

5. Environmental Analysis

5.7 HAZARDS AND HAZARDOUS MATERIALS

This section of the DEIR evaluates the potential impacts of the General Plan Update on human health and the environment due to exposure to hazardous materials or conditions. Background information on these safety hazards provides a basis for the siting of land uses that would reduce unreasonable risks and protect public health and welfare. Various federal and state programs that regulate the use, storage, and transportation of hazardous materials are also discussed in this section. Potential project impacts and appropriate mitigation measures or standard conditions are included as necessary. The analysis in this section is based, in part, upon the following source:

- *Technical Background Report to the Safety Element of the Yucca Valley General Plan*, Earth Consultants International, September 2012

A complete copy of this report is included as Appendix F to this Draft EIR.

Geologic hazards and flood hazards are addressed separately in Sections 5.5, *Geology and Soils*, and 5.8, *Hydrology and Water Quality*, respectively. Water quality and pollutant discharge are also addressed in Section 5.8.

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5.7.1.1 Regulatory Setting

Hazardous Materials and Waste Regulation

Hazardous materials refer generally to hazardous substances that exhibit corrosive, poisonous, flammable, and/or reactive properties and have the potential to harm human health and/or the environment. Hazardous materials are used in products (household cleaners, industrial solvents, paint, pesticides, etc.) and in the manufacturing of products (e.g., electronics, newspapers, plastic products). Hazardous materials can include petroleum, natural gas, synthetic gas, acutely toxic chemicals, and other toxic chemicals that are used in agriculture, commercial, and industrial uses; businesses; hospitals; and households. Accidental releases of hazardous materials can occur from a variety of causes, including highway incidents, warehouse fires, train derailments, shipping accidents, and industrial incidents.

There are many federal, state, and local programs that regulate the use, storage, and transportation of hazardous materials and hazardous waste, and they are constantly changing. Federal and state statutes, as well as local ordinances and plans regulate hazardous waste management. These regulations can reduce the danger hazardous substances may pose to people and businesses under normal daily circumstances and as a result of emergencies and disasters. Potentially relevant federal, state, and local laws, regulations, programs, and plans applicable to the proposed project are summarized below.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) of 1976 is the principal federal law that regulates the generation, management, transportation, and disposal of hazardous waste. Hazardous waste management includes the treatment, storage, and disposal of hazardous waste. Treatment is any process that changes the physical, chemical, or biological character of the waste to reduce its potential as an environmental threat. Treatment can include neutralizing the waste, recovering energy or material resources from it, rendering it less hazardous, or making it safer to transport, dispose of, or store.

The RCRA gave the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from “cradle to grave,” that is, from generation to ultimate disposal. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous



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substances. It should be noted that RCRA focuses only on active and future facilities and does not address abandoned or historical sites.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), commonly known as Superfund, was enacted to protect water, air, and land resources from the risks created by past chemical disposal practices, such as abandoned and historical hazardous wastes sites. Through the act, EPA was given power to seek out those parties responsible for any release and to compel appropriate cleanup activities. This federal law created a tax on the chemical and petroleum industries that went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites. CERCLA also enabled the revision of the National Contingency Plan, which provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The National Contingency Plan also established the National Priority List (NPL) of sites, which are known as Superfund sites.

Superfund Amendments and Reauthorization Act

CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986. Title 5 of this regulation requires that each community establish a local emergency planning committee (LEPC) to develop an emergency plan for preparing for and responding to a chemical emergency. The emergency plan is reviewed by the State Emergency Response Commission and publicized throughout the community. The Certified Unified Program Agency (CUPA) is responsible for coordinating hazardous material and disaster preparedness planning and appropriate response efforts with local municipalities as well as local and state agencies. The CUPA with responsibility for the Town of Yucca Valley is the San Bernardino County Fire Department (SBCFD), Hazardous Waste Materials Division (HMD). The goal is to improve public- and private-sector readiness and to mitigate local impacts resulting from natural or man-made emergencies.

Emergency Planning and Community Right-to-Know Act

The Emergency Planning and Community Right-to-Know Act (EPCRA) was enacted by Congress as the national legislation on community safety. This law helps local communities protect public health, safety, and the environment from chemical hazards. The primary purpose of EPCRA is to inform communities and citizens of chemical hazards in their areas by requiring businesses to report the locations and quantities of chemicals stored onsite to state and local agencies. These reports help communities prepare to respond to chemical spills and similar emergencies. Section 3131 of EPCRA requires manufacturers to report releases to the environment (air, soil, and water) of more than 600 designated toxic chemicals; report offsite transfers of waste for treatment or disposal at separate facilities; pollution prevention measures and activities; and participate in chemical recycling. These annual reports are submitted to the EPA and state agencies. The EPA maintains and publishes a database that contains information on toxic chemical releases and other waste management activities by certain industry groups and federal facilities. This online, publicly available, national digital database is called the Toxics Release Inventory and was expanded by the Pollution Prevention Act of 1990.

Toxic Substances Control Act

The Toxic Substances Control Act of 1976 was enacted by Congress to give the EPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. The EPA repeatedly screens these chemicals and can require reporting or testing of any that may pose an environmental or human health hazard. It can ban the manufacture and import of chemicals that pose an unreasonable risk. Also, the EPA has mechanisms in place to track the thousands of new chemicals that industry develops each year with either unknown or dangerous characteristics. It then can control these chemicals as necessary to protect human health and the environment. The act supplements other federal statutes, including the Clean Air Act and the Toxic Release Inventory under EPCRA.

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Occupational Safety and Health Administration Regulation 29 CFR Standard 1926.62

The Occupational Safety and Health Administration (OSHA) Regulation 29 CFR Standard 1926.62 regulates the demolition, renovation, or construction of buildings involving lead materials. It includes requirements for the safe removal and disposal of lead and the safe demolition of buildings containing lead-based paint or other lead materials.

Responsible agencies that regulate hazardous materials and waste include:

United States Environmental Protection Agency (EPA): The EPA is the primary federal agency that regulates hazardous materials and waste. In general, the EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. The agency is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. EPA programs promote handling hazardous wastes safely, cleaning up contaminated land, and reducing trash. Under the authority of the RCRA and in cooperation with state and tribal partners, the Waste Management Division manages a hazardous waste program, an underground storage tank program, and a solid waste program that includes development of waste reduction strategies such as recycling.

California Environmental Protection Agency (Cal/EPA): Cal/EPA was created in 1991 by Governor's Executive Order. The six boards, departments, and offices were placed under the Cal/EPA umbrella to create a cabinet-level voice for the protection of human health and the environment and to assure the coordinated deployment of state resources. Cal/EPA oversees hazardous materials and hazardous waste compliance throughout California.

California Department of Toxic Substances Control (DTSC): DTSC is the department of Cal/EPA that carries out the RCRA and CERCLA programs in California to protect people from exposure to hazardous substances and wastes. The department regulates hazardous waste, cleans up existing contamination, and looks for ways to control and reduce the hazardous waste produced in California primarily under the authority of RCRA and in accordance with the California Hazardous Waste Control Law (California Health and Safety Code Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (Title 22, California Code of Regulations, Divisions 4 and 4.5). Permitting, inspection, compliance, and corrective action programs ensure that people who manage hazardous waste follow state and federal requirements and other laws that affect hazardous waste specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Under DTSC, the Statewide Compliance Division (SCD) administers the technical implementation of the state's Unified Program, a consolidation of six environmental programs at the local level. This program was established under the amendments to the California Health and Safety Code made by Senate Bill 1082 in 1994. The six programs that make up the Unified Program are:

- Hazardous Materials Business Plan/Emergency Response Plan
- Hazardous Waste/Tiered Permitting
- Underground Storage Tanks
- Aboveground Storage Tanks Spill Prevention Control and Countermeasures
- California Accidental Release Prevention Program (CalARP)
- Uniform Fire Code Hazardous Materials Management Plan

SCD also conducts triennial reviews of Unified Program agencies to ensure their programs are consistent statewide, conform to standards, and deliver quality environmental protection at the local level. SCD carries out the inspections, enforcement, and complaint response at the state's hazardous waste generators, facilities, and transporters and oversees the hazardous waste generator and onsite waste treatment surveillance and enforcement programs carried out by local Unified Programs.



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Certified Unified Program Agency (CUPA): A CUPA is a local agency that has been certified by Cal/EPA to implement the local Unified Program. The CUPA can be a county, city, or joint powers authority. A participating agency is a local agency that has been designated by the local CUPA to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA. A designated agency is a local agency that has not been certified by Cal/EPA to become a CUPA but is the responsible local agency that would implement the six Unified Programs outlined above until they are certified.

The Unified Program is related to the State Emergency Response Commissions (SERCs) and LEPCs that were established under both federal (EPCRA) and state authority relative to the Hazardous Materials Business Plan/Emergency Response Plan. Although the CUPA structure does not specifically incorporate the SERC and LEPCs, both SERC and CUPA have found it beneficial to establish strong communication and coordination on hazardous materials issues. The CUPA board now has a representative on the SERC, and members of LEPCs are also CUPA board members. Common issues include ensuring that hazardous materials, waste, and tank programs maintain strong coordination and communication for maximum consistency in program implementation. Shared data, joint resources, common forms, provision of emergency information, and regulatory review are other interests that are coordinated by the CUPA board and SERC/LEPCs.

San Bernardino County is a member of the Southern California Hazardous Waste Management Authority and works to solve hazardous waste problems at the regional level. SBCFD's HMD is designated by the state as the CUPA for the County of San Bernardino. The fire department focuses on the management of specific environmental programs at the local government level to address the disposal, handling, processing, storage, and treatment of local hazardous materials and waste products. The CUPAs are also responsible for implementing the leak prevention element of the Underground Storage Tank (UST) Program.

Hazardous Waste Management Programs

Programs that regulate hazardous materials and waste include:

UST Program: Releases of petroleum and other products from USTs are the leading source of groundwater contamination in the United States. The RCRA Subtitle I established regulations governing the storage of petroleum products and hazardous substances in USTs and the prevention and cleanup of leaks. In EPA Region 9 (California, Arizona, Hawaii, Nevada, Pacific Islands, and over 140 tribal nations) the UST program operates primarily through state agency programs with EPA oversight. In California, the State Water Resources Control Board (SWRCB), under the umbrella of Cal/EPA, provides assistance to local agencies enforcing UST requirements. The purpose of the UST program is to protect public health and safety and the environment from releases of petroleum and other hazardous substances. The program consists of four elements: leak prevention, cleanup, enforcement, and tank tester licensing. In September 2004, SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs, including groundwater analytical data, the surveyed locations of monitoring wells, and other data. The SWRCB's Geotracker system currently has information submitted by responsible parties for over 10,000 leaking UST (LUST) sites statewide and has been extended to include all SWRCB groundwater cleanup programs, including the LUST, non-LUST (Spill, Leaks, Investigation, and Cleanup), Department of Defense, and landfill programs.

The SBCFD's HMD is charged with the responsibility of conducting compliance inspections of regulated facilities in San Bernardino County. Regulated facilities are those that handle hazardous materials, generate or treat hazardous waste, and/or operate an underground storage tank. All new installations of underground storage tanks require an inspection, along with the removal of the old tanks under strict chain-of-custody protocol.

County of San Bernardino Hazardous Waste Management Plan: Assembly Bill 2948 (Chapter 1504, Statutes of 1986), commonly known as the Tanner Bill, authorized counties to prepare hazardous waste management plans (HWMP) in response to the need for safe management of hazardous wastes. The County of San Bernardino HWMP

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was adopted by the board of supervisors and approved by the California Department of Health Services in February 1990. The HWMP is the primary planning document for the management of hazardous waste in San Bernardino County. It identifies the types and amounts of wastes generated in the county; establishes programs for managing these wastes; identifies an application review process for the siting of specified hazardous waste facilities; identifies mechanisms for reducing the amount of waste generated in the county; and identifies goals, policies, and actions for achieving effective hazardous waste management. Hazardous materials and waste are managed by the SBCFD HMD. As further required by the state, all cities and towns in San Bernardino County must also adopt a municipal HWMP.

Hazardous Materials Disclosure Programs: Both the federal government (Code of Federal Regulations, EPA, SARA and Title III) and the State of California (California State Health and Safety Code, Division 20, Chapter 6.95, Sections 25500–25520; California Code of Regulations, Title 19, Chapter 2, Sub-Chapter 3, Article 4, Sections 2729–2734) require all businesses that handle more than a specified amount of hazardous materials or extremely hazardous materials, termed a reporting quantity, to submit a hazardous materials emergency/contingency plan (also known as a hazardous materials business plan) to its local CUPA. The CUPA with responsibility for the Town of Yucca Valley is the SBCFD HMD. The business plan includes the business owner/operator identification page, hazardous materials inventory – chemical description page, and an emergency response plan and training plan.

The preparation, submittal and implementation of a business activity form is required by all businesses that handle a hazardous material or a mixture containing a hazardous material in quantities equal to or greater than those outlined below (SBCFD 2012):

- All hazardous waste generators, regardless of quantity generated or size of container.
- Any business that uses, generates, processes, produces, treats, stores, emits, or discharges a hazardous material in quantities at or exceeding:
 - 55 gallons or more of a liquid
 - 500 pounds or more of a solid
 - 200 cubic feet (compressed) of gas at any one time in the course of a year
- Any business that handles, stores, or uses Category (I) or (II) pesticides, as defined by the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), regardless of amount.
- Any business that handles Department of Transportation (DOT) Hazard Class 1 (Explosives, as defined in Title 49 of the Code of Federal Regulations) regardless of amount.
- Any business that handles extremely hazardous substances in quantities exceeding the threshold planning quantity, as listed in Title 40 of the Federal Code of Regulations, Part 355.
- Any business subject to the EPCRA. Generally EPCRA includes facilities that handle hazardous substances above 10,000 pounds, or extremely hazardous substances above threshold planning quantities. Some exceptions include retail gas stations with up to 75,000 gallons of gasoline or 100,000 gallons of diesel if their underground storage tanks meet the 1998 upgrade requirements.
- Any business that handles radioactive materials in quantities for which an emergency plan is required to be adopted, pursuant to Parts 30, 40 or 70 of Chapter 10, Title 10, Code of Federal Regulations, or pursuant to any regulations adopted by the state in accordance with those regulations.

All business plans need to be updated by March 1st of each year or within 30 days of a substantial change. Businesses are required to submit an amendment to their business plan to the CUPA if any of the following events occur:



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- A change in inventory
- Any change in site conditions that may significantly impact emergency response
- Change of mailing address, phone number or business location; change of emergency contact person
- Change of ownership
- Change of business name.

Business plans must include an inventory of the hazardous materials at the facility. The entire business plan needs to be reviewed and recertified every three years. Business plans are required to include emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. These plans need to identify the procedures to follow for immediate notification to all appropriate agencies and personnel of a release, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information for all emergency coordinators of the business, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel. All facilities must keep a copy of their plan on site.

Business plans are designed to be used by responding agencies, such as the SBCFD, during a release or spill to allow for a quick and accurate evaluation of each situation for appropriate response. Businesses that handle hazardous materials are required by law to provide an immediate verbal report of any release or threatened release of hazardous materials if there is a reasonable belief that the release or threatened release poses a significant present or potential hazard to human health and safety, property, or the environment. Fines of up to \$25,000 per day and one year in prison may be awarded to an individual or business if a release or threatened release is not reported. If a release involves a hazardous substance listed in Title 40 of the Code of Federal Regulations in an amount equal to or exceeding the reportable quantity for that material, a notice must be filed with the California Office of Emergency Services within 15 days of the incident.

The SBCFD HMD is charged with the responsibility of conducting compliance inspections of regulated facilities in San Bernardino County (with the exception of Victorville). Specialists are assigned countywide to address the wide variety of complex issues associated with hazardous substances.

Hazardous Materials Incident Response

Under Title III of SARA, the LEPC is responsible for developing an emergency plan for preparing for and responding to chemical emergencies in that community. This emergency plan must include:

- An identification of local facilities and transportation routes where hazardous material are present.
- The procedures for immediate response in case of an accident (this must include a community-wide evacuation plan).
- A plan for notifying the community that an incident has occurred.
- The names of response coordinators at local facilities.
- A plan for conducting exercises to test the plan.

The plan is reviewed by the SERC and publicized throughout the community. The LEPC is required to review, test, and update the plan each year. The SBCFD HMD is responsible for coordinating hazardous material coordination and inspection in the Town.

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Hazardous Material Spill/Release Notification Guidance

All significant spills, releases, or threatened releases of hazardous materials must be immediately reported. Federal and state emergency notification is required for all significant releases of hazardous materials. Requirements for immediate notification of all significant spills or threatened releases cover owners, operators, persons in charge, and employers. Notification is required regarding significant releases from facilities, vehicles, vessels, pipelines, and railroads. Many state statutes require emergency notification of a hazardous chemical release:

- Health and Safety Codes Sections 25270.7, 25270.8, and 25507
- Vehicle Code Section 23112.5
- Public Utilities Code Section 7673, (PUC General Orders #22-B, 161)
- Government Code Sections 51018, 8670.25.5 (a)
- Water Code Sections 13271, 13272
- California Labor Code Section 6409.1 (b)10

In addition, all releases that result in injuries or workers harmfully exposed must be immediately reported to California Occupational Safety and Health Administration (California Labor Code Section 6409.1 [b]). For additional reporting requirements, also refer to the Safe Drinking Water and Toxic Enforcement Act of 1986, better known as Proposition 65, and Section 9030 of the California Labor Code.

The California Accidental Release Prevention Program (CalARP) became effective on January 1, 1997, in response to Senate Bill 1889. CalARP replaced the California Risk Management and Prevention Program. Under the CalARP, the Governor's Office of Emergency Services (OES) must adopt implementing regulations and seek delegation of the program from the EPA. CalARP aims to be proactive and therefore requires businesses to prepare risk management plans, which are detailed engineering analyses of the potential accident factors present at a business, and the mitigation measures that can be implemented to reduce this accident potential. In most cases, local governments will have the lead role for working directly with businesses in this program. The SBCFD is the CUPA designated as the administering agency for CalARP.



Emergency Preparedness

The San Bernardino County OES, the SBCFD HMD, and the Town of Yucca Valley Emergency Preparedness Division are all responsible for coordinating hazardous material and disaster preparedness planning and appropriate response efforts with other Town of Yucca Valley departments, as well as local and state agencies.

San Bernardino County Office of Emergency Services

The San Bernardino OES is a branch of the SBCFD that deals with the planning for and response to natural and technological disasters in the county, including development and implementation of an emergency operations plan (EOP) for the county operations area (SBCFD 2013). The EOP identifies hazards and response, roles and responsibilities, and other key activities of government during a disaster. County OES also maintains current copies of all San Bernardino County City/Town EOPs. The SBCFD HMD deals with the coordination and inspection of hazardous materials facilities in the county and in the Town of Yucca Valley. The SBCFD has developed and teaches a community emergency response team (CERT) training program to help county residents prepare for potential disasters. The program is certified by the Federal Emergency Management Agency (FEMA) and the state OES. The Town of Yucca Valley is one of nine jurisdictions within the county currently supporting a citizens corps program. This program is designed to engage residents in community and family safety programs by helping families and neighbors prepare for a disaster.

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In 1984, San Bernardino County formed a regional hazardous materials emergency response team through a joint effort of the San Bernardino County Fire Chiefs Association, the San Bernardino County Department of Environmental Health Services, and the County's Communications Center. The formation of this response team was motivated by the need for highly trained personnel and expensive, specialized equipment to respond to hazardous materials incidents. The SBCFD's Hazardous Materials Response team now has more than 100 personnel, all trained to the State Fire Marshal-approved Hazardous Material Specialist level, and 19 response vehicles equipped to respond to hazardous release incidents. The SBCFD's Hazardous Materials Response Team is divided into three geographic locations, allowing them to quickly respond to hazardous materials incidents anywhere within the county. County Fire Station 36 in Joshua Tree has trained HazMat technicians and equipment, allowing them to make quick assessments and provide resource and mitigation recommendations to the incident commander in real time. The Twentynine Palms Combat Center Fire Department also has fully trained hazardous materials technicians and a large complement of equipment. They are available to assist on any and all hazardous materials incidents in the Town of Yucca Valley. Finally, the SBCFD's Hazardous Materials Response Team in San Bernardino can and will respond to incidents in Yucca Valley (ECI 2012).

SBCFD Hazardous Materials Team members are capable of monitoring unknown atmospheres, identifying unknown chemicals, plugging, patching and intervening in large chemical leaks, conducting mass decontamination, and handling confined space entry rescue operations. The hazardous materials team members often also assist local fire stations with medical emergencies, structural fires and mass casualty incidents.

Town of Yucca Valley Emergency Preparedness Division

The Disaster Mitigation Act of 2000 (DMA 2000) requires state and local governments to prepare mitigation plans that identify hazards, potential losses, mitigation needs, goals, and strategies. It is intended to facilitate cooperation between state and local governments, prompting them to work together (Emergency Planning Consultants 2010). In response to the DMA 2000, the Town of Yucca Valley Emergency Preparedness Division maintains and implements a hazard mitigation plan (HMP) for the Town. The HMP identifies mitigation goals and objectives, prioritizes specific mitigation actions, and presents an overall strategy for implementing those objectives. Mitigation outlined in the HMP is tailored to the unique natural setting of Yucca Valley, which requires special attention to wildland fire and earthquake-related hazards.

Airports

Airport authorities and other agencies regulate aircraft activity. The Town of Yucca Valley has no direct authority over airport development and operations. The State Aeronautics Act of the California Public Utilities Code establishes statewide requirements for the airport land use compatibility planning and requires nearly every county to create an Airport Land Use Commission (ALUC) or other alternative. San Bernardino County opted for an alternative to the ALUC and delegated responsibility to prepare and maintain an Airport Land Use Compatibility Plan (ALUCP) to each airport jurisdiction. In April of 1995, the Town Council of the Town of Yucca Valley, by adoption of Resolution No. 95-18, determined that the Town's Community Development Department would be the agency responsible for the preparation, adoption, and amendment of the ALUCP. Other public agencies also provide policy guidance or promulgate standards that address regional transportation and safety issues related to airport land use compatibility planning. A land use compatibility assessment is part of the Yucca Valley Airport Comprehensive Land Use Plan (San Bernardino County Planning Department, 1992).

Federal Aviation Administration

The basic responsibilities of the Federal Aviation Administration (FAA), under the US Department of Transportation, are the regulation of civil aviation to promote safety, airspace and air traffic management, and the regulation of commercial space transportation. The Code of Federal Regulations contains standards for aircraft noise emission levels.

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Air Safety Zones

The California ALUC Planning Handbook provides planning guidance to ALUCs and counties and cities with jurisdiction over airport area land uses. The purpose of the handbook is to support the State Aeronautics Act. The handbook allows jurisdictions flexibility in determining air safety zones that represent areas of assumed accident potential.

Fire Safety

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) is dedicated to the fire protection and stewardship of over 31 million acres of California's wildlands. The Office of the State Fire Marshal (OSFM) supports CAL FIRE's mission to protect life and property through fire prevention engineering programs, law and code enforcement, and education. OSFM provides for fire prevention by enforcing fire-related laws in state-owned or operated buildings; investigating arson fires in California; licensing those who inspect and service fire protection systems; approving fireworks for use in California; regulating the use of chemical flame retardants; evaluating building materials against fire safety standards; regulating hazardous liquid pipelines; and tracking incident statistics for local and state government emergency response agencies.

California Fire Plan

The California Fire Plan is the state's road map for reducing the risk of wildfire through planning and prevention to reduce firefighting costs and property losses, increase firefighter safety, and to contribute to ecosystem health. The California Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and CAL FIRE.



California Fire Code

The 2010 California Fire Code (Title 24 California Code of Regulations, Part 9) is based on the 2000 Uniform Fire Code and includes amendments from the State of California fully integrated into the code. The California Fire Code contains fire-safety-related building standards that are referenced in other parts of Title 24 of the California Code of Regulations.

5.7.1.2 Existing Setting

Contaminated Sites

Superfund Sites

According to the EPA, there are no Superfund sites in the Town of Yucca Valley. However, in the EPA CERCLIS database, the Yucca Mercury Spill site at 7050 La Contenta Road, in Yucca Valley 92284 is listed as a Superfund site, although not included on the National Priority List. The site is also known as La Contenta Middle School, and was cleaned up with EPA fund-financed monies on an emergency basis on March 24-25, 2007. The cleanup consisted of removal of the contaminant.

Toxic Chemical Releases

A search of the EPA Toxic Release Inventory (TRI) database on November 10, 2011, showed that there are no records of on- or offsite disposed or otherwise released chemicals in zip codes 92284 and 92286, the two zip codes that encompass the Town of Yucca Valley. The database includes the most recent data released to the public on December 2010 with data for the year 2009.

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Leaking Underground Storage Tanks

The California Regional Water Quality Control Boards (RWQCB), in cooperation with the Office of Emergency Services, maintain an inventory of leaking underground storage tanks (LUSTs) in a statewide database called GeoTracker. The database lists 10 reported LUST cases in the Yucca Valley area. According to the LUST database, all 10 sites have been remediated and closed; they are listed in Table 5.7-1.

**Table 5.7-1
Leaking Underground Tanks Reported in Yucca Valley**

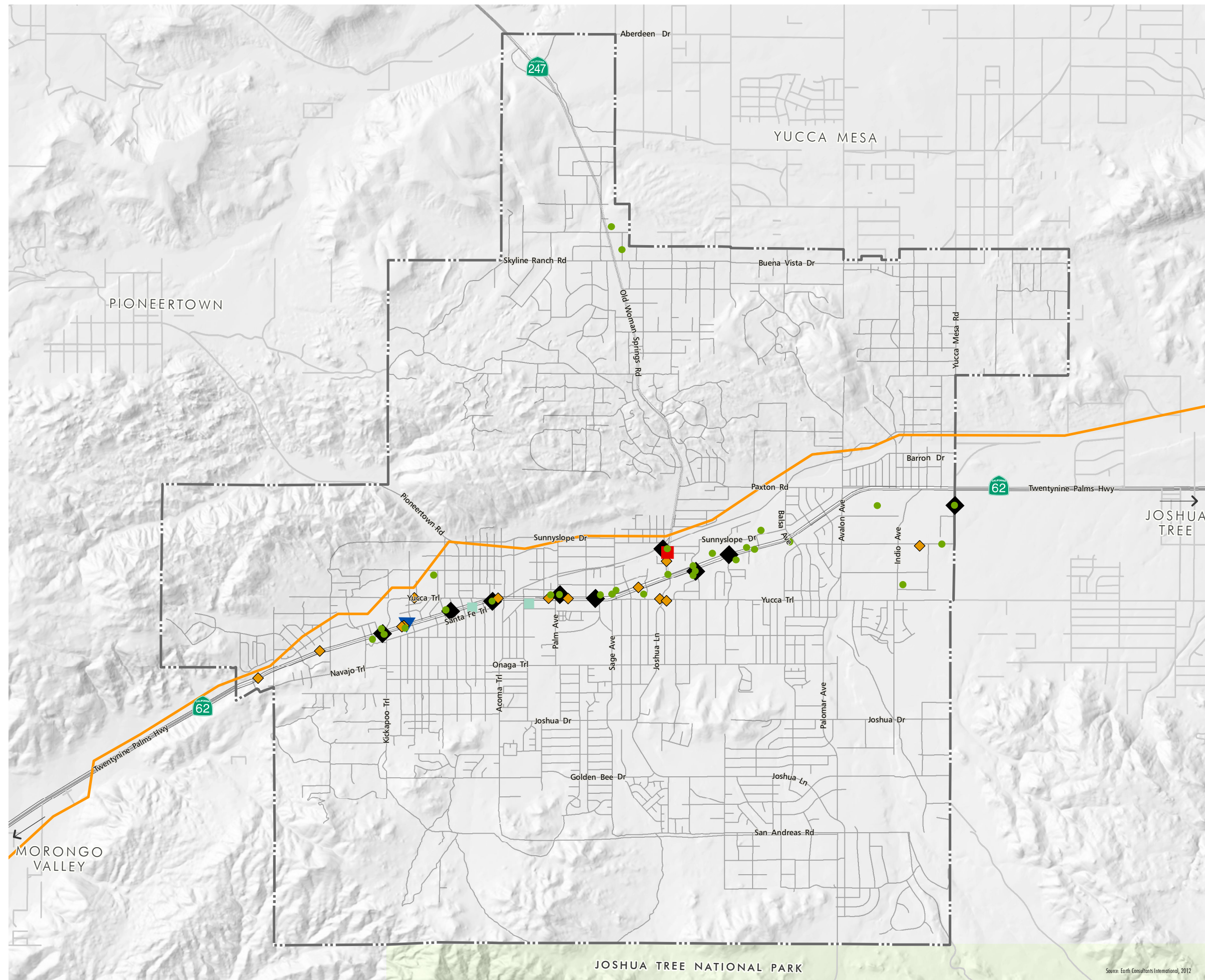
Site Name	Address	Contaminants	Status	Year Closed
7-11 Station	55277 29 Palms Hwy.	Gasoline	Case Closed	1999
Arco #9720	56888 29 Palms Hwy.	Gasoline	Case Closed	2003
Bills Service	56504 29 Palms Hwy.	Fuels Oxygenate, Gasoline	Case Closed	2004
Caltrans Paradise Valley	6690 La Contenta Rd.	Gasoline	Case Closed	1990
Circle K #902	6940 Old Woman Springs Rd.	Gasoline	Case Closed	1988
EZ Serve Station	56079 29 Palms Hwy.	Gasoline	Case Closed	1999
Goodyear Tire	57672 29 Palms Hwy.	Waste Oil	Case Closed	1995
Mag Gas	55716 29 Palms Hwy.	Gasoline	Case Closed	1999
San Bernardino Co. Yucca Valley Forest Fire	7105 Airway Ave.	Gasoline	Case Closed	1984
Thrifty Oil Station #350	56888 29 Palms Hwy.	Gasoline	Case Closed	1990

Source: Earth Consultants International 2013.

Because of the deep groundwater table in the Town of Yucca Valley area, all 10 reported leaks listed in Table 5.7-1 reportedly impacted the soil only; that is, none of the leaks impacted groundwater. In cases like these, the stained soils are generally excavated and replaced with clean soil, and the contaminated soil is then shipped to a facility that accepts hazardous materials. Specific information about each of these sites, including any reports submitted to the RWQCB by the consultants that conducted the cleanups, if available, can be found on the GeoTracker website. LUSTs and underground storage tanks that are not leaking are both shown in Figure 5.7-1, *Hazardous Materials Sites Map*.

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Figure 5.7-1
HAZARDOUS MATERIALS SITES MAP



- EPA-Registered Small Quantity Hazardous Waste Generator (LQG) Facility
- EPA-Registered Small Quantity Hazardous Waste Generator (SQG) Facility
- EPA-Registered Hazardous Waste Generator (size unknown)
- ◆ Leaking Undergrounds Storage Tank (LUST) Site - Case Closed
- ◆ Permitted Underground Storage Tank (UST)
- ▼ Land Disposal Site
- Gas Transmission
- Town

Source: Earth Consultants International, 2012

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EPA-Registered Small- and Large-Quantity Generators of Hazardous Materials

Many different types of businesses can be producers of hazardous waste. Small businesses like dry cleaners, auto repair shops, medical facilities or hospitals, photo processing centers, and metal plating shops are usually generators of small quantities of hazardous waste. The EPA (Title 40 of the Code of Federal Regulations) defines a small quantity generator as a facility that produces between 100 and 1,000 kilograms (Kg) of hazardous waste per month (approximately equivalent to between 220 and 2,200 pounds, or between 27 and 275 gallons). A “conditionally exempt” small quantity generator is a business that generates 220 pounds (27 gallons) or less of hazardous waste per month. Larger businesses are sometimes generators of large quantities of hazardous waste. These generally include some gas stations, chemical manufacturers, large electroplating facilities, petroleum refineries, and military installations. The EPA defines a large-quantity generator as a facility that produces over 1,000 Kg (2,200 pounds or about 275 gallons) of hazardous waste per month. Large-quantity generators are fully regulated under RCRA.

The EPA identifies one large-quantity generator of hazardous materials in the Yucca Valley area as of November 2011: the Southern California Edison (SCE) Twentynine Palms Service Center at 6999 Old Woman Springs Road. As of the same date, the EPA identifies 26 facilities in the Yucca Valley area as small-quantity generators and two sites with an unspecified handler type. These facilities are listed in Appendix F of this DEIR.

Household Hazardous Waste and Recycling

Household hazardous waste is defined under the California Health and Safety Code as “any hazardous waste generated incidental to owning or maintaining a place of residence. Household hazardous waste does not include any waste generated in the course of operating a business concern at a residence.” Households often generate solid wastes that could technically be hazardous wastes (e.g., old solvents, paints, pesticides, fertilizer, poisons).

The San Bernardino County Solid Waste Management Department has adopted a Household Hazardous Waste and Oil-Recycling program free to residents, in accordance with the California Integrated Solid Waste Management Act of 1989 (AB 939). The County has established several regional household hazardous waste collection centers, in addition to regional antifreeze, batteries, oil (and filters), and paint (latex only) collection centers. Those facilities within approximately 50 miles of the Town of Yucca Valley are listed in Table 5.7-2.



**Table 5.7-2
Regional Household Hazardous Waste Collection Centers**

Name	Type	Address	Other Information
Joshua Tree	Collection Facility	62499 29 Palms Hwy.	West of Solid Management Building 3 rd Saturday of the month 9:00 AM to 1:00 PM
Apple Valley	Collection Facility	13450 Nomwaket Rd.	Saturdays 10:00 AM to 2:00 PM
Lucerne Valley	Antifreeze, Batteries, Oil, and Paint Only	33269 Old Woman Springs Rd.	Behind Fire Station 3 rd Saturday of the month 9:00 AM to 12 Noon

Source: Earth Consultants International 2013.

Personnel who have been trained in hazardous waste handling and emergency response procedures operate these facilities. At the permanent waste collection centers, a variety of household toxics are accepted, including: chlorine bleach, disinfectants, hair dyes, fiberglass and epoxy resins, paint stripper, paint thinner and turpentine, chemicals

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used in photo processing, insecticides, pesticides and herbicides, motor oils, rodent poisons, pool/spa chemicals, camp propane tanks, outdated medications, etc. Materials not accepted include radioactive materials, explosives, medical waste, and asbestos. Waste from businesses and nonprofit organizations are not accepted at these collection centers. Some collection centers only accept antifreeze, batteries, oil, and latex paint.

Several other businesses in and around the Town of Yucca Valley, such as Home Depot, UPS Mailing Centers, Office Depot and similar stores may receive and recycle certain kinds of materials such as used batteries, spent light bulbs, and old electronics.

Fire Hazards

Yucca Valley is in the lower Mojave section of the Southeastern Deserts Bioregion, an area characterized by isolated, steep-sided mountain ranges separated by broad alluvial basins. Lower elevation areas of the region feature desert scrub or are barren of vegetation. The limited amount of vegetation and low surface fuel loads typically hinder the spread of fire. Higher elevations both inside and outside the Town, including areas such as Joshua Tree National Park, feature a variety of vegetation types. Because of the increased diversity of surface fuel and relatively higher loads and continuity of vegetation, the spread of fire in these regions is higher than on the desert floor. This is reflected in the higher number of fires reported historically in Joshua Tree National Park and in the mountains to the northwest, compared with the Yucca Valley area proper. In addition to vegetation, weather also impacts the risk of wildfires in Yucca Valley. Drought conditions that further reduce the low level of precipitation and summer thunderstorms that produce lightning are both factors that increase the likelihood of wildland fires in the community.

According to CAL FIRE data, there have been a few but significant large fires (defined as 300 acres or greater by CAL FIRE and ten acres or greater by the U.S. Forest Service) in the Yucca Valley area between 1910 and 2008, as shown in Figure 5.7-2, *Historical Wildland Fires in Yucca Valley*. Notable recent fires are outlined below in Table 5.7-3, *Recent Significant Fires in or near Yucca Valley*.

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**Table 5.7-3
Recent Significant Fires in or near Yucca Valley**

Name	Year	Details
Acoma Fire	2008	<ul style="list-style-type: none"> • Burned 356 acres • Destroyed one outbuilding • Human caused (exact cause unknown)
Covington and Whispering Pines Fires	2006	<ul style="list-style-type: none"> • Burned 300 (Covington) and 1,000 acres (Whispering Pines) • Impacted Joshua Tree National Park • Both ignited by lightning • Destroyed two uninhabited structures
Pushwalla Complex Fire	2006	<ul style="list-style-type: none"> • Burned 2,000 acres in Joshua Tree National Park
Sawtooth-Millard-Heart Complex Fire	2006	<ul style="list-style-type: none"> • Largest historical fire to impact the area • Several independent fires merged • Burned 85,700 acres in the Yucca Valley and San Geronio areas • Ignited by lightning near Big Bear Lake • Destroyed 50 homes, 8 mobile homes, 13 garages, 171 outbuildings, 194 vehicles, 27 trailers, 2 railcars, and 9 tractors • Seventeen people were injured, and one person died • Cost \$17 million and 861 fire personnel to battle
Pioneer Fire	2005	<ul style="list-style-type: none"> • Burned 1,900 acres near Pioneertown (4 miles west of Yucca Valley)
Paradise Fire	2005	<ul style="list-style-type: none"> • Burned 3,022 acres in the Morongo Valley • Destroyed six homes • Over 1,000 emergency personnel responded
Juniper Complex Fire	1999	<ul style="list-style-type: none"> • Burned 13,894 acres in Joshua Tree National Park • Extended to within 1.5 miles of Yucca Valley

Source: Earth Consultants International 2012.



As shown in Figure 5.7-2, most wildland fires in and around Yucca Valley have occurred and are more likely to occur in the future in hillside and foothill areas and not in the valley proper. In the developed, relatively flat areas of the Town, vegetation fires are not considered a substantial hazard due to topography and little or no vegetation. This is not to say that vegetation fires do not occur in developed areas, but these tend to be smaller and less intense in heat. The geographic distribution of fire risk discussed above is reflected in the fire hazard severity zones mapped by CAL FIRE and other agencies and shown in Figure 5.7-3, *Fire Hazard Severity Zones*. The Town of Yucca Valley, which is considered a “local responsibility area”, is mapped as having a moderate to very high wildland fire risks. Portions of the Town in very high fire hazard severity zones are located in the hillsides to the south and west-northwest of the Town. These areas extend into very high fire hazard severity zones in state and federal responsibility areas outside the Town’s boundaries.

Fire hazards in Yucca Valley are not limited to those associated with wildlands. The SBCFD identifies the facilities listed below as being the largest “target hazards” in Yucca Valley, which means they are the locations where a structure fire would result in a large loss of life or property.

- Wal-Mart/Stater Brothers Shopping Center (Hilton Road and Highway 62)
- Stater Brothers Shopping Center (Highway 62, east of Barberry Avenue)
- The Home Depot (Highway 62, east of Avalon Avenue)
- The Best Western Motel (56525 Highway 62, east of Palm Avenue)
- Amerigas Propane (Old Woman Springs Road and Buena Vista Drive)

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- Ferrelgas (Yucca Trail and Cherokee Trail)
- G&K Propane (Yucca Trail and Wall Street)
- Santa Fe Assisted Living (55475 Santa Fe Trail, west of Shawnee Trail)
- Sky Harbor Convalescent (57333 Joshua Lane, east of Hardesty Drive)
- Desert Manor Convalescent (8515 Cholla Avenue, off of Golden Bee Drive)

Other high probability/high consequence fire risks of concern include high-rise buildings due to the specialized fire-fighting equipment needed, the limited routes of access into and out of a building, and the potential for great loss of life. However, there are currently no high-rise buildings in Yucca Valley.

Airports

Yucca Valley Airport

Yucca Valley Airport is a public use general aviation facility leased and operated by the Yucca Valley Airport District for aircraft storage, maintenance, use, and training. The airport is unique in that homes with attached and detached hangars are located on the property for the convenience of residents with privately owned aircraft. The Town of Yucca Valley determines which land uses and height limits are compatible with airport operations by consulting the airport's ALUCP. The Town enforces a deed notice area in which property buyers must be notified of their proximity to the airport at the time of certain real estate transactions. Areas of the community where a height limit must be enforced for aircraft safety and deed notices are required are shown in Figure 5.7-4, *Yucca Valley Airport Avigation Easement Map*.

Within the ALUCP's planning area, there are three "safety review areas" that each reflect a particular level and type of aviation-related hazard or risk:

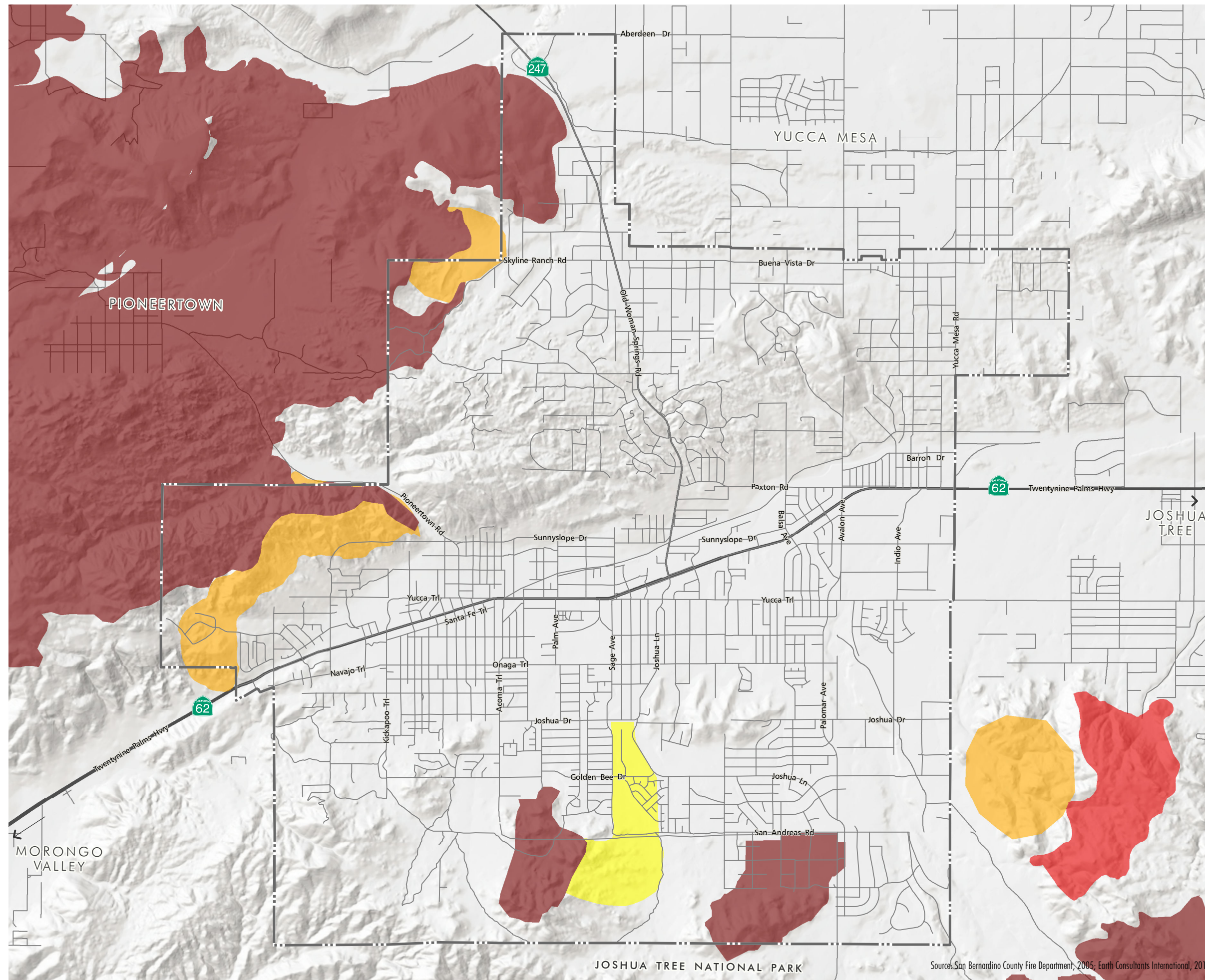
- **Safety Review Area 1:** those areas at either end of a runway, outside the airport boundaries, that correspond with the FAA-designated runway protection zone. This area is designed to provide protection to people and property on the ground and to provide protection to airborne aircraft. It includes a "runway object free area" and a "runway protection zone" where obstructions to aircraft operations are prohibited.
- **Safety Review Area 2:** those areas within the adopted 65 CNEL (community noise equivalency level) noise contours. This area also provides protection to both people on the ground and aircraft operations. It includes an "obstacle free zone", a three-dimensional volume of airspace centered above the runway. Objects are prohibited in this area so that aircraft can transition from ground to airborne or airborne to ground without risk of impact with other entities.
- **Safety Review Area 3:** the area within one mile of the outer boundaries of the airport ownership. This area provides protection to people, property, and aircraft. It is designed to provide aircraft with sterile maneuvering airspace within the immediate vicinity of the airport.

Safety review areas for Yucca Valley Airport are shown in Figure 5.7-5, *Yucca Valley Airport Safety Review Areas*. Because Safety Review Area 2 is limited to the air space above the airport runway, it is considered the most vulnerable to potential hazards. However, it does not contain structures or land uses other than the airport runway. Safety Review Area 3 is considered the least vulnerable to potential hazards but contains a variety of land uses, including residential, commercial, industrial, institutional, and other uses (San Bernardino County Planning Department 1992). The Yucca Valley Airport ALUCP addresses land use compatibility in its planning area by identifying acceptable and unacceptable land uses for each of the three safety review zones.

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Figure 5.7-2

HISTORICAL WILDLAND FIRES IN YUCCA VALLEY



- Year of Last Burn
- 2000 - 2008
 - 1990 - 1999
 - 1980 - 1989
 - 1970 - 1979
 - Town Limits

Note: This map is intended for general land use planning only. Information on this map is not sufficient to serve as a substitute for detailed studies of individual sites

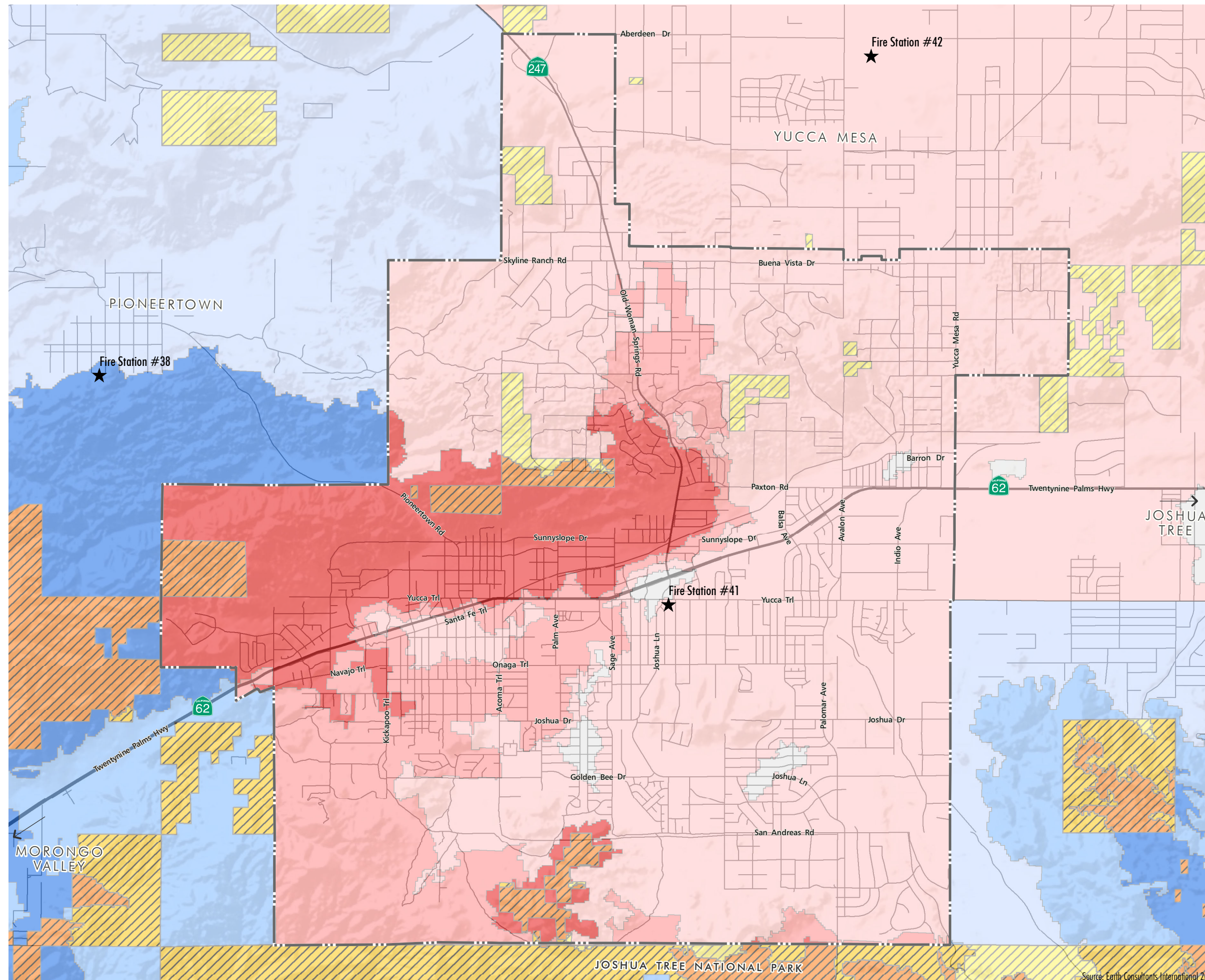
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Figure 5.7-3
FIRE HAZARD SEVERITY ZONES



- Town Limits
- Fire Station
- Local Responsibility Area**
 - Very High Fire Hazard Severity Zone
 - High Fire Hazard Severity Zone
 - Moderate Fire Hazard Severity Zone
 - Urban Unzoned
- State Responsibility Area**
 - Very High Fire Hazard Severity Zone
 - High Fire Hazard Severity Zone
 - Moderate Fire Hazard Severity Zone
- Federal Responsibility Area**
 - Very High Fire Hazard Severity Zone
 - High Fire Hazard Severity Zone
 - Moderate Fire Hazard Severity Zone

Note: This map is intended for general land use planning only. Information on this map is not sufficient to serve as a substitute for detailed studies of individual sites

Source: Earth Consultants International 2012

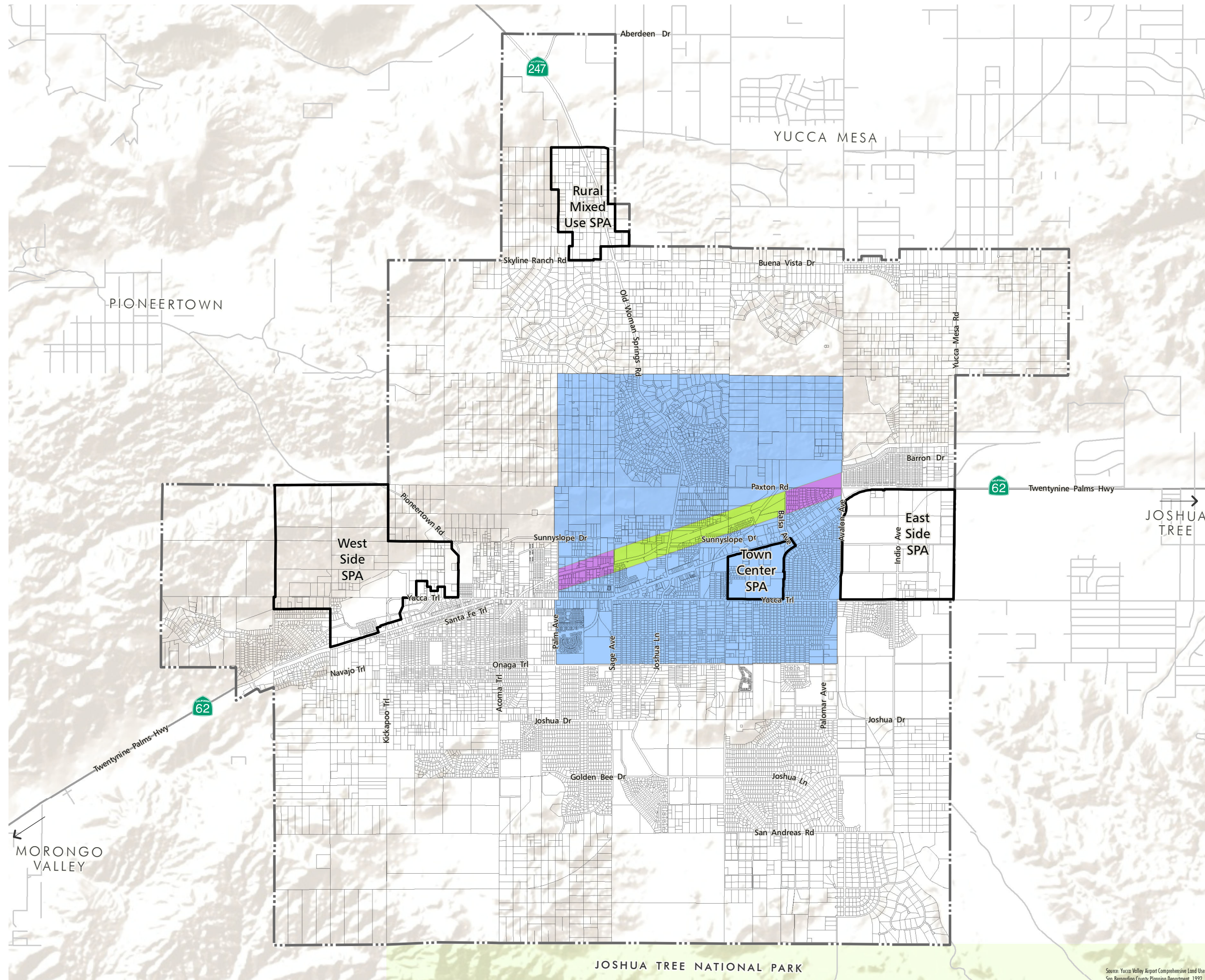
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Figure 5.7-4
YUCCA VALLEY AIRPORT AVIGATION EASEMENT MAP



Impact

- Avigation Easement - 35' Height Limit
- Avigation Easement - 45' Height Limit
- Deed Notice
- SPA - Special Policy Area
- Town Limits

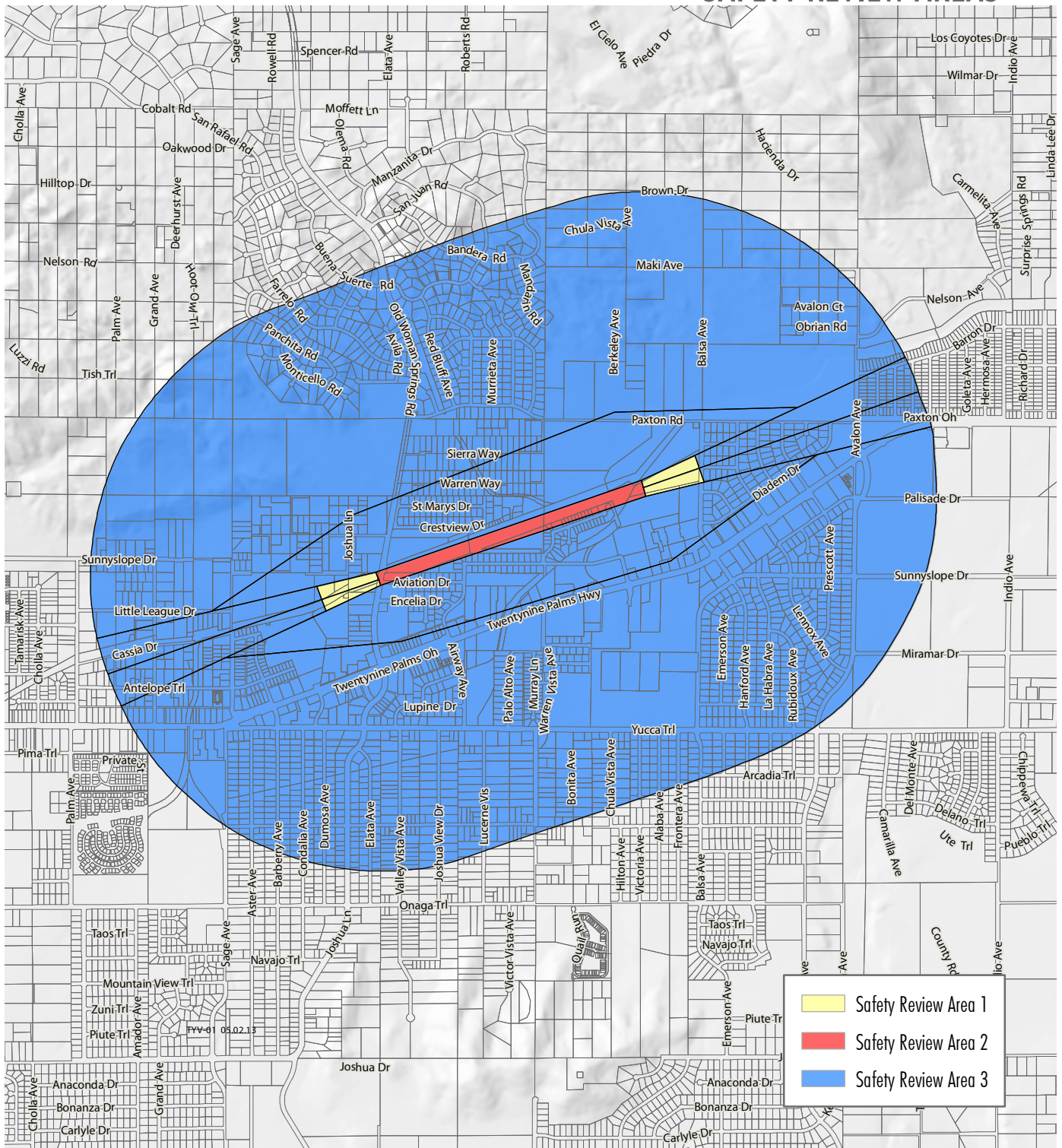
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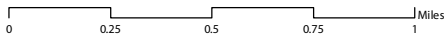
Figure 5.7-5
YUCCA VALLEY AIRPORT
SAFETY REVIEW AREAS



Source: Yucca Valley Airport Comprehensive Land Use Plan, San Bernardino County Planning Department, 1992



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YUCCA VALLEY
GENERAL PLAN

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SCE Service Center Heliport

Southern California Edison’s (SCE) privately owned Yucca Valley Service Center Heliport is in Mid-Town Yucca Valley, approximately 500 feet south of the western end of the runway of Yucca Valley Airport.

Twentynine Palms Marine Corps Air Ground Combat Center Helicopter Flight Path

The MCAGCC is approximately 7 miles northeast of Yucca Valley’s town limits. This installation is a 24/7, live-fire military installation used for training. Operations at the MCAGCC include takeoffs and landings of military aircraft. Many of these aircraft—primarily helicopters—fly over portions of Yucca Valley. The MCAGCC’s helicopter flight route through the Town is shown in Figure 5.7-6, *MCAGCC Helicopter Flight Path*. Overflight of aircraft traveling to and from the MCAGCC is sporadic and at a high altitude.

5.7.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- H-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- H-2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- H-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school.
- H-4 Be located on a site which is included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.
- H-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would result in a safety hazard for people residing or working in the project area.
- H-6 For a project in the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.
- H-7 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- H-8 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to the urbanized areas or where residences are intermixed with wildlands.



5.7.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

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IMPACT 5.7.1: FUTURE CONSTRUCTION AND/OR OPERATIONS ACTIVITIES OF DEVELOPMENT PROJECTS ACCOMMODATED BY THE GENERAL PLAN UPDATE WOULD INVOLVE THE TRANSPORT, USE, AND/OR DISPOSAL OF HAZARDOUS MATERIALS; HOWEVER, EXISTING FEDERAL, STATE AND LOCAL REGULATIONS WOULD ENSURE RISKS ARE MINIMIZED. [THRESHOLDS H-1, H-2, AND H-3]

Impact Analysis: The routine transport, use, or disposal of hazardous materials would be associated with new development, redevelopment, and demolition activities that would be permitted under the General Plan Update. Commercial project operations would involve the use of hazardous materials including solvents, cleaning agents, paints, and pesticides. However, these would generally be materials that, when used correctly, would not result in a significant hazard to residents in the proposed project area. Industrial-grade chemicals would also continue to be transported, used, and disposed of consistent with current industrial operations in the Town. In general, implementation of the General Plan Update would increase the number of businesses and residents in the Town, thereby increasing the amount of hazardous materials being transported, stored, and manufactured, and the amount of people being exposed to these materials. While businesses/users are required by federal, state, and local regulations to properly transport, use, and dispose of hazardous material within the Town, it is possible that upset or accidental conditions may arise that result in the release of hazardous materials into the environment.

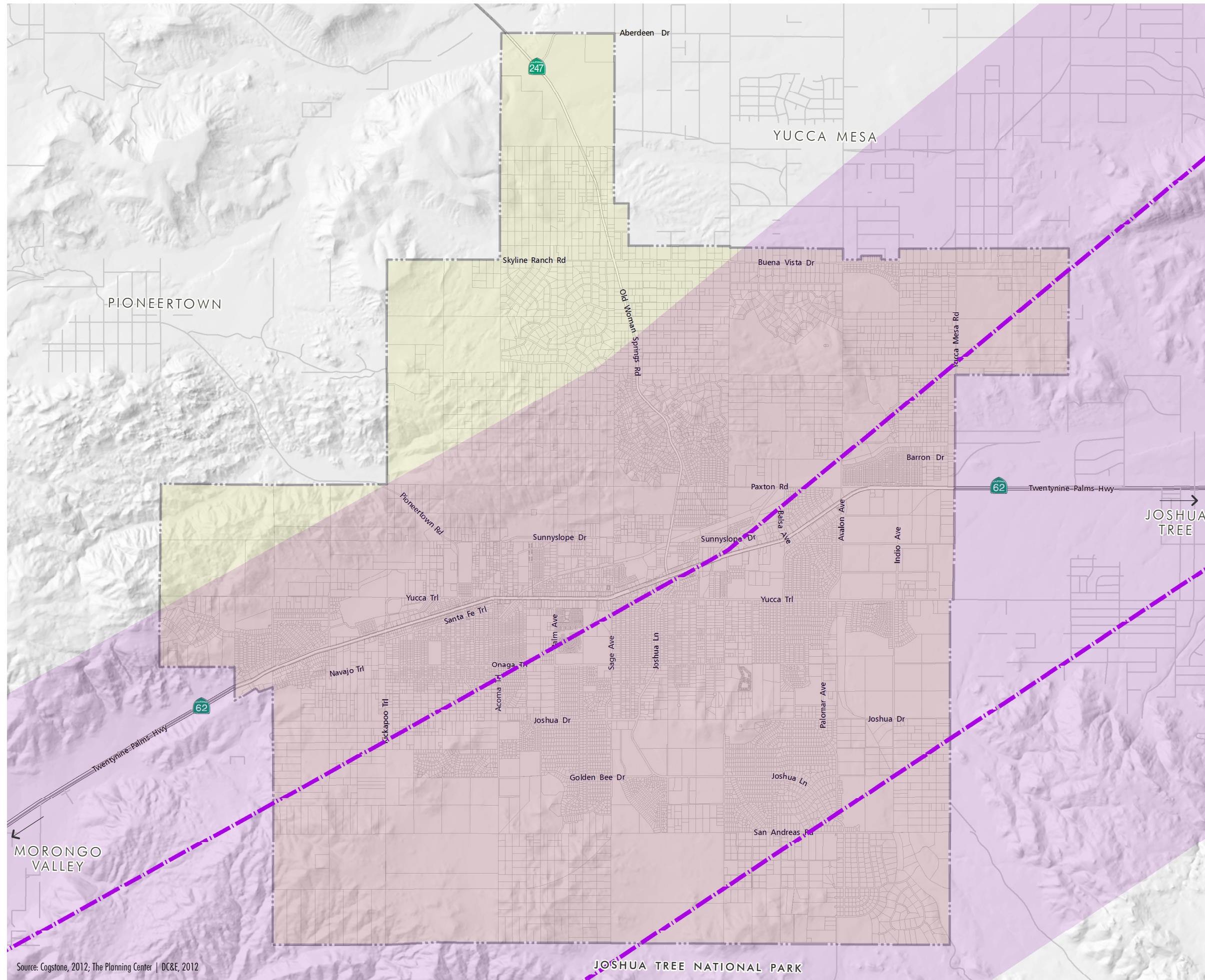
In addition to hazardous materials transported and/or used by local businesses, hazardous materials may be transported through the community to and from locations outside the Town. According to the National Hazardous Materials Route Registry maintained by the Federal Motor Carrier Safety Administration (a division of the U.S. Department of Transportation), both State Routes 62 (SR-62) and 247 (SR-247) are prescribed or permitted to carry hazardous materials. All types of hazardous materials are permitted on both of these roads, and they are both recommended for the transport of Class 1 Explosives. Other roads in the vicinity of Yucca Valley with the same status on the registry are Adobe Road and Amboy Road near the MCAGCC. As a result, these roads pose a potential for spills or leaks from nonstationary sources to occur within the Town. However, existing regulations address the transport of hazardous materials. Vehicles carrying hazardous materials are required to have placards that indicate at a glance the chemicals being carried, and whether or not they are corrosive, flammable, or explosive. The conductors are required to carry detailed "material data sheets" for each of the substances on board. These documents are designed to help emergency response personnel assess the situation immediately upon arrival at the scene of an accident, and take the appropriate precautionary and mitigation measures. The California Highway Patrol is in charge of spills that occur in or along freeways, with Caltrans, the San Bernardino County Fire Department, Hazardous Materials Division, and local sheriffs providing additional resources as needed.




One Southern California Gas Company transmission pipeline extends eastward across and near the Town of Yucca Valley. This gas transmission pipeline crosses sections of the Pinto Mountain fault zone within the Town of Yucca Valley, especially in the central portion of town. Given the large displacements expected along the Pinto Mountain fault when this fault ruptures next (an average of about 5 meters of left-lateral displacement could occur if the fault ruptures along its entire length), the pipeline can be expected to rupture where it crosses or overlies the fault. Gas would be released into the air, and if there are ignition sources nearby, fires could ensue. However, pipeline operators are responsible for the continuous maintenance and monitoring of their pipelines and the authorization of excavations around those pipelines. As with all development in California, development in Yucca Valley is required to follow the procedural requirements of the Underground Service Alert of Southern California, or DigAlert.

Existing regulations with respect to hazardous materials transportation, management, and disposal are designed to be protective of human health. The RCRA, EPCRA, state regulations, provisions of the Yucca Valley Municipal Code, and policies in the General Plan Update all minimize potential hazardous material impacts. Therefore, no significant hazards impacts to the public or environment through the routine transport, use, or disposal of hazardous waste/materials is anticipated as a result of the proposed project.

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Figure 5.7-6
MCAGCC HELICOPTER FLIGHT PATH



-  Helicopter Flight Route Center Line
-  Helicopter Flight Route
-  Town Limits

Source: Cogstone, 2012; The Planning Center | DC&E, 2012

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IMPACT 5.7-2: AREAS OF THE TOWN ARE INCLUDED ON A LIST OF HAZARDOUS MATERIALS SITES; HOWEVER, COMPLIANCE WITH EXISTING REGULATIONS WOULD ENSURE HAZARDS ARE REMEDIATED TO THE APPLICABLE STATE AND FEDERAL STANDARDS. [THRESHOLD H-4]

Impact Analysis: Based on the review of the environmental data resources database report included the *Technical Background Report to the Safety Element of the Yucca Valley General Plan* (see Appendix F), the Town encompasses an area that includes numerous businesses that have had historical releases of hazardous substances to the environment and/or are undergoing environmental investigation or remediation. Database searches identified the following types of sites in the Town. Listing does not imply that sites are contaminated or require remediation. Some sites listed may have been granted site closure by a regulatory agency.

- 29 generators of hazardous waste are listed in the EPA's EnviroMapper database, including 1 large-quantity generator, 26 small-quantity generators, and 2 generators of unknown quantities.
- 10 leaking underground storage tanks are listed in the GeoTracker LUST database. All ten sites have been remediated and closed.
- No NPL sites are listed for Yucca Valley. However, there is a listed Superfund site (La Contenta Middle School) where a one-time release of mercury was cleaned up in 2007.
- No sites were listed by the EPA Toxic Chemical Release Inventory System.
- No sites in Yucca Valley were listed on the Cortese list. The closest site on the list is the Twentynine Palms Marine Air to Ground Combat Center north of Twentynine Palms.
- No oil or geothermal wells have been drilled in Yucca Valley.

Due to the fact that there are numerous sites undergoing investigation and/or remediation within and adjacent to the Town, impacts from hazardous substance contamination on or adjacent to specific project developments in the Town may occur. Future developments in the Town in accordance with implementation of the General Plan Update may be impacted by hazardous substance contamination remaining from historical operations on a particular site that may pose a significant health risk. However, properties contaminated by hazardous substances are regulated at the local, state, and federal level and are subject to compliance with stringent laws and regulations for investigation and remediation. For example, compliance with the CERCLA, RCRA, California Code of Regulations, Title 22, and related requirements would remedy any potential impacts caused by hazardous substance contamination. Therefore, buildout of the General Plan Update would result in a less than significant impact upon compliance with existing laws and regulations.

IMPACT 5.7-3: BUILDOUT OF THE GENERAL PLAN UPDATE WOULD PLACE ADDITIONAL DEVELOPMENT AND RESIDENTS IN THE VICINITY OF THE YUCCA VALLEY AIRPORT, WITHIN THE AIRPORT'S LAND USE PLAN, AND WITHIN THE HELICOPTER FLIGHT PATH OF THE MARINE CORPS AIR GROUND COMBAT CENTER; HOWEVER, LAND USES WOULD BE COMPATIBLE WITH THE AIRPORT LAND USE COMPATIBILITY PLAN . [THRESHOLDS H-5 AND H-6]

Impact Analysis: Potential land use compatibility associated with the Yucca Valley Airport and helicopter overflights from the MCAGCC are discussed below:

Yucca Valley Airport

Yucca Valley Airport is a public use general aviation facility in Mid-Town Yucca Valley leased and operated by the Yucca Valley Airport District for aircraft storage, maintenance, use, and training. The airport is unique in that homes



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with attached and detached hangars are located on the property for the convenience of residents with privately owned aircraft. The Town of Yucca Valley determines which land uses and height limits are compatible with Airport operations through the ALUCP. They also establish a deed notice area in which property buyers must be notified of their proximity to the airport at the time of certain real estate transactions. Areas of the community where a height limit must be enforced for aircraft safety and deed notices are required are shown in Figure 5.7-4, *Yucca Valley Airport Avigation Easement Map*.

Airport influence areas are areas that can be affected by airport operations. Their geographic ranges are based on airport flight patterns that generate noise and safety issues associated with aircraft overflights. Yucca Valley Airport's influence area falls entirely within Town boundaries. It contains a variety of existing uses, including single-family residential, multifamily residential, commercial, and public uses. The General Plan Update would continue to allow a variety of uses in the influence area, including commercial, industrial, and mixed uses near SR-62 and residential uses to the north and south of the SR-62 corridor. Changes in land use designation proposed for the area include the transition of parcels north of the airport from Rural Living to Rural Residential and the application of a Corridor Residential Overlay on parcels in the SR-62 corridor currently planned for Commercial uses under the existing General Plan. The proposed transition of parcels from a Rural Living land use designation to a Rural Residential designation was established to reflect the existing conditions on those parcels.

Despite the above-mentioned increases in density and intensity allowed in the Yucca Valley Airport influence area under the General Plan Update, development in this area would be required to comply with the airport's ALUCP. The ALUCP establishes standards for the compatibility between the Yucca Valley Airport and surrounding parcels. The standards identify land uses that are considered incompatible with airport operations and areas where the greatest noise from aircraft is expected to occur, and establish height limits in select areas around the runway. The ALUCP identifies safety review areas, shown in Figure 5.7-5, that establish horizontal and three-dimensional airspace where obstructions to aircraft movement are prohibited. Safety Review Areas 1 and 2 are primarily limited to the footprint of the airport and the air space above it, and Safety Review Area 3 consists of the area within one mile of the airport's boundary. A variety of land uses are allowed in Safety Review Area 3 under the proposed General Plan. However, as stated above, new land uses built pursuant to the General Plan Update would be required to comply with standards outlined in the ALUCP.

The Land Use Element of the proposed General Plan is compatible with the Yucca Valley Airport Comprehensive Land Use Plan and contains the following policies aimed at reducing potential hazards relating to the airport.

Policy LU 3-1 Allow compatible and supportive land uses around the Yucca Valley Airport as determined in the Airport Comprehensive Land Use Plan.

Policy LU 3-2 Limit building heights in select areas according to the Avigation Easement map and standards provided in the Airport Compatibility Land Use Plan.

Adherence to the above policies would ensure that land use allowed under the proposed General Plan Update would not encroach into areas required for the safe takeoff and landing of aircrafts at Yucca Valley Airport. Compliance with these policies and land use restrictions included in the airport's ALUCP would minimize potential safety hazards for people residing and working near Yucca Valley Airport. Therefore, no significant impacts relating to airport hazards are anticipated.

Marine Corps Air Ground Combat Center

The MCAGCC is approximately 7 miles east of Yucca Valley's town limits. The installation is a 24/7, live-fire military installation used for training. Operations at the MCAGCC include takeoffs and landings of military aircraft. Many of these aircraft—primarily helicopters—fly over portions of Yucca Valley. The MCAGCC's helicopter flight route through the Town is shown in Figure 5.7-5, *MCAGCC Helicopter Flight Path*. Despite the location of this flight route

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over portions of Yucca Valley, overflight of aircraft traveling to and from the MCAGCC is sporadic and at a high altitude. Therefore, hazards relating to military aircraft overflight are minimal and no significant impacts are anticipated.

IMPACT 5.8-4: FUTURE DEVELOPMENT THAT WOULD BE ACCOMMODATED BY THE GENERAL PLAN UPDATE WOULD NOT AFFECT THE IMPLEMENTATION OF AN ADOPTED EMERGENCY RESPONSE OR EVACUATION PLAN. [THRESHOLD H-7]

Impact Analysis: The Town relies on the Town of Yucca Valley EOP, San Bernardino County EOP, and Town of Yucca Valley HMP to provide guidance for the Town's response to emergency situations including natural and manmade disasters. All new development that would be accommodated by the General Plan Update would be required to follow the Town's emergency response and evacuation guidelines and be compatible with emergency evacuation routes. Additionally, all construction activities associated with development in accordance with the General Plan Update would be performed per Town and SBCFD standards and codes, thereby avoiding any interference with emergency response or evacuation plans.

Implementation of Policy S 7-4 of the proposed General Plan would ensure that the Town's EOP and HMP reflect new changes in regulation and/or local conditions:

S 7-4 Update and maintain the Emergency Operations Plan and Hazard Mitigation Plan, keeping them current with county, state, and federal requirements; include measures pertaining to man-made and natural hazards such as flood, access, earthquakes, landslides, hazardous materials, evacuation, severe weather, and fire.

Implementation actions S 30 through S 38 of the proposed Safety Element implement the above policy, ensuring that the Town's emergency plans are regularly reviewed and updated (policies S 30 and S 35) and that the Town collaborate with the County of San Bernardino to minimize safety risks via emergency planning (policies S 31 and S 36).

Implementation of the General Plan Update is not expected to interfere with an adopted emergency response or evacuation plan and no significant impacts are anticipated.

IMPACT 5.8-5: PORTIONS OF THE TOWN ARE DESIGNATED HIGH AND VERY HIGH FIRE HAZARD ZONES AND COULD EXPOSE STRUCTURES AND/OR PEOPLE TO FIRE DANGER; HOWEVER, NEW STRUCTURES WOULD BE REQUIRED TO MEET THE CALIFORNIA BUILDING CODE AND CALIFORNIA FIRE CODE REQUIREMENTS TO MINIMIZE RISK. [THRESHOLD H-8]

Impact Analysis: The expansive open space areas in and surrounding are susceptible to destructive wildland fires, often exacerbated by dry weather and Santa Ana winds. A wildland fire is an uncontrolled fire in areas of little or no development, but these fires can quickly spread to the urban/wildland interface where development meets expanses of vegetative fuels. Yucca Valley is an interface area where a proactive approach to preventing the start and spread of wildland fire is vital to protecting lives and property. Fire suppression services are provided by the San Bernardino County Fire Department, which operates one fire station within the Town limits and another in nearby unincorporated Pioneertown. CAL FIRE provides wildland fire assistance in the community. The Town was most recently threatened by the Millard/Sawtooth Complex Fire in 2006. The fire injured 17, resulted in one fatality, and destroyed approximately 69,000 acres. The Juniper Complex Fire, the largest fire in the history of the Joshua Tree National Park, burned 13,894 acres adjacent to the Town in 1999. Both fires were ignited by lightning hitting dry desert vegetation in the summer. These and other wildland fires are shown in Figure 5.7-2, *Historical Wildland Fires in Yucca Valley*.



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As shown in Figure 5.7-3, *Fire Hazard Severity Zones*, the California Fire Plan and the Wildland Fire Threat Map of the National Fire Plan both designate Yucca Valley an area with moderate, high, and very high wildland fire threats. Areas susceptible to high and very high fire danger are in the hillsides to the south and west-northwest of central Yucca Valley. Although these areas includes portions of the valley in between, relatively flat areas of the Town are considered less hazardous due to topography and lack of fuel loading (either as a result of little to no vegetation, or due to carefully maintained, drought-tolerant landscaping). This is not to say that vegetation fires could not occur in developed areas of Yucca Valley, but these types of fires tend to be smaller and less intense in heat. Areas of Yucca Valley designated as having the highest risk for wildland fires are the hills between SR-62 and Pioneer town to the northwest of the Town. The California Fire Authority has designated Yucca Valley a “community at risk” given that it has and is adjacent to federally regulated lands with a high wildland fire hazard.

To help protect the Town and its residents from fire hazards, the Town of Yucca Valley and the County of San Bernardino have building and fire codes that must be followed. The fire chief may also use his/her authority to instate certain building, planning, or landscaping requirements. The Town of Yucca Valley addresses the issue of weeds and other vegetation as a potential fire hazard and identifies the steps that the Town takes to abate this hazard in Chapter 6.04 of the Town's Municipal Code. Specifically, the Town considers it unlawful and a nuisance for a property to have weeds, dry grass, rubble, brush, litter, or any flammable material which by its volume, extent, or nature endangers the public safety by creating a fire hazard. The Town Manager, code enforcement officer, or his/her designee has the authority to give the property owner of record a notice of violation requiring him/her to abate the hazard. If the owner does not abate the hazard during the time period specified in the notice, the Town may take further action to reduce the fire hazard in the form of tax liens and fines. SBCFD personnel are planning to conduct courtesy home inspections in the urban-wildland interface areas to educate homeowners on being fire safe and maintaining a defensible space.

Additionally, the Town of Yucca Valley has adopted the 2010 California Fire Code, as amended by the county, a modification of the International Fire Code. These codes are revised on a triennial cycle. Provisions include sprinkler and fire hydrant requirements in new structures and remodels, road widths and configurations designed to accommodate the passage of fire trucks and engines, and requirements for minimum fire flow rates for water mains. The SBCFD chief is authorized and directed to enforce the provisions of the California Fire Code throughout the Town. The Town has also adopted the most recent (currently 2010) version of the California Building Code that includes sections on fire-resistant construction material requirements based on building use and occupancy. The construction requirements are a function of building size, purpose, type, materials, location, proximity to other structures, and the type of fire suppression systems installed.

Implementation of policies S 4-1 through S 4-6 of the proposed Safety Element would, like the fire codes listed above, minimize potential wildfire impacts in Yucca Valley. Policies S 4-1 and S 4-2 emphasize the role of homeowners and other residents in minimizing wildfire risk, while policies S 4-3 through S 4-6 focus on planning infrastructure, land uses, and public services to prevent or minimize wildfire impacts. Successful execution of implementation actions included in the Safety Element would also minimize impacts of wildfires by ensuring that adequate emergency services are provided in Yucca Valley in the event that a fire occurs.

Because the State of California, County of San Bernardino, and the Town of Yucca Valley require adherence to building codes and review by the fire department to reduce fire hazards, project impacts on fire hazards would be less than significant.

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5.7.4 Relevant General Plan Policies and Implementation Actions

Land Use Element

Land Use Element Policies

Balanced Land Uses

LU 1-19 Encourage the relocation of industrial operations that are not compatible with adjacent uses to areas that are conducive to such operations.

Yucca Valley Airport

LU 3-1 Allow compatible and supportive land uses around the Yucca Valley Airport as determined in the Airport Comprehensive Land Use Plan.

LU 3-2 Limit building heights in select areas according to the Avigation Easement map and standards provided in the Airport Compatibility Land Use Plan.

Land Use Element Implementation Actions

Balanced Land Uses

LU 5 Amend the development code to create standards addressing appropriate treatments to buffer industrial and commercial uses from residential and other sensitive uses.

Yucca Valley Airport

LU 19 Periodically coordinate with the Yucca Valley Airport District to stay informed of any operational or facility changes that could impact the community.



Open Space and Conservation Element

Open Space and Conservation Element Implementation Actions

Natural Open Space and Parks

OSC 9 Update the Land Use Map when necessary to designate newly identified hazard zones as open space areas.

Safety Element

Safety Element Policies

Wildland Fire Hazard

S 4-1 Require property owners adjacent to wildland fire areas to maintain a defensible space around structures consistent with San Bernardino County Fire Department standards.

S 4-2 Continue public education efforts to inform the community of wildland fire hazards and ways to minimize the damage caused by fires.

S 4-3 Ensure that public and private water distribution and supply facilities have adequate capacity and reliability (peakload water supply) to supply both every day and emergency firefighting needs.

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- S 4-4 Continue long-range wildland fire safety planning, including enforcement and updates to the Municipal Code, improved infrastructure, and partnerships with other public agencies and the private sector.
- S 4-5 Update the Fire Hazard Areas map as development changes.
- S 4-6 Enforce fire standards and regulations in accordance with the California Building Code, Town Municipal Code for building and landscaping, and the San Bernardino County Fire Department regulations for all new development.

Hazardous Materials

- S 6-1 Collaborate with the County of San Bernardino and other appropriate agencies to facilitate the safe and immediate clean-up of all hazardous waste sites and to provide safe facilities for disposal in accordance with applicable federal, state, and local regulations.
- S 6-2 In conjunction with the San Bernardino County Fire Department, review and monitor potentially hazardous materials associated with industrial uses.
- S 6-3 Encourage businesses to utilize practices and technologies that will reduce the generation of hazardous waste.
- S 6-4 Promote the proper disposal, handling, transport, delivery, treatment, recovery, recycling, and storage of hazardous materials.
- S 6-5 Cooperate with the state and gasoline station owners and operators in monitoring the conditions of subsurface tanks.
- S 6-6 Maintain an inventory of hazardous materials and their location in Town.
- S 6-7 Maintain a protocol for communicating with responsible agencies, and coordinate efforts to assure that state and federal regulations for the testing and monitoring of leaking underground fuel storage tanks are enforced.
- S 6-8 Cooperate with regulators and encourage the enforcement of laws that require all users, producers, and transporters of hazardous materials and wastes to clearly identify such materials, and notify the appropriate county, state and/or federal agencies as required by law.
- S 6-9 Require all business that use, store or produce hazardous materials to comply with the County Fire Department's Business Plan requirements.
- S 6-10 Coordinate with the San Bernardino County Fire Department and the County Environmental Health Department to assure improved response to, and capability for, handling hazardous materials incidents.

Emergency Services

- S 7-4 Update and maintain the Emergency Operations Plan and Hazard Mitigation Plan keeping them current with county, state, and federal requirements, include measures pertaining to man-made and natural hazards such as flood, access, earthquakes, landslides, hazardous materials, evacuation, severe weather and fire.

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Safety Element Implementation Actions

Hazardous Materials

- S 24 Update the inventory of all hazardous materials sites, including underground storage tanks.
- S 25 Work with the County of San Bernardino’s Hazardous Material Division to distribute information to the community on the proper disposal, handling, transport, delivery, treatment, recovery, recycling, and storage of hazardous materials. Include disposal and recycling locations that are closest to Yucca Valley as well as emergency contact information. Make the information available at Town Hall and on the Town’s website.
- S 26 Stay up to date on hazardous materials associated with industrial and commercial uses by communicating with county, state, and federal agencies.
- S 27 Make information available to local businesses for incentives to reduce the generation of hazardous waste. Program components can include rebates for recycling; apply for grant funding through CalRecycle.
- S 28 Require new businesses handling hazardous materials to submit a Business Plan consistent with County Fire Department standards for handling, storing, transporting and disposing of hazardous materials and wastes. The plan should be submitted as a part of the development approval process.
- S 29 Communicate with the San Bernardino County Fire Department and other regulators of hazardous materials to enforce safe handling of hazardous materials.



Emergency Services

- S 30 Review and update the Emergency Operations Plan with local key staff members including medical, fire, police, etc. to ensure that the Town is adequately prepared for most likely and demanding emergency disasters.
- S 31 Work with San Bernardino County Sheriff and Fire Departments to create an educational program to enhance awareness of public safety. Components of the program could include a brochure, a workshop, a booth at community events, and additional information posted to the Town’s website. Topics can include earthquakes, urban and wildfires, severe weather conditions, hazardous materials, and flooding.
- S 33 When feasible, encourage ongoing education for Town staff to better understand local natural and human-made hazards and how they can affect development proposals and disrupt vital services.
- S 35 Maintain the Town of Yucca Valley Hazards Mitigation Plan and update it to include hazardous materials and the emergency evacuation routes with guidance for signage. Continue to make it available to the public at Town Hall and on the Town’s website.
- S 36 Communicate with the San Bernardino County Sheriff and Fire Departments to ensure an adequate level of service.
- S 37 Analyze the possibility of establishing a Public Safety Assessment District to offset the costs of providing police and fire services to new development.

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- S 38 Encourage the County Fire Department to conduct periodic inspection of commercial, industrial and institutional buildings, and multi-family developments, to ensure compliance with fire code compliance and to educate building and development managers on fire safety issues.

Circulation Element

Circulation Element Policies

Efficient Goods and Services Movement

- C 1-18 Maintain truck route designations to support heavy vehicle use and connections to the Yucca Valley Airport as noted on Figure C-3.

5.7.5 Existing Regulations

State and Federal Regulations

- California Code of Regulations, Title 22, Divisions 4 and 4.5
- California Fire Code
- California Labor Code Section 6409.1 (b)10
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980
- Emergency Planning & Community Right-to-Know Act
- Government Code Sections 51018, 8670.25.5 (a)
- Hazardous Materials Disclosure Programs
- Health and Safety Codes Sections 25270.7, 25270.8, and 25507
- OSHA Rule 29 and Code of Federal Regulations Part 1926
- Public Utilities Code Section 7673, (PUC General Orders #22-B, 161)
- Resource Conservation and Recovery Act (RCRA) of 1976
- The Toxic Substances Control Act of 1976
- Vehicle Code Section 23112.5
- Water Code Sections 13271, 13272

Town of Yucca Valley Municipal Code

- Title 2, *Administration and Personnel*, Chapter 2.40: *Emergency Organization*, provides for the preparation and carrying out of plans for the protection of persons and property within the Town in the event of an emergency or disaster. The chapter outlines protocol for the formation of a Town disaster council, requires development of a municipal emergency plan, and requires that two emergency operating centers be maintained in the Town.
- Title 6, *Health and Sanitation*, Chapter 6.02: *Solid Waste and Recycling Services*, regulates the collection, transfer, and disposal of solid waste within Yucca Valley. The chapter prohibits disposal of hazardous materials in containers provided by the Town's solid waste handler.

5.7.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and compliance with policies contained within the General Plan Update, the following impacts would be less than significant: 5.7-1, 5.7-2, 5.7-3, 5.7-4, and 5.7-5.

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5.7.7 Mitigation Measures

No significant impacts were identified and no mitigation measures are necessary.

5.7.8 Level of Significance After Mitigation

Compliance with regulatory requirements identified above would reduce potential impacts associated with hazards and hazardous materials to less than significant. Therefore, no significant unavoidable adverse impacts relating to hazards and hazardous materials have been identified.

5.7.9 References

Earth Consultants International (ECI). 2012, September. *Technical Background Report to the Safety Element of the Yucca Valley General Plan*.

Emergency Planning Consultants (EPC). 2010. Town of Yucca Valley Draft Hazard Mitigation Plan. http://www.yucca-valley.org/pdf/public_safety/hazard_mit_plan_draft_2010_12.pdf.

San Bernardino, County of. 2012. *County of San Bernardino 2007 General Plan*. Prepared by URS Corporation. <http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf>

San Bernardino County Fire Department (SBCFD). 2013. Office of Emergency Services. <http://www.sbcfire.org/oes>.

———. 2012. "Business Emergency Contingency Plan Guidelines and Forms." http://www.sbcfire.org/hazmat/forms/business_plan_V3_6_guidelines_and_forms.pdf.

San Bernardino County Planning Department. 1992. Airport Comprehensive Land Use Plan, Yucca Valley Airport. http://www.yucca-valley.org/pdf/general_plan/AirportLandUse_ComprPlan1992.pdf.



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5.8 HYDROLOGY AND WATER QUALITY

This section of the draft environmental impact report (DEIR) evaluates the potential impacts to hydrology and water quality conditions in the Town of Yucca Valley from implementation of the proposed General Plan Update. Hydrology deals with the distribution and circulation of water, both on land and underground. Water quality deals with the quality of surface and groundwater. Surface water is water on the surface of the land and includes lakes, rivers, streams, and creeks. Groundwater is water below the surface of the earth.

The information in this section is based in part on the following technical study:

- *Technical Background Report for the Safety Element, Town of Yucca Valley, California*, Chapter 3: Flood Hazards, Earth Consultants International, Inc., September 2012.

A complete copy of this study is included as Appendix F to this Draft EIR.

5.8.1 Environmental Setting

Regulatory Framework

Water Quality

Clean Water Act

The federal Water Pollution Control Act (also known as the Clean Water Act [CWA]) is the principal statute governing water quality. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the U.S. Environmental Protection Agency (EPA) the authority to implement pollution control programs, such as setting wastewater standards for industry. The statute's goal is to end all discharges entirely and to restore, maintain, and preserve the integrity of the nation's waters. The CWA regulates both the direct and indirect discharge of pollutants into the nation's waters. The CWA sets water quality standards for all contaminants in surface waters and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under its provisions. The CWA mandates permits for wastewater and storm water discharges, requires states to establish site-specific water quality standards for navigable bodies of water, and regulates other activities that affect water quality, such as dredging and the filling of wetlands. The CWA also funded the construction of sewage treatment plants and recognized the need for planning to address nonpoint sources of pollution. Section 402 of the CWA requires a permit for all point source (a discernible, confined, and discrete conveyance, such as a pipe, ditch, or channel) discharges of any pollutant (except dredge or fill material) into Waters of the United States.

National Pollutant Discharge Elimination System

The United States Congress amended the CWA in 1987 to specifically regulate discharges to Waters of the United States from public storm drain systems and stormwater flows from industrial facilities, including construction sites, and require such discharges be regulated through permits under the National Pollutant Discharge Elimination System (NPDES; pursuant to CWA Section 402[p]). Under the NPDES program, all facilities that discharge pollutants (except dredge or fill material) from any point source into Waters of the United States are required to obtain an NPDES permit.

The term pollutant broadly includes any type of industrial, municipal, and agricultural waste discharged into water. Point sources are discharges from publicly owned treatment works (POTWs), discharges from industrial facilities, and discharges associated with urban runoff. While the NPDES program addresses certain specific types of agricultural activities, the majority of agricultural facilities are defined as nonpoint sources and are exempt from NPDES regulation. Pollutant contributors come from direct and indirect sources. Direct sources discharge directly to



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receiving waters, whereas indirect sources discharge wastewater to POTWs, which in turn discharge to receiving waters. Under the national program, NPDES permits are issued only to direct point source discharges. The National Pretreatment Program addresses industrial and commercial indirect dischargers. Municipal sources are POTWs that receive primarily domestic sewage from residential and commercial customers. Specific NPDES program areas applicable to municipal sources are the National Pretreatment Program, the Municipal Sewage Sludge Program, Combined Sewer Overflows, and the Municipal Storm Water Program. Nonmunicipal sources include industrial and commercial facilities. Specific NPDES program areas applicable to these industrial/commercial sources are: Process Wastewater Discharges, Non-Process Wastewater Discharges, and the Industrial Storm Water Program. NPDES issues two basic permit types: individual and general. Also, the EPA has recently focused on integrating the NPDES program further into watershed planning and permitting (EPA 2012). The NPDES has a variety of measures designed to minimize and reduce pollutant discharges. All counties with storm drain systems that serve a population of 50,000 or more, as well construction sites one acre or more in size, must file for and obtain an NPDES permit.

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (Water Code sections 13000 et seq.) is the basic water quality control law for California. Under this Act, the State Water Resources Control Board (SWRCB) has ultimate control over state water rights and water quality policy. In California, the EPA has delegated authority to issue NPDES permits to the SWRCB. The state is divided into nine regions related to water quality and quantity characteristics. Under Porter-Cologne, the SWRCB issues joint federal NPDES Storm Water permits and state Waste Discharge Requirements to operators of municipal separate storm sewer systems (MS4s), industrial facilities, and construction sites to obtain coverage for the stormwater discharges from these operations.

Basin Plan for the Colorado River Basin

The SWRCB, through its nine Regional Water Quality Control Boards (RWQCBs) carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems. The Town of Yucca Valley is in the Colorado River Basin, Region 7, in the Lucerne Valley Planning Area. The Water Quality Control Plan for the Colorado River Basin (7) was adopted in 2006. This basin plan gives direction on the beneficial uses of the state waters within Region 7, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the standards established in the basin plan.

No NPDES permits apply within the Town of Yucca Valley. There are no Waters of the United States in the Town. Waters of the United States include waters used, or potentially usable, in interstate or foreign commerce; interstate waters including interstate wetlands; waters—including intermittent waters—and wetlands, the destruction of which could affect interstate or foreign commerce; tributaries to waters identified above; and wetlands adjacent to waters identified above (Code of Federal Regulations, Title 33, Section 328.3). The Statewide General Construction Permit issued by the SWRCB (Order No. 2009-0009-DWQ issued in 2009) applies statewide to stormwater discharges from construction sites to waters of the U.S. One MS4 Permit has been issued by the Colorado River Basin RWQCB, applicable to the Whitewater River Basin in the Coachella Valley (Order No. R7-2008-0001 issued in 2008); the Town of Yucca Valley is outside of the area covered by that Permit (CRBRWQCB 2008). A statewide general permit for stormwater discharges from small MS4 systems was adopted by the SWRCB in 2003 (Order No. 2003-0005-DWQ). That Small MS4 Permit will be superseded on July 1, 2013, by Order No. 2013-0001-DWQ (SWRCB 2013). Small MS4 Permits only apply to small MS4s that discharge to Waters of the United States, and the Town of Yucca Valley is not listed as a permittee on either of the small MS4 permits referenced above. In addition, the Small MS4 permit covers MS4s serving areas of 10,000 to 100,000 persons, and population density of 1,000 persons per square mile or more. The Town of Yucca Valley had population density of 564 persons per square mile in 2012. The Town would have population density of 1,000 persons per square mile when its population reaches 39,831 people. At ultimate General Plan buildout, the Town would have a forecast population of 64,565, well over the threshold population where coverage under the small MS4 Permit would be required. The Southern California Association of Governments 2035

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population forecast for Yucca Valley is 26,200. Assuming that is correct, Yucca Valley would reach the threshold population density for coverage under the small MS4 Permit well after 2035.

The CRBRWQCB may designate the Town's MS4 system a regulated small MS4 before the Town reaches the threshold population for required coverage. Such designation would be based on the potential of the Town's MS4 discharges to exceed water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts.

Water Quality Management Plans Required by the San Bernardino County Stormwater Program

San Bernardino County requires water quality management plans (WQMPs) for specified types of projects in three regions within the county:

- Unincorporated county areas and 16 cities within the Santa Ana River Watershed in southwestern San Bernardino County. The model WQMP for this region was revised in May 2012 pursuant to MS4 Permit R8-2010-0036 issued by the Santa Ana RWQCB in 2010.
- Urbanized areas of the Mojave River Watershed (including Victorville, Hesperia, Town of Apple Valley, and Barstow). The WQMP template for that region was revised in April 2012 pursuant to SWRCB Order No. 2003-0005-DWQ (Small MS4 Permit).
- Small MS4 permittees within the portion of the Colorado River Basin RWQCB region in San Bernardino County. The only permittee on Order No. 2013-0001-DWQ in the aforementioned region is San Bernardino County; thus, WQMPs are only required within the portion of the Colorado River Basin RWQCB region in unincorporated San Bernardino County areas.

None of the three WQMPs issued by the county apply within the Town of Yucca Valley.

California Fish and Game Code and Notification of Lake or Streambed Alteration

Streams, lakes, and riparian habitats in Yucca Valley are Waters of the State jurisdictional to the California Department of Fish and Wildlife (CDFW) pursuant to California Fish and Game Code Sections 1602 et seq. Substantial alterations of the natural flow of a stream or lake or removal of material from—or deposit of debris or waste or other material into—the bed, channel, or bank of a stream or lake, are prohibited under Section 1602 without a Lake or Streambed Alteration Agreement approved by CDFW. Projects that would conduct such activities must submit a Notification of Lake or Streambed Alteration, with required fees, to the CDFW. The notification must identify impacts to the bed, channel, and bank of the affected water body(ies), vegetation, trees, special status animal or plant species, and habitat that could support such species, and mitigation measures to prevent sediment from entering water courses during and after construction and to minimize or compensate for impacts to fish, wildlife, and plants. Engineered water courses are jurisdictional to CDFW, and notification is required for projects affecting engineered water courses.

Safe Drinking Water Act

The federal Safe Drinking Water Act (SDWA) provides regulations on drinking water quality in San Bernardino County. The SDWA gives the EPA the authority to set drinking water standards, such as the National Primary Drinking Water regulations (NPDWRs or primary standards). The NPDWRs protect drinking water quality by limiting the levels of specific contaminants that are known to occur or have the potential to occur in water and can adversely affect public health. All public water systems that provide service to 25 or more individuals are required to satisfy these standards. Water purveyors must monitor for these contaminants on fixed schedules and report to the EPA when a maximum contaminant level (MCL) has been exceeded. MCL is the maximum permissible level of a contaminant in water that is delivered to any user of a public water system. Drinking water supplies are tested for a variety of



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contaminants, including organic and inorganic chemicals (e.g., minerals), substances that are known to cause cancer (e.g., carcinogens), radionuclide (e.g., uranium and radon), and microbial contaminants (e.g., coliform and *Escherichia coli*). Changes to the MCL list are typically made every three years as the EPA adds new contaminants or, based on new research or new case studies, revised MCLs for some contaminants are issued. The California Department of Health Services, Division of Drinking Water and Environmental Management, is responsible for implementation of the SDWA in California.

California Code of Regulations, Title 22, Section 60320: Water Quality, Reclaimed Water

Reclaimed water used for recharge of drinking water aquifers shall be at all times of a quality that fully protects public health (California Code of Regulations, Title 22, Section 60320). The California Department of Public Health provides recommendations for proposed groundwater recharge projects based on factors including treatment provided, effluent quality and quantity, spreading area operations, soil characteristics, hydrogeology, residence time, and distance from recharge to withdrawal.

California Plumbing Code

The California Plumbing Code, California Code of Regulations Title 24 Part 5, contains requirements for septic tanks.

Town of Yucca Valley Municipal Code Chapter 8.03, Construction Site Maintenance and Trash Containment

Construction operations¹ are prohibited from allowing loose trash, rubbish or debris to accumulate or to be carried offsite by wind or water, and are required to keep trash, rubbish, and debris contained and to provide for waste collection to prevent trash containers from overflowing.

Mojave Desert Air Quality Management District Rules 403 and 403.2 (Fugitive Dust Control)

Mojave Desert Air Quality Management District (MDAQMD) Rules 403 and 403.2 describe requirements limiting dust that may be emitted from construction, grading, excavation, and clearing of land, and that crosses a property line. Rule 403 requirements include that every reasonable precaution be taken to minimize fugitive dust emissions from wrecking, excavation, grading, and clearing of land. Rule 403 applies to all of the MDAQMD spanning Imperial County, most of San Bernardino County, and parts of Riverside, Los Angeles, and Kern counties. Rule 403.2 sets forth specific requirements for dust control, including construction area watering; minimizing tracking of soil onto paved surfaces; covering loaded haul vehicles while operating on paved public roads; stabilizing graded surfaces that will be left exposed 30 days or more; and reducing nonessential earth-moving activity during high winds. Rule 403.2 applies in the Mojave Desert Planning Area of San Bernardino County, which includes the Mojave River Valley (Victor Valley and Barstow areas), Morongo Basin, and Lucerne Valley.

Flood Hazards

National Flood Insurance Program

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 mandate the Federal Emergency Management Agency (FEMA) to evaluate flood hazards. FEMA provides Flood Insurance Rate Maps (FIRMs) for local and regional planners to promote sound land use and floodplain development, identifying potential flood areas based on the current conditions. To delineate a FIRM, FEMA conducts engineering studies referred to as Flood Insurance Studies (FISs). The most recent FIS and FIRM were completed and published for the Town of Yucca Valley in August 2008. Using information gathered in these studies, FEMA engineers and cartographers delineate Special Flood Hazard Areas (SFHAs) on FIRMs.

The Flood Disaster Protection Act (FDPA) requires owners of all structures in identified SFHAs to purchase and

¹ Grading or construction operations under building or grading permits issued by the Town.

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maintain flood insurance as a condition of receiving federal or federally related financial assistance, such as mortgage loans from federally insured lending institutions. Community members within designated areas are able to participate in the National Flood Insurance Program (NFIP) afforded by FEMA. The NFIP is required to offer federally subsidized flood insurance to property owners in those communities that adopt and enforce floodplain management ordinances that meet minimum criteria established by FEMA. The National Flood Insurance Reform Act of 1994 further strengthened the NFIP by providing a grant program for state and community flood mitigation projects. The act also established the Community Rating System (CRS), a system for crediting communities that implement measures to protect the natural and beneficial functions of their floodplains, as well as managing erosion hazards.

The Town of Yucca Valley, under NFIP, has created standards and policies to ensure flood protection. These policies address development and redevelopment, compatibility of uses, required predevelopment drainage studies, compliance with discharge permits, enhancement of existing waterways, cooperation with the U.S. Army Corps of Engineers (Corps) and the San Bernardino County Flood Control District (SBCFCD) for updating, and method consistency with the RWQCB and proposed best management practices (BMP).

Town of Yucca Valley Municipal Code

Chapter 8.04: Flood Control: New construction and modifications to existing structures within special flood hazard areas in the Town of Yucca Valley are prohibited under Municipal Code Chapter 8.04, except if such construction or modification meets standards set forth in Chapter 8.04 and the Town has issued a development permit for such construction or modification. Structures to be built or substantially modified in flood hazard areas must be anchored to prevent flotation, collapse, or lateral movement; must be built of flood-resistant materials; and must be elevated above the existing grade or above the base flood elevation.

Encroachments in special flood hazard areas, including fill, new construction, substantial improvements, and other development, are prohibited under Municipal Code Chapter 8.04 unless it is demonstrated by a registered professional engineer or architect that the cumulative effect of the proposed development, when combined with all other development, will not increase the water surface elevation of the base flood more than one foot at any point within the Town of Yucca Valley.

Chapter 3.40: Development Impact Fees: The Town of Yucca Valley charges a development impact fee for construction and maintenance of general facilities, park facilities, trail facilities, storm drain facilities, and street and traffic facilities, authorized by Municipal Code Chapter 3.40. The fee amounts set by Ordinance No. 217 on October 19, 2010, are as follows:

- | | |
|---|--------------------------------|
| • Single-family residential development | \$9,081.00 per unit |
| • Multifamily residential development | 6,352.00 per unit |
| • Commercial development | 7,735.00 per 1,000 square feet |
| • Office development | 7,038.00 per 1,000 square feet |
| • Industrial development | 3,176.00 per 1,000 square feet |

The amounts of the development impact fees are amended from time to time by the Town Council.

Existing Conditions

Hydrology

Regional Drainage

The Town of Yucca Valley is at the western edge of the Mojave Desert, an arid region with hot summers, cool winters, and infrequent but potentially violent rainstorms. A watershed is the geographic area draining into a river system,



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ocean, or other body of water through a single outlet and includes the receiving waters. Watersheds are usually bordered and separated from other watersheds by mountain ridges or other naturally elevated areas. As rainwater and melting snow run downhill through the watershed, they carry sediment and other materials into receiving bodies of water and groundwater. Yucca Valley is in watersheds that drain into desert basins and do not reach the ocean.

Watersheds within the Town are shown in Figure 5.8-1, *Watersheds and Streams* and are based on the National Hydrography data set provided by USGS. The majority of the Town is in the Water Canyon Watershed, which covers the central and southern portions of the Town. Drainage in this watershed flows eastward toward its lowest point—Yucca Wash at the eastern watershed boundary. The Water Canyon Watershed extends from the Sawtooth Mountains on the west to the Little San Bernardino Mountains and into Joshua Tree National Park to the south. A small portion along the Town's southeastern boundary is within the Black Rock Spring Watershed, which also flows to the Yucca Wash; and the Town of Joshua Tree Watershed, which extends eastward. The southwest corner of the Town is in the Little Morongo Creek Watershed. Drainage in this watershed is southward through the Morongo Basin. The northern portion of the Town is within four watersheds: from south to north, the Town of Joshua Tree Watershed, Joshua Cove-Coyote Lake Watershed, Moonlight Mesa Watershed, and the Flat Top-Pipes Wash Watershed. The Joshua Cove-Coyote Lake Watershed extends eastward to Coyote Lake; the Moonlight Mesa Watershed extends eastward; and the Flat Top-Pipes Wash Watershed extends northeast into Homestead Valley.

Local Surface Waters and Drainage

Precipitation in the Lucerne Valley Planning Area of the Colorado River Basin occurs mostly as rainfall, with some snowfall in the San Bernardino Mountains. Rainfall is sporadic, and amounts vary widely with location. Mean annual precipitation ranges from 16 inches in the San Bernardino Mountains to less than 3 inches in the Bristol Lake (dry) area. The average annual rainfall over the entire planning area is 5 inches. Little of the rainwater percolates into the groundwater table, and most is lost by evaporation and by evapotranspiration. Arrastre and Crystal Creeks are the most significant streams in the planning area (CRBRWQCB 2006).

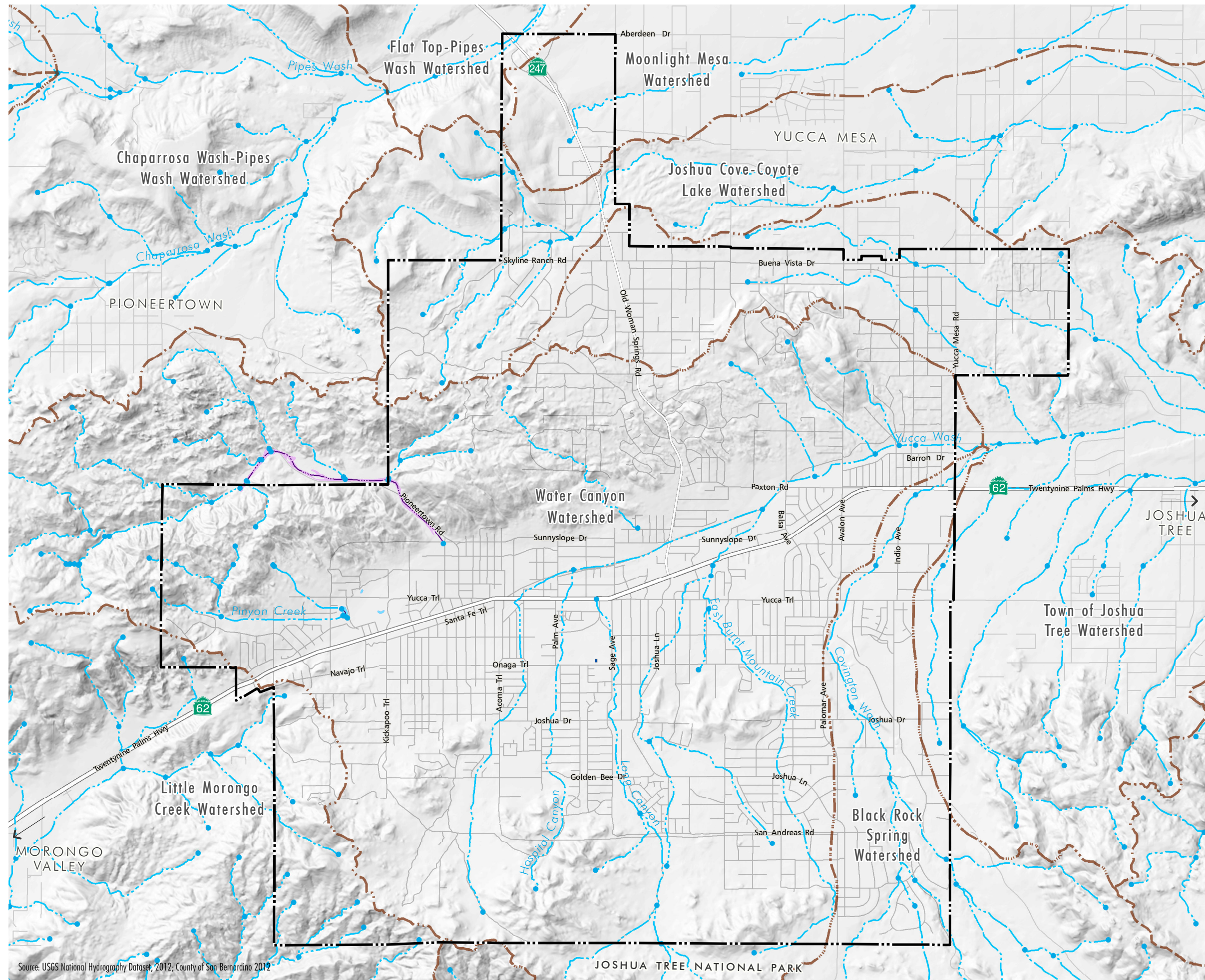
The southern part of the Town consists largely of a gently sloping alluvial plain shaped by a combination of sediments deposited by floodwaters emerging from canyons in the nearby mountains, and by past flooding of the valley's main drainage course, the Yucca Wash. North of Yucca Wash, the rugged, rocky, Sawtooth Mountains divide the southern valley from volcanic hills and sparsely populated alluvial fans in the northernmost part of the Town. The Little San Bernardino Mountains frame the Town on the south, where they exert tremendous influence on the local climate, and ultimately, on the flood hazard in Yucca Valley.

Yucca Valley has no perennial rivers or streams. When a storm arrives, the normally dry rocky canyons of the adjacent hills and mountains disperse runoff into broad desert washes or onto alluvial fans and plains—all of which are laced with a complex and dynamic drainage network that ultimately terminates in desert playas several miles to the east and northeast of the Town. Drainage channels in the local mountains are well incised; however, they lose their strong definition upon reaching the alluvial plain, where sediment-laden water is carried in shallow washes and by sheet flow. Drainage channels that are dry most of the year can quickly become dangerous torrents of water, sand, mud, and rocks, capable of transporting boulders, trees, and cars.

The valley in the southern part of the Town receives runoff from small to very large canyons in the Little San Bernardino Mountains. These canyons disperse floodwaters into numerous washes crossing the valley, including Covington Wash, East and West Burnt Mountain Creeks, Long Canyon, and Hospital Canyon, as well as smaller unnamed drainages—all having the potential to carry flash floods into the most densely populated parts of the Town. Several large drainages emerge from the southern flank of the Sawtooths as well, including Pinon Creek and Water Canyon. Runoff from mountains to the north and south of the valley is collected in the east-flowing Yucca Wash, the main drainage channel. North of the Sawtooths, stream channels also flow eastward, either passing through the gap between the Sawtooth and Bartlett Mountains to Yucca Wash, or continuing eastward north of the Bartlett Mountains.

5.8 - HYDROLOGY AND WATER QUALITY

Figure 5.8-1
WATERSHEDS AND STREAMS



- Hydrographic Junction
- Stream / River
- Artificial Path
- Wash
- Lake / Pond
- Reservoir
- USGS NHD Watershed Boundaries
- Town Limits

Source: USGS National Hydrography Dataset, 2012; County of San Bernardino 2012

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Drainage Facilities

A significant portion of Yucca Valley encompasses alluvial fans or plains that slope down gradually from the base of the mountains. Most of these areas have at least scattered development; however, higher density development is present on the alluvial fans in the main valley, between the Sawtooth and Little San Bernardino Mountains. Most of the existing development in Yucca Valley has been completed without significant alteration to the natural terrain. As a result, natural drainage courses pass through developed or semideveloped areas. Small channels pass through private yards, and some structures are built within the flow paths of shallow drainages. Most streets, many of which are unpaved, follow the natural contours of the land, crossing arroyos and gullies without the benefit of culverts or bridges. These crossings can quickly become filled with fast-moving floodwaters, trapping vehicles or washing them downstream. Where flows are concentrated or obstructed, the sandy soils that are prevalent can easily erode, forming new gullies and undermining structures.

Development in Yucca Valley has occurred in a piecemeal fashion over the years, much of it before the Town incorporated, and without the benefit of a planned drainage network. Many existing drainage courses are unimproved, and brief but intense storms can quickly overwhelm them, pushing water and sediment over low-lying areas and making unpaved roads impassable. The number of flood control facilities in the Town is limited, and these are mostly in the lowest part of the main valley along Yucca Wash. Some of these improvements have been made under the direction of the SBCFCD, and others have been constructed by developers as a condition of approval for their projects.

Regional Facilities. The SBCFCD operates and maintains regional flood control facilities along Yucca Wash and small portions of several tributaries, including Old Woman Springs Creek, Covington Wash, Burnt Mountain Creek, Long Canyon, High School Canyon, Hospital Canyon, and Church Street. These improvements consist mostly of open, graded earth channels, locally with rock reinforcements. Levees are present along the eastern portion of the Yucca Wash and Burnt Creek channels. Desilting basins are present in Long Canyon and Old Woman Springs Creek (see Figure 5.8-2, *Regional Drainage Facilities*).

Local Facilities. The Town of Yucca Valley has the responsibility of maintaining local flood control improvements. These mostly consist of small unlined earth channels, although some sections are locally lined with concrete or have some form of slope protection. Some streets are constructed with high curbs, so that they function as flood control channels during storms.

Groundwater

Yucca Valley overlies three groundwater basins: from south to north the Warren, Copper Mountain Valley, and Ames Valley basins (see Figure 5.8-3, *Groundwater Basins*). Groundwater is stored principally in the unconsolidated alluvium. Except for areas near some of the dry lakes, groundwater is unconfined. Groundwater flow follows the general gradient of the land surface except in areas of heavy extraction and where subsurface flow may be affected by faults (CRBRWQCB 2006).

- **Warren Groundwater Basin.** The Warren Valley Basin covers an area of approximately 26.9 square miles and includes the water-bearing sediments beneath the Town of Yucca Valley and the surrounding area. The Warren Valley Basin is bounded on the north by the Pinto Mountain fault, on the south by the bedrock outcrop of the Little San Bernardino Mountains, on the east by a bedrock constriction called the "Yucca Barrier," and on the west by a bedrock constriction and a topographic divide between the Warren Valley and Morongo Valley. The Warren Valley Basin has an estimated total storage capacity of approximately 568,000 acre-feet (af), with an estimated usable storage capacity of approximately 160,000 af. Groundwater production from the Warren Groundwater Basin is regulated under a 1977 Superior Court judgment,² the

² *Hi-Desert County Water District v. Yucca Water Company, Ltd.*, San Bernardino County Superior Court Case No. 172103.



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1991 Warren Valley Basin Management Plan, and its 1996 Addendum, issued because of the Court judgment. The Warren Groundwater Basin is recharged by percolation of rainfall and of ephemeral flows in Water Canyon and Covington Canyon; return flows from septic systems and irrigation; and water imported from the State Water Project (SWP), which began in 1995, at three percolation ponds operated by the Hi-Desert Water District (HDWD). Since recharge with SWP water began, groundwater levels in the Warren Basin have risen substantially. Of the 15 of 17 Warren Basin wells for which data are available, groundwater levels rose an average of 151 feet between the 1992–93 and 2011–12 water years (HDWD 2012a).

- *Copper Mountain Valley Groundwater Basin.* This basin covers 47.4 square miles, is approximately one mile north of the town of Joshua Tree, and includes the water-bearing sediments below and adjacent to Coyote Lake (dry). The northern boundary of the basin is coincident with the surface drainage divide between this basin and the Ames Valley Groundwater Basin. The southern boundary of the basin is the Pinto Mountain fault. The contact of alluvium with consolidated rocks forming Copper Mountain and the San Bernardino Mountains mark the east and west boundaries, respectively. Groundwater in storage is estimated to be a minimum of 940,000 af; there is no current estimate of groundwater storage capacity in this basin (DWR 2004). The Copper Mountain Valley Groundwater Basin is managed under a groundwater management plan adopted in 1996 by the Joshua Basin Water District (Kennedy-Jenks 2011b).
- *Ames Valley Groundwater Basin.* This groundwater basin underlies Ames Valley, Homestead Valley, and Pipes Wash in south-central San Bernardino County. The basin is bounded by nonwater-bearing rocks of the San Bernardino Mountains on the west, of Iron Ridge on the north, and of Hidalgo Mountain on the northeast. The Emerson, Copper Mountain, and West Calico faults form parts of the eastern and northern boundaries. The southern boundary and parts of the northern and eastern boundaries lie along surface drainage divides. The valley is drained northeastward by Pipes Wash to Emerson Lake (dry). Total storage capacity was estimated to be 1,200,000 af in 1975, and groundwater in storage was estimated at 540,000 af in 1972 (DWR 2004b). The Ames Valley Groundwater Basin is managed under a regional water management plan issued in 2004 by the Mojave Water Agency. An Ames Valley Recharge Project, under construction and expected to begin operating by the end of 2013, will intentionally recharge the Ames Valley Basin with imported water from the State Water Project.

Water Quality

Surface Water Quality

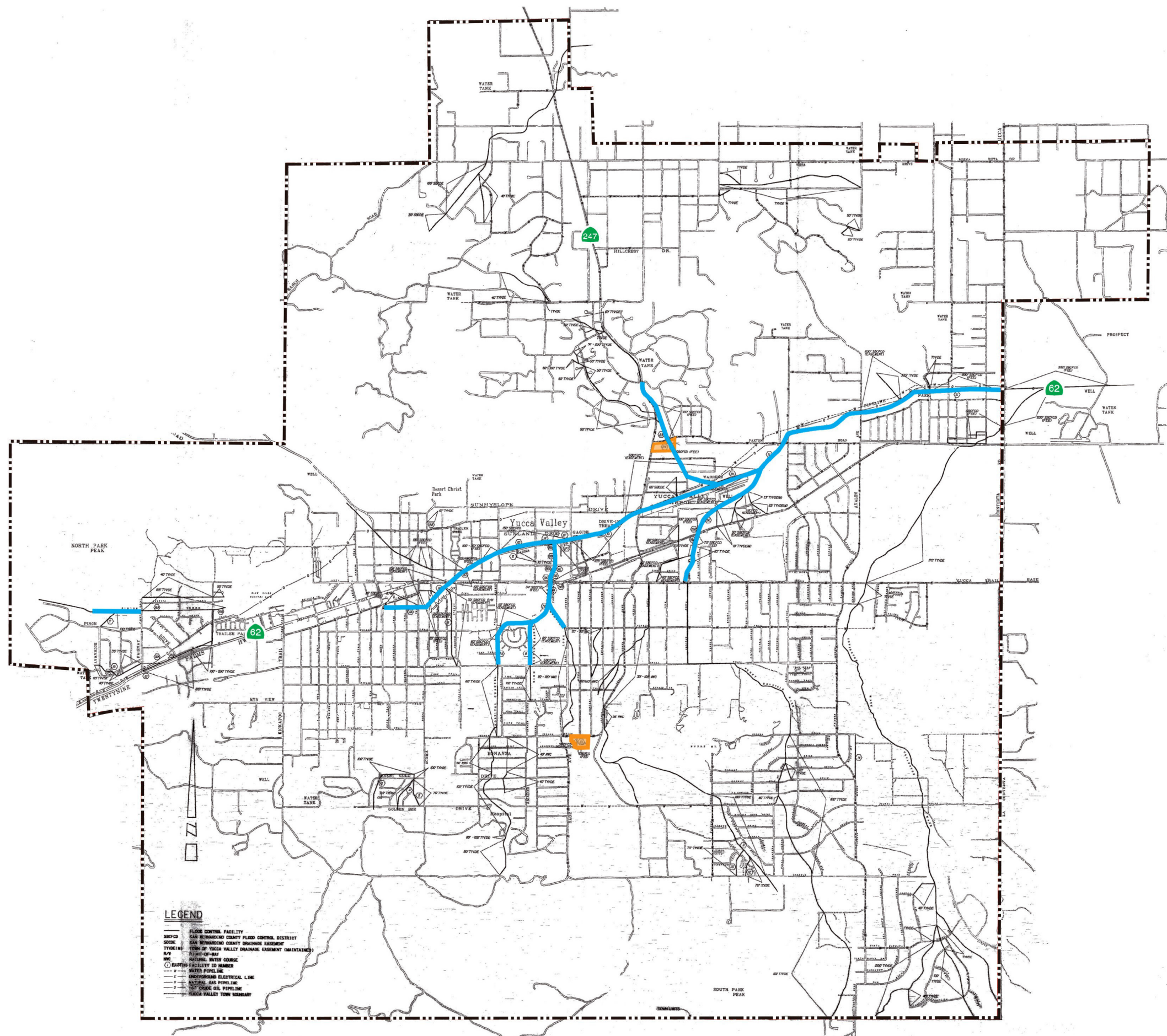
Beneficial uses are the ways that water can be used for the benefit of people and/or wildlife. Rivers and streams are divided into segments, or “reaches,” for the purposes of designating beneficial uses and listing pollutants impacting those water bodies. Under Section 303(d) of the CWA, states are required to identify water bodies that do not meet their water quality standards. Once a water body has been listed as impaired, a total maximum daily load (TMDL) for the constituent of concern (pollutant) must be developed for that water body. A TMDL is an estimate of the daily load of pollutants that a water body may receive from point sources, nonpoint sources, and natural background conditions (including an appropriate margin of safety) without exceeding its water quality standard. Those facilities and activities that are discharging into the water body, collectively, must not exceed the TMDL. No water courses in the Town of Yucca Valley are listed on the 2010 List of Water Quality Limited Segments issued by the EPA pursuant to Section 303(d) of the federal Clean Water Act.

Groundwater Quality

HDWD currently obtains its groundwater from 13 active wells—12 wells from the Warren Valley Basin and 1 well from the Ames Valley Groundwater Basin. All of the district’s production wells currently satisfy all applicable MCLs. With the exception of arsenic levels that intermittently exceed the running annual average for MCL compliance in 2 wells, all water from both the Warren Valley Basin and the Ames Valley Basin meets all federal and state drinking water regulations.

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Figure 5.8-2
REGIONAL DRAINAGE FACILITIES



- Town Limits
- Regional Drainage Facilities
- Debris Basin

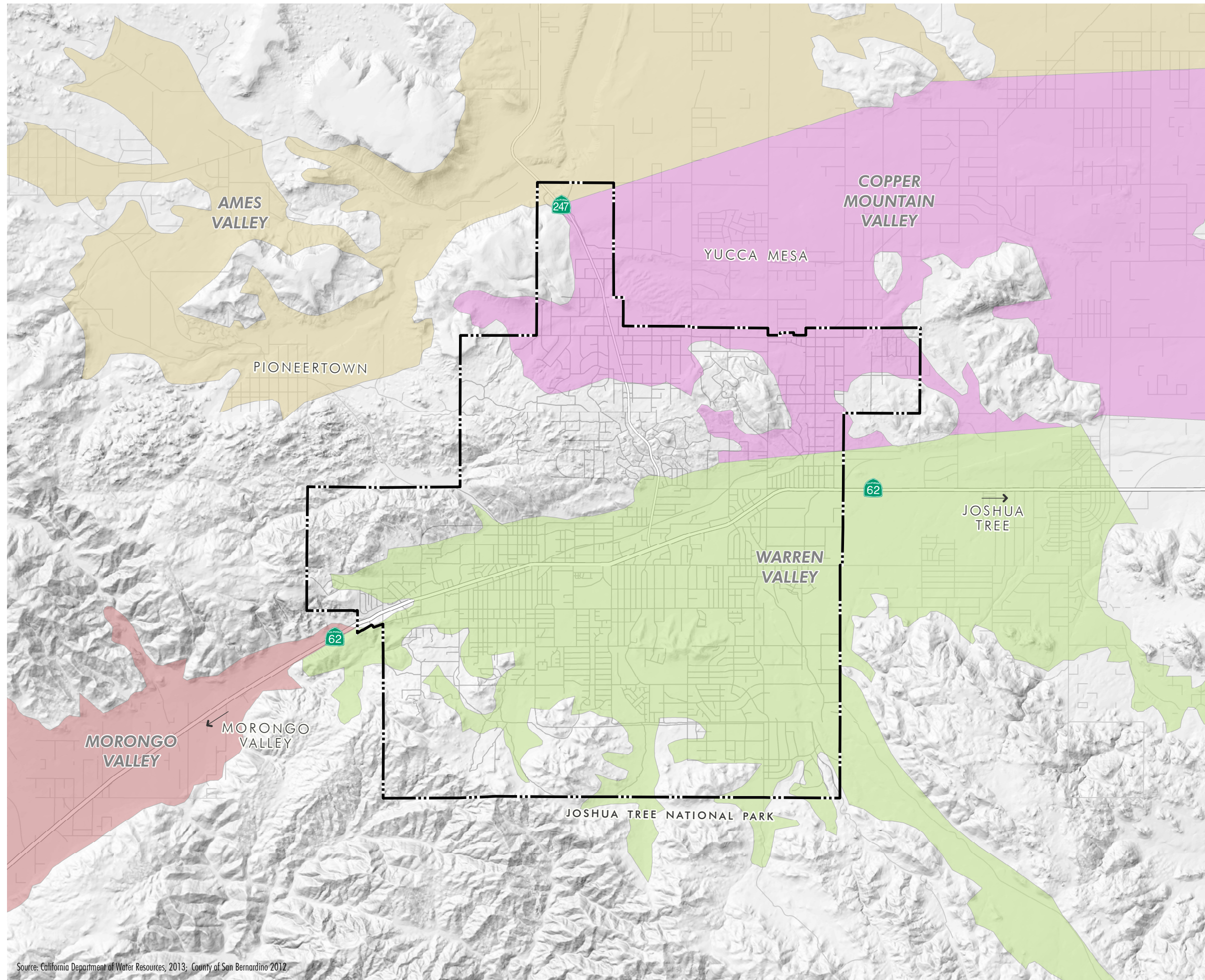
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Figure 5.8-3
GROUNDWATER BASINS



- AMES VALLEY
- COPPER MOUNTAIN VALLEY
- MORONGO VALLEY
- WARREN VALLEY
- Town Limits

Source: California Department of Water Resources, 2013; County of San Bernardino 2012

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Groundwater within the Copper Mountain Valley Basin is of relatively high quality and meets all federal and state standards for drinking water (DWR 2004a). Water produced from the Ames Valley Basin by the HDWD meets all federal and state drinking water regulations. However, in the Warren Valley Basin there are two pollutants that exceed or intermittently exceed the MCL: arsenic and nitrate:

- **Arsenic:** Two of the district's wells that extract water from the lower aquifer portions of the Warren Valley Basin intermittently exceed the MCL for arsenic. One of these wells has been taken off-line pending a solution to reduce the amount of arsenic levels, and the other is currently being treated through a permitted blending process with two low arsenic concentration wells. The current MCL for arsenic is 10 parts per billion (ppb). Arsenic levels within the two wells of concern have been detected as high as 13 ppb and as low as 2 ppb. Both wells produce less than 250 gallons per minute (gpm) and are not considered critical production wells.
- **Nitrate:** The detected amount of nitrate in the district's groundwater, 12.8 parts per million (ppm), was well within the EPA MCL of 45 ppm. However, the CRBRWQCB has concluded that concentrations of nitrate in the Warren Valley Groundwater Basin may be inconsistent with the water quality objectives established by the Water Board. Partially treated wastewater, or septage, in septic tanks was identified as the primary source of nitrate to the groundwater system in 2003 by the US Geological Survey. Increasing groundwater use caused the groundwater level to drop over 300 feet between the 1940s and 1995, when recharge of the basin with imported SWP water began. During that time, groundwater levels dropped faster than nitrates from septic systems moved downward. However, groundwater levels in HDWD Warren Valley Basin wells have risen an average of 151 feet between the 1992–93 and 2011–12 water years. High levels of nitrates from septic systems were found in some wells after recharge with SWP water began. An estimated 880 af of septic discharge currently reaches the groundwater annually (HDWD 2012b).

Because the Warren Valley Basin has elevated nitrates due to septic discharge, in 2011 the CRBRWQCB prohibited discharge from septic systems in areas of the Town of Yucca Valley shown on Figure 5.8-4, *Wastewater Treatment Project Phasing Map*. The prohibition will be phased, with areas of the Town prohibited from discharging beginning in 2016, 2019, and 2022. A small fraction of the Phase I area may be deferred to Phase II to keep Phase I cost closer to the original estimate (Ban 2013). A wastewater treatment and water reclamation system that would collect, treat, and reclaim wastewater in a majority of Yucca Valley is currently being developed. The system, which is projected to begin construction in 2016, includes a sewer collection system, a wastewater treatment plant, and water reclamation recharge ponds.

Other pollutants of concern include hexavalent chromium. Total hexavalent chromium concentration of 3.6 ppb (with a range of between 1.2 and 7.7 ppb) were reported in drinking water by the HDWD in 2009. These concentrations are significantly below the maximum contaminant level of 50 ppb for total chromium. In December 2010, however, the California Office of Environmental Health Hazard Assessment proposed a Public Health Goal for hexavalent chromium of 0.02 µg/L, with a maximum contaminant level for hexavalent chromium (independent of total chromium) expected to be established in the near future. This means that the hexavalent chromium levels in groundwater in Yucca Valley (and many other jurisdictions in the region) exceed this value.

No known hazardous materials releases affecting groundwater were identified in Chapter 5, *Hazardous Materials Management*. One Superfund site is located in Yucca Valley: La Contessa Middle School at 7050 La Contessa Road. A one-time release of mercury was removed from the site in 2007. Ten leaking underground storage tank (LUST) cases in Yucca Valley were identified in the technical background report. All cases affect soil only, and none of the cases affect groundwater; all 10 cases have been closed by the CRBRWQCB.



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Flood Hazards

Floods on alluvial fans have characteristics that are significantly different from those caused by river flooding. Although typically shallow in depth, flows can strike with little warning, travel at very high speeds, and carry tremendous amounts of sediment and debris. FEMA defines an active alluvial fan flood hazard based on three related criteria: 1) unpredictable flow paths; 2) abrupt deposition and erosion; and 3) an environment where the combination of sediment availability, slope, and topography creates an ultrahazardous condition. The active portions of the fan generally have shallow, braided stream channels and sparse vegetation. FEMA also defines an inactive alluvial fan surface as one that has relatively stable flow paths and a low level of sedimentation/erosion such that it does not cause instability in the established flow paths. Inactive surfaces usually have some soil development as well as incised, typically single-strand channels that behave more like rivers during floods. At their downstream margins, fans merge with the flatter topography of the valley floor.

Alluvial fans, including those in Yucca Valley, are highly diverse because of variations in geology, vegetation, topography of the source area, climate, tectonism (fault movements), and land uses. A particular fan may show characteristics of both active and inactive processes, especially if it has been modified by man-made structures. Therefore, it is generally not reasonable to assume that the flood risk on a fan surface is uniform. Furthermore, these characteristics make realistic assessments of flood risk and development of reliable mitigation measures particularly challenging.

Designated Flood Zones

There are 100-year flood zones in the Town along Pinyon Creek, Water Creek, Yucca Wash, Hospital Canyon, Long Canyon, West and East Burnt Mountain Creeks, Covington Wash, as well as a few other drainages (see Figure 5.8-5, *Flood Hazard Zones*).

Seismically Induced Dam Inundation

There are no dams that could pose a flood hazard to Yucca Valley through dam failure.

Inundation from Aboveground Water Storage Reservoirs

Seismically induced inundation can also occur if strong ground shaking damages aboveground water tanks. If a tank is not adequately braced and baffled, sloshing water can lift a water tank off its foundation, splitting the shell, damaging the roof, and bulging the bottom of the tank (causing what is referred to as “elephant’s foot”). Movement can also shear off the pipes leading to the tank, releasing water through the broken connections. New standards for design of steel water tanks were adopted in 1994 due to lessons learned from recent earthquakes. The new tank design includes flexible joints at the inlet/outlet connections to accommodate movement in any direction.

HDWD maintains 15 aboveground water tanks, with a total capacity of 12.9 million gallons. All the tanks are within the Town limits except Reservoir 33, which is to the northeast in the Yucca Mesa area. The two newest tanks were constructed in 2000 and 2003; however, many of the older tanks were constructed 20 years ago or more, before the adoption of newer earthquake design standards. Older tanks may not meet the new construction requirements for safety, lacking the flexible joints and other seismic upgrades that can help limit the damage that a failed water tank could cause to areas downstream. Some of the tanks have been retrofitted with seismic valves (see Table 5.8-1 below).

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Table 5.8-1
Aboveground Water Storage Tanks in Yucca Valley

Tank No.	Capacity (millions of gallons)	Year Built	Seismic Valves
Tank 14	2.0	1983	Yes
Tank 18	1.0	1986	Yes
Section 19	0.15	1966	No
Section 23	0.15	2003	No
Section 30	0.50	1969	No
Palomar	0.98	1978	No
FWH	0.98	1978	No
Alta Loma	1.00	1977	No
Golden Bee	0.42	1988	No
Hospital	0.21	ND	No
Homestead	0.50	2000	No
Lower Fox	2.22	1992	No
Upper Fox	1.50	1992	Yes
Lower Ridge	0.01	1992	Yes
Upper Ridge	0.50	ND	Yes

ND = no data

Seiche

A seiche is a surface wave created when an inland water body is shaken, usually by an earthquake. Seiches as a result of ground shaking are unlikely to occur in Yucca Valley due to the lack of large bodies of water.

Tsunami

A tsunami is a sea wave caused by a sudden displacement of the ocean floor, most often due to earthquakes. There is no tsunami hazard in Yucca Valley due to its inland location and its elevation.

Mudflows and Debris Flows

A mudflow or debris flow is a rapidly moving slurry of water, mud, rock, vegetation and debris generated by prolonged heavy rainfall. It is especially dangerous because it can move at speeds as fast as 40 feet per second (27 miles per hour), is capable of crushing buildings, and can strike with very little warning. Canyons in the Sawtooth and Bartlett Mountains and Little San Bernardino Mountains are susceptible to mudflows, and canyons on Burnt Mountain are susceptible to small mudflows.

5.8.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- HYD-1 Violate any water quality standards or waste discharge requirements.
- HYD-2 Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).



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- HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in a substantial erosion or siltation on- or off-site.
- HYD-4 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- HYD-5 Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- HYD-6 Otherwise substantially degrade water quality.
- HYD-7 Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- HYD-8 Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- HYD-9 Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
- HYD-10 Be subject to inundation by seiche, tsunami, or mudflow.

5.8.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.8-1: *DEVELOPMENT PURSUANT TO THE PROPOSED GENERAL PLAN UPDATE WOULD INCREASE SURFACE WATER FLOWS INTO DRAINAGE SYSTEMS WITHIN THE AFFECTED WATERSHEDS AS RESULT OF AN INCREASE IN IMPERVIOUS SURFACES IN THE TOWN. HOWEVER, THE TOWN WOULD NOT DEVELOP IN A MANNER THAT WOULD INCREASE FLOODING ON- OR OFFSITE. [THRESHOLDS HYD-4 AND HYD-5]*

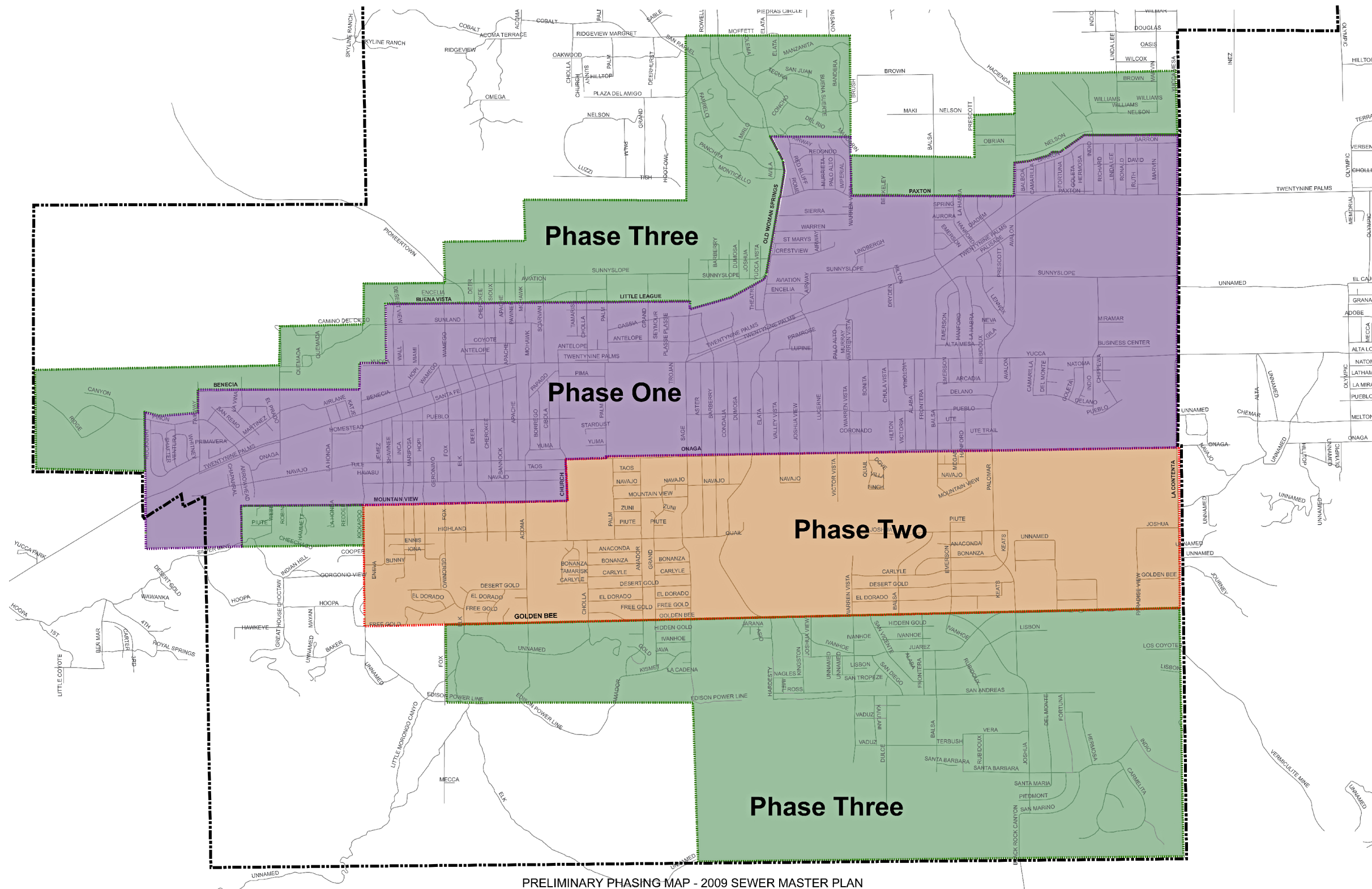
Impact Analysis: At buildout of the General Plan Update, 98.5 percent of the Town's 25,492 acres (25,106 acres) would be designated for some type of developed land use, and the remaining 386 acres would be designated for open space conservation. Currently, 65.4 percent of the Town (16,661 acres) consists of vacant land. Therefore, General Plan Update implementation would involve development of 16,275 acres of currently vacant land. Buildout of the proposed General Plan Update would increase the amount of impervious surfaces in the Town, thus increasing surface water flows into drainage systems within the watersheds in the Town. Excess flows in these drainages as a result of development has the potential to result in flooding.

To minimize flooding in the Town, 47 flood control improvements were proposed in the 1999 Master Plan of Drainage, including 27 drainage channels or channel segments, 6 detention basins, 2 storm drains, and a levee (Tettermer 1999). Existing flood control facilities in the Town are described above in Section 5.8-1. Implementation of the Master Plan of Drainage would minimize flood hazards in the Town. Furthermore, the General Plan Update includes several policies and implementation actions to reduce flooding, including Policies S3-1 through S3-11 and Implementation Actions S 10 through S 17. Specifically, Implementation Action S 10 requires developers to provide onsite retention of stormwater at a minimum of 10 percent above the incremental increase from preproject conditions. This is enforced through the development review process and routine site inspection. With adherence to the Town's standard conditions and development of the Master Plan of Drainage, impacts from an increase in impervious surfaces within the Town would be minimized.

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Figure 5.8-4

WASTEWATER TREATMENT PROJECT PHASING MAP



--- Town Limits

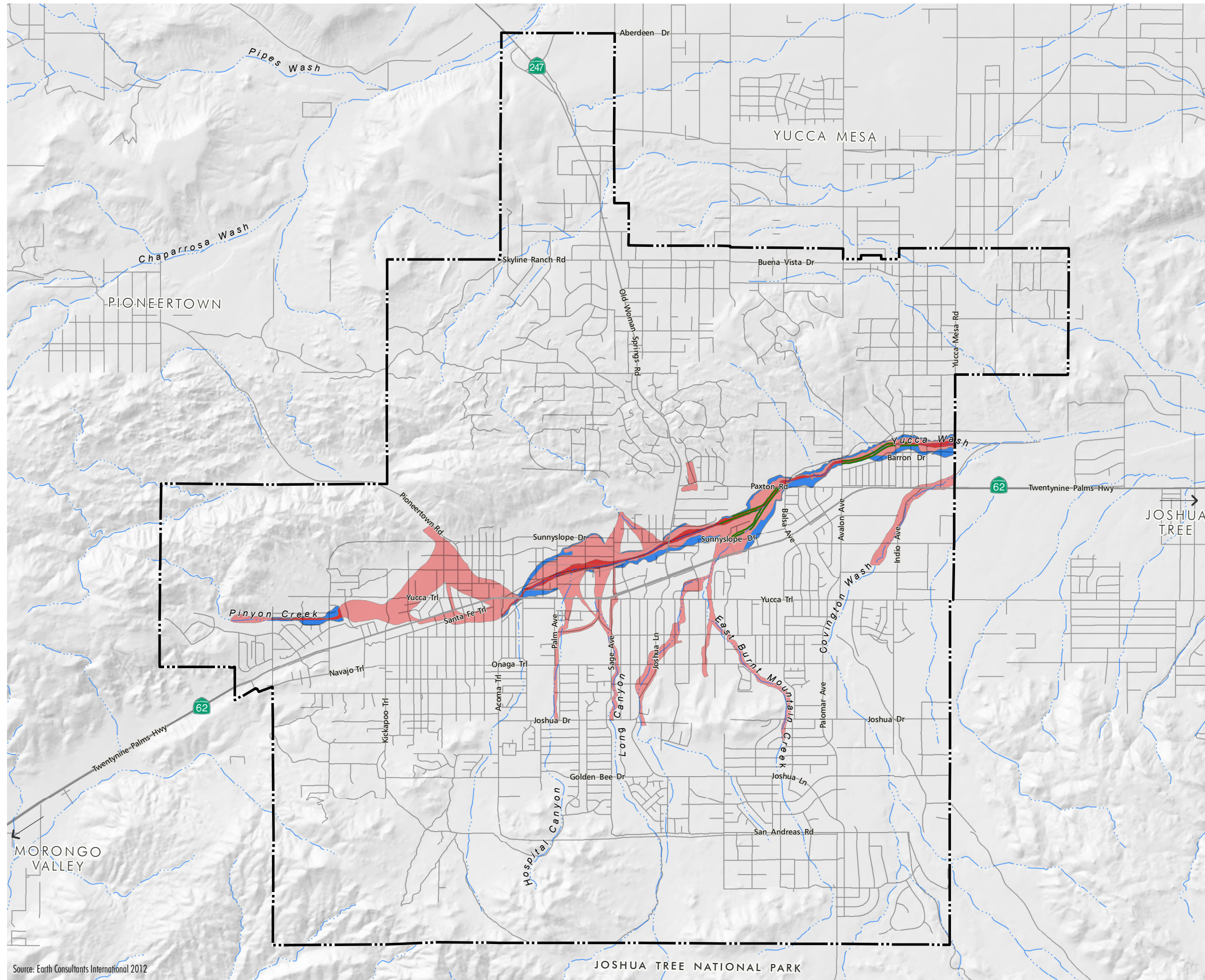
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Figure 5.8-5
FLOOD HAZARD ZONES



- █ Floodway Zone
- █ 100 Year Flood Area
- █ 500 Year Flood Area
- Levee
- Town Limits

Note: This map is intended for general land use planning only. Information on this map is not sufficient to serve as a substitute for detailed studies of individual sites

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IMPACT 5.8-2: DEVELOPMENT PURSUANT TO THE PROPOSED GENERAL PLAN UPDATE WOULD INCREASE THE AMOUNT OF IMPERVIOUS SURFACES IN THE TOWN OF YUCCA VALLEY. HOWEVER, GENERAL PLAN UPDATE BUILDOUT WOULD NOT SUBSTANTIALLY REDUCE GROUNDWATER RECHARGE. [THRESHOLD HYD-2]

Impact Analysis: General Plan Update implementation would involve development of 16,275 acres of currently vacant land. Buildout of the proposed General Plan Update would increase the amount of impervious surfaces in the Town, thus decreasing the amount of rain that could percolate into the groundwater basins.

Recharge Basins

Intentional recharge of the Warren Valley Groundwater Basin is conducted at three recharge basins owned and operated by the HDWD. Approval of the proposed General Plan Update would not change or require any change in land use on the three percolation basins. A groundwater recharge system in Ames Valley using imported SWP water is under construction and is planned to begin operation by the end of 2013. Approval of the General Plan Update would not interfere with that groundwater recharge system.

Proposed Increase in Impervious Area

There are currently 8,831 acres of developed land uses in the Town. Note, however, that some of the residential development in the Town is at a density of several acres per residence; most of the land at that low density is still available for groundwater recharge from rain. It should also be noted that the Town receives nominal annual rainfall (less than five inches per year). The proposed General Plan Update designates 25,106 acres of the Town for some type of developed land use, an increase of 16,275 acres above existing conditions. However, 8,929 acres, or 35 percent of the Town's area, would have residential land uses with maximum densities of one unit per five or more acres: Hillside Residential (one unit/20 acres), RL-10 (one unit/10 acres), and RL-5 (one unit/five acres). Thus, substantial portions of land within land use designations that would comprise slightly more than one-third of the Town would remain available for groundwater recharge at General Plan Update buildout.

Aside from imported SWP supplies, most other groundwater recharge is from septic and irrigation return flows (Kennedy-Jenks 2011). Natural recharge within the Warren Valley Groundwater Basin occurs through percolation of rainfall and of ephemeral flows in Water Canyon and Covington Canyon. Natural recharge within the Warren Valley Groundwater Basin is estimated as 49 afy (HDWD 2012a), compared to 2,569 af recharge with SWP water and 820 af septic and irrigation return flows in 2010 (Kennedy-Jenks 2011). Therefore, increasing the amount of impervious areas in the Town would not substantially reduce groundwater recharge.

Planned Wastewater Treatment System and Ensuing Groundwater Recharge

The first phase of the Town's planned wastewater treatment system is under construction. When all three phases of the wastewater collection and treatment system are completed (planned for 2022), most of the northern and central parts of the Warren Valley Groundwater Basin will dispose of wastewater through sewers rather than through septic tanks (see Figures 5.8-3 and 5.8-4). Septic returns to the Warren Valley Groundwater Basin will be greatly reduced by 2022 compared to current conditions. Treated wastewater would be recharged into the Warren Valley Groundwater Basin. Treated wastewater production by the treatment facility is forecast to be 1,863 afy in 2020 and to increase to 2,876 afy in 2035, compared to 820 afy of estimated septic and irrigation returns in 2010 (Kennedy-Jenks 2011). Thus, reducing use of septic systems in Yucca Valley in favor of the planned wastewater treatment and water reclamation system is not expected to reduce groundwater recharge into the Warren Valley Groundwater Basin and would improve water quality in this groundwater basin.



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IMPACT 5.8-3: ***PORTIONS OF THE TOWN PROPOSED FOR DEVELOPMENT ARE WITHIN A 100-YEAR FLOOD HAZARD AREA. DEVELOPMENTS AND REDEVELOPMENTS PURSUANT TO THE PROPOSED GENERAL PLAN UPDATE WOULD NOT INCREASE FLOOD HAZARDS IN THE TOWN OF YUCCA VALLEY. [THRESHOLDS HYD-7 AND HYD-8]***

Impact Analysis: Portions of the Town proposed for development are within 100-year flood hazard areas mapped on Figure 5.8-5, *Flood Hazard Zones*. One-hundred-year flood zones are located along Pinyon Creek, Water Creek, Yucca Wash, Hospital Canyon, Long Canyon, West and East Burnt Mountain Creeks, Covington Wash, and a few other drainages. Portions of Yucca Wash are a designated floodway that must be kept free of encroachment.

Future development within the 100-year flood plan must be reviewed by FEMA to determine whether or not the project meets the criteria of the National Flood Insurance Program and if revisions will be needed to the FEMA maps for the community as a result of the project's construction. Per FEMA, any proposed habitable spaces in a special flood hazard area would be required to be placed above the 100-year flood elevations. Final elevations would be verified by FEMA. Furthermore, all developments and redevelopments approved in accordance with the proposed General Plan Update would comply with provisions governing new construction, modifications of existing structures, and encroachments into special flood hazard areas set forth in Municipal Code, Chapter 8.04. Therefore, impacts related to flood zones are considered less than significant and would not subject people or structures to substantial hazards from 100-year floods.

IMPACT 5.8-4: ***DURING THE CONSTRUCTION OF PROJECTS IN ACCORDANCE WITH THE GENERAL PLAN UPDATE, THERE IS THE POTENTIAL FOR SHORT-TERM UNQUANTIFIABLE INCREASES IN POLLUTANT CONCENTRATIONS. AFTER PROJECT DEVELOPMENT, THE QUALITY OF STORM RUNOFF (SEDIMENT, NUTRIENTS, METALS, PESTICIDES, PATHOGENS, AND HYDROCARBONS) MAY BE ALTERED. [THRESHOLDS HYD-1 AND HYD-6]***

Impact Analysis: Buildout of the Town of Yucca Valley would generate pollutants during the construction and operation of projects in accordance with the General Plan Update.

Construction

Pollutants from construction activities that can enter stormwater include sediment, metals, nutrients, soil additives, pesticides, construction chemicals, and other construction waste (CASQA 2003). The Town of Yucca Valley gets very little rainfall; the average annual rainfall over the entire Lucerne Valley Planning Area is five inches (CRBRWQCB 2006). Many of the water courses in the Town are dry washes. The Corps has identified that there are currently no Waters of the U.S. within the Town because the most prominent water course in the Town, the Yucca Valley Creek, is classified as an intermittent desert stream.³ If a jurisdictional determination has been made that the project does not discharge to federal waters, then no enrollment under the General Construction Permit is necessary and no water quality impacts are considered to occur. Furthermore, grading or construction operations under Town grading or construction permits are prohibited from allowing loose trash, rubbish, or debris to accumulate or to be carried offsite by wind or water; are required to keep trash, rubbish, and debris contained; and are required to provide for waste collection to prevent trash containers from overflowing, by Town Municipal Code Chapter 8.03, *Construction Site Maintenance and Trash Containment*. Construction, grading, excavation, and land clearing operations are required to use measures to minimize wind erosion under MDAQMD Rules 403 and 403.2. Grading and construction activities pursuant to the General Plan Update would comply with existing laws and regulations aimed at minimizing or eliminating pollution of stormwater with trash and debris and pollution of air and water by dust.

³ Waters of the United States include waters used, or potentially usable, in interstate or foreign commerce; interstate waters including interstate wetlands; waters—including intermittent waters—and wetlands, the destruction of which could affect interstate or foreign commerce; tributaries to waters identified above; and wetlands adjacent to waters identified above (Code of Federal Regulations, Title 33, Section 328.3). The Corps determination is reviewed every five years.

5. Environmental Analysis

Project Design and Project Operation

Pollutants from the postconstruction phases of projects include sediment, metals, nutrients, pesticides, and hydrocarbons. SWRCB Order No. 2013-0001 DWQ, effective July 1, 2013, for small MS4s does not apply because the Town does not currently exceed a population density of 1,000 persons per square mile. However, the Town would have a population density of 1,000 persons per square mile when its population reaches 39,831 persons. The Southern California Association of Governments 2035 population forecast for Yucca Valley is 26,200. Assuming that is correct, Yucca Valley would reach the threshold population density for coverage under the small MS4 Permit well after 2035. At General Plan buildout, the Town would have a forecast population of 64,565, well over the threshold population, and the requirements under this Statewide General Permit for small MS4s would apply. The CRBRWQCB may designate the Town's MS4 system a regulated small MS4 before the Town reaches the threshold population. Such designation would be based on the potential for the Town's MS4 discharges to exceed water quality standards, including impairment of designated uses, or for other significant water quality impacts, including habitat and biological impacts.

At buildout, the Town would be required to implement the Statewide General Permit for Small MS4s. This would include a requirement for land use projects subject to the permit to prepare a site-specific WQMP that identifies BMPs for pollutants of concern. Site design for stormwater quality protection under the Statewide General Permit for small MS4s uses a three-level strategy:

- 1) Reduce or eliminate post-project runoff;
- 2) Control sources of pollutants; and, if still needed after (1) and (2),
- 3) Treat contaminated stormwater before discharging it into the storm drain system or into receiving waters.



There are three categories of BMPs, with each category corresponding to one of the three strategies.

- Low-impact development (LID) BMPs (site design) are intended to reduce or eliminate postproject runoff
- Source control BMPs control sources of pollutants and are divided into two types:
 - Structural source control BMPs, which are included in project design
 - Nonstructural source control BMPs, which are used during project operation
- LID/treatment control BMPs treat contaminated stormwater before the water is discharged offsite (CASQA 2003).

LID BMPs, structural source control BMPs, and treatment control BMPs would all be required in the design of projects developed once the Town reaches the threshold population density for coverage under the small MS4 Permit.

Impacts to Waters of the State

Streams and riparian habitats in the Town of Yucca Valley are Waters of the State regulated by the CDFW under California Fish and Game Code Sections 1602 et seq. Alterations to the natural flow, removal of material from, or deposit of material into a stream or lake are prohibited except under a lake or streambed alteration agreement. Selected requirements for notifications of lake or streambed alterations are described in Section 5.8.1. All development and redevelopment projects approved according to the General Plan Update would comply with Sections 1602 et seq. of the Fish and Game Code. Impacts to water bodies and riparian habitats must be identified and mitigated.

Environmental Analysis

HYDROLOGY AND WATER QUALITY

Groundwater Pollution from Sanitary Wastewater Treatment

Buildout of the proposed General Plan would add approximately 17,771 residential units, 43,283 residents, 17.4 million square feet of nonresidential land uses, and 27,387 employees in the Town of Yucca Valley, thus substantially increasing wastewater generation in the Town.

Waste discharge requirements are issued for certain individual projects by the CRBRWQCB. Properties in the Town for which waste discharge requirements have been issued include stores, a restaurant, a mobile home park, and a laundromat. Some affected properties discharge to onsite wastewater treatment plants while others discharge to septic tanks/seepage pits (CRBRWQCB 2013).

The CRBRWQCB in 2011 prohibited discharge from septic systems in the Town of Yucca Valley. The prohibition will be phased, with areas of the Town prohibited from discharging beginning in 2016, 2019, and 2022 (see Figure 5.8-4, *Wastewater Treatment Project Phasing Map*). A wastewater treatment and water reclamation system that would collect, treat, and reclaim wastewater in a majority of Yucca Valley is currently being developed. The system, which is projected to begin operation in 2016, includes a sewer collection system, a wastewater treatment plant, and water reclamation recharge ponds. Wastewater treatment, groundwater recharge with treated wastewater, and withdrawal of groundwater after recharge, would all comply with requirements in Title 22, California Code of Regulations; and recommendations of the California Department of Public Health pursuant to such regulations. Recharge of the Warren Valley Groundwater Basin with treated wastewater would have a favorable impact on groundwater quality compared to existing pollution from septic system returns.

Septic systems that would be installed in parts of the Town where they would still be permitted—that is, outside of the phased prohibited areas shown on Figure 5.8-4—would be mandated to comply with requirements for septic tanks in the California Plumbing Code, California Code of Regulations, Title 24, Part 5. Adherence to the septic tank prohibition in the areas identified in Figure 5.8-4 and compliance with the California Plumbing Code in the more rural areas would reduce impacts to groundwater quality.

IMPACT 5.8-5: *BUILDOUT IN ACCORDANCE WITH THE YUCCA VALLEY GENERAL PLAN UPDATE WOULD NOT EXPOSE PEOPLE OR STRUCTURES TO RISKS ASSOCIATED WITH FAILURE OF A LEVEE. [THRESHOLD HYD-9]*

Impact Analysis: Levees are present along the eastern portion of the Water Canyon Channel and along Burnt Mountain Wash. There are also planned and existing detention/debris basins in the Town that contain stormwater on a temporary basis. Implementation of the proposed General Plan could expose additional population to flood hazards. The 1999 Town of Yucca Valley Master Plan of Drainage (MPD) recommends the following improvements for Water Canyon:

- A detention/debris basin in Water Canyon along the north side of Pioneertown Road next to the west Town boundary. The basin would be sized to store the 100-year debris yield.
- Construction of Water Canyon Channel as a revetted soft-bottom channel 3,000 feet downstream from the proposed basin, then continuing downstream as a rock-lined channel.

These improvements have not yet been built. An area near the mouth of Water Canyon is designated as a FEMA 100-year flood zone (Zone A; see Figure 5.8-5, *Flood Hazards*).

Seven basins were included in the MPD: one existing basin (Old Woman Springs), an expansion to a second existing basin (Long Canyon), and five planned basins. All basins except Old Woman Springs Basin were sized to hold the debris volume from a 100-year storm. Selected characteristics of the five planned and one expanded basins are provided below.

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

- Water Canyon Basin: 438 af storage capacity, 126,000 cubic yards (cy) debris capacity, 35 acres.
- Kickapoo Basin: 32 af storage capacity, 26,500 cy debris capacity, 8 acres.
- Acoma Basin: 90 af storage capacity, 57,000 cy debris capacity, 10 acres.
- Long Canyon Basin (expanded): 130 af storage capacity, 108,000 cy debris capacity, 15 acres.
- East Burnt Mountain Basin: 194 af storage capacity, 39,000 cy debris capacity, 20 acres.
- West Burnt Mountain Basin: 96 af storage capacity, 50,000 cy debris capacity, 20 acres.

Based on a survey of locations of proposed facilities using Google Satellite View in May 2013, the Old Woman Springs Channel has been built both upstream and downstream of Old Woman Springs Basin. Remaining proposed facilities in the 1999 MPD have not yet been built. The six above-listed basins, given their size and storage capacity, would be under the jurisdiction of the California Division of Safety of Dams (DOSD). The DOSD would review the design and oversee the construction of the basins and would inspect the basins annually once completed.

Developments within Yucca Valley are required to pay a development impact fee for construction and maintenance of general facilities, park facilities, trail facilities, storm drain facilities, and street and traffic facilities, pursuant to Municipal Code Chapter 3.40. Future developments would pay the required development impact fee; revenue from such fee would be available to construct and maintain storm drainage facilities. After payment of development impact fees by future developments, and review and inspection of basins by DSOD during design, construction, and operations, no substantial flooding hazard would occur due to failure of levees or of detention/debris basins.

IMPACT 5.8-6: IMPLEMENTATION OF THE GENERAL PLAN UPDATE WOULD NOT CAUSE SUBSTANTIAL HAZARDS FROM FAILURE OF AN ABOVEGROUND WATER TANK. [THRESHOLD HYD-10]

Impact Analysis:

There are currently 15 aboveground water storage tanks in the Town of Yucca Valley that are owned and operated by HDWD. The HDWD provides water to over 24,000 people in the communities of Yucca Valley and Yucca Mesa. Most of the tanks are on hilltops in sparsely populated areas, but there is a remote possibility that if any of the tanks were to catastrophically fail, it would result in localized flooding in some areas of the Town.

The tanks range from 150,000 gallons to 2.2 million gallons, with a total capacity of 12.9 million gallons. All of the tanks are constructed of welded steel, except for the Hospital Reservoir, which is constructed of bolted steel. The tanks were installed between 1965 and 2010 with an average date of 1985. The newest tank, Lower Ridge Reservoir, was constructed in 2010 and is in compliance with the latest seismic standards and AWWA standards for welded steel tanks. However, some of the older tanks may lack the flexible joints and other seismic upgrades that can help limit the potential for damage to areas downstream of a failed water tank. The HDWD has a program of evaluating and retrofitting existing tanks as necessary, and all water tanks within Yucca Valley are regularly inspected.

Strong ground shaking can cause structural damage to aboveground water storage tanks if the tanks are not adequately braced and baffled. Ground movement and water inertia combine to exert stresses on the tank shell, tank foundation, anchorage of the tank to the foundation, and piping connections. A seiche, that is, the sloshing of water within the tank, also occurs with strong ground movement and can potentially lift the tank off its foundation, damage the roof, or create a bulge at the tank bottom. Movement can also shear off the inlet and outlet piping to the tank, releasing water.

In addition to the potential inundation of downslope properties, water released from these tanks can significantly reduce the water available for residential or commercial/industrial use or for fighting earthquake-induced fires. However, water from other sources, such as imported water from the State Water Project and local groundwater wells, should be able to meet the water demand of the communities served by HDWD until repairs to the tanks can be made.



Environmental Analysis

HYDROLOGY AND WATER QUALITY

During the 1994 Northridge earthquake, 40 steel water storage tanks sustained damaged, from minor damage to walkways to complete collapse of the tanks. However, the most serious damage occurred to bolted steel tanks that were constructed prior to 1972. Only one of the HDWD tanks fits these criteria—the Hospital Reservoir was constructed in 1965 of bolted steel. However, it is relatively small in size (210,000 gallons) and is on top of a hill on the southeast boundary in a sparsely populated area of the Town. If a release occurred from this tank, the nearest downslope residence is over 600 feet to the northeast, with an intervening road that would convey a portion of the released water. Buildout of the proposed General Plan Update would not cause substantial flood hazards due to failure of an aboveground water tank.

IMPACT 5.8-7: *IMPLEMENTATION OF THE GENERAL PLAN UPDATE WOULD NOT CAUSE SUBSTANTIAL HAZARDS FROM MUDFLOW. [THRESHOLD HYD-10]*

Impact Analysis: Canyons in the Sawtooth and Bartlett Mountains and Little San Bernardino Mountains are susceptible to mudflows, and canyons on Burnt Mountain are susceptible to small mudflows (see Figure 5.1-1, *Mountain Ranges*). Projects considered for approval in those areas pursuant to the proposed General Plan would be required to have geotechnical studies conducted for their sites. Such studies would be required to evaluate the potential for slope failure onsite, including mudflow, and to include recommendations for minimizing any identified hazards. Each project would be required to comply with recommendations in its geotechnical report. Consequently, adherence to the Town’s standard conditions would minimize impacts from mudflows.

5.8.4 Relevant General Plan Policies and Implementation Actions

Safety Element

Safety Element Policies

- | | |
|-------|---|
| S 3-1 | Continue to improve local drainage facilities to be consistent with or complementary to the Master Plan of Drainage. |
| S 3-2 | Seek funding for local drainage improvements to provide flood control protection, preserve natural landform, and create passive and active recreational open space amenities. |
| S 3-3 | Continue to manage local natural and improved drainage facilities to be consistent with or complementary to the Master Plan of Drainage. |
| S 3-4 | Collaborate with the San Bernardino County Flood Control District and other state and federal agencies to minimize flood damage. |
| S 3-5 | Participate in regional planning efforts to monitor and regulate the use and removal of sewage disposal systems threatening the Town’s groundwater basin. |
| S 3-6 | In those locations where managed flood plains are recommended by the Master Plan of Drainage, limited to no improvements shall be allowed to control or divert the flow of flood water. |
| S 3-7 | Require development within the 100-year flood zone to implement mitigation measures to minimize risks associated with flood hazards. |
| S 3-8 | Collect, maintain, and make available information regarding flooding hazards to remain aware of potential hazards and serve as an educational resource for the community. |

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

- S 3-9 Actively cooperate with FEMA regarding amendments to local Flood Insurance Rate Maps, recognizing the importance of redesignation of the 100 and 500-year flood plains within the Town boundaries as facility improvements are completed.
- S 3-10 Coordinate with the San Bernardino County Flood Control District to enter into multi-use agreements within flood control facilities, allowing for safe, attractive recreational facilities while maintaining the function of the drainage facilities.
- S 3-11 Require new development to incorporate adequate flood mitigation, including appropriate siting of structures located within flood plains and grading that prevents adverse drainage impacts to adjacent properties through on-site retention of runoff.

Safety Element Implementation Actions

- S 10 Work with the San Bernardino County Flood Control District to update and implement the Master Plan of Drainage for the near and long term protection of the community and its residents. Encourage the County to develop and include strategies to address local drainage issues unique to Yucca Valley's desert environment such as drainage over private properties in semi-developed areas and unpaved roads that cross natural drainage areas that cannot be remedied by standard measures included in the existing Master Plan and typically apply to more urbanized areas.
- S 11 Continue to disseminate information on flooding, flood control on private property, floodplains, and flood preparedness to the public at Town Hall and on the Town's website.
- S 12 Periodically review county, state, and federal flood control best practices and incorporate appropriate standards into the Municipal Code.
- S 13 Apply for grants that provide funding for local drainage controls. Cal/EPA and the California State Water Resources Control Board both offer grants to municipalities throughout California.
- S 14 Secure a Conditional Letter of Map Revision (CLOMAR) and final map amendment recognizing the re-designation of the 100-year flood plain within the Town boundaries.
- S 15 Enforce on-site retention of stormwater and run-off, plus a minimum of 10% above the incremental increase, through the development review process and routine site inspections.
- S 16 Communicate with FEMA regarding Flood Insurance Rate Maps.
- S 17 Map areas that frequently flood to track priority places for infrastructure improvements. Use this data to apply for grant funding.



Open Space and Conservation Element

Open Space and Conservation Element Policies

- OSC 5-1 Support Hi-Desert Water District efforts to promote water conservation and efficiency in existing and new development.

Environmental Analysis

HYDROLOGY AND WATER QUALITY

- OSC 5-2 Protect open spaces, natural habitat, floodplains, and wetland areas that serve as groundwater recharge areas; and participate in regional transportation/flood control planning to increase groundwater recharge concurrent with flood plain management practices.
- OSC 5-3 Protect groundwater recharge and groundwater quality when considering new development projects.
- OSC 5-4 Participate in regional water planning efforts to protect groundwater resources and to assist the HDWD in implementation of its wastewater collection and treatment system.
- OSC 5-5 Require the inclusion of erosion control measures as components of a grading plan to assure elimination of impacts to downstream property owners.
- OSC 6-1 Coordinate with the Hi-Desert Water District to share information on potential groundwater contaminating sources.
- OSC 6-2 Coordinate with the Hi-Desert Water District to implement the wastewater collection and treatment system.
- OSC 6-3 Require low water use, drought resistant landscape planting to reduce water demand.
- OSC 6-4 Require new development to incorporate Best Management Practices (BMPs) for water use and efficiency and demonstrate specific water conservation measures.
- OSC 6-5 Preserve and enhance all watercourses and washes necessary for regional flood control, ground water recharge areas, and drainage for open space and appropriate recreational purposes.
- OSC 6-6 Require that development and maintenance of project specific on site stormwater retention/detention basins implement and enhance ground water recharge, complement regional flood control facilities, and addresses applicable community design policies.

Open Space and Conservation Element Implementation Actions

- OSC 23 Continue to support the Hi-Desert Water District's groundwater recharge program, while protecting recharge sites from potential impacts of proposed development.
- OSC 24 Track data collected by HDWD's groundwater quality data monitoring program.
- OSC 25 Continue to work with HDWD in the pursuit of outside financial resources to reduce the costs to property owners for wastewater system implementation.
- OSC 26 Update water efficient-landscape guidelines, which address the use of drought-tolerant plant materials and irrigation standards in the Development Code in accordance with State law.
- OSC 27 Provide development standards and guidelines for the construction of on-site storm water retention facilities that are consistent with community design standards and local and regional drainage plans.

5. Environmental Analysis

5.8.5 Existing Regulations

Federal

- United States Code Title 42, Sections 300f et seq.: Safe Drinking Water Act
- United States Code, Title 33, Sections 1251 et seq.: Clean Water Act
- Code of Federal Regulations Title 40 Parts 122 et seq.: National Pollutant Discharge Elimination System.

State

- California Water Code Sections 13000 et seq.: Porter-Cologne Water Quality Act
- California Code of Regulations Title 24 Part 5: California Plumbing Code

Town of Yucca Valley

- Town of Yucca Valley Municipal Code Chapter 8.04, Flood Control

5.8.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.8-1, 5.8-2, 5.8-3, 5.8-4, 5.8-5, 5.8-6, and 5.8-7.

5.8.7 Mitigation Measures

No significant adverse impacts were identified and no mitigation measures are necessary.



5.8.8 Level of Significance After Mitigation

With implementation of the Master Plan of Drainage and the General Plan Update policies and implementation actions, impacts to hydrology in the Town would be minimized. Furthermore, at buildout, the Town would reach the population density for coverage under the small MS4 permit, which would further reduce impacts to water quality from an increase in development within the Town. No significant impacts were identified with regard to hydrology and water quality.

5.8.9 References

Colorado River Basin Regional Water Quality Control Board (CRBRWQCB). 2013, April 15. Colorado River Basin Board Orders: Year 2013.
http://www.waterboards.ca.gov/coloradoriver/board_decisions/adopted_orders/boardorders2013.shtml.

———. 2006, June. Water Quality Control Plan, Colorado River Basin–Region 7.

Department of Water Resources (DWR). 2004a, February 27. Copper Mountain Valley Groundwater Basin.
http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/7-11.pdf.

———. 2004b, February 27. Ames Valley Groundwater Basin.
http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/7-16.pdf.

Earth Consultants International, Inc. (ECI). 2012, September. Chapter 3: Flood Hazards. In Technical Background Report for the Safety Element, Town of Yucca Valley, California.

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HYDROLOGY AND WATER QUALITY

High Desert Water District (HDWD). 2012a, December 20. Annual Report of the Warren Valley Basin Watermaster, October 1 2011 through September 30 2012.

<http://www.hdwd.com/LinkClick.aspx?fileticket=0TJu0H9lTyM%3d&tabid=170&mid=811>.

———. 2012b, June. Wastewater Treatment & Water Reclamation Project: Questions & Answers.

http://www.hdwd.com/Portals/0/HDWD/Documents/WastewaterProject/QA_FINAL.pdf.

———. 1996, November. Addendum to the Warren Valley Basin Management Plan.

<http://www.hdwd.com/LinkClick.aspx?fileticket=ITKs9WCEMxM%3d&tabid=173&mid=804>.

Kennedy-Jenks Consultants. 2011, June. Final 2010 Urban Water Management Plan for Hi-Desert Water District.

<http://www.hdwd.com/LinkClick.aspx?fileticket=dUTe%2bDg6kBQ%3d&tabid=180>.

State Water Resources Control Board. 2013, February 5. Fact Sheet for NPDES General Permit And Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (Order). Order No. 2013-0001-DWQ.

http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/phsii2012_5th/fs_final_sidenote.pdf.

Tettermer & Associates, Inc. 1999, June. Town of Yucca Valley Master Plan of Drainage.

United States Environmental Protection Agency (USEPA). 2012, September 26. Water Permitting 101.

<http://www.epa.gov/npdes/pubs/101pape.pdf>.