

8.0 SAFETY ELEMENT

8.1 Introduction

The primary purpose of the Safety Element is to identify and assess natural and human-made safety hazards and then minimize their danger to life and property. These hazards have a direct impact on the quality of life and the well-being of residents of Calexico and include both natural and human-induced causes. This element will examine the following public health and safety concerns:

- Geologic Hazards - including earthquakes and their secondary hazards
- Flooding
- Fire - both wild land and urban
- Hazardous materials
- The New River
- Peak Load Water Supply
- Emergency Access

The State of California requires the inclusion of a safety element for all General Plans. The following language from California Government Code 65302 outlines the necessary topics that must be addressed:

A safety element for the protection of the community from any unreasonable risks associated with the effects of seismically-induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence and other geologic hazards known to the legislative body; flooding; and wild land and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, peak load water supply requirements and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards.

8.2 Existing Conditions/ Hazard Assessment

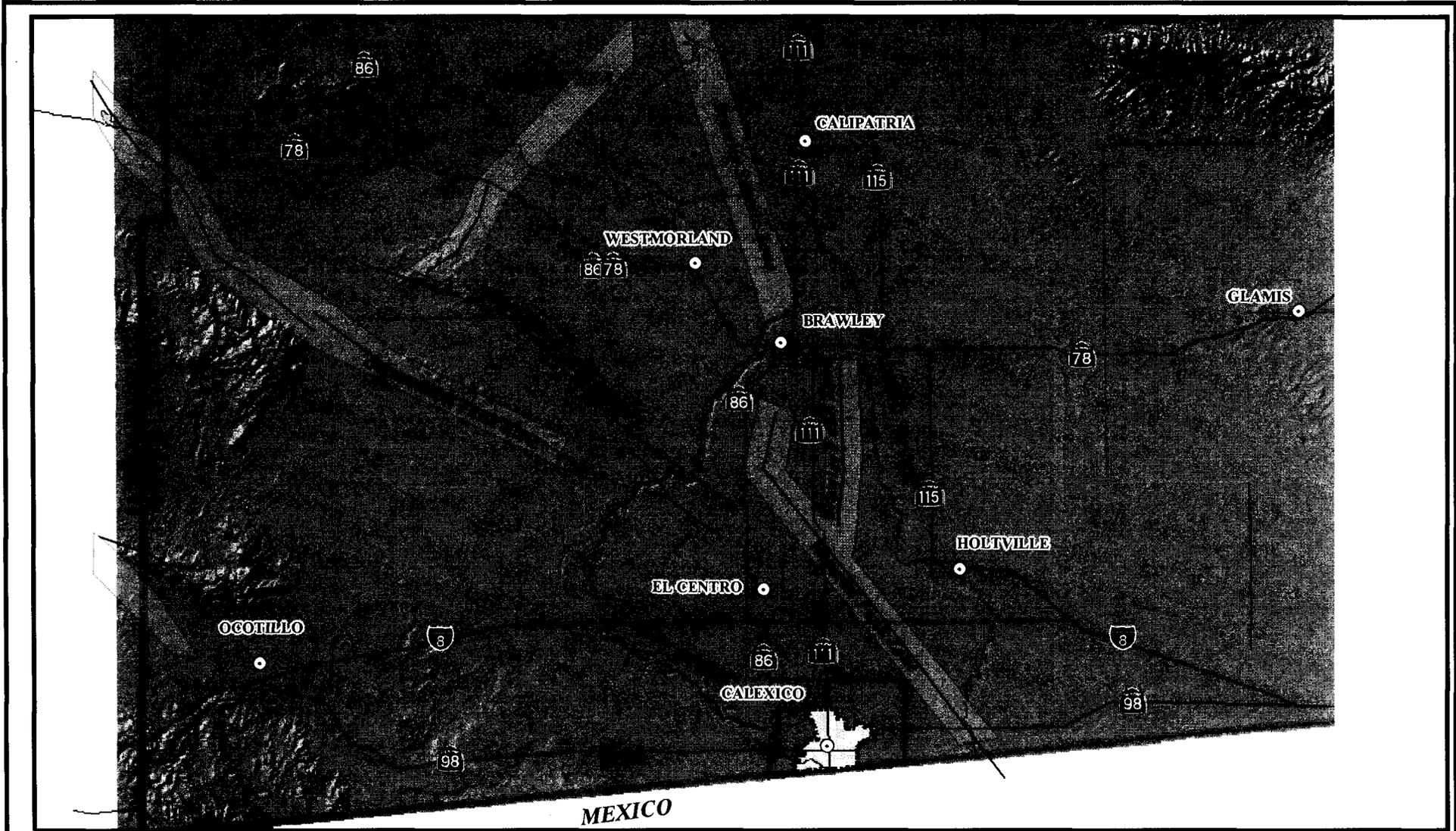
8.2.1 Geologic

The City of Calexico is particularly susceptible to geologic hazards such as earthquakes and the secondary hazards associated therewith. The primary hazard from earthquakes is significant because of the proximity of major faults and the soil composition of the Imperial Valley. The secondary impacts are related to the extensive irrigation and drainage as well as other consequences caused by earthquakes such as fires, ground displacement, soil liquefaction, and environmental contamination.

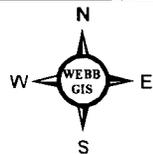
Earthquakes are caused by the sudden release of energy stored in the earth's core. Essentially, rigid plates form a "shell" around the fluidic layer below it. As these plates shift and grind against one another, energy is released which is known as plate tectonics. It is the areas near the boundaries or separations (faults) in the plates that the majority of energy is released.

The State of California is located on the San Andreas Fault which represents a portion of the boundary between the North American Plate and the Pacific Plate. The Imperial Valley is located in what is known as the Salton Trough, bordered on the east by the San Andreas and Imperial Faults, and to the west by the San Jacinto-Coyote Creek and Elsinore-Laguna Salada Faults. The Salton Trough is one of the most seismically active areas in the United States. Figure S-1 shows the City's location in relation to the locations of known fault lines.

In the last one hundred years, there have been eleven earthquakes that have measured at least magnitude 6.0 on the Richter scale. In 1940, there was a magnitude 7.1 earthquake that occurred along the Imperial Fault that killed 7 people, destroyed numerous structures, and caused major crop damage from flooding; the International Canal was moved more than 14 feet off its course during that earthquake.



Source: California Dept. of Conservation
 Division of Mines and Geology
 Geologic Data Map No. 6, 1994



Not to Scale

LEGEND

- ACTIVE FAULTS
- ACTIVE SEISMIC ZONES
- ⊞ CALEXICO CITY LIMITS
- ▭ LONG-TERM SPHERE OF INFLUENCE
- HIGHWAYS

Figure S-1

Faults & Seismic Zones

City of Calexico General Plan



8.2.1.1 Surface Ruptures

Surface ruptures usually occur on fault lines in the event of seismic activity. However, they may occur anywhere within a fault zone. The likelihood of surface ruptures are directly proportional to the magnitude of the earthquake and are caused by the upward fault displacement thrust from the epicenter. Surface ruptures can cause tremendous damage to anything located along its path. The ability to prevent major damage from surface rupture depends on our knowledge of the existence of active faults. California Public Resources Code has created special zones for areas close to active faults called Alquist-Priolo Earthquake Fault Zoning which enforces special building requirements for structures in these areas. The City of Calexico is not located within an Alquist-Priolo Earthquake Fault Zone.

8.2.1.2 Ground Shaking

As energy is released along a fault during an earthquake, a shockwave is created that moves through the soil and rock away from the epicenter. This release of energy causes the ground to shake. The severity of the shaking depends on the strength of the earthquake, the distance from where the shaking is felt relative to the epicenter, and the soil composition between the epicenter and the receptor site. Ground shaking can cause damage across vast distances. Calexico is most susceptible to earthquake damage from ground shaking.

8.2.1.3 Ground Failure

Ground failure occurs from the shock of an earthquake and is almost exclusively manifest in the form of a landslide. Landslides are caused by the combination of gravity, poor geologic conditions, along with the seismic event. Due to its flat topography, Calexico is not susceptible to landslides.

8.2.1.4 Liquefaction

The soil composition of the Valley adds to the potential seismic risk. Because the Valley's soil is a result of a deep layer of silt, and it is irrigated for agricultural purposes, it is particularly susceptible to liquefaction. Liquefaction is the loss of stability or strength in certain soil types as a result of a seismic event. Typically liquefaction occurs in granular, unconsolidated, saturated soils like those deposited in the Imperial Valley by the Colorado River. The City of Calexico and the surrounding area is particularly susceptible to liquefaction because of crop irrigation and the geologically young and unconsolidated sediment soil. Damage caused by liquefaction is the result of the ground becoming liquefied and thus flowing or lurching. The ground may also act like

quicksand and cause structures to sink or tilt. Although liquefaction represents a risk to structures, it doesn't necessarily preclude development. Available mitigation measures such as excavation and replacement of susceptible soils and the use of concrete piles are available.

8.2.1.5 Subsidence

Land subsidence is the lowering of the land-surface elevation from activities occurring underground. Typically it is caused by the pumping of water, oil, or gas from subterranean reservoirs or from peat oxidation (shrinkage of buried organic matter) or hydrocompaction (initial wetting of soils that causes the soil to compact under their own weight), and earthquakes. Subsidence could be a problem in the Imperial Valley because of the irrigation and drainage systems. These systems utilize gravity-fed systems, and even minor alterations in elevation could disrupt these and cause localized flooding. Another source of potential subsidence in Calexico and the surrounding areas are geothermal plants, whose rate and volume of extraction/injection are key variables that could lead to subsidence.

8.2.1.6 Structure Hazard

The Uniform Building Code (UBC) has incorporated seismic design standards since 1943. Since that time, the standards have improved dramatically. Recent industry experience has shown that adherence to the aforementioned codes greatly increases the chance that a structure will endure an earthquake with little or no significant damage.

8.2.1.7 Earthquake Risk Assessment

Thus far, the specificity with which earthquakes are predictable is that they will occur at certain places sometime in the future. Though we know not when, where, or to what intensity an earthquake will be, we know that they will in fact occur. Modern building codes and construction techniques have greatly improved our ability to withstand an earthquake.

Risk assessment is the process of comparing the cost to avoid a risk with potential cost of the damage produced by the hazard. The purpose of evaluating seismic risk is to reduce the risk to an acceptable level based on structure use because it is not possible or practical to eliminate all risk to life and property. While basing planning decisions on risk is difficult, risk-reduction measures can be implemented. We cannot reduce the chance of an earthquake occurring, but we can develop plans to help minimize its impact.

Acceptable risk as defined by the Council of Intergovernmental Relations guidelines for the General Plan Seismic Safety Element:

The level of risk below which no specific action by government is deemed to be necessary other than making the risk known.

When establishing acceptable risk levels, we should consider the importance of the facility after the seismic event for the preservation of public health, and safety, the number of people likely to be in the building, whether its use is voluntary or involuntary, and the cost of eliminating the risk. Certain facilities are very important and must remain usable after a seismic event, such as fire and police stations, schools, public utility facilities, and hospitals and other medical facilities. Table S - A shows the allowable risk levels per land use and the estimated cost to achieve the accepted level of risk.

Occupancy levels must be a consideration in determining acceptable risk. Structures with high occupancy levels such as theaters, schools, churches, meeting halls, office buildings, apartment buildings, and shopping centers should have a low level of acceptable risk. Conversely, higher levels of risk may be acceptable in low-occupancy uses such as single-family houses and warehouses.

Another factor to be considered when evaluating risk is whether the inhabitants of the structure have a choice as to whether they would otherwise subject themselves to a certain level of risk. Involuntary risk occurs at facilities such as hospitals, schools, and convalescent homes. Persons using these facilities may be restrained or incapable of leaving these during a seismic event, thus only a low level of risk is acceptable.

Perhaps the most significant variable in risk reduction is the cost of doing so. Risk reduction must be balanced against the cost thereof. Costs can be either direct, such as the case with extra reinforcement of a building, or indirect, as in zoning land with a high seismic risk as open space. Three common examples of seismic risk mitigation are rehabilitation or demolition of nonconforming structures, requiring extraordinary design and construction techniques, and limiting or prohibiting development in dangerous areas.

TABLE S-A: SCALE OF ACCEPTABLE RISKS

Level of Acceptable Risk	Types of Structures	Additional Project Cost to Achieve an Acceptable Level of Risk
1. Extremely Low ¹	Structures whose continued use is critical or failure catastrophic: nuclear reactors, large dams, manufacturing plants that store toxic or explosive materials.	No set percentage; whatever is necessary to attain maximum safety.
2. Slightly higher than Level 1 ¹	Structures whose continued use after a seismic event is important to public health, safety, and welfare: hospitals, police and fire stations, utility centers, bridges and overpasses, smaller dams.	5-25% of project cost ²
3. Lowest possible risk to occupants of structure ³	High-occupancy structures whose continued use after a seismic event would be beneficial: schools, churches, theaters, large hotels, high-rise buildings with high-occupancy, and other structures that commonly attract large numbers of people; civic building, large shopping centers, roads.	5-15% of project cost ⁴
"Ordinary" level of risk to the occupants of the structure ^{3,5}	Most structures: most commercial and industrial buildings, small hotels and apartment buildings, and single family residences.	1-2% of project cost

Source: *City of Calexico General Plan and Zoning Ordinance, 1992.*

8.2.2 Fire Hazards

The City of Calexico has a fire hazard rating of 5 from the ISO (Insurance Service Office) Commercial Risk Services, Inc. The rating is based on a 1 to 10 scale with 10 being the greatest risk and considers many factors,

¹ Failure of a single structure could affect large populations.

² Percentage assumption based on the structure otherwise being built in accordance with standard California practice. The estimated additional cost assumes that the structure will remain useful after an event.

³ Failure of a single structure would affect only the occupants.

⁴ Percentage assumption based on the structure otherwise being built in accordance with standard California practice. The estimated additional cost assumes that the structure will give reasonable assurance of preventing injury or loss of life but not necessarily remaining useful after an event.

⁵ Resists minor earthquakes without damage; resists moderate earthquakes without structural damage but with some non-structural damage; resists major earthquakes with the intensity of the strongest experienced in California, without collapse but with some structural and non-structural damage. In most structures, it is expected that structural damage even from major earthquakes could be limited to repairable damage (Structural Engineers Association of California).

including adequate water pressure and supply (in addition to the city's maximum rate of consumption for purposes other than firefighting), fire equipment and personnel, response time, etc. Downtown Calexico is susceptible to fires because many of the structures were built in the early 1900s and are constructed of wood. Additionally, some buildings lack space between them, thus increasing the chances that a fire could spread to numerous buildings. Also, many of the buildings in downtown Calexico have not been retrofitted for seismic activity and do not contain sprinkler systems.

The City has a low risk of damage from wildfires. The undeveloped areas around and outside of the City are either irrigated farm land or sparsely-vegetated desert land. Therefore there is little risk from wildfires due to lack of fuel.

The City currently has two existing fire stations; one at 430 East 5th Street, and the other at 900 Grant Street. Of note is that the fire stations are located on either side of the Union Pacific railroad tracks. There is currently a proposal to build a new station in vicinity of Meadows Road and Cole Road.

Currently, the Calexico Fire Department has one (1) chief, 30 firefighters, one (1) fire inspector and an administrative staff. Based on a population of 32,600, the current staffing ratio is 1.0 personnel for each 1,000 residents based on professional full-time staff. The desired ratio is 1.5 per 1,000 so current staffing levels are considered inadequate.

The City's emergency services providers, such as fire and police, are currently cooperating with IVECA and RCS for the coordinated efforts Valley-wide to integrate communication within the Valley and between Imperial Valley and San Diego County. The Calexico Fire Department is a member of the Imperial Valley Firefighters Strike Force which is responsible to respond to fire emergencies throughout California. The Department is also a member of the Imperial Valley Hazardous Materials Response Team and is available to respond to hazardous materials emergencies throughout Imperial County. The Department also has a Fire Prevention Bureau headed by the inspector and administers inspections, occupancy permits, and various safety programs throughout the city.

8.2.3 Hazardous Materials

The California Health and Safety Code defines a hazardous material as "any material that because of its quantity, concentration, or physical or chemical characteristics poses a significant present or potential hazard to human health and safety, or to the environment." These materials can be in solid, liquid, or gaseous form and include such things as pesticides, herbicides, toxic metals and chemicals, liquefied natural gas, explosives, volatile chemicals, and nuclear fuels. According to the U.S.

Environmental Protection Agency (“EPA”), hazardous material exhibit one or more of the following properties:

- Ignitability: Can create fires under certain conditions.
- Corrosivity: Is acidic and capable of corroding metal.
- Reactivity: Can create explosions or toxic fumes, gases and/or vapors when exposed to air or mixed with water.
- Toxicity: Harmful or fatal when ingested, breathed, or absorbed by the skin.

The risk posed by hazardous materials has been a concern for the City. This is due to the fact that there has been heavy border truck and rail traffic with many trucks and rail cars hauling potentially dangerous materials. With the new commercial truck border crossing located east of the City and the completion of SR-7 connecting SR-98 to I-8, the risks associated with potentially hazardous materials hauled via truck are reduced significantly. Rail service will continue to pose this risk as it passes through the heart of the City as will trucks that serve industry located within Calexico.

The other potential source of hazardous material release is from some of the operations associated with agriculture, such as chemical handling and storage facilities and crop dusting companies. The County Health Services Department, pursuant to California Health and Safety Code Section 25500, must maintain a list of hazardous material handlers and/or vendors as well as an inventory of materials that is available to City fire departments.

In January 2001, the EPA completed “Calexico: Hazardous Materials Commodity Flow Study.” The purpose of the study was “to provide a commodity flow study of hazardous materials to aid local, state and federal authorities to understand the volume and nature of hazardous material movements into, out of, and through the region, particularly the City of Calexico.” The recommendations of this study have been incorporated into the General Plan as described in Table S-B, below:

**TABLE S-B: COMPARISON OF EPA HAZARDS STUDY
RECOMMENDATION AND GENERAL PLAN**

EPA Recommendation	General Plan Response
<p>Restrict truck traffic from using East Birch Street (SR-98) east of Imperial Ave. (SR-111) and west of the intersection with Cole Road. The purpose being to avoid population center and high school.</p>	<p>Figure 5.7-1, Interim and Ultimate Truck Routes, identifies short- and long-term truck routes that respect the EPA recommendation. The Land Use Plan and Future Land Uses, General Plan Figures LU-1 and LU-2, eliminate future industrial land uses from the west side of Calexico focusing them north and east to avoid residential areas and respond to the eastern border crossing. See also Policies 5(a) and 5(c) in General Plan Section 8.4.1.5.</p>
<p>Encourage warehouses and truck transfer stations to move closer to the Calexico-East border crossing to minimize truck traffic within the City. The purpose to provide needed infrastructure so that development could occur along SR-7 south of SR-98.</p>	<p>Although the City of Calexico has no jurisdiction over the area EPA is discussing, within the City Sphere of Influence, the Land Use Plan and Future Land Uses, General Plan Figures LU-1 and LU-2, eliminate future industrial land uses from the west side of Calexico focusing them north and east to avoid residential areas and respond to the eastern border crossing. See also Policies 5(a) and 5(c) in General Plan Section 8.4.1.5.</p>
<p>Reassess the location of hazardous incident response resources within the county. Since the greatest risk of a hazardous material incident in Imperial County is near the border (Calexico), hazardous material spill response equipment should be located close to this area.</p>	<p>Policy 5(d) in Section 8.4.1.5 was included in the General Plan to address this recommendation.</p>
<p>Complete SR-7 between SR-98 and I-8.</p>	<p>This section of State Route 7 has been built to Caltrans Expressway standards.</p>

8.2.4 The New River

8.2.4.1 Pollution

In many cities, the presence of a river can be a source of valuable open space, recreational opportunities, or development potential. In Calexico however, the presence of the New River represents one of the City's greatest environmental hazards and challenges. The New River flows north from Mexicali through the City of Calexico and discharges into the Salton Sea, approximately 60 miles north of the City. According to a 1996 study by the U.S. Department of Health and Human Services ("USDHS"), about one third of the cumulative water flow of the New River is generated in Mexico. Of that portion of water from Mexico, based on information as current as May 2005, the State Water Resources Control Board ("SWRCB") indicates that almost 70% of the pollution comes from agricultural chemical runoff from the Imperial Valley agricultural operations, and 29% is from the City of Mexicali, Mexico as human waste. A remaining small percentage (1%) is attributed to the manufacturing plants operating in Mexico. The amount of untreated or partially-treated sewage often surges during times of sewer system failures at Mexican treatment facilities.

The previously mentioned study by USDHS identified the presence of many dangerous substances found in the river. Among the many materials found in the New River at unacceptable levels are: fecal coliforms, fecal streptococci, and pathogenic microorganisms that are capable of causing polio, typhoid, cholera, and tuberculosis. There was also the presence of over twenty-five metals exceeding acceptable levels, including arsenic, lead, and cadmium. The New River also contains volatile organic compounds ("VOCs") and various pesticides. Therefore, the New River is a major threat to public health for the City of Calexico.

Another hazard that affects land uses near the New River is the presence of foam that frequently forms on the surface of the river. In 1980, the California Regional Water Quality Control Board ("CRWQCB") investigated the composition and source of the foam. The results of the CRWQCB study found that the foam was primarily composed of detergents discharged in Mexico, but was unable to determine whether they were industrial or domestic in origin. The foam can be blown by the wind and onto adjacent land uses and has been found to contain high levels of fecal coliform.

The risks created by the pollution of the New River are human contact with or the ingestion of the water, unpleasant odors, blowing foam, the consumption of fish and wildlife living in the river, and the possibility that the mosquitoes (*Culex trsalis*) that live in the New River are vectors for encephalitis. In addition, the blight associated with the New River

represents a missed opportunity to gain needed recreational lands in the City.

8.2.4.2 Flooding

Flooding is a natural hazard that is unlikely to affect the City of Calexico under normal rain and run-off conditions. The Federal Emergency Management Agency (FEMA) hazard area map of the Calexico area shows that the 500 year floodplain of the New River within the City is contained within the area north of the Calexico International Airport that is currently zoned as Open Space land. See Figure S-2. However, conditions upstream in Mexico do affect the river. As the Mexicali area becomes more urbanized with nothing heretofore having been done to control urban runoff there, the potential for flooding could increase in downstream areas such as Calexico.

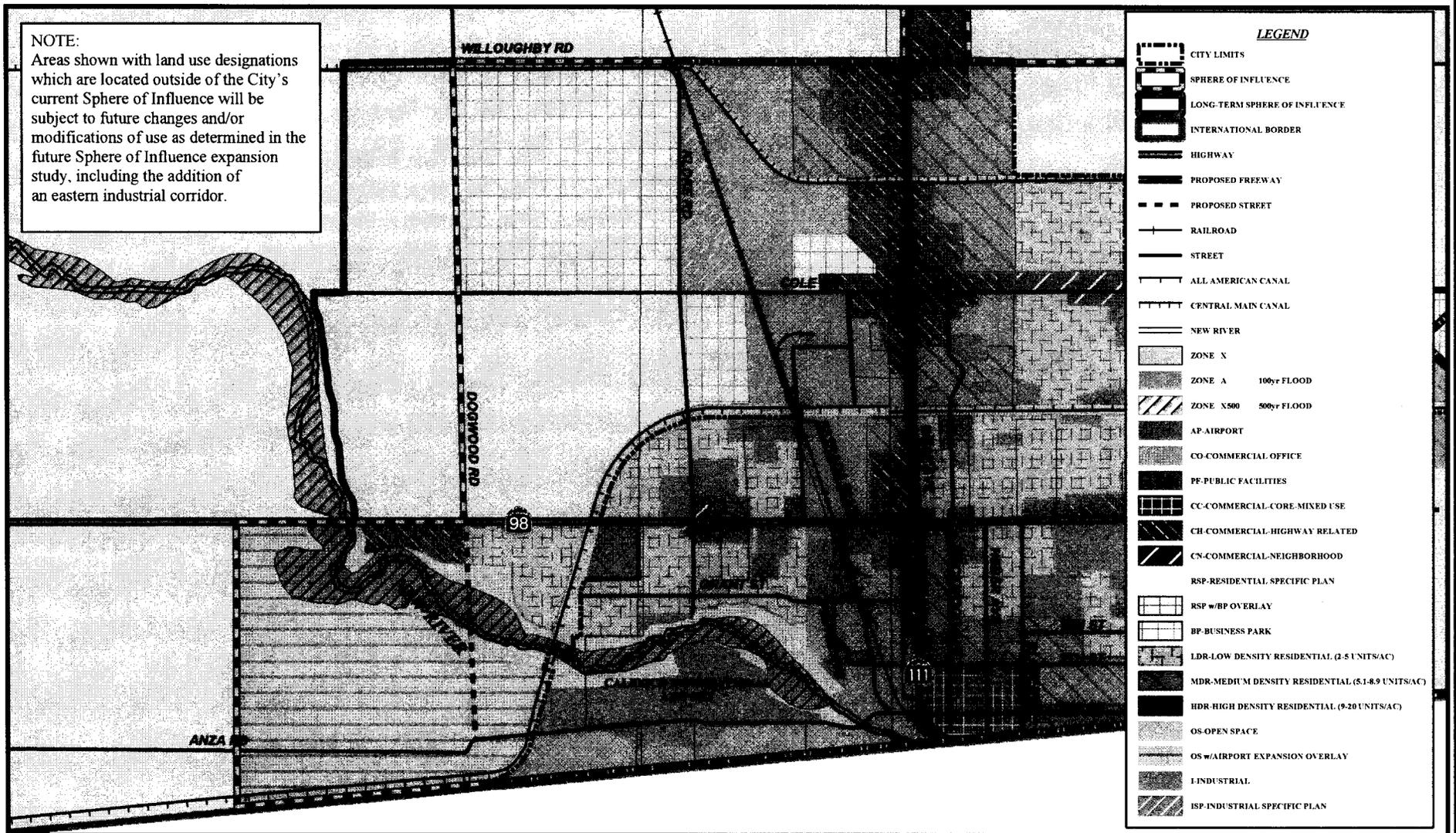
As mentioned in Section 8.2.1, flooding could result from seismic damage to a major IID canal. The City of Calexico is traversed by two major canals: the All American and the Central Main.

8.2.5 Peak Load Water Supply

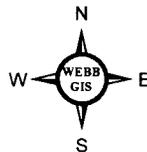
Calexico receives all of its potable water supply from the Calexico Water Department (CWD). The CWD receives the water from Imperial Irrigation District (IID) which is brought from the Colorado River. Currently, about 2 percent of IID water is divided among nine Imperial Valley communities. The city of Calexico's current daily maximum water output is 9 million gallons of potable water. The peak demand of the City of Calexico is 10,481 gallons per minute (gpm) and can be handled by the existing electric pumps which have a capacity of 12,200 gpm. The CWD also has an additional 5,000 gpm fire flow suppression delivered by 2 natural gas driven pumps. CWD has purchased property and is in the process of designing a 6 million gallon (mg) tank near Cole Road and Highway 98 to stabilize and loop the existing water system and serve future development to the east of the City's existing boundaries. According to the "2000 Urban Water Management Plan for Imperial Irrigation District (IID) and the Cities of Brawley, Calexico, and El Centro," the projected water demand for Calexico will be 2,068 mg annually in 2020 and the project water supply will be 2,200 mg annually. The City has the necessary capacity to supply enough water in the event of a disaster. However, a severe earthquake or other natural disaster could destroy portions of the water transmission system, thus causing a short-term water shortage. The Imperial County Office of Emergency Services requires a ten-day storage holding capacity for cities, so interruptions in transmission can be managed.

NOTE:

Areas shown with land use designations which are located outside of the City's current Sphere of Influence will be subject to future changes and/or modifications of use as determined in the future Sphere of Influence expansion study, including the addition of an eastern industrial corridor.



Source: Federal Emergency Management Agency, 2002



Not to Scale

Figure S-2

Flood Zone Designations

City of Calexico General Plan

8.2.6 Evacuation/Emergency Access

Evacuations and the need for emergency access can become necessary on a localized or City-wide basis depending on the type of emergency situation. Local evacuations and the need for emergency access occur, for example, when a building is on fire. A larger area may need to be evacuated for more catastrophic events such as an earthquake that causes major damage and/or flooding. Should an event occur that would necessitate the mass evacuation or dispersal of people from the City, the surrounding agricultural land is favorable because it is uninhabited and open. The major evacuation routes are Highways 111, 98, and Interstate 8. All primary local streets in the City connect to the county road system outside of the City.

Localized emergency access relates to things such as adequate roadway widths and turning radii, spaces around buildings, and distances to fire hydrants. The City of Calexico Zoning Ordinance establishes setbacks which provide for safe access around buildings associated with all types of land uses. The General Plan Circulation Element, Section 3, includes policies addressing local street design and appropriate access on major streets. The Circulation Element plan for streets is based on providing adequate cross sections of streets to accommodate through traffic. All new development is subject to these policies and standards. In older areas of the City where such requirements are substandard, the City is working to correct and improve less than ideal access.

8.3 Establishing a Vision

The *Vision* for safety in the City of Calexico will ensure one of the most fundamental expectations—that lives and property will be protected from human-made and natural hazards to the extent feasible. The Safety Element is responsive to this *Vision* because it:

- a) Provides a sense of security and well-being to our residents.
- b) Identifies facilities and services that support safety functions that are essential to the future development of the City.
- c) Offers some measure of assurance to those who would invest in the City that their investment will be protected to the extent possible and feasible.
- d) Demonstrates a commitment to this important aspect of community development by our public officials.
- e) Adds to the desirability of the community as a place to attract business investment.

8.4 Related Plans and Programs

There are other agencies with plans and programs related to the purpose of the Safety Element. These plans have been developed and adopted by various levels of government and are administered by agencies with powers to enforce state and local laws.

Multi-agency Cooperative Programs

The City's emergency services providers, such as fire and police, are currently cooperating with the coordinated efforts Valley-wide to integrate communication within the Valley and between Imperial Valley and San Diego County. The Calexico Fire Department is a member of the Imperial Valley Firefighters Strike Force which is responsible to respond to fire emergencies throughout California. The Department is also a member of the Imperial Valley Hazardous Materials Response Team and is available to respond to hazardous materials emergencies throughout Imperial County. The Department also has a Fire Prevention Bureau headed by the inspector and administers inspections, occupancy permits, and various safety programs throughout the City.

Imperial County Emergency Plan

Imperial County has an Emergency Plan that addresses Imperial County's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and nuclear defense operations. The County Emergency Plan focuses on potential large-scale disasters that can generate unique situations requiring unusual responses. The Emergency Plan also identifies the sources of outside support which might be provided by other jurisdictions, state and federal agencies, and the private sector through mutual aid and specific statutory authorities.⁶

Calexico International Airport Master Plan

The Calexico International Airport is subject to the Calexico International Airport Master Plan, 2001, prepared by the City of Calexico. The plan identifies future improvements for the airport to meet future aviation needs. The plan also addresses land uses surrounding the airport. The type of development occurring in the airport environs impacts the safety of aircraft operations. In the reverse, it also impacts the number of people exposed to aircraft hazards such as airplane crashes. The General Plan reflects the future airport expansion plan and the current/future safety hazards in the Land Use Element.

Imperial County Airport Land Use Plan

The Calexico International Airport is also subject to the Airport Land Use Compatibility Plan – Imperial County Airports, 1996, prepared by

⁶ County of Imperial, final Program Environmental Impact Report for the County of Imperial General Plan, Volume I, October 1993.

Imperial County Airport Land Use Commission. The plan identifies areas impacted by aircraft operations and includes policies to allow for the continued operation of county airports, while protecting public safety. The Hazards Element of the General Plan addresses these issues and policies. The Airport Land Use Compatibility Plan is updated on a periodic basis to reflect the California Department of Transportation's Airport Land Use Planning handbook. The City will review its General Plan to ensure consistency when the airport plan is updated.

Calexico Codes and Ordinances

The City has adopted the Uniform Building Code, Uniform Mechanical Code, National Electrical Code, Uniform Code for the Abatement of Dangerous Buildings, and the Uniform Fire Code, all of which contain structural requirements for existing and new buildings. The codes are designed to ensure structural integrity during seismic and other hazardous events to prevent personal injury, loss of life, and substantial property damage. To protect public safety, development in Calexico is subject to these codes. Calexico has also adopted a Flood Damage Prevention code and an Earthquake Hazard Reduction in Existing Buildings code to address safety issues directly associated with flooding and earthquakes.

California Environmental Quality Act (CEQA) and Guidelines

The California Environmental Quality Act was adopted by the State legislature to provide public disclosure of the substantial adverse environmental effects of proposed development within the State. The CEQA Statutes (Public Resources Code Section 21000, *et seq.*) and Guidelines (California Code of Regulations Title 14, Chapter 3, Section 15000, *et seq.*) include disclosure of and mitigation for safety hazards as environmental impacts. Continued implementation of CEQA will ensure that City officials and the general public have information describing and mitigating potentially significant safety impacts associated with discretionary private and public development projects.

Seismic Hazards Mapping Act

Pursuant to the Seismic Hazards Mapping Act, the State Geologist through the California Geological Survey unit of the Department of Conservation compiles maps identifying seismic hazard zones throughout the State. Development in seismic hazard areas is subject to policies and criteria established by the State Mining and Geology Board. Approval of development located within a seismic hazard area requires the preparation of a geotechnical report and local agency consideration of the policies and criteria set forth by the State (Public Resources Code Section 2690 *et seq.*). The City requires geotechnical reports for development throughout the City due to the high risk for seismic activity in the area.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act requires the State Geologist to identify earthquake fault zones along traces of recently and potentially active major faults. The General Plan includes Figure S-1 which shows the location of these faults. The Alquist-Priolo Zones are usually one-quarter mile or less in width. Proposed development plans within these fault zones must be accompanied by a geotechnical report prepared by a geologist describing the likelihood of surface rupture and other seismically induced hazards.

Cobey-Alquist Floodplain Management Act

The Cobe-Alquist Floodplain Management Act encourages local governments to plan, adopt, and enforce land use regulations for floodplain management in order to protect people and property from flooding hazards. This act also identifies requirements which jurisdictions must meet in order to receive State and financial assistance for flood control.

National Flood Insurance Administration Program (NFIP)

The NFIP which is administered by the Federal Emergency Management Agency (FEMA), provides federal flood insurance and federally financed loans for property owners in flood prone areas. To qualify for federal flood insurance and assistance, the City must identify flood hazard areas (Figure S-2) and implement a system of protective controls. The Safety Element, Land Use Element, and Title 15, Chapter 15.54 of the Municipal Code fulfill these requirements.

County of Imperial General Plan

The County General Plan identifies potential hazards that could impact persons and property in the unincorporated portion of the City's planning area. The City cooperates with the County in emergency situations affecting both jurisdictions and has mutual aid arrangements. Until annexation into the City occurs, unincorporated areas are subject to the County General Plan and other policies addressing safety.

City of Calexico Emergency Disaster Plan

The City of Calexico has adopted a Standardized Emergency Management System (SEMS) Multi Hazard Functional Emergency Operations Plan (SEMS Operations Plan). It provides guidance for the City to respond to extraordinary emergency situations associated with natural disasters, man-made disasters, technological incidents, and war emergency operations within the City. As stated above, the City cooperates with the County in emergency situations affecting both jurisdictions and has mutual aid arrangements and the City's SEMS Operations Plan allows it to be prepared to be part of the statewide emergency management system.

8.5 Goal, Objectives, and Policies

8.5.1 Goal

To identify and minimize, to the extent possible or feasible, the risks to persons and property caused by natural and human-induced hazards.

8.5.1.1 Levels of Risk

Objective 1

To maintain acceptable risk levels when conducting land use planning.

Policy 1

- a. The Scale of Acceptable Risk for New Structures shall continue to be used to determine the type and location of future land use. (Table S - A)
- b. Land uses should not be subjected to greater risk than the level the scale suggests unless no other alternative exists.
- c. The City shall require a geologic/geotechnical investigation for all projects whose uses or intensities attain a Level of Acceptable Risk rating that exceeds “Ordinary” levels (Levels 1, 2 & 3—Refer to Table S-A), and must contain a site-specific evaluation of peak horizontal ground acceleration.

8.5.1.2 Seismic Hazards

Objective 2

All development in the City shall adhere to standards for grading and construction which reduce the potential of seismic hazards.

Policy 2

- a. The City may consider design and construction standards that exceed the minimums set forth in the uniform building code (UBC) due to the area’s high potential for seismic acceleration.
- b. Consultation with a qualified engineering geologist shall be required for all development.
- c. The City shall maintain standards to identify and mitigate seismic hazards.
- d. The City shall continually inform the residents of the community of the potential seismic hazards that exist and what the best methods are for reducing loss or injury caused by them.

8.5.1.3 Emergency Preparedness

Objective 3

Minimize the potential hazards to public health, safety, and welfare and prevent the loss of life and property damage from natural and human-induced phenomena.

Policy 3

- a. The City shall ensure the adequacy of existing emergency preparedness plans to handle effectively and efficiently known hazards and emergencies.
- b. The City shall review evacuation procedures to make sure that in case of an evacuation, the residents of Calexico will be quickly notified and the evacuation will be orderly.
- c. The City shall work with the Calexico Water Department to ensure that an adequate supply of water will be available in the event of an emergency and to help create and maintain an emergency water supply.
- d. The Calexico Fire Department should review an update the need for additional fire hydrants and shall work with the Calexico Water Department to ensure that adequate water pressures for fire flows are maintained.
- e. The City shall require the heads and staff of each department to participate in the maintenance of a City-wide emergency preparedness plan.
- f. The City shall cooperate with IID to prepare or update an emergency plan for the rapid removal and repair of downed power lines and/or damaged/breeched water facilities in the event of an earthquake.
- g. The City of Calexico shall work with the Calexico International Airport and the Johnson Brothers private airstrip operators to review and identify improvements to airport facilities and takeoff/landing procedures to reduce the risk associated with airfield operations. The City shall also continue to participate in the airport land use plan revisions for existing airport facilities and operations, future airports, and airport extensions.
- h. The City shall implement the City of Calexico SEMS Operations Plan in case of extraordinary emergency situations, including updates and reviews to keep the information current and responsive to community needs.

8.5.1.4 The New River

Objective 4

The City shall make every effort to protect its residents from the potential hazards associated with the New River, including restricting access and participating in any multi-jurisdictional efforts to improve it.

Policy 4

- a. The City shall continue to restrict access to the river and maintain bilingual signs that warn of the dangers of contact with the water.
- b. The City shall continue to seek county, state, or federal funds to cover costs incurred by the City for work done to restrict public access to the river or any other measure associated with the river due to its pollution or risk to public safety.
- c. The City shall cooperate with international, federal, state and regional responsible agencies in projects aimed at cleaning up or encasing the New River through the implementation of the New River Improvement Project as described in 5.2.5 of the Conservation Element.
- d. The City shall prohibit land development near the New River in order to reduce exposure of its residents to the potential contact with the water, odors, and airborne foam.

8.5.1.5 Hazardous Materials

Objective 5

To ensure the health, safety, and welfare of the residents and guests of Calexico through strict regulation and planning for the safe transport, storage and usage of hazardous materials in the Calexico area.

Policy 5

- a. Discourage the transport of hazardous materials through residential areas and critical facilities and limit transport through heavily developed areas as much as possible. (See Truck Route designations, figure C-3, in the Circulation Element.)
- b. Prohibit incompatible land uses near sites that use, store or produce hazardous materials.
- c. Plan future industrial parks to the east, north, and northeast of the City such that the industrial uses, along with the Port of Entry (East Border Crossing), United States and Mexico International Border, will reduce truck traffic, especially those containing hazardous materials, as they will be diverted from the center of the City.

8.6 Safety Implementation Program

This implementation program provides actions to implement the adopted policies and plans identified in the Safety Element. Table S-C describes the responsible department within the City of Calexico and other agencies, funding source(s), time frame to complete the action, and related policies within the Safety and other Elements of the General Plan.

TABLE S-C: SAFETY ELEMENT

Objective	Policy Summary	Responsible Agency/ Department	Funding Source	Time Frame	Related Policies
Objective 1 To maintain acceptable risk levels when conducting conscientious land use planning.	1a. Scale of Acceptable Risk shall continue to be used for location of future land use	Building & Safety Planning	General Fund and Project Review Fees	Ongoing	Conservation/Open Space: 2b Safety: 1a – c
	1b. Land uses should not be subjected to greater risk than the level the scale suggests	Building & Safety Planning	General Fund and Project Review Fees	Ongoing	Conservation/Open Space: 2b Safety: 1a – c
	1c. Require a geologic/ geotechnical investigation for projects that attain a rating that exceeds “Ordinary”	Building & Safety Planning	General Fund and Project Review Fees	Ongoing	Open Space: 2b Safety: 1a – c
Objective 2 All development in the City shall adhere to standards for grading and construction which reduce the potential of seismic hazards.	2a. The City may consider design and construction standards that exceed the UBC due to high potential for seismic acceleration	Building & Safety	General Fund Private Funds Development Review Fees Redevelopment Fees	Ongoing	Safety: 2a – d; 1c Open Space: 2b
	2b. Qualified engineering geologist shall be required for all development	Building & Safety	General Fund Private Funds Development Review Fees Redevelopment Fees	Ongoing	Safety: 2a – d; 1c Open Space: 2b
	2c. Maintain standards to mitigate seismic hazards	Building & Safety	General Fund Private Funds Development Review Fees Redevelopment Fees	Ongoing	Safety: 2a – d; 1c Open Space: 2b
Objective 3	3a. Ensure the adequacy of	City Manager’s	General Fund State	Within 1 yr.	Safety: 3a - g

Objective	Policy Summary	Responsible Agency/ Department	Funding Source	Time Frame	Related Policies
Minimize the potential hazards to public health, safety, and welfare and prevent the loss of life and property damage from natural and human-induced disasters.	existing emergency preparedness plans	Office All City Departments Calexico Water Dept. IID Calexico Int'l Airport	Federal		
	3b. City shall review evacuation procedures to make sure Calexico will be quickly notified and evacuation will be orderly	City Manager's Office All City Departments Calexico Water Dept. IID Calexico Int'l Airport	General Fund State Federal	Within 1 yr.	Safety: 3a - g
	3c. Calexico Water Dept. ensure that an adequate supply of water will be available in the event of an emergency	Calexico Water Dept. IID	General Fund State Federal	Within 1 yr.	Safety: 3a - g
	3d. Calexico Fire Dept. should review an update the need for additional fire hydrants and Calexico Water Dept. to ensure that adequate water pressures for fire flows are maintained	Fire Dept. Calexico Water Dept. Engineering	General Fund Development Impact Fees	Within 1 yr. and ongoing	Safety: 3a - g
	3e. City shall require the heads and staff of each department to participate in the maintenance of a City-wide	City Manager's Office All City Departments Calexico Water Dept.	General Fund	Annually	Safety: 3a - g

Objective	Policy Summary	Responsible Agency/ Department	Funding Source	Time Frame	Related Policies
	emergency preparedness plan	IID Calexico Int'l Airport			
	3f. City shall cooperate with IID to prepare emergency plan for the rapid removal and repair of downed power lines and/or damaged/ breeched water facilities	City Manager's Office All City Departments Calexico Water Dept. IID Calexico Int'l Airport	General Fund	Ongoing	Safety: 3a – g
Objective 4 The City shall make every effort to protect its residents from the potential hazards associated with the New River, including restricted access and participating in any multi-jurisdictional efforts to improve it.	4a. Restrict access and maintain bilingual signs that warn of the dangers of contact with water	Border International Agency RWQCB New River Commission Building & Safety Police Fire Planning	General Fund State Federal	Ongoing	Open Space: 6d Safety: 4a – d
	4b. Seek county, state or federal funds to cover costs for work done to restrict public access or other measures to protect public	U.S. Border Patrol RWQCB New River Commission Building & Safety Police Fire Planning	General Fund State Federal	Ongoing	Open Space: 6d Safety: 4a – d
	4c. Cooperate with federal agencies to clean up or re-route river	RWQCB New River Commission Planning	General Fund State Federal Grants	Ongoing	Open Space: 6d Safety: 4a – d
	4d. Prohibit land development near	Planning County Airport	General Fund	Ongoing	Open Space: 6d

Objective	Policy Summary	Responsible Agency/ Department	Funding Source	Time Frame	Related Policies
	New River reducing exposure of residents to potential noxious contact	Land Use Commission			Safety: 4a – d
Objective 5 To ensure the health, safety and welfare of the residents and guests of Calexico through strict regulation and planning for the safe transport, storage and usage of hazardous materials in the Calexico area.	5a. Discourage transport of hazardous materials through residential areas, critical facilities, and heavily developed areas	EPA Police Planning Caltrans	General Fund Federal State	Ongoing	Safety: 5a – c
	5b. Prohibit incompatible land uses near sites that use, store, or produce hazardous materials	Planning County Airport Land Use Commission	General Fund	Ongoing	Safety: 5a – c
	5c. Plan future industrial parks east, north and northeast of City to reduce hazardous materials truck traffic and avoid center of City	Planning	General Fund	Ongoing	Safety: 5a – c