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None

3 Urban and Rural Land Uses

Chapter 3 evaluates potential impacts to urban and rural land uses from Program implementation. The focus of this chapter is on the consistency of the Program with local and regional land use plans and policies in effect in the Program Area. Because the exact location and timing of potential mosquito control activities are unknown, this analysis has been conducted at a programmatic level.

Section 3.1, Environmental Setting, presents an overview of the types of land uses found in the Program Area, including a description of public lands in the Program Area where mosquito control measures could be implemented. It also presents federal, state, and local ordinances and regulations that are related to pesticide use in the Program Area. Section 3.2, Environmental Impacts and Mitigation Measures, presents the following:

- > Environmental concerns and evaluation criteria
- > Evaluation methods and assumptions
- > Discussion of the land use impacts from the No Program and Program alternatives, and recommendations for mitigation, if required, for those impacts
- > Cumulative impacts related to land use
- > Summary of environmental impacts due to land use conflicts

3.1 Environmental Setting

3.1.1 Overview of Urban and Rural Land Use

Generally, implementation of mosquito control activities could occur on a wide range of land uses within the principle service areas of the District covered under the Proposed Program, which covers Alameda County. Alameda County encompasses 813 square miles (738 land area and 83.8 water area) and a population of 1,578,891. Unincorporated Alameda County encompasses over 375 square miles with a diverse population in excess of 139,000 residents. The unincorporated area has six distinct communities: Ashland, Castro Valley, Cherryland, Fairview, San Lorenzo and Sunol. The Eastern portion of the unincorporated area is mainly agricultural while the Western portion is urban that includes light industrial, retail and residential.

In addition, Program actions can also be taken in adjacent counties as needed, including San Joaquin, Santa Clara, Stanislaus, and Contra Costa counties. This 5-county region representing the Program Area is characterized by both urban and rural settings. Urban areas include residential, commercial, and industrial uses that tend to be located in incorporated areas. In fact, the Program Area covers portions of the San Francisco Bay Area region, which are densely populated. With more than 1.5 million people, Alameda County is the 7th most populous of the 58 counties in California. Other parts of the Program Area are rural in character, including agricultural land, rural residential, open space, wildlife management areas/refuges, and other public lands that are generally undeveloped.

Control measures specific to mosquitoes are focused on aquatic habitats, including man-made and natural areas, such as marshes, lakes and ponds, rivers and streams, vernal pools and other seasonal wetlands, and irrigated pastures. These types of habitats typically are found in rural areas. Mosquito control measures can also occur at developed facilities found in urban areas or other areas that retain water, such as stormwater detention basins, flood control channels, street drains and gutters, wash drains, animal troughs, artificial containers, tire piles, fountains, ornamental fishponds, and swimming pools.

3.1.2 Public Lands

Although mosquito control measures can be implemented on lands irrespective of land ownership, large expanses of aquatic and terrestrial habitat are commonly found on public lands, such as National Wildlife Refuges (NWR) administered at the federal level by the USFWS. Table 3-1 presents the extent of federal land in the Program Area based on US Department of the Interior information. Many lands within the NWR system administered by USFWS are not eligible for payments in lieu of taxes and are not included in the table, which is focused on lands eligible for “payments in lieu of taxes.” For example, the Don Edwards NWR (the nation’s first urban NWR) was established to protect important stopover and wintering grounds for waterfowl, shorebirds, and other migratory birds. It is also designed to support recovery of endangered species, in particular, the salt marsh harvest mouse and Ridgway’s Rail. The NWR comprises 30,000 acres of open bay, salt ponds, salt marsh, mudflats, and upland and vernal pool habitats located in Alameda, Santa Clara and San Mateo counties. The Golden Gate Audubon is also working to have 574 acres and 390 acres of adjacent bay waters transferred from the U.S. Navy to the U.S. Fish and Wildlife Service (USFWS) to create the Alameda National Wildlife Reserve to protect the northernmost nesting colonies of the endangered California Least Terns. The District is not eligible to receive payments in lieu of taxes for USFWS lands where mosquito control services are provided.

The Program Area also has extensive areas of public land managed by state agencies, namely California State Parks, as well as community and regional parks managed by local parks and recreation departments of affected municipalities and special districts. The most extensive is the East Bay Regional Park District (EBRPD) a special district operating in Alameda County and Contra Costa County. EBRPD spans 120,000 acres with 65 parks and over 1,200 miles of trails. CDFW manages the Eden Landing Ecological Reserve, 6,400 acres of former salt ponds along the east side of San Francisco Bay shoreline adjacent to Hayward and Union City in Alameda County. This site is a part on the much larger South Bay Salt Pond Restoration Project (SBSPRP) which is the largest tidal restoration project on the West Coast. When complete, the SBSPRP will convert 15,100 acres of former salt ponds in Alameda, Santa Clara, and San Mateo counties to a mix of tidal marsh, mudflat, managed pond, open water, and other wetland habitats.

Table 3-1 Federal Lands in the Program Area, FY-2012 (acres)

County	Agency						Total
	BLM	USFS	USBR	NPS	USACE	USFWS*	
Alameda	217	0	542	0	111	0	870
Contra Costa	74	0	1,875	336	0	0	2,285
San Joaquin	603	0	898	0	677	0	2,178
Santa Clara	1,636	0	175	0	0	0	1,811
Stanislaus	471	0	1,765	0	1,048	0	3,284
Total	3,001	0	5,255	336	1,836	0	10,428

Source: US Department of Interior (2013)
 BLM = Bureau of Land Management
 NPS = National Park Service
 USACE = US Army Corps of Engineers
 USBR = US Bureau of Reclamation
 USFS = USDA Forest Service
 USFWS = US Fish and Wildlife Service

3.1.3 Regulatory Setting

3.1.3.1 *Federal*

No federal regulations and/or policies govern land use in the Program Area, except for management plans related to federal land holdings. However, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)¹ regulates, at the federal level, pesticide distribution, sale, and use. For more information on FIFRA, refer to Section 7.1.5.1 (Human Health).

3.1.3.2 *State*

Similar to the federal level, the State of California has no direct authority on local land use on private lands with the exception of requirements related to general plan development and zoning consistency. Specifically, California Government Code Section 65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. A general plan is a comprehensive, long-term strategy document that sets forth the expected location and general type of physical development expected in the city or county developing the document. In addition, State Zoning Law (California Government Code Section 65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses in a specific district, are required to be consistent with the general plan and any applicable specific plans. Land use on state-managed public lands is regulated pursuant to any applicable land use plans and policies administered by each state agency.

From a land use perspective, the key regulatory consideration at the state level is related to the concept of preemption. Preemption refers to laws at one level of government taking precedence over laws of a lower level. As such, no entity at the lower level can pass a law inconsistent with the law at the higher level. The California Constitution also allows the state to preempt local jurisdictions. California Food and Agricultural Code Section 11501.1 states that no ordinance or regulation of local government “may prohibit or in any way attempt to regulate any matter relating to the registration, sale, transportation, or use of pesticides, and any of these ordinances, laws or regulations are void and of no force or effect.”

3.1.3.3 *Local*

Each of the municipalities (i.e., counties and incorporated cities) in the Program Area maintains its own general plan and/or zoning ordinance that regulates allowable land use within its jurisdiction. Typically, policies and programs related directly to pesticide use are outside the purview of local planning and zoning regulation. However, some cities and counties have enacted regulations on pesticide use as part of their municipal code. Local governing bodies may pass ordinances that regulate or restrict pesticide use in their own operations. However, these restrictions do not apply to state operations and would not be applicable to treatments proposed by the District under the Program because California state law preempts local regulation and restriction of pesticide use. The District is a regulatory agency formed pursuant to California Health and Safety Code Section 2000 et seq. State law charges the District with the authority and responsibility to take all necessary or proper steps for the control of mosquitoes in the District (see Section 1.1.3).

Several municipalities within the Program Area have adopted specific regulations regarding the use of pesticides and/or have developed IPM plans or programs. In the Program Area, these municipalities include, but are not limited to (Californians for Pesticide Reform 2013):

- > City of Albany. Created an IPM program, and attempts to minimize or eliminate the use of pesticides.
- > City of Berkeley. Created an IPM program, and attempts to minimize or eliminate the use of pesticides.

¹ 7 United States Code Section 136 et seq. (1996)

- > County of Contra Costa. Requires county departments to create, implement, and periodically review IPM programs.
- > City of Sunnyvale. Developed and implemented a pesticide toxicity control plan to address urban stream impairment.

3.2 Environmental Impacts and Mitigation Measures

The evaluation of land use impacts in the Program Area is presented below. Program impacts on urban and rural land uses were evaluated based on the significance criteria presented in Section 3.2.1.

3.2.1 Evaluation Concerns and Criteria

The following concerns associated with urban and rural land uses are based on comments from public scoping, comments made during other District activities, and historical questions raised by individuals and are addressed in this EIR:

- > Potential for aspects of the Program that would diminish recreational experience of park visitors of the regional parks and trails within the Program Area.
 - Effects on recreational land use are covered in this section.
- > Population diversity (age, health, disabilities, etc.) within the designated residential developments is high and concern was expressed over the possible effects of pesticides on the health and daily activity of affected residents.
 - The Program would not affect the extent or distribution of residential land uses nor population levels throughout the Program Area. Public health effects are covered in Chapter 7, Human Health.
- > Potential for impacts at school sites.
 - The Program would not alter land uses at public or private school sites and schools would continue to operate similarly to existing conditions. Public health effects on the health of sensitive populations, including school-aged children, are covered in Chapter 7, Human Health.
- > Potential that the Program would conflict with local community regulations regarding pesticides.
 - Potential effects related to consistency with local community regulations are covered in this section.

Based on the State CEQA Guidelines and professional judgment, Program impacts to urban and rural land uses would be considered potentially significant if the Program would:

- > Physically divide an established community.
 - The Program does not propose any change in land use or new developments and, therefore, would have no impact related to physically dividing an established community; as a result, this criterion is not applicable to the Program.
- > Result in adverse impacts on the quantity and/or quality of recreational land uses.
- > Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Program (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- > Conflict with any applicable habitat conservation plan or natural community conservation plan.
 - The Program's potential to conflict with any applicable habitat conservation plan or natural community conservation plan is discussed in Chapter 4, Biological Resources – Aquatic.

The environmental impact topics of the effects on recreational land uses and potential to conflict with applicable plans, policies, or regulations within the Program treatment areas are evaluated for each Program alternative below.

3.2.2 Evaluation Methods and Assumptions

The methodology for evaluating land use impacts consists of (1) reviewing existing recreational opportunities in the Program Area and analyzing how proposed mosquito control measures would affect recreational land uses and (2) reviewing the Program alternatives in the context of state and local laws and regulations pertaining to pesticide use.

The District has implemented and will continue to implement the following BMPs that are applicable to District activities in all areas within the Program Area including rural recreational, agricultural, and open-space areas.

- > District staff has had long standing and continues to have cooperative, collaborative relationships with federal, state, and local agencies. The District regularly communicates with agencies regarding the District's operations and/or the necessity and opportunity for increased access for surveillance, source reduction, habitat enhancement, and the presence of special status species and wildlife. The District often participates in and contributes to interagency projects. The District will continue to foster these relationships, communication, and collaboration. (Table 2-6, BMP A1)
- > District staff will work with care and caution to minimize potential disturbance to wildlife while performing surveillance and mosquito treatment/population management activities. (Table 2-6, BMP A6)
- > Vehicles driving on levees to travel through tidal marsh or to access sloughs or channels for surveillance or treatment activities will travel at speeds no greater than 10 miles per hour to minimize noise and dust disturbance. (Table 2-6, BMP A8)
- > Operation of noise-generating equipment (e.g., chainsaws, brush-cutters) will abide by the time-of-day restrictions established by the applicable local jurisdiction (i.e., City and/or County) if such noise activities would be audible to receptors (e.g., residential land uses, schools, hospitals, places of worship) located in the applicable local jurisdiction. Shut down all motorized equipment when not in use. (Table 2-6, BMP A11)
- > For operations that generate noise expected to be of concern to the public, the following measures will be implemented: (Table 2-6, BMP A12)
 - Measure 1: Provide Advance Notices: A variety of measures are implemented depending on the magnitude/nature of the activities the District undertakes and may include, but are not limited to, press releases, the District website, social media, and posted signs. Public agencies and elected officials also may be notified of the nature and duration of the activities, including the Board of Supervisors or City Council, environmental health and agricultural agencies, emergency service providers, and airports.
 - Measure 2: Provide Mechanism to Address Complaints: District staff is available during regular business hours to respond to service calls and address concerns about nighttime operations.

3.2.3 Surveillance Alternative

Impacts on Recreational Land Uses

The Surveillance Alternative involves utilization of various methods to monitor targeted mosquitoes in terms of their location and distribution. District staff may implement surveillance techniques in recreational

settings, but they would not likely interfere with existing recreational uses. Recreationists would continue to utilize recreation areas and potential impacts on the quality of the recreational experience, such as from noise, would be minor.

Impact LU-1: Surveillance of mosquitoes would not appreciably impact the quantity and/or quality of recreational opportunities in the Program Area. This impact is **less than significant** and no mitigation is required.

Conflict with Applicable Land Use Regulations and Policies

This alternative does not involve the use of chemical pesticides to control mosquitoes and, therefore, would not conflict with local ordinances restricting pesticide use.

Impact LU-2: Surveillance of mosquitoes would not conflict with applicable land use regulations. **No impact** would occur.

3.2.4 Physical Control Alternative

Impacts on Recreational Land Uses

The Physical Control Alternative entails changes to the extent or composition of mosquito habitats as a means of mosquito control or “source reduction.” Alterations of certain types of habitats for mosquito control may adversely affect the recreational quality of that habitat, particularly applicable to aquatic habitats that are used either directly or indirectly for recreational purposes, e.g., waterbodies used by anglers or waterfowl that are targeted by hunters. The District undertakes a variety of physical control projects in freshwater bodies and saline habitats, including marshes and ponds, consistent with regulatory requirements (see Section 2.8) in a manner that generally maintains or improves habitat values for desirable species to control mosquitoes. The control of mosquitoes in aquatic habitats prevents them from annoying/biting recreationists, which enhances the recreational experience. In addition, physical control measures that would be implemented would target other types of mosquito habitats that generally do not support recreational uses. As a result, this alternative would continue with practices used under existing conditions, and would not be likely to interfere with existing recreational uses except on a limited basis, and recreationists would continue to utilize recreation areas in a similar fashion to the present. Potential impacts on the quality of the recreational experience, including noise-related effects, would be minor.

Impact LU-3: Physical control of mosquito habitat would not appreciably impact the quantity and/or quality of recreational opportunities in the Program Area. This impact is **less than significant** and no mitigation is required.

Conflict with Applicable Land Use Regulations and Policies

This alternative does not involve the use of chemical pesticides to control mosquitoes and, therefore, would not conflict with local ordinances restricting pesticide use.

Impact LU-4: Physical control of mosquitoes would not conflict with applicable land use regulations. **No impact** would occur.

3.2.5 Vegetation Management Alternative

Impacts on Recreational Land Uses

The Vegetation Management Alternative involves control or removal of vegetation in an effort to control mosquitoes. The District coordinates with landowners/managers and, where applicable, resource agencies prior to commencing work, whether trimming or herbiciding. Recreational uses generally do not rely on vegetation removal to be carried out, except for trail maintenance; and vegetation management techniques including herbicides would not likely interfere with existing recreational uses. If used, herbicides would be applied from the ground using trucks or ATV-mounted sprayer or by hand using a

can sprayer. These methods would not require closure of treated areas. Recreationists would maintain access and continue to utilize recreation areas, and potential impacts on the quality of the recreational experience, including noise-related effects, would be minor.

Impact LU-5: Vegetation management would not appreciably impact the quantity and/or quality of recreational opportunities in the Program Area. This impact is **less than significant** and no mitigation is required.

Conflict with Applicable Land Use Regulations and Policies

This alternative involves the potential use of herbicides to facilitate access for mosquito surveillance and control, therefore, would conflict with local ordinances restricting pesticide use if those ordinances apply to herbicide use. However, because state law preempts local restrictions on the use of pesticides, local ordinances prohibiting their use are not applicable to the Program.

Impact LU-6: Vegetation management would not conflict with applicable land use regulations because state law preempts local ordinances. **No impact** would occur.

3.2.6 Biological Control Alternative

Impacts on Recreational Land Uses

The Biological Control Alternative entails the use of pathogens and predators to control target mosquitoes. Mosquito pathogens are covered under the Chemical Control Alternative. The predator technique requires placement of mosquitofish in controlled waterbodies such as ornamental ponds and water gardens. Such methods would not be noticeable in recreational settings and would not likely interfere with existing recreational uses. Recreationists would maintain access and continue to utilize recreation areas as they do under existing conditions, and potential impacts on the quality of the recreational experience would be negligible.

Impact LU-7: Biological control of mosquitoes would not appreciably impact the quantity and/or quality of recreational opportunities in the Program Area. **No impact** would occur.

Conflict with Applicable Land Use Regulations and Policies

This alternative does not involve the use of chemical pesticides to control mosquitoes and, therefore, would not conflict with local ordinances restricting pesticide use.

Impact LU-8: Biological control of mosquitoes would not conflict with applicable land use regulations. **No impact** would occur.

3.2.7 Chemical Control Alternative

Impacts on Recreational Land Uses

The Chemical Control Alternative entails the periodic use of insecticides to control target mosquitoes, which would be implemented based on a number of factors, including but not limited to the mosquito abundance, density, species composition, proximity to human settlements, water temperature, and presence of predators. Chemical applications may occur in public recreation areas, such as parks and refuges, thereby potentially affecting recreational uses.² Chemical applications in recreation areas would improve the quality of recreational opportunities due to the elimination of nuisance effects from mosquitoes. However, some factors may result in adverse effects on recreation. First, chemical application techniques may involve the use of ATVs or aircraft for aerial applications, which would diminish the quality of the recreational experience realized by recreationists. Such equipment generates

² Table 3-1 shows the extent of federal land holdings in the Program Area, which include areas used for recreational purposes.

noise, particularly aircraft, and alters the visual landscape, which is inconsistent with the overall character of many recreation areas. Second, the potential exists that chemical applications would deter people from recreating in certain areas in an effort to avoid direct exposure, thereby temporarily limiting recreational access for local residents and visitors. Helicopter applications require the District to close walking trails and restrict access into flight areas for public safety (Alameda County Mosquito Abatement District 2011a). The public education component of the Proposed Program (including BMP M12) calls for public notification in advance of chemical application that limit access in public areas (as necessary), which would allow recreationists to adjust their recreational patterns (e.g., visiting alternative recreation sites in the region). Together, potential impacts on recreational quality from the use of ATVs or aircraft in public areas and impacts on recreational access from deterred visitors would generate impacts on recreational land uses in the Program Area. However, chemical applications in recreation areas would be isolated events similar to existing conditions and implemented on an as-needed basis; therefore, impacts on recreation would be temporary.

Impact LU-9: Chemical application to control mosquitoes would impact recreational access and the quality of recreational opportunities in the Program Area. However, because these impacts would be isolated and short term, they are considered **less than significant** and no mitigation is required.

Conflict with Applicable Land Use Regulations and Policies

The Chemical Control Alternative could conflict with local land use regulations that restrict pesticide use in some jurisdictions, such as those outlined in Section 3.1.3.3. However, because state law preempts local restrictions on the use of pesticides, local ordinances prohibiting their use are not applicable to the Program.

Impact LU-10: The Chemical Control Alternative would not conflict with applicable land use regulations because state law preempts local ordinances. **No impact** would occur.

3.2.8 Cumulative Impacts

See Section 13.1 for a complete discussion of cumulative impacts including a definition of what constitutes a significant cumulative impact. In summary, due to the extensive recreational opportunities on public lands within the Program Area (i.e., no existing significant cumulative impact within the Program Area), the small incremental potential impacts on recreational opportunities from five of the Proposed Program alternatives when combined would not likely cumulatively contribute to recreational impacts in the region. **No cumulative significant impacts to urban and rural land uses** are anticipated when all of the Program's incremental impacts and the impacts of other activities in the region are considered together.

3.2.9 Environmental Impacts Summary

Table 3-2 presents a summary of impacts related to land use including recreational opportunities and applicable land use regulations.

Table 3-2 Summary of Alternative Land Uses Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control
Effects on Land Uses					
Impact LU-1: Surveillance of mosquitoes would not appreciably impact the quantity and/or quality of recreational opportunities in the Program Area. This impact is less than significant and no mitigation is required.	LS	na	na	na	na
Impact LU-2: Surveillance of mosquitoes would not conflict with applicable land use regulations. No impact would occur.	N	na	na	na	na
Impact LU-3: Physical control of mosquito habitat would not appreciably impact the quantity and/or quality of recreational opportunities in the Program Area. This impact is less than significant and no mitigation is required.	na	LS	na	na	na
Impact LU-4: Physical control of mosquitoes would not conflict with applicable land use regulations. No impact would occur.	na	N	na	na	na
Impact LU-5: Vegetation management would not appreciably impact the quantity and/or quality of recreational opportunities in the Program Area. This impact is less than significant and no mitigation is required.	na	na	LS	na	na
Impact LU-6: Vegetation management would not conflict with applicable land use regulations. No impact would occur.	na	na	N	na	na
Impact LU-7: Biological control of mosquitoes would not appreciably impact the quantity and/or quality of recreational opportunities in the Program Area. No impact would occur.	na	na	na	N	na
Impact LU-8: Biological control of mosquitoes would not conflict with applicable land use regulations. No impact would occur.	na	na	na	N	na
Impact LU-9: Chemical application to control mosquitoes would impact recreational access and the quality of recreational opportunities in the Program Area. However, because these impacts would be isolated and short term, they are considered less than significant and no mitigation is required.	na	na	na	na	LS
Impact LU-10: The Chemical Control Alternative would not conflict with applicable land use regulations because state law preempts local ordinances. No impact would occur.	na	na	na	na	N

LS = Less-than-significant impact

N = No impact

na = Not applicable

SM = Potentially significant but mitigable impact

SU = Significant and unavoidable impact

3.2.10 Mitigation and Monitoring

No mitigation or monitoring is required as it relates to land use.

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