M. HAZARDS AND HAZARDOUS MATERIALS

This section presents a general discussion of hazardous materials[1] and public health and safety issues within Yolo County. This discussion is largely based on information contained in the Yolo County General Plan Update Background Report,[2] supplemented with information from County staff and regulatory agency records. Potential impacts related to hazardous materials and public health and safety hazards that could result from implementation of the policies and actions of the Draft General Plan are described and evaluated, with mitigation measures provided to address significant impacts, as appropriate.

1. Setting

Products as diverse as gasoline, paint, solvents, household cleaning products, refrigerants, and radioactive substances are categorized as hazardous materials. What remains of a hazardous material after use, or processing, is considered to be a hazardous waste. Of concern to all communities are the handling, transportation, and disposal of such wastes, as well as proper handling of hazardous materials.

Beginning in the 1970s, governments at the federal, State, and local levels became increasingly concerned about the effects of hazardous materials management on human health and the environment. Numerous laws and regulations were developed to investigate and mitigate these effects. As a result, the storage, use, generation, transport, and disposal of hazardous materials and waste are highly regulated by federal, State, and local laws and regulations. Due to the highly regulated nature of hazardous materials, this settings section begins with a description of the regulatory framework, and is followed by an overview of specific hazardous materials and public health and safety issues in the County.

a. Regulatory Framework. A myriad of laws and regulations at the federal, State, and local levels regulate the management of hazardous materials. In California, the U.S. Environmental Protection Agency (U.S. EPA) has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (Cal/EPA). In turn, a local agency, the Yolo County Health Department, Environmental Health Division (YCEHD) has been granted responsibility for implementation and enforcement of many hazardous materials regulations in the County under the Certified Unified Program Agency (CUPA) Program (described below). Other local agencies, such as the Yolo County Sherriff's Department, are responsible for emergency response to hazardous materials incidents within the County.

In California, regional agencies are responsible for programs regulating emissions to the air, surface water, and groundwater. In Yolo County, the Yolo-Solano Air Quality Management District (AQMD) has oversight over air emissions, and the Central Valley Regional Water Quality Control Board

[1] The California Health and Safety Code defines a hazardous material as, "...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment" (California Health and Safety Code Section 25501).

[2] Jones and Stokes, 2005. Background Report for the Yolo County General Plan Update, prepared for Yolo County, January.

(RWQCB) regulates discharges and releases to surface and groundwater. The Cal/EPA Department of Toxic Substances Control (DTSC) regulates remediation of sites where discharges to land could potentially present a public health risk.

Oversight over investigation and remediation of sites affected by hazardous materials releases can be performed by State agencies, such as DTSC, regional agencies, such as the Water Board, or local agencies, such as YCEHD, which oversees investigation and remediation of leaking underground petroleum storage tank (LUST) sites in the County.

The U.S. Department of Transportation (DOT) is the Federal administering agency for hazardous materials transportation safety. The DOT Office of Hazardous Materials Safety oversees a national safety program to minimize the risks related to commercial transportation of hazardous materials. The Federal hazardous materials transportation law (49 United States Code 5101 et seq.) is the basic statute regulating hazardous materials transportation in the United States. Federal hazardous materials transportation regulations are contained in 49 Code of Federal Regulations Parts 171-180. In California, the California Department of Transportation (Caltrans) is the implementing agency for DOT laws and regulations.

Routine hazardous materials management in California is administered under the Certified Uniform Program Agency (CUPA) program. The CUPA program was established under California Senate Bill 1082 to reduce the cost and improve the efficiency of hazardous materials regulations. Yolo County's hazardous materials programs are administered and enforced by YCEHD under the CUPA program. The CUPA program encompasses several hazardous materials programs: Hazardous Materials Management Plans (HMMP) program, California Accidental Release Prevention (CalARP) program, underground storage tank (UST) programs, aboveground storage tank (AST) programs, and hazardous waste generation and disposal. The five hazardous materials programs administered under the CUPA program are described briefly below.

(1) Hazardous Materials Management Plan. Businesses that store hazardous materials in excess of specified quantities must report their chemical inventories to YCEHD by preparing a Hazardous Materials Management Plan (HMMP), also known as a Business Plan. Approximately 1,200 facilities in Yolo County are required to file a Business Plan with YCEHD.[3] This information informs the community on chemical use, storage, handling, and disposal practices. It is also intended to provide essential information to fire fighters, health officials, planners, elected officials, workers, and their representatives so that they can plan for and respond to potential exposures to hazardous materials.

(2) California Accidental Release Prevention Program. Under the CalARP Program, businesses that use large quantities of acutely hazardous materials must prepare a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential. There are currently 13 facilities in Yolo County that participate in the CalARP program.[4]

[3] Jeff Pinnow, 2008, YCEHD Supervising Hazardous Materials Specialist, personal communication with Cheri Page of Baseline Environmental Consulting, 25 November.

[4] YCEHD, 2008, CalARP facilities / 12-1-2008, database table.

(3) Underground Storage Tank Programs. Due to fire hazards, flammable liquids, such as gasoline, have historically been stored in USTs, which, over time, tend to leak, resulting in potential risks for the general public and the environment. Current regulations require that USTs be installed, monitored, operated, and maintained in a manner that protects public health and the environment. Tanks must be constructed with primary and secondary levels of containment and be designed to protect public health and the environment for the lifetime of the installation. The USTs must be monitored for leaks and built such that a leak from the primary container into the secondary container will be detected. When a UST is proposed to be removed, a detailed permit application must be submitted to YCEHD, which oversees removal activities to identify evidence of leakage. There are currently 113 permitted UST facilities in Yolo County.[5]

(4) Aboveground Storage Tank Programs. Inspections and permits are required for facilities storing hazardous materials in aboveground storage tanks (ASTs) by YCEHD. In addition, any facility operating ASTs with an aggregate tank capacity of 1,320 gallons or more must: 1) complete a Spill Prevention Control and Countermeasure (SPCC) plan to provide a detailed engineering analysis of the potential for release from ASTs present at a facility and the measures, such as secondary containment and emergency response that can be implemented to reduce the release potential and 2) file a storage statement, as required by the State Water Resources Control Board (SWRCB). There are approximately 175 AST sites in Yolo County.[6]

(5) Hazardous Waste Generation and Disposal. Once a hazardous material has been used or processed, what remains may be considered a hazardous waste. Many items routinely used by residents and businesses, such as paints and thinners, cleaning products, and motor oil, are considered hazardous waste once they are ready for disposal. Nearly all businesses and residences in the County are expected to generate some amount of hazardous wastes (including household hazardous wastes). Hazardous waste generation and disposal regulations are administered and enforced by YCEHD. Businesses that generate more than 100 kilograms of hazardous waste per month, or more than one kilogram of acutely hazardous waste, must be registered with U.S. EPA's Resource Conservation and Recovery Act (RCRA) program and are subject to extensive regulations regarding storage and disposal. Approximately 800 Yolo County businesses generated hazardous waste in 2008,[7] including 15 sites classified as large-quantity generators, indicating that they generated at least 1,000 kilograms of hazardous waste per month.[8]

Hazardous waste management in Yolo County is primarily a responsibility of YCEHD, but is also governed by County Plans, including the Yolo County Waste Management Plan, adopted in 1989, and the County Waste Management Plan, Household Hazardous Waste Element, adopted in 1993. The Household Hazardous Waste Element is reviewed every five years by a County Waste Advisory Committee.[9] Household hazardous wastes in Yolo County are collected at twice-monthly events at

[5] SWRCB, 2008, Geotracker online database, https://geotracker.waterboards.ca.gov, accessed December 2.

[6] Jeff Pinnow, 2008, op cit.

[7] Ibid.

[8] YCEDH, 2008, RCRA LQG facilities / 12-01-2008, database table.

[9] Jeff Kieffer, 2008, Senior Civil Engineer, Yolo County Integrated Waste Management Division, personal communication with Cheri Page of Baseline Environmental Consulting, December 2.

the Central Landfill, northeast of Davis.[10] There are no hazardous waste landfills in Yolo County, so hazardous wastes must be transported outside the County.[11]

YCEHD is regularly evaluated by Cal/EPA to ensure that the CUPA programs are being administered in accordance with State guidelines. The most recent evaluation, which is ongoing and will be concluded in September 2009, included an in-office program review and field oversight inspections by State evaluators. The preliminary evaluation report from August 2008 found that YCEHD's performance was in full compliance.[12] The preliminary report noted a number of innovations Yolo County had implemented, including a system automatically generating enforcement and reminder letters, that will be shared with other CUPA programs State-wide.

b. Hazardous Materials Release Sites. Releases of hazardous materials may occur during use, storage, transfer, and disposal of these materials, and can contaminate soil and groundwater at these sites. Releases that affect groundwater can migrate with the groundwater and contaminate other nearby sites. SWRCB records identify 405 hazardous materials release sites in Yolo County, of which 171 are currently under active regulatory oversight.[13]

The majority of hazardous materials release sites in Yolo County (291 of the 405 total) are related to leaking underground storage tanks. Although current regulations requiring double-wall construction and leak monitoring equipment for underground storage tanks should reduce the number of releases in the future, many underground tanks installed in previous decades have failed, causing petroleum contamination in soils and groundwater. These releases are often discovered during tank removal or upgrade activities.

Typically, the most significant hazardous materials sites affecting public health are overseen by DTSC. DTSC lists a total of 21 facilities in Yolo County (including incorporated areas) on their Envirostor database. One of those sites, Frontier Fertilizer, is listed on the Federal National Priority List (commonly referred to as Superfund). Frontier Fertilizer is located on Second Street within the City of Davis. Also listed were five Hazardous Waste facilities, one School Cleanup Site, eight State Response sites, and six Voluntary Cleanup sites.

Two facilities in Yolo County, both within incorporated areas, were listed by DTSC as having an active Hazardous Waste Operating Permit: Evergreen Environmental Services in Davis and Ramos Environmental Services in West Sacramento. One facility with a non-operating hazardous waste permit, ExxonMobil Oil Corporation, is currently in active cleanup status. This facility is located just east of College City in the unincorporated area of Yolo County.

c. Agricultural Hazardous Materials Issues. Agriculture, which is the County's most important industry, uses a variety of hazardous materials, including fuels and maintenance fluids for farm equipment, and fertilizers, herbicides, fungicides, and insecticides. Currently, Yolo County is at the forefront of the promotion of organic agriculture. The Yolo Certified Organic Agriculture (YCOA)

[10] Ibid.

[11] Ibid.

[12] Cal/EPA, 2008, Certified Unified Program Agency Evaluation Summary of Findings, Yolo County Environmental Health, August 20.

[13] SWRCB, 2008, op cit.

agency, established by the County Agricultural Commissioner's Office, is one of the few County agencies in California dedicated to the promotion and support of organic agriculture. YCOA is a US Department of Agriculture (USDA)-accredited organic certification agency. Although organic farming is growing rapidly, conventional agriculture still represents the vast majority of production within the County; the 2007 County Agricultural Crop Report indicates that organic production represented about 4.3 percent of the total crop value in Yolo County, up from 3.9 percent in 2006.[14]

The use of agricultural chemicals can leave residues in soils that can harm people and the environment. Chemicals used today are less-persistent, organic compounds; agricultural chemicals used prior to the 1970s often included highly persistent compounds such as DDT. Inorganic compounds containing heavy metals such as arsenic, lead, and mercury were commonly used prior to the 1950s.

Chemicals commonly used in the past have the potential to leave residual inorganic or organic components in shallow soils that could persist for many decades. If present in elevated concentrations, these residues could pose a potential health risk to future construction workers, residents, and other persons who may come in direct contact with surface soils.

Pesticides are regulated under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) by the U.S. EPA. This includes labeling and registration of pesticides as to how they may be used. U.S. EPA delegates pesticide enforcement activities in California to the California Department of Pesticide Regulation (DPR), under Title 3 of the California Code of Regulations and the California Food and Agriculture Code. The DPR registers pesticides for use in California, and licenses pesticide applicators and pilots, advisors, dealers, brokers, and businesses. In turn, the Yolo County Agricultural Commissioner (YCAC) acts as the local enforcement for DPR. The YCAC registers licensed pest control businesses, and agricultural pest control advisors in the County in which they operate; requires permits and advanced notification for buying or using California restricted-use pesticides; and requires the completion of pesticide use reports for pesticides applied in the County. In addition, the YCAC investigates pesticide-related injury and illnesses, and oversees enforcement of worker training in pesticide management.

d. Other Hazardous Materials Issues in Yolo County. Existing conditions related to other hazardous materials issues include: aerially-deposited lead, sensitive receptors, lead and asbestos in building materials, and working health and safety, and these issues are discussed below.

(1) Aerially-Deposited Lead near Major Roadways. Aerially-deposited lead is a common hazardous materials issue in urban areas. Soils adjacent to major roadways often contain elevated concentrations of lead. The lead deposition is the result of airborne particulates and surface water runoff associated with tailpipe emissions prior to the time lead was phased out of vehicle fuels. Studies by the California Department of Transportation (Caltrans) suggest that hazardous waste levels of lead, if present, are generally found in soils within 30 feet of the edge of the pavement.[15]

[14] Yolo County Agriculture Department, 2007 Agricultural Crop Report.

[15] Cal/EPA, DTSC, 2000, Fact Sheet, Variance for Caltrans Districts 4,6,7,8,10,11,12 for Reuse of Lead-Contaminated Soils.

Yolo County contains a number of heavily-trafficked roadways, including the interstates and state highways. Properties located adjacent to roadways may contain elevated concentrations of lead in exposed surface soils, which could pose a health hazard to construction workers and users of the properties. Lead is a State-recognized carcinogen (causes cancer) and reproductive toxicant (causes birth defects or other reproductive harm).[16] Exposure of construction workers or future site occupants to lead in soil could result in adverse health effects, depending on the duration and extent of exposure.

(2) Schools and Other Sensitive Receptors. Some populations, such as children, the elderly, and the infirm, are more susceptible to health effects of hazardous materials than the general population. Hazardous materials use near schools, day care centers, senior housing, and hospitals must consider potential health effects to these populations, often referred to as "sensitive receptors." Construction or redevelopment on contaminated properties that could potentially generate vapors or fugitive dust containing contaminants may potentially pose a health risk to these populations. In addition, commercial businesses in proximity to sensitive receptors may have hazardous emissions or handle hazardous or acutely hazardous materials or wastes that could pose a health risk to these sensitive receptors.

Section 17210 et seq. of the State Education Code, Section 21151.2, Section 21151.4, and Section 21151.8 of the Public Resources Code require that prospective school sites be reviewed to determine that such sites are not a current or former hazardous waste disposal site, a hazardous substance release site, or the site of hazardous substance pipelines. These laws also require consultation with local hazardous materials agencies and air quality districts to ensure that no sites within ¼ mile of a school that handle or emit hazardous substances would potentially endanger future students or workers at the prospective school site.

All school districts receiving State funds must prepare a Phase I environmental assessment on prospective school sites. The Phase I assessment would detail the historical uses of the property and indicate any potential for contamination. DTSC must review this assessment and make one of the following findings: 1) that no further action is required; or 2) that concerns about contamination exist and the district must conduct a Preliminary Endangerment Assessment (PEA). The PEA entails site sampling and the development of a detailed risk assessment of any contaminants present on the proposed school property.

(3) Lead, Asbestos, and Other Hazardous Materials in Buildings. Hazardous materials are commonly found in building materials that may be affected during demolition and renovation activities associated with redevelopment. Prior to 1978, lead compounds were commonly used in interior and exterior paints. Prior to the 1980s, building materials often contained asbestos fibers, which were used to provide strength and fire resistance. In addition, other common items are present in buildings, such as electrical transformers, fluorescent lighting, electrical switches, heating/cooling equipment, and thermostats that can contain hazardous materials, which may pose a health risk if not handled and disposed of properly.

Demolition of buildings has the potential to release lead particles, asbestos fibers, and/or other hazardous materials to the air where they may be inhaled by construction workers and the general

[16] Cal/EPA, Office of Environmental Health Hazard Assessment, Safe Drinking Water and Toxic Enforcement Act of 1986, 2007, Chemicals Known to the State to Cause Cancer or Reproductive Toxicity, 1 June.

public. Federal and State regulations govern the demolition of structures where lead or material containing lead is present. During demolition, lead-based paint that is securely adhering to wood or metal may be disposed of as demolition debris, which is a non-hazardous waste. Loose and peeling paint must be disposed of as a California and/or federal hazardous waste if the concentration of lead exceeds applicable waste thresholds. State and federal construction worker health and safety regulations require air monitoring and other protective measures during demolition activities where lead-based paint is present.

Federal, State, and local requirements also govern the removal of asbestos or suspected asbestos-containing materials (ACMs), including the demolition of structures where asbestos is present. All friable (crushable by hand) ACMs, or non-friable ACMs subject to damage, must be abated prior to demolition in accordance with applicable requirements, including notification to the BAAQMD. Friable ACM must be disposed of as an asbestos waste at an approved facility. Non-friable ACM may be disposed of as non-hazardous waste at landfills that will accept such wastes. Workers conducting asbestos abatement must be trained in accordance with State and federal Occupational Safety and Health Administration (OSHA) regulations.

Fluorescent lighting tubes and ballasts, computer displays, and several other common items containing hazardous materials are regulated as "universal wastes" by the State of California. Universal waste regulations allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes. Management of other hazardous wastes is governed under DTSC hazardous waste rules.

(4) Worker Health and Safety. The U.S. Department of Labor, OSHA regulates worker health and safety at the federal level. The Federal Occupational Safety and Health Act of 1970 authorizes states (including California) to establish their own safety and health programs with OSHA approval; the California Department of Industrial Relations (DIR) regulates implementation of worker health and safety in California. The DIR includes the Division of Occupational Safety and Health (DOSH), which acts to protect workers from safety hazards through its California OSHA (Cal/OSHA) program and provides consultative assistance to employers.

California standards for workers dealing with hazardous materials are contained in Title 8 of the California Code of Regulations (CCR) and include practices for all industries (General Industrial Safety Orders), and specific practices for construction and other industries. Workers at hazardous waste sites (or working with hazardous wastes as might be encountered during excavation of contaminated soil) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations.[17] Additional regulations have been developed for construction workers potentially exposed to lead[18] and asbestos.[19] Cal/OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices.

e. Other Public Health and Safety Concerns. Existing conditions related to other public health and safety issues, including emergency response, aviation, and wildfire hazards, are discussed below.

[17] Title 8, CCR Section 5192.

[18] Title 8, CCR Section 1532.1.

[19] Title 8, CCR Section 1529.

(1) Emergency Response. Yolo County maintains an Emergency Operation Center (EOC), which is the central location used to manage a disaster or other large-scale emergency in the County. Overall emergency response is governed by two plans: the Yolo County Emergency Operations Plan, which describes overall emergency response responsibilities, and the Yolo Operational Area Multi-Hazard Mitigation Plan, which was developed in response to a Federal Emergency Management Agency (FEMA) mandate to describe specific disasters and possible responses. [20] A third plan, Yolo Operational Area Hazardous Materials Environmental Response Plan, September 2001, is implemented by YCEHD and addresses response to hazardous materials emergencies. This plan establishes a Hazardous Materials Response Team, which becomes active when deemed necessary by a fire department officer, and combines the forces of the UC Davis, Davis, West Sacramento and Woodland fire departments and the YCEHD.

(2) Aviation. Yolo County's closest commercial airport is Sacramento International Airport, located immediately east of the county boundary. Yolo County has four public use airports: the Yolo County Airport, the Borges-Clarksburg Airport, the Watts-Woodland Airport, and University Airport. The Yolo County Airport is located in south-central Yolo County, just to the north and west of the City of Davis and southwest of the City of Woodland. The Borges-Clarksburg Airport is located in eastern Yolo County, approximately one mile northeast of the town of Clarksburg. The Watts-Woodland Airport is located approximately five miles west of the City of Woodland. University Airport is located approximately two mines west of the City of Davis. The most recent comprehensive land use plans (CLUPs) for these airports indicate that the Yolo County Airport and Watts-Woodland Airport have about 60,000 takeoff and landing operations per year, [21] University Airport has around 24,000 operations per year,[22] and the Borges-Clarksburg Airport has about 6,000 operations per year.[23]

In addition to public use airports, a number of private airstrips are present in the County. Five private airstrips are listed in FAA records: CHP Academy in Bryte, G3 Ranch in Capay, Borges-Clarksburg in Clarksburg, Medlock Field in Davis, KOVR in West Sacramento, and Joe Heidrick in Woodland.[24] Other informal private airstrips are known to be present in unincorporated areas of the County, though the number is unknown as they are not regulated and do not appear in government records.

The Sacramento Area Council of Governments (SACOG) serves as the Airport Land Use Commission (ALUC) for Sacramento, Sutter, Yolo, and Yuba Counties. It is responsible for developing and maintaining CLUPs to protect public health and safety and ensure compatible land uses in the areas around each commercial and public use airport, including the public use airports in Yolo County and Sacramento International Airport.

[20] Noderer, Kyle, 2008, Emergency Services Planner, Office of Emergency Services, personal communication with Cheri Page of BASELINE Environmental Consulting, December 2.

[21] Airport Land Use Commission for Sacramento, Sutter, Yolo and Yuba Counties, 1999, Yolo County Airport Comprehensive Land Use Plan, October; and Airport Land Use Commission, 1993, Watts-Woodland Airport, Comprehensive Land Use Plan, December 1988, amended March 1993.

[22] FAA, 2009, Airport Master Record for EDU, Form 5010, March 12.

[23] Airport Land Use Commission, 1994, Borges-Clarksburg Airport Comprehensive Land Use Plan, April.

[24] FAA, 2009, Airport Safety Data, online database, http://www.faa.gov/airports_airtraffic/airports/airport_safety/airportdata_5010/menu/index.cfm, accessed March 24.

(3) Wildland Fires. In accordance with California Public Resource Code Section 4201-4204 and Government Code Section 51175-51189, the California Department of Forestry and Fire Protection (CAL FIRE) has mapped areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ), represent the risks associated with wildland fires.

The western third of Yolo County (west of Esparto and Winters) has been classified as having Moderate to Very High wildfire risk, with the Very High risk areas concentrated in the northwest portion of the County bordering Napa, Lake, and Colusa counties (Figure IV.M-1).[25] Most of the remaining areas of the County are unzoned, representing minimal to moderate wildfire risk.

In California, responsibility for wildfire prevention and suppression is shared by federal, state, and local agencies. Federal agencies are responsible for federal lands in Federal Responsibility Areas (FRA). The State of California has determined that non-federal lands in unincorporated areas with watershed value are of Statewide interest and have classified those lands as State Responsibility Areas (SRA), which are managed by CAL FIRE. All incorporated areas and other unincorporated lands are classified as Local Responsibility Areas (LRA). Most of the western third of Yolo County has been classified as SRA, with FRA near the northwest and west County boundaries (Figure IV.M-2).

Under State regulations,[26] areas within very high fire hazard risk zones must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life within these areas. The Yolo County Planning and Public Works Department is responsible for enforcing these provisions in unincorporated LRA-classified areas of the County.

2. Draft 2030 Countywide General Plan for Yolo County

The following is a list of relevant Draft General Plan policies and actions from the Health and Safety and Public Facilities and Services Elements related to hazardous materials, emergency preparedness, wildland fires, and aviation safety.

Public Facilities and Services Element

- Policy PF-5.3: Require assertive fire protection measures in all development to supplement limited rural fire district resources.
- Policy PF-5.4: Encourage fire districts and other emergency medical service providers to achieve National Fire Protection Association standards of an average response time for emergency calls of nine minutes at least 90 percent of the time in the unincorporated communities and 15 minutes at least 80 percent of the time in rural areas, with the exception of remote areas (requiring a travel distance of more than 8 miles).
- Policy PF-5.6: Work with each community to upgrade its water system to meet sprinkler requirements. Support/require improvements to water infrastructure to achieve appropriate water pressure to adequately fight fires and operate sprinkler systems.
- Policy PF-5.7: Encourage fire districts to support narrow streets and other desirable community design features promoted by this General Plan.

[25] CalFire, 2007, Draft Fire Hazard Severity Zones, Map 57, Fire Hazard Map for Yolo County, November.

[26] Government Code, Section 51182.

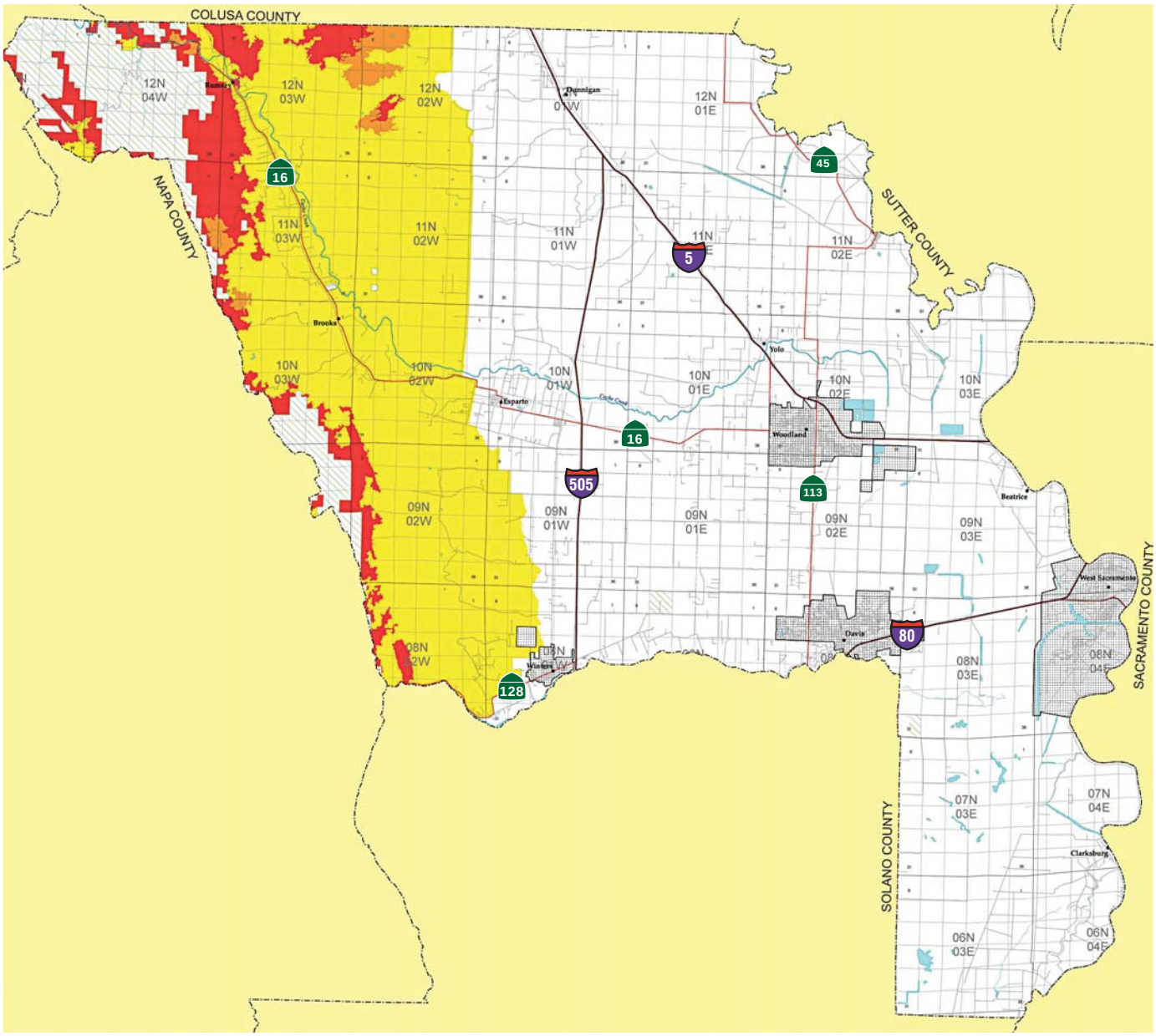
- Policy PF-5.8: Anticipate and adapt to potential changes in frequency and severity of wildfires resulting from predicted effects of global warming.
- Action PF-A28: Amend the County Code to incorporate measures such as fire-safe building materials, clear spaces and fuel reduction, fire breaks, and fire suppression systems for all new development located in high fire hazard areas. (Policy PF-5.3)
- Action PF-A29: Require that new development comply with all State and local requirements within the State Responsibility Area. (Policy PF-5.3)

Health and Safety Element
Hazardous Materials

- Policy HS-4.1: Minimize exposure to the harmful effects of hazardous materials and waste.
- Policy HS-4.2: Inspect businesses regularly for compliance with their Hazardous Materials Inventory and Hazardous Materials Business Emergency Response Plan.
- Policy HS-4.3: Encourage the reduction of solid and hazardous wastes generated in the County.
- Action HS-A46: Provide adequate separation between areas where hazardous materials are present and sensitive uses. The following land uses are considered sensitive receptors for the purpose of exposure to hazardous materials: residential uses, hospitals and nursing/convalescent homes, hotels and lodging, schools and day care centers and neighborhood parks. (Policy HS-4.1)
- Action HS-A47: New development and redevelopment in areas previously used for commercial or industrial uses shall ensure that soils, groundwater, and buildings affected by hazardous material releases from prior land uses, as well as lead paint and/or asbestos potentially present in building materials, will not have the potential to affect the environment or health and safety of future property owners or users, and any affected areas shall be properly abated. A Phase I Environmental Site Assessment (ESA) to American Society for Testing and Materials (ASTM) standards shall be required where appropriate and a Phase II ESA may be required in certain circumstances based on the recommendations/results of the Phase I. (Policy HS-4.1)
- Action HS-A48: Develop a GIS-based map from the information submitted in the filed Hazardous Materials Inventories and Hazardous Materials Business Emergency Response Plans so that emergency responders are aware of potential dangers and can prepare accordingly. (Policy HS-4.2)
- Action HS-A49: Promote public education about the safe disposal of used syringes and needles, household hazardous waste, such as motor oil, florescent bulbs, sharps/syringes, and batteries, including the locations of disposal sites. (Policy HS-4.3)
- Action HS-A50: Cooperate with other agencies in the prevention and control of potential oil spills, including coordination with the State Oil Spill Program (SOSP). The SOSP shall be incorporated into local emergency and safety plans, standards, and ordinances. (Policy HS 4.1)
- Action HS-A51: Complete the remediation and reclamation of the County's former burn dump sites. (Policy HS-4.1)

Emergency Response

- Policy HS-6.1: Respond to catastrophic emergencies by:
    - Continuing and restoring critical services.
    - Maintaining order.
    - Supporting evacuations.
    - Distributing emergency supplies.



LSA

FIRE HAZARD SEVERITY ZONES in State Responsibility Area (SRA)
- Moderate
- High
- Very High

FIRE PROTECTION RESPONSIBILITY
- Federal Responsibility Area (FRA)
- Local Responsibility Area (LRA) - Unincorporated
- Local Responsibility Area (LRA) - Incorporated

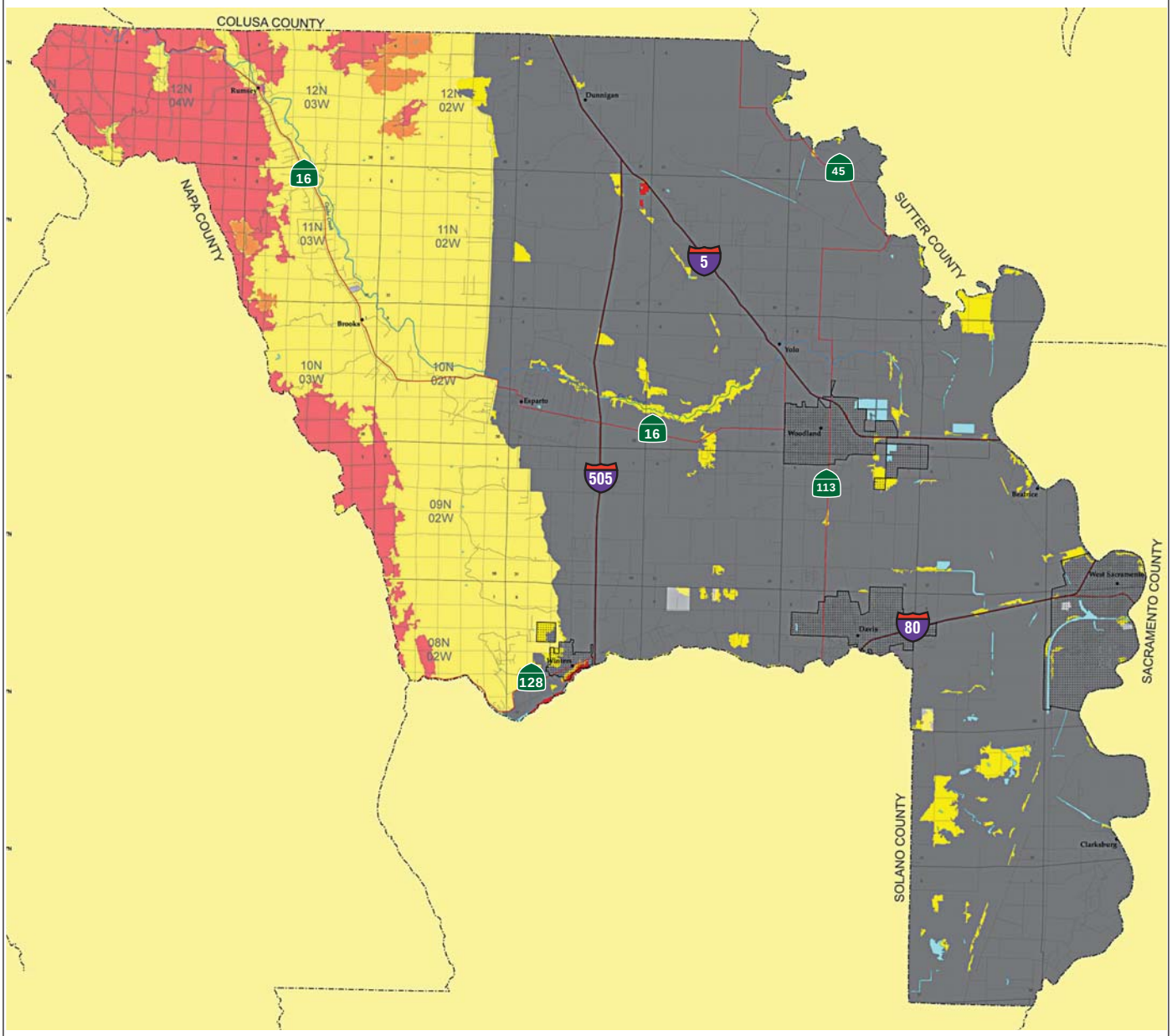
FIGURE IV.M-1

Yolo County 2030 Countywide General Plan EIR

Fire Hazard Severity Zones in SRA

SOURCE: CAL FIRE, 2007.

I:\CYK0701 yolo county\figures\EIR\Fig_IVM1.ai (4/20/09)



LSA

FIRE HAZARD SEVERITY ZONES

- LRA Very High
- LRA High
- LRA Moderate
- LRA Unzoned
- Other Very High
- Other High
- Other Moderate
- Other Unzoned

Incorporated Cities

FIGURE IV.M-2

Yolo County 2030 Countywide General Plan EIR

Draft Fire Hazard Severity Zones in LRA

SOURCE: CAL FIRE, 2007.

I:\CYK0701 yolo county\figures\EIR\Fig_IVM2.ai (4/20/09)

  - Ensuring search/rescue operations and medical care.
  - Saving lives and protecting property.
  - Repairing and restoring essential public infrastructure.
  - Mobilize the necessary resources to carry out emergency response efforts.
  - Coordinating operations with other jurisdictions.
  - Disseminating emergency public information.
  - Establishing emergency operation centers and maintaining communications.
  - Notifying vulnerable populations (e.g., seniors, school children, disabled, non-English speaking households, etc.)

- Policy HS-6.2: Provide continuous advance planning to anticipate potential threats and improve emergency response effectiveness.
- Policy HS-6.3: Ensure the compatibility of permitted land use activities within the Delta Primary Zone with applicable emergency preparedness policies of the Land Use and Resource Management Plan of the Delta Protection Commission.
- Policy HS-6.4: Encourage adequate infrastructure and resources to provide for local food security in emergencies and to restore food system integrity and operation after an emergency.
- Policy HS-6.5: Work with Yolo Emergency Communications Agency to seek funding for emergency communications, evacuation planning and recovery planning.
- Action HS-A53: Develop a disaster response program to enhance the short-term and long-range recovery of affected areas, assist in the return to normal life for local residents, and expedite the reconstruction of homes, businesses, and public facilities. (Policy HS-6.1, Policy HS-6.2)
- Action HS-A54: Prepare and update emergency access/evacuation routes, including the removal of potential traffic impediments. (Policy HS-6.1, Policy HS 6.2)
- Action HS-A55: Implement the programs and procedures in the Yolo Operational Area Multi-Hazard Mitigation Plan. (Policy HS-6.1)
- Action HS-A56: Conduct ongoing public outreach efforts regarding procedures and plans to be followed in the event of an emergency. (Policy HS-6.2)
- Action HS-A57: Develop multiple stress scenarios on a regular basis where key evacuation routes are blocked and/or alternative communication methods are inoperable, and refine emergency response plans accordingly. (Policy HS-6.2)
- Action HS-A58: Create an inventory of significant urban, rural, and natural hazards and provide standards for avoidance and/or mitigation of such hazards in an emergency. (Policy HS-6.2)
- Action HS-A59: Study the implications of climate change for future emergencies, including the increased risk and severity of fires; increased frequency and intensity of drought; expanded and deeper areas of flooding; and associated changes in disease vectors. (Policy HS-6.2)
- Action HS-A60: Ensure well-organized and efficient coordination between government, health, and community emergency response agencies. (Policy HS 6.2)

Aviation Hazards

- Policy HS-5.1: Ensure that land uses within the vicinity of airports are compatible with airport restrictions and operations.

- Policy HS-5.2: Ensure that new development is consistent with setbacks, height, and land use restrictions as determined by the Federal Aviation Administration and the Sacramento Area Council of Governments Airport Land Use Commission.
- Policy HS-5.3: Respect and conservatively enforce airport safety zones as identified in airports CLUPs.
- Policy HS-5.4: Within the Delta Primary Zone, ensure compatibility of permitted land use activities with applicable properly adopted airport policies of the Land Use and Resource Management Plan of the Delta Protection Commission.
- Action HS-A52: Develop appropriate Aviation Disaster Response Plans. (Policy 5.1, Policy HS-5.2, Policy HS-5.3)

Fire Hazards

- Policy HS-3.1: Manage the development review process to protect people, structures, and personal property from unreasonable risk from wildland fires.
- Policy HS-3.2: Encourage well-organized and efficient coordination between fire agencies and the County.
- Policy HS-3.3: Clearly communicate the risks, requirements, and options available to those who own land and live in wildfire hazard areas.
- Action HS-A38: Require new and/or existing development to establish "defensible space" by providing for clearance around structures, using fire-resistant ground cover, building with fire-resistant roofing materials, fuel load reduction, and taking other appropriate measures. (Policy HS-3.1)
- Action HS-A39: Require the design and construction of new roadways and driveways in fire hazard areas to be of sufficient width, radius and grade to facilitate access by fire-fighting apparatus. (Policy HS-3.1)
- Action HS-A40: Require land divisions within the very high and high risk Fire Hazard Severity Zones to demonstrate the following:
    - guaranteed availability of adequate water;
    - provision of more than one access point for firefighting equipment;
    - permanent maintenance of defensible space around all buildings; and
    - use of fire-resistant materials in construction. (Policy HS-3.1)
- Action HS-A41: Cluster residential units located in areas of high fire risk with adequate access to maintained emergency evacuation routes to ensure adequate access for firefighting equipment and escape routes for residents in rural areas. (Policy HS-3.1)
- Action HS-A42: Assist dependent fire districts with development impact fees, legal counsel, grant applications, and fee waivers, where feasible. (Policy HS-3.2)
- Action HS-A43: Coordinate with the Clarksburg Fire District to ensure compatibility of permitted land use activities within the Delta Primary Zone with applicable fire safe policies of the Land Use and Resource Management Plan of the Delta Protection Commission. (Policy HS-3.2)
- Action HS-A44: Implement State recommendations for fire prevention in Fire Hazard Severity Zones. (Policy HS-3.1)
- Action HS-A45: Coordinate with fire districts to ensure fire safe design and construction of new development. (Policy HS-3.2)

3. Impacts and Mitigation Measures

This section provides an assessment of the potential adverse impacts related to hazards and hazardous materials of the proposed project. It establishes the thresholds of significance for impacts and then evaluates the Draft General Plan. Where potentially significant impacts of the proposed project are identified, mitigation measures are recommended.

a. Significance Criteria. The Draft General Plan would have a significant hazards and hazardous materials impact if it would:

- Create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment;
- Create a significant hazard to the public or environment through exposure to hazardous materials present in soils, surface water, ground water, and/or building materials as a result of historical land uses in the project vicinity;
- Be located on or adjacent to a site that is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would result in a safety hazard for people residing or working in the area;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school;
- Impair implementation of an adopted emergency response plan or emergency evacuation plan;
- Expose people to existing or create new health or safety hazards (such as an increased risk of exposure to wild and/or urban fire hazards);
- Result in the location of development within an airport land use plan area, or where such a plan has not been adopted, within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area; or
- Result in the location of development within the vicinity of a private airstrip, and result in a safety hazard for people residing or working in the project area.
- Substantially conflict with applicable plans, policies and regulations of other agencies where such conflict would result in an adverse physical change in the environment; or
- Result in new policies that would result in significant adverse physical impacts as compared to the 1983 General Plan policies.

b. Impacts Analysis. The following section provides an evaluation and analysis for the potential impacts of the Draft General Plan for each of the criteria of significance listed above.

(1) Exposure from the Use, Storage, Generation, Disposal or Release of Hazardous Materials. This discussion addresses the first two significance criteria listed above. Current land uses, as well as future land uses under the Draft General Plan, involve or will involve the use, storage, generation, and disposal of hazardous materials. As detailed in the setting section, hundreds of businesses currently use hazardous materials and each year releases occur, which require regulatory oversight to protect human health and the environment. Although hazardous materials releases cannot

feasibly be eliminated, implementation of Draft General Plan policies and existing regulatory programs would reduce potential impacts of routine transport, use, or disposal of hazardous materials and reasonably foreseeable upset or accident conditions to a less-than-significant level. The primary tool for addressing these potential impacts is Policy HS-4.2, inspection of businesses for compliance with hazardous material regulations under the State CUPA programs. Implementation of other policies, such as HS-4.1, to minimize exposure to harmful effects of hazardous materials and wastes, and HS-4.2, encouraging the reduction of solid and hazardous wastes generated in the County, would also serve to mitigate this potential impact to acceptable (less than significant) levels. No additional mitigation is required.

(2) Expose Public or Environment to Hazardous Materials From Hazardous Materials Sites and Historical Land Uses. This discussion addresses the third and fourth significance criteria listed above. Properties with historic industrial and commercial land uses can have soil and ground-water contamination that may pose a health risk to future workers and residents. Contamination from hazardous material release sites, such as those on the Cortese list, compiled in accordance with Government Code section 65962.5, can migrate and affect people and environmental resources.

Draft General Plan Action HS-A46 would require a Phase I site assessment for commercial and industrial properties being redeveloped for more sensitive land uses, such as residential developments or school sites. The Phase I report would include a review of historical land uses and nearby hazardous materials sites, including those listed in Government Code section 65962.5, and would provide a judgment as to whether hazardous materials could affect the property being developed. Should hazardous materials affects be suspected, a Phase II investigation would be required, which would include collection and analysis of soil and/or groundwater samples. Action HS-A46 would reduce this impact for commercial and industrial properties to a less-than-significant level, but would not reduce the impact from redevelopment of agricultural properties to a less-than-significant level.

<u>Impact HAZ-1</u>: The public may be exposed to health risks from agricultural chemical residues in soils as a result of redevelopment of former agricultural properties that may occur under the Draft General Plan. (S)

As detailed in the setting section above, current agricultural practices do not employ toxic chemicals with long-persistence; however, chemicals formerly used in agriculture included heavy metals and organic compounds, such as DDT, which may persist in soil for decades. These residues could potentially pose a health risk to persons coming into contact with those chemicals. DTSC has developed guidance for sampling former agricultural properties, which applies to "school sites and other projects where new land uses could result in increased human exposure, especially residential use."[27] The guidance includes recommended number and types of samples to be collected, and risk analysis guidelines for determining if agricultural chemical residues may pose a risk to future land uses.

The following mitigation measure would reduce this impact to a less-than-significant level:

[27] DTSC, 2008, Interim Guidance for Sampling Agricultural Properties (Third Revision), April 30.

Mitigation Measure HAZ-1: Amend Action HS-A47 of the Draft General Plan as follows:

Action HS-A47: New development and redevelopment in areas previously used for agricultural, commercial, or industrial uses shall ensure that soils, groundwater, and buildings affected by hazardous material releases from prior land uses, as well as lead paint and/or asbestos potentially present in building materials, will not have the potential to affect the environment or health and safety of future property owners or users, and any affected areas shall be properly abated. A Phase I Environmental Site Assessment (ESA) to American Society for Testing and Materials (ASTM) standards shall be required where ~~appropriate~~ redevelopment may expose sensitive populations to hazardous materials, and a Phase II ESA may be required in certain circumstances based on the recommendations/results of the Phase I. A Phase I ESA will be required for residential and other sensitive development on former industrial, commercial, and agricultural properties, and for commercial development on former industrial properties. Where the Phase I report has identified agricultural cultivation prior to the 1980s, a shallow soil investigation shall be performed at the property in accordance with DTSC guidance for sampling agricultural properties. (LTS)

(3) Expose Schools and Other Sensitive Receptors to Hazardous Materials. Sensitive receptors, which include children, the elderly, and the infirm, are more susceptible to health effects from hazardous materials than the general population. As described in the setting section, hazardous materials must be handled properly to prevent significant releases that could affect sensitive receptors. Schools must be sited to prevent them from being located near hazardous materials sites. In addition, Policy HS-A45 in the Draft General Plan calls for separation between hazardous materials users and residentially-designated land uses, hospitals and nursing/convalescent homes, hotels and lodging, schools and daycare centers, and species of concern. This policy, in coordination with existing regulatory programs, would reduce this impact to a less-than-significant level, and no additional mitigation is required.

(4) Impair Emergency Response or Evacuation Plans. Policies HS-6.1 and HS-6.2 and Actions HS-A52 through HS-A59 in the Draft General Plan make improvements to emergency response and evacuation in the County. Specific new actions include development of a disaster response program (Action HS-A52), preparation, update, and refinement of evacuation routes and evacuation plans (Actions HS-A53 and HS-A55), creating an inventory of hazards with standards for mitigation (Action HS-A57), and studying the effects of climate change on emergency response (Action HS-A58). New development would be required to meet State Fire Code provisions for minimum street widths, turning areas, and other requirements to ensure access for emergency response vehicles. However, increased traffic as a result of development under the Draft General Plan may result in increased response time for emergency vehicles.

Impact HAZ-2: New development under the Draft General Plan may impair emergency response during peak traffic periods.

Additional development in the County under the Draft General Plan would result in an increase in traffic and congestion on roadways, which could potentially impair emergency response. Traffic Policy CI-3.1 would allow for more congestion on roadways during peak traffic periods, in order to allow for more efficient use of transportation infrastructure and other beneficial impacts. Although the Draft General Plan contains actions and policies that would mitigate the potential effects of new development on emergency response times to some extent, delays in emergency response due to increased congestion during peak traffic periods are expected to occur.

While the greater utilization of the roadways could cumulatively affect emergency response between the responding station and the emergency call site due to the additive effects of delay at successive signalized intersections over the course of any particular route during the peak period, the County is generally comprised of a grid pattern of rural roads and the growth areas are required to utilize a grid pattern of local roads, both of which allow for multiple access options.

In the three communities in which mixed use growth has been allowed (Dunnigan, Knights Landing, and Madison) professional fire service within the community is a requirement. Of the three areas, Dunnigan is the largest physical area (2,312 acres) and yet its dimensions are very conducive to walking, approximately 1.5 miles wide by three miles long. Additionally the County Code requires fire sprinklers in all residential structures. The combined effect of grid streets, local fire stations proximate to growth, small compact communities, and residential sprinklers will help ensure acceptable fire response. Nevertheless, because some delay could occur this is considered a significant impact.

> Mitigation Measure HAZ-2: None available.
>
> While implementation of the policies and actions included in the Draft General Plan would reduce the severity of the impact to emergency responses, no additional feasible mitigation measures are available. Therefore, this impact would remain significant and unavoidable. (SU).

(5) Expose People to Fire Risks or Other New Health and Safety Hazards. As described in the setting section, the County is responsible for implementation of State wildfire prevention and mitigation policies. Action HS-A43 specifically implements these policies. Existing County building requirements, such as requiring sprinklers in residential structures,[28] are designed to address fire risks to County residents. Policy HS-3.3 would aid in this effort by having the County communicate the risks, requirements, and options available to those who own land and live in wildfire hazard areas. Specific actions in the Draft General Plan would further aid wildfire response and minimize loss of life and property in fires through construction requirements for new buildings, emergency access requirements, and establishment of "defensible space" (Actions HS-A37, HS-A38, HS-A39, and HS-A40). Therefore, the Draft General Plan would result in a net beneficial impact, and no additional mitigation is required.

(6) Expose People to Risks from Aviation Hazards. This discussion addresses the eighth and ninth significance criteria listed above. As described in the setting section, land use plans have been implemented by SACOG in accordance with Federal Aviation Administration (FAA)

[28] Yolo County Code, Title 7, Section 7-1.04(g).

requirements to ensure compatible land use near County public use airports. Implementation of Policies HS-5.1 through HS-5.4 would ensure that established airport safety zones are conservatively interpreted and enforced. However, the policies do not address private or informal (unregulated) airstrips within unincorporated areas of the county.

Impact HAZ-3: The public may be exposed to safety hazards due to new development near private and informal airstrips.

As detailed in the Setting section above, several private airstrips are located in the County, and an unknown number of informal airstrips are believed to be present. The development of structures that are incompatible with these airstrips, due to proximity to the airstrips or height within takeoff and landing zones, could present a safety hazard.

The following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure HAZ-3: Amend Policy HS-5.2 of the Draft General Plan as follows:

Policy HS-5.2: Ensure that new development near commercial and public use airports is consistent with setbacks, height, and land use restrictions as determined by the Federal Aviation Administration and the Sacramento Area Council of Governments Airport Land Use Commission. Ensure that development proximate to private airstrips addresses compatibility issues. (LTS)

(7) Conflict with Plans or Policies of Other Agencies. Most of the significant public health and safety responsibilities for the County involve implementation of State and federal laws, regulations, and programs. For hazardous materials, YCEHD is charged with implementing State programs, which in turn incorporate federal requirements. For aviation hazards, the County Planning Department is charged with implementing safety requirements promulgated by SACOG, which is in turn obligated to meet or exceed FAA regulations. The County also is responsible for implementing State wildfire prevention regulations. The Draft General Plan is consistent with these responsibilities to laws, programs, and regulations from other agencies, and no significant impact resulting from inconsistencies would result.

(8) Result in Adverse Impacts from Draft General Plan Policies Compared to 1983 General Plan Policies. Where possible and appropriate, the Draft General Plan includes many policies and actions that are more stringent than the State or federal regulatory requirements and the 1983 General Plan. As one example, requiring a Phase I site assessment (Action HS-A46) is more protective to human health than is required by State and federal regulations. Therefore, implementation of the Draft General Plan would result in a beneficial impact, compared to the 1983 General Plan. No additional mitigation is required.