

15 Alternatives

CEQA Guidelines Section 15126.6(a) requires that a draft EIR must describe a reasonable range of alternatives to the project or project location that could feasibly attain most of the basic project objectives and would avoid or substantially lessen any of the significant environmental impacts of the proposed project. This chapter summarizes the analysis of alternatives for the Marin/Sonoma Mosquito and Vector Control District's IVMP. It is based on Appendix E, *Alternatives Analysis Report* prepared by the District.

15.1 Alternatives Analysis and Screening Process

The District undertakes mosquito and/or vector control activities through its Program to control the following vectors of disease and/ or discomfort in the Program Area: mosquitoes, rats, mice, ticks, and yellow jacket wasps. The District also performs vegetation management activities focused on vegetation that supports mosquito breeding habitat but may include removal of noxious/invasive weeds for other agencies under their permits.

The Proposed Program's specific objectives are as follows:

- > Reduce the potential for human and animal disease caused by vectors
- > Reduce the potential for human and animal discomfort or injury from vectors
- > Accomplish effective and environmentally sound vector management by means of:
 - Surveying for vector abundance/human contact
 - Establishing treatment guidelines
 - Appropriately selecting from a wide range of Program tools or components

The District has a well-defined process for selecting tools to be used in mosquito and/or vector control. The District has evaluated a variety of tools for their effectiveness in meeting the objectives listed above. The criteria used for determining the feasibility or viability and ranking of reasonable tools are listed below:

- > **Criterion 1.** The District uses tools known to be effective to manage vector species on a widespread level that have developed breeding populations in the State.
- > **Criterion 2.** The District does not use experimental or hypothetically effective tools on a broad scale (but does engage in trial applications with newly developed/released products).
- > **Criterion 3.** Given equal efficacy and operational constraints, the District will use the least environmentally disruptive tool in its control Program.

15.2 Alternatives Considered but Eliminated

CEQA Guidelines Section 15126.6(c) requires that the draft EIR explain briefly why other alternatives were rejected. Appendix E describes the tools that were considered and then, subsequently, eliminated from further consideration for inclusion in the Proposed Program. Further analysis of one attract-and-kill formulation, the new AllClear ATSB, is needed prior to using it for mosquito control. Further analysis of the other forms of attract-and-kill and of regulatory control was deemed unnecessary.

The District determined that of the 20 potential tools from Table 3-1 (Appendix E), the following eight methods were not immediately available for use in its IVMP: biological control pathogens (viruses), biological control (parasites), mass trapping, attract and kill, inundative releases (both parasites and predators), regulatory control, and repellents.

- > Biological Control pathogens (viruses) are deemed infeasible as this method is not commercially available in California and there are currently many efficacy related issues.
- > Biological Control (parasites) is deemed infeasible, as this method is not commercially available in California. Research on the use of parasites for mosquito control has also shown several limitations related to efficacy.
- > Mass Trapping is not considered by the District to be a practical, effective, reliable method of controlling vector populations. Can be very expensive and time consuming (i.e., labor intensive).
- > Attract and Kill is not considered by the District to be a practical, effective, reliable, method of controlling vector populations. The technology for both mosquitoes and yellow jackets is limited, and effectiveness is either not obtained or is inconsistent. Nontarget insects can be impacted. The District is aware of one commercially available ATSB product, Terminix® AllClear. The District still needs to operationally test this material, as well as other potential ATSBs, to determine those circumstances where their use may be effective while also having little or no nontarget species impacts.
- > Inundative Releases of parasites is not considered by the District to be a practical or currently feasible method of controlling vector populations. They are not commercially available and remain experimental at this time.
- > Inundative Releases of predators, either sterilized or genetically altered organisms, is not considered by the District to be a practical or a currently feasible method of controlling vector populations. Genetically modified vectors are still experimental. They are also not commercially available at this time.
- > Regulatory Control is not considered feasible because adoption of regulations is lengthy, time intensive, expensive and uncertain as to the regulatory outcome. This approach is not focused sufficiently on control of existing populations. Moreover, regulatory controls are dependent upon state and federal agencies to initiate and implement, and thus this approach cannot assure that any project objectives would be achieved.
- > Repellants, although effective for small-scale use by humans and animals, are not part of the overall Program control strategy because they merely displace the problem and do not reduce the mosquito population in an area.

15.3 No Program

CEQA Guidelines Section 15126.6(a) requires analysis of a no project alternative in the draft EIR. No Project is defined as what would reasonably be expected to occur in the foreseeable future, based on current plans and consistent with available infrastructure and community services, if the project was not approved and implemented. For the District, the Proposed Program is to continue current nonchemical and chemical treatment activities and to introduce similar pesticides to those currently in use if needed. The No Project/No Program condition assumes that the current activities would cease and result in a “do nothing” alternative going forward. Key assumptions for the future No Program Alternative are:

- > Current regulatory controls would continue and expand as needed; however, the District would not engage in implementing any of these regulations concerning public health and management of vectors carrying potential diseases. For all practical purposes, the District’s office would close. Public education and other outreach activities would cease along with the control activities.
- > Private landowners would manage mosquito and/or vector problems on private land without any state or federal oversight with pesticides approved for use. Households would use pesticides commonly available from retail outlets where permethrin and pyrethroids are common ingredients.
- > In the absence of the District’s IVMP, the responsibility for vector management could fall on CDPH (or some other agency), who would not provide mosquito and vector control support or “oversight” to local

jurisdictions (from Sacramento) given lack of personnel, equipment, or funding. Management at the state level would likely be only reactive rather than proactive.

The District would perform no surveillance, physical control, vegetation management, biological control, chemical control or other nonchemical control activities within its Service Area or in adjacent jurisdictions. “Do nothing” means the District would cease to exist and not provide the services funded by local property taxes. It is assumed that CDPH would not be able to provide even limited vector management services at the local level. As a result, the vectors of human and animal disease and discomfort would be more numerous than under existing conditions, and proliferate such that outbreaks of disease and illness would occur more frequently. See Appendix E, (Section 4.2) for a more extensive discussion of No Program than presented herein with historical information. In comparison to existing conditions with the current Program fully implemented, the No Program Alternative would have the following environmental impacts:

- > **Urban and Rural Land Uses:** No conflicts with local land regulations and no disruption to recreationists from temporary closures of trails or other park features would occur during chemical treatments. However, the increase in mosquitoes and other vectors would impact the quality of the recreational experience and homeowners due to an increase in discomfort and injury from biting mosquitoes and stinging insects. Stinging insects can cause severe allergic reactions in sensitive individuals, leading to hospitalization and even death. Without control of saltmarsh mosquitoes, all land uses could be affected in nearby areas. Residents could also experience an increase in rats at their homes and businesses. These impacts are **potentially significant**.
- > **Biological Resources – Aquatic:** In the absence of surveillance and physical controls, including maintenance activities within tidal, managed tidal, and nontidal marshes, seasonal wetlands, diked, historic baylands, and in some creeks adjacent to these wetlands, no impact (rather than less-than-significant impacts) would occur to aquatic special-status species using those habitats if present. No conflicts with existing provisions of an HCP/NCCP would occur. It is assumed CDPH would not be able to employ chemical treatments to the same extent as the District. However, lack of IPM-based larval surveillance and control may lead to increased, non-IPM based use of adulticides by individuals and private contractors that could affect aquatic habitats. Ad-hoc larviciding by individuals using unregistered materials (e.g., bleach, oil) would cause substantial harm to biological resources including aquatic habitats. In short, **potentially significant** impacts to aquatic resources would occur under No Program.
- > **Biological Resources – Terrestrial:** Under No Program, terrestrial resources in general would not be impacted significantly. There would be no potential for disturbance to terrestrial habitats and special-status species. However, in the absence of organized mosquito and vector control, unlicensed individuals may apply over-the-counter pesticides on their own, without training and potentially without adhering to label requirements. Furthermore, wildlife including birds would be subject to greater incidence of disease including WNV. The overall impact is **potentially significant** especially if special-status species are affected.
- > **Ecological Health:** Fewer herbicide and pesticide treatments by organized mosquito and vector control agencies would be used to control mosquitoes and other vectors under No Program. Indiscriminant use of aerosol foggers by the public may lead to increased pesticide resistance issues. In the absence of physical controls and nonchemical vegetation management, it is possible that the habitat conditions would result in greater rates of infection of species involved in the transmission of pathogens. Domesticated animals, wildlife, and the public would suffer greater incidence of disease and discomfort. The potential exists for increased use of inappropriate or unregistered materials such as bleach, oil, gasoline, diesel fuel, etc., in an effort to deal with vectors, especially mosquitoes and yellow jackets. Their use can cause significant environmental harm compared to materials applied in accordance with label requirements by trained, licensed professionals. Greater incidence of diseases and possible pesticide resistance would be **potentially significant** impacts.

- > **Human Health:** In the absence of the District's IVMP, greater incidence of vector-borne disease and discomfort to people would occur in the Program Area. A wide range of public health issues would occur with the No Program Alternative,
- First, risk of human cases of vector-borne disease and vector interaction issues for humans, pets, and wildlife would increase. The San Francisco Bay Area has a well-documented history concerning human-vector interaction, especially with mosquitoes.
 - Second, the lack of any form of coordinated surveillance reduces the ability of any agency to perform disease risk assessments and, therefore, predict potential outbreaks. Although vector-borne disease is not as prevalent as in other areas of the world, vector-borne pathogens are still present.
 - Third, lack of coordinated surveillance increases the risk of emerging infectious diseases or vectors going undetected until they have become established.
 - Fourth, lack of public outreach results in less current information being available about vectors and vector-borne disease risk reduction. This lack of interaction with the public can lead to increased production of vectors on private property as well as increased cases of vector-borne disease in humans, their pets, and livestock. Additionally, the increase in vector-human interactions would result in an increased risk of severe reactions to the bites and stings of vector organisms (e.g., mosquitoes, ticks, and yellow jackets) in sensitive and immunocompromised individuals.
 - Fifth, in the absence of organized mosquito and vector control programs, unlicensed individuals could begin applying over-the-counter pesticides on their own. Most of these individuals have little or no training in the proper and effective use of these materials, meaning a reasonable possibility exists of over- or under-application as well as the potential for creation of unrecognized resistance issues. This possibility is especially true for the indiscriminate use of aerosol foggers as well as concentrated pesticides that require mixing with water prior to application. Additionally, the health and well-being of sensitive individuals (e.g., asthmatics and chemically sensitive people) and their pets (especially birds and fish) could be affected by the unexpected drift of these pesticides into their yards, open windows, and neighborhood parks from attempts by unlicensed individuals using pesticides. Increased pesticide use by unlicensed individuals outside of an IPM program could potentially impact water resources and human and ecological health.
- CDPH would not be able to replace all of the services the District currently provides or would provide under the Proposed Program. Lack of coordinated surveillance increases risk of emerging diseases or vectors going undetected until already established in an area; it reduces disease risk assessments and outbreak predictions at the local level. Lack of public outreach leads to increased mosquito production on private property and less information being available to people about vector-borne disease reduction. Homeowners would resort to use of pesticides available to them, many of which are more toxic than the ones used by the District. This impact on human health is **potentially significant**.
- > **Public Services and Hazard Response:** The greater use of over-the-counter pesticides could lead to greater improper disposal of the containers. There could also be a greater demand on emergency services due to improper use of pesticides resulting in accidental poisonings, exposures of asthmatics and chemically sensitive individuals, etc. A greater incidence of disease and discomfort would potentially increase the demand for emergency services in the Program Area, a **potentially significant** impact.
- > **Water Resources:** Under No Program, use of chemical treatments would be reduced compared to existing conditions. **No impact** on surface and groundwater resources would occur.
- > **Air Quality:** The District would cease vector control activities, resulting in no use of vehicles, equipment, or pesticides and herbicides. **No impact** on air quality would occur.

- > Greenhouse Gases and Climate Change: The District would cease vector control activities, resulting in no use of vehicles, equipment, or pesticides and herbicides. However, increased mosquito populations may lead to reduced outdoor recreation, especially non-motorized recreation such as hiking and bicycling, and increased indoor recreation involving greater electricity usage for air conditioning and entertainment. A **less-than-significant** impact on GHG emissions would occur.
- > Noise: The District would cease vector control activities, resulting in no use of vehicles, equipment, or pesticides and herbicides. **No impact** on noise would occur.
- > Economic Conditions: A number of economic issues are associated with the No Program Alternative. Appendix E cites several sources of information on the cost of not having effective vector control in an area with key findings presented below:
 - First, with increased human-vector interactions comes an increase in the number of cases of vector-borne disease. The short-term medical and lost workplace, school, and home time associated with illness can cost governments, businesses, families, and individuals upwards of many thousands of dollars.
 - Second, increased vector populations can lead to reduced outdoor recreation activities by the public, resulting in increased usage of electricity for air conditioning and indoor entertainment. These increases could also lead to a reduction in revenues for recreational areas such as parks, campgrounds, marinas, and other areas that depend on usage fees to help with their maintenance and staffing, not to mention the impacts on other aspects of tourism (food, lodging, gear purchases, and equipment rentals).
 - Third, increased vector populations not only lead to increased levels of vector-borne disease and discomfort but can also result in decreased property values. Property values form an essential part of the revenue stream for government services such as schools, police, fire, libraries, parks, and health and welfare programs.
 - Fourth, the cost of hiring private contractors to provide vector control services on a site-specific basis can end up being more costly than the costs associated with the current program (with economies of scale).

15.4 Alternatives to Reduce Significant Impacts

CEQA Guidelines Section 15126.6(b) also requires that a draft EIR identify alternatives that are capable of avoiding or substantially lessening the significant environmental effects of the proposed project, even if the alternative would impede to some degree the attainment of all of the project objectives or would be more costly.

One potentially significant impact is associated with the Proposed Program, an air quality impact associated with the Chemical Control Alternative. The Chemical Control Alternative could subject people to objectionable odors. Impacts even with BMPs implemented could be **potentially significant but mitigable** (Impact AQ-25). Certain VOCs, sulfur compounds, and chlorine compounds found in some pesticides emit characteristic odors when they evaporate (volatilize) into air, even at very low concentrations well within safety limits. Pesticides currently used or proposed for future use emit phenols (e.g., deltamethrin, etofenprox, permethrin, or resmethrin). Materials such as Bti in liquid form and the adulticides pyrethrin and permethrin have an odor. Due to the low application rates of these materials, mixing with water (e.g., liquid Bti) and the ULV application method (e.g., for adulticides), relatively small quantities of these types of materials are typically used at a given time. Nevertheless, the human sense of smell (olfactory system) is sensitive to these types of compounds as a warning mechanism, and some individuals are more sensitive than others. The Chemical Control Alternative as proposed would apply certain types of odorous treatments using hydraulic spraying and atomizing (fogging), which could result in drift of small droplets and gaseous vapors. Depending on atmospheric conditions (i.e., wind direction, wind

speed, stability class), this drift could subject people to objectionable odors near a treatment area. Without site-specific information, it cannot be determined whether an objectionable odor may persist downwind of a particular treatment area; therefore, an application containing an odorous compound may impact an undefined number of people for an undefined period of time. The materials have been used in the current Program, and people have not complained about odors. However, it is possible that complaints could occur in the future despite public notification procedures about large-scale treatments.

Modifications to the Proposed Program could include the following reduced Program based on a “Reduced Chemical Control Alternative” which would avoid the potentially significant impact associated with the Proposed Program. A reduced Program with a “No Chemical Control Alternative” is evaluated as well.

15.4.1 Reduced Chemical Control Alternative Program

This alternative would eliminate or limit the use of any of the options of using odorous pesticide products containing phenols (e.g., deltamethrin, etofenprox, permethrin, or resmethrin), certain formulations of the larvicide Bti (e.g., liquid), and pyrethrin and permethrin as mosquito adulticides and for control of yellow jacket wasps and ticks in populated areas or in areas used for outdoor recreation. Yellow jacket control is only provided in areas where people or domestic animals could be injured. However, materials such as pyrethrin and others using hand held or ATV mounted equipment are most often used in remote areas away from residences and local parks. They are small scale, site-specific applications, and/or not conducted in the immediate vicinity of the public, and/or arrangements are made to perform the application when the public is not present. The odors these materials produce are also very short lived.

This Reduced Chemical Control Program would include all of the Surveillance, Physical Control, Vegetation Management, and other Nonchemical Control/Trapping Alternatives as planned under the Proposed Program but would eliminate or limit the options under the Chemical Control Alternative of using one or more of the pesticides with the greatest potential to subject people to objectionable odors: pyrethrin, permethrin, resmethrin, deltamethrin, etofenprox and some formulations of Bti (liquid) for control of mosquitoes and for control of yellow jacket wasps. It could result in greater use of other, less malodorous chemicals and in greater amounts, which could have impacts on public health if these other chemical methods are not as effective for the specific treatment area due to vector resistance problems or specific site conditions (see No Chemical Alternative below). All of these odorous pesticides can be used without significant impacts to public health or to other air quality parameters; but where people are located close to or possibly recreate within a chemical treatment area, the odor could be a problem for some persons even when the application is within product label specifications for wind speed and consistent with District BMPs.

The Reduced Chemical Control Program could be implemented consistent with the Program objectives on a situational or case-by-case basis (e.g., adult mosquito control is not required or a liquid formulation of Bti is not required) as long as the area affected is not large scale (i.e., relatively small number of specific individual sites as compared to an areawide basis) and as long as other, less odorous chemical options at comparable costs are available for use, the vector is not resistant to the remaining chemical options, and the remaining options have a high probability of being effective. Limiting the choices of materials that can be used to a few chemicals significantly increases the risks of vector resistance to the few products that are available for use. Furthermore, certain formulations may not be compatible with certain sites (e.g., crops and agricultural lands). Typically, the odorous chemicals (pyrethrin, permethrin, resmethrin, etofenprox) are used for adult mosquito control, thus eliminating the ability to control the adult, disease-transmitting life stage of the mosquito or yellow jacket and, therefore, resulting in ineffective and problematic vector control and increased public health risk. Removing the types of pesticides listed above from the IVMP entirely or even on a relatively large scale (i.e., beyond a situational/individual/case-by-case site basis) would reduce Program effectiveness and not meet Program objectives. Sound IVM involves many tools, with many materials being used, and using the most effective and least environmentally harmful products.

For the other environmental resources and issues of land use, biological, ecological health, human health, public services, water quality, air quality, GHGs, and noise, the impacts of the Reduced Chemical Control Program would be “no impact” or “less-than-significant impact,” consistent with the environmental impact evaluations provided in Chapters 3 through 12 for the Surveillance, Physical Control, Vegetation Management, Chemical Control, and Other Nonchemical Control/Trapping Alternatives if Program effectiveness was not affected. See Table 15-1 for the specific impact statements by resource topic/issue for all of these Program alternatives, which would be applicable to a Reduced Chemical Control Program with the exception of Impact AQ-25 which would be less than significant. However, if the less malodorous pesticides are relied upon and result in a less effective Program due to vector resistance issues, then the public and ecological health impacts from a less effective Program would be a greater incidence of vector-borne disease and discomfort to people, animals, and birds in the Program Area than under the Proposed Program but not as much as would occur under No Program or the reduced Program with a No Chemical Control Alternative.

15.4.2 No Chemical Control Program

This reduced Program would exclude all of the pesticide and herbicide products associated with the Chemical Control and Vegetation Management Alternatives under the Proposed Program. It would rely solely on Surveillance, Physical Control, the nonchemical physical component of Vegetation Management, Biological Control (mosquitofish), and the Other Nonchemical Control/Trapping Alternatives, along with ongoing public education. The issue is whether a Program made up only of these remaining alternatives plus education would be effective and meet Program objectives and IVM principles.

An example of reliance on only nonchemical tools with public education is the approach the State of Texas took in 2012 to deal with a WNV outbreak.

- > In Summer 2012, the Dallas-Fort Worth Metroplex experienced a severe WNV outbreak in which more than 1,868 confirmed cases of West Nile disease and 89 WNV-related deaths were reported. The analysis of mitigation efforts for the WNV outbreak in Texas suggested two lessons for improving public health system in preparation for future events: the need for (1) clear, comprehensive, uniform data systems that include mosquito data and (2) science-based triggers for spraying, as well as mutual assistance plans with spraying companies and among jurisdictions for times when spraying is necessary. (Harris County Public Health & Environmental Services 2012)
- > Spraying larvicides and/or adulticides for mosquitoes was not part of Texas’ routine protocol. Texas had not sprayed for mosquitoes in 43 years before the WNV outbreak. The WNV outbreak in Texas demonstrated the capacity for an epidemic to spread from one state to the entire country. Once the spraying was completed (two applications), a 93 percent reduction in disease-carrying mosquitoes occurred, while areas that were not sprayed reported an increase. (Zhang 2012)
- > In 2010, 2011, and 2012, Dallas County’s health department did not purchase mosquito larvicides until July 30, 2012, following the CDC telling the department that Dallas was already at the highest possible risk level for WNV. To avoid outbreaks such as what occurred in Dallas, aggressive larviciding is an effective tool along with surveillance of dead birds. (Friedman 2012)

Bandon Marsh National Wildlife Refuge (889 acres) protects the largest remaining tidal salt marsh within the Coquille River estuary in Oregon. The USFWS had restored an old hayfield back to tidal marsh by September 2011, with resultant mosquito production that resulted in an angry public with the mayor and a congressman getting involved. The USFWS now sprays for mosquitoes using larvicides Bti, methoprene and oil as a last resort.

These reports and others indicate that chemical control was required to combat an outbreak of mosquitoes (Oregon) and mosquitoes infected with WNV (Texas). Not letting mosquito populations get out of control due to inadequate surveillance and control measures is critical to avoidance of a large outbreak such as the one experienced in Texas in 2012. Consequently, a No Chemical Control

Alternative would not be effective and not meet the District's Proposed Program objectives stated in Section 2.2.2. The No Chemical Control Alternative would not meet the principles of successful IVM. The impacts to public health would be as follows:

- > **Human Health:** In the absence of the chemical control tools being included in the District's IVMP, greater incidence of vector-borne disease and discomfort to people would occur in the Program Area. A wide range of public health issues would occur with the No Chemical Control Alternative:
 - First, risk of human cases of vector-borne disease and vector interaction issues for humans, pets, and wildlife would increase. The San Francisco Bay Area has a well-documented history concerning human-vector interaction, especially with mosquitoes.
 - Second, increased production of vectors would occur on private property adjacent to areas that previously were treated with pesticide (and herbicide) products as well as increased cases of vector-borne disease in humans, their pets, and livestock would. Additionally, the increase in vector-human interactions would result in an increased risk of severe reactions to the bites and stings of vector organisms (e.g., mosquitoes, ticks, and wasps) in sensitive and immunocompromised individuals.
 - Third, in the absence of organized mosquito and vector control programs using chemical controls and reduced effectiveness in controlling vectors, unlicensed individuals could begin applying over-the-counter pesticides on their own. Most of these individuals have little or no training in the proper and effective use of these materials, meaning a reasonable possibility exists of over- or under-application as well as the potential for creation of unrecognized resistance issues. This possibility is especially true for the indiscriminate use of aerosol foggers as well as concentrated pesticides that require mixing with water prior to application. Additionally, the health and well-being of sensitive individuals (e.g., asthmatics and chemically sensitive people) and their pets (especially birds and fish) could be affected by the unexpected drift of these pesticides into their yards, open windows, and neighborhood parks.

This impact on human health is **significant and unavoidable**.

For the other land use, biological, ecological health, public services, water quality, air quality, GHGs, and noise environmental resources and issues, the impacts of the No Chemical Control Program would be "no impact" or "less-than-significant impact," similar to the environmental impact evaluations provided in Chapters 3 through 12 for the Surveillance, Physical Control, Vegetation Management (physical control option only), and Other Nonchemical Control/ Trapping Alternatives. See Table 15-1 for the specific impact statements by resource topic/issue for all of these Program alternatives which would be applicable to a No Chemical Control Program. However, the indiscriminate use of over-the-counter pesticides and improper disposal has the potential to adversely affect ecological health. If homeowners apply the products consistent with label requirements, potentially significant impacts would be avoided.

15.5 Comparison of Alternatives

Table 15-1 presents a summary of all of the impacts associated with each Program Alternative and, therefore, the overall Proposed Program of all of the alternatives combined. The potential for objectionable odors to people under the Chemical Control Alternative is the only situation where potentially significant impacts could occur.

- > The Surveillance Alternative has the potential for less-than-significant impacts to recreational land uses, biological resources (aquatic and terrestrial), ecological health, air quality, GHGs, and noise. It has no impacts to land use regulations, human health, public services/hazard response, and water resources.

- > The Physical Control Alternative has the potential for less-than-significant impacts to recreational land uses, biological resources (aquatic and terrestrial), ecological health, human health, water resources, air quality, GHGs, and noise. It has no impacts to land use regulations and public services/hazard response.
- > The Vegetation Management Alternative has the potential for less-than-significant impacts to recreational land uses, aquatic and terrestrial biological resources, ecological health, human health, water resources, air quality, GHGs, and noise. It would have no impact to land use regulations and public services/hazard response.
- > The Biological Control Alternative has the potential for less-than-significant impacts to ecological health, water resources, air quality, GHGs, and noise. It has no impacts to land use, biological resources (aquatic and terrestrial), human health, public services/hazard response.
- > The Chemical Control Alternative has less-than-significant impacts to recreational land uses, aquatic and terrestrial biological resources, ecological health, human health, surface and groundwater resources, GHGs, and noise. It has no impacts to land use regulations and public services/hazard response. The potential exists for subjecting people to objectionable odors depending on the formulation used and proximity of treatment locations to human activities, a significant impact that can be mitigated to less than significant.
- > The Other Nonchemical/Trapping Alternative has less-than-significant impacts to the following resources and issues: recreational land uses, air quality, GHGs, and noise. It has no impacts to land use regulations, biological resources (aquatic and terrestrial), ecological health, human health, public services/hazard response, and water resources.

Table 15-2 provides a comparison of the Proposed Program, Reduced Chemical Control Program, and No Chemical Control Program.

15.6 Environmentally Superior Alternative

As shown in Table 15-1, for Surveillance, Physical Control, Vegetation Management, Chemical Control, and Nonchemical Control/Trapping Alternatives, the impacts are either "less than significant" (LS) or "no impact" (N) with one "potentially significant but mitigable impact" (SM).

The Chemical Control Alternative could subject people to objectionable odors. Impacts even with BMPs implemented could be **potentially significant but mitigable**. Certain VOCs, sulfur compounds, and chlorine compounds found in some pesticides emit characteristic odors when they evaporate (volatilize) into air, even at very low concentrations well within safety limits. Pesticides currently used or proposed for future use emit phenols (e.g., deltamethrin, etofenprox, permethrin, or resmethrin). Materials such as Bti in liquid form and the adulticides pyrethrin and permethrin have an odor. Due to limited applicability, small quantities of these types of substances are typically used. The human sense of smell (olfactory system) is sensitive to these types of compounds as a warning mechanism, and some individuals are more sensitive than others. The Chemical Control Alternative would apply certain types of odorous treatments using hydraulic spraying and atomizing (fogging), which could result in drift of small droplets and gaseous vapors. Depending on atmospheric conditions (i.e., wind direction, wind speed, stability class), this drift could subject people to objectionable odors near a treatment area. The materials have been used in the current Program, and people have not complained about odors. However, it is possible that complaints could occur in the future despite public notification procedures about large-scale treatments.

Section 15.4 describes two "Reduced Program Alternatives:" Reduced Chemical Control and No Chemical Control.

- > Reduced Chemical Control: To the extent the District can modify elements of the Chemical Control Alternative to mitigate identified impacts by avoiding the potentially significant impacts associated with some pesticide products by using less of any of these products or by eliminating one or more them in favor of other, less odorous products, then the **environmentally superior alternative would be a**

Program incorporating these modifications to this alternative as components of the overall IVMP as long as Program effectiveness is maintained. Excluding air quality and the odor issue, the impacts to all of the other resources would be the same as for the Proposed Program.

- > No Chemical Control: This alternative would completely remove the chemical treatment options under the Vegetation Management and Chemical Control Alternatives. It would not have any of the less-than-significant impacts associated with herbicide and pesticide use. However, it was determined to be inconsistent with Program objectives and IVM principles, and it could lead to substantial impacts to human health due to the reduced effectiveness of the Program in controlling mosquito and other vector populations.

The No Program Alternative is not the environmentally superior alternative due to its potentially significant impacts to the following resources and concerns identified in Section 15.3: urban and rural land uses, aquatic and terrestrial biological resources, ecological health, human health, and public services and hazard response.

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
3. Urban and Rural Land Uses						
Impact LU-1: Surveillance of vectors 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	na
Impact LU-2: Surveillance of vectors would not be inconsistent with applicable land use regulations. No impact would occur.	N	na	na	na	na	na
Impact LU-3: Physical control of vector 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	na
Impact LU-4: Physical control of vectors would not be inconsistent with applicable land use regulations. No impact would occur.	na	N	na	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	na
Impact LU-6: Vegetation management would not be inconsistent with applicable land use regulations. No impact would occur.	na	na	N	na	na	na
Impact LU-7: Biological control of vectors 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	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact LU-8: Biological control of vectors would not be inconsistent with applicable land use regulations. No impact would occur.	na	na	na	N	na	na
Impact LU-9: Chemical application to control vectors would impact recreational access and the quality of recreational opportunities in the Program Area. However, because these impacts would be isolated and short term and would involve public notification for the large events in close proximity to recreation intensive use areas, they are considered less than significant and no mitigation is required.	na	na	na	na	LS	na
Impact LU-10: The Chemical Control Alternative would not be inconsistent with applicable land use regulations because state law preempts local ordinances. No impact would occur.	na	na	na	na	N	na
Impact LU-11: Trapping of vectors 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	na	na	na	LS
Impact LU-12: Other nonchemical control and trapping of vectors would not conflict with applicable land use regulations. No impact would occur.	na	na	na	na	na	N
4. Biological Resources – Aquatic						
Impact AR-1. The Surveillance Alternative would have a less-than-significant impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species. No mitigation is required.	LS	na	na	na	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact AR-2. The Surveillance Alternative would have a less-than-significant impact on any riparian habitat or other sensitive natural community. No mitigation is required.	LS	na	na	na	na	na
Impact AR-3. The Surveillance Alternative would have a less-than-significant impact on federally protected wetlands as defined by Section 404 of the Clean Water Act. No mitigation is required.	LS	na	na	na	na	na
Impact AR-4. The Surveillance Alternative would have no impact on the movement of any native resident or migratory fish or wildlife species. Nor would it impact any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.	N	na	na	na	na	na
Impact AR-5. The Surveillance Alternative would have no impact on local policies or ordinances protecting biological resources.	N	na	na	na	na	na
Impact AR-6. The Surveillance Alternative has a less-than-significant impact on any adopted HCPs or NCCPs. No mitigation is required.	LS	na	na	na	na	na
Impact AR-7. The Physical Control Alternative, would have a less-than-significant impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species. No mitigation is required.	na	LS	na	na	na	na
Impact AR-8. The Physical Control Alternative would have a less-than-significant impact on any riparian habitat or other sensitive natural community. No mitigation is required.	na	LS	na	na	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact AR-9. The Physical Control Alternative would have a less-than-significant impact on federally protected wetlands as defined by Section 404 of the Clean Water Act. No mitigation is required.	na	LS	na	na	na	na
Impact AR-10. The Physical Control Alternative would have a less than significant impact on the movement of any native resident or migratory fish or wildlife species. Nor would it impact any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. No mitigation is required.	na	LS	na	na	na	na
Impact AR-11. The Physical Control Alternative would have no impact on local policies or ordinances protecting aquatic resources.	na	N	na	na	na	na
Impact AR-12. The Physical Control Alternative would have a less-than-significant impact on adopted HCPs or NCCPs. No mitigation is required.	na	LS	na	na	na	na
Impact AR-13. The Vegetation Management Alternative would have a less-than-significant impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species. No mitigation is required.	na	na	LS	na	na	na
Impact AR-14. The Vegetation Management Alternative would have a less-than-significant impact on any riparian habitat or other sensitive natural community. No mitigation is required.	na	na	LS	na	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact AR-15. The Vegetation Management Alternative would not result in the direct removal, filling, or hydrological interruption of federally protected wetlands as defined by CWA Section 404. As such, this alternative would have a less-than-significant impact on these resources. No mitigation is required.	na	na	LS	na	na	na
Impact AR-16. The Vegetation Management Alternative would have a less-than-significant impact on the movement of any native resident or migratory fish or wildlife species. Nor would it impact any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. No mitigation is required.	na	na	LS	na	na	na
Impact AR-17. The Vegetation Management Alternative would have no impact on local policies or ordinances protecting biological resources.	na	na	N	na	na	na
Impact AR-18. The Vegetation Management Alternative would have a less-than-significant impact on adopted HCPs or NCCPs. No mitigation is required.	na	na	LS	na	na	na
Impact AR-19. The Biological Control Alternative would have no impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species.	na	na	na	N	na	na
Impact AR-20. The Biological Control Alternative would have no impact on any riparian habitat or other sensitive natural community.	na	na	na	N	na	na
Impact AR-21. The Biological Control Alternative would have no impact on federally protected wetlands as defined by CWA Section 404.	na	na	na	N	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
<p>Impact AR-22. The Biological Control Alternative would have no impact on the movement of any native resident or migratory fish or wildlife species. Nor would it impact any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.</p>	na	na	na	N	na	na
<p>Impact AR-23. The Biological Control Alternative would have no impact on local policies or ordinances protecting biological resources.</p>	na	na	na	N	na	na
<p>Impact AR-24. The Biological Control Alternative would have no impact on approved HCPs, NCCPs, or local conservation plans.</p>	na	na	na	N	na	na
<p>Impact AR-25: The Chemical Control Alternative's mosquito larvicides would have a less-than-significant impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species. No mitigation is required.</p>	na	na	na	na	LS	na
<p>Impact AR-26: The Chemical Control Alternative's mosquito adulticides would have a less-than-significant impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species. No mitigation is required.</p>	na	na	na	na	LS	na
<p>Impact AR-27. The Chemical Control Alternative's control of yellow jackets and ticks would have a less-than-significant impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special- status species. No mitigation is required.</p>	na	na	na	na	LS	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact AR-28. The Chemical Control Alternative would have no impact on any riparian habitat or other sensitive natural community	na	na	na	na	N	na
Impact AR-29. The Chemical Control Alternative would not result in the direct removal, filling, or hydrological interruption of federally protected wetlands as defined by CWA Section 404 and would have a no impact on these resources.	na	na	na	na	N	na
Impact AR-30. The Chemical Control Alternative would have a less-than-significant impact on the movement of any native resident or migratory fish or wildlife species. Nor would it impact any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. No mitigation is required.	na	na	na	na	LS	na
Impact AR-31. The Chemical Control Alternative would have no impact on local policies or ordinances protecting biological resources.	na	na	na	na	N	na
Impact AR-32. The Chemical Control Alternative would have a less-than-significant impact on approved HCPs, NCCPs, or local conservation plans. No mitigation is required.	na	na	na	na	LS	na
Impact AR-33. The Other Nonchemical Control/Trapping Alternative would have no impact either directly or through habitat modifications, on any aquatic species identified as a candidate, sensitive, or special-status species.	na	na	na	na	na	N
Impact AR-34. The Other Nonchemical Control/Trapping Alternative would have no impact on any riparian habitat or other sensitive natural community.	na	na	na	na	na	N

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact AR-35. The Other Nonchemical Control/Trapping Alternative would have no impact on federally protected wetlands as defined by CWA Section 404.	na	na	na	na	na	N
Impact AR-36. The Other Nonchemical Control/Trapping Alternative would have no impact on the movement of any native resident or migratory fish or wildlife species. Nor would it impact any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.	na	na	na	na	na	N
Impact AR-37. The Other Nonchemical Control/Trapping Alternative would have no impact on local policies or ordinances protecting biological resources.	na	na	na	na	na	N
Impact AR-38. The Other Nonchemical Control/Trapping Alternative would have no impact on approved HCPs, NCCPs, or local conservation plans.	na	na	na	na	na	N
5. Biological Resources – Terrestrial						
Impact TR-1. The Surveillance Alternative would have a less-than-significant impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species. No mitigation is required.	LS	na	na	na	na	na
Impact TR-2. The Surveillance Alternative would have a less-than-significant impact on riparian habitat or other sensitive natural communities. No mitigation is required.	LS	na	na	na	na	na
Impact TR-3. The Surveillance Alternative would have a less-than-significant impact on federally protected wetlands as defined by Section 404 of the Clean Water Act. No mitigation is required.	LS	na	na	na	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact TR-4. The Surveillance Alternative would have no impact on the movement of any native resident or migratory fish or wildlife species, nor would it impact any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.	N	na	na	na	na	na
Impact TR-5. The Surveillance Alternative would have no impact on local policies or ordinances protecting biological resources.	N	na	na	na	na	na
Impact TR-6. The Surveillance Alternative would have a less-than-significant impact on adopted HCPs or NCCPs. No mitigation is required.	LS	na	na	na	na	na
Impact TR-7. The Physical Control Alternative, would have a less-than-significant impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species. No mitigation is required.	na	LS	na	na	na	na
Impact TR-8. The Physical Control Alternative, would have a less-than-significant impact on any riparian habitat or other sensitive natural community. No mitigation is required.	na	LS	na	na	na	na
Impact TR-9. The Physical Control Alternative would have a less-than-significant impact on federally protected wetlands as defined by CWA Section 404. No mitigation is required.	na	LS	na	na	na	na
Impact TR-10. The Physical Control Alternative would have a less than significant impact on the movement of any native resident or migratory fish or wildlife species. Nor would it impact any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.	na	LS	na	na	na	na
Impact TR-11. The Physical Control Alternative would have no impact on local policies or ordinances protecting terrestrial resources.	na	N	na	na	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact TR-12. The Physical Control Alternative would have a less-than-significant impact on adopted HCPs or NCCPs. No mitigation is required.	na	LS	na	na	na	na
Impact TR-13. The Vegetation Management Alternative would have a less-than-significant impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species. No mitigation is required.	na	na	LS	na	na	na
Impact TR-14. The Vegetation Management Alternative would have a less-than-significant impact on any riparian habitat or other sensitive natural community. No mitigation is required.	na	na	LS	na	na	na
Impact TR-15. The Vegetation Management Alternative would have a less-than-significant impact on federally protected wetlands as defined by CWA Section 404. No mitigation is required.	na	na	LS	na	na	na
Impact TR-16. The Vegetation Management Alternative would have a less-than-significant impact on the movement of any native resident or migratory fish or wildlife species. Nor would it impact any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. No mitigation is required.	na	na	LS	na	na	na
Impact TR-17. The Vegetation Management Alternative would have no impact on local policies or ordinances protecting terrestrial resources.	na	na	N	na	na	na
Impact TR-18. The Vegetation Management Alternative has a less-than-significant impact on approved HCPs or NCCPs. No mitigation is required.	na	na	LS	na	na	na
Impact TR-19. The Biological Control Alternative would have no impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species.	na	na	na	N	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact TR-20. The Biological Control Alternative would have no impact on any riparian habitat or other sensitive natural community.	na	na	na	N	na	na
Impact TR-21. The Biological Control Alternative would have no impact on federally protected wetlands as defined by CWA Section 404.	na	na	na	N	na	na
Impact TR-22. The Biological Control Alternative would have no impact on the movement of any native resident or migratory fish or wildlife species. Nor would it impact any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.	na	na	na	N	na	na
Impact TR-23. The Biological Control Alternative would have no impact on local policies or ordinances protecting biological resources.	na	na	na	N	na	na
Impact TR-24. The Biological Control Alternative would have no impact on approved HCPs, NCCPs, or local conservation plans.	na	na	na	N	na	na
Impact TR-25: The Chemical Control Alternative's mosquito larvicides would have a less-than-significant impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species. No mitigation is required.	na	na	na	na	LS	na
Impact TR-26: The Chemical Control Alternative's mosquito adulticides would have a less-than-significant impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species. No mitigation is required.	na	na	na	na	LS	na
Impact TR-27: The Chemical Control Alternative's use of the synergist PBO would have a less-than-significant impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species. No mitigation is required.	na	na	na	na	LS	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact TR-28: The Chemical Control Alternative’s use of pyrethrin, pyrethroids, and pyrethroid-like pesticides for yellow jacket wasp and tick control would have a less-than-significant impact either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species. No mitigation is required.	na	na	na	na	LS	na
Impact TR-29. The Chemical Control Alternative would have no impact on any riparian habitat or other sensitive natural community.	na	na	na	na	N	na
Impact TR-30. The Chemical Control Alternative would have no impact on federally protected wetlands as defined by CWA Section 404.	na	na	na	na	N	na
Impact TR-31. The Chemical Control Alternative would have a less-than-significant impact on the movement of any native resident or migratory fish or wildlife species. Nor would it impact any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. No mitigation is required.	na	na	na	na	LS	na
Impact TR-32. The Chemical Control Alternative would have no impact on local policies or ordinances protecting terrestrial resources.	na	na	na	na	N	na
Impact TR-33. The Chemical Control Alternative would have a less-than-significant impact on approved HCPs, NCCPs, or local conservation plans. No mitigation is required.	na	na	na	na	LS	na
Impact TR-34. The Other Nonchemical Control/Trapping Alternative would have a less-than-significant impact either directly or through habitat modifications, on any terrestrial species identified as a candidate, sensitive, or special-status species. No mitigation is required.	na	na	na	na	na	LS
Impact TR-35. The Other Nonchemical Control/Trapping Alternative would have no impact on any riparian habitat or other sensitive natural community.	na	na	na	na	na	N

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact TR-36. The Other Nonchemical Control/Trapping Alternative would have no impact on federally protected wetlands as defined by CWA Section 404.	na	na	na	na	na	N
Impact TR-37. The Other Nonchemical Control/Trapping Alternative would have no impact on the movement of any native resident or migratory fish or wildlife species. Nor would it impact any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.	na	na	na	na	na	N
Impact TR-38. The Other Nonchemical Control/Trapping Alternative would have no impact on local policies or ordinances protecting terrestrial resources.	na	na	na	na	na	N
Impact TR-391. The Other Nonchemical Control/Trapping Alternative would have no impact on approved HCPs, NCCPs, or local conservation plans.	na	na	na	na	na	N
6. Ecological Health						
Impact ECO-1: The Surveillance Alternative would have a less-than-significant impact on nontarget ecological receptors, including native or special-status plants and animals and mitigation is not required.	LS	na	na	na	na	na
Impact ECO-2: The Physical Control Alternative would have a less-than-significant impact to nontarget ecological receptors and mitigation is not required.	na	LS	na	na	na	na
Impact ECO-3: The employment of a nonherbicide Vegetation Management Alternative in the form of physical removal would result in a less-than-significant impact to nontarget ecological receptors and mitigation is not required.	na	na	LS	na	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact ECO-4: The use of any of the selected herbicides as a vegetation management technique would result in a less-than-significant impact to nontarget ecological receptors and mitigation is not required.	na	na	LS	na	na	na
Impact ECO-5: The use of glyphosate would result in a less-than-significant impact to nontarget ecological receptors and mitigation is not required.	na	na	LS	na	na	na
Impact ECO-6: The use of adjuvants would result in a less-than-significant impact to nontarget ecological receptors and mitigation is not required.	na	na	LS	na	na	na
Impact ECO-7: The use of mosquitofish as a Biological Control Alternative would result in a less-than-significant impact to nontarget ecological receptors and mitigation is not required.	na	na	na	LS	na	na
Impact ECO-8: The use of bacterial larvicides would result in a less-than-significant impact to nontarget ecological receptors and mitigation is not required.	na	na	na	na	LS	na
Impact ECO-9: The use of methoprene for mosquito larvae would result in a less-than-significant impact to nontarget ecological receptors and mitigation is not required.	na	na	na	na	LS	na
Impact ECO-10: The use of surfactants for the control of mosquito larvae would result in a less-than-significant impact to nontarget ecological receptors and mitigation is not required.	na	na	na	na	LS	na
Impact ECO-11: The use of pyrethrins for adult mosquitoes and yellow jacket wasps would result in a less-than-significant impact to nontarget ecological receptors including aquatic organisms and bees and mitigation is not required.	na	na	na	na	LS	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact ECO-12: The use of pyrethroids and pyrethroid-like compounds (e.g., resmethrin, permethrin, and etofenprox) for mosquitoes and yellow jacket wasps would result in a less-than-significant impact to nontarget ecological receptors and mitigation is not required.	na	na	na	na	LS	na
Impact ECO-13: The use of synergists (PBO) for mosquitoes and yellow jacket wasps would result in a less-than-significant impact to nontarget ecological receptors and mitigation is not required.	na	na	na	na	LS	na
Impact ECO-14: The use of pyrethroids and pyrethroid-like compounds for yellow jacket wasps and ticks would result in a less-than-significant impact to nontarget ecological receptors and mitigation is not required.	na	na	na	na	LS	na
Impact ECO-15: The Other Nonchemical Control/Trapping Alternative would result in a less-than-significant impact to nontarget ecological receptors and mitigation is not required.	na	na	na	na	na	LS
7. Human Health						
Impact HH-1: No impact would occur to human health from the use of the Surveillance Alternative.	N	na	na	na	na	na
Impact HH-2: Impacts to human health from use of the Physical Control Alternative would be less than significant and mitigation is not required.	na	LS	na	na	na	na
Impact HH-3: No impact would occur to human health from the nonherbicide Vegetation Management Alternative.	na	na	N	na	na	na
Impact HH-4: Impacts to human health from the herbicides imazapyr and triclopyr would be less than significant and mitigation is not required.	na	na	LS	na	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact HH-5: Impacts to human health from the use of glyphosate would be less than significant and mitigation is not required.	na	na	LS	na	na	na
Impact HH-6: Impacts to human health from the use of pesticide adjuvants would be less than significant and mitigation is not required.	na	na	LS	na	na	na
Impact HH-7: No impact would occur to human health from the use of mosquitofish.	na	na	na	N	na	na
Impact HH-8a: No impact would occur to human health from the use of bacterial larvicides.	na	na	na	na	N	na
Impact HH-8b: No impact would occur to human health from the use of the mosquito larvicide methoprene.	na	na	na	na	N	na
Impact HH-8c: No impact would occur to human health from the use of surfactant larvicides (alcohol ethoxylated surfactant and aliphatic solvents).	na	na	na	na	N	na
Impact HH-9: Impacts to human health from the use of pyrethrins would be less than significant and mitigation is not required.	na	na	na	na	LS	na
Impact HH-10: Impacts to human health from the use of pyrethroids and pyrethroid-like compounds as mosquito adulticides would be less than significant and mitigation is not required.	na	na	na	na	LS	na
Impact HH-11: Impacts to human health from the use of the synergist PBO in mosquito adulticides would be less than significant and mitigation is not required.	na	na	na	na	LS	na
Impact HH-12: No impact would occur to human health from the District's use of the Other Nonchemical Control/Trapping Alternative.	na	na	na	na	na	N

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
8. Public Services and Hazard Response						
Impact PSH-1: Surveillance activities would not increase demand for police, fire, or health-care services. Therefore, no impact would occur.	N	na	na	na	na	na
Impact PSH-2: Surveillance activities would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, no impact would occur.	N	na	na	na	na	na
Impact PSH-3: Surveillance activities would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, no impact would occur.	N	na	na	na	na	na
Impact PSH-4: Physical control activities would not increase demand for police, fire, or health-care services. Therefore, no impact would occur.	na	N	na	na	na	na
Impact PSH-5: Physical control activities do not include the use of pesticides or herbicides; therefore, these activities would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, no impact would occur.	na	N	na	na	na	na
Impact PSH-6: Physical control activities would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, no impact would occur.	na	N	na	na	na	na
Impact PSH-7: Vegetation management activities would not increase demand for police, fire, or health-care services. Therefore, no impact would occur.	na	na	N	na	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact PSH-8: Vegetation management activities would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, no impact would occur.	na	na	N	na	na	na
Impact PSH-9: Vegetation management activities would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, no impact would occur.	na	na	N	na	na	na
Impact PSH-10: Biological control activities would not increase demand for police, fire, or health-care services. Therefore, no impact would occur.	na	na	na	N	na	na
Impact PSH-11: Biological control activities would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, no impact would occur.	na	na	na	N	na	na
Impact PSH-12: Biological control activities would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, no impact would occur.	na	na	na	N	na	na
Impact PSH-13: Chemical control activities would not increase demand for police, fire, or health-care services. Therefore, no impact would occur.	na	na	na	na	N	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact PSH-14: Chemical control ground larviciding and adulticiding activities for mosquitoes would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, no impact would occur.	na	na	na	na	N	na
Impact PSH-15: Chemical control ground larviciding and adulticiding activities would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, no impact would occur.	na	na	na	na	N	na
Impact PSH-16: Chemical control (aerial application) activities would not increase demand for police, fire, or health-care services. Therefore, no impact would occur.	na	na	na	na	N	na
Impact PSH-17: Chemical control (aerial application) activities would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, no impact would occur.	na	na	na	na	N	na
Impact PSH-18: Chemical control (aerial application) activities would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, no impact would occur.	na	na	na	na	N	na
Impact PSH-19: Chemical control for yellow jackets and ticks would not increase demand for police, fire, or health-care services. Therefore, no impact would occur.	na	na	na	na	N	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
<p>Impact PSH-20: Chemical control of yellow jackets and ticks would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, no impact would occur.</p>	na	na	na	na	N	na
<p>Impact PSH-21: Chemical control of yellow jackets and ticks would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, no impact would occur.</p>	na	na	na	na	N	na
<p>Impact PSH-22: Other Nonchemical Control/Trapping Alternative activities would not increase demand for police, fire, or health-care services. Therefore, no impact would occur.</p>	na	na	na	na	na	N
<p>Impact PSH-23: The Other Nonchemical Control/Trapping Alternative would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, no impact would occur.</p>	na	na	na	na	na	N

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
<p>Impact PSH-24: The Other Nonchemical Control/Trapping Alternative would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, no impact would occur.</p>	na	na	na	na	na	N
9. Water Resources						
<p>Impact WR-1: The Surveillance Alternative would not result in increased soil erosion, so the impact to surface water would be less than significant. No mitigation is required.</p>	LS	na	na	na	na	na
<p>Impact WR-2: The Surveillance Alternative collection devices would not contact nor interact with the environment. No impact would occur to surface or groundwater.</p>	N	na	na	na	na	na
<p>Impact WR-3: The Physical Control Alternative’s activities to modify water circulation, remove sediment, and maintain water control facilities to reduce habitat conditions for mosquito production would have a less-than-significant impact on soil erosion and water resources and no mitigation is required.</p>	na	LS	na	na	na	na
<p>Impact WR-4: Mechanical removal of vegetation from aquatic habitats would have a less-than-significant impact to surface water and no impact to groundwater resources. No mitigation is required.</p>	na	na	LS, N	na	na	na
<p>Impact WR-5: Application of the herbicides imazapyr and glyphosate would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.</p>	na	na	LS	na	na	na
<p>Impact WR-6: Application of the herbicide triclopyr would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.</p>	na	na	LS	na	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact WR-7: For nonylphenol and APEs, application of these herbicides would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	LS	na	na	na
Impact WR-8: Application of modified plant oils and lecithins would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	LS	na	na	na
Impact WR-9: The Biological Control Alternative’s use of mosquitofish limits wastewater discharges to the sanitary sewer or upland areas. Therefore, the use of mosquitofish would have a less-than-significant impact on surface and groundwater resources and no mitigation is required.	na	na	na	LS	na	na
Impact WR-10: The Biological Control Alternative’s use of mosquitofish is limited to man-made water features that are hydrologically isolated from receiving waters. Therefore, the use of mosquitofish would have a less-than-significant impact on surface and groundwater resources and no mitigation is required.	na	na	na	LS	na	na
Impact WR-11: Application of the biological agents Bs, Bti, and spinosad would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na
Impact WR-12: Application of methoprene would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na
Impact WR-13: Application of the surfactant larvicides oxyethylene, mineral oils, and aliphatic petroleum hydrocarbons would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact WR-14: Application of the synergist PBO would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na
Impact WR-15: Application of pyrethrins would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na
Impact WR-16: Application of allethrins would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na
Impact WR-17: Application of permethrin would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na
Impact WR-18: Application of phenothrin would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na
Impact WR-19: Application of prallethrin would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na
Impact WR-20: Application of resmethrin would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na
Impact WR-21: Application of tetramethrin would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na
Impact WR-22: Application of deltamethrin would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na
Impact WR-23: Application of esfenvalerate would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact WR-24: Application of etofenprox would have a less-than-significant impact to surface and groundwater resources and no mitigation is required.	na	na	na	na	LS	na
Impact WR-25: The Nonchemical Control/Trapping Alternative collection techniques use tamper-resistant or baited traps, which limit the exposure of chemical-containing baits to the environment no impact would occur to surface water or groundwater.	na	na	na	na	na	N
10. Effects on Air Quality						
Impact AQ-1: Based on the general inclusion of Surveillance Alternative emissions in the SIP emission inventory and the compliance with applicable air regulations, the Surveillance Alternative would not conflict with applicable air quality plans. Impacts would be less than significant and no mitigation is required.	LS	na	na	na	na	na
Impact AQ-2: Based on estimated daily emissions for each criteria pollutant, the Surveillance Alternative would not violate an ambient air quality standard. Impacts would be less than significant and no mitigation is required.	LS	na	na	na	na	na
Impact AQ-3: Based on estimated daily emissions for each criteria pollutant, the Surveillance Alternative would not result in a cumulatively considerable increase of nonattainment pollutants. Impacts would be less than significant and no mitigation is required.	LS	na	na	na	na	na
Impact AQ-4: Based on the estimated daily emissions for each criteria pollutant, the Surveillance Alternative would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant and no mitigation is required.	LS	na	na	na	na	na
Impact AQ-5: The Surveillance Alternative would not subject people to objectionable odors. No impact would occur.	N	na	na	na	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
<p>Impact AQ-6: Based on the general inclusion of Physical Control Alternative emissions in the SIP emission inventory and the compliance with applicable air regulations, the Physical Control Alternative would not conflict with applicable air quality plans. Impacts would be less than significant and no mitigation is required.</p>	na	LS	na	na	na	na
<p>Impact AQ-7: Based on estimated daily emissions for each criteria pollutant, the Physical Control Alternative would not violate an ambient air quality standard. Impacts would be less than significant and no mitigation is required.</p>	na	LS	na	na	na	na
<p>Impact AQ-8: Based on estimated daily emissions for each criteria pollutant, the Physical Control Alternative would not result in a cumulatively considerable increase of nonattainment pollutants. Impacts would be less than significant and no mitigation is required.</p>	na	LS	na	na	na	na
<p>Impact AQ-9: Based on the estimated daily emissions for each criteria pollutant, the Physical Control Alternative would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant and no mitigation is required.</p>	na	LS	na	na	na	na
<p>Impact AQ-10: The Physical Control Alternative would not subject people to objectionable odors. No impact would occur.</p>	na	N	na	na	na	na
<p>Impact AQ-11: Based on the general inclusion of Vegetation Management Alternative emissions in the SIP emission inventory and the compliance with applicable air regulations, the Vegetation Management would not conflict with applicable air quality plans. Impacts would be less than significant and no mitigation is required.</p>	na	na	LS	na	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact AQ-12: Based on estimated daily emissions for each criteria pollutant, the Vegetation Management Alternative would not violate an ambient air quality standard. Impacts would be less than significant and no mitigation is required.	na	na	LS	na	na	na
Impact AQ-13: Based on estimated daily emissions for each criteria pollutant, the Vegetation Management Alternative would not result in a cumulatively considerable increase of nonattainment pollutants. Impacts would be less than significant and no mitigation is required.	na	na	LS	na	na	na
Impact AQ-14: Based on the estimated daily emissions for each criteria pollutant, the Vegetation Management Alternative would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant and no mitigation is required.	na	na	LS	na	na	na
Impact AQ-15: The Vegetation Management Alternative would not subject people to objectionable odors. No impact would occur.	na	na	N	na	na	na
Impact AQ-16: Based on the general inclusion of Biological Control Alternative emissions in the SIP emission inventory and the compliance with applicable air regulations, the Biological Control Alternative would not conflict with applicable air quality plans. Impacts would be less than significant and no mitigation is required.	na	na	na	LS	na	na
Impact AQ-17: Based on estimated daily emissions for each criteria pollutant, the Biological Control Alternative would not violate an ambient air quality standard. Impacts would be less than significant and no mitigation is required.	na	na	na	LS	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact AQ-18: Based on estimated daily emissions for each criteria pollutant, the Biological Control Alternative would not result in a cumulatively considerable increase of nonattainment pollutants. Impacts would be less than significant and no mitigation is required.	na	na	na	LS	na	na
Impact AQ-19: Based on the estimated daily emissions for each criteria pollutant, the Biological Control Alternative would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant and no mitigation is required.	na	na	na	LS	na	na
Impact AQ-20: The Biological Control Alternative would not subject people to objectionable odors. No impact would occur.	na	na	na	N	na	na
Impact AQ-21: Based on the general inclusion of Chemical Control Alternative emissions in the SIP emission inventory and the compliance with applicable air regulations, the Chemical Control Alternative would not conflict with applicable air quality plans. Impacts would be less than significant and no mitigation is required.	na	na	na	na	LS	na
Impact AQ-22: Based on estimated daily emissions for each criteria pollutant, the Chemical Control Alternative would not violate an ambient air quality standard. Impacts would be less than significant and no mitigation is required.	na	na	na	na	LS	na
Impact AQ-23: Based on estimated daily emissions for each criteria pollutant, the Chemical Control Alternative would not result in a cumulatively considerable increase of nonattainment pollutants. Impacts would be less than significant and no mitigation is required.	na	na	na	na	LS	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
Impact AQ-24: Based on the estimated daily emissions for each criteria pollutant, the Chemical Control Alternative would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant and no mitigation is required.	na	na	na	na	LS	na
Impact AQ-25: The Chemical Control Alternative could subject people to objectionable odors. Impacts could be potentially significant but mitigable , even with BMPs implemented.	na	na	na	na	SM	na
Impact AQ-26: Based on the general inclusion of Other Nonchemical Control/Trapping Alternative emissions in the SIP emission inventory and the compliance with applicable air regulations, the Other Nonchemical Control/Trapping Alternative would not conflict with applicable air quality plans. Impacts would be less than significant and no mitigation is required.	na	na	na	na	na	LS
Impact AQ-27: Based on estimated daily emissions for each criteria pollutant, the Other Nonchemical Control/Trapping Alternative would not violate an ambient air quality standard. Impacts would be less than significant and no mitigation is required.	na	na	na	na	na	LS
Impact AQ-28: Based on estimated daily emissions for each criteria pollutant, the Other Nonchemical Control/Trapping Alternative would not result in a cumulatively considerable increase of nonattainment pollutants. Impacts would be less than significant and no mitigation is required.	na	na	na	na	na	LS
Impact AQ-29: Based on the estimated daily emissions for each criteria pollutant, the Other Nonchemical Control/Trapping Alternative would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant and no mitigation is required.	na	na	na	na	na	LS

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
<p>Impact AQ-30: The Other Nonchemical Control/Trapping Alternative would not subject people to objectionable odors. No impact would occur.</p>	na	na	na	na	na	N
11. Effects on GHGs						
<p>Impact GHG-1: Based on estimated annual CO₂e emissions, the Surveillance Alternative would not result in a cumulatively considerable amount of GHGs, and neither would the incremental contribution of the District. Impacts would be less than significant and no mitigation is required.</p>	LS	na	na	na	na	na
<p>Impact GHG-2: Based on the general inclusion of Surveillance Alternative emissions in the local and statewide GHG emission inventories, the Surveillance Alternative would not conflict with applicable plans, policies, or regulations for reducing GHG emissions. Impacts would be less than significant and no mitigation is required.</p>	LS	na	na	na	na	na
<p>Impact GHG-3: Based on estimated annual CO₂e emissions, the Physical Control Alternative would not result in a cumulatively considerable amount of GHGs, and neither would the incremental contribution of the District. Impacts would be less than significant and no mitigation is required.</p>	na	LS	na	na	na	na
<p>Impact GHG-4: Based on the general inclusion of Physical Control Alternative emissions in the local and statewide GHG emission inventories, the Physical Control Alternative would not conflict with applicable plans, policies, or regulations for reducing GHG emissions. Impacts would be less than significant and no mitigation is required.</p>	na	LS	na	na	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
<p>Impact GHG-5: Based on estimated annual CO₂e emissions, the Vegetation Management Alternative would not result in a cumulatively considerable amount of GHGs, and neither would the incremental contribution of the District. Impacts would be less than significant and no mitigation is required.</p>	na	na	LS	na	na	na
<p>Impact GHG-6: Based on the general inclusion of Vegetation Management Alternative emissions in the local and statewide GHG emission inventories, the Vegetation Management Alternative would not conflict with applicable plans, policies, or regulations for reducing GHG emissions. Impacts would be less than significant and no mitigation is required.</p>	na	na	LS	na	na	na
<p>Impact GHG-7: Based on estimated annual CO₂e emissions, the Biological Control Alternative would not result in a cumulatively considerable amount of GHGs, and neither would the incremental contribution of the District. Impacts would be less than significant and no mitigation is required.</p>	na	na	na	LS	na	na
<p>Impact GHG-8: Based on the general inclusion of Biological Control Alternative emissions in the local and statewide GHG emission inventories, the Biological Control Alternative would not conflict with applicable plans, policies, or regulations for reducing GHG emissions. Impacts would be less than significant and no mitigation is required.</p>	na	na	na	LS	na	na
<p>Impact GHG-9: Based on estimated annual CO₂e emissions, the Chemical Control Alternative would not result in a cumulatively considerable amount of GHGs, and neither would the incremental contribution of the District. Impacts would be less than significant and no mitigation is required.</p>	na	na	na	na	LS	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
<p>Impact GHG-10: Based on the general inclusion of Chemical Control Alternative emissions in the local and statewide GHG emission inventories, the Chemical Control Alternative would not conflict with applicable plans, policies, or regulations for reducing GHG emissions. Impacts would be less than significant and no mitigation is required.</p>	na	na	na	na	LS	na
<p>Impact GHG-11: Based on estimated annual CO₂e emissions, the Other Nonchemical Control/Trapping Control Alternative would not result in a cumulatively considerable amount of GHGs, and neither would the incremental contribution of the District. Impacts would be less than significant and no mitigation is required.</p>	na	na	na	na	na	LS
<p>Impact GHG-12: Based on the general inclusion of Other Nonchemical Control/Trapping Control Alternative emissions in the local and statewide GHG emission inventories, the Other Nonchemical Control/Trapping Control Alternative would not conflict with applicable plans, policies, or regulations for reducing GHG emissions. Impacts would be less than significant and no mitigation is required.</p>	na	na	na	na	na	LS

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
12. Effects on Noise						
<p>Impact N-1: Use of equipment and vehicles under the Surveillance Alternative would increase noise levels during operations, but this increase would not exceed noise standards. This impact is less than significant based on the frequency and duration of the activity, resulting noise levels, and compliance with BMPs. No mitigation is required.</p>	LS	na	na	na	na	na
<p>Impact N-2: Use of equipment and vehicles under the Surveillance Alternative would cause a temporary increase in noise levels during operations. This increase would not be substantial and, therefore, is less than significant based on the frequency and duration of the activity, resulting noise levels, comparability to noise resulting from existing activities, and implementation of BMPs. No mitigation is required.</p>	LS	na	na	na	na	na
<p>Impact N-3: Use of equipment and vehicles under the Physical Control Alternative would increase noise levels during operations, but this increase would not exceed regulatory thresholds. This impact is less than significant based on the frequency and duration of the activity and resulting noise levels. No mitigation is required.</p>	na	LS	na	na	na	na
<p>Impact N-4: Use of equipment and vehicles under the Physical Control Alternative would cause a temporary increase in noise levels during operations. This increase would not be substantial, and therefore is less than significant based on the frequency and duration of the activity, resulting noise levels, comparability to noise resulting from existing activities, and implementation of BMPs. No mitigation is required.</p>	na	LS	na	na	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
<p>Impact N-5: Use of equipment and vehicles under the Vegetation Management Alternative would increase noise levels during operations, but this increase would not exceed regulatory thresholds. This impact is less than significant based on the frequency and duration of the activity and resulting noise levels. No mitigation is required.</p>	na	na	LS	na	na	na
<p>Impact N-6: Use of equipment and vehicles under the Vegetation Management Alternative would cause a temporary increase in noise levels during operations. This increase would not be substantial, and therefore is less than significant based on the frequency and duration of the activity, resulting noise levels, comparability to noise resulting from existing activities, and implementation of BMPs. No mitigation is required.</p>	na	na	LS	na	na	na
<p>Impact N-7: Use of vehicles under the Biological Control Alternative would increase noise levels during operations, but this increase would not exceed regulatory thresholds. This impact is less than significant based on the frequency and duration of the activity and resulting noise levels. No mitigation is required.</p>	na	na	na	LS	na	na
<p>Impact N-8: Use of vehicles under the Biological Control Alternative would cause a temporary increase in noise levels during operations. This increase would not be substantial and, therefore, is less than significant based on the frequency and duration of the activity and resulting noise levels, and implementation of BMPs. No mitigation is required.</p>	na	na	na	LS	na	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
<p>Impact N-9: Use of equipment and vehicles under the Chemical Control Alternative would increase noise levels during operations, but this increase would not exceed regulatory thresholds. This impact is less than significant based on the frequency and duration of the activity and resulting noise levels. No mitigation is required.</p>	na	na	na	na	LS	na
<p>Impact N-10: Helicopter/aircraft/airboat use under the Chemical Control Alternative would temporarily increase noise levels during operations, but would not exceed regulatory thresholds. This impact is less than significant based on the frequency and duration of the activity and resulting noise levels. No mitigation is required.</p>	na	na	na	na	LS	na
<p>Impact N-11: Use of equipment and vehicles under the Chemical Control Alternative would cause a temporary increase in noise levels during operations. This increase would not be substantial and, therefore, is less than significant based on the frequency and duration of the activity, resulting noise levels, comparability to noise resulting from existing activities, and implementation of BMPs. No mitigation is required.</p>	na	na	na	na	LS	na
<p>Impact N-12: Helicopter/aircraft/airboat use under the Chemical Control Alternative would temporarily increase noise levels during operations, but this increase would not be substantial. This impact is less than significant based on the frequency and duration of the activity, resulting noise levels, and implementation of BMPs. No mitigation is required.</p>	na	na	na	na	LS	na

Table 15-1 Summary of Program Alternative Impacts

Impact Statement	Surveillance	Physical Control	Vegetation Management	Biological Control	Chemical Control	Other Nonchemical/ Trapping
<p>Impact N-13: Use of equipment and vehicles under the Other Nonchemical Control/Trapping Alternative would increase noise levels during operations, but this increase would not exceed regulatory thresholds. This impact is less than significant based on the frequency and duration of the activity and resulting noise levels. No mitigation is required.</p>	na	na	na	na	na	LS
<p>Impact N-14: Use of equipment and vehicles under the Other Nonchemical Control/Trapping Alternative would cause a temporary increase in noise levels during operations. This increase would not be substantial and, therefore, is less than significant based on the frequency and duration of the activity, resulting noise levels, comparability to noise resulting from existing activities, and implementation of BMPs. No mitigation is required.</p>	na	na	na	na	na	LS

LS = Less-than-significant impact

N = No impact

na = Not applicable

SM = Potentially significant but mitigable impact

SU = Significant and unavoidable impact

Table 15-2 Comparison of Reduced Program Alternatives to Proposed Program

	Proposed Program	Reduced Chemical Control Program	No Chemical Control Program
<i>Alternative Component</i>			
Surveillance	Included	Included	Included
Physical Control	Included	Included	Included
Vegetation Management > Physical Methods > Herbicides/Adjuvants	All physical methods and chemical options included	All physical methods and chemical options included	Includes physical methods only. > Excludes all herbicides and adjuvants. > Less effective with greater reliance on physical and mosquitofish options
Biological Control	Mosquitofish	Mosquitofish	Mosquitofish
Chemical Control	Use any or all pesticides and adjuvants, surfactants, and synergists listed in Chapter 2	Use less of or eliminate one or more of the following: > Deltamethrin > Etofenprox > Permethrin > Resmethrin > Pyrethrin > Bti liquid	Use none of the pesticides and adjuvants, surfactants, and synergists listed in Chapter 2
Nonchemical Control/Trapping	Included	Included	Included

Table 15-2 Comparison of Reduced Program Alternatives to Proposed Program

	Proposed Program	Reduced Chemical Control Program	No Chemical Control Program
<i>Impacts</i>			
Biological Resource Impacts (excluding ecological health)	No Impact or Less-than-Significant Impact	No Impact or Less-than-Significant Impact	No Impact or Less-than-Significant Impact
Physical Resource Impacts (excluding air quality odors)	No Impact or Less-than-Significant Impact	No Impact or Less-than-Significant Impact	No Impact or Less-than-Significant Impact
Air Quality - Odors	Potentially Significant but Mitigable Impact Less-than-Significant after Mitigation	Less-Than-Significant Impact	No Impact
Ecological Health Impacts	Less-than-Significant Impact	Less-than-Significant Impact	Potentially Significant Impact
Human Health Impacts	No Impact or Less-than-Significant Impact	No Impact or Less-than-Significant Impact	Significant and Unavoidable Impacts

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