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4.4 PUBLIC HEALTH AND SAFETY

INTRODUCTION

This section discusses public health and safety issues associated with the Project's proposed use of recycled water for irrigation, the potential exposure of workers or the public to hazards from the storage, use and potential release of hazardous materials, construction safety hazards, aircraft hazards and disease vectors. To allow evaluation of these impacts, use of recycled water for irrigation is characterized, and regulations for water reclamation are presented. Information on current and potential hazardous materials storage and use at the White Slough Pollution Control Facility and the City of Lodi ProStyle Sports Complex is summarized. Policies and regulations regarding construction and aircraft hazards and vector control are presented.

IMPACTS EVALUATED IN OTHER SECTIONS

The following items are related to Public Health and Safety but are evaluated in other sections of this document.

- Geologic Hazards. These are discussed in Section 4.2, Geology.
- Water Quality Issues Regarding Groundwater, Surface Water and Drinking Water Supplies. These issues are evaluated in Section 4.3, Water Quality and Hydrology and Section 4.11, Public Services.
- Emergency Response Plans. Section 4.6, Transportation, discusses and evaluates impacts of the project required lane closures upon emergency services.

AFFECTED ENVIRONMENT (SETTING)

Water Reclamation and Reuse

The Project alternatives propose to irrigate playing fields and landscaped areas at the ProStyle Sports Complex with tertiary treated recycled water from the White Slough Pollution Control Facility. These uses would conform with the State's recycled water regulations, which are contained in Title 22 of the California Code of Regulations (Title 22, California Code of Regulations §60304). Uses approved by Title 22 specifically include irrigation of food crops, parks and playgrounds, school yards, residential landscaping, and golf courses—some of which are proposed uses at the City's ProStyle Sports Complex. The proposed uses would be consistent with the practices of many cities in California (e.g., Santa Rosa, San Jose, Carmel/Monterey and San Diego) that already use tertiary treated recycled water to irrigate landscaping and playing fields at parks, schools and golf courses.

Recycled water may also be used in buildings to supply the fire protection system (e.g., ceiling sprinklers) and possibly for flushing restroom toilets. The use of disinfected tertiary treated

recycled water for flushing toilets and urinals is permitted by California regulations (Title 22, California Code of Regulations §60307). California's regulations also permit the use of disinfected tertiary treated recycled water for "structural fire fighting" (Title 22, California Code of Regulations §60307), for example to supply fire hydrants. The regulations do not, however, specifically address the use of recycled water for fire control in buildings (e.g., for overhead sprinkler systems), although this use has been permitted in some buildings in California. This type of use is considered on a case-by-case basis. Due to the absence of specific regulations addressing this application for recycled water and based on the experiences of other California cities, a number of State and local agencies would be involved in the permitting process, including the California Department of Health Services, the Central Valley Regional Water Quality Control Board (Central Valley Regional Board), San Joaquin County Public Health Services, the City of Lodi Fire Department and the Delta and Woodbridge Fire Protection Districts. Issues that would need to be addressed include those associated both with water quality (e.g., use of recycled water in building areas used for food handling and preparation) and with fire protection system reliability (e.g., the ability to deliver a dependable, adequate supply of water during a fire). Should regulatory approvals for using recycled water for fire fighting uses be in question, a potable system will be designed to provide water for these uses.

To ensure an appropriate level of treatment for protection of public health from pathogenic organisms[1], the California Department of Health Services has established treatment requirements for a variety of recycled water uses (Title 22, California Code of Regulations, §60301 *et seq.*). These conventional and widely practiced water and wastewater treatment processes are believed to be capable of reducing pathogenic constituents to acceptable levels. Current Title 22 criteria for recycled water are intended to prevent transmission of disease by any of the possible mechanisms: skin contact; ingestion; or inhalation of infectious agents in water or by direct contact with a contaminated object. Recycled water must be treated to an appropriate level to protect surface water and to prevent transmission of pathogens through aerosols (small particles of water suspended in air) from spray irrigation.

The California Department of Health Services recently updated California's recycled water regulations. These revisions were incorporated into the California Code of Regulations in December 2000. The level of treatment, required in the proposed regulations, varies with the ultimate use of the recycled water but at minimum, wastewater must receive secondary treatment prior to use as recycled water (Table 4.4-1). The most stringent criteria require secondary treatment plus advanced treatment processes of coagulation, clarification, filtration, and disinfection (i.e., tertiary treatment). The level of disinfection required depends upon the ultimate use of the water, but the most restrictive requirement is for spray irrigation in parks, playgrounds, and residential landscaping.

[1] Untreated wastewater contains pathogenic organisms (i.e., bacteria, viruses, and parasites) that must be removed to allow safe use of recycled water. The potential for pathogenic contamination of recycled water is expressed as the number (measured by the Most Probable Number [MPN]) of coliform bacteria present in water sources. Coliform bacteria are "indicator organisms" whose presence is evidence that pollution (associated with fecal contamination from humans or other warm-blooded animals) has occurred. Indicator organisms may be accompanied by pathogens, but do not necessarily cause disease themselves. Indicators have the following general characteristics: they are absent from unpolluted waters; are present in greater numbers than pathogenic organisms; have greater survival time than pathogens; and their detection is generally more reliable and less time-consuming.

Tertiary treated recycled water from the White Slough Pollution Control Facility would meet the most stringent requirements for recycled water use in accordance with Title 22 regulations. The Control Facility currently provides secondary treatment of its wastewater prior to its discharge to Dredger Cut. Prior to construction of the proposed ProStyle Sports Complex the Control Facility plans to make improvements to accommodate the tertiary treatment of approximately 2.5 million gallons per day of the secondary effluent stream. The additional treatment will involve chemical flocculation, filtration, and disinfection prior to storage of recycled water for distribution.

Discharges of recycled water to surface waters (rivers, lakes and streams) are regulated under the Federal Clean Water Act and in California under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act, California Water Code §13000 *et seq.*). The Porter-Cologne Act also addresses recycled water discharges that may affect groundwater quality. The Clean Water Act's broad objective is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." To meet this objective, the EPA has set up a system of permitting and licensing, the National Pollutant Discharge Elimination System (NPDES), to monitor and control recycled water discharges. In the study area, this system is administered by the State Water Resources Control Board and the Central Valley Regional Board, which are part of the California EPA.

Publicly Owned Treatment Works (POTWs), such as the White Slough Water Pollution Control Facility, operate under the NPDES and must have an NPDES permit to discharge recycled water. The permit sets discharge requirements and specifies what chemicals the POTW must monitor. Because the White Slough Water Pollution Control Facility has a daily flow of more than five million gallons it is required to establish an industrial pretreatment program to control industrial discharges into the sewer system. The standards were established to prevent discharges that would interfere with the POTW's treatment equipment or operations or endanger personnel and to prevent discharges that could not be adequately treated before discharge by the POTW. Industrial discharges (primarily food processing wastes and some metal finishing wastes) are collected by a system that is separate from the domestic waste collection system. Industrial dischargers must pretreat their wastewater to standards set by the EPA and the State Water Resources Control Board. The White Slough Water Pollution Control Facility has a pretreatment program and other programs to minimize the introduction of chemicals into the White Slough Water Pollution Control Facility. Recycled water derived from the industrial waste stream is currently used to irrigate the land where the proposed Project will be located. However, treated industrial wastewater would not be used at the ProStyle Sports Complex. Only recycled water from the domestic wastewater stream would be used at the proposed facility. It may be possible to design a recycled water system to adequately serve the requirements of both the irrigation system and fire fighting systems. A detailed hydraulic analysis will be required prior to final design of the recycled water system to ensure it meets the needs of both uses. This analysis will show there may be conflicting hydraulic criteria for each use. If this is the case, the potable water system will be designed to provide water for the fire protection systems.

Table 4.4-1

Categories of Recycled Water Usage[1]

Use Category	Disinfection Criteria
Parks and playgrounds Residential landscaping Any irrigation use not prohibited by the California Code of Regulations	Recycled water used for the surface irrigation in this category shall be a disinfected tertiary recycled water. Disinfected tertiary recycled water means filtered and disinfected wastewater that meets the following criteria: (a) The filtered wastewater has been disinfected by either: (1) A chlorine disinfection process following filtration that provides a chlorine contact time (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or (2) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration. (b) The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.
Any nonedible vegetation where access is controlled so that the irrigated area cannot be used as if it were part of a park, playground or school yard.	Recycled water used for surface irrigation in this category shall be at least disinfected secondary-23 recycled water. "Disinfected secondary-23 recycled water" means recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed an MPN of 23 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30 day period.
Flushing toilets and urinals Priming drain traps Structural fire fighting Decorative fountains Commercial laundries	Recycled water used for these purposes shall be disinfected tertiary recycled water, except that for filtration being provided pursuant to Section 60301.320(a) coagulation need not be used as part of the treatment process provided that the filter effluent turbidity does not exceed 2 NTU, the turbidity of the influent to the filters is continuously measured, the influent turbidity does not exceed 5 NTU for more than 15 minutes and never exceeds 10 NTU, and that there is the capability to automatically activate chemical addition or divert the wastewater should the filter influent turbidity exceed 5 NTU for more than 15 minutes.

Source: Title 22, California Code of Regulations

1. Additional allowable uses (e.g., artificial snow making and irrigation of food crops) are identified by the regulations. Only those possibly applicable to the proposed project are included here.

Hazardous Materials and Hazardous Waste

Over the past two decades there has been significant legislation passed at all levels of government that attempts to better regulate hazardous materials and hazardous waste for the protection of public health and the environment. This legislation requires specific actions by businesses and local governments in assessing and planning for the safe handling and disposal of hazardous materials. The following sections discuss the laws and regulations of the State of California and the Federal government to regulate hazardous materials and hazardous waste.

Hazardous Materials Storage and Use

State law requires businesses to obtain a permit for any facility in which hazardous materials are stored. Businesses must also develop procedures to handle hazardous materials safely. These procedures are compiled in a plan called a "business plan" or Hazardous Materials Management Plan. In San Joaquin County, permitted facilities must submit a Hazardous Materials Management Plan to the County that describes procedures for monitoring the stored materials to detect releases, for regular testing of the detection systems and for inspections. The State law also requires permitted facilities to submit an annual Hazardous Materials Inventory Statement, which is an inventory of all hazardous materials stored. The White Slough Water Pollution Control Facility has prepared an Hazardous Materials Management Plan that addresses the storage and handling of hazardous materials during operation of the plant and submits an updated inventory each year.

A variety of hazardous materials, including chlorine to disinfect wastewater and sulfur dioxide to neutralize the chlorine, are currently stored and used at the White Slough Water Pollution Control Facility. The Project would cause the use of chlorine and sulfur dioxide to increase because of the need to provide tertiary treated, recycled water to the ProStyle Sports Complex. However, the volume of chlorine and sulfur dioxide stored on-site at any given time would not increase because existing storage tanks have an adequate capacity to meet both the existing and proposed treatment needs. Additional hazardous materials, such as fuels, motor oils, paints, and compressed gases, would be used during construction of the ProStyle Sports Complex. While these are commonly used materials, if handled improperly (fuels, for example, are flammable) they could endanger workers and the public. Their use, however, would present a minor risk.

Accidental Release Prevention Law

In 1986, California adopted the La Follette Bill, which was the predecessor to the Accidental Release Prevention Law. The La Follette Bill regulated "acutely hazardous materials" and was intended to expand control over materials that can produce toxic clouds after fires, explosions or other accidents. In 1996, the State codified the programs created under the La Follette Bill into the Accidental Release Prevention Law. This new law provided improved consistency with Federal laws (i.e., the Emergency Preparedness and Community Right-to-Know Act and the Clean Air Act) that allow local oversight of

both the State and Federal programs. The State and Federal laws are similar in their requirements, however the California threshold planning quantities for regulated substances are lower than the Federal values. Local agencies may set lower reporting thresholds or add chemicals to the program.

Beginning in 1997 the Accidental Release Prevention Law has been implemented by the State's local Certified Unified Program Agency, which in San Joaquin County is the Office of Emergency Services. Any business, including the White Slough Water Pollution Control Facility, where the maximum quantity of a regulated substance exceeds the specified threshold planning quantities must register with the County as a manager of regulated substances and prepare a Risk Management Plan. Stored quantities of chlorine and sulfur dioxide exceed their respective thresholds at the White Slough Water Pollution Control Facility. The current Risk Management Plan for the facility was prepared in 1998. As required by law, it contains an offsite consequence analysis, a five-year accident history (there have been no accidents during this time), an accident prevention program, an emergency response program, and a certification of the truth and accuracy of the submitted information.

The off-site consequence analysis in the Risk Management Plan assesses several potential release scenarios for chlorine and sulfur dioxide from their respective storage tanks. Should a storage tank or a connection fail, chlorine gas or sulfur dioxide vapor could be released to the atmosphere. Nearby workers, residents, or other members of the public could breathe potentially harmful concentrations of these chemicals. The Risk Management Plan identifies the nearest receptor to the White Slough Pollution Control Facility as a residential population located about 0.7 miles northeast of the plant. A few other businesses and residences are located within 1.7 miles, the endpoint for the worst case and alternative release scenarios. The proposed project would be located a few hundred feet east of the White Slough Pollution Control Facility across Interstate 5, much closer than the current closest receptor.

Emergency Planning and Community Right-to-Know Act

The Emergency Planning and Community Right-to-Know Act (EPCRA) was adopted as Title III of the Superfund Amendments and Reauthorization Act of 1986. It was developed partly as a response to the December 1984 toxic gas disaster in Bhopal, India. The incident focused attention on the possibility that accidents at facilities handling hazardous chemicals could harm neighboring communities. The law is intended to increase public access to information about the storage and use of hazardous chemicals.

EPCRA establishes four programs for making information about hazardous chemicals available to emergency response agencies and the general public. These include emergency planning for facilities that handle extremely hazardous substances; reporting requirements for spills and leaks of extremely hazardous substances; reporting hazardous substances in the workplace; and compilation of toxic release inventories. At the Federal level the EPA administers EPCRA. However, some of its components overlap with state requirements (e.g., the Waters and LaFollette Bills) that predated EPCRA, and these are

implemented at the state or local level (see the previous discussion of California's Accidental Release Prevention Law). Businesses, institutions and other entities in San Joaquin County, that use, store or release hazardous substances submit most of the required information to the County's Office of Emergency Services, the State's local Certified Unified Program Agency.

Resource Conservation and Recovery Act

The Federal hazardous waste laws are generally known as the Resource Conservation and Recovery Act (RCRA). These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused or disposed. The EPA has primary responsibility for implementing RCRA but, in California, has delegated that responsibility to the California EPA Department of Toxic Substances Control. The Department of Toxic Substances Control also implements and enforces California's own hazardous waste laws, which are known collectively as the Hazardous Waste Control Law.

The Department of Toxic Substances Control has delegated some of its authority for the enforcement of RCRA and California hazardous waste regulations to county health departments and other local Certified Unified Program Agencies. The San Joaquin County Office of Emergency Services periodically inspects the hazardous materials and hazardous waste storage areas of businesses and institutions in San Joaquin County. It can issue citations or take other appropriate enforcement actions in the event that it discovers a violation. The storage, use and disposal of hazardous materials during the construction and operation of the project must comply with Federal, State and local hazardous materials and hazardous waste laws.

Construction Hazards

Hazards associated with construction activities can affect the safety of both workers and the general public. The safety of workers is regulated by the California Occupational Safety and Health Administration, which receives its authority from Title 8 of the California Code of Regulations. These regulations also indirectly protect the general public by requiring construction managers to post warnings signs, to limit public access to construction areas, and to obtain permits for work considered to present a significant risk of injury (e.g., excavations greater than 5 feet into which a person is required to descend).

Where excavations or other Project activities would occur in public rights-of-way, an encroachment permit is required from the appropriate agency such as the California Department of Transportation for State highways, Lodi Department of Public Works for city streets or the San Joaquin County Department of Public Works for county roads (refer to Section 4.6, Transportation). These permits are designed to protect the public by providing a system of notification to providers of emergency or other important services of road closures. Compliance with these requirements would minimize the safety and health hazards associated with construction activities.

Vector Control

Mosquitoes are both pests and vectors of disease to humans and animals. Mosquito populations can increase rapidly, especially during the warmer summer months. Many species of mosquitoes are known to occur within the Project area. Several of these have the potential to breed and to reproduce as a result of the construction and operation of Project components (e.g., storm water retention areas).

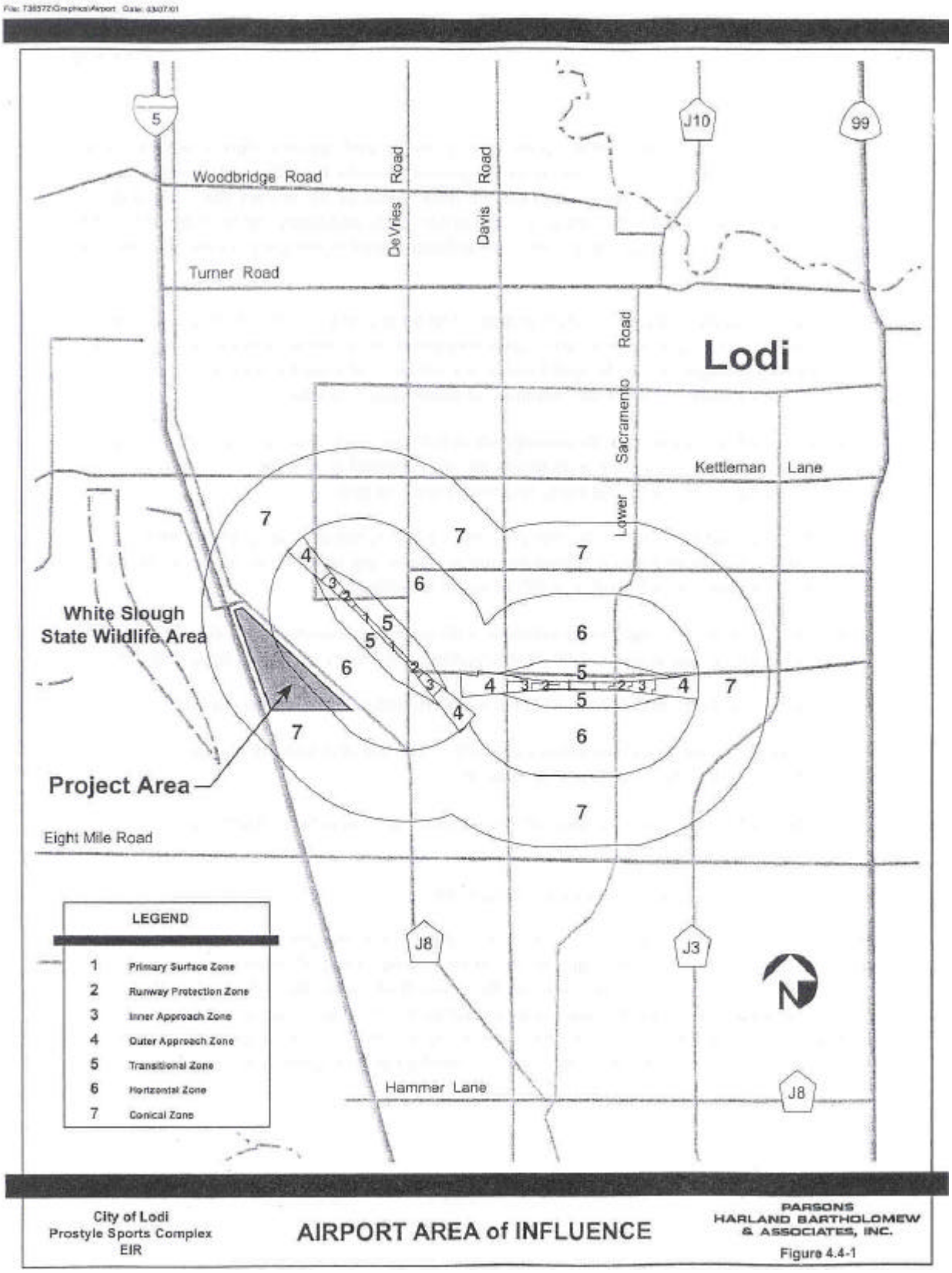
The California Health and Safety Code provides authority for mosquito abatement districts to advise and control mosquito production on private and public lands and to assess the land owner for the cost of that control. The districts also have the authority to hold hearings and assess civil penalties to abate nuisance and potential health threats to the general public (California Health and Safety Code, Sections 2270-2294). The San Joaquin County Mosquito and Vector Control District (Control District) and the Vector Biology and Control Branch of the California Department of Health Services (State Vector Control Branch) are responsible for overseeing the mosquito prevention program within the Project area. The primary objective of the Control District is to suppress the mosquito population below the threshold level required for disease transmission or nuisance tolerance level.

The State Vector Control Branch has produced several documents addressing mosquitoes and other biting arthropods associated with wastewater reclamation or disposal projects. These documents provide project design criteria for mosquito prevention as well as guidelines for proper management of wastewater reclamation or disposal projects. The design criteria include minimizing the amount of over-irrigation, ponding, or tail water, thereby significantly reducing the need to treat these sites with pesticides and the subsequent need to provide the Control District with compensation for that control effort.

Airport Safety

The proposed project site is located within the area of influence for the Kingdon Airpark and Precissi Airport, according to the San Joaquin county Council of Governments Airport Land Use Plan (Figure 4.4-1). The California Public Utilities Code §21670-21678 and the California Government Code §65302.3 require every county with an airport served by one or more commercial air carriers to have an Airport Land Use Commission (ALUC). The ALUC, which is the San Joaquin County Council of Governments, must prepare a comprehensive Airport Land Use Plan that provides for the orderly growth of each public airport and the area surrounding the airport, and that safeguards the general welfare of the inhabitants near the airport and the public in general. ALUC staff reviews projects for compliance with the Airport Land Use Plan and reports their findings to the local jurisdiction (in this case the City of Lodi). If the applicant or City of Lodi does not agree with the ALUC staff findings, the matter is referred to the Commission and the members will decide the issue. A local jurisdiction can override the Commission's decision by the two-thirds vote of its local governing body.

FIGURE 4.4-1 AIRPORT AREA OF INFLUENCE


5
J10
99
Woodbridge Road
DeVries Road
Davis Road
Turner Road
Lodi
Sacramento Road
Kettleman Lane
Lower
White Slough
State Wildlife Area
Project Area
Eight Mile Road
Hammer Lane
J8
J3
J8
LEGEND
1 Primary Surface Zone
2 Runway Protection Zone
3 Inner Approach Zone
4 Outer Approach Zone
5 Transitional Zone
6 Horizontal Zone
7 Conical Zone
City of Lodi
Prostyle Sports Complex
EIR
AIRPORT AREA of INFLUENCE
PARSONS
HARLAND BARTHOLOMEW
& ASSOCIATES, INC.
Figure 4.4-1

Kingdon Airpark is a privately-owned, public use airport located approximately 1 mile east of the project site. The airport is currently used by general aviation business and pleasure aircraft (single engine, twin engine and small corporate jets). Most of the project site lies within the Conical Zone of the Kingdon Airpark area of influence; the southeastern corner of the project site lies within Horizontal Zone of the airport. The following restrictions apply within all zones and airport areas of influence:

- New residential land uses (developments with no less than 5 units) within each airport's area of influence must have an avigation easement recorded in favor of the airport. The Deed of Avigation and Hazard Easement must be filed with the local governing body's recording agency prior to the beginning of development construction.

- Occupied structures must be soundproofed to reduce interior noise to 45 dB according to State guidelines. Reflective materials are not permitted to be used in structures or signs (excluding traffic directing signs) to avoid distracting pilots.

- All proposed acquisitions of property within a 2-mile radius of an airport runway for the purpose of constructing a school require a review and approval of the proposal by the State Department of Transportation, Division of Aeronautics.

- No transmissions that would interfere with aircraft communications or navigation are permitted. Power lines must be undergrounded if necessary to prevent hazard to aircraft.

The following standards and restrictions apply within Horizontal and Conical surfaces:

- Proposed communications towers and other very tall structures should be evaluated to ensure that they will not be aircraft hazards.

- Proposed dumps, landfills and waterways should be evaluated to ensure that they will not present a bird hazard to aircraft.

- No special construction standards are required.

The City of Lodi's 1990 *Draft General Plan Background Report* states that the primary concern regarding land use conflicts in Lodi pertains to the encroachment of urban uses on productive agricultural land. One of the land use conflicts described in the Report is the restriction on aircraft application of chemicals near residential development. The residential component of the proposed project (a 200-room dormitory and 600-room hotel) will be located on the southern boundary of the property adjacent to land that is currently used for agriculture.

EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

The evaluation criteria for public health and safety are based on standards promulgated by the Federal Government and by the State of California, and by the strategies, policies and/or implementation recommendations of San Joaquin County (Table 4.4-2).

Table 4.4-2

Evaluation Criteria with Point of Significance – Public Health and Safety

Evaluation Criteria	As Measured by	Point of Significance	Justification
1. Will the Project create a public health risk due to its use of recycled water?	Proposed measures not in compliance with Title 22 regulations for the use of recycled water.	Greater than 0 occurrences	California Title 22 regulations governing the use of recycled water
2. Will the Project increase potential exposure of the public to hazardous materials due to a chemical release?	Increase in use or storage of hazardous materials not in accordance with State and Federal hazardous materials or waste regulations.	Greater than 0 occurrences	California and Federal Hazardous Materials/Waste Regulations; Public Safety sections of local General Plans
3. Will the Project expose the public to safety hazards associated with operation of heavy machinery, vehicles, or equipment; or creation of accessible excavations (trenches, pits, or borings); or creation of an accessible open body of water?	Use of heavy machinery, vehicles or equipment; creation of excavations; or creation of an open body of water in public areas not in accordance with State construction safety regulations.	Greater than 0 occurrences	California Construction Safety Regulations (see text)
4. Will the Project increase the potential exposure of the public to disease vectors (i.e., mosquitoes)?	Creation of mosquito habitat.	Greater than 0 acres of new mosquito habitat	San Joaquin County Mosquito and Vector Control District and Vector Biology and Control Branch of the California Department of Health Services criteria for mosquito abatement
5. Will the Project result in a safety hazard for people residing or working in the project area if located within an airport land use plan or within two miles of an airport or airstrip?	Lack of compliance with the standards, regulations or restraints contained in the Airport Land Use Plan for San Joaquin County	Greater than 0 occurrences	San Joaquin County Airport Land Use Plan

Source: Parsons, 2001

The evaluation criteria and points of significance were developed as discussed below.

Water Reclamation and Reuse

The water reclamation and reuse evaluation criterion is based on Title 22 regulations for recycled water. The California Department of Health Services has established treatment requirements for a variety of recycled water uses (Title 22, California Code of Regulations §60301 *et seq.*). These requirements are believed to be capable of reducing pathogenic constituents to acceptable levels. The most stringent regulations in Title 22 currently require secondary treatment of wastewater plus the advanced treatment processes of coagulation, clarification, filtration, and disinfection. Currently, the level of disinfection required depends upon the ultimate use of the water but the most restrictive requirement (for nonrestricted recreational impoundments and spray irrigation) is a median coliform level that does not exceed 2.2 MPN per 100 milliliter and a maximum coliform level that does not exceed 23 MPN per 100 milliliter more than once in a 30-day period. Filtration must produce turbidity of 2 turbidity units of less.

Hazardous Materials and Hazardous Waste

The hazardous materials storage and use criterion is based on the requirements of the Public Safety Sections of local General Plans, which list goals, objectives, and/or policies for reducing potential damage from hazardous materials. These requirements are derived from State regulations (e.g., California Health and Safety Code §25500 *et seq.*) that require local agencies such as fire departments to administer programs for storing and handling of hazardous materials.

Construction Hazards

The criterion for safety hazards during construction is based on safety regulations (Title 8, California Code of Regulations §1500 to §1938) regarding construction sites. While the regulations have been promulgated to protect workers in the construction industry, the Project alternatives have components that may be built in areas accessible to the public during construction. The criteria have been developed to protect the public in areas where they may encounter construction activities.

Vector Control

The criterion for disease vectors is based on the requirements of the San Joaquin County Mosquito and Vector Control District and the Vector Biology and Control Branch of the California Department of Health Services, which are responsible for overseeing the mosquito prevention program within the Project area.

Airport Safety

The San Joaquin County Airport Land Use Plan exists to protect airport operations, as well as the health and safety of the general public. The plan establishes areas or influence within which airport operations are likely to affect other land uses, and proposes restraints to minimize conflicts within those boundaries. New land uses are subject to the land use restrictions within these areas.

METHODOLOGY

Water Reclamation and Reuse

The potential human health impacts from exposure to recycled water are evaluated by determining whether the proposed uses of recycled water from the White Slough Water Pollution Control Facility comply with California's Title 22 regulatory requirements for the use of recycled water.

Hazardous Materials and Hazardous Waste

The potential human health impacts from exposure to hazardous materials used during Project construction or operation are evaluated by comparing proposed uses with California and Federal regulations regarding the storage and use of hazardous materials.

Construction Hazards

The potential safety impacts from hazards associated with construction activities are evaluated in the context of California and federal regulations.

Vector Control

The potential human health impacts from exposure to mosquitoes are evaluated by identifying Project components that may increase potential mosquito habitat. Practices regarding irrigation water use are evaluated to determine whether they would comply with San Joaquin County Mosquito and Vector Control District and Department of Health Services, Vector Control Branch guidelines.

Airport Safety

The standards, regulations and restraints contained in the Airport Land Use Plan for San Joaquin County are used to evaluate the impacts of the project on airport operations as they relate to the health and safety of the public.

ENVIRONMENTAL CONSEQUENCES IMPACTS AND RECOMMENDED MITIGATION

Table 4.4-3

Public Health and Safety

Evaluation Criteria	As Measured by	Point of Significance	Impact	Type of Impact[1]	Level of Significance[2]
1. Will the Project create a public health risk due to its use of recycled water?	Proposed measures not in compliance with Title 22 regulations for the use of recycled water.	Greater than 0 occurrences	Medium	O&M	⊙
2. Will the Project increase potential exposure of the public to hazardous materials due to a chemical release?	Increase in use or storage of hazardous materials not in accordance with State and Federal hazardous materials or waste regulations.	Greater than 0 occurrences	Medium	O&M	⊙
3. Will the Project expose the public to safety hazards associated with operation of heavy machinery, vehicles, or equipment; or creation of accessible excavations (trenches, pits, or borings); or creation of an accessible open body of water?	Use of heavy machinery, vehicles or equipment; creation of excavations; or creation of an open body of water in public areas not in accordance with State construction safety regulations.	Greater than 0 occurrences	Low	C	❍
4. Will the Project increase the potential exposure of the public to disease vectors (i.e., mosquitoes)?	Creation of mosquito habitat.	Greater than 0 acres of new mosquito habitat	Medium	O&M	⊙
5. Will the Project result in a safety hazard for people residing or working in the project area if located within an airport land use plan or within two miles of an airport or airstrip?	Lack of compliance with the standards, regulations or restraints contained in the Airport Land Use Plan for San Joaquin County	Greater than 0 occurrences	Medium	O&M	⊙

Source: Parsons 2001

1. C: Construction O&M: Operation and Maintenance
2. Level of Significance Codes
   - == No impact
   - ❍ Less than significant impact; no mitigation proposed
   - ● Significant impact before and after mitigation
   - ⊙ Significant impact; less than significant after mitigation

IMPACT: 4.4-1a. Water Reclamation and Reuse for Irrigation

Analysis: *Less than Significant; All Alternatives*

The Project would produce and use tertiary treated recycled water to irrigate playing fields and other public areas of the proposed Project. The public could contact tertiary treated water in areas that have been irrigated. California's Title 22 regulations require that recycled water used in public areas be treated to remove disease-causing organisms. Regular testing of the effluent from the treatment plant is required to confirm that the water meets the State's requirements. Tertiary treated recycled water is widely used in California for irrigation of playing fields, parks and golf courses. No reports of disease outbreaks due to this use have been reported. This impact is less than significant.

Mitigation: No mitigation is necessary.

IMPACT: 4.4-1b. Water Reclamation and Reuse for Fire Protection

Analysis: *No Impact; No Project Alternative*

The No Project Alternative would not use reclaimed water for fire protection, and therefore, would not result in any impacts.

Analysis: *Significant; All Alternatives*

The Project would use tertiary treated recycled water to supply the fire protection systems in buildings of the ProStyle Sports Complex. California's Title 22 regulations do not address this application of recycled water usage. However, use of recycled water for fire protection has been permitted by public health agencies and fire departments in California on a project-specific basis. This impact is potentially significant.

The California Department of Health Services requires an Engineering Report to be submitted for each proposed new application of reclaimed water. The Department's *Guidelines for the Preparation of an Engineering Report for the Production, Distribution and Use of Recycled Water* recommend that the reports contain three sections that describe the system that produces recycled water (e.g., water source, treatment processes, plant reliability, and monitoring and reporting); the system that transmits and distributes the recycled water; and the proposed use areas for the recycled water (e.g., specific types of reuse and specific properties, parties responsible for on-site facilities, public and employee access, and cross-connection controls). For this project the report should include a discussion that relates to the design and physical layout of the fire protection systems. It should address the management issues (e.g., disposition of food items exposed to recycled water after a system activation) that are required to be addressed by the building tenants. The Engineering Report must be written by a qualified professional engineer(s) registered in California and experienced in the field of wastewater treatment and fire protection systems.

Mitigation: **4.4-1b Water Reclamation and Reuse for Fire Protection**

Implementation of the following mitigation measures would reduce the impact to a level that is less than significant.

- Prepare an Engineering Report according to the California Department of Health Services' *Guidelines for the Preparation of an Engineering Report for the Production, Distribution and Use of Recycled Water*.
- Submit the Engineering Report for review to the California Department of Health Services, the Central Valley Regional Water Quality Control Board (Central Valley Regional Board), San Joaquin County Public Health Services, the City of Lodi Fire Department and the Delta and Woodbridge Fire Protection Districts.

After Mitigation: *Less than Significant*

The Engineering Report would address public health and safety issues associated with the safe use of recycled water for fire protection in buildings at the ProStyle Sports Complex that are not currently addressed in California's Title 22 regulations. Implementation of the requirements of a properly prepared and approved report would reduce the impacts to less than significant.

IMPACT: 4.4-2. Hazardous Materials and Hazardous Waste

Analysis: *No Impact; No Project Alternative*

The No Project Alternative would not result in changes to current conditions, and therefore, would not result in any impacts.

Analysis: *Significant; Project, Sports Use Only, and Alternate Site Development*

The project would increase the rate of use of chlorine and sulfur dioxide at the White Slough Pollution Control Facility. Existing tanks would be used to store these chemicals. The White Slough Pollution Control Facility has prepared and filed a Risk Management Plan with the San Joaquin County for the storage of chlorine and sulfur dioxide. According the Risk Management Plan, the ProStyle Sports Complex is within the area potentially affected by accidental airborne releases of these chemicals. This impact is potentially significant.

Impacts for the Alternate Site Development would be similar to those at the Project Site. The Manteca Treatment Plant that would supply the development currently processes 5.3 million gallons per day. Some of this water is used to irrigate agricultural lands that currently occupy the Alternate Site. Upgrading water treatment at the plant to supply a sports complex would change the chemical usage and/or storage requirements for the plant and thus change the potential hazard to the public from accidental airborne releases of these chemicals. This impact is potentially significant.

Mitigation: **4.4-2 Hazardous Materials and Hazardous Waste**

Implementation of the following mitigation measures would reduce the impact to a level that is less than significant.

- Update the zone of vulnerability analysis of the Risk Management Plan to address the new land use at the proposed ProStyle Sports Complex.
- Modify the emergency response component of the Risk Management Plan to reflect the change of land use at the project site.
- Submit the revised Risk Management Plan to the San Joaquin County Office of Emergency Services for review and approval.

An alternative approach would be to change the effluent disinfection system from a chlorine gas/sulfur dioxide system to a sodium hypochlorite/sodium bisulfite system. The City is currently considering this change, which will eliminate the risk of chlorine and sulfur dioxide gas emissions. Sodium hypochlorite and sodium bisulfite are hazardous liquids, so the following measures would have to be implemented:

- Chemical storage tanks would be equipped with secondary containment to prevent spills
- The Hazardous Materials Management Plan for the White Slough Pollution Control Facility would be updated to included storage information and site plans for the new chemical storage facilities. The plan update would be in compliance with Federal and State regulations intended to assure the safe handling of hazardous materials and the protection of workers, the public and the environment.

After Mitigation: *Less than Significant*

Revision and approval of the Risk Management Plan would assure that the White Slough Water Pollution Control Facility is in compliance with State and Federal laws and regulations that are intended to protect the public from airborne releases of hazardous materials.

Changes in the type of disinfection system would eliminate the risk associated with the handling of chlorine gas, and revision and approval of the Hazardous Materials Management Plan would ensure that handling of hazardous liquids was in compliance with regulations. Implementation of either mitigation measure would render the impact less than significant.

IMPACT: 4.4-3. Construction Hazards

Analysis: *Less than Significant; All Alternatives*

Construction activities present a potential risk to the public because of the use of heavy machinery, the creation of excavations and the storage and use of hazardous materials. The project site is located in an area with a very low potential for the

public to be exposed to these hazards. There are no nearby residential or commercial areas that would bring people to the construction site. Compliance with existing regulations would render the impact less than significant.

Mitigation: No mitigation is necessary

IMPACT: 4.4-4. Vector Control

Analysis: *No Impact; No Project Alternative*

The No Project Alternative would not result in changes to current conditions, and therefore, would not result in any impacts.

Analysis: *Significant; All Alternatives*

Irrigation and stormwater retention facilities have the potential to create mosquito habitat if improperly applied. The San Joaquin County Mosquito and Vector Control District and the Vector Biology and Control Branch of the California Department of Health Services have developed design criteria for mosquito prevention as well as guidelines for proper management of wastewater reclamation or disposal projects. The design criteria include minimizing the amount of over-irrigation, ponding, or tail water, thereby significantly reducing the need to treat these sites with pesticides and the subsequent need to provide the San Joaquin County Mosquito and Vector Control District with compensation for that control effort. This impact is potentially significant.

Mitigation: **4.4-4 Vector Control**

Implementation of the following mitigation measure would reduce the impact to a level that is less than significant.

- Amend the White Slough Pollution Control Facility's NPDES permit to incorporate design criteria that minimize the potential for irrigation to create mosquito habitat.
- Retention basins shall be sized and located so as not to encourage ponding and attract vectors, and yet prevent runoff from the site. Proper location of these basins, proper depth to discourage long-term ponding, and planned irrigation procedures will ensure that retention ponding is minimized.

After Mitigation: *Less than Significant*

Amendment and approval of the NPDES permit would assure that the White Slough Water Pollution Control Facility and the ProStyle Sports Complex are in compliance with the design criteria for mosquito prevention for the use of recycled water as required by the San Joaquin County Mosquito and Vector Control District and the Vector Biology and Control Branch of the California Department of Health Services. Implementation of this mitigation measure would render the impact less than significant.

IMPACT: 4.4-5. Airport Safety

Analysis: *Less than Significant; No Project and Alternate Site Development*

The No Project Alternative would not result in changes to current conditions, and therefore, would not result in any impacts.

The Alternate Site is not within an airport planning area. The Stockton Metropolitan Airport is about 8 miles north of the Manteca Alternate Site. The Stockton Armory (formerly the Sharpe Army Depot, but now operated by the California National Guard) is about 3 miles north of the Manteca Site.

Analysis: *Significant; Project and Sports Use Only*

The project site is within the Horizontal and Conical Zones of the Kingdon Airpark. The San Joaquin County Airport Land Use Plan applies restrictions (e.g. to communication towers and other tall structures) to new developments within airport zones and areas of influence in the county. The proposed project must comply with these restrictions.

A potential public health impact is created by creating high human-use areas (including dormitory residential use) near agricultural lands that are sprayed by aircraft (see also Section 4.1, Land Use). Agricultural buffers and a green belt would be necessary to buffer the high human-use areas from agricultural activities. Potential safety conflicts will exist with crop spraying and the aquatic center.

Mitigation: **4.4-5 Airport Safety**

A land use buffer should be incorporated into the design of the facility to increase the distance between the residential area of the proposed project and the surrounding agricultural land use, where aircraft are used to spray crops. The aquatic center should be fully enclosed to avoid effects of spray drift from aircraft on pool water.

After Mitigation: *Less than Significant*

Incorporation of the land use buffer would assure that project is in compliance with the City of Lodi's restriction on aircraft application of chemicals near residential development. Enclosure of the aquatic center would avoid effects of spray drift on pool water. Implementation of this mitigation measure would render the impact less than significant.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

The project would not contribute to any significant impacts associated with public health and safety. The recommended mitigation measures would reduce public health and safety impacts to a level that is less than significant.