

## 3.11 CUMULATIVE EFFECTS

### 3.11.1 INTRODUCTION

A cumulative impact is the combined effect of past, present or reasonably foreseeable future actions on a particular resource. To assess the cumulative effects of the proposed water recycling project, other relevant actions (which can include projects, programs and/or plans) are first identified. Collectively, these relevant actions are referred to as the “cumulative context.” The project-specific impacts of the proposed water recycling system are analyzed within the cumulative context so that a full understanding of the potential cumulative impact on each resource is identified. Cumulative impacts can be individually minor but collectively significant actions occurring over time (40 CFR Section 1508.7). A brief discussion including the status and agency responsible for each of the relevant projects/plans is presented below, followed by an analysis of cumulative effects by environmental area.

- The ***Final Presidio General Management Plan (GMPA)*** was approved by the National Park Service in 1994. The GMPA, as amended, is the currently adopted land use plan for the Presidio. The GMPA establishes a framework for the transition of the former military base into a national park and includes concepts for the rehabilitation/reuse of existing historic buildings, building demolition and replacement construction, natural habitat restoration plans, open space expansion and a variety of other actions that would revitalize and increase the visitation and use at the park. The Presidio Trust Act was passed by the United States Congress in 1996, two years after the GMPA was adopted. The Trust Act established the Presidio Trust to manage the non-coastal areas of the Presidio (Area B). The Presidio Trust is in the process of updating the GMPA for Area B through the proposed ***Draft Presidio Trust Implementation Plan (PTIP)***. The Draft Plan and Draft EIS were released for public review and comment in July 2001. A Final Plan and Final EIS are currently being prepared. Once NEPA review is completed and a preferred plan alternative is adopted by the Trust, that plan will serve as the long-term land use plan for Area B. Area A (the coastal areas of the Presidio) remain under the management of the National Park Service and subsequently the GMPA. These two plans broadly set the cumulative context for the park and addressed wherever relevant in the cumulative impact analysis below. A list of the specific projects which could contribute cumulatively to the effects of the proposed water recycling project is presented below.
- **Doyle Drive/Highway 101** delineates the northern boundary of the Letterman Complex, and bisects the Letterman and Crissy Field planning districts. Various seismic retrofit and redesign alternatives for this elevated six-lane highway structure are currently being studied by the San Francisco County Transportation Authority, Caltrans, and the Federal Highway Administration (FHWA) (lead agencies), in consultation with the Trust and NPS. Among the alternatives being considered is retrofit and widen in place, and various combinations of tunnels and elevated structures. All of the alternatives would introduce some type of new direct surface roadway connection (i.e., via a tunnel opening or off-ramp) within the Letterman Complex. These connections would generally occur within and around the Gorgas Avenue corridor in the northern part of the Complex, and based on preliminary engineering,

the majority of the alternatives would require multiple historic buildings to be removed (to accommodate expanded roadways/intersections).

- The **Tennessee Hollow Restoration** study area extends from the East Housing planning district, straddles the western edge of the Letterman Complex and eastern edge of the Main Post, and ends at Crissy Field. Planning for this project was recently initiated by the Trust, and draft restoration alternatives should be available in mid-2002. Although detailed information on the possible alternatives is not available at this time, it is reasonable to assume that some type of enhancement of the natural environment, including possible removal of fill material in this area is likely. Once complete, the restored creek corridor would connect to the **Crissy Marsh** in north. The Trust, NPS and Golden Gate National Parks Association are also currently evaluating opportunities to ensure the long-term health of Crissy Marsh, potentially by expanding the marsh. Detailed information on the location and type of expansion, and its potential environmental effects, are not yet available.
- The **Letterman Digital Arts Center (LDAC)**, is a 23-acre campus located in the eastern portion of the Letterman Complex. The LDAC project was previously reviewed under a separate NEPA document. Once complete, the LDAC will replace the former Letterman Hospital, Research Institute, and associated surface parking lot with a mixed office/ research use campus, public park space (Great Lawn) and public-serving uses, and an underground parking structure. The EIS for the 23-acre Letterman Digital Arts Center included a mitigation measure to improve access to the site, including a slip ramp from northbound Richardson Avenue that will terminate at the intersection of Marshall Street and Gorgas Avenue and a new intersection on Richardson Avenue at Lyon Street. The Presidio Trust is designing and constructing the project in consultation with Caltrans and the City and County of San Francisco. The six-month construction period is expected to begin in the summer of 2002. Construction activities related to this project could occur simultaneously with the proposed water recycling project.
- **Environmental remediation** of hazardous materials/waste sites at the Presidio is an ongoing process that may include a variety of physical actions, including excavation of materials, construction of caps (engineered covers), and monitoring of groundwater or surface water resources. Based on existing information regarding the presence of hazardous materials/waste, remedial activities are expected to occur within the project area at Letterman Complex, and along several of the proposed distribution pipelines.
- Implementation of the **1999 Bay Area Regional Water Recycling Program (BARWRP)** and the **City and County of San Francisco's Recycled Water Master Plan (RWMP)** would increase the amount of recycled water produced (and decrease the amount of secondary treated wastewater entering receiving waters) within the San Francisco Bay Area and San Francisco peninsula. The 1999 BARWRP identifies development of approximately 125,000 acre-feet (or over 40 billion gallons) per year of recycled water within the Bay Area over the next 10 years, and the environmental review process for the BARWRP has not yet been completed. The City's RWMP is considered part of Phase 1 of the BARWRP, and is currently being updated. The RWMP was originally prepared in 1996 and identified a project

capable of producing over 10 million gallons per day of recycled water for use in San Francisco. A Final EIR for the RWMP was certified in 1997; however, the City never adopted the RWMP. At this time the City is in the process of revising the plan to provide for a smaller, less costly project (CCSF 2001). Based on the 1997 Final EIR, there would be no significant adverse effects to groundwater quality, assuming that the project were operated in accordance with all applicable requirements, and that the landscape irrigation and fertilization practices were modified to account for the recycled water quality (CCSF 1997).

### 3.11.2 LAND USE

Implementation of either action alternative evaluated in this EA would result in the rehabilitation and reuse of an existing industrial building in the Letterman Complex (for the proposed water recycling facility), and associated underground facilities. As described in Section 3.2, the plant would be designed so that noise and odors are adequately contained, and no land use conflicts would occur. The use of recycled water at various locations throughout the park would not alter or otherwise affect current or future land uses, and implementation of either action alternative would be consistent with and carry out a long-time vision for sustainable water resources management at the park.

Land uses within the Letterman Complex have, and will continue to transition as currently vacant historic buildings are rehabilitated and reused, and the LDAC will be completed. Future uses will be required to conform to the adopted land use plan (either Final GMPA, or once complete the Final PTIP) as well as the *Letterman Complex Planning & Design Guidelines* (Trust 2000), which will help ensure that the historic character, scale and spatial organization of the Complex are preserved. The possible exception would be the implementation of the Doyle Drive/Highway 101 retrofit project, currently under study. This project will be subject to its own environmental review process, and detailed information on the project's effects are not currently known, and would vary depending upon the alternative selected. Based on the preliminary range of alternatives, it appears that a new surface roadway connection to Highway 101 could be introduced within the Letterman Complex, and multiple historic buildings could be removed, including Building 1063 under one of the current Doyle Drive alternatives. Ongoing coordination with the Doyle Drive/Highway 101 lead agencies will focus on use of land for the right-of-way and engineering a roadway project that minimizes conflicts with existing and planned land uses.

### 3.11.3 WATER RESOURCES

Cumulatively, the demand for water at the Presidio would increase over time under both the adopted Final GMPA and the proposed PTIP. The demand for irrigation water (i.e., recycled water) would be relatively consistent under either land use plan, and both of the action alternatives evaluated in this EA would have a beneficial effect by providing a new source of drought-resistant, non-potable water at the park that would result in reduced demand for potable water in the future. The reduction in potable water demands that would occur over the life of the proposed project would be a beneficial effect, despite overall increases due to the levels of employment and population in the park.

Implementation of the 1999 BARWRP or the CCSF's RWMP would expand the regional use of recycled water, but no significant cumulative effects would be expected; rather, the cumulative effects would be considered beneficial as less treated wastewater would be discharged to the Bay, and less potable water would be consumed. Considering on-going remediation efforts, beneficial effects on local groundwater quality are expected. Other development activities within the Presidio, including the LDAC, Doyle Drive, and environmental restoration projects would not result in significant cumulative effects from the proposed water recycling project.

### 3.11.4 BIOLOGICAL RESOURCES

Individually, either of the proposed action alternatives would not have a significant impact on biological resources. The proposed project facilities were specifically located to avoid or minimize impacts to biological resources. All biologically sensitive areas would be avoided or otherwise sufficiently protected to minimize the impact of construction activities. Some short-term disturbance of common wildlife and plant species would result from project construction; however, various best management practices and mitigation measures would be implemented to minimize this impact. Operationally, recycled water would meet or exceed the highest level of relevant state quality standards and would be used for irrigation in landscaped areas only.

As a result of the proposed project, the Presidio may be required to remove an undetermined number of mature "historic forest" eucalyptus trees to accommodate the proposed pipeline. Project development may require removal of one or more, and perhaps up to several dozen, mature eucalyptus trees, which would be mitigated to a less-than significant level in the current project. Cumulatively, other proposed projects may also result in the loss of individual trees throughout the Presidio; however, factors such as tree disease and age already require the continued maintenance and replacement of historic forest trees. Because removed trees will be replaced as per an established tree replacement schedule, the implementation of multiple development projects in the Presidio will not contribute to overall loss of historic forest trees. The loss of historical forest trees is considered a less-than significant cumulative project effect.

Based on the overall low wildlife habitat values in the proposed project corridor and minimal effects of the current proposed action, no cumulative effects are expected to special status plant or wildlife species. Cumulatively, the proposed project would not improve or degrade habitat for these species.

When viewed in the context of the BARWRP and other regional water quality projects, the proposed project is not expected to cumulatively affect plants or wildlife in the Presidio or aquatic habitats of San Francisco Bay.

Cumulatively, there are a variety of programs and projects that could have both beneficial and adverse effects on biological resources at the park. These projects/programs are in varying stages of development and implementation, and include activities being managed by outside agencies. Because other proposed projects in the Presidio such as Doyle Drive/Highway 101, LDAC, and ongoing environmental remediation will occur in areas that are either already developed or have relatively few biological resource values, the current project would not have cumulative effects

on biological resources. The Tennessee Hollow Restoration is expected to result in a net benefit to common plants and wildlife, thus no adverse cumulative effects are expected.

### 3.11.5 CULTURAL RESOURCES

The project alternatives were designed and subsequently refined through the environmental review process to avoid or minimize the potential impact on cultural resources. Individually, neither of the two action alternatives would have a significant or adverse impact on cultural or historic resources. In complying with the *Secretary of the Interior's Standards for Rehabilitation of Historic Structures* for the use of the Trust's preferred treatment plant site (Building 1063), the historic structure would benefit from rehabilitation and reuse. Avoidance of various resources or known sensitive areas would also minimize potential impacts to the cultural landscape and archaeological features.

Cumulatively, there are a variety of activities that could affect cultural and historic resources within the project area. Recent building rehabilitation within this portion of the Letterman planning area include the Gorgas Avenue Warehouses. Concentrating mainly on the interior of the buildings, these projects were undertaken in compliance with the Section 106 of the National Historic Preservation Act. Rehabilitation work removed intrusive elements that altered the building's interior spatial relationships, thus reintroducing the historic character of the buildings. It also retained character-defining features to the maximum extent possible.

Past projects, including the Rehabilitation of the Thoreau Center, were also undertaken in compliance with Section 106 of the National Historic Preservation Act. Implemented more than five years ago, this project successfully adapted this series of buildings for modern office use, while retaining both interior and exterior character-defining elements.

The LDAC will be constructed in compliance with Section 106 of the National Historic Preservation Act and will follow various guidance set forth in the *Programmatic Agreement Among the Presidio Trust, the Advisory Council on Historic Preservation, the National Park Service, and the California State Historic Preservation Officer regarding deconstruction, new construction, and the execution of associated leases at the Letterman Complex, Presidio of San Francisco, California*.

The Doyle Drive project, depending upon the alternative identified for implementation, could have the potential to remove multiple historic buildings. Prehistoric and historic archaeological sites in the Crissy Field Planning District could also be subject to potential impacts from the Doyle Drive project. In particular, the alternatives with below-ground or tunnel features pose the greatest threat to buried prehistoric and historic archaeological sites. The Federal Highway Administration and Caltrans will be conducting further investigations to identify specific archaeological site boundaries and impacts to archaeological sites from each of the alternatives.

The 23-acre LDAC project is not expected to contribute to cumulative impacts because no evidence of buried archaeological sites was found during a recent investigation, archaeological monitoring will take place during the demolition and new construction phases, and the process

defined in the Programmatic Agreement, Archaeological management Plan, and Discovery Process will be adhered to.

### 3.11.6 HAZARDOUS MATERIALS

Implementation of either action alternative would not result in a significant impact to hazardous materials. Compliance with standard federal, state, and local rules and regulations, in conjunction with a soil monitoring plan, would reduce potential hazards associated with lead-based paint, asbestos, and impacted soil and groundwater to a less-than significant level. Past, present, and reasonably foreseeable future actions would have an overall long-term beneficial effect on hazardous materials. Implementation of the 1999 BARWRP and the CCSF's RWMP would be unlikely to have adverse hazardous materials impacts, as chemicals and hazardous materials associated with recycled water facilities would be stored, used, transported, and disposed of in accordance with applicable regulatory requirements. The Trust's Environmental Remediation program, restoration of Tennessee Hollow, and construction of the LDAC would have a long-term, beneficial effect through the removal of lead-based paint, asbestos, and remediation of impacted soil and groundwater in the Presidio.

### 3.11.7 CONSTRUCTION TRAFFIC

Implementation of one of the two action alternatives would result in approximately 20 daily construction worker trips for a 12-month period (per each project phase). In addition, temporary lane closures would be necessary when pipeline construction occurs within an existing roadway or trail. Pipeline construction would proceed at roughly 150 to 200 feet per day, and the closures would be small-scale and temporary as described in Section 3.7. Within the cumulative context, the area surrounding the alternative treatment plants and subsurface storage sites (all within the Letterman Complex) would be subject to a variety of simultaneous construction activities, and has the greatest potential for cumulative construction traffic effects. Under both of the action alternatives, most construction activity in this area would occur during Phase 1, which is proposed for implementation during 2002-2003. During Phase 2 of the project, there would be minimal project-generated construction in the vicinity of the Letterman Complex, as the majority of construction would be dispersed throughout other areas of the Presidio, as the recycled water distribution system is expanded.

Within the Phase 1 timeframe, the construction of the LDAC project (ongoing), as well as various environmental remediation projects, would occur. The shared use of roadways and demands for staging areas within the Letterman Complex would have a cumulative effect on the traffic conditions. It should be noted that construction activities associated with Doyle Drive would not occur within the Phase 1 timeline.

Construction vehicles would generally access the Letterman Complex via the Gorgas Gate and Doyle Drive/Richardson Avenue. From points east of the Presidio, construction traffic would use Lombard Street through the Lombard Street Gate to the Letterman Complex. Construction traffic would access the Letterman Complex from southbound U.S. 101 via Richardson Avenue and the

Gorgas Gate. Construction traffic leaving the complex would use Halleck, Marshall and Mason Streets to access northbound Doyle Drive at the intersection of Mason Street/Marina Boulevard and Doyle Drive; this traffic would not travel east on Marina Boulevard due to City restrictions.

The additional construction-related traffic from the proposed project and the LDAC project could result in some conflicts with local and regional traffic, especially from the larger construction vehicles. However, because the vehicle trips traveling to and from the complex would be dispersed through the Bay Area, the construction-related vehicle trips generated by both the proposed project and the LDAC project on other regional roadways would not be substantial, and would fall within the normal fluctuations of traffic volumes. Within the Presidio, each project would have their own separate staging areas within, or immediately adjacent to their construction sites. The staging areas for the proposed project would be situated away from, and west of the LDAC project site. The project's staging areas would generally be bounded by Gorgas Road to the north, Edie Road to the south, Kendall Road to the east, and the Thoreau Center parking lot to the west. Traffic leaving the site to go southbound on U.S. 101 would use Lombard Gate as City restrictions prohibit truck traffic from leaving the Gorgas Gate. Note that if the Letterman Redevelopment-Richardson Avenue Access Project is completed prior to completion of this project, trucks would be able to use Gorgas Avenue to access Richardson Avenue (U.S. 101) directly without violating City restrictions. Similarly, trucks traveling to the site from U.S. 101 could use the slip ramp to access the site rather than the Lombard Gate. Construction management plans would be implemented for both projects, and would be developed to provide specific truck routes and other mitigation measures, and to ensure that activities are coordinated.

### 3.11.8 AIR QUALITY

Construction of either of the action alternatives evaluated in this EA would have minor, temporary effects on air quality. Other past, present or reasonably foreseeable construction activities within the Air Basin could contribute cumulatively to dust and other emissions. The Bay Area Air Quality Management District (BAAQMD) requires implementation of various control actions to minimize these effects, and the project's contribution to Basin-wide construction emissions would be very small. Operationally, emissions associated with the proposed water recycling plant would be minor. The potential for odors would be slight, and would be effectively contained within the proposed treatment facility. No regional or other operational sources of emissions would result from the project alternatives, and thus the project would have a negligible contribution to cumulative air quality conditions within the Basin. Please refer to Section 3.8 for additional discussion on regional air quality attainment plans, and the project's consistency with relevant plans.

### 3.11.9 NOISE

Operational noise generated by project would fall within the existing ambient noise levels, and no noticeable increase would occur as a result of either action alternative. Under cumulative conditions, Doyle Drive would be either seismically retrofitted within its current alignment or be reconstructed with one of four alternatives currently under consideration. Some of the proposed

alternatives would locate Doyle Drive within a tunnel in the project area, which could have a cumulatively beneficial long-term noise impact on the project area.

Cumulative construction noise would result from the LDAC project and the Doyle Drive construction, which will not occur simultaneously. While these projects would add cumulatively to the ambient noise levels during the construction period, all equipment would need to be operated subject to the limitations of the San Francisco Noise Ordinance. Additionally, the construction period of the proposed project at any particular location would be relatively short-term, and would not be considered to result in a cumulative noise impact.

### 3.11.10 GEOLOGY & SOILS

Neither the proposed action nor the cumulative projects would increase the likelihood or intensity of seismic activity at the Presidio, or the risk of other geologic hazards such as settlement or landsliding. Most seismic and geologic hazards are unpredictable and unavoidable, and would continue to affect visitors and residents at the Presidio regardless of the proposed development actions. However, development actions at the Presidio, including the proposed action and the cumulative projects, will eventually lead to a greater number of people visiting the area and, therefore, in the event of an earthquake, more people could be exposed to injury and property could be damaged. In addition, short-term construction impacts, especially those related to soil erosion and topsoil loss, could occur with additional development projects.

The potential cumulative risk of additional exposure to seismic and geologic hazards as the Presidio's visitor and resident population increases is not considered significant. As future development projects are designed and constructed, they will incorporate modern earthquake design criteria that are intended to reduce the effects of ground shaking and associated potential for injury, damage, and loss of life. As research into earthquake ground shaking affects advances and more reliable design methods to reduce structural damage are developed, future construction will provide offices and homes that can better withstand earthquake ground shaking. Cumulative soil erosion impacts will be offset by required compliance with BMPs and project Standard Conditions.