



Final | May 2016

# SAFETY ELEMENT

Prepared by:

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INTERNATIONAL



# SAFETY ELEMENT

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# McFarland Safety Element



## **PURPOSE**

The State General Plan Guidelines direct cities to incorporate a number of required elements into their general plans, including Safety. The purpose of the Safety Element is to reduce the potential risk of death, injuries, property damage, and economic and social dislocation resulting from natural and human-induced hazards. The Safety Element establishes preventative and responsive policies and programs to mitigate the potential impacts associated with hazards that may affect the City of McFarland. This Element addresses geologic and seismic hazards, flood hazards, fire hazards, hazardous materials, and emergency preparedness and response planning.

The Safety Element also includes policies on natural hazard mitigation planning that implement and supports the City's Local Hazard Mitigation Plan (LHMP). The Federal Emergency Management Agency (FEMA) requires local agencies to adopt a LHMP in order to be eligible for pre-disaster mitigation funds. By law, a Hazard Mitigation Plan must describe the type, location, and extent of all natural hazards that can affect the jurisdiction; describe the jurisdiction's vulnerability to these hazards; include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses; and, contain a plan maintenance process. The McFarland LHMP addresses several natural disasters that may affect the City: Flood, Geologic, Severe Weather, Drought, and Extreme Heat. The LHMP identifies community policies, actions, and tools for implementation to reduce the public's exposure to these hazards, to minimize property damage and community disruption, and to reduce or avoid the costs of disaster relief.

The City of McFarland LHMP serves as one of the implementation programs of the Safety Element and contains programs that implement its policies. The McFarland LHMP is, and as updated from time to time, will continue to be incorporated in the Safety Element. The Safety Element and LHMP are complementary documents that work together to achieve the ultimate goal to reduce the impacts on a community from a disaster.

## **RELATIONSHIP TO OTHER GENERAL PLAN ELEMENTS**

The California Government Code requires internal consistency among the various elements of a general plan. The Safety Element is affected by policies contained in other elements of the McFarland General Plan including the Land Use, Housing, Circulation, Open-Space, Conservation and Recreation, and Noise Elements, and may overlap with topical areas addressed in these elements.

The Land Use Element is linked to the Safety Element as the policies and programs are intended to protect current and planned land uses. Potential hazards identified in the Safety Element are addressed through programs established to avoid or mitigate public safety impacts associated with future development, such as land use compatibility.

The Housing Element identifies existing and projected housing needs, and establishes goals, policies, quantified objectives, and scheduled programs for the preservation, improvement, and development of housing to serve all members of the community. The Safety Element addresses hazards or nuisances that should be considered when determining the location of new housing development and improvements to existing housing.

The Circulation Element is closely related to safety and security as well-designed streets and efficient circulation are imperative during an emergency. The provision of viable evacuation routes within the City are linked to the planned circulation system described in the Circulation Element. Safety is integral in maintaining an efficient, effective, coordinated, multi-modal circulation system that serves the variety of transit, automobile, bicycle, and pedestrian users in a complete street network.

The Open Space, Conservation, and Recreation Element provides information on soils and erosion, and water quality within the Planning Area in the interest of health, safety, and welfare. Additionally, flood control measures are included in the Open Space, Conservation, and Recreation Element of the City's General Plan under the title of Hydraulic Forces of Water for the protection of the lives and property of its citizens during a disaster. Flooding has been identified as a major issue for areas of the City and is discussed in detail in the McFarland LHMP.

The Noise Element also affects the Safety Element as it contains safety guidelines regarding acceptable noise levels which consider occupational noise exposure as well as noise exposure in the home. The guidelines recognize exterior noise levels to protect the public from hearing loss, activity interference, sleep disturbance, and annoyance. The Noise Element also documents and guides the location of noise sensitive land uses including all residential uses and schools so they may be less impacted by noise.

Section 65300.5 of the Government Code states that the general plan and the individual elements shall be integrated and internally consistent. The City will maintain this consistency as future General Plan amendments are processed by evaluating proposed amendments for consistency with all elements of the McFarland General Plan.

## **CONTEXT AND SETTING**

### **GEOLOGIC AND SEISMIC HAZARDS**

Geologic and soils hazards include subsidence, expansive soils, and steep slopes and landslides. Seismic hazards related to earthquakes include ground shaking and ground failures, such as liquefaction, lateral spreading, ground lurching, seiches, mudslides, landslides, and soil slumping. Geologic hazards pose a danger to residents of McFarland and can result in significant property and infrastructure damage.

### **GEOLOGIC HAZARDS**

#### **Soils**

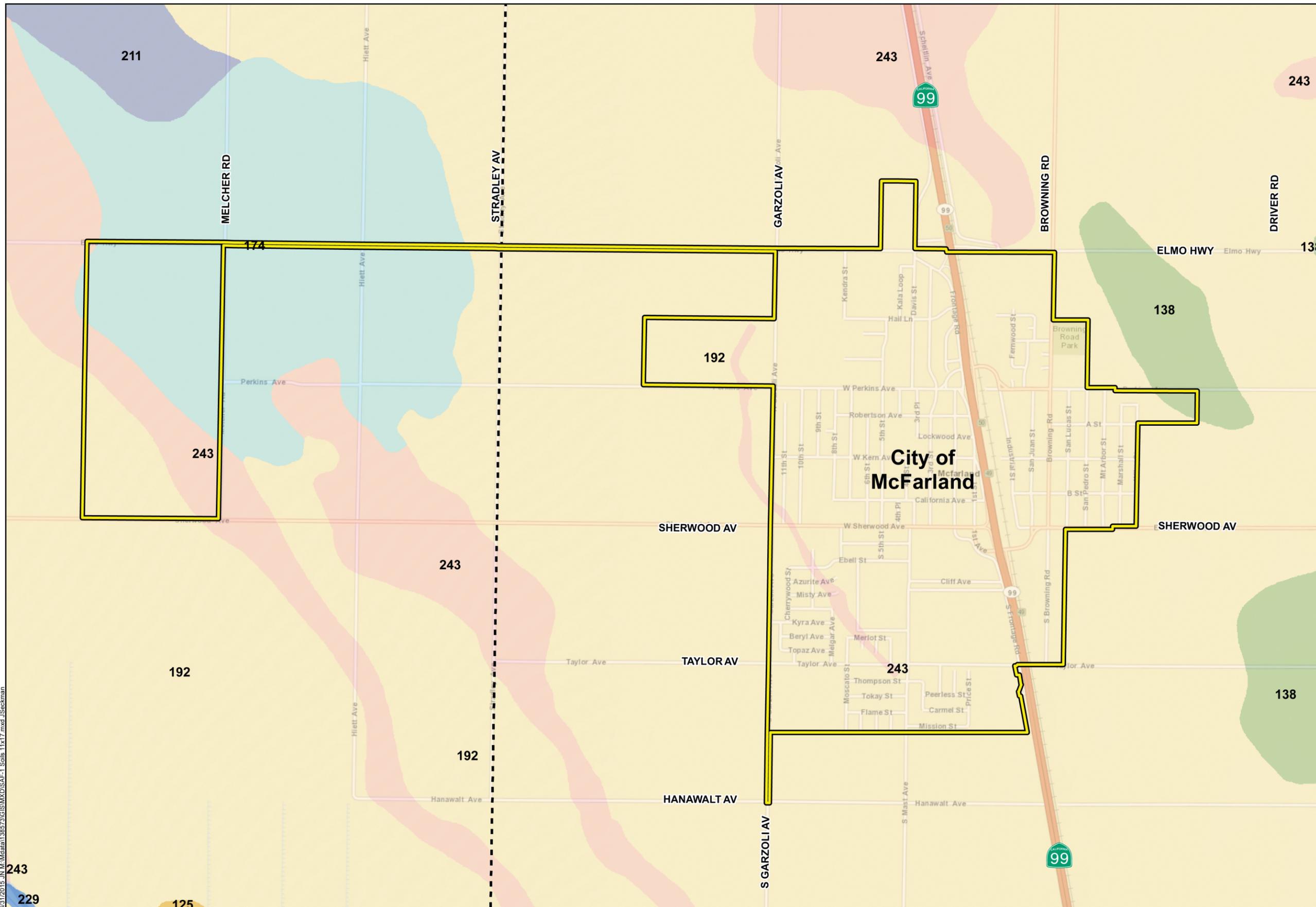
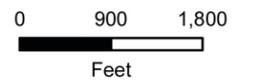
Soils in McFarland are primarily made up of McFarland loam with some areas of Kimberlina fine sandy loam, Wasco sandy loam and Delano sandy loam; refer to [Exhibit SAF-1](#), [Soils Map](#). All soils are well drained and have a low or very low runoff class.



-  City Limits
-  Sphere of Influence
- Soil Type**
-  138 Delano Sandy Loam  
0 to 2 Percent Slopes
-  125 Granoso Loamy Sand,  
0 to 2 Percent Slopes
-  174 Kimberlina Fine Sandy  
Loam, 0 to 2 percent  
Slopes MLRA 17
-  192 McFarland Loam  
Panoche Clay Loam,  
0 to 2 Percent Slopes,  
MLRA 17
-  211 Riverwash
-  243 Wasco Sandy Loam



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## **Subsidence**

Subsidence occurs when a large portion of land is displaced vertically, usually due to the withdrawal of groundwater, oil, or natural gas. Subsidence has occurred near the City of Delano, located approximately three miles north of McFarland. A majority of the subsidence occurred as a result of accelerated ground water pumping of the deep aquifer system during the 1950s and 1960s. The southern end of the San Joaquin Valley has seen the most subsidence, four to eight feet in some areas.

Ground failure can be accelerated by ground shaking in areas where subsidence already occurs. This condition currently exists in McFarland, and as continued population growth, water demands, and uncertain water supplies are likely to continue, so will the trend of groundwater withdrawal and the potential for subsidence.

## **Expansive Soils**

Expansive soils contain significant amounts of clay particles that have the ability to give up water (shrink) or take on water (swell). When these soils swell, the change in volume can exert significant pressures on loads that are placed on them, such as buildings, and can result in structural distress and/or damage. The type and amount of the silt and clay content in the soil will determine the amount of shrink or swell associated with the various levels of water content.

## **SEISMIC HAZARDS**

McFarland, like most of California, is located within a seismically active region. Faults and earthquakes present direct hazards from fault rupture and ground shaking, as well as indirect hazards, as described further below.

### **Fault Rupture**

The Planning Area is not located within an Alquist-Priolo Earthquake Fault Zone.<sup>1</sup> However, the Pond Fault, located approximately six miles west of McFarland is identified as an Alquist-Priolo Earthquake Fault Zone. In addition, the White Wolf Fault Zone has been identified as the closest active and potentially hazardous fault to McFarland residences and property. The White Wolf Fault Zone is a system of faults that starts approximately 55 miles south of McFarland near where Interstate 5 (I-5) and State Route 99 (SR-99) merge and extends easterly about 45 miles between the northeastern end of San Emigdio Mountains to the Tehachapi Mountains ending near Tehachapi Pass. Although there are closer faults, including the Premier, New Hope, Kern Front, Mt. Poso, Kern Gorge, and the Poso Creek Faults, none are identified as active or a severe threat to McFarland, refer to Exhibit SAF-2, Fault Map.<sup>2</sup> Additionally, seismic hazard mapping indicates that the City has low seismic hazard potential. While there are no known active faults residing within or near the City limits, the Planning Area is likely to experience hazards associated with earthquakes, such as ground shaking.

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<sup>1</sup> The Alquist-Priolo Earthquake Fault Zoning (AP) Act provides a mechanism for reducing losses from surface fault rupture on a statewide basis. The intent of the AP Act is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep.

<sup>2</sup> State of California Department of Conservation, *State of California Special Studies Zones, Pond Quadrangle Official Map*, effective January 1, 1985.

## **Ground Shaking**

Ground shaking from earthquakes affects the most people and can cause the most damage of any geologic hazard. The amount of ground shaking depends on the magnitude of the earthquake, the distance from the epicenter, and the type of earth materials in between. McFarland experienced significant ground shaking from a Magnitude 7.5 earthquake that occurred on the White Wolf Fault in 1952. The Kern County/White Wolf Fault Earthquake and its series of aftershocks caused significant damage to property in the area. According to the Probabilistic Seismic Hazards Map (PSHM), McFarland has a 25 to 30 percent chance of experiencing an earthquake greater than Magnitude 5.0 within the next 20 years and a 50 to 60 percent chance of experiencing an earthquake greater than Magnitude 5.0 within the next 30 years.<sup>3</sup> McFarland is located within an area identified as having moderate ground shaking probability.

## **Secondary Seismic Hazards**

Ground shaking can induce secondary seismic hazards such as liquefaction, lateral spreading, subsidence, ground fissuring, and landslides. Liquefaction of saturated cohesionless soils can be caused by strong ground motion resulting from earthquakes.

### **Liquefaction**

Liquefaction can occur when loose sand and silt that is saturated with water behaves like a liquid when shaken by an earthquake, resulting in ground failure. The California Geological Survey identifies liquefaction zones where the stability of foundation soils must be investigated and countermeasures undertaken in the design and construction of buildings for human occupancy. McFarland is not located within an area identified as having the potential for liquefaction.

### **Earthquake-Induced Landslide and Slope Failure**

In addition to liquefaction, the California Geological Survey identifies landslide zones, which generally indicate steep hillslopes composed of weak materials that may fail when shaken by an earthquake. These areas are required to be investigated and countermeasures undertaken in the design and construction of buildings for human occupancy. McFarland is not located within an area identified as having the potential for earthquake-induced landslides. Similarly, due to the relatively flat topography of McFarland and the surrounding area, lateral spreading, mudslides, ground lurching, and soil slumping are unlikely to occur.

### **Seismic Seiches**

Seismic seiches are standing waves in an enclosed or partly enclosed body of water, such as rivers, reservoirs, ponds, and lakes. There are no large bodies of water located within the Planning Area. Lake Woollomes is located approximately 3.5 miles northeast of McFarland, east of the Friant-Kern Canal. The potential for water from the lake to reach the Planning Area in the event of a seiche would be limited by the canal and vast amount of vacant land that separates the Planning Area from the lake.

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<sup>3</sup> United States Geological Survey 2009 Earthquake Probability Mapping.

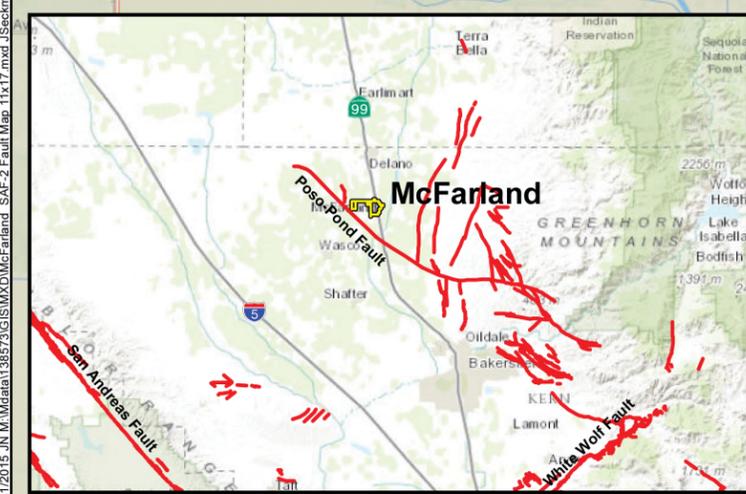
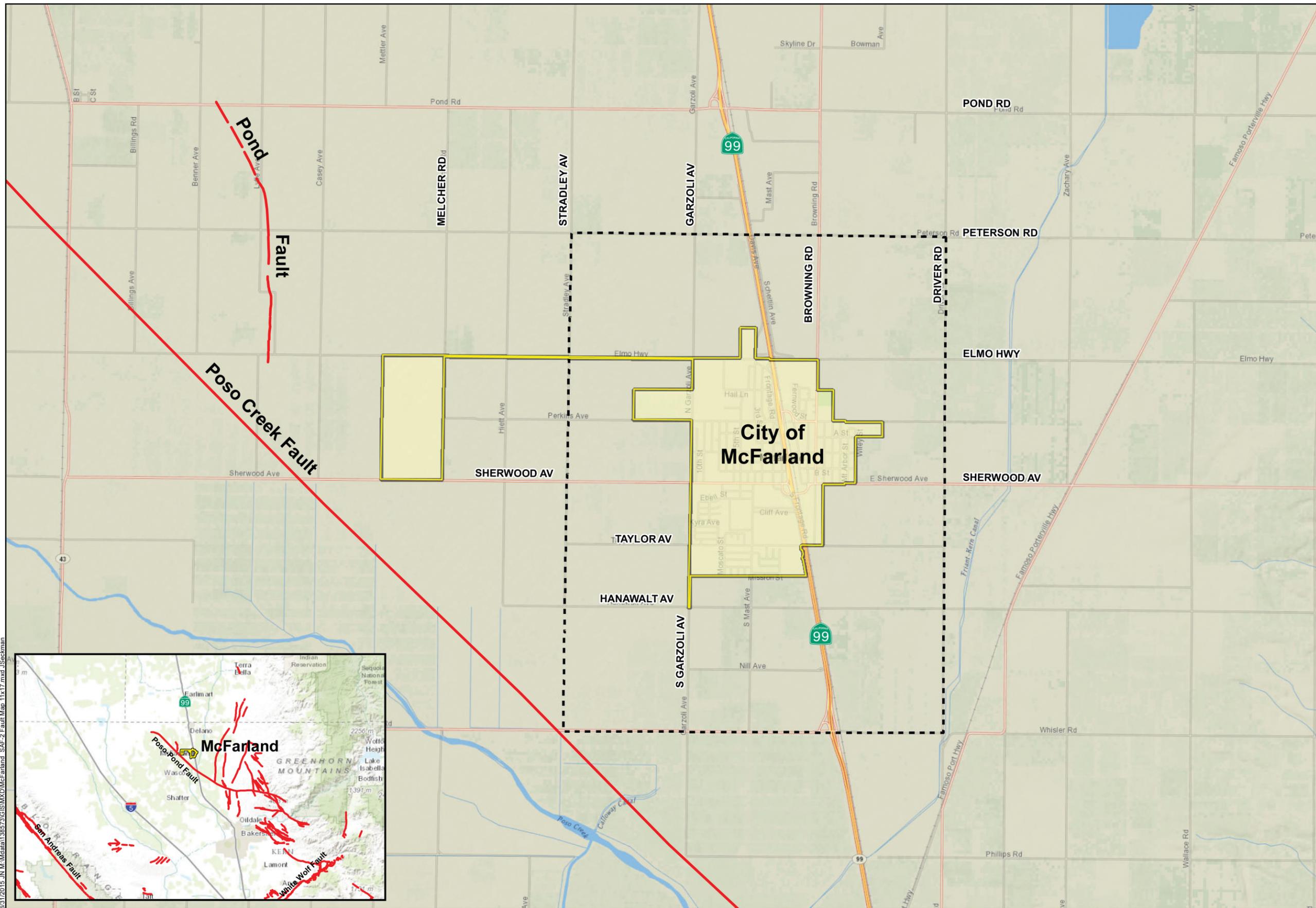
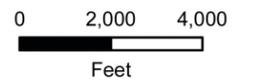


**Legend**

- Fault Lines
- Sphere of Influence
- City Limits



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## FLOOD HAZARDS

Flooding can be a destructive natural hazard, and is a recurring event. Flooding and stormwater management is a substantial problem in McFarland.

### Regional Flooding

Regional flooding on the eastern side of the City of McFarland is a result from the overflow of Poso Creek and runoff from the mountains east of McFarland. The runoff ponds behind the Friant-Kern Canal and then flows southerly along the east canal bank. Both the overflow from Poso Creek and runoff from the canal flow northerly toward McFarland through the canal siphon at SR-99. East of SR-99, there are overland flows with an average depth of less than one foot. Previous flooding on the east side of the City, as recently as 1978, was caused by these two sources. Although the effective Flood Insurance Study (FIS) identifies the source of flooding stated above, there is no current overflow analysis from FEMA for how much flow is coming from Poso Creek, the depth of the water, and the extents of the flooding.

A Letter of Map Revision (LOMR) for the City of McFarland and Kern County, dated December 21, 2010, changed the types of flooding zones on Flood Insurance Rate Map (FIRM) panels 06029C0740E and 06029C0750E. The revision changed the classification of two areas, previously labeled as Zone A, to Zone X. The possible breach of the Friant-Kern Canal was analyzed and it was demonstrated that a weir flow of 1,000 cubic feet per second (cfs) would produce a band of AE zone along the west side of the canal. A shaded Zone X would be supported west of the transition point where the depth of flooding becomes less than 1 foot.

As stated in the FIS, at the City of McFarland, protection from major flood events less than the 1-percent annual chance event is provided by the Friant-Kern Canal and its built-up bank. Runoff from the mountains, located east of McFarland, ponds against the east bank of the canal. Flap gates allow water to enter the canal and be carried away. Under major events, the canal cannot carry away enough flow to keep the water from flowing south to the opening at SR-99 and north toward the City.

Based on the current FEMA floodplain maps, it is the agency's opinion that there is a risk of overtopping of the canal levee; refer to [Exhibit SAF-3, FEMA Flood Zones](#). Improving the regional flooding issue is a large task that would require coordination from many agencies. Kern County, FEMA, the Friant Water Authority, the Department of Water Resources, the Bureau of Reclamation, Caltrans, and the Southern Pacific Railroad all have vested interests in the area. In order to improve the existing regional hydrologic conditions for the areas in and around the City of McFarland, a restudy of the existing regional hydrology and hydraulic conditions of Poso Creek and the Friant-Kern Canal are needed.

### Local Flooding

The location, topography, and land uses in and around the City pose unique drainage situations for the way local runoff is contained. As the City has been developed on predominantly agricultural lands, sump basins are the primary facilities used to retain the local storm water flows. There are a limited number of storm drain facilities in the City, which convey the runoff to the sump basins. The City has prepared a Storm Drain Master Plan to identify and address local flooding issues within the City. Identified improvements to the existing drainage systems consist primarily of upsizing existing storm drain facilities and extending existing storm drain systems farther upstream to the areas of flooding.

Development located within flood prone areas has led to a steady increase in annual flood losses. Vulnerability to flooding is primarily during the winter months when drainage systems are overwhelmed and soil is saturated from heavy rainfall. During the winter rains, storm drainage and flood control devices have difficulty moving water away from structures and roadways.

### **Dam Inundation**

Dams are man-made structures built for a variety of uses including flood control, power, agriculture, water supply, and recreation. When dams are constructed for flood control, they usually are engineered to contain a flood with a computed risk of occurrence. Dam failures can result from any one or a combination of causes, including prolonged periods of rainfall and flooding; earthquake; inadequate spillway capacity resulting in overtopping; or internal erosion caused by embankment or foundation leakage or piping. Dams can fail at any time of year, but the results are most catastrophic when the dams fill or overtop during winter or spring rain/snowmelt events. The onset time of dam failure depends on the type of failure. If the dam is inspected regularly then small leaks allow for adequate warning time. Once a dam is breached, however, failure and resulting flooding occurs rapidly. Although there are several dams that have the ability to affect Kern County in the event of failure, the potential for significant flooding associated with dam inundation to occur within McFarland has not been identified. Dam inundation maps for Lake Isabella, the largest reservoir in the County, indicate that flooding from dam failure would not extend into McFarland.<sup>4</sup>

### **Levee Failure**

Levees are designed to protect against a certain level of flooding. However, levees can and do decay over time and can also be overtopped, or even fail during large floods. According to the *2012 Kern Multi Jurisdiction Hazard Mitigation Plan* (Kern MJHMP) Figure 4.32, Kern County Levee Location Map, there are no levees located within McFarland or the surrounding area. The Kern MJHMP identifies the likelihood of a levee failure as low with limited affects to Kern County in the event of a levee failure, with the exception of Bakersfield.<sup>5</sup> However, the Friant-Kern Canal, which is located approximately 1.25 miles east of the City's eastern boundary, serves as a levee structure. The Friant-Kern Canal is under the jurisdiction of the U.S. Department of the Interior Bureau of Reclamation. Although unlikely, the canal levee could fail if overtopped. In the event the canal is breached, runoff would spread out and flow into the City of McFarland from the east. No flows have overtopped the canal levee since its opening in 1953, but water has ponded near the top of the levee.

## **HAZARDOUS MATERIALS**

The California Code of Regulations defines a hazardous material as a substance that, because of physical or chemical properties, quantity, concentration, or other characteristics, may either (1) cause an increase in mortality or an increase in serious, irreversible, or incapacitating, illness or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed. Hazardous wastes are hazardous materials that no longer have practical use, such as substances that have been discarded, discharged, spilled, contaminated, or are being stored prior to proper disposal. A hazardous materials incident involves the uncontrolled release of a hazardous substance during storage, use, or transport.

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<sup>4</sup> Kern County Engineering, Surveying and Permit Services, Lake Isabella Flood Area, <http://esps.kernds.com/floodplain-management/lake-isabella-flood-area/>, accessed January 6, 2015.

<sup>5</sup> Kern Multi Jurisdiction Hazard Mitigation Plan, September 2012.



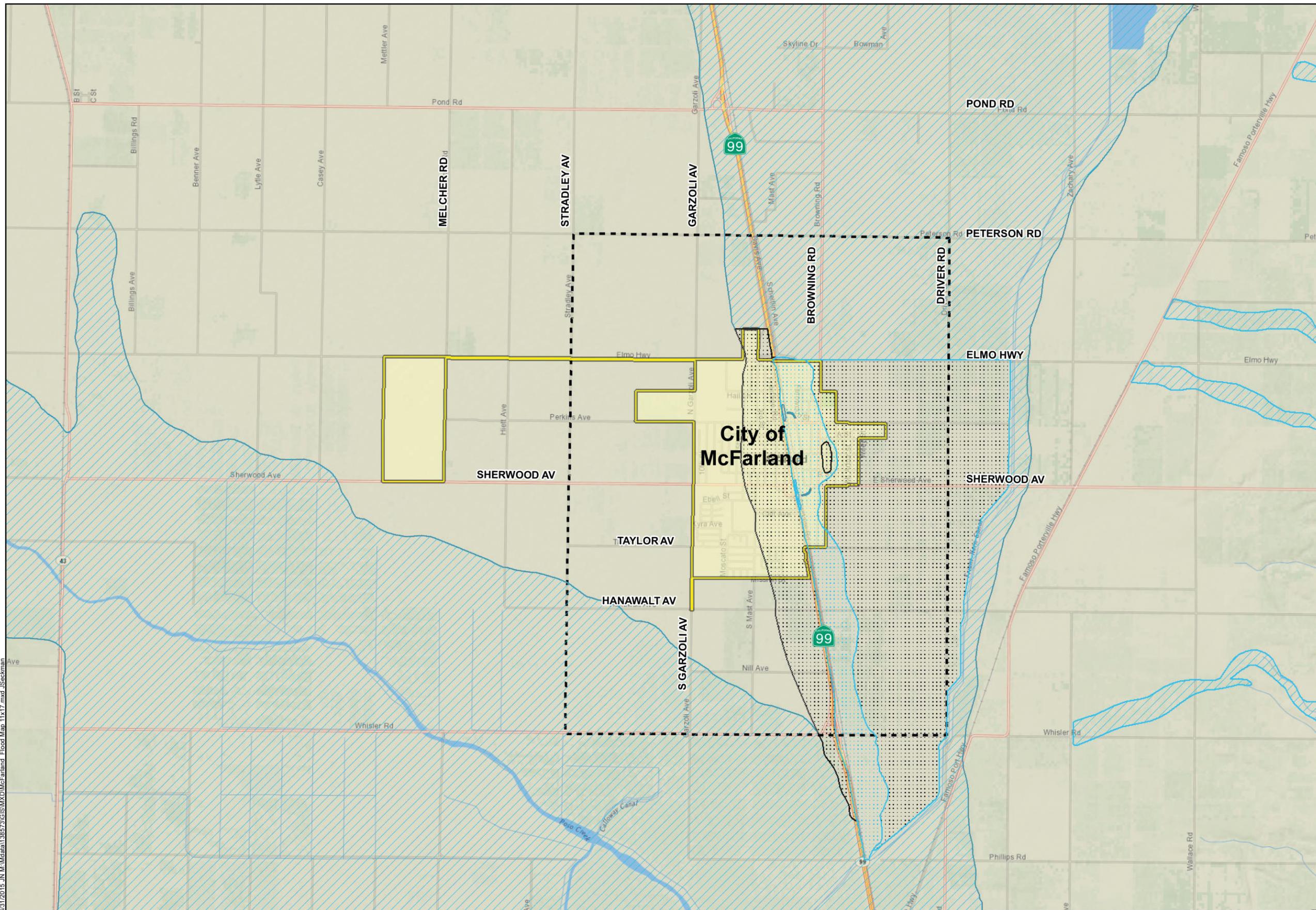
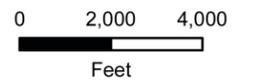
-  City of McFarland
-  Sphere of Influence

**Flood Zone Designations**

-  A - 100 yr; No base flood elevations determined.
-  AH - Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
-  X - 0.2% Annual Chance Flood Hazard
-  X - Areas of 500-yr flood; areas of 100-yr flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-yr flood.



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**MCFARLAND SAFETY ELEMENT  
FEMA Flood Zones**

Exhibit SAF-3

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The State's Accidental Release Prevention Law provides for consistency with Federal laws (i.e., the Emergency Preparedness and Community Right-to-Know Act and the Clean Air Act) regarding accidental chemical releases and allows local oversight of both the State and Federal programs. State and Federal laws are similar in their requirements; however, the California threshold planning quantities for regulated substances are lower (stricter) than the Federal quantities. Local agencies may set lower reporting thresholds or add additional chemicals to the program. The Accidental Release Prevention Law is implemented by the Certified Unified Program Agencies (CUPAs) and requires that any business utilizing a greater quantity of a regulated substance than the specified threshold quantity, register with the responsible CUPA as a manager of regulated substances and prepare a Risk Management Plan.

A Risk Management Plan must contain an off-site consequence analysis, a five-year accident history, an accident prevention program, an emergency response program, and a certification of the truth and accuracy of the submitted information. Businesses submit their plans to the CUPA, which makes the plans available to emergency response personnel. The Business Plan must identify the type of business, location, emergency contacts, emergency procedures, mitigation plans, and chemical inventory at each location. Under CUPA, site inspections of these hazardous materials programs (above ground storage tanks, underground storage tanks, hazardous waste treatment, hazardous waste generators, hazardous materials management and response plans, and the California Fire Code) are consolidated and accomplished by a single inspection. In addition, this program provides emergency response to chemical events to furnish substance identification; health and environmental risk assessment; air, soil, water, and waste sample collection; incident mitigation and cleanup feasibility options; and on-scene coordination for state superfund incidents. The program also provides for the oversight, investigation, and remediation of unauthorized releases from underground tanks.

The CUPA for the City of McFarland is Kern County's Environmental Health Services Department. The Environmental Health Services Department (EHSD) was established in 1989 by the Board of Supervisors. The EHSD's Hazardous and Solid Waste Division is designed to protect the public health and the environment in the areas of hazardous material and waste surveillance and enforcement, radiological health, vector control, solid waste and infectious waste. Legal authority for these programs is provided by a variety of state and local statutes including the California Health and Safety Code and the California Code of Regulations, which designates the EHSD as the Local Enforcement Agency for the California Integrated Waste Management Board.

Kern County Environmental Health Division, Hazardous Materials Emergency Response program serves to protect the residents of Kern County by responding to hazardous materials emergencies. The first responders perform health and environmental safety assessment, substance identification and monitoring as part of an interagency Emergency Response team as well as provide and oversee investigation and cleanup of incidents activities.<sup>6</sup>

## **Transportation of Hazardous Materials**

Hazardous substance incidents could occur in McFarland due to the presence of highways and railways. The transport of hazardous materials may occur along the Union Pacific Railway or SR-99, which traverse the City. In the event of train derailment, hazardous materials transported on the rail line could be released impacting adjacent development and properties. Given the City's reliance on groundwater, the

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<sup>6</sup> Kern County Public Health Services Department, Environmental Health Division Website, [http://psbweb.co.kern.ca.us/EH\\_Internet/default.aspx](http://psbweb.co.kern.ca.us/EH_Internet/default.aspx), Accessed October 30, 2014.

potential release of hazardous materials could migrate into the groundwater aquifer, potentially contaminating the City's drinking water supply.

Transportation of hazardous materials/wastes is regulated by California Code of Regulations (CCR) Title 26. The United States Department of Transportation (DOT) is the primary regulatory authority for the interstate transport of hazardous materials. The DOT establishes regulations for safe handling procedures (i.e., packaging, marking, labeling, and routing). The CHP and Caltrans enforce Federal and State regulations and respond to hazardous materials transportation emergencies. Emergency responses are coordinated as necessary between Federal, State, and local governmental authorities and private persons through a State mandated Emergency Management Plan.

## **Hazardous Materials Sites**

Hazardous materials can be found in certain businesses in McFarland including production or service processes, which generate hazardous waste. These businesses include automotive services, dry cleaners, photo processing, printing lithography, and medical services. There are currently several leaking Underground Storage Tanks in McFarland.<sup>7</sup> These tanks pose environmental hazards by contaminating soil and groundwater. These tanks need to be replaced, the soil excavated and removed and the groundwater cleaned, if contaminated, and monitored. The Kern County EHSD is responsible for the remediation of the Underground Storage Tanks through alternatives including soil washing, vapor extraction, bioremediation, and pump and treat of the contaminated groundwater.<sup>8</sup> Remediation alternatives would provide benefits of no contamination of groundwater and soil. Facilities handling moderately and extremely hazardous materials have a greater chance of significant onsite and offsite consequences if the hazardous materials are released. The last inspection date and category are used to determine inspection priority and frequency, respectively.

## **Hazardous Waste**

Hazardous waste is waste with properties that make it dangerous or potentially harmful to human health or the environment. Residential Hazardous Wastes are products purchased for use in or around the home, that when improperly discarded, may threaten human health or the environment including household cleaners; deodorizers; personal hygiene products; pesticides; herbicides; insecticides; pet care products; paint products; photographic chemicals; swimming pool chemicals; and automotive products & fluids.<sup>9</sup> Business Hazardous Waste is generated during the course of operating a business including schools, government agencies, churches, farms, landlords, property managers, ranches, non-profit organizations as well as conventional businesses. Kern County area landfills do not accept hazardous waste. However, households may bring residential hazardous wastes to one of three County Special Waste facilities or hazardous waste collection events in the county, while businesses that generate hazardous waste are required by state and federal law to contract with registered hazardous waste transporters and disposers. The Kern County Special Waste Facilities serve the hazardous waste disposal needs of Kern County businesses including within the City of McFarland.<sup>10</sup> The Conditionally Exempt Small Quantity Generator (CESQG) Program allows eligible businesses to bring hazardous waste

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<sup>7</sup> CalEPA, *Waterboard Geotracker Database*, <https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=McFarland%2C+CA>, accessed May 1, 2015.

<sup>8</sup> Ibid.

<sup>9</sup> Kern County Waste Management Website, *Residential Hazardous Waste*, <http://www.kerncountywaste.com/hazardous-waste>, Accessed October 30, 2014.

<sup>10</sup> Telephone Communication, Ms. Rachel Woodard, Waste Management Technician, Kern County Waste Management, November 6, 2014.

to one of three Special Waste Facilities serving Kern County. State and Federal Laws limit the use of this type of program to businesses that qualify as a CESQG. Businesses generating larger amounts are required to use a licensed hazardous waste hauler to manifest and transport their waste. Historical accumulations of waste may require the services of a licensed hazardous waste hauler.<sup>11</sup>

## **FIRE HAZARDS**

### **Wildland Fires**

A wildland fire is a large destructive fire that spreads quickly over woodland or brush. The California Department of Forestry and Fire Protection (CAL FIRE) conducts fire hazard severity mapping including mapping areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ), define the application of various mitigation strategies to reduce risk associated with wildland fires. According to the Kern County Fire Hazard Severity Zone (FHSZ) map, there are no Fire Hazard Severity Zones (FHSZ) located within the McFarland Planning Area.<sup>12</sup>

### **Structure Fires**

There is the potential for McFarland to experience structure fires, including homes, industrial and commercial buildings, and other facilities. Many fires are related to human behavior or buildings that do not meet current fire regulations. Fires vary in terms of their potential threat to life and property. Areas with older buildings and deteriorated structures tend to have higher fire hazards. Generally, the risk of injury and damage is greater for higher occupancy structures, such as apartment buildings, hotels, hospitals, and churches. Land use considerations affect fire potential, as industrial and commercial areas tend to have higher risks of fire associated with operations. Consideration for fire protection in the City also involves adequate access for fire and emergency response as new areas develop within the Planning Area.

## **AIRPORT OPERATIONS**

There are several private, public, and military airports that operate within Kern County. The nearest airports to McFarland include Delano Municipal and Wasco airports. The Kern County Airport Land Use Compatibility Plan (ALUCP) (November 13, 2012) establishes procedures and criteria for the County and affected incorporated cities to address compatibility issues when making planning decisions regarding airports and the land uses around them. According to the Kern County ALUCP, McFarland is not located within the airport influence areas identified for any airports within Kern County. However, McFarland Municipal Code Chapter 17.112, H Zone, requires additional regulations for lands within the H airport approach height zone and appoints the Planning Commission as the Airport Zoning Commission with all the powers and duties specified by the Airport Approaches Zoning Law of the state.

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<sup>11</sup> Kern County Waste Management Website, *Business Hazardous Waste*, <http://www.kerncountywaste.com/hazardous-waste/business-hazardous-waste>, Accessed October 30, 2014.

<sup>12</sup> CAL FIRE, *Wildland Hazard & Building Codes, Kern County FHSZ Map*, [http://www.fire.ca.gov/fire\\_prevention/fhsz\\_maps\\_kern.php](http://www.fire.ca.gov/fire_prevention/fhsz_maps_kern.php), accessed January 12, 2015.

## **EMERGENCY SERVICES, PREPAREDNESS, AND RESPONSE**

### **Fire Protection Services**

The Kern County Fire Department (KCFD) provides fire protection services for the City of McFarland. With over 546 uniformed firefighters stationed in 46 fire stations throughout Kern County, KCFD serves the community by protecting life, property and the environment through education, prevention, preparedness, and emergency response. In addition, KCFD has 14 Mutual Aid Agreements with neighboring fire suppression organizations to further strengthen available emergency services. KCFD duties include fire suppression, emergency medical services, hazardous materials mitigation, fire prevention, rescue, air operations, training and public education, arson investigation, and apparatus maintenance.

Fire Station 33, located within the City of McFarland at 700 West Perkins Avenue, serves the City and surrounding area with a response area of 182 square miles.

### **Fire Prevention**

The fire prevention inspection program consists of Title 19 mandatory inspections, miscellaneous or permit inspections and the Company Fire inspections which are completed by fire station personnel.<sup>13</sup> McFarland utilizes its Municipal Code to promote public safety and welfare and to prescribe regulations governing conditions hazardous to life and property from fire or explosions by the adoption of minimum fire prevention standards. McFarland adopts and makes effective the City minimum fire prevention standards, which are the same as those in effect in the unincorporated territory of the county.

### **Police Protection Services**

The McFarland Police Department is a full service department with a variety of specialties and community services. The Police Department strives to work as partners with the community to serve and protect. They provide law enforcement services that focus on building the quality of life of citizens and visitors in the City through proactive problem solving, fair and equitable police services, and utilizing resources effectively. The Police Department ensures public safety in the community by responding to all crime-related matters, hazardous situation incidents, neighborhood disputes, and suspicious activities.

The City's public safety services include Patrol Bureau, Investigations Bureau, Traffic Bureau, K-9 Unit, Bicycle Unit, Reserve Officers, Chaplain Bureau, Animal Control, Neighborhood Watch Explorer Program, Volunteer Program, Property and Evidence Unit, Communications Bureau, Records Bureau and Police Reserves.<sup>14</sup> The Investigations Bureau is tasked with investigating all major felonies that occur within the City while the Neighborhood Watch utilizes the community members as partners to fight crime. The Traffic Bureau is dedicated to keeping citizens safe in the City whether they are driving, biking, or walking by incorporating traffic education through enforcement, seminars at local schools to educate students on the rules of the roadway and to conduct traffic collision investigations. The Police Department offers several community programs including the Police Explorer Program that allows

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<sup>13</sup> Kern County Fire Department, *Kern County Fire Annual Report – 2012*.

<sup>14</sup> City of McFarland Website, *Police Department*, <http://www.mcfarlandcity.org/203/Police-Department>, accessed October 24, 2014.

community members to experience first-hand how the department functions and what it takes to get started in a law enforcement career and the Citizen Volunteer Program in which volunteers donate their time assisting patrol officers or attending special events.

## **Emergency Medical Services**

The Emergency Medical Services Department (EMS) is the lead agency for the emergency medical services system in Kern County. In Kern County, the Board of Supervisors designated the EMS Department as the Local EMS Agency. The Kern County Ambulance Ordinance, which governs the majority of the pre-hospital systems in the County, was adopted by the Board of Supervisors in November 1990, and became effective on February 28, 1991. As a result of this ordinance and the subsequent regulations, the EMS System in Kern County became more structured and included, for the first time, measurable standards for the response of paramedic level of care to the citizens of Kern County during an emergency. EMS is responsible for coordinating all system participants in the County. Participants include the public, fire departments, ambulance companies, other emergency service providers, hospitals, and EMT training programs. EMS also provides certification and re-certification for EMT's, paramedics, specialized nurses, and specialized dispatchers.

EMS includes a system of services organized to provide rapid response to serious medical emergencies, including immediate medical care and patient transport to definitive care in an appropriate hospital setting. While most EMS responses are day-to-day emergencies, EMS agencies also plan and prepare for disaster medical response. In addition, EMS is becoming more and more involved with preventative health care and managed care in the overall scope of its functions. EMS includes:<sup>15</sup>

- Public safety dispatch;
- Fire services first response and treatment;
- Private ground and air ambulance response, treatment and transport;
- Law enforcement agencies;
- Hospitals and specialty care centers;
- Training institutions and programs for EMS personnel;
- Managed care organizations;
- Preventative health care; and
- Citizen and medical advisory groups.

## **Emergency Communications Center**

The Emergency Communications Center (ECC) is responsible for receiving and dispatching all fire, medical and rescue calls. The ECC receives transfers calls from 21 different law enforcement agencies and gives calls to seven different private ambulance companies with an annual call volume at approximately 86,000 calls. All calls requiring medical aid or ambulance dispatch are put through the National Academy of Emergency Medical Dispatch (EMD) protocols, insuring that all medically related calls will be processed the same way and the appropriate response is sent on every call. It also requires dispatchers to remain on the line for life threatening emergencies and give appropriate pre-arrival instructions to the caller such as CPR, the Heimlich maneuver, and childbirth. During fire season, wildland fire dispatching is a large part of ECC operations, utilizing Resource Ordering and Status System

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<sup>15</sup> Kern County, *Emergency Medical Services About Us*, <http://www.co.kern.ca.us/ems/about.asp>, accessed October 30, 2014.

(ROSS) to ensure that responders receive the needed resources to fight wildland fires, from engines, bull dozers, hand crews, and aircraft.

## Emergency Operations Center

The Emergency Operations Center (EOC) is a centralized location to support multi-agency and/or multi-jurisdiction disaster response coordination and communication. Unique to the State of California is the definition of an Operational Area, which includes all political subdivisions within the County boundary. On behalf of the Kern Operational Area, the Kern County EOC will serve as the designated point of contact between the jurisdictions within the County, as well as between the State and the Operational Area. During an emergency, staff in the EOC will facilitate effective emergency management. The EOC supports multi-agency and multi-jurisdiction coordination and communication.

## Emergency Operations Plan

The Kern County Emergency Operations Plan establishes an emergency management organization and assigns functions and tasks consistent with California's Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS). The County of Kern is the lead agency for the Kern Operational Area and is tasked to coordinate emergency activities between the county, cities, and special districts and to serve as a communications link focusing on the collection, processing, and dissemination of vital disaster information. The Plan provides for the integration and coordination of planning efforts of the County/Operational Area with those of its cities, special districts and the state. The content is based on guidance provided by the California Emergency Management Agency, FEMA, and Department of Homeland Security. The intent of the Plan is to facilitate emergency response and short-term recovery by providing a framework for response to all significant emergencies, regardless of the nature of the event. The Plan is comprised of four major parts as follows:<sup>16</sup>

- **Basic Plan** – Overview of County/Operational Area's emergency management program, Emergency Management Organization, and concept of emergency operations.
- **General Procedures** – Emergency procedures to be implemented by employees at the time of a major emergency or disaster.
- **Emergency Operations Center (EOC) Procedures and Annexes** – EOC procedures, annex and checklists for each major EOC function, and resource and contact lists.
- **Contingency Plans** – Event-specific information and emergency instructions (e.g., Terrorism). The Contingency Plans are separate documents that may be implemented independent of the Plan and are incorporated into the Plan by reference.

Further, Kern County's Health and Medical Branch, comprised of EMS, Department of Public Health (DPH), Environmental Health Services (EHS) and Mental Health Services (MHS), oversees and coordinates disaster medical and mental health care and public and environmental health services on a countywide basis in the field, Department Operations Centers (DOC), and County/Operational Area (OA) Emergency Operations Center (EOC).<sup>17</sup>

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<sup>16</sup> Kern County Fire Department Website, *Emergency Operations Plan*, <http://www.kerncountyfire.org/index.php/operations/emergency-plans/emergency-operations-plan>, accessed October 28, 2014.

<sup>17</sup> Kern County, *Emergency Operations Plan Annex B-4*, April 30, 2008.

## **Terrorism Response and Recovery Plan**

The Terrorism Response and Recovery Plan describes the emergency procedures that will be used in the event of a terrorist threat or incident that occurs or impacts the Kern County Operational Area (OA), which includes McFarland. This Plan is designed to establish responsibilities, and to coordinate preparedness, response, and recovery from a terrorist initiated incident, with emphasis placed upon incidents involving Weapons of Mass Destruction (WMD). The contingency plan supplements the existing Kern County Emergency Operations Plan. It is intended to provide general guidance. Actual response will be dependent upon conditions existing at the time of the emergency, including the availability of local and mutual aid resources.

## **Evacuation Routes**

Currently, the City of McFarland has no defined emergency routes. SR-99 would serve as the primary emergency route since it traverses the City and provides regional access within Kern County. However, access to SR-99 is constrained, as there are only two interchanges within the City. Additionally, access between the east and west side of the City is restricted due to the physical barrier SR-99 provides and the limited number of overpasses providing connections.

## **Emergency Incident Information and Notification**

Kern County has implemented ReadyKern, an emergency notification system that alerts residents and businesses about natural disasters and other crises. The emergency notification system enables Kern County to provide essential information quickly in a variety of situations, such as earthquakes, severe weather, fires, floods, or evacuation of buildings or neighborhoods. Residents and businesses with listed telephone numbers and those that register for notifications receive a message about a potential safety hazard or concern. Messages are sent to all standard voice and text communication devices, including land line phones, cell phones, and e-mail. If receipt of the message is not confirmed, the system will try to reach the second contact number or email. The system will continue trying to contact someone until it receives a confirmation.

When the EOC is activated during an emergency, the Joint Information Center (JIC) is established to coordinate, develop, and disseminate emergency-related public information. The JIC is the central point of contact for all news media. Public information officials from all participating agencies/jurisdictions are collocated at the JIC. The news media receives regular briefings about the emergency in the Media Room adjacent to the JIC.

## **GOALS AND POLICIES**

This section contains goals and policies that provide for the safety and protection of life and property from the occurrence of a natural or manmade hazard. Citywide safety goals and policies apply generally to any potential hazardous event, which may be addressed further in topic-specific goals and policies.

## **Citywide Safety**

**Goal SAF-1: A community protected from and prepared for natural and man-made hazards.**

Policy SAF-1.1: Support projects, programs, policies, and regulations to mitigate potential impacts associated with natural and man-made hazards.

Policy SAF-1.2: Regularly maintain and update natural hazard information relevant to the McFarland Local Hazard Mitigation Plan.

Policy SAF-1.3: Support programs, policies, and regulations that discourage or limit development within areas that are vulnerable to natural disasters, particularly in areas with recurring damage.

Policy SAF-1.4: Support programs that promote greater public awareness of disaster risks, personal and business risk reduction, and personal and neighborhood emergency response.

Policy SAF-1.5: Investigate and pursue available funding sources to fund safety programs, provide services, upgrade/construct facilities, and purchase equipment.

## **Geologic and Seismic Hazards**

**Goal SAF-2: A community protected from loss of life or injury and damage to property due to geologic and seismic hazards.**

Policy SAF-2.1: Continue to incorporate geotechnical hazard data in future land use decision-making, site design, and construction standards.

Policy SAF-2.2: Adopt the latest version of the building codes adopted by the State of California and ensure implementation in all new construction and renovations.

Policy SAF-2.3: Require site-specific soils and/or geologic reports for development in areas where potentially serious geologic risks exist.

Policy SAF-2.4: Monitor and enforce mitigation measures to reduce risks for projects where seismic and geologic hazards can be mitigated and prohibit development in areas where seismic and geologic hazards cannot be mitigated.

Policy SAF-2.5: Promote the upgrade, retrofitting, and/or relocation of all existing critical facilities (e.g., police and fire stations, hospitals, schools, community centers, water facilities, public works yard, emergency access routes) and other important public facilities that do not meet current building code standards and are within areas of seismic or geologic hazard risks.

Policy SAF-2.6: Continue to seek out opportunities to educate and encourage the community on ways to implement measures to mitigate potential injury and damage associated with earthquakes.

## **Flood Hazards**

**Goal SAF-3: A community protected from loss of life or injury and damage to property due to flood hazards.**

Policy SAF-3.1: Continue to work with the appropriate local, State, and Federal agencies to maintain the most current flood hazard and floodplain information and use it as a basis for project review and to guide development.

Policy SAF-3.2: Actively promote and participate in a regional drainage analysis and implementation of regional and local flood control measures to reduce regional flooding conditions within the City.

Policy SAF-3.3: Continue to participate in the National Flood Insurance Program (NFIP) and ensure that City regulations are in full compliance with the standards adopted by the Federal Emergency Management Agency (FEMA).

Policy SAF-3.4: Implement recommendations contained in the McFarland Storm Drain Master Plan that are within the City's jurisdiction.

Policy SAF-3.5: Minimize flood risks associated with existing development.

Policy SAF-3.6: Require evaluation of potential flood hazards prior to approval of development projects.

Policy SAF-3.7: Identify construction or other methods to minimize damage if new development is located in flood hazard zones.

Policy SAF-3.8: Prohibit new development within the 100-year flood zone unless it can be shown that the development will not:

- Create danger to life and property due to increased flood heights or velocities caused by excavation, fill, roads and intended use.
- Create difficult emergency vehicle access in times of flood.
- Create a safety hazard due to the unexpected heights velocity, duration, rate of rise and sediment transport of the flood waters at the site.
- Create excessive costs in providing governmental services during and after flood conditions, including maintenance and repair of public facilities.
- Interfere with the existing waterflow capacity of the floodway.
- Substantially increase erosion and/or sedimentation.
- Contribute to the deterioration of a watercourse or the quality of water in any body of water.
- Require storage of material, or any substantial grading or placement of fill.
- Change the water storage/volume capacity of the flood basin.

Policy SAF-3.9: Require that essential public facilities be located and designed to mitigate potential flood risk to ensure long term operation.

Policy SAF-3.10: Promote low impact development techniques and design features such as pervious paving, on-site groundwater recharge, rainwater harvesting, minimization of building footprints, and bioretention to improve defensive measures against storm events and stormwater pollution.

Policy SAF-3.11: Educate property owners and residents located in flood hazard areas about opportunities to mitigate flood hazards and damage, implementation of flood preparation activities, and evacuation and recovery efforts associated with a flooding event.

Policy SAF-3.12: Continue to support efforts of the Bureau of Reclamation to ensure that proper maintenance and repairs of the Friant-Kern Canal are accomplished.

## **Hazardous Materials**

**Goal SAF-4: A community protected from the harmful effects of hazardous materials, hazardous waste, and environmental contamination.**

Policy SAF-4.1: Ensure that land uses involved in the production, storage, transportation, handling, or disposal of hazardous materials are located and operated to reduce risk to other land uses.

Policy SAF-4.2: When approving new development, ensure that the site:

- Is sufficiently surveyed for contamination and remediation, particularly for sensitive uses near existing or former toxic or industrial sites.
- Is adequately remediated to meet all applicable laws and regulations, if necessary.
- Is suitable for human habitation.
- Is protected from known hazardous and toxic materials.
- Does not pose higher than average health risks from exposure to hazardous materials.

Policy SAF-4.3: Monitor the operations of businesses and individuals that handle hazardous materials through the planning and business permit processes.

Policy SAF-4.4: Work with the appropriate Federal, State, regional, and local agencies to identify previously unidentified contaminated sites in the City, particularly on sites with a high likelihood of past contamination, such as old gas stations or industrial sites, and work with the property owners and applicable agencies to remediate them.

Policy SAF-4.5: Ensure the safe transport of hazardous materials through the City by:

- Restricting transport of hazardous materials within McFarland to designated routes.
- Prohibiting the parking of vehicles transporting hazardous materials on City streets.
- Requiring new pipelines or other channels carrying hazardous materials avoid residential areas to the greatest extent possible.

Policy SAF-4.6: Support Caltrans and California Highway Patrol efforts to ensure safe transportation of hazardous materials on SR-99.

Policy SAF-4.7: Educate residents and businesses on how to reduce or eliminate the use of hazardous materials and products, and encourage the use of safer, nontoxic, environmentally friendly equivalents.

Policy SAF-4.8: Raise public awareness of appropriate disposal for household hazardous waste, and publicize collection events and locations.

## **Fire Hazards**

**Goal SAF-5: A community protected from loss of life or injury and damage to property due to fire hazards.**

Policy SAF-5.1: Continue to coordinate fire protection services with Kern County Fire Department to ensure sufficient capacity, stations, personnel, and equipment are available to meet growth needs in McFarland for fire protection and related emergency services.

Policy SAF-5.2: Ensure adequate water supply and water pressure is provided throughout the City for firefighting purposes.

Policy SAF-5.3: Ensure all new development provides adequate access for emergency vehicles and evacuation.

Policy SAF-5.4: Regularly update building and fire codes to provide for fire safety design.

Policy SAF-5.5: Promote public safety education programs to reduce accidents, injuries, and fires, as well as to train members of the public to respond to emergencies.

## **Emergency Services, Preparedness, and Response**

**Goal SAF-6: A community prepared to provide effective response and recovery efforts in the event of an emergency.**

Policy SAF-6.1: Continue to implement emergency preparedness and response measures in coordination with Kern County's Emergency Operations Plan.

Policy SAF-6.2: Conduct periodic trainings with staff and/or participate in Kern County trainings on emergency operations procedures and response.

Policy SAF-6.3: Support policies and programs that ensure adequate resources are available to respond to health, fire, and police emergencies.

Policy SAF-6.4: Investigate and seek out opportunities to improve emergency access and circulation throughout the community, especially between the east and west sides of the City.

- Policy SAF-6.5: Provide residents and businesses with information about local safety hazards and emergency plans, including evacuation plans and procedures to accommodate special needs populations and efficient post-disaster recovery.
- Policy SAF-6.6: Support policies and programs to involve and educate the community in emergency preparedness.
- Policy SAF-6.7: Collaborate with the school district, businesses, nonprofit organizations, and community members/groups to maintain safety throughout the City.
- Policy SAF-6.8: Involve the Police Department in the development review process to address safety concerns, access issues, and potential traffic conflicts, and identify opportunities to apply Crime Prevention Through Environmental Design (CPTED) principles.