommodate access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. Sacred sites are defined in Executive Order 13007 (May 24, 1996) as "any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site."

On June 23, 2010, Reclamation's archaeological consultant requested a Sacred Lands File search and list of appropriate Native American representatives and tribal organizations from the NAHC. The NAHC responded on July 19, 2010 and indicated that no culturally significant sites or properties were known to exist within or near the APE. In 2010 and 2013, Reclamation and its consultant performed outreach to the Native American contacts listed with the NAHC. No responses have been received. Because no Indian Sacred Sites appear to be located within Contra

Loma and the alternatives would not limit access to and ceremonial use of Indian sacred sites by Indian religious practitioners, or significantly adversely affect the physical integrity of such sacred sites, no impacts to Indian sacred sites would occur.

### ***Paleontological Resources***

As a Federal land management agency, Reclamation is responsible for managing and protecting paleontological resources on the Federal land under its management (PL 111-011). The geology of the Contra Loma region consists of terrestrial and marine Eocene- to Pliocene- (Tertiary) aged sandstone with lesser amounts of siltstone, conglomerate, and shale (Graymer et al. 1994). Of the geologic formations underlying Contra Loma, Cierbo Sandstone is the only formation that is known to contain abundant paleontological resources, or more specifically marine fossils. Cierbo Sandstone runs beneath the southernmost portion of Contra Loma, forming the east-west trending ridge that runs along the southern boundary of the Regional Park (Figure 3-15).

No known paleontological resources have been identified in Contra Loma (Bondurant, pers. comm. 2013). Due to the relatively steep topography in this area, few new improvements would be built atop the Cierbo Sandstone formation. Exceptions may include a new communications tower (both action alternatives) and portions of a disc golf course (Expanded Recreation and Facilities Alternative). For these reasons, the likelihood of encountering paleontological resources that provide new information about the history of life on earth is very low. The two action alternatives would include Management Action 56, which is intended to manage and protect any important paleontological resources encountered during construction activities in the portion of the Regional Park underlain by Cierbo Sandstone. This measure would ensure that impacts on paleontological resources are minor.

## **4.2 Land Use**

### **4.2.1 Types of Impacts**

Land uses at Contra Loma include recreation, grazing, operations and maintenance, administration, and reservoir management. This section assesses the potential impacts of the RMP alternatives on land use compatibility with existing uses within Contra Loma.

Potential impacts to land use could result from three general types of activities:

- Human Use
- Livestock Grazing
- Facility Improvements

### **4.2.2 Assumptions**

The land use impact analysis is based on the following assumptions:

- Reclamation would only provide project-specific authorization for activities, including construction and operation of new facilities that have undergone appropriate environmental review.

- The proposed management actions would comply with applicable laws and regulations governing public utilities.
- No land use changes would occur that do not meet RMP goals.

#### **4.2.3 Impacts Common to All Alternatives**

##### ***Human Use***

Recreational use of Contra Loma would continue under all of the RMP alternatives. Currently, only occasional minor conflicts arise between user groups. Such activities are likely to increase, heightening the potential for conflicts between uses. Impacts on land use would be dependent on the availability and suitability of a particular facility to accommodate the proposed use; the density of recreational use; and potential impacts imposed on natural resources, the setting, and other user groups. The managing partner(s) would be expected to continue to manage recreational use of Contra Loma's recreational facilities in a manner that minimizes land use conflicts. Therefore, no additional land use effects would be expected from implementation of the action alternatives when compared to the current low levels of conflict expected under the No Action Alternative.

Under all of the RMP alternatives, the Regional Park would continue to be used by the public for recreational activities. The existing Regional Park trail system would continue to be operated, managed, and maintained for activities such as hiking, biking, wildlife viewing, and equestrian uses. Although various user groups (i.e., hikers, bicyclists, equestrians) utilize many of the same trails, trail users are often widely dispersed and the different user groups have not come into serious conflict in the past. If conflicts were to occur, they would likely be infrequent, isolated incidents of relatively minor nature. Increased use of the Regional Park trail system by differing user groups would slightly increase the potential for conflict.

#### **4.2.4 Impacts Specific to the No Action Alternative**

##### ***Human Use***

The impacts would be the same as those addressed in Section 4.2.3.

##### ***Livestock Grazing***

Livestock grazing performed for fire suppression now occurs on 454 acres of grasslands within the Regional Park, and grazing would likely continue under the No Action Alternative. Under this alternative, no change in the acreage, location, or intensity of grazing is expected to occur although grazing could decline depending on need. Grazing would be implemented according to a grazing management plan that would be prepared specifically for Contra Loma by the managing partner(s) and would require Reclamation approval. Although the potential exists for recreational activities such as biking or hiking to conflict with grazing, these activities already occur alongside grazing and any future conflicts are expected to be minor.

#### **4.2.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

##### ***Human Use***

In addition to the impacts addressed in Section 4.2.3, this alternative would include more enhanced recreation opportunities than the No Action Alternative, which could incrementally increase visitor use. Currently, only occasional minor conflicts arise between user groups. An incremental increase in visitor use would proportionally increase the potential for conflicts

among user groups, but would not preclude any class of recreational uses that are currently allowed at Contra Loma. Under this alternative, increased visitor use would only have a minor impact on land use.

### ***Livestock Grazing***

In addition to the impacts caused by livestock grazing under the No Action Alternative, adjustment of the boundary lines between the Regional Park and Community Park under this alternative could result in an overall increase of approximately 0.3 acre of grazing in Contra Loma. Under this alternative, approximately 8.4 acres of land currently located within the southwest corner of the Community Park could be placed within the Regional Park by future local managing partner(s). This adjustment would result in introduction of grazing for fire suppression on approximately 3 acres of land that previously had not been grazed with the remainder being fenced off to protect riparian vegetation (Figure 2-1). In addition, the adjustment of 2.7 acres of land in the northeast corner of Contra Loma from the Regional Park to the Community Park would result in cessation of grazing within this area. This slight increase would not substantially increase the intensity of grazing, nor would it substantially increase the potential for recreational activities such as biking or hiking to conflict with grazing. These activities already occur alongside grazing and future conflicts, if any, are expected to be minor. Increased grazing under this alternative would only have a minor impact on current land uses.

### ***Facility Improvements***

This alternative may include new, expanded, or renovated facilities at the Regional Park to enhance recreation and improve operations that would not occur under the No Action Alternative. Examples include a new park residence, classroom facilities near the swim lagoon, improvements to the park office and police substation, a new fueling station, a radio communications tower, new restrooms, additional picnic sites, enhanced fishing and boating facilities, expanded parking areas, a storm water retention basin, and a “safe swim” area or splash pad at the swim lagoon. These facilities are expected to be designed and located in order to promote compatibility with existing land uses. For example, the classroom and the “safe swim” area or splash pad would be located near the swim lagoon and would be designed to support and complement use of the swim lagoon. Improvements to the boat launch area would be designed to enhance boating and fishing access and may include a new fishing pier separate from the boat dock, thereby reducing conflicts between anglers and boaters using the existing launch ramp. New fishing docks would reduce conflicts by dispersing anglers. New restrooms and picnic sites would be located where they would best accommodate demand. In addition, the new park residence, fueling station, and radio communications tower would be situated where they would be most useful and functional. Future managing partner(s) would be expected to place all new facilities where they would be compatible with nearby land uses, thereby minimizing the intensity of any land use conflicts. Therefore, land use impacts from construction and operation of the new, expanded, or renovated facilities are expected to be minor.

When specific facilities are designed and sited, a site-specific environmental analysis would be conducted that would include a more focused assessment of the activity’s impact on land use. At that time, more clearly defined land use impacts may be identified. If substantial land use impacts were to be identified, the proposed project would be modified, if possible, to reduce these impacts.

#### **4.2.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

##### ***Human Use***

In addition to the impacts addressed in the previous Section 4.2.5 and those expected for the No Action Alternative, this alternative may include overnight camping as part of the Regional Park's current day camp programs and other special events. Existing day use facilities may be modified to accommodate group campers; however, no new camping facilities would be built. Because overnight camping would not coincide with daytime recreational activities, potential conflicts with existing land uses in the park are not anticipated. Under this alternative, increased visitor use would only have a minor impact on land use.

##### ***Livestock Grazing***

This alternative may include the expansion of the Community Park into approximately 15 acres of the Regional Park (see Figure 2-2). Should this occur, the boundaries between the parks would be adjusted by the local managing partner(s) and current grazing of this area would cease. In conjunction with the potential boundary change between the parks described in Section 4.2.5 (see Figure 2-1), this expansion would result in a net reduction of grazing in Contra Loma by 14.7 acres. Compared to the No Action Alternative, this would reduce grazing within Contra Loma by about 3 percent, which is not expected to cause grazing to be uneconomical at Contra Loma.

Grazing could present conflicts with a new disc golf course that might be built at the Regional Park under this alternative because some areas within the course may require clearing of grass and herbaceous vegetation within currently grazed areas to improve visibility for disc golfers. This could reduce the amount of vegetation available for consumption by livestock. Also, livestock waste could present a nuisance to players. After implementation of BMPs including optimized disc golf course siting, construction of a disc golf course would lead to only occasional conflicts between land uses, including grazing. Therefore, this adverse effect would be minor. This effect would not occur under the No Action Alternative.

##### ***Facility Improvements***

This alternative would include construction of new or expanded recreational facilities in addition to those that would be built under the Enhanced Recreation and Facilities Alternative. Expanded recreational facilities proposed for the Regional Park under this alternative may include expansion of the swim lagoon, a new angler's shelter, a playground structure, a disc golf course, new trails, and a fitness course. These facility improvements and their effects on land use would not occur under the No Action Alternative. The managing partner(s) would be expected to design and locate these facilities where they would be compatible with nearby land uses.

The swim lagoon is one of the principal attractions at the Regional Park. A swim lagoon expansion project would be designed to support and complement existing use of the swim lagoon, and would therefore be compatible with the lagoon and nearby recreational facilities. An angler's shelter and a playground structure may be built along the south or east shore of the reservoir in locations that would accommodate demand. These facilities would also be compatible with nearby recreational uses. Swim lagoon improvements would have no effect on land use because the adjacent recreational uses are compatible with these improvements.

Designing and locating these facility improvements where they would be compatible with nearby land uses would minimize the intensity of any land use conflicts.

This alternative may include construction of new trails that would be open to bicycles and/or may allow bicycles on portions of trails that are not currently open to bicycles. Expansion of the bicycle-accessible trail system could conflict with livestock grazing or with other trail users such as hikers or equestrians. Expansion of the bicycle-accessible trail system would follow BMPs such as installation of additional signage and optimizing of trail alignment to improve visibility. This alternative may include establishment of a new fitness course by installing outdoor exercise stations with stationary equipment and signage along the shoreline trail loop. Use of the shoreline trail loop would likely increase with establishment of the fitness course; however, the use of exercise equipment located near the trail would be consistent with existing trail use and is not expected to create conflicts with other trail users. Conflicts among trail user groups and between trail and grazing uses are currently minor and relatively infrequent. The managing partner(s) would be expected to continue to manage recreational use of Contra Loma's recreational facilities in a manner that minimizes land use conflicts. Therefore, no additional land use effects would be expected from these activities.

This alternative may include a new disc golf course at the Regional Park that would be built in a suitable location so as to minimize conflicts with other park uses; however, such conflicts might not be completely avoided. If the course is not properly designed and located, errant golf discs (similar to Frisbees) could interfere with the enjoyment of other park users. Therefore, a disc golf course would be best suited to areas of the Regional Park that receive less visitation and use. As discussed previously, grazing could also present conflicts with a disc golf course because some areas within the course may require clearing of grass and herbaceous vegetation to improve visibility and because livestock waste could present a nuisance to players. After implementation of BMPs including optimized disc golf course siting, construction of a disc golf course would lead to only occasional conflicts between land uses. Therefore, this adverse effect would be minor.

This alternative may include the addition of two new sports fields within the Community Park south of the two existing sports fields, and increased parking capacity if needed to serve the new sports fields. This management action would require expansion of the Community Park boundaries south into the Regional Park and an adjustment of the boundary between the two parks (see Figure 2-1). The proposed area for the new sports fields is currently undeveloped but is grazed by livestock. Livestock would be excluded from the expanded Community Park area; therefore, no land use conflict between grazing and recreation would result from this alternative because grazing would be excluded from the sport fields' area. The effect of constructing the new sports fields would neither increase nor decrease the land use conflicts at Contra Loma.

When specific facilities are designed and sited, a site-specific environmental analysis would be conducted that would include a more focused assessment of the activity's impact on land use. At that time, more clearly defined land use impacts may be identified. If substantial land use impacts were to be identified, the proposed project would be modified, if possible, to reduce these impacts. Therefore any land use impacts related to installation of new facilities would be minimized and would only result in minor adverse effects.



#### **4.2.7 Cumulative Impacts**

##### ***Increased Visitation and Concurrent Improvements***

Regional Park visitation increased by 20 percent (24,248 visitors) during the six-year period from 2005 through 2010. Visitation to Contra Loma is expected to continue to increase under all of the alternatives. More visitation is expected under the two action alternatives than the No Action Alternative, because the action alternatives would include enhanced or expanded facilities that would attract more visitors than the No Action Alternative.

A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans. The City's population is expected to increase by 15 percent (15,900 people) between 2010 and 2025 (City of Antioch 2003b). The County's population is expected to increase by 9 percent (95,100 people) between 2010 and 2020 and the population in the unincorporated areas of East Contra Costa County is expected to grow by almost 20 percent from 2000 to 2020, an increase of 9,569 people (Contra Costa County 2009).

The improvements to sports fields 4 and 5 and the boat launch area upgrades would increase visitation to Contra Loma. However, neither these improvements nor issuance of a license to the City for continued use of the 5.7 acres of land east of the Regional Park for golf course use would involve land use changes.

##### ***Human Use***

The presence of additional visitors to the park would increase the potential for conflicts between various activities. Given the ability of the current managing partner(s) to manage recreational use of Contra Loma's recreational facilities in a manner that minimizes land use conflicts, the intensity of the projected cumulative increase in visitation is expected to cause minor adverse cumulative impacts on land use. Because more visitation is expected under the two action alternatives than the No Action Alternative, the intensity of this effect is expected to be greater under the action alternatives than the No Action Alternative.

##### ***Livestock Grazing***

Although the potential exists for recreational activities such as biking or hiking to conflict with grazing, these activities already occur alongside grazing and any future conflicts caused by the cumulative increase in visitation are expected to be minor. The intensity of this effect would be greater under the two action alternatives than the No Action Alternative because visitation would be higher under the action alternatives.

##### ***Facility Improvements***

No land use changes would result from the improvements to sports fields 4 and 5, the boat launch area upgrades, or issuance of a license to the City for continued use of the 5.7 acres of land east of the Regional Park for golf course use. These actions represent a continuation of existing uses, although some of these actions would include facility upgrades. Because these actions do not involve land use changes, there would be no change in their compatibility with existing land uses (i.e., the land uses under the No Action Alternative). They would also not change the intensity of the minor adverse land use effects attributable to construction of new facilities under the two action alternatives.

#### **4.2.8 Mitigation Measures**

No need for mitigation has been identified.

### **4.3 Recreation**

#### **4.3.1 Type of Impacts**

The effects of the RMP alternatives on recreation at Contra Loma would vary depending on the type and location of the recreational activity. Because recreation is a complex and integral part of the RMP, some impacts on recreation are assessed according to the effect that RMP alternative management actions may have on four general categories of recreation found at Contra Loma: General Recreation (administration, management), Land-Based Recreation, Water-Based Recreation (swimming, fishing, and boating), and Interpretive Services (public education, programs, public perception).

As described in sections 2.2.4 and 3.2.1, two distinct management zones based on the WROS system have been identified for Contra Loma Reservoir. The southern half of the reservoir is managed as WROS Class S4 while the northern half is managed as WROS Class RD6 (see Figure 1-2). The attributes that differentiate these WROS management zones have a direct effect on the type of recreational opportunities and the visitor's recreational experience. The S and RD zones under the WROS system are similar, though not identical, to the S and RD zones under the WALROS system. The 2008 WROS inventory did not identify classifications for the land portions of Contra Loma. Because Contra Loma has not been re-inventoried under the WALROS system, each RMP alternative is analyzed below for consistency with the reservoir's existing WROS classifications.

The RMP does not address dam and reservoir operations, other than to describe activities included in the Expanded Recreation Facilities Alternative to manage the reservoir in a manner that supports and improves recreational fishing and habitat enhancement/restoration along the shoreline. Responsibilities for dam and reservoir operations are subject to a separate contract agreement between Reclamation and CCWD and are therefore outside the scope of the Contra Loma RMP.

Potential impacts to recreation could result from five general types of activities:

- Facility Management
- Facility Maintenance
- Resource Management
- Livestock Grazing
- Facility Improvements

#### **4.3.2 Assumptions**

The recreation impact analysis is based on the following assumptions:

- Reclamation would only provide project-specific authorization for activities, including construction and operation of new facilities that have undergone appropriate environmental review.
- Visitation to Contra Loma and use of the Regional Park and Community Park recreation facilities would continue to increase.
- None of the RMP alternatives include adjustments to the WROS classification zones. Therefore, management actions included in the RMP alternatives are intended to be consistent with the existing WROS classifications.
- No land use changes would occur that do not meet RMP goals.

### 4.3.3 Impacts Common to All Alternatives

#### ***Facility Management***

**General Recreation** Included in all of the RMP alternatives are actions that would support a diverse range of recreational opportunities within the Regional Park and the Community Park. Management actions include regulation of park uses, opening and closing of park gates for daily operations, concessionaire administration, issuance of special use permits, and implementation of a reservation system for use of the Community Park's sports fields. These management actions would be similar to the management activities currently being implemented by the managing partners (see Sections 3.2 and 3.3) and, therefore, would have no impact on recreation.

The managing partner(s) or other organizations may continue to provide public recreation programs at the Regional Park, such as low-income youth swim programs, Girl Scout and Boy Scout events, fundraiser events, and environmental and outdoor educational programs. These management actions would be similar to the management actions currently being implemented by the managing partners (see Sections 3.2 and 3.3). In addition, management regulations pertaining to recreation programs would continue to minimize user conflicts. Currently, a small potential currently exists for conflicts between group recreational activities and the recreational experience of other park visitors. Continuation of these management actions would not increase the potential for such conflicts. Therefore, these management actions would have no impact on recreation.

Under the RMP alternatives, user fees would continue to be collected at the Regional Park. Parking, day use, and special event fees contribute to the ability of the managing partner(s) to provide safe and desirable recreation opportunities. The collection of fees also provides a means to account for the number of users and monitor recreational preferences at the Regional Park. Fees can also deter some would-be park visitors who cannot afford fees or do not wish to pay fees. It is assumed however, that those visitors choosing to pay a fee to participate in a particular recreational activity do so because they find equitable value in the quality of the recreational experience available at the park. By serving as a limiting factor to visitation, fee payment may reduce the number of user conflicts and increase the level of satisfaction enjoyed by those choosing to pay fees; however, those who cannot afford the fees could be prevented from participating in recreational activities available at the Regional Park. Fees are charged at the Community Park for group activities where reservation of a specific part of the park may be

desired (e.g., picnic sites, sports fields). Otherwise, use of the Community Park by individuals is not subject to day use fees. Fee collection would be a continuation of an existing management activity (see Section 3.3) and, therefore, would have no impact on recreation.

**Land-based Recreation** Under all of the RMP alternatives, a diverse range of land-based recreational opportunities would continue to attract large numbers of users to the Regional Park and the Community Park. It is anticipated that the upward growth trend in the region would result in the increased use and demand for land-based recreational opportunities at Contra Loma. Under all RMP alternatives, the Regional Park trail system would continue to be operated, managed, and maintained for dispersed recreational activities such as hiking, biking, and equestrian uses, while the areas of concentrated recreation such as the day use areas adjacent to the WROS S4 zone on the reservoir's south side and the Community Park sports fields would continue to be operated, managed, and maintained at levels that would provide visitors with a positive recreation experience. Similarly, wildlife viewing, artistic pursuits (e.g., painting, photography), and other passive forms of recreation would not be affected because there would be no significant changes to existing management activities. Therefore, continued recreation management and administration would have an inconsequential impact on land-based recreation.

Picnicking, team sports play, and other activities supported by developed recreation facilities at the Regional Park and the Community Park would continue under all of the RMP alternatives. Continuation of these activities would have no impact on other forms of land-based recreation.

**Water-based Recreation** Water-based recreation opportunities including swimming in the lagoon, boating, and fishing—both on the water and from the shoreline of the reservoir—would continue to be allowed under all of the RMP alternatives. Consistent with existing conditions, use of the reservoir for recreational activities would be carefully managed by the managing partner(s) to protect water quality (see Section 3.3). The WROS classifications for the reservoir would continue to guide management actions related to recreation in and around the reservoir. The types of water-based recreation allowed at the reservoir would remain the same under all alternatives. Prohibition of gasoline-powered engines and swimming within the reservoir would continue. These prohibitions would continue to be enforced to protect water quality and to minimize the potential for conflicts between visitors using the reservoir for fishing, kayaking, or windsurfing and those who visit to Contra Loma to swim. Therefore, continuation of these activities would have no effect on water quality or conflicts between water-based recreationists.

Under all RMP alternatives, recreational fishing would continue to be allowed at the reservoir. Fish populations would be managed to maximize angler success and recreational experience. Fish planting, fish monitoring, angler permit sales, and public education would be some of the management activities used to maintain the reservoir's fish populations and satisfy user demand. The managing partner(s) for the Regional Park would also continue to enforce regulations against unauthorized fishing (i.e., poaching). Continued recreation management would have no impact on water-based recreation.

The managing partner(s) for the Regional Park would continue to implement measures to prevent mussel infestation and/or the introduction of other invasive aquatic pest species in the reservoir. Public education, pre-launch boat inspections by trained staff, and prohibitions against wet boats or gear entering the reservoir would be continued under all of the RMP alternatives (see Section

3.3). While such actions by the managing partner(s) may require an added level of intensive management (i.e., personnel to enforce measures) to respond to visitation increases, the intensity of these actions would be consistent with present conditions and, thus would have no impact on water-based recreation.

**Interpretive Services** Under the RMP alternatives, the managing partner(s) would continue to provide opportunities for public education and interpretation of natural and cultural resources. Interpretive opportunities are valuable tools for increasing visitor appreciation of Contra Loma's resources. Continued provision of interpretive opportunities would be consistent with existing conditions (see Section 3.3) and, thus would have no impact on recreation.

#### ***Facility Maintenance***

Under all of the RMP alternatives, provision and maintenance of public facilities and infrastructure would continue to be performed by the managing partner(s) at a level suitable to ensure that visitors have a safe and positive recreation experience and to encourage continued use of Contra Loma. Regular maintenance benefits users by preserving the quality of park facilities, although maintenance activities can temporarily restrict or impair public use and access to certain recreational facilities.

Visitor recreational use of Contra Loma is expected to increase under all of the RMP alternatives, consistent with the visitation trend over the past few years. Increased visitation would incrementally increase the need for routine maintenance activities which could incrementally increase the frequency of temporary restriction or impairment of public use and recreation access. However, this change would be negligible, resulting in a minor impact on recreation. In addition, the local managing partner(s) would implement BMPs to notify visitors through signage or other means about areas closed for construction. Facility maintenance would have no impact on the WROS reservoir classifications, because it would not change land uses.

#### ***Resource Management***

Under the RMP alternatives, the managing partner(s) would continue to operate Contra Loma in a manner that is consistent with Federal and state laws and regulations that govern the protection of natural and cultural resources within Contra Loma. The local managing partner(s) for the Regional Park may also develop programs to protect special-status species likely to occur at the park. The public could be restricted from certain areas of Contra Loma if necessary to avoid sensitive natural or cultural resources. Such restrictions could impair recreational activities within those areas. However, most recreational activity occurs within Contra Loma's developed recreation areas, which have little potential to support special-status species or for cultural resources to be present. Therefore, such restrictions would not substantially impair recreational activities within Contra Loma. Resource management activities would have a minor impact on recreation.

#### ***Livestock Grazing***

Livestock grazing would likely continue in the Regional Park under all of the RMP alternatives. Grazing would be implemented according to a grazing management plan that would be prepared specifically for Contra Loma by the managing partner(s) and approved by Reclamation. Although the potential exists for recreational activities such as biking or hiking to conflict with

grazing, these activities already occur alongside grazing and any future conflicts are expected to be minor.

#### **4.3.4 Impacts Specific to the No Action Alternative**

##### ***Facility Management***

The impacts would be the same as those addressed in Section 4.3.3.

##### ***Facility Maintenance***

The impacts would be the same as those addressed in Section 4.3.3.

##### ***Resource Management***

The impacts would be the same as those addressed in Section 4.3.3.

##### ***Livestock Grazing***

The impacts would be the same as those addressed in Section 4.3.3.

#### **4.3.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

##### ***Facility Management***

The impacts would be the same as those for the No Action Alternative and as discussed in Section 4.3.3.

##### ***Facility Maintenance***

In addition to the impacts expected under the No Action Alternative and as addressed in Section 4.3.3, this alternative would include new facilities to enhance recreational opportunities. These facilities would not be built under the No Action Alternative. The new facilities would increase the need for routine maintenance activities which could increase the frequency of temporary restriction or impairment of public use and recreation access. Also, because this alternative would include more enhanced recreation opportunities than the No Action Alternative, it could result in more visitor use and require incrementally more maintenance. Therefore, this alternative could result in more frequent occurrences of temporary restriction or impairment of public use and recreation access than the No Action Alternative. However, this change would be negligible, resulting in a minor adverse effect on recreation. Also, the local managing partner(s) would implement BMPs to notify visitors about areas closed for maintenance further reducing the effect.

##### ***Resource Management***

In addition to the impacts expected under the No Action Alternative and as addressed in Section 4.3.3, this alternative may increase habitat restoration and improvement through construction of additional quail habitat enhancement projects and installation of additional bat houses and avian nest boxes. Recreation could be affected if these actions require recreation restrictions in areas where these actions would occur in order to prevent adverse impacts on habitat restoration and improvement activities. However, the areas needed for these restoration projects would be relatively small within the context of Contra Loma, and they would generally be located in areas that do not receive heavy recreational use. Therefore, restrictions caused by habitat restoration and improvement activities would have a minor adverse effect on recreation.

**Livestock Grazing**

In addition to the impacts expected under the No Action Alternative and as addressed in Section 4.3.3, this alternative may include new water infrastructure (e.g., pumps, water lines, troughs) to support grazing. Installation of the new infrastructure could temporarily inhibit recreation in certain locations during construction. Because such restrictions would be of short duration and would be located in discrete areas, and because the managing partner(s) would be expected to carry out the improvements in a manner that minimizes conflicts with recreation, the intensity of the effect on recreation from grazing facility improvements would be minor. These improvements would not substantially affect recreation.

Under this alternative, livestock would be grazed within a portion of the 8.4 acres of land currently within the Community Park that may be managed as part of the Regional Park. This would not occur under the No Action Alternative. Because no trails or recreational facilities are located within the potential new grazing area, it likely receives little use. Therefore, no conflicts between grazing and recreation are expected to occur under this alternative.

**Facility Improvements**

This alternative would include several new facility improvements in various locations throughout Contra Loma that would not occur under the No Action Alternative. Long-term changes in visitor use patterns could occur as new facilities become identified by visitors as more preferable and draw visitors away from the older facilities.

**General Recreation** Under this alternative, improvements would be made to existing administrative buildings and recreational facilities. These improvements would enhance Regional Park operations, public services, and public safety. This alternative requires the managing partner(s) to design future improvements to comply with ADA accessibility requirements. This alternative would also include an ADA facility retrofit program that involves replacing, retrofitting, and restructuring many of the park facilities to meet current ADA standards. During construction, recreationists may be temporarily excluded from some areas; however, the short duration of any such exclusion would minimize the intensity of its effect on recreation resulting in a minor, short-term impact. Enhancement and expansion of existing facilities and accessibility improvements, however, would have a long-term beneficial impact on recreation that would not occur under the No Action Alternative.

**Land-based Recreation** Under this alternative the East Shore Trail, the West Shore Trail, and the trail across the dam would be improved by paving the surfaces along the entire reservoir shoreline loop. Improvements to the trail surfaces that compose the shoreline loop would not result in any changes in WROS classifications or adversely affect land-based recreational opportunities adjacent to the reservoir. Trail improvements along the reservoir shoreline would have a long-term beneficial impact on recreation by making more trails accessible to a variety of visitors, including the disabled and elderly. During construction, recreationists may be temporarily excluded from some areas; however, the short duration of any such exclusion would minimize the intensity of its effect on recreation resulting in a minor, short-term impact. Also, the local managing partner(s) would notify the public about temporary closures. These impacts would not occur under the No Action Alternative.

This alternative includes the potential to construct additional individual and group picnic sites in the vicinity of the Regional Park's south or east shore recreational clusters. The exact location of the new picnic sites would be chosen based on usefulness and public demand. The new picnic sites would be located within an existing recreational cluster where some supporting infrastructure is already in place, especially along the south shore. Because these improvements would be consistent with the experience descriptions for the WROS S and RD zones, they would not affect the reservoir's WROS classifications. These improvements would have a long-term beneficial impact on recreation by increasing the availability of picnic facilities. During construction, recreationists may be temporarily excluded from some areas; however, the short duration of any such exclusion would minimize the intensity of its effect on recreation resulting in a minor, short-term impact. Also, the local managing partner(s) would notify the public about temporary closures. These impacts would not occur under the No Action Alternative.

**Water-based Recreation** This alternative may include renovations to the buildings near the swim lagoon within the WROS S4 zone. A "safe swim" or splash pad specifically for small children may also be constructed at the swim lagoon. Because these improvements would be consistent with the experience description for the WROS S zone, they would not affect the reservoir's WROS classifications. These improvements would have a long-term beneficial impact on recreation by enhancing recreational opportunities at or near the swim lagoon. During construction, recreationists may be temporarily excluded from some areas; however, the short duration of any such exclusion would minimize the intensity of its effect on recreation resulting in a minor, short-term impact. Also, the local managing partner(s) would notify the public about temporary closures. These impacts would not occur under the No Action Alternative.

#### **4.3.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

##### ***Facility Management***

The impacts would be the same as those for the No Action Alternative and as discussed in Section 4.3.3.

##### ***Facility Maintenance***

In addition to the impacts expected under the No Action Alternative and as addressed in Section 4.3.3, this alternative would include more recreation and infrastructure facilities than the other two alternatives, which could require more maintenance than the other alternatives. Also, because this alternative would include more expanded recreation opportunities than the other two alternatives, it could result in more visitor use and require incrementally more maintenance than the other alternatives. Therefore, this alternative could result in more frequent occurrences of temporary restriction or impairment of public use and recreation access. However, this change would be negligible, resulting in a minor adverse effect on recreation. Also, the local managing partner(s) would implement BMPs to notify visitors about areas closed for maintenance further reducing the effect.

##### ***Resource Management***

The impacts would be the same as those addressed in Section 4.3.5.



### ***Livestock Grazing***

In addition to the impacts caused by livestock grazing addressed in Section 4.3.5, grazing could present conflicts with use of the disc golf course that might be built under this alternative because livestock waste could present a nuisance to players. After implementation of BMPs including optimized disc golf course siting, grazing would lead to only occasional conflicts with disc golfers. Therefore, this adverse effect would be minor. This impact would not occur under the No Action Alternative.

This alternative may include the expansion of the Community Park into approximately 15 acres of the Regional Park. Should this occur, the boundaries between the parks would be adjusted by the local managing partner(s) and current grazing of this area would cease, thereby avoiding any conflict between livestock and users of the new sports fields. Grazing would have no effect on use of the new sports fields.

### ***Facility Improvements***

**General Recreation** The impacts would be the same as those addressed in Section 4.3.5.

**Land-based Recreation** This alternative would include the impacts addressed in Section 4.3.5, but would also include impacts from facility improvements that would not occur under the other two alternatives.

The swim lagoon is one of the principal attractions at the Regional Park's south shore recreation cluster and may be expanded to accommodate increased future demand. Its expansion would not likely result in permanent conflicts with adjacent recreational land uses, such as picnic sites or the shoreline trail system, because these facilities would be considered during project design and because they could be relocated if necessary to accommodate the swim lagoon expansion. During construction, however, some areas near the swim lagoon may be temporarily unavailable for use. However, the short duration of any such exclusion would minimize the intensity of its effect on recreation resulting in a minor, short-term impact. Also, the local managing partner(s) would notify the public about temporary closures.

This alternative may include the addition of two new sports fields in the Community Park south of sports fields 4 and 5 and increased parking capacity, if needed. This management action would require expansion of the Community Park boundary southward into the Regional Park and a resulting adjustment of the boundary between the two parks (see Figure 2-1). The area where the new sports fields would be located is currently undeveloped and receives little recreational use, except for a Regional Park trail that follows the existing Community Park boundary. Because this area currently receives little recreational use, and because the existing trail could be rerouted or incorporated into the design of the new sports fields, the addition of two new sports fields would not adversely affect existing recreational uses and would have a long-term beneficial impact on land-based recreation. This area would be unavailable for use during construction, but any adverse effect would be minor considering the temporary nature of the closure and that the area currently receives little use. Also, the local managing partner(s) would implement BMPs to notify visitors about areas closed for construction further reducing the effect.

This alternative may include construction of new trails that would be open to bicycles and/or allow bicycles on portions of trails that are not currently open to bicycles. Expansion of the bicycle-accessible trail system could conflict with other trail users such as hikers or equestrians. However, trail users are often widely dispersed and the different user groups have not come into serious conflict in the past. If conflicts were to occur, they would likely be infrequent, isolated incidents of relatively minor nature. Increased use of the Regional Park trail system by differing user groups would slightly increase the potential for conflict, but would not substantially affect recreation within the Regional Park adversely. Rather, the overall effect of making more trails available to recreationists would be a beneficial impact. Expansion of the trail system to include new trails and to improve interconnection between trail systems would also be beneficial for recreation and is not likely to conflict with any other user groups. This alternative may also include establishment of a new fitness course by installing outdoor exercise stations with stationary equipment and signage along the shoreline trail loop. This would be beneficial for recreation and, as discussed in Section 4.2.6 above, is not likely to conflict with any other user groups. During construction, recreationists may be temporarily excluded from some areas; however, the short duration of any such exclusion would minimize the intensity of its effect on recreation resulting in a minor, short-term impact. Also, the local managing partner(s) would implement BMPs to notify visitors about areas closed for construction further reducing the effect.

This alternative includes a proposal to build a disc golf course in the Regional Park. Potential locations being considered include undeveloped areas east of the reservoir and in the southeast part of the Regional Park located within the natural environment unit of the Regional Park. Although segments of the Contra Loma trail system pass through or near the areas being considered in the southeast part of the Regional Park, disc golf requires very little infrastructure. As such, development of a disc golf course is unlikely to conflict with other low-impact recreational user groups. Overall, the addition of a disc golf course would have a long-term beneficial impact on land-based recreation due to increased recreational opportunities within Contra Loma. During construction, recreationists may be temporarily excluded from some areas; however, the short duration of any such exclusion would minimize the intensity of its effect on recreation resulting in a minor, short-term impact. Also, the local managing partner(s) would implement BMPs to notify visitors about areas closed for construction further reducing the effect.

This alternative may also include periodic overnight camping as part of the Regional Park's current day camp programs and other special events. Conflicts with other recreational uses are not anticipated because overnight camping would not coincide with other recreational activities. Overnight group camping would create additional recreational opportunities, resulting in a beneficial impact on land-based recreation. No new camping facilities would be built, but some existing day use facilities may be modified to accommodate group campers. During construction, recreationists may be temporarily excluded from some areas; however, the short duration of any such exclusion would minimize the intensity of its effect on recreation resulting in a minor, short-term impact. Also, the local managing partner(s) would implement BMPs to notify visitors about areas closed for construction further reducing the effect.

Other facilities and improvements that may occur under this alternative such as a playground structure in the developed recreational areas along the south side of the reservoir and shade trees to support recreational uses would also have a beneficial impact on land-based recreation.

**Water-based Recreation** This alternative would include the short-term minor adverse impacts due to construction activities and the long-term beneficial impacts on water-based recreation that were identified for the Enhanced Recreation and Facilities Alternative in Section 4.3.5. This alternative would also include facility improvements that would not occur under the Enhanced Recreation and Facilities Alternative.

Expansion of the swim lagoon to accommodate the anticipated increase in future demand would benefit water-based recreation by improving the quality of the visitor's recreational experience at the Regional Park. This would be a beneficial impact that would be consistent with the experience description for the WROS S zone.

Fishing improvements would include fish habitat and population enhancements, and improvements to the recreational facilities used by anglers. Such management actions would benefit recreational fishing activities. Construction of a fisherman's shelter on the reservoir's south or east shore would enhance recreational fishing and improve the visitor experience. The shelter would be consistent with the experience descriptions for the WROS S and RD zones. There would be no conflicts with other recreational uses as a result of these actions and these actions would result in a beneficial impact to recreation.

**Interpretation** This alternative may include increased use of interpretive signage and programs to educate the public and improve its interpretation of Contra Loma's history and natural resources. This alternative may also include a botanical garden in the Community Park. Increased interpretive opportunities would have a beneficial impact on recreation. During construction, however, some areas may be temporarily unavailable for use resulting in a temporary and minor impact.

#### **4.3.7 Cumulative Impacts**

##### ***Increased Visitation and Concurrent Improvements***

As discussed previously, visitation to Contra Loma is expected to continue to increase under all of the alternatives with more visitation expected under the two action alternatives than the No Action Alternative. A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans.

The improvements to sports fields 4 and 5 and the boat launch area upgrades would increase visitation to Contra Loma. These improvements and issuance of a license to the City for continued use of the 5.7 acres of land east of the Regional Park for golf course use would affect recreation.

##### ***Facility Management***

None of the RMP alternatives would change the manner in which the managing partner(s) manage Contra Loma for recreation. Nor would such changes be caused by increased visitation

or the concurrent improvements. Therefore, no cumulative impact to facility management would occur under any of the alternatives.

### ***Facility Maintenance***

Under all of the alternatives, provision and maintenance of public facilities and infrastructure would be performed by local managing partner(s). As discussed previously, visitation to Contra Loma would increase under all of the alternatives, with more visitation expected under the two action alternatives than the No Action Alternative. A substantial portion of the expected future visitor increase would be attributable to buildout of the City and County general plans. The improvements to sports fields 4 and 5 and the boat launch area upgrades would also increase visitation to Contra Loma.

This increased visitation would incrementally increase the need for routine maintenance activities which could incrementally increase the frequency of temporary restriction or impairment of public use and recreation access. Also, the new or improved recreational facilities that would be built under the two action alternatives would increase the need for routine maintenance activities which could increase the frequency of temporary restriction or impairment of public use and recreation access. Because the two action alternatives would include more recreation opportunities than the No Action Alternative, they could result in more visitor use, require incrementally more maintenance, and increase the frequency of temporary restriction or impairment of public use and recreation access. Under all of the alternatives, however, this increase would be negligible resulting in a minor cumulative adverse effect on recreation. Also, the local managing partner(s) would implement BMPs to notify visitors about areas closed for construction further reducing the effect.

### ***Resource Management***

The public could be restricted from certain areas of Contra Loma if necessary to avoid sensitive natural or cultural resources. The habitat restoration and improvement projects that could occur under the two action alternatives could increase the number of locations restricted to visitors. Such restrictions could impair recreational activities within those areas and increased visitation could increase the number of visitors affected by such restrictions. However, most recreational activity occurs within Contra Loma's developed recreation areas, which have little potential to support special-status species or for cultural resources to be present. Therefore, such restrictions would not substantially impair recreational activities within Contra Loma. Resource management activities would have a minor cumulative impact on recreation.

### ***Livestock Grazing***

Under all of the alternatives, the potential exists for recreational activities such as biking or hiking to conflict with grazing. Increased visitation to Contra Loma would increase the potential for conflicts between recreation and grazing. The potential for such conflicts would be greater under the two action alternatives than the No Action Alternative, because visitation would be greater. However, recreation activities already occur alongside grazing and any future conflicts are expected to have a minor cumulative impact on recreation.

### ***Facility Improvements***

The new or improved recreational facilities that would be built under the two action alternatives would have long-term beneficial impacts on recreation that would not occur under the No Action

Alternative. The improvements to sports fields 4 and 5, the boat launch upgrades, and the renewed lease between Reclamation and the City of the 5.7-acre parcel located outside of Contra Loma for the existing golf course would have a beneficial cumulative impact on recreation in the general area.

#### **4.3.8 Mitigation Measures**

No need for mitigation has been identified.

## **4.4 Visitor Access and Circulation**

### **4.4.1 Type of Impacts**

This section assesses the potential impacts of the RMP alternatives on visitor access and circulation. Because the RMP neither includes nor defines specific projects, the analysis in this section is qualitative.

Potential impacts on visitor access and circulation could result from four general types of activities:

- Increased Human Use
- Facility Maintenance and Operation
- Natural and Cultural Resource Management and Protection
- Facility Improvements

### **4.4.2 Assumptions**

The visitor access and circulation impact analysis is based on the following assumptions:

- Reclamation would only provide project-specific authorization for activities, including construction and operation of new facilities that have undergone appropriate environmental review.
- The proposed management actions would comply with applicable laws and regulations governing visitor access and circulation.
- The demand for facility management at Contra Loma would continue to increase regardless of the selected alternative, and would require an increased level of management to satisfy this demand.
- The managing partner(s) would continue to provide the standard of care necessary to ensure the health and safety of visitors to Contra Loma, as well as protect the natural environment and cultural resources.
- No land use changes would occur that do not meet RMP goals.

#### **4.4.3 Impacts Common to All Alternatives**

##### ***Increased Human Use***

Visitor use of Contra Loma is expected to increase under all of the RMP alternatives, consistent with the visitation trend over the past few years. Increased visitation would result in greater demand for parking within the Regional Park and Community Park, and would increase the number of vehicles using park roads and parking areas for internal circulation and public roads to access Contra Loma. Currently, the internal roads and parking areas accommodate increased visitation on most days, although occasional gate closures to vehicles are necessary when road and parking capacity is reached. Increased visitation could cause vehicle gate closures to occur more frequently or earlier in the day than current conditions. However, the increased frequency of gate closures is expected to be relatively minor. Increased visitation would cause a minor impact on visitor access and circulation within Contra Loma.

##### ***Facility Maintenance and Operation***

All of the RMP alternatives have been designed to avoid potential land use conflicts to the extent possible. Public motorized vehicles would be confined to existing roads and parking areas within both the Regional Park and the Community Park. Trail system use by private motorized vehicles would continue to be prohibited throughout Contra Loma. The opening and closing of park gates for daily visitor access would be the responsibility of the managing partner(s). The managing partner(s) would continue to maintain and operate publicly accessible roads and parking areas within Contra Loma. If road closure is required during maintenance activities, the closure would be short term and the effect on visitor access and circulation would be minor. Also, the local managing partner(s) would implement BMPs to notify visitors about such closures further reducing the effect.

Trail system maintenance and operation in the Regional Park would continue under all of the RMP alternatives. Hiking, equestrian, and bicycle trail system users could encounter trail sections receiving periodic maintenance activities, such as gravel and rock placement on fire trails to maintain all-weather access for emergency vehicles. The impact on recreational trail access and circulation during maintenance would be temporary and of short duration. If trail closure is required during maintenance activities, the closure would be short term and the effect on visitor access and circulation would be minor. Also, the local managing partner(s) would implement BMPs to notify visitors about such closures further reducing the effect.

##### ***Natural and Cultural Resource Management and Protection***

All of the alternatives include management actions for protecting and managing natural and cultural resources. Under the RMP alternatives, the local managing partner(s) for the Regional Park would continue to perform periodic biological surveys to inventory and assess special-status plant and wildlife species within the Regional Park. Federal and state regulations and laws governing the protection of special-status plant and animal species may require modification or closure of trails or roads if public access is determined to have an adverse impact on such species. Avoiding or minimizing disturbance of special-status plant communities or special-status wildlife species (individuals or populations) could affect current and proposed visitor access and circulation due to road or trail closures, or could influence future road and trail planning. Cultural resources within Contra Loma would be afforded similar protections.

Known populations of special-status plant or animal species, or cultural resource sites are currently protected by the managing partner(s) as directed by Federal or state regulations. Public access and circulation in the vicinity of currently known biologically or culturally sensitive areas would continue to be managed similar to existing conditions (see Section 3.3) and, thus would incur no new impacts. All future planning improvements in the Regional Park would be consistent with laws and regulations that govern the protection of natural and cultural resources. Therefore, conflicts between a visitor access and circulation planning action and a sensitive resource can be proactively addressed early in the planning process to reduce or avoid conflicts to the extent possible. Natural and cultural resource management and protection could result in a minor impact on visitor access and circulation.

#### **4.4.4 Impacts Specific to the No Action Alternative**

##### ***Increased Human Use***

In addition to the impacts addressed in Section 4.4.3, increased visitation would increase the number of vehicles using public roads to access Contra Loma. This increased traffic would be most noticeable on high-volume days and in the immediate vicinity of Contra Loma. Visitation to the Regional Park is generally highest on weekends and holidays from Memorial Day weekend through Labor Day. The local roads providing access to the park (i.e., James Donlon Boulevard, Lone Tree Way, Contra Loma Boulevard) are classified as major collector roads and primary arterials (i.e., high capacity urban roads) in the local road system. Peak traffic on these roads generally occurs on weekday mornings and afternoons which correspond with peak commuting periods. Increased visitation to the Regional Park would mostly occur on the weekends; therefore, its effect on peak hour traffic would be minimal.

The most popular activities at the Community Park involve use of the sports fields; therefore, increased visitation to the Community Park would mostly occur on weekday evenings from 4:00 to 10:00 p.m. and on Saturdays. Therefore, increased visitation to the Community Park could increase traffic on roads leading to the Community Park during the weekday afternoon peak hour.

Increased vehicle trips to Contra Loma would represent a small proportion of the existing traffic on local roads serving Contra Loma. According to the City's General Plan EIR (prepared in 2003), average daily traffic on James Donlon Boulevard, Lone Tree Way, and Contra Loma Boulevard ranges from 13,490 to 27,760 vehicles and volume-to-capacity ratios for these streets range from 0.53 to 0.82 (City of Antioch 2003b). The Regional and Community parks have a combined parking capacity of about 1,500 spaces. If daily visitation by visitors driving vehicles to Contra Loma increases by 20 percent, vehicle trips would increase by about 600 trips per day ( $1,500 \times 20\% \times 1 \text{ trip each direction} [2 \text{ trips}] = 600$ ) on the busiest days. These additional trips would increase average daily traffic from 2 to 4 percent of the current traffic volumes and would increase volume-to-capacity ratios to a range from 0.55 to 0.84. As of 2003, James Donlon Boulevard, Lone Tree Way, and Contra Loma Boulevards had available remaining capacity of approximately 6,100 to 15,000 vehicles. The increased trips expected under this alternative (i.e., about 600) would be minor in the context of the available capacity of the roads servicing Contra Loma. It appears that these roads would be sufficient to accommodate increased visitation expected under this alternative. Increased human use of Contra Loma, therefore, would cause a minor impact on the capacity of local roads.

***Facility Maintenance and Operation***

The impacts would be the same as those addressed in Section 4.4.3.

***Natural and Cultural Resource Management and Protection***

The impacts would be the same as those addressed in Section 4.4.3.

**4.4.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

***Increased Human Use***

In addition to the impacts addressed in Section 4.4.3, this alternative would include more enhanced recreation opportunities which could result in more visitor use and generate more vehicle trips to Contra Loma. The internal roads and parking areas would be expected to accommodate increased visitation on most days; however, gate closures to vehicles when road and parking capacity is reached could occur more frequently than the No Action Alternative. Impacts to parking capacity caused by increased human use could be alleviated by the management action to expand the gravel/overflow parking areas within the Regional Park. Also, the local managing partner(s) would implement BMPs to notify visitors about gate closures further reducing the effect.

If this alternative were to generate 20 percent more new daily visitors than the No Action Alternative, vehicle trips on the busiest days would increase by about 720 trips per day as compared to existing conditions (600 trips under No Action Alternative x 120% = 720 trips). These additional trips would increase average daily traffic from 3 to 5 percent of the current traffic volumes and would increase volume-to-capacity ratios to a range from 0.56 to 0.84. As of 2003, James Donlon Boulevard, Lone Tree Way, and Contra Loma Boulevards had available remaining capacity of approximately 6,100 to 15,000 vehicles. The increased trips expected under this alternative (i.e., about 720) would be minor in the context of the available capacity of the roads servicing Contra Loma. Similar to the No Action Alternative, it appears that these roads would be sufficient to accommodate the increased visitation expected under this alternative. Increased human use of Contra Loma, therefore, would cause a minor impact on the capacity of local roads. The impacts of increased human use on visitor access and circulation would be minor.

***Facility Maintenance and Operation***

In addition to the impacts expected under the No Action Alternative and those addressed in Section 4.4.3, this alternative would include new facilities to enhance recreational opportunities. The new facilities would increase the need for routine maintenance activities which could increase the frequency of temporary road or trail closures. Also, because this alternative would include more enhanced recreation opportunities than the No Action Alternative, it could result in more visitor use and require incrementally more maintenance. Therefore, this alternative could result in more frequent occurrences of temporary road or trail closure than the No Action Alternative. If temporary road or trail closure is required during maintenance activities, the closure would be short term and the effect on visitor access and circulation would be minor. Also, the local managing partner(s) would implement BMPs to notify visitors about such closures further reducing the effect.



### ***Natural and Cultural Resource Management and Protection***

The impacts would be the same as those expected under the No Action Alternative and those addressed in Section 4.4.3.

### ***Facility Improvements***

Under this alternative the East Shore Trail, the West Shore Trail, and the trail across the dam would be improved by paving the surfaces along the entire reservoir shoreline loop. The shoreline loop is open to pedestrian and bicycle traffic. Improvements to the trails that compose the shoreline loop would make the shoreline loop more accessible to a wider range of pedestrian and bicycle traffic, including handicap visitors and other recreationists who may have trouble negotiating unpaved surfaces. Trail improvements along the reservoir shoreline would have a beneficial impact on visitor access and circulation within the Regional Park that would not occur under the No Action Alternative.

This alternative includes the potential to expand or renovate existing buildings or construct new facilities for the purpose of improving Regional Park operations. These facility improvements would not occur under the No Action Alternative. Existing roads and parking areas are anticipated to be sufficient to accommodate any increased vehicle traffic resulting from building and facilities enhancements, although some existing gravel parking areas may be paved and overflow parking at the Regional Park may be expanded, if it becomes necessary to accommodate more vehicles. Facility improvements would not result in permanent impacts on visitor access or circulation. However, temporary road or trail closures, if needed during construction, could result in minor, short-term adverse effects on visitor access and circulation. Also, the local managing partner(s) would implement BMPs to notify visitors about such closures further reducing the effect.

Facility improvements at the Regional Park included in this alternative would comply with ADA accessibility requirements. The local managing partner(s) may implement a management action that would replace, retrofit, or restructure many of the Regional Park facilities to meet current ADA requirements resulting in beneficial impacts that would not occur under the No Action Alternative.

#### **4.4.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

### ***Increased Human Use***

In addition to the impacts addressed in Section 4.4.3, this alternative would include more expanded recreation opportunities which could result in more visitor use and generate more vehicle trips to Contra Loma. The internal roads and parking areas would be expected to accommodate increased visitation on most days; however, gate closures to vehicles when road and parking capacity is reached could occur more frequently than the other two alternatives. Similar to the other alternatives, the local roads providing access to Contra Loma would be sufficient to accommodate increased visitation. The effect of increased human use on visitor access and circulation would be minor. Also, the local managing partner(s) would implement BMPs to notify visitors about gate closures further reducing the effect.

If this alternative were to generate 20 percent more new daily visitors than the Enhanced Recreation and Facilities Alternative, vehicle trips would increase by about 864 trips per day on

the busiest days as compared to existing conditions (720 trips under Enhanced Recreation and Facilities Alternative x 120% = 864 trips). These additional trips would increase average daily traffic from 3 to 6 percent of the current traffic volumes and would increase volume-to-capacity ratios to a range from 0.56 to 0.85. As of 2003, James Donlon Boulevard, Lone Tree Way, and Contra Loma Boulevards had available remaining capacity of approximately 6,100 to 15,000 vehicles. The increased trips expected under this alternative (i.e., about 864) would be minor in the context of the available capacity of the roads servicing Contra Loma. Similar to the other two alternatives, it appears that these roads would be sufficient to accommodate the increased visitation expected under this alternative. Increased human use of Contra Loma, therefore, would cause a minor impact on the capacity of local roads. The impacts of increased human use on visitor access and circulation would be minor.

### ***Facility Maintenance and Operation***

In addition to the impacts expected under the No Action Alternative and those addressed in Section 4.4.5, this alternative would include new facilities to expand recreational opportunities. The new facilities would increase the need for routine maintenance activities which could increase the frequency of temporary road or trail closures. Also, because this alternative would include more expanded recreation opportunities than the other two alternatives, it could result in more visitor use and require incrementally more maintenance. Therefore, this alternative could result in more frequent occurrences of temporary road or trail closure than the other alternatives. If temporary road or trail closure is required during maintenance activities, the closure would be short term and the effect on visitor access and circulation would be minor. Also, the local managing partner(s) would implement BMPs to notify visitors about such closures further reducing the effect.

### ***Natural and Cultural Resource Management and Protection***

The impacts would be the same as those expected under the No Action Alternative and those addressed in Section 4.4.3.

### ***Facility Improvements***

This alternative would include construction of new or expanded recreational facilities in addition to those that would be built under the Enhanced Recreation and Facilities Alternative. Expanded recreational facilities proposed under this alternative would also include expansion of the swim lagoon and construction of additional sports fields. The swim lagoon is one of the principal attractions at the Regional Park's south shore recreation cluster and would be expanded to accommodate increased future demand. The addition of two new sports fields and increased parking capacity (if needed) south of the two existing soccer fields located in the Community Park would attract a substantial number of visitors to the Community Park. Existing roads and parking areas at both the Regional Park and the Community Park are anticipated to be capable of providing an adequate level of service to accommodate increased visitor traffic. Facility improvements would not result in any permanent impacts on visitor access or circulation. However, road or trail closures, if needed during construction, could result in temporary, minor effects on visitor access and circulation that would not occur under the No Action Alternative. Also, the local managing partner(s) would implement BMPs to notify visitors about such closures further reducing the effect.

This alternative may include construction of new trails that would be open to bicycles and/or allow bicycles on portions of trails that are not currently open to bicycles. Expansion of the trail system would improve bicycle, equestrian, and pedestrian access and circulation throughout the Regional Park. In addition, the expansion of the Community Park trails system to include new trails and improve interconnection between trail systems would also improve bicycle and/or pedestrian access and circulation throughout the Community Park. Expanding the trails system in the Regional Park and the Community Park would be beneficial for visitor access and circulation that would not occur under the No Action Alternative.

#### **4.4.7 Cumulative Impacts**

##### ***Increased Visitation and Concurrent Improvements***

As discussed previously, visitation to Contra Loma is expected to continue to increase under all of the alternatives with more visitation expected under the two action alternatives than the No Action Alternative. A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans. The improvements to sports fields 4 and 5 and the boat launch area upgrades will increase visitation to Contra Loma. In particular, the installation of flood lights to sports fields 4 and 5 will allow for increased nighttime visitation to the Community Park.

##### ***Increased Human Use***

Increased visitation would result in greater demand for parking within the Regional Park and Community Park, and would increase the number of vehicles using park roads and parking areas for internal circulation. The internal roads and parking areas would be expected to accommodate increased visitation on most days; however, gate closures to vehicles when road and parking capacity is reached could occur more frequently than current conditions. The cumulative increase in human use of Contra Loma, therefore, would cause a minor impact on visitor access and circulation within Contra Loma under all of the alternatives. However, the management action included in the two action alternatives to expand the gravel/overflow parking areas within the Regional Park could help reduce cumulative impacts to parking capacity caused by increased human use. Also, the local managing partner(s) would implement BMPs to notify visitors about gate closures further reducing the effect.

Increased visitor use of the Regional and Community parks would increase vehicle trips to Contra Loma; regional population growth would also increase traffic volumes on roads near Contra Loma. As discussed previously, the increased traffic would be most noticeable on high-volume days and in the immediate vicinity of Contra Loma. Also, increased vehicle trips (up to about 864 new trips per day) to Contra Loma from implementation of the RMP would represent a small proportion (up to 6 percent) of the existing traffic on local roads serving Contra Loma. The two action alternatives would generate more traffic than the No Action Alternative.

According to the City's General Plan EIR (prepared in 2003), average daily traffic on James Donlon Boulevard, Lone Tree Way, and Contra Loma Boulevard ranges from 13,490 to 27,760 vehicles and volume-to-capacity ratios for these streets range from 0.53 to 0.82. The projected daily traffic on James Donlon Boulevard, Lone Tree Way, and Contra Loma Boulevard after build out of the General Plan would range from 17,000 to 42,700 vehicles and volume-to-

capacity ratios for these streets would range from 0.50 to 0.84 (City of Antioch 2003b). Although the traffic volume would increase over time, expected future roadway improvements envisioned in the General Plan would ensure that the volume-to-capacity ratios for these streets would not exceed their expected range or capacity. Therefore, these roads would be sufficient to accommodate cumulative increases in traffic volume, including those attributable to increased visitation to Contra Loma.

#### ***Facility Maintenance and Operation***

As previously discussed, hiking, equestrian, and bicycle trail system users could encounter trail sections receiving periodic maintenance activities under all of the alternatives. The cumulative increase in visitation would increase the need for trail maintenance, and could also increase the number of visitors unable to access the sections of trail undergoing maintenance. Under all of the alternatives, if trail closure is required during maintenance activities, the closure would be short term and the cumulative effect on visitor access and circulation would be minor. Also, the local managing partner(s) would implement BMPs to notify visitors about such closures further reducing the effect.

#### ***Natural and Cultural Resource Management and Protection***

All of the alternatives include management actions for protecting and managing natural and cultural resources. Avoiding or minimizing disturbance of special-status plant communities or special-status wildlife species (individuals or populations) could affect current and proposed visitor access and circulation due to road or trail closures, or could influence future road and trail planning. Cultural resources within Contra Loma would be afforded similar protections. Increased visitation from buildout of the City and County general plans would increase the number of visitors potentially affected by such protective measures.

However, conflicts between a visitor access and circulation planning action and a sensitive resource can be proactively addressed early in the planning process to reduce or avoid conflicts to the extent possible. Natural and cultural resource management and protection could result in a minor cumulative impact on visitor access and circulation.

#### **4.4.8 Mitigation Measures**

No need for mitigation has been identified.

## **4.5 Utilities**

### **4.5.1 Types of Impacts**

As described in Section 3.5.1, public utilities within Contra Loma include water service, wastewater service, solid waste disposal, electricity, and telephone and radio service available to personnel and visitors of the Regional Park and the Community Park. All of the RMP alternatives would have an effect on the availability and the public's level of demand for utilities.

Potential impacts to public utilities could result from four general types of activities:

- Human Use
- Livestock Grazing

- Facility Improvements
- Communications

#### **4.5.2 Assumptions**

The public utilities impact analysis is based on the following assumptions:

- Reclamation would only provide project-specific authorization for activities, including construction and operation of new facilities that have undergone appropriate environmental review.
- Neither Reclamation nor its local managing partner(s) are public utilities service providers.
- The proposed management actions would comply with applicable laws and regulations governing public utilities.
- The demand for public utilities at Contra Loma will continue to increase regardless of the selected alternative, and an increased level of facilities management will be required to satisfy this demand.
- The managing partner(s) would uphold their responsibilities to provide the standard of care necessary to ensure that utilities are reasonably available and maintained for the benefit of visitors to Contra Loma. These agencies would provide staff levels commensurate with recreation visitation to ensure implementation of the policies and management actions intended to maintain the level and quality of safety and services expected by visitors to the Regional Park and the Community Park.

#### **4.5.3 Impacts Common to All Alternatives**

##### ***Human Use***

As described previously, visitor use of Contra Loma is expected to increase under all of the RMP alternatives. Increased visitation would increase the demand for publicly available utilities such as restrooms, potable water, electricity, and litter and waste disposal. It is anticipated that the managing partner(s) would provide additional portable chemical toilets if needed to accommodate increased demand. Also, similar to current practices, routine maintenance of public utilities, including litter and waste removal, sewage pumping, and plumbing repairs would be required under all project alternatives to avoid potential public health and safety concerns, ensure adequate service, and protect water quality (see Sections 3.2, 3.5, and 3.8). The anticipated increase in human use and corresponding waste disposal needs would be a minor impact because the managing partner(s) would continue to provide adequate waste disposal services. Increased demand for electricity would be a minor impact as electricity would continue to be provided by PG&E under its current electrical generation capacities.

#### **4.5.4 Impacts Specific to the No Action Alternative**

##### ***Human Use***

The impacts would be the same as those addressed in Section 4.5.3.

#### **4.5.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

##### ***Human Use***

This alternative would include facility improvements and renovations that would increase the public's enjoyment and use of the Regional Park and the Community Park. This alternative would likely attract more visitors than the No Action Alternative, thereby increasing demand for utilities. Consequently, this alternative would include utilities infrastructure improvements and renovations. Additional restrooms may be built to accommodate existing and future user needs, while existing portable chemical toilets may be replaced with permanent restrooms served by vault systems, septic tanks, or the City's sewer system. This would be a beneficial impact that would not occur under the No Action Alternative.

The greatest potential for water use occurs during the peak visitor season (May through October). During this peak season, irrigation and potable water use account for the greatest demand for water. Potable water service at Contra Loma is provided by the City via its contractual agreement with CCWD. Additional drinking water fountains and spigots may be installed as a result of this alternative. Extension of City sewer and potable water lines may be needed to accommodate the new infrastructure. This alternative would generate higher water demand than the No Action Alternative; however, the City's water system is expected to have adequate capacity to serve Contra Loma's potable water needs. Therefore, the impact of increased human use on water supply would be minor.

Raw water for irrigation and livestock grazing is derived from the reservoir, with an allocation of up to 100 acre-feet per year. Under this alternative, the volume of water pumped from the reservoir to irrigate the Regional Park might be increased from 100 acre-feet per year to 150 acre-feet per year. This water would be purchased from CCWD if the requested water is available. CCWD would be responsible for reviewing the request for additional water, and would only approve the request if sufficient water is available. Because CCWD would only provide additional water to the Regional Park if it is available, the provision of increased raw water would have a minor impact on water supplies. This impact would not occur under the No Action Alternative.

This alternative would also generate higher demand for other public utilities (i.e., electricity, and litter and waste disposal) than the No Action Alternative. However, this impact would be minor because PG&E would be able to provide electricity to serve the increased demand and because the managing partner(s) would continue to provide adequate litter and waste disposal services.

##### ***Livestock Grazing***

This alternative could result in 0.3 more acre of grazing area than the No Action Alternative. This slight increase would not substantially increase the amount of water needed for livestock. If additional water for livestock grazing is needed, the water would be purchased from CCWD if it is available. This impact is discussed above (Human Use).

##### ***Facility Improvements***

This alternative would generate more demand for utilities than the No Action Alternative. Proposed building expansion or renovation of the existing park offices, the police substation, the secondary storage yard, and the buildings near the swim lagoon could increase demand for

electricity as well as for wastewater and solid waste disposal. A fueling station and fuel storage tank facility proposed for use by the managing partner(s) could also result in an increased demand for utilities. Infrastructure improvements, including a new radio communication tower and facilities as well as the addition of call boxes and security cameras in the Regional Park, would require electricity to operate. The anticipated increase in wastewater and solid waste disposal needs would be a minor impact because the managing partner(s) would continue to provide adequate waste disposal services. Increased demand for electricity would be a minor impact because PG&E would be expected to have sufficient capacity to serve the increased demand.

### ***Communications***

The new radio communication tower and supporting facilities proposed under this alternative would improve communications at Contra Loma, thereby enhancing public service response and aiding the managing partner(s) and other public service personnel in serving the Regional Park. Therefore, construction of the radio tower would be a beneficial impact that would not occur under the No Action Alternative.

## **4.5.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

### ***Human Use***

This alternative would include facility improvements and renovations beyond those proposed under the other two alternatives. These improvements would further increase the public's enjoyment and use of the Regional Park and the Community Park and would likely attract more visitors than the other alternatives. Similar to the other two alternatives, however, the impacts of increased human use on public utilities would be minor because the City's water system is expected to have adequate capacity to serve Contra Loma's potable water needs, PG&E would be able to provide electricity to serve the increased demand, and the managing partner(s) would continue to provide adequate litter and waste disposal services.

### ***Livestock Grazing***

This alternative may include the addition of two new sports fields within the Community Park and expansion of the Community Park boundaries south into the Regional Park. Livestock would be excluded from this area (approximately 15 acres), which is currently grazed. Therefore, this alternative could reduce the amount of grazing area within Contra Loma as compared to the other two alternatives, thereby reducing the amount of water needed for livestock.

### ***Facility Improvements***

This alternative would include new facility improvements in addition to those that would be included in the Enhanced Recreation and Facilities Alternative.

Some improvements may be needed to accommodate overnight camping, such as installation of wash basins and electrical outlets. Allowing overnight camping would increase use of potable water, electricity, and restroom facilities as a result of the change in duration of use by visitors to the park. The expanded swim lagoon would also require some additional electricity to filter the larger volume of water. The increased demand for electricity and water as a result of overnight camping and expansion of the swim lagoon would be a minor impact because the City's water system is expected to have adequate capacity to serve Contra Loma's potable water needs and

PG&E would be able to provide electricity to serve the increased demand. This impact would not occur under the No Action Alternative.

Proposed improvements to the recreational facilities at the Community Park include two new lighted sports fields. Power would be provided by PG&E, which already provides electrical power to the Community Park, including the three lighted sports fields, and the Regional Park. This increased demand for electricity would be a minor impact that would not occur under the No Action Alternative.

To help meet the increased demand for energy, this alternative would include installation of solar panels on shade structures or buildings. Energy derived from these solar panels would be used to supplement the park's energy needs, including powering the water pumps at the swim lagoon. This would be a beneficial impact that would decrease dependency on commercial electricity and that would not occur under the No Action Alternative.

### ***Communications***

The impacts would be the same as those addressed in Section 4.5.5.

## **4.5.7 Cumulative Impacts**

### ***Increased Visitation and Concurrent Improvements***

As discussed previously, visitation to Contra Loma is expected to continue to increase under all of the alternatives with more visitation expected under the two action alternatives than the No Action Alternative. A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans. This buildout would also increase regional demand for utilities. The improvements to sports fields 4 and 5 and the boat launch area upgrades will increase visitation to Contra Loma and the new flood lights will increase electrical demand.

### ***Human Use***

Increased visitation would increase the demand for publicly available utilities such as restrooms, electricity, and litter and waste disposal. It is anticipated that the managing partner(s) would provide additional portable chemical toilets if needed to accommodate increased demand. Under the two action alternatives, additional restrooms may be built to accommodate existing and future user needs, while existing portable chemical toilets may be replaced with permanent restrooms. The anticipated increase in human use and corresponding sanitary and solid waste disposal needs would result in a minor cumulative impact because the managing partner(s) would continue to provide adequate waste disposal services. Increased demand for electricity would have a cumulative minor impact because PG&E would be expected to have sufficient capacity to serve the increased demand.

Water service at Contra Loma is provided by the City via their contractual agreement with CCWD for CVP water. The cumulative increase in visitation to Contra Loma and regional population growth would increase potable water demand within the City. The City's General Plan EIR estimates that water usage between 2010 and 2020 will increase by 13 percent (2,832 acre-feet per year). The City's General Plan includes policies to ensure that adequate water



supply is available for future growth, such as maintaining adequate pumping and storage capacity, ensuring that adequate water supply infrastructure is in place prior to occupancy or development, maintaining existing levels of water service, implementing a residential growth management program development review process for non-residential development to ensure that adequate long-term water supplies are available, and requiring new development to be equipped with drought-tolerant landscaping and water conservation devices. The City's General Plan EIR concludes that these policies will reduce water supply impacts below a level of significance (City of Antioch 2003b). Therefore, the City's water system is expected to have adequate capacity to serve the cumulative increase in potable water needs for Contra Loma and the City. Increased visitation would, therefore, have a minor adverse cumulative impact on water supply.

Wastewater from the Regional Park's permanent restrooms, the showers near the swim lagoon, and the restrooms and concession building/snack bar within the Community Park are collected and conveyed through the City's sewer lines to the DDS D's wastewater treatment plant. As of 2010, the plant was operating at 77 percent of its capacity (Delta Diablo Sanitation District 2013). The cumulative increase in visitation to Contra Loma and projected population growth the DDS D service area (i.e., Antioch, Bay Point, Pittsburg) would increase wastewater demand within the DDS D service area. DDS D is expected to continue to expand its treatment capacity consistent with growth projections and the associated demand increase and the City is expected to continue to expand sewer line capacity to serve increased growth within its service area. Therefore, the DDS D treatment plant and the City's sewer lines are expected to have sufficient capacity to serve the cumulative increase in wastewater generation. Increased visitation would have a minor adverse cumulative impact with respect to wastewater generation and treatment.

### ***Facility Improvements***

The two action alternatives would include facility improvements that are not included in the No Action Alternative. These improvements would generate increased demand for utilities. Similar to the cumulative effects described under Human Use above, the increased demand for utilities caused by the facility improvements and increased visitation would have a minor cumulative impact on utilities.

#### **4.5.8 Mitigation Measures**

No need for mitigation has been identified.

## **4.6 Public Health and Safety**

### **4.6.1 Types of Impacts**

Public health and safety issues at the Regional Park and the Community Park include fire protection, police service, medical response, boating and swimming safety, natural hazards, and general public safety. Safety issues related to wildland fires, dam failure, and hazardous materials are described in Section 4.15 (Hazards), and safety issues related to seismicity and other potential geologic hazards are described in Section 4.11 (Geologic and Soil Resources). The RMP does not address health and safety issues related to operation of the dam and reservoir, which is subject to a separate contract between Reclamation and CCWD and is therefore outside the scope of the Contra Loma RMP.

Potential impacts to public health and safety could result from seven general types of activities:

- Human Use
- Emergency Preparedness
- Facility Maintenance
- Facility Improvements
- Enhanced Recreational Facilities
- Communications
- Expanded Recreational Facilities

#### **4.6.2 Assumptions**

The public health and safety impact analysis is based on the following assumptions:

- Reclamation would only provide project-specific authorization for activities, including construction and operation of new facilities that have undergone appropriate environmental review.
- The proposed management actions would comply with applicable laws and regulations governing public health and safety.
- The managing partner(s) would uphold their responsibilities to provide the standard of care necessary to ensure the health and safety of visitors to Contra Loma. These agencies would provide staff levels commensurate with recreation visitation to ensure implementation of the policies and management actions intended to maintain the level and quality of safety and services expected by visitors to the Regional Park and the Community Park.

#### **4.6.3 Impacts Common to All Alternatives**

##### ***Human Use***

As described previously, visitor use of Contra Loma is expected to increase under all of the RMP alternatives. More visitors would result in the increased use of restrooms and other facilities and infrastructure and would generate more solid and sanitary waste. The current managing partners manage and maintain sanitary services in a manner that protects public health and safety (see Section 3.5). Even with increased visitation, the future managing partner(s) would be expected to manage sanitary services public utilities at levels that would ensure that the RMP's public health and safety goal is maintained. It is anticipated that under all of the RMP alternatives, the managing partner(s) would provide additional portable chemical toilets if needed and would increase the frequency of solid waste removal and/or provide more waste receptacles, as needed.

Increased human use could also increase the amount of solid waste, discarded food, and other attractants for unwanted pests (such as rodents or wasps), and could increase the potential for accidental fires. However, the local managing partner(s) would implement integrated pest

management (IPM) plans to control pests and to reduce fire hazards by mowing and grazing the grassland areas.

Therefore, impacts of increased human use on public health and safety would be minor.

***Emergency Preparedness***

The current managing partners provide emergency services, including fire, police, and lifeguard services. Increased visitation would potentially increase the demand for emergency services, as well as the number of rescues and assistance responses performed by lifeguards at the swim lagoon and possibly the reservoir. The managing partner(s) would either implement fire and emergency preparedness plans for the Regional Park and the Community Park or would contract the provision of police and fire services to other local agencies. At the Regional Park, continued operation of the existing police substation and fire station as well as continued provision of lifeguard services may be included in the proposed management actions common to all alternatives. Maintenance of the Regional Park trail system would continue to ensure all-weather access for emergency vehicles. Trail system bike patrols may also be included in management actions. Use of existing and expanded emergency and safety services, and the development and implementation of emergency preparedness plans would ensure that increased visitor use of Contra Loma would have no impact on the public health and safety of park users.

The City's Office of Emergency Services maintains a community emergency disaster warning system to notify the public of potential emergencies, including earthquakes, severe winter storms, wildland fires, and hazardous materials events. The RMP would have no impact on the City's emergency disaster warning system.

***Facility Maintenance***

All of the RMP alternatives include continuation of routine maintenance and repair activities that could affect visitor health and safety. For example, some maintenance and repair activities include the use of mechanized equipment that could injure visitors and some activities could create temporary hazards such as open trenches. Increased visitation could incrementally increase the amount of facility maintenance required, thereby incrementally increasing the potential risk to visitors. However, facility maintenance would have a minor adverse impact on public health and safety because the managing partner(s) would be expected to perform maintenance and repair activities in a manner that meets the RMP goal of protecting public health and safety.

**4.6.4 Impacts Specific to the No Action Alternative**

***Human Use***

The impacts would be the same as those addressed in Section 4.6.3.

***Emergency Preparedness***

The impacts would be the same as those addressed in Section 4.6.3.

***Facility Maintenance***

The impacts would be the same as those addressed in Section 4.6.3.

#### **4.6.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

##### ***Human Use***

In addition to the impacts addressed in Section 4.6.3, this alternative would include facility improvements and renovations that would increase the public's enjoyment and use of the Regional Park and the Community Park. This alternative would likely attract more visitors than the No Action Alternative, thereby increasing demand for public health and safety services. However, facilities management actions performed by the managing partner(s) would maintain public utilities at levels that would ensure that the RMP's public health and safety goal is maintained. Also, the local managing partner(s) would implement IPM plans to control pests and to reduce fire hazards by mowing and grazing the grassland areas. Therefore, the impacts of increased human use on public health and safety services would be minor.

##### ***Emergency Preparedness***

The impacts would be the same as those expected under the No Action Alternative and addressed in Section 4.6.3.

##### ***Facility Maintenance***

This alternative would include more recreation and infrastructure facilities than the No Action Alternative, which could require more maintenance and repair than the No Action Alternative. In addition, because this alternative would include more enhanced recreation opportunities than the No Action Alternative, it could result in more visitor use and require incrementally more maintenance and repairs than the No Action Alternative. Similar to the No Action Alternative, however, facility maintenance would have a minor adverse impact on public health and safety because the managing partner(s) would be expected to perform maintenance and repair activities in a manner that meets the RMP goal of protecting public health and safety.

##### ***Facility Improvements***

This alternative would include a new fueling station and fuel storage tank for use by park personnel to refuel equipment and vehicles used for Regional Park operations. The new fueling station and fuel storage tank would not be available for public use and would only be operated by trained managing partner staff, thereby minimizing the potential for public contact with the fuel. The facility would be designed with fuel containment devices to protect public health and safety as well as prevent accidental spills from entering the reservoir or contaminating groundwater; therefore, the impact on public health and safety would be minor. This impact would not occur under the No Action Alternative.

This alternative also includes renovations to the existing park offices, police substation, secondary storage yard, and buildings near the swim lagoon. These renovations are intended to better provide for public service and safety by increasing park management efficiency and creating a place for public education activities such as swim and safety lessons. Renovations to these existing buildings and structures would have a beneficial impact on public health and safety that would not occur under the No Action Alternative.

Under this alternative, the existing portable chemical toilets may be replaced with permanent restrooms and new or upgraded sewer lines may be built to connect future permanent restrooms to the City's sewer and wastewater system. Because the existing restrooms and portable toilets

are properly used and maintained, they represent a very limited potential source of biological contamination to the reservoir. These improvements, however, would further reduce the potential for inadvertent spills from the portable restrooms, resulting in a beneficial impact on public health and safety. This impact would not occur under the No Action Alternative.

### ***Enhanced Recreational Facilities***

Fishing is a popular recreational activity at the reservoir. During drawdowns, the floating fishing docks often become unusable and unsafe due to the steep angles of the access ramps and/or the steepness of the fishing docks themselves, requiring temporary closure. When this occurs, some anglers choose to fish from the boat dock, which can cause congestion and interfere with boater access. Fishing from the boat dock poses a safety issue to boaters who could be ensnared in fishing line or injured by a fish hook while using the dock. This alternative may include the modification or addition of more fishing docks to provide anglers with safe, continuous fishing opportunities away from the boat dock during reservoir drawdowns. These improvements would be a beneficial impact on public safety that would not occur under the No Action Alternative.

This alternative may include a “safe swim” area or splash pad specifically for small children. This would improve swim safety for small children because it would separate them from older children and adults, thereby reducing the potential for injurious physical contact. This improvement would also reduce the potential for small children without proper swimming skills to venture into deeper water. This improvement would have a beneficial impact on public safety that would not occur under the No Action Alternative.

### ***Communications***

A new radio communications tower and supporting facilities would be built under this alternative. Improvements to communications at Contra Loma would enhance emergency response and preparedness as well as aid the managing partner(s) and other public service personnel in the management of the park providing a beneficial impact that would not occur under the No Action Alternative.

Call boxes and/or security cameras may also be installed in the Regional Park. Call boxes would allow visitors to contact public safety officials in case of an emergency. Security cameras could help reduce the potential for unlawful activities (e.g., mugging, assault) that could harm visitors. Installation of these devices would have a beneficial impact on public safety that would not occur under the No Action Alternative.

## **4.6.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

### ***Human Use***

In addition to the impacts expected under the No Action Alternative and addressed in Section 4.6.3, this alternative would include facility improvements and renovations that would increase the public’s enjoyment and use of the Regional Park and the Community Park. This alternative would likely attract more visitors than the other two alternatives, thereby increasing demand for public health and safety services. However, facilities management actions performed by the managing partner(s) would maintain public utilities at levels that would ensure that the RMP’s public health and safety goal is maintained. Also, the local managing partner(s) would implement IPM plans to control pests and to reduce fire hazards by mowing and grazing the

grassland areas. Therefore, the impacts of increased human use on public health and safety services would be minor.

***Emergency Preparedness***

The impacts would be the same as those expected under the No Action Alternative and addressed in Section 4.6.3.

***Facility Maintenance***

This alternative would include more recreation and infrastructure facilities than the other two alternatives, which could require more maintenance and repair than the other two alternatives. In addition, because this alternative would include more expanded recreation opportunities, it could result in more visitor use and require incrementally more maintenance and repairs than the other alternatives. Similar to the other two alternatives, however, facility maintenance would have a minor adverse impact on public health and safety because the managing partner(s) would be expected to perform maintenance and repair activities in a manner that meets the RMP goal of protecting public health and safety.

***Facility Improvements***

The impacts would be the same as those addressed in Section 4.6.5.

***Expanded Recreational Facilities***

This alternative would include expanded recreational facilities and opportunities beyond those of the other two alternatives. The expanded trail systems, increased interpretive opportunities, and disc golf course would result in a wider dispersal of park visitors than current conditions and any of the other alternatives, increasing the potential for visitors to encounter natural hazards such as snakes and ticks as well as increasing the likelihood of visitors sustaining injuries in more remote parts of the park. Introducing overnight group camping opportunities to the Regional Park would increase the potential for injury due to reduced visibility during nighttime hours. Also, an expanded swim lagoon would increase the number of people using the lagoon, and could increase the likelihood of water-related accidents. However, the managing partner(s) would ensure that adequate staff and emergency plans are available to effectively accommodate the increased risk to public health and safety related to expanded recreational facilities resulting in a minor impact.

***Communications***

The impacts would be the same as those addressed in Section 4.6.5.

**4.6.7 Cumulative Impacts**

***Increased Visitation and Concurrent Improvements***

As discussed previously, visitation to Contra Loma is expected to continue to increase under all of the alternatives with more visitation expected under the two action alternatives than the No Action Alternative. A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans. The improvements to sports fields 4 and 5 and the boat launch area upgrades will increase visitation to Contra Loma.

***Human Use***

More visitors would result in the increased use of restrooms and other facilities and infrastructure and would generate more solid and sanitary waste, which could create public health and safety issues. However, facilities management actions performed by the managing partner(s) would maintain public utilities at levels that would ensure that the RMP's public health and safety goal is maintained. It is anticipated that under all of the RMP alternatives, the managing partner(s) would provide additional portable chemical toilets if needed and would increase the frequency of solid waste removal and/or provide more waste receptacles, as needed. Increased human use could also increase the amount of solid waste, discarded food, and other attractants for unwanted pests (such as rodents or wasps), and could increase the potential for accidental fires. However, the local managing partner(s) would continue to implement IPM plans to control pests and to reduce fire hazards by mowing and grazing the grassland areas. Therefore, cumulative impacts of increased human use on public health and safety would be minor.

***Emergency Preparedness***

The cumulative increase in visitation would potentially increase the demand for emergency services. The two action alternatives would likely result in more demand than the No Action Alternative. Included in all RMP alternatives are management actions that require local managing partner(s) to meet the anticipated increased demand for emergency services, which would include additional demand caused by cumulative increases in visitation. Use of existing and expanded emergency and safety services, and the development and implementation of emergency preparedness plans would ensure that the cumulative increase in visitor use of Contra Loma would have no impact on the public health and safety of park users.

***Facility Maintenance***

All of the RMP alternatives include continuation of routine maintenance and repair activities that could affect visitor health and safety. The two action alternatives would require more maintenance than the No Action Alternative. A cumulative increase in visitation could incrementally increase the amount of facility maintenance required, thereby incrementally increasing the potential risk to visitors. However, facility maintenance would have a minor cumulative adverse impact on public health and safety because the managing partner(s) would be expected to perform maintenance and repair activities in a manner that meets the RMP goal of protecting public health and safety.

***Expanded Recreational Facilities***

The Expanded Recreation and Facilities Alternative may include expanded trail systems, increased interpretive opportunities, and disc golf course that would result in a wider dispersal of park visitors than current conditions and any of the other alternatives, increasing the potential for visitors to encounter natural hazards such as snakes and ticks as well as increasing the likelihood of visitors sustaining injuries in more remote parts of the park. Increased visitation would incrementally increase the potential for these effects. However, the managing partner(s) would ensure that adequate staff and emergency plans are available to effectively accommodate the increased risk to public health and safety related to expanded recreational facilities. This would result in a minor cumulative impact with respect to public health and safety.

**4.6.8 Mitigation Measures**

No need for mitigation has been identified.

## **4.7 Water Resources**

### **4.7.1 Types of Impacts**

Water resources include groundwater and surface water carried by drainages or stored in the Contra Loma Reservoir. Potential impacts to water resources could result from five general types of activities:

- Human Use and Waste Disposal
- Livestock Grazing
- Facility Improvements
- Construction Activities
- Increased Withdrawal of Reservoir Water

### **4.7.2 Assumptions**

The water resources impact analysis is based on the following assumptions:

- Reclamation would only provide project-specific authorization for activities, including construction and operation of new facilities that have undergone appropriate environmental review.
- The local managing partner(s) would implement BMPs when necessary to protect water resources.
- The proposed management actions would comply with applicable laws and regulations governing water resources.

### **4.7.3 Impacts Common to All Alternatives**

#### ***Human Use and Waste Disposal***

As described previously, visitor use of Contra Loma is expected to increase under all of the alternatives. Increased visitation would increase the potential for unauthorized human contact with the reservoir, would increase the volume of solid, human, and domestic animal (e.g., dogs and horses) waste generated within the recreation area, would increase trail and road use, and would increase the potential for reservoir infestation by non-native zebra and quagga mussels.

Human-borne pathogens and viruses can affect reservoir water quality through direct bodily contact; however, body contact with the reservoir is highly restricted to protect the reservoir's domestic water supply. These restrictions would continue under all of the alternatives, thereby ensuring that potential adverse impacts to water quality due to bodily contact would be minimal.

Improper disposal of litter and waste can affect reservoir water quality if introduced to the reservoir through wind dispersion or other means. Under all of the alternatives, however, litter and waste reduction programs would continue to be implemented to effectively meet demand. As a result, adverse impacts to water quality related to litter and waste disposal would be minor.



Increased visitation would increase the volume of human sanitary waste generated at Contra Loma. Improper sanitary disposal, plumbing system failure, accidental spills, or overflow of portable toilets can affect reservoir water quality. Under all of the alternatives, however, the restroom facilities would continue to be inspected and maintained at regular intervals, thereby ensuring that adverse impacts to water quality from human sanitary waste would be minor.

Increased visitation would likely increase boating activity, thereby increasing the potential for reservoir infestation by zebra and quagga mussels and other non-native species. Under all of the alternatives, however, the local managing partners(s) would continue to support and complement CCWD's programs to prevent zebra and quagga mussel infestation, thereby ensuring that adverse impacts to water quality from invasive species would be minor.

The public is not allowed to operate gasoline-powered engines on the reservoir to prevent contamination from petroleum products and exhaust byproducts, and none of the RMP alternatives would alter this restriction. Therefore, no impacts to water resources would result from gasoline-powered engines.

Equestrian activities and dog walking have the potential to introduce animal waste into the reservoir through surface runoff. Under all of the alternatives, however, the local managing partner(s) would continue to provide plastic waste bags in various locations and encourage dog owners to dispose of dog waste in garbage cans. Therefore, adverse impacts to water quality from domestic animal waste would be minor.

Hiking, biking, and equestrian activities can cause small amounts of localized erosion, and the resulting sediment can be transported to the reservoir by surface runoff. Chemical runoff from roads and parking lots can also be transported to the reservoir by surface runoff. Under all of the alternatives, however, the local managing partner(s) would continue to manage and maintain the trail and road system in a manner that maintains proper drainage and controls erosion and chemical runoff. Therefore, adverse impacts to water quality from trail and road use would be minor.

#### **4.7.4 Impacts Specific to the No Action Alternative**

##### ***Human Use and Waste Disposal***

The water quality impacts would be the same as those addressed in Section 4.7.3. Because the No Action Alternative would not involve new facilities or land uses, it would have no impact on hydrology.

##### ***Livestock Grazing***

Livestock grazing can impair water quality not only through transport of feces from surface runoff, but also through the process of livestock-induced erosion and subsequent transport of sediment. Within Contra Loma, grazing is rotated between multiple enclosures and livestock are not allowed near the reservoir to protect water quality. One small ephemeral stream flows through the southern part of the grazed area into the reservoir. This ephemeral stream has a limited potential to transport fecal matter and sediment directly into the reservoir. Grazing would likely continue under all of the alternatives, subject to preparation of a Reclamation-approved grazing management plan by the local managing partner(s). Under this alternative, the acreage,

location, and intensity of grazing are not likely to change. Continuation of grazing at current livestock levels would have no impact on water resources beyond the existing limited effects of this activity described above.

#### **4.7.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

##### ***Human Use and Waste Disposal***

In addition to the impacts expected under the No Action Alternative and addressed in Section 4.7.3, this alternative would include more enhanced recreation opportunities which could result in more visitor use. Increased visitation would increase the potential for water quality impacts caused by unauthorized human contact with the reservoir; generation and disposal of solid, human, and domestic animal waste; trail and road use; and introduction of non-native zebra and quagga mussels into the reservoir. As discussed in Section 4.7.3, the proposed management actions would ensure that these impacts are minor.

This alternative would include new infrastructure and facility improvements that could affect water resources. For example, the existing portable chemical toilets may be replaced with permanent restrooms. Because the existing portable toilets are properly used and maintained (see Section 3.5), they represent a very limited potential source of contamination to the reservoir. This improvement, however, would further reduce the potential for inadvertent spills from the portable restrooms, resulting in a beneficial impact on water resources. This impact would not occur under the No Action Alternative.

This alternative may include new, expanded, or renovated buildings and structures to improve operations. Examples include a new park residence, classroom facilities near the swim lagoon, and a radio communication tower. This alternative may also include new or renovated recreational facilities, such as new or reconstructed fishing docks, and improvements at the boat launch area to enhance boating and fishing access. Operation of these improvements would be substantially similar to use of the existing facilities and would result in minor impacts on water resources that would not occur under the No Action Alternative.

This alternative may include a new fueling station and fuel storage tank for Regional Park vehicles and equipment as well as for public safety officers. The managing partner(s) would be required to implement substantial design and operational measures to protect surface water (e.g., reservoir) and groundwater quality. Only staff trained to safely use the station would be allowed to operate it, thereby reducing the potential for spills caused by improper use. The managing partner(s) must design the facility with fuel containment devices to prevent any spilled fuel from reaching the natural ground surface (i.e., soil), entering the reservoir, or otherwise impairing surface water or groundwater quality. This facility may only be built and operated in compliance with applicable federal and federally-mandated laws, regulations, and permits. As a condition of Reclamation's approval of this facility, the local managing partner(s) will ensure that spill prevention and decommissioning plans are prepared or amended to address operation of this facility. By implementing these measures, this facility would have a minor adverse impact on water quality. This impact would not occur under the No Action Alternative.

This alternative may include a new "safe swim" area or splash pad at the swim lagoon for small children and expansion of the pumping and filtration facility to accommodate this additional

swim/splash area. Similar to the swim lagoon, these additional swim/splash areas would be hydrologically separated from the reservoir, ensuring that water from the lagoon does not enter the reservoir; therefore, the new swim/splash area would have no impact on water quality.

### ***Livestock Grazing***

This alternative could change the locations of some grazing areas and could increase the total grazing area by 0.3 acre. The changes to the grazing areas would not be located within the reservoir's watershed, so grazing in those areas would not affect reservoir water quality. Also, the relatively small increase in grazing acreage would not adversely affect water quality and hydrology beyond the existing effects of this activity. Therefore, livestock grazing would have no impact on water quality and hydrology beyond the existing effects of this activity. These effects would be similar to the grazing effects under the No Action Alternative.

### ***Facility Improvements***

Under this alternative, a storm water retention basin may be built to improve the quality of water carried by the Regional Park's storm drain system before it reaches the reservoir. This would have a beneficial impact on reservoir water quality that would not occur under the No Action Alternative.

### ***Construction Activities***

This alternative would include construction of new, expanded, or renovated facilities and supporting infrastructure that would not occur under the No Action Alternative. This alternative may also include drainage improvements to sports field 3. Construction activities and drainage improvements can affect water quality through erosion and sedimentation, a temporary increase in turbidity due to runoff from construction areas, or inadvertent spilling of construction-related chemicals. However, this alternative includes a management action requiring a focused site-specific assessment of any potential impact on water quality when specific construction activities are proposed. If required by Federal regulations, the local managing partner(s) proposing a construction activity would submit a plan that identifies the sources of sediment and other pollutants on site and ensures the reduction of such pollutants in stormwater discharged from the construction site. The plan will provide descriptions of BMPs selected to control erosion, sediment discharge, turbidity, and other pollutant sources during construction. If appropriate needed, BMPs would be implemented prior to construction and would be continued through the duration of construction activities. This management action would ensure that construction activities and drainage improvements would result in minor adverse effects on water quality. These effects would not occur under the No Action Alternative.

### ***Increased Withdrawal of Reservoir Water***

Under this alternative, the volume of water pumped from the reservoir for irrigation of the Regional Park might be increased from 100 acre-feet per year to 150 acre-feet per year. This water would be purchased from CCWD if the requested water is available.

Because the additional water would be drawn from the reservoir, it would have the same water quality as the reservoir water and therefore, would have no impact on the water quality of the reservoir. CCWD uses the reservoir in combination with other raw water storage supplies to meet peak summer demand. The net reservoir drawdown of 50 acre-feet would be withdrawn from the reservoir gradually over a 3-4 month period of time during the summer irrigation

season. It should also be noted that some of the irrigation water not lost to evaporation or evapotranspiration would return to the reservoir via surface flow and subsurface seepage. CCWD would be responsible for reviewing the request for additional water, and would only approve the request if sufficient water is available. Because CCWD would only provide additional water to the Regional Park if it is available, the provision of increased raw water would have a minor impact on water supplies that would not occur under the No Action Alternative.

#### **4.7.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

##### ***Human Use and Waste Disposal***

This alternative would include more expanded recreation opportunities than the other two alternatives which could result in more visitor use. Increased visitation would increase the potential for water quality impacts caused by unauthorized human contact with the reservoir; generation and disposal of solid, human, and domestic animal waste; trail and road use; and introduction of non-native zebra and quagga mussels into the reservoir. As discussed in Section 4.7.3, the proposed management actions would ensure that these impacts are minor.

This alternative may include expanding the size and capacity of the swim lagoon. However, the swim lagoon is hydrologically separated from the reservoir, ensuring that water from the lagoon does not enter the reservoir. Because the enlarged portion of the swim lagoon would also be separated from the reservoir, it would have no impact on water quality.

This alternative may introduce overnight group camping to the Regional Park on a discretionary basis as part of the current day camp programs or other special events. Group camping would require event-specific authorization, oversight, and regulation by the Regional Park's local managing partner to ensure protection of the park's facilities and natural resources, including water quality. As with all of the alternatives, body contact with the reservoir would remain highly restricted to protect the reservoir's domestic water supply. Because camping would be discretionary and would receive oversight from the Regional Park's local managing partner, and because body contact restrictions would continue to be enforced, adverse impacts to water quality from overnight group camping would be minor. These impacts would not occur under the No Action Alternative.

##### ***Livestock Grazing***

In addition to the changes described in Section 4.7.5, this alternative may include the addition of two new sports fields within the Community Park and expansion of the Community Park boundaries south into the Regional Park. Livestock would be excluded from this area (approximately 15 acres), which is currently grazed. Therefore, this alternative could reduce the amount of grazing area within Contra Loma. This area is not located within the reservoir's watershed, so elimination of grazing in this area would not affect reservoir water quality. Reducing grazing in this area could have a minor beneficial effect on the water quality of receiving waters that would not occur under the No Action Alternative.

##### ***Facility Improvements***

The impacts would be the same as those addressed in Section 4.7.5.

**Construction Activities**

This alternative would include construction of new infrastructure and facility improvements in addition to those that would be built under the Enhanced Recreation and Facilities Alternative. Therefore, this alternative would have more potential to adversely affect water resources from construction activities than the other alternatives would. Similar to the Enhanced Recreation and Facilities Alternative, however, this alternative includes a management action requiring a focused site-specific assessment of any potential impact on water quality when specific construction activities are proposed, preparation of a construction stormwater plan, and implementation of water quality BMPs as appropriate. This management action would ensure that construction activities and drainage improvements would result in minor adverse effects on water quality. These effects would not occur under the No Action Alternative.

**Increased Withdrawal of Reservoir Water**

The impacts would be the same as those addressed in Section 4.7.5.

**4.7.7 Cumulative Impacts****Increased Visitation, Concurrent Improvements, and Land Use Changes**

As discussed previously, visitation to Contra Loma is expected to continue to increase under all of the alternatives with more visitation expected under the two action alternatives than the No Action Alternative. A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans. The improvements to sports fields 4 and 5 and the boat launch area upgrades will increase visitation to Contra Loma.

Approximately 38 percent of the land within the City (6,383 acres) and nearly 46 percent of the land within the unincorporated portion of the General Plan study area (2,240 acres) were vacant in 2003. Buildout of the City and County general plans would convert a substantial amount of vacant land to urbanized uses, increasing the potential for water quality impacts.

**Human Use and Waste Disposal**

Increased visitation would increase the potential for unauthorized human contact with the reservoir, would increase the volume of solid, human, and domestic animal (e.g., dogs and horses) waste generated within the recreation area, would increase trail and road use, and would increase the potential for reservoir infestation by non-native zebra and quagga mussels. The two action alternatives would have greater potential for this effect than the No Action Alternative.

However, body contact restrictions on reservoir use would ensure that potential adverse impacts to water quality due to bodily contact would be minimal, litter and waste reduction programs would continue to be implemented to effectively meet demand, restroom facilities would continue to be inspected and maintained at regular intervals, the local managing partners(s) would continue to support and complement CCWD's programs to prevent zebra and quagga mussel infestation, prohibitions on public use of gasoline-powered engines on the reservoir would continue, the local managing partner(s) would continue to provide plastic waste bags in various locations and encourage dog owners to dispose of dog waste in garbage cans, and the local managing partner(s) would continue to manage and maintain the trail and road system in a

manner that maintains proper drainage and controls erosion and chemical runoff. For these reasons, the cumulative effect on water quality from increased human use would be minor.

***Facility Improvements and Construction Activities***

About 350 acres of the 741-acre recreation area drains to the Contra Loma Reservoir, and the remainder drains elsewhere. The reservoir's total watershed is about 680 acres. About half of its watershed lies within Regional Park and nearly all of the remainder is located in EBRPD's Black Diamond Mines Regional Preserve located adjacent to the southern boundary of Contra Loma. No foreseeable land use changes or other activities are expected to occur within Black Diamond Mines Regional Preserve that would substantially alter the water quality of the reservoir or its watershed. The RMP, therefore, would not contribute to a cumulative impact on the water quality of the reservoir or its watershed.

As discussed above, certain RMP activities could have minor impacts on water quality. Some of those activities would occur within the areas located outside the reservoir's watershed, which drain either toward the municipal reservoir at the golf course, the Contra Costa Canal, or the City storm drain system. Development needed to accommodate project regional population growth could also impair the water quality of the receiving waters. For example, erosion and inadvertent chemical spills from construction activities could pollute these waters. Also, increased urbanization would increase the amount of fertilizers, pesticides, and other pollutants washed into streams by storm events and other means. These related activities could cumulatively affect the water quality of receiving waters.

As discussed above, RMP management actions would protect water quality and ensure that RMP activities result in only minor impacts on water quality. In addition, the City's General Plan includes policies to protect water quality from contaminated runoff. These measures include working with the Contra Costa County Flood Control District to ensure that runoff from new development is adequately handled; requiring new developments to provide erosion and sedimentation control measures to protect water quality; requiring implementation of BMPs in the design of drainage systems to reduce discharge of nonpoint source pollutants originating in streets, parking lots, paved industrial work areas, and open spaces involved with pesticide applications; requiring the implementation of BMPs to minimize erosion and sedimentation resulting from new development; opposing proposals with the potential to increase the salinity of the Delta; and, participating in the Contra Costa Clean Water program to reduce stormwater pollution and protect the water quality of the City's waterways (City of Antioch 2003a). The County's General Plan also includes policies to protect water quality including identification and control of point sources of pollution to protect beneficial uses of water; cooperating with other regulatory agencies to control point and non-point water pollution sources to protect beneficial uses of water; requiring that grading, filling and construction activity near watercourses be conducted in a manner that minimizes impacts from increased runoff, erosion, sedimentation, biochemical degradation, or thermal pollution; preserving watersheds and groundwater recharge areas by avoiding the placement of potential pollution sources in areas with high percolation rates; discouraging runoff of pollutants and siltation into marsh and wetland areas from outfalls serving nearby urban development; encouraging public ownership of lands bordering reservoirs to safeguard water quality; and, taking an active role in reviewing regional, State, and Federal programs that could affect water quality (Contra Costa County 2005).

The RMP management actions to protect water quality, City and County water quality protection policies, and project specific compliance with applicable water quality regulations would ensure that cumulative water quality impacts would be minor.

#### **4.7.8 Mitigation Measures**

No need for mitigation has been identified.

## **4.8 Vegetation**

### **4.8.1 Types of Impacts**

Vegetation communities within Contra Loma have been classified according to habitat types defined by the CWHR System (California Department of Fish and Game 2011). These habitat types include annual grassland, blue oak woodland, valley foothill riparian, fresh emergent wetland, riverine, lacustrine, urban, and barren. Inasmuch as the classification of barren is defined as the absence of vegetation due to hardscape such as paving, sidewalks, curbs, and gravel roads and parking lots, impacts to vegetation within this category are considered inconsequential and no further discussion of impacts to this habitat type is needed.

Potential impacts to vegetation resources could result from seven general types of activities:

- Wildland Fire
- Protection or Conservation of Special Status Plant Species
- Human Use at Public Sites and Trails
- Livestock Grazing
- Introduction of Invasive Species
- Construction Related Surface Disturbance (Temporary or Permanent)
- Increased Withdrawal of Reservoir Water

Impacts to vegetation can be direct, as in the case of trampling or removing rooted vegetation as a part of construction activities, or may be indirect, as in the case of introduction of invasive weeds by various vectors.

### **4.8.2 Assumptions**

The vegetation resources impact analysis is based on the following assumptions:

- Reclamation would only provide project-specific authorization for activities, including construction and operation of new facilities that have undergone appropriate environmental review.
- The proposed management actions would comply with applicable laws and regulations governing protection of special-status plants and upland and wetland plant communities.

- Reclamation and the managing partner(s) would continue to manage, protect, and restore Contra Loma's vegetation resources in a manner consistent with current management trends as articulated in existing management and policy documents and ordinances.
- The local managing partner(s) would implement BMPs to protect vegetation from chemical spills or other storm-water runoff pollutants.

#### **4.8.3 Impacts Common to All Alternatives**

##### ***Wildland Fire***

Wildland fire can have temporary negative impacts on annual grasslands, especially native bunchgrasses and special status plants. However, wildland fire was commonly employed by Native Americans in the coastal prairies of California to enhance wildlife habitat. California's native coastal prairies have adapted to this historic occasional fire regime. Thus, occasional grassland fire does not necessarily lead to lasting negative impacts on native grasslands. In Contra Loma, occasional grassland fires may have a beneficial impact by controlling certain noxious weeds, most notably star thistle.

The risk of catastrophic wildland fire in Contra Loma is low because existing wildland fire management facilities provided by the CCCFPD are maintained at high response levels near Contra Loma, with 2 stations located within 1.5 miles. The current local managing partner for the Regional Park also provides backup fire suppression with satellite stations and a wildland fire truck located at the southern park boundary. Included in all RMP alternatives are management actions that require the local managing partner(s) to meet the anticipated demand for fire suppression services. The managing partner(s) would either implement fire preparedness plans for the Regional Park and the Community Park or would contract the provision of police and fire services to other local agencies. Wildland fire risk is further reduced because the management actions common to all alternatives would include periodic mowing and livestock grazing of the grassland areas to reduce fire hazard. Vegetation fire risk within the developed areas of Contra Loma is very low due to the scarcity of dry vegetation and the predominance of landscaped or wetland vegetation types.

Under all management alternatives, the potential temporary negative impacts of wildland fire on vegetation resources in Contra Loma would be moderated by the potential long term beneficial impacts of isolated or occasional wildland fire.

##### ***Protection or Conservation of Special Status Plant Species***

Under all RMP alternatives, the local managing partner(s) for the Regional Park would continue to perform periodic biological surveys to inventory and assess special-status plant and wildlife species. Known populations of special status plants in Contra Loma are limited to stinkbells, which are located adjacent to one trail in the northwest corner of Contra Loma. Effects on the native vegetation resources resulting from special status plant conservation and protection, as called for in the management actions, is expected to be beneficial.

#### **4.8.4 Impacts Specific to the No Action Alternative**

##### ***Wildland Fire***

The impacts would be the same as those addressed in Section 4.8.3.



### ***Protection or Conservation of Special Status Plant Species***

The impacts would be the same as those addressed in Section 4.8.3.

### ***Human Use at Public Sites and Trails***

As described previously, visitor use of Contra Loma is expected to increase under all of the alternatives. This increased visitation would predominantly be in the developed portions of Contra Loma such as the picnic areas, fishing access areas, and sports fields which currently experience the most visitor use. Additional use of these areas could increase the potential for trampling of sensitive habitats near the developed areas (e.g., wetland and riparian habitat) should visitors venture into them for fishing access or other purposes. Trampling can damage vegetation through direct contact and by increased soil compaction or erosion that can impair plant growth. However, environmental conditions such as the density of vegetation, soil moisture (i.e., muddy) conditions, and the risk of contact with insects, blackberry prickles, or poison oak reduce the attractiveness of entering these areas, thereby reducing the potential for trampling of sensitive habitats.

The trails in the undeveloped portions of Contra Loma would also receive increased visitation, although in fewer numbers than the developed areas. The trails in the undeveloped areas now pass through annual grasslands and provide access to areas supporting other vegetation types (e.g., wetlands, riparian, oak woodland). Increased pedestrian traffic on these trails could increase foot traffic within the annual grassland in the vicinity of the trails causing increased soil compaction and erosion that could impair the growth of the grassland species. Trail users can also damage other vegetation types (e.g., wetlands, riparian, oak woodland) by trampling them when poor trail conditions (e.g., muddy or eroded sections) cause them to leave the trail to bypass the problem sections or when venturing off the trail for other reasons. Increased visitation would increase the potential for trampling; however visitors are less likely to leave trails adjacent to wetlands due to the density of vegetation and soil moisture conditions.

RMP management actions would require the local managing partner(s) to manage and maintain the trails, thereby reducing the likelihood of visitors leaving the trails to avoid poor trail conditions. These management actions, and the fact that existing trails have been routed to avoid direct incursion into sensitive habitats would reduce but not eliminate the likelihood of trampling.

Impacts on vegetation caused by human use are expected to be similar to existing conditions, but increased visitation would incrementally increase the potential for vegetation impacts.

### ***Livestock Grazing***

Unmanaged grazing can contribute to degradation of vegetation through excessive trampling, soil erosion, sedimentation, and over-harvest. As discussed below (Introduction of Invasive Species), however, livestock grazing can control the growth of non-native grasses and herbs. Grazing would likely continue under all management alternatives, subject to a Reclamation-approved grazing management plan prepared by the managing partner(s). Under this alternative, no change in the acreage, location, or intensity of grazing would occur. Therefore, the overall effect of livestock grazing on vegetation would be similar to current conditions.

### ***Introduction of Invasive Species***

Reconnaissance surveys conducted in 2010 and 2011 identified 23 invasive and/or noxious non-native plant species occurring at Contra Loma. None of these plants are listed as noxious weeds in accordance with Section 2814 of the Federal Noxious Weed Act of 1974; however, they are rated as noxious or invasive by either the CDFA or Cal-IPC. Invasive plant species can threaten or disrupt native vegetation species and communities by altering nutrient and hydrologic cycles, increasing fire hazard, creating changes in sediment deposition and erosion, displacing native species, or hybridizing with native species. Invasive plant species can spread via natural dispersion, or they can be spread by humans, horses, livestock, or vehicles.

The RMP includes management actions requiring the local managing partners(s) for the Regional Park to continue implementation of pesticide management plans and IPM plans for weeds, which are subject to review and approval by Reclamation prior to implementation.

The current grazing practices at Contra Loma may also serve to successfully control some species of invasive grasses and other weeds, including oat species, bromes, ryegrass, and burclover. Livestock grazing can control the growth of non-native grasses and herbs so that other desirable plants (e.g., wildflowers, native grasses) can regenerate and coexist with them (East Bay Regional Park District 2012a). Grazing can favor native annual forbs and can control non-native species (Immel et al. 2012). Under this alternative, no change in the acreage, location, or intensity of grazing would occur and grazing would likely continue under all RMP alternatives, subject to a Reclamation-approved grazing management plan prepared by the managing partner(s). The grazing management plan would address means to control the introduction of invasive plants when livestock first enter a grazing area or are moved from one grazing area to another within Contra Loma. Therefore, the effect of livestock grazing on control of non-native species would be similar to current conditions.

## **4.8.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

### ***Wildland Fire***

The impacts would be the same as those expected under the No Action Alternative and addressed in Section 4.8.3.

### ***Protection or Conservation of Special Status Plant Species***

The impacts would be the same as those expected under the No Action Alternative and addressed in Section 4.8.3.

### ***Human Use at Public Sites and Trails***

The impacts would be similar to those addressed in Section 4.8.4; however, this alternative would include facility improvements and renovations that would increase the public's enjoyment and use of Contra Loma. This alternative would likely attract more visitors than the No Action Alternative, thereby increasing the potential for human use to impact vegetation.

### ***Livestock Grazing***

This alternative could increase the total grazing area by 0.3 acre. This small change in grazing area would incrementally increase the potential for degradation of vegetation as compared to the No Action Alternative, resulting in a minor adverse impact.

***Introduction of Invasive Species***

The impacts are similar to those addressed in Section 4.8.4; however, this alternative could increase the total grazing area by 0.3 acre as compared to the No Action Alternative. This small change in grazing area would incrementally increase the potential for introduction of invasive species, resulting in a minor adverse impact.

***Construction Related Surface Disturbances (Temporary or Permanent)***

This alternative would include construction of new, enhanced, or renovated facilities and supporting infrastructure that would not be built under the No Action Alternative. Most construction proposed under this alternative is expected to be on sites that are already altered or developed, in areas where a vegetation component is either entirely lacking or has been replaced by hardscape (i.e. barren), or in areas that are urban in nature. The management action to provide drainage improvements to sports field 3 includes a provision to minimize the effects on the adjacent riparian habitat caused by placement of fill, removal of vegetation, transport of chemicals and fertilizers, or changes in hydrology.

This alternative potentially includes some construction on undisturbed or unoccupied sites, including the construction of a new park residence near the park office and a new fueling station and fuel storage tank.

New construction can cause impacts to vegetation from vegetation removal on the structure footprint, from ground disturbance due to equipment operations, or from covering due to spoils deposition or erosion and siltation. Most of the affected vegetation is expected to be non-native annual grassland. Management Action 53 provides that future improvements should be consistent with laws and regulations that govern the protection of natural resources. However, this provision alone would not necessarily prevent impacts without specific knowledge of the risk to wetlands, potentially present rare plants, or other sensitive vegetation for each construction site. Incorporation of Mitigation Measures Vegetation-1 and Vegetation-2 (Section 4.8.8) within this alternative would reduce impacts to the no impact or minor impact level. These impacts would not occur under the No Action Alternative.

***Increased Withdrawal of Reservoir Water***

Under this alternative, reservoir water pumping for irrigation of vegetation within developed areas may be increased from 100 acre-feet per year to 150 acre-feet per year. The additional irrigation can be expected to have a beneficial impact on vegetation resources in developed areas of Contra Loma, including managed landscaping.

The increase in irrigation water of 50 acre-feet would represent a net additional reservoir drawdown of approximately one foot, occurring most likely during the hot months of July and August. The additional reservoir drawdown would cause a small decrease in the reservoir's wetted perimeter adjacent to existing wetland vegetation at the reservoir high water mark, resulting in a minor impact to wetland vegetation resources that would not occur under the No Action Alternative.

#### **4.8.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

##### ***Wildland Fire***

The impacts would be the same as those expected under the No Action Alternative and addressed in Section 4.8.3.

##### ***Protection or Conservation of Special Status Plant Species***

The impacts would be the same as those expected under the No Action Alternative and addressed in Section 4.8.3.

##### ***Human Use at Public Sites and Trails***

This alternative would include facility improvements and renovations that would increase the public's enjoyment and use of Contra Loma beyond those of the other two alternatives. This alternative would likely attract more visitors than the other two alternatives, thereby increasing the potential for human use to impact vegetation.

This alternative may also include expanding the trail system for hiking, equestrian, and bicycle use, and allowing bicycle use on existing trails not currently open to bicycles. Expansion of the trail system would improve access to certain areas of Contra Loma beyond those already accessible by trail. Therefore, trail system expansion may increase the potential for trampling of vegetation communities. RMP management actions would require the local managing partner(s) to manage and maintain the trails and to implement future improvements in a manner that is consistent with laws and regulations that govern the protection of natural resources. This alternative also includes an interpretive signage and education program intended to both instill an appreciation of the region's natural resources and motivate conservation of natural resources. Despite these measures, however, this alternative may result in a major adverse impact on vegetation resources resulting from increased human use at public sites and trails. With incorporation of Mitigation Measures Vegetation-3 and Vegetation-4 (Section 4.8.8) into this alternative, human use impacts would be reduced to a minor level. These impacts would not occur under the No Action Alternative.

##### ***Livestock Grazing***

This alternative may include the addition of two new sports fields within the Community Park and expansion of the Community Park boundaries south into the Regional Park. Livestock would be excluded from this area (approximately 15 acres), which is currently grazed. Therefore, this alternative could reduce the amount of grazing area within Contra Loma and the potential for degradation of vegetation. This would result in a minor beneficial impact that would not occur under the No Action Alternative.

##### ***Introduction of Invasive Species***

The impacts are similar to those addressed in Section 4.8.4; however, this alternative could reduce the grazing area by 15 acres, thereby reducing the potential for introduction of invasive species. This would result in a beneficial impact that would not occur under the No Action Alternative.

##### ***Construction Related Surface Disturbances (Temporary or Permanent)***

This alternative would include construction of new infrastructure and facility improvements in addition to those that would be built under the Enhanced Recreation and Facilities Alternative.

Therefore, this alternative would have more potential for construction activities to adversely affect vegetation resources than the other alternatives. New facilities under this alternative could include an anglers' shelter along the south or east reservoir shore, a fitness course along the shoreline trail loop, a disc golf course, and additional multi-use sports fields directly south of the two existing sports fields which would include additional parking. Some or all of these facilities could potentially be constructed on previously undisturbed sites with grassland vegetation, or adjacent to sensitive riparian or wetland vegetation. New construction can cause impacts to vegetation from vegetation removal on the structure footprint, from ground disturbance due to equipment operations, or from covering due to spoils deposition or erosion and siltation.

Management actions would serve to lessen potential impacts. Despite these measures, however, this alternative may result in a major adverse impact on vegetation resources resulting from new construction. Incorporation of Mitigation Measures Vegetation-1 and Vegetation-2 within this alternative would reduce impacts to the no impact or minor impact level. These impacts would not occur under the No Action Alternative.

#### ***Increased Withdrawal of Reservoir Water***

The impacts would be the same as those addressed in Section 4.8.5.

#### **4.8.7 Cumulative Impacts**

##### ***Increased Visitation, Concurrent Improvements, and Land Use Changes***

As discussed previously, visitation to Contra Loma is expected to continue to increase under all of the alternatives with more visitation expected under the two action alternatives than the No Action Alternative. A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans. The improvements to sports fields 4 and 5 and the boat launch area upgrades will increase visitation to Contra Loma.

Approximately 38 percent of the land within the City (6,383 acres) and nearly 46 percent of the land within the unincorporated portion of the General Plan study area (2,240 acres) were vacant in 2003. Buildout of the City and County general plans would convert a substantial amount of vacant land to urbanized uses, increasing the potential for regional impacts on vegetation.

##### ***Wildland Fire***

Increased visitation to Contra Loma could increase the potential for accidental wildland fires to start. However, the potential temporary negative impacts of wildland fire on vegetation resources in Contra Loma would be moderated by the potential long term beneficial impacts of isolated or occasional wildland fire. Increased visitation, therefore, would have a minor cumulative effect with respect to wildland fires.

##### ***Human Use at Public Sites and Trails***

Visitation to Contra Loma would increase under all of the alternatives, with more visitation expected under the two action alternatives than the No Action Alternative. Regional population growth would further increase visitation to Contra Loma and the addition of flood lights to sports fields 4 and 5 will increase nighttime visitation to the Community Park. This cumulative increase

in visitation would result in greater potential for trampling of vegetation and the spread of invasive weeds.

As discussed in Sections 4.8.4 and 4.8.5, the No Action and Enhanced Recreation and Facilities alternatives would result in minor adverse effects on trampling of vegetation and all three alternatives would result in minor adverse effects on the spread of invasive weeds. Increased visitation is expected to cause minor cumulative impacts. Increased development from buildout of the City and County general plans could facilitate introduction and spread of invasive weeds, contributing to this cumulative adverse effect.

Because the Expanded Recreation and Facilities Alternative may include expansion of the trail system and would generate more visitation than the other two alternatives, it would contribute more to this adverse cumulative impact than the other two alternatives. As discussed in Section 4.8.6, the Expanded Recreation and Facilities Alternative would result in a major adverse impact with respect to trampling of vegetation. Increased visitation could have a major cumulative impact. With incorporation of Mitigation Measures Vegetation-3 and Vegetation-4 (Section 4.8.8) into this alternative, cumulative human use impacts would be reduced to a minor level.

***Construction Related Surface Disturbance (Temporary or Permanent)***

The two action alternatives would include construction of new, enhanced, expanded or renovated facilities and would, therefore, result in vegetation removal. The Expanded Recreation and Facilities Alternative would remove the most vegetation. The improvements to sports fields 4 and 5 would replace several acres of annual grassland with artificial turf. Development needed to accommodate the projected regional population growth would convert a substantial amount of vacant land to urban uses. Such development would remove a substantial amount of native and non-native vegetation, increasing habitat fragmentation. These actions could result in major adverse cumulative impacts on vegetation.

As discussed above, RMP management actions and Mitigation Measures Vegetation-1 through Vegetation-4 would protect Contra Loma's vegetation, especially sensitive plant communities, and ensure that RMP activities result in only minor impacts to vegetation. In addition, the City's General Plan includes policies to preserve sensitive habitats and habitats supporting rare and endangered species of plants. The County's General Plan includes policies to preserve and enhance areas important for the maintenance of natural vegetation and wildlife populations. These management actions, mitigation measures, and general plan policies would reduce cumulative impacts on vegetation.

**4.8.8 Mitigation Measures**

***Mitigation Measure Vegetation-1: Perform wetland delineations for construction related impacts to wetland and riparian vegetation communities.***

When specific construction activities are proposed, site-specific environmental analysis would be conducted that would include a more focused assessment of any potential impact on vegetation resources. If deemed necessary by Reclamation, the local managing partner(s) proposing a construction activity will perform a delineation of wetland and riparian vegetation of all areas potentially affected by temporary or permanent construction-related activities. The delineation will fully describe all areas classified as Waters of the U.S. (Federal Clean Water Act). Feasible

mitigation shall be proposed for any temporary or permanent losses of wetlands or for any wetland or riparian vegetation communities impacted. Such project-specific mitigation could include impact avoidance, minimization or compensatory measures, or a combination thereof.

***Mitigation Measure Vegetation-2: Perform protocol level surveys for presence of special-status plants.***

When specific construction activities are proposed, site-specific environmental analysis would be conducted that would include a more focused assessment of any potential impact on vegetation resources. If deemed necessary by Reclamation, the local managing partner(s) proposing a construction activity will perform protocol level surveys for the presence of special-status plants. The surveys will follow protocols as directed by Reclamation, which may elect to use standardized protocols, and may include those developed by CDFW. The surveys shall propose feasible mitigation for any temporary or permanent losses of special-status plants. Such project-specific mitigation could include impact avoidance, minimization or compensatory measures, or a combination thereof.

***Mitigation Measure Vegetation-3: Incorporate signage along equestrian and bicycle trails to prevent horses and bicycles from leaving trails.***

All new or expanded trails proposed under the Expanded Recreation and Facilities Alternative, and any expansion of equestrian or bicycle use on existing trails as proposed under this alternative, shall incorporate signage at reasonable intervals (subject to Reclamation approval) prescribing no equestrian or bicycle use off established trails.

***Mitigation Measure Vegetation-4: Route any new trails to avoid sensitive vegetation communities, and provide for an educational leaflet program.***

All new trails or trail connectors proposed under the Expanded Recreation and Facilities Alternative shall be routed to provide a minimum 50 foot buffer from wetland and riparian communities, quail restoration areas, and known rare plant communities. Additionally, if new trails, trail connectors, or expanded facilities are proposed within 100 feet of such vegetation communities, an educational leaflet program will be developed to provide information to the public on the sensitive nature of the vegetation communities adjacent to the proposed trail or improvement and to encourage users to limit human disturbance within and adjacent to such sensitive areas. The leaflets will be available at each visitor kiosk at the park entrances and from leaflet stands where trails leave parking areas, and adjacent to wetland and riparian vegetation communities.

## **4.9 Wildlife**

### **4.9.1 Type of Impacts**

A wide variety of reptile, amphibian, mammal and bird species are known to or highly likely to be present in Contra Loma, as described in Section 3.10.1.

Potential impacts to wildlife resources could result from five general types of activities:

- Wildland Fire
- Human Use

- Livestock Grazing
- Construction Activities
- Increased Withdrawal of Reservoir Water

Impacts to wildlife under the RMP can be direct impacts to wildlife populations or individuals resulting from direct mortality or displacement, or may be indirect impacts due to habitat removal or alteration. Impacts can also be temporary or permanent.

#### **4.9.2 Assumptions**

The wildlife resources impact analysis is based on the following assumptions:

- Reclamation would only provide project-specific authorization for activities, including construction and operation of new facilities that have undergone appropriate environmental review.
- The proposed management actions would comply with applicable laws and regulations governing protection of special status wildlife and upland and wetland wildlife habitats.
- Reclamation and the managing partner(s) will continue to manage, protect, and restore Contra Loma's wildlife resources consistent with current management trends as articulated in existing management and policy documents and ordinances.

#### **4.9.3 Impacts Common to All Alternatives**

##### ***Wildland Fire***

Wildland fire can have temporary negative impacts on wildlife through initial mortality and by removal or reduction of annual grassland habitat. However, as described in Section 4.8.3, California coastal prairies have adapted to historic occasional fire regimes as commonly employed by Native Americans. Thus occasional grassland fire would not necessarily lead to lasting negative impacts on wildlife from habitat loss.

The risk of catastrophic wildland fire in Contra Loma is low because existing wildland fire management facilities provided by CCCFPD are maintained at high response levels near Contra Loma, with 2 stations located within 1.5 miles. EBRPD also provides backup fire suppression with satellite stations and a wildland fire truck located at the southern park boundary. The managing partners would be expected to continue to provide these services under all management alternatives. Wildland fire risk is further reduced because management actions common to all alternatives would perform periodic mowing and continue livestock grazing of the grassland areas adjacent to trails to reduce fire hazard and implement plans for fire and emergency preparedness. The risk of fire which can be damaging to wildlife within the developed areas of Contra Loma is very low due to the scarcity of dry vegetation and the predominance of landscaped or wetland vegetation types. Thus, under all management alternatives, wildland fire would have minor effects on wildlife resources in Contra Loma.



#### **4.9.4 Impacts Specific to the No Action Alternative**

##### ***Wildland Fire***

Impacts would be the same as those described in Section 4.9.3.

##### ***Human Use***

As described previously, visitor use of Contra Loma is expected to increase under all of the alternatives. Increased visitation would result in more pedestrian, bicycle, and equestrian traffic on trails, causing an increase of human disturbance to wildlife which relies on adjacent habitats such as annual grasslands, upland riparian, blue oak woodland, and wetlands. Increased traffic on trails may disturb wildlife from noise impacts or simply from human presence. Similar to existing conditions, however, the additional visitors would tend to be concentrated in the developed portions of Contra Loma such as the picnic areas, swim lagoon, fishing access areas, and sports fields. In undeveloped portions of Contra Loma, visitation increases are expected to be more modest. Hikers on trails in the undeveloped areas through grasslands and near wetland or riparian habitats are less likely to cause sustained loud noise more commonly associated with high use recreational amenities such as the swim lagoon, picnic areas, and sports fields. Hence, impacts to wildlife from increased noise or human presence on trails would be minor.

Wildlife can be affected by direct conflict with maintenance equipment, disturbance from equipment noise, and contact with inadvertent hazardous materials spills. Increased visitation would increase the need for operation and maintenance activities by the managing partner(s) over existing conditions. This could incrementally increase the potential for these activities to adversely affect wildlife. Operation and maintenance activities would need to be coordinated with programs implemented to protect special status species. Management actions call for the local managing partners(s) to perform ongoing routine maintenance activities and repairs of the existing facilities that would not involve ground-disturbance or otherwise have the potential to cause significant environmental effects. The incremental increase in the potential for these activities to adversely affect wildlife would result in a minor adverse impact.

Increased trail use could also increase the potential for visitors to leave the trail and investigate sensitive habitats, especially wetland or riparian habitats. Therefore, increased trail use could increase the potential for visitors to affect wildlife through incidental harassment or disturbance, or displacement due to trampling of sensitive habitats, especially wetlands. Impacts could also result from increased introduction of exotic species related to increased human traffic. The expected visitation increase would incrementally increase the potential for wildlife disturbance, resulting in a minor adverse impact.

In developed high activity areas of Contra Loma adjacent to sensitive wetland and riparian wildlife habitats, existing trails have been routed to avoid direct incursion into such areas. Visitors are unlikely to leave trails adjacent to wetlands due to the density of vegetation, soil moisture (i.e., muddy) conditions, and the risk of contact with insects, blackberry prickles, or poison oak. These environmental conditions would continue to reduce the attractiveness of entering these areas, thereby reducing the potential for wildlife disturbance and resulting in a minor adverse impact.

The local managing partner(s) for the Regional Park would continue to perform periodic biological surveys to inventory and assess special-status plant and wildlife species, and would continue to develop and implement programs to protect special-status species likely to occur at the park. Such programs would be coordinated with operation and maintenance programs and would be consistent with the RMP goals of protecting and enhancing natural resources and maintaining the natural setting of Contra Loma. Thus, increases in human use would cause only minor impacts to wildlife.

### ***Livestock Grazing***

Livestock grazing controls the growth of non-native grasses and herbs so that other desirable native grasses can regenerate and coexist with them (East Bay Regional Park District 2012a). This serves to maintain the condition of native wildlife habitat within the annual grasslands. Grazing would likely continue under all management alternatives, subject to a Reclamation-approved grazing management plan prepared by the managing partner(s). Grazing in Contra Loma is currently limited to cattle; however, other species (e.g., sheep, goats) could be permitted subject to the grazing management plan. Potential impacts on wildlife habitat may be less for sheep or goats than cattle due to their smaller weight and size per animal unit, as they have smaller impacts on soils and vegetation, particularly when soils are damp (Oregon State University, 2013). Conversely sheep are able to browse closer to the soil surface, potentially resulting in greater damage to soils and the root zone than cattle. Relative impacts and merits of grazing different livestock species would need to be considered during preparation of the grazing management plan. Although unmanaged grazing can contribute to degradation of grassland wildlife habitat through excessive trampling and soil erosion, a well-managed grazing program within the annual grasslands of Contra Loma would have positive effects on wildlife resources. Under this alternative, no change in the acreage, location, or intensity of grazing would occur. Therefore, the overall effect of livestock grazing on wildlife would be similar to current conditions.

## **4.9.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

### ***Wildland Fire***

Impacts would be the same as those expected under the No Action Alternative and addressed in Section 4.9.3.

### ***Human Use***

Impacts would be similar to those addressed in Section 4.9.4; however, this alternative would include facility improvements and renovations that would increase the public's enjoyment and use of Contra Loma. This alternative would likely attract more visitors and would require more maintenance than the No Action Alternative, thereby increasing the potential for human use to impact wildlife.

### ***Livestock Grazing***

The impacts are similar to those addressed in Section 4.9.4; however, this alternative could increase the total grazing area by 0.3 acre. This small change in grazing area would incrementally increase the potential for the positive effects on wildlife resources derived from a well-managed grazing program. This would be a minor beneficial impact that would not occur under the No Action Alternative.

### ***Construction Activities***

This alternative would include construction of new, expanded or renovated facilities and supporting infrastructure that would not occur under the No Action Alternative. Most construction proposed by this alternative is on altered or developed sites, within areas where habitat is either urban in nature and thus of limited value to wildlife or entirely lacking due to replacement by hardscape (i.e., barren). Consequently there would be no impact to wildlife from expanded or renovated facilities in areas of urban or barren habitat.

This alternative may include some new construction on undisturbed or unoccupied sites, including the construction of a new park residence near the park office. Underground utility extensions to provide renovated water and sewer line and communications facilities could also be constructed on undisturbed sites.

New construction and related ground disturbing activity can cause impacts to wildlife from direct mortality or habitat removal due to equipment operations, overcovering by placement of spoils, or erosion. If special status birds such as burrowing owl are nesting within the area of construction impacts, their potential resulting mortality or reproductive failure would be a major impact. Similarly, if special status wildlife such as San Joaquin kit fox occupy the construction site or its margins, their potential mortality or displacement would be considered a major impact. If new construction were to result in take of Federally-listed species, formal consultation with the FWS would be required.

Management Action 53 provides that future improvements should be consistent with laws and regulations that govern the protection of natural resources. However, this provision alone would not necessarily prevent impacts, lacking specific knowledge of the risk to nesting birds or other special status wildlife for each construction site. Incorporation of Mitigation Measures Wildlife-1 and Wildlife-2 (Section 4.9.8) into this alternative would reduce impacts to a no impact or minor impact level. These impacts would not occur under the No Action Alternative.

### ***Increased Withdrawal of Reservoir Water***

Under this alternative, reservoir water pumping for landscape irrigation within developed areas may be increased from 100 acre-feet per year to 150 acre-feet per year. This increase would not occur under the No Action Alternative. The additional irrigation would have a positive impact on the urban habitat component in developed areas of Contra Loma, and hence may have a small positive impact on wildlife there. The additional irrigation of managed landscaping may also help maintain the hydrology of certain wetland and stream corridor wildlife habitats that receive runoff from the landscaped areas. Conversely, fertilizers and pesticides applied to non-native landscape plantings could be transported to aquatic habitats by the additional landscape irrigation and adversely affect wildlife and aquatic resources. Management actions requiring preparation of non-aquatic pesticide management plans and consistency with laws and regulations protecting natural resources would be implemented; therefore, the additional landscape irrigation would not result in major impacts on wildlife resources.

The increase in irrigation water of 50 acre-feet would represent a net additional reservoir drawdown of approximately one foot, most likely occurring during the hot months of July and August. The additional reservoir drawdown would cause a small decrease in the reservoir's

wetted perimeter adjacent to existing wetland vegetation at the reservoir high water mark, resulting in a minor impact to wildlife that benefit from wetland vegetation.

#### **4.9.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

##### ***Wildland Fire***

Impacts would be the same as those expected under the No Action Alternative and addressed in Section 4.9.3.

##### ***Human Use***

Impacts would be similar to those addressed in Section 4.9.5; however, this alternative would include facility improvements and expansion of trail use that would increase the public's enjoyment and use of Contra Loma beyond those of the other two alternatives. This alternative would likely attract more visitors than the other alternatives, thereby increasing the potential for human use to impact wildlife.

##### ***Livestock Grazing***

This alternative may include the addition of two new sports fields within the Community Park and expansion of the Community Park boundaries south into the Regional Park. Livestock would be excluded from this area (approximately 15 acres), which is currently grazed. Therefore, this alternative could reduce the amount of grazing area within Contra Loma. This reduction would reduce the potential for the positive effects on wildlife resources derived from a well-managed grazing program. This would be a minor adverse impact that would not occur under the No Action Alternative.

##### ***Construction Activities***

This alternative would include construction of new infrastructure and facility improvements in addition to those that would be built under the Enhanced Recreation and Facilities Alternative. Therefore, this alternative would have more potential to adversely affect wildlife resources from construction activities. New facilities under this alternative may include a fishermen's shelter along the south or east reservoir shore, a fitness course along the shoreline trail loop, a disc golf course, and additional multi-use sports fields directly south of the two existing sports fields, including additional parking. This alternative also allows for underground utility extensions to provide new water and sewer line and communications facilities, and new or expanded trails and additional trail connectors to allow trail system looping. These facilities could either be constructed on previously undisturbed sites with annual grassland habitat, or adjacent to sensitive riparian, blue oak woodland or wetland wildlife habitats.

New construction and related ground disturbing activity can cause impacts to wildlife from direct mortality or habitat removal due to equipment operations, overcovering by placement of spoils, or erosion. If special status birds such as burrowing owl are nesting within the area of construction impacts, their potential resulting mortality or reproductive failure would be a major impact. Similarly, if special status wildlife such as San Joaquin kit fox occupy the construction site or its margins, their potential mortality or displacement would be considered a major impact. If new construction were to result in take of Federally-listed species, formal consultation with the FWS would be required. Mitigation Measures Wildlife-1 and Wildlife-2 would reduce such adverse impacts to the no impact or minor impact level.

Construction of new trails to allow increased pedestrian, equestrian, and bicycle use may result in increased impacts on adjacent habitats of special status wildlife. Existing trails generally are routed to avoid sensitive habitats, however, new trails and trail connectors could be routed such that unexpected stress on special status species results. New trails routed too close to sensitive habitats could also result in an increased tendency for humans to venture into sensitive habitats.

Management Action 53 requires future improvements to be consistent with laws and regulations that govern the protection of natural resources. Developing and implementing design and construction BMPS that include minimizing the number of trail crossings of streams, wetlands, and other sensitive habitats; providing clear span bridges, reinforced fords, or other small crossing structures to minimize the direct effect of foot and bicycle traffic passing through the sensitive habitats; revegetating sensitive habitat disturbed during the trail construction process; and following project-specific conditions of any regulatory agency permits and approvals required for the project would further lessen potential impacts on wildlife resources from construction and use of new trails and connectors. This alternative may still result in a major adverse impact on wildlife resources resulting from these activities. With incorporation of Mitigation Measure Wildlife-3 into the Expanded Recreation and Facilities Alternative (Section 4.9.8), impacts to wildlife resources would be minor. These impacts would not occur under the No Action Alternative.

***Increased Withdrawal of Reservoir Water***

The impacts would be the same as those addressed in Section 4.9.5.

**4.9.7 Cumulative Impacts**

***Increased Visitation, Concurrent Improvements, and Land Use Changes***

As discussed previously, visitation to Contra Loma is expected to continue to increase under all of the alternatives with more visitation expected under the two action alternatives than the No Action Alternative. A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans. The improvements to sports fields 4 and 5 and the boat launch area upgrades will increase visitation to Contra Loma.

Approximately 38 percent of the land within the City (6,383 acres) and nearly 46 percent of the land within the unincorporated portion of the General Plan study area (2,240 acres) were vacant in 2003. Buildout of the City and County general plans would convert a substantial amount of vacant land to urbanized uses, increasing the potential for regional impacts on wildlife habitats.

***Wildland Fire***

Increased visitation to Contra Loma could increase the potential for accidental wildland fires to start. However, the potential temporary negative impacts of wildland fire on wildlife resources in Contra Loma would be moderated by the potential long term beneficial impacts of isolated or occasional wildland fire. Increased visitation, therefore, would have a minor cumulative effect with respect to wildland fires.

### **Human Use**

Visitation to Contra Loma would increase under all of the alternatives, with more visitation expected under the two action alternatives than the No Action Alternative. Regional population growth would further increase visitation to Contra Loma and the addition of flood lights to sports fields 4 and 5 will increase nighttime visitation to the Community Park. This cumulative increase in visitation would result in greater potential for effects on wildlife caused by disturbance from human presence, maintenance activities, increased introduction of exotic species, and displacement due to trampling of sensitive habitats. Because the Expanded Recreation and Facilities Alternative may include expansion of the trail system and would generate more visitation than the other two alternatives, it would contribute more to this cumulative impact than the other two alternatives. For reasons similar to the RMP-specific impacts discussed above, these cumulative effects are expected to be minor.

### **Construction Activities**

The two action alternatives would include construction of new, enhanced, expanded or renovated facilities and could, therefore, cause impacts to wildlife from direct mortality or habitat removal. The Expanded Recreation and Facilities Alternative would involve the most new construction. The improvements to sports fields 4 and 5 would replace several acres of annual grassland with artificial turf. Development needed to accommodate the projected regional population growth would convert a substantial amount of vacant land to urban uses. Such development would remove a substantial amount of native and non-native vegetation, would increase habitat fragmentation. These actions could have a major adverse cumulative effect on wildlife.

As discussed above, RMP management actions and Mitigation Measures Wildlife-1 through Wildlife-3 would protect Contra Loma's special-status wildlife species and their habitats and reduce impacts from RMP activities to a no impact or minor impact level. In addition, the City's General Plan includes policies to preserve sensitive habitats and habitats supporting endangered species of animals. The County's General Plan includes policies to preserve and enhance areas important for the maintenance of natural vegetation and wildlife populations. These management actions, mitigation measures, and general plan policies would reduce cumulative impacts on wildlife.

#### **4.9.8 Mitigation Measures**

##### ***Mitigation Measure Wildlife-1: Perform nest surveys for construction related impacts to special status birds within riparian, wetland, woodland, or grassland wildlife habitats or their margins***

When specific construction activities are proposed, a site-specific environmental analysis would be conducted that includes a more focused assessment of the activity's impact on special status avian wildlife resources. If deemed necessary by Reclamation, the local managing partner(s) proposing a construction activity will perform surveys for special status bird nests or burrows in all areas potentially affected by temporary or permanent construction related activities. The surveys will be conducted at times selected to target all special status bird species potentially affected by a construction activity and shall propose feasible mitigation for any temporary or permanent impacts to special status wildlife or reproductive success. Such project-specific mitigation could include impact avoidance (which could include removal of nest materials prior

to the applicable reproductive cycle), minimization (which could include appropriate buffers), compensatory measures, or a combination thereof that does not lead to take of migratory birds.

***Mitigation Measure Wildlife-2: Perform protocol level surveys for presence of special status wildlife species.***

When specific construction activities are proposed, a site-specific environmental analysis would be conducted that includes a more focused assessment of the activity's impact on special status wildlife resources. If deemed necessary by Reclamation, the local managing partner(s) proposing a construction activity will perform protocol level surveys for presence of special status wildlife species. The surveys shall propose feasible mitigation for any temporary or permanent losses of special status wildlife species or their habitat. Such project-specific mitigation could include impact avoidance, minimization or compensatory measures or a combination thereof.

***Mitigation Measure Wildlife-3: Incorporate signage along equestrian and bicycle trails to prevent horses and bicycles from leaving trails.***

To protect special status wildlife species, all new or expanded trails and any expansion of equestrian or bicycle use on existing trails shall incorporate signage adjacent to sensitive wildlife habitats at reasonable intervals, subject to Reclamation approval, prescribing no equestrian or bicycle use off established trails.

## **4.10 Fisheries**

### **4.10.1 Type of Impacts**

As described in Section 3.10.1, there are currently 20 known fish species, including eight species of game fish, in Contra Loma Reservoir (Table 8, Chapter 3). Potential impacts to fishery resources from implementation of the RMP could result from three factors or activities:

- Fishing Pressure
- Invasive or Exotic Species
- Construction Activities

Fishery resource impacts under the RMP can be direct impacts to fish populations due to direct mortality or displacement, or can be indirect impacts due to habitat manipulation such as reservoir drawdown. Impacts can also be temporary or permanent in nature.

### **4.10.2 Assumptions**

The fishery resources impact analysis is based on the following assumptions:

- Reclamation would only provide project-specific authorization for activities, including construction and operation of new facilities that have undergone appropriate environmental review.
- The proposed management actions would comply with applicable laws and regulations pertaining to fishery resources and recreational sport fishing.

- Reclamation and the managing partner(s) would continue to manage, protect, and restore Contra Loma's fishery resources consistent with current management trends as articulated in existing management and policy documents and ordinances.
- The risk of inadvertent introduction of fish species not known to be present in the reservoir has been greatly reduced because of the recent completion of the Rock Slough Fish Screen Project described in Section 3.11.1.

#### **4.10.3 Impacts Specific to the No Action Alternative**

##### ***Fishing Pressure***

As described previously, visitor use of Contra Loma is expected to increase under all of the alternatives. Fishing pressure can be expected to increase at rates similar to the increase in overall visitation, due to the increased popularity of the Regional Park but also due to the increased popularity of and demand for the unique recreational fishing opportunities that Contra Loma provides.

Increased fishing pressure may result in overharvest of existing sport fishing stocks. This is often a self-limiting effect, as fishing pressure tends to decrease in response to decreased angler success. Nonetheless, in the case of put and take fisheries such as the reservoir's trout and catfish fisheries, overharvest could lead to spikes in populations of prey species such as threadfin shad which can in turn upset fishery population balances. Fishing pressure for these species tends to fluctuate consistent with the chances for success, so a quality put and take trout or catfish fishery depends on meeting demand with adequate stocking rates. Trout and catfish plants at Contra Loma have typically been scheduled to address existing demand, such that the fishery provides a reasonable chance of success and remains popular. Management actions would serve to ensure that planting rates would adequately keep pace with demand; hence the impact of increased trout or catfish fishing pressure on the fishery resources of Contra Loma would have a minor adverse impact.

Overharvest could also cause adverse impacts on the population of largemouth bass and adversely affect the ability of this fishery resource to remain self-sustaining. Current regulations allow anglers to harvest largemouth bass larger than 12 inches. Annual EBRPD monitoring efforts over the last 10 years using electrofishing reveals moderate declines in overall bass populations. Harvest rates of largemouth bass may be a contributing factor in these declines. However, impaired reproductive success may have a much larger impact than harvest rates. A recent increase in average largemouth bass size from under 10 inches to approximately 13 inches (measured in fork length) coupled with the overall decrease in population during the 2007-2011 period indicates significantly fewer young fish are in the population, which suggests there has been less successful reproduction or survival over this period. Low survival could be due to poor conditions for fry survival as well as predation by other fish.

EBRPD encourages anglers to practice catch and release when fishing for bass through its educational and press release literature available on-line, and with signs posted at fishing and boat launching docks and at the lakeshore. EBRPD also requests anglers to report fishing success and harvest rates upon exiting the park, using a "creel census" card issued with each daily fishing permit (Alexander, pers. comm. 2012). These current practices are embodied in the RMP as



management actions common to all alternatives. Hence the intensity of increases in fishing pressure over time and resulting potential for overharvesting of largemouth bass would have a minor adverse impact on fishery resources.

Although less popular with most anglers than trout, catfish or bass, several other species of panfish at Contra Loma provide an additional quality recreational fishery, including white and black crappie, bluegill, and redear and green sunfish. Annual population surveys of these species indicate a very viable self-sustaining fishery. Historic and current fishing pressure on these species is relatively light, and there is no indication that overharvest has occurred. Management actions common to all alternatives would insure that this fishery is monitored and remains viable in spite of future increases in fishing pressure and harvest rates. Consequently, increased fishing pressure over time would have a minor adverse impact on panfish populations under all RMP alternatives.

### ***Invasive or Exotic Species***

Invasive or exotic species that could be introduced into Contra Loma Reservoir include various species of bait fish or crayfish introduced by fishermen, zebra and quagga mussels potentially introduced by water craft users, and introduction or proliferation of aquatic plants (macrophytes) such as Eurasian milfoil and other pond weed species of the Potamogetonaceae family, and various bulrush and cattail species. As noted in Section 4.10.2 above, the risk of introducing exotic species into the reservoir from the Contra Costa Canal would be very low due to the completion of the Rock Slough Fish Screen Project. The screen mesh is sufficiently small to reduce the introduction of fish species from the canal.

Bait fish or crayfish when used in a reservoir as live bait can under certain circumstances become established, upsetting population balances of desirable species. Increased use of the reservoir for fishing would increase the potential for introduction of exotic or invasive species. Currently, Ordinance 38 of the EBRPD does not allow the use of wet or live baits in any EBRPD reservoir, except worms or nightcrawlers, whether from commercial sources, imported from other waters or captured in Contra Loma Reservoir. RMP management actions would allow the Regional Park's managing partner(s) to implement similar restrictions, which would continue to reduce the potential for introduction of exotic or invasive species. Additionally, management actions common to all alternatives call for monitoring and annual electrofishing, which can be expected to detect infestation of exotic or invasive species. Hence the increased risk of introduction of exotic species of baitfish or crayfish into the reservoir from increased fishing would be a minor impact.

Introduction of zebra and quagga mussels poses a major threat to the viability of the fisheries resources of Contra Loma Reservoir, although none have been observed in the reservoir. Zebra or quagga mussels have invaded other reservoirs in California and can have very detrimental and disruptive effects on other resources and species (including fish), due to their explosive reproductive capabilities, and their propensity to alter water chemistry and filter out important food chain nutrients (Benson 2012). Currently, all vessels are subject to pre-launch inspections by trained staff and wet boats and gear are prohibited from entering the reservoir (see Section 3.3). Management actions common to all alternatives call for the local managing partners(s) for the Regional Park to continue to support and complement CCWD's programs to prevent introduction of zebra and quagga mussels. Elements of this program may be modified or

expanded as necessary to improve the program's effectiveness in preventing mussel infestation. Hence, the risk of introduction of zebra or quagga mussels, although never completely eliminated, would be minor.

The reservoir already contains certain exotic macrophyte species that may pose risks to the reservoir's fishery resources and to angler access, including milfoil and various other submergent macrophytes, and various bulrush or tule (family Cyperaceae) and cattail (family Typhaceae) emergents. Some of the tule and cattail emergents present in the reservoir may be California natives, or may have been introduced. Although current populations of these macrophyte communities provide important positive habitat and cover attributes for many resident fish species, their unchecked proliferation and expansion could cause imbalances in water chemistry and temperature, restrict boat launching and reduce or seriously limit open water fishing opportunities and shoreline angler access. CCWD has an unpublished draft macrophyte management plan for Contra Loma Reservoir calling for periodic treatment of shoreline vegetation including tules and cattails that restrict fishing access, particularly to benefit annual fishing derbies (East Bay Regional Park District 2011d). Macrophyte control activities have been limited to occasional spot herbicide treatments in the littoral zone and to specific tule beds, and have only been necessary several times in the last 6 years (Nakagawa, pers. comm. 2012). The treatments are timed such that the herbicide is absorbed by the root rhizome during the plant's dormant period so that physical removal of dead plant biomass is not generally necessary. No long-term treatment procedures have been developed or deemed necessary to date. Due to existing management activities of CCWD, as monitored by the Regional Park's managing partner(s), invasive macrophytes represent a minor risk to fishery resources. It may become necessary to employ more aggressive measures to control macrophytes in the future, which could have further impacts on fishery resources. For example, drawdown of the reservoir may be an option for controlling an exotic species that could have more than a minor risk to fishery resources. However, future implementation of such measures would have to be analyzed further for their impacts on fisheries at the time they are proposed. All the RMP alternatives would have similar levels of impact with respect to this issue.

### ***Reservoir Levels***

Contra Loma Reservoir levels are managed by CCWD under a separate agreement with Reclamation and are outside the scope of the RMP. The primary purpose of the reservoir is water supply; recreation is a secondary purpose. Therefore, water supply and reservoir operation and management take precedence over management for recreation, including fisheries. Contra Loma Reservoir is not a principal water storage reservoir. Water to meet CCWD customer demands is not drained from the reservoir on a daily basis, but instead the reservoir storage is used to meet periodic peak system demands. Water is pumped into the reservoir from the Contra Costa Canal for storage and returned to the canal when CCWD operational needs dictate. In the spring, in preparation for peak summer demands, water is cycled out of and back into the reservoir to address taste and odor concerns. Hence, the water level in the reservoir fluctuates as operational demands require.

During fall and winter of some years, the reservoir is drawn down as part of CCWD's operations. This drawdown can leave fishing docks out of the water, forcing fishermen to use the boat dock or to fish only from shore. Additionally, winter drawdown can make it harder for anglers to reach open water that is free of macrophyte vegetation from shore. During these seasons, however,

fishing pressure is generally lighter than in spring and summer. Opportunities for anglers to reach open water at limited shore locations still exist during fall and winter. Also, as noted elsewhere in this section, CCWD performs a periodic macrophyte control program which typically responds to the need to provide shore access to anglers during fall or winter drawdowns and for fishing derbies. These activities reduce the adverse effect of fall and winter drawdown.

#### **4.10.4 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

##### ***Fishing Pressure***

Impacts would be similar to those addressed in Section 4.10.3; however, this alternative would include facility improvements and renovations that would increase the public's enjoyment and use of Contra Loma. This alternative would likely attract more visitors than the No Action Alternative, thereby increasing fishing pressure and resulting in a minor adverse impact.

##### ***Invasive or Exotic Species***

Impacts would be similar to those addressed in Section 4.10.3; however, this alternative would include facility improvements and renovations that would increase the public's enjoyment and use of Contra Loma. This alternative would likely attract more visitors than the No Action Alternative, thereby increasing the potential for introduction or spread of invasive or exotic species.

##### ***Reservoir Levels***

Impacts would be similar to those addressed in Section 4.10.3; however, this alternative would include improvements that would enhance angler access. These improvements include modification, reconstruction, or replacement of the existing fishing piers to allow safe, continuous fishing during reservoir drawdowns. More fishing piers may also be added if needed to accommodate increased demand. Also, a number of fishing pier and boat ramp improvements may be completed to enhance ADA access, including ADA compliance for rest room facilities, paving of parking areas, and paved trails to the boat launch and fishing pier areas. These improvements would serve to partially compensate for the existing adverse effects on the angler experience during fall and winter low water conditions and would have a beneficial impact that would not occur under the No Action Alternative.

##### ***Construction Activities***

This alternative would include modification, reconstruction, or replacement of existing fishing piers to allow safe, continuous fishing use during reservoir drawdowns. In addition, more fishing piers may be added if needed to accommodate increased demand. In addition, several improvements may be implemented at the boat launch area to enhance boating and fishing access. The improvements may include reconstruction of the boat ramp and providing for ADA accessibility compliance. Some of the new or rehabilitated docks may require new pilings.

Construction activities of this type may cause temporary impacts on lake water quality, may adversely affect fish resources especially young panfish and bass and may temporarily inconvenience anglers. As discussed in Section 4.7.5, this alternative includes a management action requiring a focused site-specific assessment of any potential impact on water quality when specific construction activities are proposed. If required by Federal regulations, the local managing partner(s) proposing a construction activity would submit a plan that identifies the

sources of sediment and other pollutants on site and ensures the reduction of such pollutants. This management action would reduce the effects of in-water construction activities on fisheries. In addition, the construction would of necessity be carried out during lower water level periods in the late fall or winter, thus siltation of reservoir waters could be kept at a minimum. This would reduce the intensity of any effects caused by siltation. No special status aquatic species or fish are known to inhabit the reservoir, so no adverse impacts to special status species would result. Also at these times, fishing pressure would be lower, so inconvenience to anglers would be minimal. Finally, the resident panfish and bass species are known to spawn in the spring, so there would be no impacts to these species due to spawning disruption. Hence, construction activities would cause minor adverse impacts on fishery resources under this alternative that would not occur under the No Action Alternative.

#### **4.10.5 Impacts Specific to the Expanded Recreation and Facilities Alternative**

##### ***Fishing Pressure***

In addition to the impacts expected under the No Action Alternative and addressed in Section 4.10.4, this alternative may include construction of a fishermen's shelter along the south or east shore and may improve fish habitat to increase fish populations. These management actions would result in positive impacts on the sportfishing experience at Contra Loma, and partially compensate for the minor adverse impacts on fishery resources expected from increased fishing pressure.

##### ***Invasive or Exotic Species***

The impacts would be the same as those addressed in Section 4.10.3.

##### ***Reservoir Levels***

Impacts would be similar to those addressed in Section 4.10.3; however, this alternative may include creation or modification of fish habitat if desirable to increase fish populations. If implemented, this management action would serve to partially compensate for the existing adverse effects on the angler experience during fall and winter low water conditions and would have a beneficial impact that would not occur under the No Action Alternative or the Enhanced Recreation and Facilities Alternative.

##### ***Construction Activities***

Additional improvements under this alternative may include construction of a fishermen's shelter along the south or east shore and improvement or creation of additional fish habitat to increase fish populations. Similar to the discussion in Section 4.10.4, in-water construction activities would most likely be undertaken in the fall or winter, while lake levels are drawn down and fishing pressure is somewhat lighter. Also, the management action requiring a focused site-specific assessment of any potential impact on water quality and preparation of a plan that ensures the reduction of such pollutants would reduce the effects of in-water construction activities on fisheries. Consequently, these additional improvements would result in minor temporary adverse impacts on fishery resources that would not occur under the No Action Alternative.

#### 4.10.6 Cumulative Impacts

##### ***Increased Visitation, Concurrent Improvements, and Land Use Changes***

As discussed previously, visitation to Contra Loma is expected to continue to increase under all of the alternatives with more visitation expected under the two action alternatives than the No Action Alternative. A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans. The improvements to sports fields 4 and 5 and the boat launch area upgrades will increase visitation to Contra Loma.

##### ***Fishing Pressure***

Visitation to Contra Loma would increase under all of the alternatives, with more visitation expected under the two action alternatives than the No Action Alternative. Regional population growth would further increase visitation to Contra Loma. This cumulative increase in visitation would result in greater pressure on Contra Loma's fisheries. Increased fishing pressure may result in overharvest of existing sport fishing stocks.

The RMP includes management actions requiring the managing partner for the Regional Park to manage recreational fisheries through fish planting (i.e., stocking) programs, continued monitoring of fish populations, and provision of educational information to the public. These actions may also include catch-and-release practices for certain fish species, tracking of stocking rates and angler permit sales, and periodic evaluation and adjustment of stocking rates to maximize angler success and experience. These management actions would ensure that the cumulative impact of increased fishing pressure from regional population growth would be minor.

Changes to future conditions at other similar nearby lakes and reservoirs could also contribute to a cumulative increase in fishing pressure at Contra Loma. Nearby fresh water fish bearing reservoirs managed by EBRPD include Lake Chabot near Castro Valley, Lake Temescal near Oakland, and Shadow Cliffs near Pleasanton. These water bodies provide similar fishing opportunities, with catchable trout and catfish as well as bass and panfish opportunities. A number of smaller reservoirs add somewhat to the available opportunities. However, Contra Loma provides the highest quality bass fishing of any large water body in the region, and is very popular for put and take trout fishing as well. Other lakes or reservoirs of the region (e.g., Del Valle in Livermore) are likely to be too distant to be considered as providing comparable sport fishing for the local population. Fishery resources in these reservoirs are successfully managed by EBRPD and CDFW in a similar manner as Contra Loma. EBRPD's Master Plan includes a policy to develop aquatic facilities, where appropriate, to create a wide variety of fisheries; to monitor fisheries resources to determine species composition, size, population and growth rates; and to cooperate with CDFW to conserve, enhance and manage EBRPD fisheries resources for ecological and recreational benefit for all fish bearing lakes and reservoirs it manages (East Bay Regional Park District 2013). There are no known projects or changes planned for these other lakes that would adversely affect their fishery resources and result in cumulative impacts to Contra Loma fisheries (Alexander, pers. comm. 2013), nor is there any available information to indicate that fishing pressure impacts on these lakes when combined with Contra Loma would result in additional unmitigated effects.

### ***Invasive or Exotic Species***

The cumulative increase in visitation could also increase the potential for the introduction or spread of invasive or exotic species such as bait fish, crayfish, zebra mussels, and quagga mussels. The RMP includes a management action to allow the managing partner for the Regional Park to impose restrictions on the use of certain live baits. Hence the increased risk of introduction of exotic species of baitfish or crayfish into the reservoir from a cumulative increase in fishing would be a minor impact.

RMP management actions call for the local managing partners(s) for the Regional Park to continue to support and complement CCWD's programs to prevent introduction of zebra and quagga mussels. With these management actions, the risk of introduction of zebra or quagga mussels from a cumulative increase in visitation, although never completely eliminated, would be minor.

#### **4.10.7 Mitigation Measures**

No need for mitigation has been identified.

## **4.11 Geologic and Soil Resources**

### **4.11.1 Types of Impacts**

This section assesses the potential impacts of the RMP alternatives on the geologic and soil resources found in Contra Loma. Impacts related to soil erosion caused by construction activities are addressed in Section 4.7 (Water Resources).

Potential impacts to geology and soils could result from three general types of activities:

- Facility Maintenance
- Fire Suppression
- Facility Improvements

### **4.11.2 Assumptions**

The geology and soils impact analysis is based on the following assumptions:

- Reclamation would only provide project-specific authorization for activities, including construction and operation of new facilities that have undergone appropriate environmental review.
- The proposed management actions would comply with applicable laws and regulations governing geologic hazards, structure stability and erosion protection.
- Negative impacts on geology and soil resources would be greatest from direct, large-scale disturbance activities such as earthquakes or large-scale construction projects which require use of heavy equipment such as bulldozers, scrapers, large excavators or drilling and blasting.

- All buildings and structures at Contra Loma would meet City and/or state building code standards pertaining to geologic hazards and stability.

#### **4.11.3 Impacts Common to All Alternatives**

##### ***Facility Maintenance***

Ongoing routine maintenance activities and repairs of existing facilities by the managing partner(s) at the Regional Park and the Community Park would, in general, not involve ground disturbance or otherwise have the potential to cause significant environmental effects. However, trail maintenance activities in the Regional Park may include annual grading of fire roads and trails using machinery and hand tools in order to maintain the quality of the road or trail surface as well as maintain proper drainage. Vegetation management activities may include mowing of grasslands adjacent to trails to aid in fire suppression, potentially exposing soils to erosion. However, vegetation would not typically be removed in a manner that exposes bare soil, and removal of dead tree stumps causing soil disturbance would be a rare occurrence. All of the RMP alternatives would have a minor but long-term beneficial impact on soils by managing and reducing the potential for erosion.

##### ***Fire Suppression***

Wildland fire can have temporary negative impacts on soils due to soil erosion caused by off-road fire equipment use and temporary loss of grasslands. Management actions common to all alternatives would include periodic mowing and livestock grazing of the grassland areas adjacent to certain trails, hence reducing grassland fire hazards and the erosion effects which can result. These maintenance activities would be similar to current practices. Vegetation fire risk within the developed areas of Contra Loma is very low due to the scarcity of dry vegetation and the predominance of landscaped or wetland vegetation types, hence soil erosion resulting from fire would be very unlikely in the developed areas of Contra Loma.

#### **4.11.4 Impacts Specific to the No Action Alternative**

##### ***Facility Maintenance***

The impacts would be the same as those addressed in Section 4.11.3.

##### ***Fire Suppression***

The impacts would be the same as those described in Section 4.11.3.

#### **4.11.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

##### ***Facility Maintenance***

The impacts would be the same as those expected under the No Action Alternative and described in Section 4.11.3.

##### ***Fire Suppression***

The impacts would be the same as those expected under the No Action Alternative and described in Section 4.11.3.

### ***Facility Improvements***

Improvements to the boat launch area that are proposed in this alternative include the installation of concrete trails from the reservoir shoreline to the boat launch area in order to improve access. This action would also decrease the potential for erosion along the shoreline, resulting in a beneficial impact that would not occur under the No Action Alternative.

This alternative also includes paving of the unpaved portions of the East Shore Trail, the West Shore Trail, and the trail across the dam. Paving these trail sections would create a shoreline loop trail system that could be used year-round without increasing the potential for soil erosion and the subsequent potential for sediment to reach the reservoir, resulting in a beneficial impact that would not occur under the No Action Alternative.

Finally, this alternative would include construction of new or expanded buildings and facilities, such as restrooms, utility lines, offices, the police substation, a park residence, a communication tower, and fishing and boating facilities. All new buildings and facilities at Contra Loma would meet City and/or state building code standards pertaining to geologic hazards and stability. Therefore, these facility improvements would have a minor impact with respect to geology and soil resources that would not occur under the No Action Alternative.

Section 4.7 (Water Resources) assesses impacts related to soil erosion caused by construction activities, and includes mitigation measures to control construction-related erosion and sedimentation.

#### **4.11.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

##### ***Facility Maintenance***

The impacts would be the same as those expected under the No Action Alternative and described in Section 4.11.3.

##### ***Fire Suppression***

The impacts would be the same as those expected under the No Action Alternative and described in Section 4.11.3.

##### ***Facility Improvements***

This alternative would include construction of new or expanded buildings and facilities in addition to those that would be built under the Enhanced Recreation and Facilities Alternative. Additional buildings and facilities proposed under this alternative include expansion of the swim lagoon, an anglers' shelter, additional sports fields, and solar panels. Similar to the Enhanced Recreation and Facilities Alternative, all new buildings and facilities at Contra Loma would meet City and/or state building code standards pertaining to geologic hazards and stability. Therefore, these facility improvements would have a minor impact with respect to geology and soil resources that would not occur under the No Action Alternative.

The Expanded Recreation and Facilities Alternative may include construction of new trails that would be open to bicycles and/or would allow bicycles on portions of trails that are not currently open to bicycles. This alternative may also include establishment of a new fitness course by installing outdoor exercise stations with stationary equipment and signage along the shoreline trail loop. Construction of new trails or fitness trail equipment and signage would result in soil



disturbance. However, newly constructed trails and existing trails opened for bicycle use would be built in a manner that minimizes erosion, resulting in a minor impact that would not occur under the No Action Alternative.

This alternative includes a proposal to build a disc golf course in the Regional Park that would not be built under the No Action Alternative. Potential locations being considered for the disc golf course include areas east of the reservoir and in the southeast part of the Regional Park. Steep, unstable terrain has been mapped in the eastern half of the Regional Park (see Figure 3-15), indicating that there is a potential for landslides to occur in response to changes in water content, earthquakes, or the removal of downslope support. Construction of the disc golf course, including the infrastructure associated with disc golf would involve relatively little earthwork, limited to the construction of tee pads. Tee pads are typically 5-feet to 6-feet wide and 12-feet to 18-feet long and have a level surface of textured cement, asphalt, grass, or earth. Construction of the tee pads would not require any major ground disturbance associated with heavy equipment use; therefore, this impact would be minor.

#### **4.11.7 Cumulative Impacts**

##### ***Concurrent Improvements and Land Use Changes***

Approximately 38 percent of the land within the City (6,383 acres) and nearly 46 percent of the land within the unincorporated portion of the General Plan study area (2,240 acres) were vacant in 2003. Buildout of the City and County general plans would cause a substantial amount of ground disturbance. The improvements to the boat launch area would cause a small amount of ground disturbance.

##### ***Facility Improvements***

The proposed construction activities proposed under the two action alternatives could temporarily increase the potential for soil erosion. Construction activities carried out by others in the vicinity of Contra Loma, including the sports field improvements at the Community Park, could also increase the potential for soil erosion, which could cause a cumulative increase in soil erosion and sedimentation in local waterways. However, Section 4.7 (Water Resources) includes mitigation measures to control construction-related erosion and sedimentation attributable to the RMP, thereby reducing the RMP's contribution to a potential cumulative soil erosion impact.

#### **4.11.8 Mitigation Measures**

No need for mitigation has been identified.

## **4.12 Climate and Air Quality**

### **4.12.1 Types of Impacts**

This section assesses the potential impacts of the RMP alternatives on climate change and on regional air quality. Because the RMP neither includes nor defines specific projects, the analysis in this section is qualitative.

Potential impacts related to air quality and climate change could result from three general types of activities:

- Human Use
- Facility Maintenance
- Facility Improvements

#### **4.12.2 Assumptions**

The air quality and climate change impact analysis is based on the following assumptions:

- Reclamation would only provide project-specific authorization for activities, including construction and operation of new facilities that have undergone appropriate environmental review.

#### **4.12.3 Impacts Specific to the No Action Alternative**

##### ***Human Use***

Vehicle emissions of air pollutants generated by park visitation would have minor adverse impacts on air quality in the Contra Loma region. Ozone precursors (i.e., ROG, NO<sub>x</sub>), PM<sub>10</sub> and PM<sub>2.5</sub>, and GHGs are currently generated by vehicles traveling to and from Contra Loma. Although increased visitation to Contra Loma would increase the volume of air pollutants generated by visitors' vehicles, this increase is not likely to result in levels of park visitation high enough to cause exceedance of National Ambient Air Quality Standards (NAAQS).

Although the primary access road into the Regional Park is paved, some of the parking areas in the Regional Park as well as the road leading to the east side of the reservoir have gravel surfaces. Use of gravel roads and parking areas may generate a small but insubstantial amount of dust because the gravel provides a protective ground surface and because the speed and number of vehicles driving in unpaved areas within the Regional Park are generally low. The recreational trail system in the Regional Park is closed to privately operated motorized vehicles. Therefore, dust generated by recreational trail use would result from activities such as mountain biking, hiking, and equestrian use. However, these types of recreational transportation activities are not usually fast enough or dense enough to generate a substantial amount of dust. Three of the Community Park's sports fields have baseball diamonds with dirt infields. Use of these fields generates a small, insubstantial amount of dust. Increased visitation to Contra Loma would increase the amount of dust generated by human use but is not expected to substantially increase the amount of dust emissions generated within Contra Loma due to reasons described above resulting in a minor impact on air quality.

Smoke from barbecue grills used by park visitors is a source of PM. However, the amounts of smoke generated by occasional day use activities typically only occur seasonally, primarily on weekends, resulting in temporary minor impacts to air quality. Increased visitation would incrementally increase the amount of PM generated by barbecue grills. However, this incremental increase would not be substantial and would result in a minor impact on air quality.

##### ***Facility Maintenance***

Ongoing routine maintenance and management activities and repairs of existing facilities at the Regional Park and the Community Park by the managing partner(s) would continue to involve the use of motorized vehicles and equipment such as staff vehicles, mowers, graders, and various

landscaping equipment. Increased visitation could incrementally increase the amount of facility maintenance required. These maintenance and repair activities could generate dust and hydrocarbon emissions, including PM, ozone precursors (ROG, NO<sub>x</sub>), and GHGs. It is anticipated that equipment would be properly maintained by the managing partner(s) to reduce exhaust emissions. Dust would continue to be generated by mowing and other landscaping activities and by park vehicles traveling on dirt fire roads (see Section 3.13); however, mowing and landscaping activities would be short term and park maintenance vehicles would reduce dust generation by complying with park road speed limits. Annual fire road grading and maintenance activities would likely involve the use of heavy construction equipment that would generate dust. Such activities, however, are temporary and of short duration. It is anticipated that maintenance activities requiring substantial ground disturbance would include use of water trucks to minimize dust emissions and that the managing partner(s) or their contractor would maintain mechanized equipment in accordance with local and state emissions guidelines; therefore, facility maintenance and repairs would have a minor impact on air quality and climate change.

#### **4.12.4 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

##### ***Human Use***

Impacts would be similar to those addressed in Section 4.12.3; however, this alternative would include facility improvements and renovations that would increase the public's enjoyment and use of Contra Loma. This alternative would likely attract more visitors and would, therefore, generate more air pollutants than the No Action Alternative. For the reasons discussed in Section 4.12.3, air quality and climate change impacts from human use would be minor.

##### ***Facility Maintenance***

The impacts would be similar to those addressed in Section 4.12.3; however, this alternative would include more recreation and infrastructure facilities than the No Action Alternative, which could require more maintenance than the No Action Alternative. In addition, because this alternative would include more enhanced recreation opportunities than the No Action Alternative, it could result in more visitor use and require incrementally more maintenance than the No Action Alternative. For the reasons discussed in Section 4.12.3, air quality and climate change impacts from facility maintenance would be minor.

##### ***Facility Improvements***

This alternative includes expansion or renovation of existing buildings and structures as well as construction of new facilities within the Regional Park that would occur under the No Action Alternative. These actions may include mechanical ground-disturbing activities that could generate dust and create conditions conducive to wind erosion. Because the managing partner(s) would adhere to BAAQMD control strategies for reducing air pollutants, dust control measures such as frequent watering and/or covering of stockpiled soils would reduce potential impacts on air quality to a minimum; resulting in a minor impact on air quality.

Construction activities for facility improvements would also temporarily generate air pollutants, including PM, ozone precursors, and GHGs, through fuel combustion and the evaporation of solvents, paints, and fuels. Diesel particulate emitted from heavy equipment is an identified toxic air contaminant. However, construction emissions would be temporary and primarily localized around the construction areas. Project operations would adhere to local and statewide efforts

aimed at minimizing GHG emissions, including measures recommended in BAAQMD's 2010 Clean Air Plan (CAP). Efforts to reduce tailpipe emissions and diesel exhaust produced by combustion engines would be included in all construction activities at Contra Loma; therefore, impacts on air quality and climate change would be minor.

Potential expansion of the pumping and filtration facility at the swim lagoon is proposed under this alternative. Operation of the pump(s) and filtration system needed for this expansion would be a permanent source of exhaust emissions. However, this would have a minor impact on air quality since equipment would be operated and maintained at levels consistent with BAAQMD stationary source measures resulting in minor impacts on air quality and climate change that would not occur under the No Action Alternative.

This alternative may include a new fueling station and fuel storage tank for Regional Park vehicles and equipment as well as for public safety officers. The managing partner(s) would be required to design and operate the facility in a manner that minimizes its impact on air quality and the facility may only be built and operated in compliance with applicable federal and federally-mandated air quality laws, regulations, and permits. Even with these measures, some petroleum vapors (air pollutants) would escape to the atmosphere during equipment fueling and fuel handling. The amount of air pollutants generated by the fueling facility would likely be similar to the amount of pollutants currently emitted when the current managing partner for the Regional Park fuels its vehicles at offsite fueling stations. If the new fueling station were to generate more air pollutants than the current managing partner's fueling practices, the air quality measures described above would ensure that the fueling station would only have a minor adverse impact on air quality. This impact would not occur under the No Action Alternative.

#### **4.12.5 Impacts Specific to the Expanded Recreation and Facilities Alternative**

##### ***Human Use***

The impacts would be similar to those addressed in Section 4.12.3; however, this alternative would include facility improvements and expansion of trail use that would increase the public's enjoyment and use of Contra Loma beyond those of the other two alternatives. This alternative would likely attract more visitors and would, therefore, generate more air pollutants than the other two alternatives. For the reasons discussed in Section 4.12.3, air quality and climate change impacts from human use would be minor.

##### ***Facility Maintenance***

The impacts would be similar to those addressed in Section 4.12.3; however, this alternative would include more facility and trail improvements than the other two alternatives, which could require more maintenance. In addition, because this alternative would include more enhanced recreation opportunities than the other alternatives, it could result in more visitor use and require incrementally more maintenance. For the reasons discussed in Section 4.12.3, air quality and climate change impacts from facility maintenance would be minor.

##### ***Facility Improvements***

This alternative would include construction of new or expanded buildings and facilities in addition to those that would be built under the Enhanced Recreation and Facilities Alternative. These activities would generate PM through mechanized ground disturbance and wind erosion.

Construction activities would comply with guidelines contained in the BAAQMD CAP and the construction contractor would be required to minimize airborne dust to the extent possible, resulting in a minor impact on air quality that would not occur under the No Action Alternative.

The increased construction that would occur under this alternative would also increase the volume of temporary, construction-related vehicle and equipment exhaust emissions. However, construction emissions would be temporary and primarily localized around the construction areas. Project operations would adhere to local and statewide efforts aimed at minimizing GHG emissions, including measures recommended in BAAQMD's CAP. Efforts to reduce tailpipe emissions and diesel exhaust produced by combustion engines would be included in all construction activities at Contra Loma; therefore, impacts on air quality and climate change would be minor. These impacts would not occur under the No Action Alternative.

Expansion of the Regional Park's recreational trail system is included under this alternative. Impacts on air quality as a result of dust generated by low-impact recreational use of the expanded trail system would be similar to those described in Section 4.12.4. There would be no impact on air quality as a result of expanded recreational trail use.

This alternative would also include installation of solar panels to supplement the Regional Park's energy needs. Solar panels would reduce the Regional Park's demand for conventionally generated electricity, thereby slightly reducing air pollutant emissions generated at the power plants that serve Contra Loma. This would be a beneficial impact that would not occur under the No Action Alternative.

#### **4.12.6 Cumulative Impacts**

##### ***Increased Visitation, Concurrent Improvements, and Land Use Changes***

As discussed previously, visitation to Contra Loma is expected to continue to increase under all of the alternatives with more visitation expected under the two action alternatives than the No Action Alternative. A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans. The improvements to sports fields 4 and 5 and the boat launch area upgrades will increase visitation to Contra Loma.

Approximately 38 percent of the land within the City (6,383 acres) and nearly 46 percent of the land within the unincorporated portion of the General Plan study area (2,240 acres) were vacant in 2003. Buildout of the City and County general plans would convert a substantial amount of vacant land to urbanized uses, increasing the potential for air pollutant emissions.

##### ***Discussion***

Cumulative air quality impacts typically occur when multiple projects affect the same air basin at the same time, or when sequential projects extend the duration of air quality emissions over a longer period of time. Because attainment of NAAQS for ozone and PM require evaluation of conditions over a three-year period, air pollution emissions that occurred in the recent past can affect attainment or nonattainment designations.

Cumulative construction-related air quality impacts would occur if projects approved or carried out by other government entities were constructed concurrently with construction being

performed under the proposed RMP. The City and the County both expect future population increases, accompanied by new construction on public and private lands. Some of this construction activity is likely to occur concurrently with RMP-related construction activity. PM and ozone precursors generated during RMP construction activities could contribute to the existing violations of PM in the Bay Area and could exceed state ambient air quality standards. Therefore, the construction contractor would be required to minimize airborne dust, PM, ozone precursors, and GHG emissions to the extent required by applicable air quality plans and guidelines.

Cumulative operational air quality impacts would occur if projects approved or carried out by other government entities were to combine with emissions from Contra Loma operations and generate emissions that conflict with applicable air quality plans. Management activities associated with the RMP alternatives could have some minor adverse impacts on air quality and climate change, but the overall contribution of the actions proposed at Contra Loma to air quality and climate change would be minimal. Aside from the motor vehicles used by many park visitors to access Contra Loma, recreational activities at the Regional and Community parks do not generate substantial emissions. Low impact, non-motorized activities that produce minimal amounts of airborne dust typify recreational pursuits at Contra Loma.

The expected regional population growth would increase the number of vehicles traveling regional roads, leading to increased vehicle emissions. Federal vehicle emission control programs could offset the increased emissions from population growth.

Because the two action alternatives would include more facilities and would experience more visitation than the No Action Alternative, they would contribute most to cumulative air quality impacts.

#### **4.12.7 Mitigation Measures**

No need for mitigation has been identified.

### **4.13 Noise**

#### **4.13.1 Types of Impacts**

This section describes potential impacts on existing noise levels as a result of management actions included in the RMP alternatives. The impacts of the RMP alternatives on noise levels are evaluated qualitatively considering the existing noise environment and the duration and anticipated magnitude of noise level changes. Although a number of sensitive noise receptors (i.e., residences) are located within ¼ mile of the north and southeast boundaries of Contra Loma, to date, neither of the current managing partners has received any noise complaints from nearby residents.

Noise impacts could potentially result from three general types of activities:

- Human Use
- Facility Maintenance

- Facility Improvements

#### **4.13.2 Assumptions**

The noise impact analysis is based on the following assumptions:

- Reclamation would only provide project-specific authorization for activities, including construction and operation of new facilities that have undergone appropriate environmental review.
- The proposed management actions would comply with applicable policies and regulations governing noise.
- The public's use of Contra Loma would continue to increase regardless of the selected alternative, and would require an increased level of facilities management to satisfy this demand.

#### **4.13.3 Impacts Common to All Alternatives**

##### ***Human Use***

Visitor use of Contra Loma is expected to increase under all of the RMP alternatives, consistent with the visitation trend over the past few years. As a result, visitor generated noise from sources such as vehicles or human voices is expected to increase incrementally. Although noise levels within Contra Loma would likely increase, the impact would occur over limited time periods and would typically occur in areas of concentrated human use such as the swim lagoon, the south shore of the reservoir, and the Community Park recreational facilities. Most of the noise generated by human use within Contra Loma would occur during daytime hours, although nighttime use of the currently lighted Community Park sports fields would continue. Such noises are generally an accepted part of the ambient noise levels experienced by park visitors and nearby residents. Noise level increases from non-vehicular human use are not expected to be noticeable; therefore, noise impacts resulting from increased non-vehicular human use would be minor.

Increased visitor use would increase vehicle trips to Contra Loma, resulting in a small increase in vehicle noise on roads leading to Contra Loma. Typically, traffic volumes must double before traffic noise increases are noticeable. According to the City's General Plan EIR, traffic volumes on the local roads providing access to Contra Loma (i.e., James Donlon Boulevard, Lone Tree Way, Contra Loma Boulevard) would not double by the year 2020, even with build out of the General Plan (2020 is the study horizon of the General Plan EIR traffic analysis; City of Antioch 2003b). Therefore, the addition of vehicles from Contra Loma visitors is also not expected to cause vehicle traffic to double. For this reason, vehicle noise level increases from increased visitation are not expected to be noticeable and would result in a minor noise impact.

##### ***Facility Maintenance***

Increased visitation would incrementally increase the need for routine maintenance activities such as waste disposal, facility repairs, vehicle patrols, and emergency response by the managing partner(s) or others. Similar to current practices, most noise generated by maintenance activities within Contra Loma would occur during daytime hours. In addition, such noises are generally an

accepted part of the ambient noise levels experienced by park visitors and nearby residents. Noise level increases caused by maintenance activities are not expected to be noticeable; therefore, noise impacts resulting from increased facility maintenance would be minor.

#### **4.13.4 Impacts Specific to the No Action Alternative**

##### ***Human Use***

The impacts would be the same as those addressed in Section 4.13.3.

##### ***Facility Maintenance***

The impacts would be the same as those addressed in Section 4.13.3.

#### **4.13.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

##### ***Human Use***

In addition to the impacts addressed in Section 4.13.3, this alternative would include more enhanced recreation opportunities than the No Action Alternative, which could incrementally increase visitor use and vehicle trips to Contra Loma. An incremental increase in visitor use would proportionally increase noise from human activity.

##### ***Facility Maintenance***

In general noise impacts would be the same as those described in Section 4.13.3; however, this alternative would include more enhanced recreation opportunities than the No Action Alternative, which could require more facility maintenance. Unlike the No Action Alternative, this alternative would also include the replacement of existing portable chemical toilets with permanent restrooms, which would reduce or remove the need for periodic waste water pumping, and would therefore minimize or remove this common maintenance activity as a source of noise.

##### ***Facility Improvements***

This alternative may include new, expanded, or renovated facilities at the Regional Park to enhance recreation and improve operations. Examples include a new park residence, classroom facilities near the swim lagoon, improvements to the park office and police substation, a new fueling station, additional picnic sites, a storm water retention basin, and a “safe swim” area or splash pad at the swim lagoon. Expanded pumping and filtration facilities may also be needed to operate the additional swim facilities. Use of these facilities could increase ambient noise levels within the Regional Park at certain times. However, the impact would occur over limited time periods, would typically occur in areas of concentrated human use such as the swim lagoon and south shore of the reservoir, and would not occur near noise-sensitive land uses located outside Contra Loma. In addition, such noises are generally an accepted part of the ambient noise levels experienced by park visitors; therefore, noise level increases from these improvements are not expected to be noticeable.

Construction of the facility improvements would temporarily increase noise levels within Contra Loma, which could be distracting to some park visitors. Construction noise may also be audible from some offsite areas, depending on the location and the nature of the construction activity. However, construction activities would be short-term. Also, the managing partner(s) can limit construction activities to days and times that reduce noise-related effects on visitors and on sensitive receptors near Contra Loma. For these reasons, noise increases attributable to facility



improvements would have a minor adverse impact. This impact would not occur under the No Action Alternative.

#### **4.13.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

##### ***Human Use***

In general, noise impacts would be similar to the Enhanced Recreation and Facilities Alternative. Overnight group camping at the Regional Park would increase the potential for noise, particularly nighttime noise. However, overnight camping would be allowed only in the Regional Park, and would most likely occur in the developed picnic area along the south shore of the reservoir. Noise generated in this location is buffered from residential areas by distance and topography. In addition, event-specific authorization, oversight, and regulation by the managing partner(s) would be required, thereby ensuring that group camping would not generate excessive noise; therefore, the noise impact from this activity would be minor. This impact would not occur under the No Action Alternative. Under this alternative, all other types of human use would result in minor adverse impacts similar to those described in Section 4.13.3.

##### ***Facility Maintenance***

This alternative would include the routine maintenance activities needed for operation of the Regional Park and Community Park that are included in the Enhanced Recreation and Facilities Alternative. In addition, this alternative would include more expanded recreation opportunities than the other two alternatives, which could require more facility maintenance and generate more noise than the other two alternatives.

##### ***Facility Improvements***

This alternative would include construction of new or expanded facilities in addition to those that would be built or enhanced under the Enhanced Recreation and Facilities Alternative. Except as discussed below, construction and use of new or expanded facilities under this alternative would be the same as described under the Enhanced Recreation and Facilities Alternative.

This alternative may include the addition of two new sports fields and increased parking capacity in the Community Park. The sports fields would have floodlights to allow evening use in addition to those currently used within sports fields 1, 2, and 3. Therefore, this alternative may expand sports field use, including evening league play, at the Community Park. Noise generated by sports league play at the Community Park includes vehicle noise, sports whistles, and human voices such as cheers and shouts. Noise generated at the new sports fields could be noticeable to some residents near the eastern portion of the Community Park, although the closest residence would be approximately 800 feet away on the north side of James Donlon Boulevard. In addition, the homes closest to the Community Park are routinely exposed to vehicle noise from James Donlon Road, and vehicle noise associated with use of the new sports fields would be similar. The magnitude of noise levels experienced at nearby residences from sports field use is currently buffered and would continue to be buffered by topography and distance. Also, noise generated by the new sports fields would typically be of short duration, lasting no more than a few hours on any given day. Therefore, the intensity of the additional noise generated by the new sports fields is not expected to be substantial. Also, human noise generated by use of the new fields would be similar to noise generated by use of Fields 1, 2, and 3. Therefore, when considering the context and intensity of additional noise generated by new sports fields, the new

fields would have a minor noise impact. In addition, the local managing partner(s) for the Community Park would have the ability to adjust the hours of use to accommodate the needs of nearby residents. This minor impact would not occur under the No Action Alternative.

#### **4.13.7 Cumulative Impacts**

##### ***Increased Visitation, Concurrent Improvements, and Land Use Changes***

As discussed previously, visitation to Contra Loma is expected to continue to increase under all of the alternatives with more visitation expected under the two action alternatives than the No Action Alternative. A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans. The improvements to sports fields 4 and 5 and the boat launch area upgrades will increase visitation to Contra Loma.

Approximately 38 percent of the land within the City (6,383 acres) and nearly 46 percent of the land within the unincorporated portion of the General Plan study area (2,240 acres) were vacant in 2003. Buildout of the City and County general plans would convert a substantial amount of vacant land to urbanized uses, increasing noise within the project region.

##### ***Human Use and Facility Maintenance***

Increased visitation would cumulatively, though incrementally, increase the volume of noise generated by visitors and maintenance activities. This impact would occur over limited time periods and would typically occur in areas of concentrated human use such as the swim lagoon, the south shore of the reservoir, and the Community Park recreational facilities. Most of the noise generated by human use within Contra Loma would occur during daytime hours, although installation of floodlights at sports fields 4 and 5 would increase nighttime use of the Community Park sports fields. The intensity of the additional noise generated by the new sports fields is not expected to be substantial. Also, such noises are generally an accepted part of the ambient noise levels experienced by park visitors and nearby residents. Therefore, when considering the context and intensity of additional noise generated by a cumulative increase in visitation and nighttime use of sports field 4 and 5, the cumulative noise impact would be minor. Because the two action alternatives would experience more visitation and would include more new facilities than the No Action Alternative, they would result in higher noise levels attributable to human use and facility maintenance than the No Action Alternative.

Increased visitor use would increase vehicle trips to Contra Loma, resulting in a small increase in vehicle noise on roads leading to Contra Loma. Regional population growth would also increase traffic volumes and resulting vehicle noise on roads near Contra Loma. Typically, traffic volumes must double before traffic noise increases are noticeable. According to the City's General Plan EIR, traffic volumes on the local roads providing access to Contra Loma (i.e., James Donlon Boulevard, Lone Tree Way, Contra Loma Boulevard) would not double by the year 2020, which corresponds with the study horizon of the General Plan EIR traffic analysis (City of Antioch 2003b). The addition of vehicles from Contra Loma visitors is not expected to cause vehicle traffic to double. Therefore, cumulative vehicle noise level increases from increased visitation are not expected to be noticeable and would result in a minor cumulative noise impact.

### **Facility Improvements**

Sports fields 1 through 5 currently generate noise from sporting activities. Sports fields 1, 2, and 3 have floodlights for nighttime use and floodlights have recently been installed at sports fields 4 and 5. The Expanded Recreation and Facilities Alternative would include two new sports fields with floodlighting. When combined, use of these fields would cause a cumulative noise level increase during the daytime and early nighttime hours in the vicinity of the Community Park. The greatest noise increase would be in the eastern portion of the Community Park near Fields 4 and 5 and the two proposed sports fields because Fields 4 and 5 will soon be usable at night and because the new fields would represent new noise sources. The cumulative noise increase at the new sports fields could be noticeable to some residents near the Community Park. The closest residences would be approximately 360 feet away from Fields 1, 2, and 3, 575 feet away from Fields 4 and 5, and 800 feet away from the two new sports fields. All of these residences are on the north side of James Donlon Boulevard. These residences are routinely exposed to vehicle noise from James Donlon Road, and vehicle noise associated with use of the new sports fields would be similar. The magnitude of noise levels experienced at nearby residences from sports field use is currently buffered and would continue to be buffered by topography and distance. Also, noise generated by the new sports fields would typically be of short duration, lasting no more than a few hours on any given day. Therefore, the intensity of the cumulative noise increase generated by the existing sports fields, nighttime use of sports fields 4 and 5, and the proposed new fields is not expected to be substantial. Also, human noise generated by use of the new fields would be similar to noise generated by use of Fields 1, 2, and 3 and daytime use of fields 4 and 5. Therefore, when considering the context and intensity of additional cumulative noise levels, the increase would have a minor noise impact. In addition, the local managing partner(s) for the Community Park would have the ability to adjust the hours of use to accommodate the needs of nearby residents.

#### **4.13.8 Mitigation Measures**

No need for mitigation has been identified.

## **4.14 Visual Resources**

### **4.14.1 Types of Impacts**

This section describes potential effects on visual resources from management actions and other resource uses. This analysis focuses on direct and indirect effects from actions that would change the visual resources by introducing intrusions into the landscape.

Potential impacts to visual resources could result from three general types of activities:

- Human Use
- Physical Improvements to the Regional Park
- Physical Improvements to the Community Park

### **4.14.2 Assumptions**

The visual resources impact analysis is based on the following assumptions:

- Reclamation would only provide project-specific authorization for activities, including construction and operation of new facilities that have undergone appropriate environmental review.
- The size and/or severity of surface disturbance proportionally increases the magnitude of the resulting effect on scenic quality.
- Visual quality and opinions about the effect of changes within the visual environment are highly subjective to the viewer.

#### **4.14.3 Impacts Common to All Alternatives**

##### ***Human Use***

As described previously, visitor use of Contra Loma is expected to increase under all of the alternatives, consistent with the visitation trend over the past few years. Increased visitation would increase the potential for littering, trampled vegetation, scarred terrain, vandalism, and facility deterioration, which could impair the visual quality of the landscape. Under all of the alternatives, however, litter and waste reduction programs will continue to be implemented to effectively meet demand, thereby reducing the possibility that litter will impair visual quality. In addition, the local managing partner(s) will continue to be responsible for performing landscape maintenance and management activities that regulate park uses in order to minimize trampling of vegetation, scarring of terrain, and vandalism. The managing partner(s) will also continue to repair and maintain facilities before they deteriorate and can adversely affect Contra Loma's visual character. These maintenance and management activities would ensure that the intensity of any visual change caused by increased human use and the resulting impacts to visual resources would be minor.

#### **4.14.4 Impacts Specific to the No Action Alternative**

##### ***Human Use***

The impacts would be the same as those addressed in Section 4.14.3.

#### **4.14.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

##### ***Human Use***

The impacts would be the same as those expected under the No Action Alternative and addressed in Section 4.14.3.

##### ***Physical Improvements to the Regional Park***

This alternative may include new, expanded, or renovated buildings and structures to improve operations. These improvements would not be built under the No Action Alternative. Examples include a new park residence, new permanent restrooms to replace existing portable chemical toilets, classroom facilities near the swim lagoon, and a radio communication tower. This alternative may also include new or renovated recreational facilities, such as new or reconstructed fishing docks, improvements at the boat launch area to enhance boating and fishing access, a "safe swim" area or splash pad at the swim lagoon, additional shade structures on the swim lagoon lawn, additional trail signs, and additional picnic sites.

Some of the new or renovated facilities would improve the visual quality within the Regional Park. Examples include new permanent restroom facilities to replace portable chemical toilets and renovated fishing docks to replace deteriorating docks. Such improvements would result in a beneficial impact on localized views in the vicinity of these improvements.

Some of the proposed improvements would represent noticeable changes to the visual environment but would not impair the visual quality or character of the Regional Park because they would be consistent with the existing visual character of the Regional Park. For example, park visitors are accustomed to seeing picnic areas, shade structures, trail signs, and restrooms when visiting the Regional Park, and consider such facilities to be important components of their recreational experience. Similarly, improvements to the swim lagoon area such as a “safe swim” area or splash pad for children would be consistent with views in the vicinity of the swim lagoon. Such improvements, therefore, would have no impact on visual resources within the Regional Park.

Other proposed improvements, however, have the potential to impair visual resources. These include the larger and more prominent improvements such as a new park residence, classroom facilities, and a new radio communication tower. These larger facilities would be visible from various locations within the Regional Park and some facilities, such as a radio communication tower, could be visible from offsite locations. Because the specific designs and locations of these facilities are not yet known, the potential impact on visual resources could vary in intensity. Improvements that are designed to blend well with the visual environment would result in minor adverse impacts. Alternatively, improvements that appear inconsistent with the visual environment could impair the visual character of Contra Loma from viewpoints within the recreation area and from viewpoints outside the recreation area, resulting in major adverse impacts.

When specific facilities are proposed, site-specific environmental analysis would be conducted that includes a more focused assessment of the potential impact on visual resources. When feasible and appropriate, the proposed activity would be modified or mitigation measures would be implemented to reduce impacts on visual resources (see Section 4.14.8, Mitigation Measure Visual-1).

#### **4.14.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

##### ***Human Use***

The impacts would be the same as those expected under the No Action Alternative and addressed in Section 4.14.4.

##### ***Physical Improvements to the Regional Park***

This alternative would include new, expanded, or renovated infrastructure or recreational facilities in addition to those that would be built under the Enhanced Recreation and Facilities Alternative. Therefore, this alternative would have more potential to change the visual character of the Regional Park than the other alternatives.

Some of the proposed improvements would represent noticeable changes to the visual environment but would not impair the visual quality or character of the Regional Park because

they would be consistent with the existing visual character of the Regional Park. For example, park visitors are accustomed to seeing trails, shade structures, picnic tables, wash basins, electrical outlets, interpretive signage, fitness courses, and playground structures when visiting the Regional Park or other similar recreation areas. Similarly, an expanded swim lagoon would be consistent with existing views of the swim lagoon. Such improvements, therefore, would have no impact on visual resources within the Regional Park.

This alternative may also include installation of shade structures in the parking and picnic areas, and solar panels may be installed on top of the shade structures or on buildings to supplement the Regional Park's energy needs. Shade structures in picnic areas are common in many recreation areas and would be visually consistent with the Regional Park's recreational setting. Therefore, shade structures would have no impact on visual resources. Solar panels and parking area shade structures are widely used within non-recreational land uses, but are less commonly seen in park settings. Therefore, solar panels and parking lot shade structures would likely be more noticeable to park users than many of the other proposed improvements. The intensity of the visual change, however, would not be substantial and, thus, would not impair the visual quality or character of the Regional Park. Such improvements, therefore, would have no impact on visual resources within the Regional Park.

This alternative may also include installation of disc golf course in an undeveloped location that is suitable for disc golf and that minimizes conflicts with other park uses. Potential locations may include the gently rolling land east of the reservoir and west of the Lone Tree Golf Course, gently sloping land near the southwest corner of the reservoir, and the level or gently sloping land in the southeast portion of the Regional Park directly north of Frederickson Lane. These locations are undeveloped and currently support grazed annual grassland.

Disc golf courses typically have a relatively low visual prominence because they require minimal ground disturbance and infrastructure. A typical disc golf course includes either 9 or 18 holes, and consists of a tee pad and a target for each hole and simply-designed signage. Tee pads are typically 5-feet to 6-feet wide and 12-feet to 18-feet long and have a level surface of textured cement, asphalt, grass, or earth. Disc golf targets are approximately 5-feet high and 27-inches in diameter and consist of a metal pole supporting a metal basket and several metal chains. Some areas within a disc golf course may require clearing of grass and herbaceous vegetation. The course would be noticeable to viewers in some locations, but would have no adverse impact on visual resources because the intensity of the visual change from annual grassland to a disc golf course would be relatively minor, and because a disc golf course at the Regional Park would be visually consistent with other recreational land uses within the Regional Park, the Community Park, and the adjacent Lone Tree Golf Course.

This alternative would also include the management actions proposed for the Enhanced Recreation and Facilities Alternative, including some proposed improvements that have the potential to impair visual resources. As discussed for the Enhanced Recreation and Facilities Alternative, when specific facilities are proposed, site-specific environmental analysis would be conducted that includes a more focused assessment of any potential impact on visual resources. When feasible and appropriate, the proposed activity would be modified or mitigation measures would be implemented to reduce impacts on visual resources (see Section 4.14.8, Mitigation Measure Visual-1).

***Physical Improvements to the Community Park***

This alternative would include new, expanded, or renovated infrastructure or recreational facilities that would not be included in the Enhanced Recreation and Facilities Alternative. Therefore, this alternative would have more potential to change the visual character of the Community Park than the other alternatives.

This alternative may include new trails and a botanical garden within the Community Park. These improvements would represent noticeable changes to the visual environment but would not impair the visual quality or character of the Community Park because they would be consistent with the existing visual character of the Community Park which includes trails and landscaping; therefore, these improvements would have no impact on visual resources.

Additional multi-use sports fields may be built directly south of the two existing sports fields on the east side of the Community Park and additional parking areas may be developed nearby (see Figure 2-1). The new sports fields may include floodlights to allow evening use. These improvements would represent noticeable changes to the visual environment of the Community Park. During the day, the new fields would be visible to Contra Loma visitors. However, they would be consistent with the existing visual character of the Community Park, which currently has five multi-use sports fields and two parking lots.

The new sports fields would be approximately 800 feet away from the nearest residences, located on the north side of James Donlon Boulevard, and would be screened by vegetation and topography. At night, glare or general skyglow from the floodlights may be visible from some residences. However, the additional nighttime lighting would be visually consistent with the lighting used at Fields 1, 2, and 3 and with the street lights along James Donlon Boulevard. Within this context, the new lighting would be less noticeable. Also, the distance between the lighted fields and the residences would reduce their intensity as observed from the residences. In addition, the lights would be shut off each night after their use, and the local managing partner(s) for the Community Park would have the ability to adjust the hours of use to accommodate the needs of nearby residents. For these reasons, the sports field lights would result in a minor adverse impact on visual resources. This impact would not occur under the No Action Alternative.

**4.14.7 Cumulative Impacts**

***Increased Visitation, Concurrent Improvements, and Land Use Changes***

As discussed previously, visitation to Contra Loma is expected to continue to increase under all of the alternatives with more visitation expected under the two action alternatives than the No Action Alternative. A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans. The improvements to sports fields 4 and 5 and the boat launch area upgrades will increase visitation to Contra Loma.

Approximately 38 percent of the land within the City (6,383 acres) and nearly 46 percent of the land within the unincorporated portion of the General Plan study area (2,240 acres) were vacant in 2003. Buildout of the City and County general plans would convert a substantial amount of vacant land to urbanized uses, changing the visual appearance of the project region.

### ***Human Use***

Increased visitation would increase the potential for littering, trampled vegetation, scarred terrain, vandalism, and facility deterioration, which could impair the visual quality of the landscape. For the reasons presented in Section 4.14.3, the intensity of any visual change caused by the cumulative increase in human use and the resulting impacts to visual resources would be minor.

### ***Physical Improvements***

Sports fields 1, 2, and 3 currently have floodlights for nighttime use and floodlights are currently being installed at sports fields 4 and 5. The Expanded Recreation and Facilities Alternative would include two new sports fields with floodlighting. When combined, lighting for these sports fields would cause a cumulative increase in nighttime lighting in the vicinity of the Community Park. However, this nighttime lighting would be visually consistent with the lighting used at Fields 1, 2, and 3 and with the street lights along James Donlon Boulevard. Within this context, the combined lighting would be less noticeable. Also, the distance between Fields 4 and 5 and the residences would reduce their intensity as observed from the residences. In addition, all of the lights would be shut off each night after their use, and the local managing partner(s) for the Community Park would have the ability to adjust the hours of use to accommodate the needs of nearby residents. For these reasons, the sports field lights would result in a minor cumulative impact on visual resources.

Very few land use changes are expected to occur in the vicinity of Contra Loma that could contribute to a cumulative impact on visual resources when considered in combination with the visual changes proposed in the RMP. The land to the north of Contra Loma has largely been built out with suburban land uses. The land directly to the east of Contra Loma is occupied by the Lone Tree Golf Course. The land east of the golf course has also largely been built out with suburban land uses. The residential land directly adjacent to the southeastern boundary of Contra Loma has largely been built out. The land southwest of Contra Loma is owned and managed by EBRPD as the Black Diamond Mines Regional Preserve. Therefore, no land use changes are expected to occur in these areas that would contribute to a cumulative impact on visual resources.

Only the land on the southern portion of the western boundary of Contra Loma has the potential for further development. The City's General Plan designates this land as Estate Residential with a density of two dwelling units per acre. However, most of this area is visually separated from Contra Loma by the ridgeline that runs along the eastern boundary of Contra Loma and is, therefore, not visible from most locations within Contra Loma. Therefore, it is highly unlikely that buildout of the residential area and the management actions proposed in the RMP would combine to contribute to a cumulative impact on visual resources.

#### **4.14.8 Mitigation Measures**

##### ***Mitigation Measure Visual-1: Implement design measures to reduce visual impacts from new development.***

When a specific project is proposed, a site-specific environmental analysis would be conducted that includes a more focused assessment of the potential impact on visual resources. When



feasible and appropriate, the proposed activity would be modified to reduce impacts on visual resources. Such modifications may include, but are not limited to:

- Design all new development to be visually compatible with Contra Loma's visual character and quality.
- Use building materials that are visually compatible with Contra Loma's natural setting.
- Avoid removal of native vegetation to the extent possible.
- Minimize grading of slopes to the extent possible.
- Revegetate cut and fill slopes with native plants.
- Avoid the placement of infrastructure, including communications facilities, on ridges and peaks in order to maintain open viewsheds.

## **4.15 Hazards**

### **4.15.1 Type of Impacts**

This section addresses the potential hazards related to the use of hazardous materials and wildland fire associated with the RMP alternatives. Hazards related to visitor use and safety are described in Section 4.6 (Public Health and Safety) and hazards related to seismic events or other geologic issues are described in Section 4.11 (Geologic and Soil Resources).

The RMP does not address hazards related to operation of the dam and reservoir, which is subject to a separate contract agreement between Reclamation and CCWD and, therefore, outside the scope of the Contra Loma RMP. It is important to note, however, that Reclamation has determined that the overall safety classification of the dam is considered satisfactory and the risk from dam failure is low (City of Antioch 2003a).

Four general types of activities involve management actions intended to reduce potentially hazardous situations or that could result in exposure of the public or environment to hazardous situations or materials:

- Facility Maintenance
- Livestock Grazing
- Fire And Emergency Preparedness
- Facility Improvements

### **4.15.2 Assumptions**

The hazards impact analysis is based on the following assumptions:

- The proposed management actions would comply with applicable laws and regulations related to hazards.
- The managing partner(s) would uphold their responsibilities to provide the standard of care necessary to ensure the health and safety of visitors to Contra Loma as well as the natural environment.

#### **4.15.3 Impacts Common to All Alternatives**

##### ***Facility Maintenance***

All of the RMP alternatives include continuation of routine maintenance and repair activities that sometimes require the use of potentially hazardous materials (e.g., cleaning solutions, petroleum products). Increased visitation could incrementally increase the amount of facility maintenance required. The local managing partners(s) will be required to prepare a hazardous waste/spill prevention plan subject to review and approval by Reclamation. Therefore, the potential for accidental release of potentially hazardous materials or for public exposure to such materials in toxic amounts is minimal and would not substantially increase. Continued use of potentially hazardous materials (see Section 3.16), although at a slightly greater level, would result in a minor impact with respect to hazards.

All of the RMP alternatives include continuation of mowing in the Regional and Community parks and grazing in the Regional Park to reduce the potential for ignition and spread of wildland fire. Mowing of grassland areas would continue to reduce fine fuels (e.g., dry grass, small twigs) that ignite readily and are consumed rapidly. Mowing activities in the Regional Park and the Community Park by the managing partner(s) would continue to be an important safety practice (see Section 3.6), but would not reduce hazards below the current conditions and, therefore, would have no impact with respect to hazards.

##### ***Livestock Grazing***

Livestock grazing would likely continue in the Regional Park under all of the RMP alternatives. Grazing of grasslands in the natural environment unit (i.e., the grasslands and rolling hills that surround the reservoir) of the Regional Park reduces fine fuels (e.g., dry grass, small twigs) that ignite readily and are consumed rapidly. Grazing in the Regional Park would continue to reduce fire hazard, but would not reduce hazards below the current conditions and, therefore, would have no impact with respect to hazards.

##### ***Fire and Emergency Preparedness***

Included in all RMP alternatives are management actions that require the preparation of fire and emergency preparedness plans for the Regional Park and the Community Park. Fire and emergency services will continue to be implemented by the managing partner(s) or they may be contracted with other local agencies. Use of existing fire and emergency services, and the development and implementation of fire and emergency preparedness plans, would ensure that the managing partner(s) and/or other local responsible agencies would continue to provide an adequate fire suppression strategy and respond appropriately to accidental hazardous materials spills. The managing partner(s) would continue to provide effective fire and emergency services to Contra Loma (see Section 3.6). These management actions, therefore, would have no impact with respect to hazards.

Continued maintenance of the Regional Park trail system and annual grading of fire roads would ensure that all-weather access is provided for fire trucks and other emergency responders into the Regional Park's natural environment unit. Continuation of these maintenance activities would not increase the potential for impacts from hazards beyond the current conditions.

#### **4.15.4 Impacts Specific to the No Action Alternative**

##### ***Facility Maintenance***

The impacts would be the same as those addressed in Section 4.15.3.

##### ***Livestock Grazing***

The impacts would be the same as those addressed in Section 4.15.3.

##### ***Fire and Emergency Preparedness***

The impacts would be the same as those addressed in Section 4.15.3.

#### **4.15.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

##### ***Facility Maintenance***

This alternative would include more recreation and infrastructure facilities than the No Action Alternative, which could require more maintenance than the No Action Alternative. In addition, because this alternative would include more enhanced recreation opportunities than the No Action Alternative, it could result in more visitor use and require incrementally more maintenance than the No Action Alternative. Similar to the No Action Alternative, however, the local managing partners(s) will be required to prepare a hazardous waste/spill prevention plan subject to review and approval by Reclamation. Therefore, the potential for accidental release of potentially hazardous materials or for public exposure to such materials in toxic amounts is minimal. Continued use of potentially hazardous materials for routine facility maintenance and repairs (see Section 3.16), although at an incrementally greater level, would result in a minor impact with respect to hazards.

##### ***Livestock Grazing***

The impacts would be the same as those addressed in Section 4.15.3; however, this alternative could increase the total grazing area by 0.3 acre. This small change in grazing area would incrementally increase the positive effects of grazing on reducing wild fire hazards as compared to the No Action Alternative. This would be a minor beneficial impact.

##### ***Fire and Emergency Preparedness***

The impacts would be the same as those expected under the No Action Alternative and as discussed in Section 4.15.3.

##### ***Facility Improvements***

This alternative may include a new fueling station and fuel storage tank for Regional Park vehicles and equipment as well as for public safety officers. The managing partner(s) would be required to implement substantial design and operational measures to reduce the potential for the station to cause an environmental hazard. Only staff trained to safely use the station would be allowed to operate it, thereby reducing the potential for spills caused by improper use. The managing partner(s) must design the facility with fuel containment devices to prevent any spilled

fuel from reaching the natural ground surface (i.e., soil), entering the reservoir, or otherwise causing an environmental hazard. This facility may only be built and operated in compliance with applicable federal and federally-mandated laws, regulations, and permits. As a condition of Reclamation's approval of this facility, the local managing partner(s) will ensure that spill prevention and decommissioning plans are prepared or amended to address operation of this facility. These measures would substantially reduce the likelihood of large spills, would ensure that small spills are cleaned up quickly and effectively, and would ensure that the facility is decommissioned properly. By implementing these measures, this facility would have a minor adverse impact with respect to environmental hazards. This impact would not occur under the No Action Alternative.

#### **4.15.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

##### ***Facility Maintenance***

This alternative would include more recreation and infrastructure facilities than the other alternatives, which could require more maintenance than the other alternatives. In addition, because this alternative would include more expanded recreation opportunities than the other alternatives, it could result in more visitor use and require incrementally more maintenance than the other alternatives. Similar to the other alternatives, however, the local managing partners(s) will be required to prepare a hazardous waste/spill prevention plan subject to review and approval by Reclamation. Therefore, the potential for accidental release of potentially hazardous materials or for public exposure to such materials in toxic amounts is minimal. Continued use of potentially hazardous materials for routine facility maintenance and repairs (see Section 3.16), although at an incrementally greater level, would result in a minor impact with respect to hazards.

##### ***Livestock Grazing***

In addition to the changes in grazing area described in Section 4.15.5, this alternative may also include the addition of two new sports fields within the Community Park and expansion of the Community Park boundaries south into the Regional Park. Livestock would be excluded from this area (approximately 15 acres), which is currently grazed. Therefore, this alternative could reduce the amount of grazing area within Contra Loma. The new sports fields would either have an artificial turf surface or would be mowed by the managing partner(s) for the Community Park to maintain a playing surface. Therefore, the sports fields would pose a similar risk of fire hazard to grazed annual grassland.

##### ***Fire and Emergency Preparedness***

The impacts would be the same as those expected under the No Action Alternative and addressed in Section 4.15.3.

##### ***Facility Improvements***

The impacts would be the same as those addressed in Section 4.15.5.

#### **4.15.7 Cumulative Impacts**

##### ***Increased Visitation, Concurrent Improvements, and Land Use Changes***

As discussed previously, visitation to Contra Loma is expected to continue to increase under all of the alternatives with more visitation expected under the two action alternatives than the No

Action Alternative. A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans. The improvements to sports fields 4 and 5 and the boat launch area upgrades will increase visitation to Contra Loma.

Approximately 38 percent of the land within the City (6,383 acres) and nearly 46 percent of the land within the unincorporated portion of the General Plan study area (2,240 acres) were vacant in 2003. Buildout of the City and County general plans would convert a substantial amount of vacant land to urbanized uses.

#### ***Facility Maintenance***

Increased visitation could incrementally increase the amount of facility maintenance required. The two action alternatives would require more maintenance than the No Action Alternative. The local managing partner(s) will be required to prepare a hazardous waste/spill prevention plan subject to review and approval by Reclamation. Therefore, the potential for accidental release of hazardous materials or for public exposure to such materials in toxic amounts is minimal and would not substantially increase. Continued use of potentially hazardous materials, although at a slightly greater level, would result in a minor cumulative impact with respect to hazards.

#### ***Fire And Emergency Preparedness***

Increased visitation would incrementally increase the potential for wildland fires. Also, new housing developments that could be built along the urban/wildland interface could increase the need for immediate fire suppression and increase the potential for wildfires to spread into Contra Loma.

Included in all of the alternatives, however, are management actions that require the preparation of fire and emergency preparedness plans for the Regional Park and the Community Park. Fire and emergency services would be implemented by the managing partner(s) or they may be contracted with other local agencies. Use of existing fire and emergency services, and the development and implementation of fire and emergency preparedness plans, would ensure that the managing partner(s) and/or other local responsible agencies would continue to provide an adequate fire suppression strategy. In addition, the City and other surrounding communities would be expected to maintain adequate service ratios for fire protection, with new staff and facilities funded through developer fees, bond monies, and taxes on new development. For these reasons, increased visitation and additional urban growth in surrounding communities would have a minor cumulative impact with respect to hazards.

#### **4.15.8 Mitigation Measures**

No need for mitigation has been identified.

## **4.16 Cultural Resources**

### **4.16.1 Type of Impacts**

Cultural resources include prehistoric, historic-era, architectural, and traditional cultural properties. Cultural resources documented within the APE consist of traces of prehistoric occupation such as lithic debitage and implement deposits and scatters, and the remains of

historic-era ranching and agricultural activities such as building foundations. Other historic-era resources found within and near the APE include transportation routes such as the Empire Railroad, and water storage and conveyance facilities including the Contra Costa Canal and the Contra Loma Dam and Reservoir. Similar resources could also be present in areas of the APE not previously subject to archaeological surveys.

Historic properties are defined as prehistoric or historic-era cultural resources that are presently listed or are eligible for listing on the NRHP. Impacts on historic properties occur when a management action causes damage or loss of such resources or important contextual aspects of their character and setting. This section assesses the potential impacts of the RMP alternatives on historic properties. None of the known cultural resources in Contra Loma have been evaluated for NRHP eligibility although the dam may be determined eligible for NRHP listing as a contributing property to the CVP. Also, communication with Native American Tribes did not yield any specific information about traditional cultural properties or other pertinent Native American cultural interests in the immediate area. During recent efforts to relocate previously recorded cultural resource sites, Reclamation's archaeological consultant observed that some of these resources had already been affected by previous management activities, such as construction of the reservoir, the sports fields, and other facilities. However, new impacts in already-developed portions of the APE (including the Contra Loma Dam and Reservoir) are not likely to further affect cultural resources. Potential impacts on presently undocumented cultural resources would be most likely to occur in areas of the APE that have not been subjected to cultural resources surveys and in subsurface contexts for proposed activities that would require excavation.

Potential impacts on historic properties could result from four general types of activities:

- Human Use
- Facility Maintenance
- Livestock Grazing
- Facility Improvements

#### **4.16.2 Assumptions**

This impact analysis is based on the following assumptions:

- Cultural resources identified in future investigations would be similar to the types already known to exist within the APE and the immediate surrounding area.
- The proposed management actions would comply with applicable laws and regulations governing historic properties.
- Portions of Contra Loma have been inventoried for historic properties; however, historic properties may be present in unsurveyed areas or may have remained undiscovered by previous-surveys;
- No changes are proposed that would affect Contra Loma Dam.

### **4.16.3 Impacts Common to All Alternatives**

#### ***Human Use***

Increased visitation would increase the potential for visitors to adversely affect known or unknown cultural resources. However, none of the known cultural resources in Contra Loma have been evaluated for NRHP eligibility and outreach with Native American Tribes did not yield any specific information about traditional cultural properties or other pertinent Native American cultural interests in the immediate area. Therefore, no adverse impacts on historic properties or traditional cultural properties are anticipated because no such resources have been identified within Contra Loma.

If any unidentified historic properties are located within Contra Loma, visitors could affect them through inadvertent trampling or the unauthorized collecting of archaeological materials. The majority of human use is concentrated near the developed recreational facilities located along the south side of the reservoir and within the Community Park. These areas have undergone substantial alteration, and the likelihood that unidentified historic properties exist in these areas is very low. In the more remote parts of the Regional Park, visitors are typically dispersed and practice low-impact activities such as hiking. Therefore, human use in these areas would be less likely to adversely affect unidentified historic properties than in the more developed recreation areas. In summary, human use would have a minor impact on unidentified historic properties.

#### ***Facility Maintenance***

Ongoing routine maintenance activities and repairs of existing facilities by the managing partner(s) at the Regional Park and the Community Park would, in general, not involve ground disturbance or otherwise have the potential to cause adverse effects on unidentified historic properties. Trail maintenance activities in the Regional Park may include annual grading of fire roads and trails using machinery and hand tools to maintain the quality of the road or trail surface and maintain proper drainage. Soil disturbance and vegetation removal could inadvertently impact unidentified historic properties, if any are present. However, it is unlikely that periodic, routine maintenance activities such as these would have an impact on unidentified historic properties, because there is no indication that past and present maintenance practices have adversely affected historic properties. Therefore, no impacts on unidentified historic properties are anticipated as a result of routine facility maintenance.

### **4.16.4 Impacts Specific to the No Action Alternative**

#### ***Human Use***

The impacts would be the same as those addressed in Section 4.16.3.

#### ***Facility Maintenance***

The impacts would be the same as those addressed in Section 4.16.3.

#### ***Livestock Grazing***

Livestock grazing would likely continue in the Regional Park under the No Action Alternative. Trampling by livestock and an increased potential for grazing-induced erosion could have an adverse impact on unidentified historic properties, if present. No substantial change in the acreage, location, or intensity of grazing is anticipated under this alternative. Continuation of

livestock grazing would not increase the potential for impacts to historic properties beyond the current condition.

#### **4.16.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

##### ***Human Use***

The impacts of human use on historic properties are addressed in Section 4.16.3. This alternative would include more enhanced recreation opportunities than the No Action Alternative, which could result in more visitor use, thereby increasing the potential for visitors to adversely affect unidentified historic properties.

##### ***Facility Maintenance***

The impacts of facility maintenance on historic properties are addressed in Section 4.16.3. This alternative would include more enhanced recreation opportunities than the No Action Alternative, which could require more facility maintenance than the No Action Alternative. However, it is unlikely that periodic routine maintenance activities such as these would have an impact on unidentified historic properties for the reasons described above.

##### ***Livestock Grazing***

This alternative could increase the total grazing area by 0.3 acre. This small change in grazing area would incrementally increase the potential for impacts to historic properties as compared to the No Action Alternative, resulting in a minor adverse impact.

##### ***Facility Improvements***

This alternative would include construction of new or expanded buildings and facilities, such as restrooms, utility lines, offices, the police substation, a park residence, a communication tower, and new picnic facilities. While most construction or renovation activities would occur within the footprint of existing buildings or structures where there would be no impacts on historic properties, new construction activities such as expansion of parking areas or installation of a new radio communications tower could affect unidentified historic properties, if any are present.

When specific construction activities are proposed, site-specific environmental analyses would be conducted that include a more focused assessment of any potential impact on historic properties. If impacts are identified, the proposed activities may be modified or other mitigation measures may be implemented to eliminate these impacts when possible (see Section 4.16.8, Mitigation Measure Cultural-1). These impacts would not occur under the No Action Alternative.

#### **4.16.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

##### ***Human Use***

The impacts of human use on historic properties are addressed in Section 4.16.3. This alternative would include more expanded recreation opportunities than the other two alternatives, which could result in more visitor use. This alternative, therefore, could increase the potential for visitors to adversely affect unidentified historic properties beyond what is expected under the other two alternatives, if any are located where a disc golf course or new trails might be built. Please refer to the discussion of Facility Improvements later in this section for an analysis of this issue.



***Facility Maintenance***

The impacts of facility maintenance on historic properties are addressed in Section 4.16.3. This alternative would include more enhanced recreation opportunities than the other two alternatives, which could require more facility maintenance. However, it is unlikely that periodic routine maintenance activities such as these would have an impact on unidentified historic properties for the reasons described above.

***Livestock Grazing***

The impacts of grazing on historic properties are addressed in Section 4.16.3. However, this alternative may also include the addition of two new sports fields within the Community Park and expansion of the Community Park boundaries south into the Regional Park. Livestock would be excluded from this area (approximately 15 acres), which is currently grazed. Therefore, this alternative could reduce the amount of grazing area within Contra Loma, thereby reducing the potential for grazing to adversely affect unidentified historic properties. The construction of new sports fields, however, could affect unidentified historic properties. This issue is discussed in Facility Improvements section below. These effects would not occur under the No Action Alternative.

***Facility Improvements***

This alternative would include construction of new or expanded recreation facilities in addition to those that would be built under the Enhanced Recreation and Facilities Alternative. This alternative may include signage and/or kiosks and programs that provide interpretive opportunities focusing on historic areas within Contra Loma and natural resources of importance to local Native American groups.

Other facilities proposed under this alternative include expansion of the swim lagoon in the Regional Park and construction of two additional sports fields in the Community Park. Most expansion activities would occur in previously disturbed areas and would likely have no impact on unidentified historic properties. However, construction of the new sports fields and related parking areas would require substantial grading and other soil disturbance activities in previously undisturbed areas. Construction of these facilities could potentially affect unidentified historic properties, if any are present. Such effects would not occur under the No Action Alternative.

This alternative may also include construction of a disc golf course in an unimproved part of the Regional Park. Potential locations may include the gently rolling land east of the reservoir, gently sloping land near the southwest corner of the reservoir, and the southeast portion of the Regional Park directly north of Frederickson Lane. Construction of the disc golf course would involve a small amount of ground disturbance, and its use would increase visitation in less-frequently used areas of the Regional Park. A known prehistoric site (CA-CCo-572) is located in an area where the disc golf course may be built and it could be affected by construction and use of the disc golf course. This site has not been assessed as to NRHP listing eligibility; however, there is a possibility that presently unidentified components of CA-CCo-572 exist in subsurface contexts that could contribute to the site being eligible for NRHP listing. Construction activities could disturb or destroy such materials and adversely affect the site's NRHP eligibility. Consequently, unnecessary effects to this resource should be avoided if possible. Avoiding unnecessary effects on this site would be consistent with RMP goals.

This alternative may also include construction of new recreational trails for bike, equestrian, and pedestrian use. New trail construction could cause ground disturbance that could adversely affect unidentified historic properties, and could affect the known prehistoric site (CA-CCo-572). Also, construction of a new trail in the vicinity of this prehistoric site could increase public access to this area and increase the potential for unauthorized collecting of or damage to archaeological materials.

When specific construction activities are proposed, site-specific environmental analyses would be conducted that include a more focused assessment of any potential impact on historic properties. If impacts are identified, the proposed activities may be modified or other mitigation measures may be implemented to eliminate these impacts when possible (see Section 4.16.8, Mitigation Measure Cultural-1). These impacts would not occur under the No Action Alternative.

#### **4.16.7 Cumulative Impacts**

Cultural resource surveys, data base reviews, and tribal outreach efforts have not identified cultural resources that have been determined or recommended eligible for NRHP listing or traditional cultural properties. Unless unidentified historic properties are present within Contra Loma that would be affected by management actions included in the RMP, none of the alternatives would contribute to a cumulative impact on historic properties.

#### **4.16.8 Mitigation Measures**

##### ***Mitigation Measure Cultural-1: Implement measures to protect unidentified historic properties during construction activities.***

Prior to the implementation of undertakings incorporating potential ground-disturbing activities in un-surveyed areas of Contra Loma, Reclamation and the local managing partner(s) proposing the activity will follow the Section 106 process as outlined in 36 CFR, Part 800. These regulations, which describe implementation of Section 106 of the NHPA, call for consultation with the State Historic Preservation Officer, Indian Tribes, and interested members of the public throughout the Section 106 compliance process. The four principal steps are:

- initiate the Section 106 process (36 CFR, Part 800.3),
- identify historic properties (36 CFR, Part 800.4),
- assess the effects of the undertaking on historic properties within the APE (36 CFR, Part 800.5), and
- resolve adverse effects (36 CFR, Part 800.6).

The identification step would consist of a cultural resources inventory to document any historic properties that could be affected by the proposed activities. Reclamation is responsible for Native American community and public consultation and will modify undertakings if possible to avoid historic properties and make every effort to avoid other cultural resources. In addition, Reclamation, in cooperation with local managing partner(s) will ensure compliance with Section 106 of the NHPA prior to undertaking authorization.

Cultural resources and human remains are also protected according to the provisions of the Archaeological Resources Protection Act of 1979 (ARPA) and the Native American Graves Protection and Repatriation Act (NAGPRA). The ARPA strengthened the permitting procedures required for conducting archeological fieldwork on federal lands, originally mandated by the Antiquities Act of 1906. It also establishes rigorous fines and penalties for unauthorized excavation on or the removal of archaeological materials from federal land.

ARPA is important from the standpoint of managing archeological collections because it:

- acknowledges federal ownership of objects excavated from federal lands;
- calls for the preservation of objects and associated records in a "suitable" institution and,
- prohibits public disclosure of information concerning the nature and location of archeological resources that require a permit or other permission under ARPA for their excavation or removal.

NAGPRA requires federal agencies and institutions that receive federal funding to return Native American "cultural items" to lineal descendants and culturally affiliated Indian tribes and Native organizations. NAGPRA also establishes procedures for the inadvertent discovery or planned excavation of Native American cultural items and human remains on federal or tribal lands. While these provisions do not apply to discoveries or excavations on private or state lands, the collection provisions of NAGPRA may apply to Native American cultural items if they come under the control of an institution that receives federal funding. In addition, NAGPRA makes it a criminal offense to traffic in Native American human remains without right of possession or in Native American cultural items obtained in violation of NAGPRA.

## **4.17 Socioeconomics**

### **4.17.1 Types of Impacts**

This impact analysis includes consideration of the local and regional demographic characteristics and economies that could be affected by existing and proposed land management actions within Contra Loma. This section assesses the potential impacts of the RMP alternatives on socioeconomics with regard to proposed management actions and resource use. For the purpose of this assessment, socioeconomic impacts were not modeled quantitatively and were not derived using dollar values. Rather, impacts are described in qualitative terms.

Potential impacts on socioeconomics could result from four general types of activities:

- Human Use
- Facility Maintenance
- Livestock Grazing
- Facility Improvements

#### **4.17.2 Assumptions**

The socioeconomic impact analysis is based on the following assumptions:

- The managing partner(s) would uphold their responsibilities to provide the standard of care necessary to ensure that public recreation facilities are reasonably available and maintained for the benefit of visitors to Contra Loma. These agencies would provide staff levels commensurate with recreation visitation to ensure implementation of the policies and management actions intended to maintain the level and quality of safety and services expected by visitors to the Regional Park and the Community Park.
- Visitation to Contra Loma would continue to increase regardless of the selected alternative, requiring an increased level of facility management.
- Because Contra Loma is a regional facility, most visitors live within about a one-hour driving radius. Therefore, the effect of visitation to Contra Loma on the local economy is limited to incidental expenditures such as gasoline, occasional meals, and consumable recreational supplies as opposed to tourism involving overnight stays and multiple, successive meals.
- Staffing of Contra Loma creates employment, thereby improving the local and regional economies.
- Facility and recreational improvements create temporary construction-related jobs, thereby improving the local and regional economies.
- Increased population growth would stimulate economic activity and improve local economies.
- None of the RMP alternatives would result in a direct change in population or the demand for housing, schools, public facilities, or public services outside of Contra Loma.

#### **4.17.3 Impacts Common to All Alternatives**

##### ***Human Use***

Visitor use of Contra Loma is expected to increase under all of the RMP alternatives. Management actions included in all the RMP alternatives would be implemented to ensure continued public health and safety as well as continued operation of existing facilities and activities, thereby ensuring a positive recreation experience for park visitors. Positive visitor experiences would encourage continued or increased visitation. Use fees charged for various visitor use activities (e.g., boat launch, swim area, parking, league sports) would continue to be a consistent source of revenue that keeps pace with ever-increasing park use (see Section 3.3). Increased human use of Contra Loma would likely require increased levels of staffing and concessions, thereby creating jobs and stimulating business opportunities within Contra Loma. Increased employment and business revenues would directly and indirectly benefit many sectors of the local and regional economies. Increased human use of Contra Loma would have a net beneficial socioeconomic impact, although increasing use fees could impair the affordability of some uses for members of low-income populations.

Included in all RMP alternatives is a commitment by the managing partner(s) to provide and manage a recreational fishing program at the Regional Park's reservoir. The local managing partner(s) for the Regional Park will continue to provide a recreational fishing program in the reservoir and to manage fish populations through fish planting (i.e., stocking) programs. In 2011 in California, \$2.3 billion was spent on fishing recreation, of which \$1.6 billion was for trip-related expenditures, \$577 million was for equipment purchases, and \$71 million was for the purchase of other items, such as magazines, membership dues, licenses, permits, stamps, and land leasing and ownership. The average expenditure per angler was \$1,333 and the average angler trip expenditure per day was \$68. In California, in 2012, sales generated by sport fishing licenses totaled \$56,959,464 (California Department of Fish and Wildlife 2013b). Fishing at Contra Loma contributes to the local economy through sales of fishing supplies such as bait, tackle, and equipment resulting in a beneficial socioeconomic impact.

#### ***Facility Maintenance***

In order to maintain existing land uses, all RMP alternatives would include ongoing routine maintenance activities and repairs of existing facilities by the managing partner(s) at the Regional Park and the Community Park. Anticipated increases in visitation would increase the frequency and amount of maintenance that would be required to meet the public's expectations and enjoyment of park facilities and recreational opportunities. Increased facility maintenance and repair could have a minor beneficial socioeconomic impact on the region because the managing partner(s) would need to purchase additional supplies and services.

#### **4.17.4 Impacts Specific to the No Action Alternative**

##### ***Human Use***

The impacts would be the same as those addressed in Section 4.17.3.

##### ***Facility Maintenance***

The impacts would be the same as those addressed in Section 4.17.3.

##### ***Livestock Grazing***

Livestock grazing would likely continue in the Regional Park under this alternative. The local managing partner(s) for the Regional Park would likely continue to collect fees to cover administrative costs; however, no increase in grazing acreage or intensity would occur. Consequently, there would be no change from current socioeconomic conditions.

#### **4.17.5 Impacts Specific to the Enhanced Recreation and Facilities Alternative**

##### ***Human Use***

This alternative would include facility improvements and renovations that could increase the public's enjoyment and use of the Regional Park and the Community Park. These improvements would likely attract more visitors than the No Action Alternative. Although there could be an increase in visitor use, the impacts would be the same as those expected under the No Action Alternative and addressed in Section 4.17.3.

##### ***Facility Maintenance***

This alternative would include facility improvements and renovations that could increase the public's enjoyment and use of the Regional Park and the Community Park. These improvements

would likely attract more visitors and require more maintenance than the No Action Alternative. Increased facility maintenance and repair could have a minor beneficial socioeconomic impact on the region because the managing partner(s) would need to purchase additional supplies and services similar to the No Action Alternative.

### ***Livestock Grazing***

Under this alternative, adjustment of the boundary lines between the Regional Park and Community Park could result in an overall increase of approximately 0.3 acre of grazing in Contra Loma. This would represent a negligible increase in grazing area of 0.07 percent. Any increase in grazing revenue from this additional grazing area would also be negligible and would not change socioeconomic conditions.

### ***Facility Improvements***

This alternative would include construction, expansion, or renovation of recreation and infrastructure facilities for the purpose of improving operation and enjoyment of Contra Loma. These improvements would not be built under the No Action Alternative. Recreational facility improvements may include structures and facilities for classes, such as a low-income youth swim program; improved fishing docks, cleaning stations, and a boat launch that would increase the desirability of fishing opportunities at the reservoir; the addition of picnic sites within the reservoir's recreation cluster; and improvements to the Community Park sports fields. These improvements would increase Contra Loma's attractiveness to a wide variety of visitors, including minority and low-income populations, and may increase the desirability of buying or renting a home in the local area. This, in turn, could increase housing costs in the local area. This effect would not occur under the No Action Alternative.

This alternative also includes a management action to increase the frequency of fish stocking in the reservoir from current levels in order to meet demand. Fishing at the reservoir provides important social benefits for some populations in the region. Increasing fisheries resources would benefit the local economy by increasing the desirability of the reservoir as a fishing destination; therefore, resulting in a beneficial socioeconomic impact that would not occur under the No Action Alternative.

Facility improvements at the Regional Park and Community Park would create temporary construction-related jobs and increase the amount the services and supplies purchased by the local managing partner(s). Facility improvements would contribute to the local and regional economies, resulting in temporary beneficial socioeconomic impacts that would not occur under the No Action Alternative.

## **4.17.6 Impacts Specific to the Expanded Recreation and Facilities Alternative**

### ***Human Use***

This alternative would include facility improvements and renovations beyond those proposed under the Enhanced Recreation and Facilities Alternative, such as a new disc golf course, expansion of the swim lagoon at the Regional Park, and two new sports fields at the Community Park. These improvements would further increase the public's enjoyment and use of the Regional Park and the Community Park and would likely attract more visitors than the other alternatives. Increased human use would have a beneficial socioeconomic impact through

increased job creation potential and revenue generation at Contra Loma and in the surrounding communities that would not occur under the No Action Alternative.

#### ***Facility Maintenance***

This alternative would include facility improvements and renovations beyond those proposed under the Enhanced Recreation and Facilities Alternative. These improvements would likely attract more visitors and require more maintenance than the other alternatives. Increased facility maintenance and repair could have a beneficial socioeconomic impact on the region because the managing partner(s) would need to purchase additional supplies and services that would be needed under the No Action Alternative and as described in Section 4.17.3.

#### ***Livestock Grazing***

This alternative may include the addition of two new sports fields within the Community Park and expansion of the Community Park boundaries south into the Regional Park. Livestock would be excluded from this area (approximately 15 acres), which is currently grazed. In conjunction with the potential boundary change between the parks, this expansion would result in a net reduction of grazing in Contra Loma by 14.7 acres. This would reduce grazing within Contra Loma by about 3 percent, thus reducing grazing revenues by about 3 percent. This reduction of grazing land would cause a negligible (about 0.01 percent) decrease in the amount of active pasture and range land within the County as compared to the No Action Alternative. This alternative would have a minor adverse socioeconomic effect with respect to livestock grazing.

#### ***Facility Improvements***

This alternative would include facility improvements and renovations beyond those proposed under the Enhanced Recreation and Facilities Alternative. These improvements would likely attract more visitors and require more maintenance than the other alternatives. Facility improvements would cause beneficial impacts that would not occur under the No Action Alternative for the same reasons discussed in Section 4.17.5.

### **4.17.7 Cumulative Impacts**

#### ***Increased Visitation, Concurrent Improvements, and Land Use Changes***

As discussed previously, visitation to Contra Loma is expected to continue to increase under all of the alternatives with more visitation expected under the two action alternatives than the No Action Alternative. A substantial portion of the expected future visitor increase would be attributable to the projected population increase expected to occur within the northeastern portion of the County from buildout of the City and County general plans. The improvements to sports fields 4 and 5 and the boat launch area upgrades will increase visitation to Contra Loma.

#### ***Human Use***

The cumulative increase in visitation would likely require increased levels of staffing and concessions, thereby creating jobs and stimulating business opportunities within Contra Loma. Increased employment and business revenues would benefit many sectors of the local and regional economies. This would result in a beneficial cumulative impact. The Expanded Recreation and Facilities Alternative would have a greater effect than the other alternatives because it would attract more visitors.

### ***Facility Maintenance***

Increased visitation would increase the need for facility maintenance and repair, which could have a minor cumulative beneficial socioeconomic impact on the region because the managing partner(s) would need to purchase additional supplies and services. The two action alternatives would have a greater effect than the No Action Alternative because they would require more facility maintenance.

### ***Facility Improvements***

The two action alternatives would include construction, expansion, or renovation of recreation and infrastructure facilities. These improvements, along with the improvements to sports fields 4 and 5 and the boat launch area, would increase Contra Loma's attractiveness to a wide variety of visitors, including minority and low-income populations, and may increase the desirability of buying or renting a home in the local area. This, in turn, could increase housing costs in the local area. This cumulative adverse effect would not occur under the No Action Alternative.

The facility improvements included in the two action alternatives, along with the boat launch improvements, would create temporary construction-related jobs and increase the amount the services and supplies purchased by the local managing partner(s). Facility improvements would contribute to the local and regional economies, resulting in temporary beneficial cumulative impacts that would not occur under the No Action Alternative.

#### **4.17.8 Mitigation Measures**

No need for mitigation has been identified.

## **4.18 Environmental Justice**

### **4.18.1 Types of Impacts**

This impact analysis considers whether the RMP alternatives could cause disproportionately high and adverse impacts to minority and/or low-income populations. Federal agencies are required to include analysis of environmental justice in their EISs.

Potential impacts to environmental justice populations could result from four general types of activities:

- Human Use
- Facility Improvements
- Facility Maintenance
- Low-Income Recreational Programs

### **4.18.2 Assumptions**

The environmental justice impact analysis is based on the following assumptions:



- “Minority population” is defined as including all non-white racial groups and Hispanics of any racial group. “Low-income” population is defined based on federal poverty thresholds (Council of Environmental Quality 1997).
- The managing partner(s) would uphold their responsibilities to provide the standard of care necessary to ensure that public recreation facilities are reasonably available and maintained for the benefit of visitors to Contra Loma. These agencies would provide staff levels commensurate with recreation visitation to ensure implementation of the policies and management actions intended to maintain the level and quality of safety and services expected by visitors to the Regional Park and the Community Park.
- Visitation to Contra Loma would continue to increase regardless of the selected alternative.
- Facility and recreational improvements create temporary construction-related jobs.

#### **4.18.3 Impacts – All Alternatives**

Although some residents in the general vicinity of Contra Loma have incomes below the poverty level, the proportion of low-income households within the community is not high enough to be considered a low-income population. According to the Census Bureau, the proportions of households within the County and the City that have incomes below the poverty level are relatively low at 8.6 and 12.5 percent, respectively, and do not constitute a majority. These percentages are lower than the state average of 13.2 percent (Census Bureau 2009; Fannie Mae 2011). Therefore, none of the alternatives would disproportionately affect low-income populations.

According to the Council on Environmental Quality, minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent; or, (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (Council of Environmental Quality 1997).

The minority population in the City exceeds 50 percent, which is a higher proportion than the County. In 2010, the percentage of non-Hispanic minorities in the City totaled 51.1 percent and people of Hispanic ethnicity comprised 31.7 percent of the City’s population. In comparison, the percentage of non-Hispanic minorities in the County totaled 41.4 percent and people of Hispanic ethnicity comprised 24.4 percent of the County’s population in 2010. Although the population in the general vicinity of Contra Loma includes a relatively high proportion of minorities, none of the alternatives would cause dislocation, adverse changes in employment, or increase flood, drought, or disease and none would disproportionately impact economically disadvantaged or minority populations in an adverse manner.

No private residences are located within Contra Loma; therefore, none of the alternatives include any land use changes that would directly cause people to move or otherwise be dislocated from their residences. Offsite effects of the RMP alternatives include minor noise increases near Contra Loma and more vehicles using public roads to access Contra Loma. As discussed in Sections 4.4 and 4.13, these offsite impacts would be minor; therefore, they would not be

expected to indirectly cause people to move from their residences. None of the census tracts nearest Contra Loma (i.e., those most likely to be affected by these offsite effects) are comprised of more than 50 percent minorities (Census Bureau 2010c). Therefore, these minor impacts would not disproportionately affect minority populations.

As discussed previously, all of the alternatives have the potential to increase employment and business opportunities within Contra Loma and in the surrounding communities. None of the alternatives would reduce or eliminate employment opportunities.

All of the alternatives would include management actions that encourage continued use of Contra Loma's recreational facilities by low-income groups (e.g., low-income youth swimming programs), thereby benefiting low-income individuals.

#### **4.18.4 Cumulative Impacts**

None of the alternatives would disproportionately affect low-income populations or cause dislocation, adverse changes in employment, or increase flood, drought, or disease and none would disproportionately impact economically disadvantaged or minority populations in an adverse manner. Therefore, none of the alternatives would contribute to a cumulative adverse impact with respect to environmental justice.

#### **4.18.5 Mitigation Measures**

No need for mitigation has been identified.

### **4.19 Unavoidable Adverse Impacts**

NEPA Section 102(2)(c)(ii) requires the environmental analysis in an EIS to identify any unavoidable adverse impacts, defined as those impacts of an action that cannot be avoided, either by changing the nature of the action or through mitigation if the action is undertaken. Based on the analysis presented in EIS Sections 4.2 through 4.17, the RMP would result in several unavoidable adverse impacts, although all adverse impacts would be minor or could be mitigated to a minor level.

Visitor use to Contra Loma is expected to increase under all of the RMP alternatives for the foreseeable future. Increased visitation would result in many types of unavoidable adverse impacts, such as increased risk of conflict between various user groups and between recreational activities and grazing; increased vehicle congestion on internal park roads and public roads leading to Contra Loma; increased demand for parking spaces; increased volumes of air pollutants, including GHGs, generated by visitor vehicles; increased volumes of PM generated by additional use of trails and barbecue grills; increased demand for utilities such as water, wastewater disposal, and electricity; increased risk of littering, trampled vegetation, scarred terrain, vandalism, and facility deterioration, which could impair the visual quality of the landscape; increased risk of accidental releases or inadvertent public contact with potentially hazardous materials used for construction and maintenance activities; increased risk of damage to known or unknown cultural resources; increased risk of water quality impacts from unauthorized human contact with the reservoir; increased risk of water quality and public health impacts from increased volumes of solid, human, and domestic animal (e.g., dogs and horses)

waste; increased erosion and sedimentation from trail use; increased risk of damage to sensitive vegetation communities and wildlife habitats; increased risk of introduction or spread of invasive or noxious non-native plant or animal species (e.g., zebra or quagga mussels); increased risk of human disturbance to wildlife caused by noise impacts or simply by human presence; and increased pressure on the recreational fishery resources.

Maintenance activities would continue under all of the alternatives. The two action alternatives would include construction of new or renovated facilities which, in turn, would require additional maintenance. Maintenance and construction activities can cause short-term and long-term unavoidable adverse impacts. New construction can cause impacts to vegetation from vegetation removal within the structure footprint, overcovering for spoils deposition, or erosion. Ground disturbing activity can also affect wildlife through direct mortality, noise, contact with inadvertent chemical spills, and impacts to habitat. Most of the affected vegetation is expected to be non-native annual grassland; however, other sensitive vegetation communities could be affected.

Construction activities could affect water quality through erosion and sedimentation, a temporary increase in reservoir turbidity due to runoff from construction areas, or inadvertent spilling of construction-related chemicals. Increased use of mechanized equipment would generate additional air pollutants, including GHGs and PM. Ground disturbance could also damage known or previously undiscovered cultural resources.

The new or renovated facilities proposed under the two action alternatives could also cause other unavoidable adverse impacts. Some of the facilities would convert vegetation communities to recreational or administrative land uses, thereby reducing the amount of wildlife habitat within the Regional Park. Most of the affected vegetation is expected to be non-native annual grassland; however, other sensitive vegetation communities could be affected. Some of the facility improvements would change Contra Loma's visual setting and possibly impair its visual character in some locations. For example, a new communications tower could be visible from viewpoints in many areas of Contra Loma, and from some offsite locations. Also, floodlights for the proposed sports fields could produce nighttime glare or a general skyglow that may be visible from some nearby residences. The new sports fields would increase ambient noise in the vicinity of the Community Park and would exclude livestock grazing from about 15 acres of land that is currently grazed. This would permanently reduce the amount of grazing land available within Contra Loma. New or expanded facilities would increase demand for utilities such as water, wastewater disposal, and electricity and would increase energy demand, which could generate increased volumes of air pollutants, including GHGs.

## **4.20 Irreversible or Irrecoverable Commitment of Resources**

NEPA Section 102(2)(c)(v) requires the environmental analysis in an EIS to identify any irreversible and irretrievable commitment of resources that would be involved in the proposed action should it be implemented. Reclamation and other Federal agencies have interpreted irreversible and irretrievable commitments to mean the use of nonrenewable resources and the effects this use would have for the future.

An irreversible commitment of resources refers to a loss of future opportunities associated primarily with nonrenewable resources, such as mineral, soils, or cultural resources. The effects of project actions on nonrenewable resources are usually permanent, although in some cases the resource could be restored over a long period of time and possibly at great expense. Mineral extraction, destruction of cultural resources, and species extinction are examples of irreversible commitments.

An irretrievable commitment of resources occurs when there is a loss of opportunity for production, harvest, or use of nonrenewable resources. Typically, these opportunities are forfeited while the proposed action is being implemented. During this period, use of the resource cannot be realized. Land conversion to a use that would prevent extraction of underground minerals and construction of a levee preventing beneficial flooding of flood plains to replenish soil fertility are examples of irretrievable commitments.

The principal nonrenewable resources within Contra Loma include cultural resources and special-status species. Open space and views of undeveloped, natural landscapes may also be considered nonrenewable resources within Contra Loma. Coal and sand mining historically occurred within the adjacent Black Diamond Mines Regional Preserve until unfavorable market conditions caused the mines to cease production. Coal, sand, and other mineral resources could also underlie Contra Loma.

Implementation of the RMP would not result in an irreversible or irretrievable commitment of cultural resources or special-status species because the RMP includes goals and management actions to effectively manage these resources, because none of the alternatives includes actions that would require use or elimination of these resources, and because the EIS includes mitigation measures to protect cultural resources and special-status species.

The RMP would irretrievably commit open space and views of undeveloped, natural landscapes within Contra Loma because many of the RMP management actions would include recreation or facility improvements. Most of the improvements would be visible to varying degrees and depending on their location and setting, some improvements would irreversibly change views of undeveloped, natural landscapes to other uses consistent with the management and operation of a public recreation area. However, the RMP includes management actions requiring certain improvements (i.e., radio communication facilities) to be sited and designed in a manner that minimizes impacts to the Regional Park's aesthetic character. In addition, the EIS includes mitigation measures requiring the managing partner(s) to implement design measures to reduce visual impacts from new development.

If coal, sand, or other mineral resources underlie Contra Loma, the RMP would cause an irretrievable commitment these resources because the RMP would not allow mining to occur within Contra Loma. Similar to the historic mining that occurred within Black Diamond Mines Regional Preserve, however, market conditions would likely not be favorable for extracting these resources even if they were present and mining were allowed in Contra Loma.

The RMP would not cause any other irreversible or irretrievable commitments of resources.

## 4.21 Relationship of Short-Term Uses of the Environment to Long-Term Productivity

NEPA Section 102(2)(c)(iv) requires an EIS to discuss the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity. In other words, an EIS should include a discussion of long-term effects versus short-term effects, regardless of whether such effects are adverse or beneficial. Short-term effects are expected to occur while various management actions are being implemented (i.e., constructed). Long-term effects are those effects expected to continue for an extended period after implementation of a management action. They may or may not extend beyond the 25-year planning horizon of the RMP.

The previous sections of Chapter 4 evaluated the environmental impacts of implementing each of the alternatives and identified short-term effects and long-term effects, when applicable. Regardless of which alternative is selected, certain management activities would result in various short-term adverse effects from construction activities such as increased localized soil erosion, air pollutant emissions affecting air quality, damage to vegetation and to fish and wildlife habitat, and decreased visual resource quality. These short-term adverse effects from construction activities would lead to long-term beneficial effects such as improved recreational opportunities, replacement of portable chemical toilets with permanent restrooms, improved radio communications for public service personnel, the use of solar panels to decrease dependency on commercial electricity, improved safety from construction of a "safe swim" area or splash pad for small children at the swim lagoon, improved accessibility from ADA upgrades, improved aesthetics from replacement of deteriorating facilities, and socioeconomic benefits from facility improvements, maintenance, and increased visitation. Therefore, the short-term adverse effects from temporary construction activities would improve the productivity of Contra Loma's recreational resources, the ability of the local managing partner(s) to manage Contra Loma, and the economic productivity of the local economy.

Many of the proposed management actions would result in long-term adverse effects. For example, construction of new facilities would convert wildlife habitat and grazing land to recreational or administrative uses, thereby causing a long-term reduction of the productivity of Contra Loma's wildlife habitat and grazing land. Construction of new facilities would also change Contra Loma's visual setting and possibly impair its visual character in some locations. However, these long-term adverse effects would improve the productivity of Contra Loma's recreational resources, the ability of the local managing partner(s) to manage Contra Loma, and the economic productivity of the local economy.

As discussed in the previous sections of Chapter 4, most of the RMP's long-term adverse effects would be minor and the remainder would be mitigated to a minor level.

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# Chapter 5. Consultation, Coordination, and Cooperation

This chapter describes the history of relevant public involvement and agency coordination activities that have taken place and that will take place during the planning and preparation of this RMP/EIS.

## 5.1 Public Involvement

Public involvement is a critical element in developing the RMP. Reclamation's goal is to gain input from a cross section of the user public and stakeholders, including the current local managing partners. A Notice of Intent to prepare the RMP/EIS was published in the *Federal Register* on November 12, 2009. Reclamation conducted public outreach in 2010 and 2011 to explain the scope and objectives of the Contra Loma RMP and to encourage comments from the public and stakeholders, including EBRPD, the City, CCWD, about the issues that should be addressed in the RMP and evaluated in the EIS. Reclamation held a scoping meeting for the Contra Loma RMP/EIS on February 8, 2010, at the Nick Rodriguez Community Center in Antioch. Reclamation also held a public workshop on August 4, 2010, at Sutter Elementary School in Antioch to seek ideas, concerns, and comments to inform development of the RMP/EIS. Written scoping comments were solicited by Reclamation from February 8 through 22, 2010 and from August 4 through 31, 2010. On March 3, 2011, Reclamation held a second public workshop at Prewett Community Center in Antioch to solicit comments on the conceptual draft packages of RMP actions and alternatives.

Attendance at the three public meetings/workshops totaled 59 participants: 20 people attended the scoping meeting, 26 attended the August 4, 2010 workshop, and 13 people attended the March 3, 2011 workshop. Some participants attended more than one meeting or workshop. Some attendees at the scoping meeting and the March 3, 2011 workshop provided verbal comments, which were recorded by hand and are summarized in Appendix D. Written comments were received from the following public agencies and elected officials:

- The Office of U.S. Congressman John Garamendi
- The Office of County Supervisor Federal D. Glover
- East Bay Regional Park District
- Contra Costa Water District
- Antioch City Council
- Antioch Parks and Recreation Commission
- City of Antioch Recreation Department

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Comments were received from the following nongovernmental organizations or representatives of such organizations:

- Delta Youth Soccer League
- Turf and Track Group
- St. Anthony Church
- Village Community Resource Center

In addition, Reclamation developed a mailing list (and accompanying database), produced and distributed flyers and public notices, and posted project updates and information on Reclamation's Contra Loma RMP/EIS website and the EBRPD website listed below.

- [www.usbr.gov/mp/nepa/nepa\\_projdetails.cfm?Project\\_ID=6396](http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=6396)
- [www.ebparks.org/](http://www.ebparks.org/)

Based on the comments received and its own review of the issues, Reclamation identified the following primary issue areas to be addressed in the RMP:

- recreational facilities and opportunities at Contra Loma Regional Park,
- infrastructure and administrative facilities at Contra Loma Regional Park,
- facility management at Contra Loma Regional Park,
- recreational facilities and opportunities at Antioch Community Park,
- facility management at Antioch Community Park,
- reservoir management and reservoir water quality, and
- pasture vegetation management at Contra Loma Regional Park.

Reclamation also identified the following sub-issue areas within the primary issue areas:

- swim lagoon;
- fishing;
- reservoir recreation (non-fishing);
- trail system;
- sports fields;
- other recreation;
- restrooms;
- buildings, structures, and other infrastructure;



- litter, animal feces, and graffiti;
- staffing and security;
- reservoir level fluctuation;
- reservoir water quality; and
- aquatic invasive species.

In December 2010, Reclamation prepared an Issues and Opportunities Report that provided a summary of public comments and the issues that were raised during the scoping meeting and the first public workshop in August 2010.

Reclamation prepared an Issues and Opportunities Report summarizing the public comments and issues raised during the scoping meeting and the first public workshop in August 2010. The report is included as Appendix A and provides a summary of written and verbal comments provided by agencies, organizations, and individuals (Bureau of Reclamation 2010).

Summaries of the public meetings and workshops and copies of the public notices are provided in Appendix D.

Reclamation will post the Draft RMP/EIS for a 60-day public review period to solicit written comments. Reclamation will also hold a public meeting to receive public comments on the Draft RMP/EIS. Comments received and responses to public comments will be included in the Final RMP/EIS.

## **5.2 Cooperating Agencies**

No cooperating agencies were invited to formally participate in preparation of this EIS. However, Reclamation coordinated extensively with the EBRPD, the City, and CCWD throughout the course of the RMP planning process. These agencies contributed to the RMP/EIS by providing data, planning documents, technical expertise, and anecdotal information based on many years of experience managing natural and cultural resources at Contra Loma. In addition, all of these agencies attended the scoping meeting and participated in the RMP workshops. In addition, federally-recognized Indian Tribes were consulted during preparation of the Contra Loma Recreation Area Cultural Resources Technical Report.

## **5.3 Other Environmental Compliance**

The RMP includes recommendations for various resource management actions and facility improvement projects. These are specific actions that may be implemented at Contra Loma to meet the RMP goals. These management actions and projects are defined at a conceptual or programmatic level in the RMP. More detailed descriptions of the actions and projects will be developed during the planning horizon of the RMP. The responsibility for funding, designing,

and implementing (or constructing) the management actions and improvement projects will be specified in financial assistance agreements with the local managing partner(s).

Should the local managing partner(s) choose to implement management actions that involve new or expanded recreational activities or facilities identified in the RMP, such as new fishing docks in the reservoir or new sewer lines to connect the Regional Park sanitary facilities to the City's wastewater treatment system, they would be required to conduct an appropriate site specific environmental review. The local managing partner(s) would need to receive Reclamation approval and project-specific environmental documentation would be prepared to meet NEPA and other Federal environmental requirements. In addition, local managing partner(s) will need to satisfy CEQA requirements.

The actions described in this RMP/EIS have been analyzed at a programmatic level. Given this level of specificity additional environmental compliance maybe required when specific projects described in this document are implemented. Consultations with the State Historic Preservation Office and affected Indian Tribes pursuant to the NHPA could be required during implementation of individual projects. Consultation with the USFWS would be initiated if Reclamation determines that any proposed projects, when identified, may affect listed species.

## Chapter 6. List of Preparers

### 6.1 Bureau of Reclamation

<b>Name</b>	<b>Position/Title</b>	<b>Area of Expertise Addressed In RMP/EIS</b>
Sheryl Carter	Chief of Lands Division	Overall Project Management
Rain Healer	Natural Resources Specialist	NEPA Review
Michael Inthavong	Natural Resources Specialist	NEPA Review
Elizabeth Vasquez	Natural Resources Specialist	NEPA Review
Laureen Perry	Regional Archaeologist	Cultural Resources Review
Amy Barnes	Archaeologist	Cultural Resources Review
Ned Gruenhagen	Wildlife Biologist	Biological Resources
Jennifer Lewis	Wildlife Biologist	Biological Resources

### 6.2 North State Resources, Inc.

<b>Name</b>	<b>Position/Title</b>	<b>Area of Expertise Addressed In RMP/EIS</b>
Scott Goebel	Senior Environmental Manager	Overall Project Management, Visual Resources, Cumulative
Wirt Lanning	NEPA Program Manager	Overall Project Direction
Connie Carpenter	Environmental Analyst	Land Use and Management, Recreation, Visitor Access and Circulation, Utilities, Public Health and Safety, Geology and Soils, Climate and Air Quality, Noise, Hazards, Socioeconomics and Environmental Justice
Brian Ludwig, Ph.D.	Senior Archaeologist	Cultural Resources
Christina Crawford	Archaeologist	Cultural Resources
Paul Kirk	Botanist	Vegetation
Brandon Amrhein	Wildlife Biologist	Wildlife
Bruce Webb	Senior Environmental Analyst	Fisheries, Vegetation, Wildlife
Duncan Drummond	Registered Geologist	Geology and Soils, Water Quality
Mike Gorman	Fisheries Biologist	Fisheries
Andy Lindeman	Water Quality Analyst	Water Resources
Teri Mooney	GIS Specialist	GIS
Sylvia Cantu	Document Production Specialist	Document Production
Andrew Minks	Environmental Analyst	Technical Editing
Brooke McDonald	Editor	Technical Editing

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