



# Safety (S)



## A. Introduction

The Safety Element establishes goals and policies that work to protect the community from risks of injury, loss of life, and property and environmental damage associated with natural and manmade hazards such as wildfires, geologic and seismic hazards, flooding, hazardous materials, military installations, and brownfields. It includes mapping of known seismic and geologic hazards, along with areas subject to flooding and fire risk. This element also includes methods to reduce criminal behavior through environmental design and response objectives related to police and fire operations and emergency services. Although it is not possible to prevent or mitigate all hazards and safety issues, their destructive effects can be reduced to acceptable levels or avoided through careful planning.

## B. Existing Setting

### HAZARD MITIGATION PLANNING

The Federal Disaster Mitigation Act of 2000 requires all local governments to create a disaster plan in order to qualify for funding for hazard mitigation planning projects. The County of San Diego's Multi-Jurisdiction Hazard Mitigation Plan (Final Draft 2010) includes all of the cities in the County, as well as unincorporated areas. Hazard Mitigation Plans must be updated every five years. The County of San Diego Hazard Mitigation Plan is anticipated to be adopted by the Federal Emergency Management Agency (FEMA) in 2010. The Hazard Mitigation Plan addresses:

- Earthquake;
- Liquefaction;
- Landslide;

- Coastal Storms, Erosion, and Tsunami;
- Dam Failure;
- Flood;
- Wildfire and Structure Fire;
- Hazardous and Nuclear Materials Release;
- Manmade Hazards and
- Terrorism.

## SEISMIC AND GEOLOGIC HAZARDS

### Earthquake

An earthquake is a sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of the Earth's tectonic plates. Common effects of earthquakes are ground motion and shaking, surface fault ruptures, and ground failure. Earthquakes also can trigger many secondary effects, such as landslides and rock falls, urban fires, building collapse, water tank or dam failures, disruption of essential facilities and systems (water, sewer, gas, electricity, transportation, and communications), and hazardous materials releases<sup>1</sup>.

There are five faults located near the planning area. They are listed below, including the most probable maximum Richter scale magnitude earthquake that each might cause<sup>2</sup>:

- Rose Canyon Fault (6.2-7.0)
- La Nación (6.2-6.6)
- Coronado Bank (6.0-7.7)
- San Diego Trough (6.1-7.7)
- San Clemente (6.6-7.7)



**Peak Ground Acceleration - (PGA)** is a measure of the strength of ground movement and is used to project the risk of damage from future earthquakes by showing earthquake ground motions that have a specified probability: (10%, 5%, or 2%) of being exceeded in 50 years. (San Diego County)

The La Nacion Fault Zone poses the greatest potential earthquake threat to the planning area. The Rose Canyon Fault is considered to be the greatest potential threat to the San Diego region as a whole, due to its proximity to areas of high population, but threatens other parts of the region more than National City<sup>3</sup>.

Figure S-1 displays the location and extent of the profiled earthquake hazard for the planning area. Earthquake hazard is based on probabilistic peak ground acceleration,

<sup>1</sup> County of San Diego. (2010, January). Multi-Jurisdiction Hazard Mitigation Plan, Final Draft.

<sup>2</sup> Demere, Thomas. (2009). Faults and earthquakes in San Diego County. San Diego Natural History Museum. Retrieved February 5, 2009 from <http://www.sdnhm.org/research/paleontology/sdfaults.html>.

<sup>3</sup> County of San Diego. (2010, January). Multi-Jurisdiction Hazard Mitigation Plan, Final Draft.



which correlates to how hard the earth shakes in a given area. Although located near fault lines, the planning area lies within medium-low to low shake potential zones.

A compounding factor to the risks associated with seismic events within the planning area is the prevalence of unreinforced masonry buildings. Unreinforced masonry buildings are primarily older structures, typically constructed prior to 1973. Approximately, 63% of structures in National City were constructed prior to 1970, compared to 38% in San Diego County overall.<sup>4</sup> Unreinforced masonry buildings, due their construction type and age, are at greater risk for damage or collapse during a seismic event<sup>5</sup>.

### Liquefaction

Liquefaction is a phenomenon in which ground shaking triggered by an earthquake causes loose soils to lose strength and take on the consistency of a heavy liquid. When the soils supporting structures liquefy, bearing strength is lost, and structures collapse. Historically, seismic shaking levels in the San Diego region have not been sufficient to trigger liquefaction<sup>6</sup>.

Figure S-2 displays the location and extent of areas with a risk of liquefaction within the planning area, based on probabilistic ground acceleration data from the USGS and a Scenario Earthquake Shake map for Rose Canyon from the California Integrated Seismic Network (CISN). National City has a low liquefaction risk. However, there are some soil types in the western portion of the planning area which can amplify the risk of liquefaction. Hydric soils, or soils that are often saturated or characteristic of wetlands, can increase the potential for liquefaction<sup>7</sup>. The planning area contains a few hydric soils, including CkA Chino silt loam saline, Rm Riverwash, Tf Tidal flats, and TuB Tujunga sand. However, according to the 2006 United States Department of Agriculture (USDA) Soil Survey, there are very few areas in the City that contain these soil types (See Figure S-3).

### Landslides

Landslides occur when masses of rock, earth, or other material move down a slope. They are influenced by human activity such as mining and construction, and natural

<sup>4</sup> U.S. Census Bureau, American FactFinder. (2000.) Census 2000, Summary File 3. Retrieved May 3, 2010 from: <http://factfinder.census.gov/home/en/datanotes/expsf3.htm>.

<sup>5</sup> County of San Diego. (2010, February). Multi-Jurisdiction Hazard Mitigation Plan, Final Draft.

<sup>6</sup> County of San Diego. (2010, January). Multi-Jurisdiction Hazard Mitigation Plan, Final Draft.

<sup>7</sup> County of San Diego (2007, July). Guidelines for determining significance – Geologic hazards.

factors, such as rain and topography. Landslides frequently accompany floods and earthquakes. Landslide risk is determined by steep slopes that have 25 percent or greater incline, soil type, and soil-slip susceptibility as defined by the United States Geological Survey (USGS)<sup>8</sup>.

National City is not identified as an area where significant landslides have occurred in the past. It is a highly urbanized area with very few slopes exceeding a 25 percent grade.

Figure S-4 displays landslide hazards. The risk of landslides is low within the planning area.

### **FLOOD HAZARDS AND INUNDATION**

A flood occurs when excess water from snowmelt, rainfall, or storm surge accumulates and overflows onto a river's bank or to adjacent floodplains. Floodplains are lowlands adjacent to rivers, lakes, and oceans that are subject to recurring floods. Several factors contribute to the severity of floods including rainfall intensity and duration<sup>9</sup>.

#### **Historical Flooding**

Due to the City's close proximity to the Bay and its relatively flat topography, the City has experienced flood damage from historical flooding events. The Sweetwater River drainage area comprises approximately 219 square miles, and according to historical floodplain maps, consisted of a poorly defined channel in a very broad floodplain. In 1968, Congress authorized the construction of the Sweetwater Flood Control Channel and the associated SR-54 construction<sup>10</sup>. Circa 1976, the Army Corps of Engineers (ACOE) started building the Sweetwater Channelization project (including widening the channel and the construction of levees) to reduce the limits of the existing floodplain. The ACOE project was designed to convey the 500-year flood within the channel in order to considerably reduce the overflow of the Sweetwater River<sup>11</sup>. The project included the construction of levees on both the north and south sides of the channel, which extend from I-5 to I-805. The Sweetwater River Channel protects historically flood-prone areas in National City, Chula Vista, and the unincorporated area of San Diego County.

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<sup>8</sup> County of San Diego. (2010, February). Multi-Jurisdiction Hazard Mitigation Plan, Final Draft.

<sup>9</sup> County of San Diego. (2010, January). Multi-Jurisdiction Hazard Mitigation Plan, Final Draft.

<sup>10</sup> US Army Corps of Engineers, Sweetwater River Final Environmental Impact Statement, March 1982, p.1

<sup>11</sup> FEMA, San Diego County Flood Insurance Study, last revised September 29, 2006, p. 44



## Flood Hazard Areas

The potential for flood hazards in the planning area generally exists along the entire bayfront, as well as the three major drainage basins: Sweetwater River, Paradise Creek, and Las Puleta Creek.

To prepare and mitigate hazards from flooding, National City participates in the National Flood Insurance Program. Potential flood zones are identified on flood insurance rate maps (FIRMs) that are supplied by FEMA. The maps are based on hydrologic (the distribution of water on the surface) analysis, and hydraulic (the movement of water) analysis. Data used in preparing the FIRMs includes information on historical storm systems, tides, waves, beach profiles, topography, and drainage patterns.

FEMA designates flood hazard areas in a 100-year flood category and a 500-year flood category. The 100-year flood zone indicates the flood elevation that has a one percent chance of being equaled or exceeded each year. The 500-year flood zone indicates that the flood elevation has a 0.2 percent chance of exceedance each year. Figures S-5-A and S-5-B, “Flood Hazard Zones,” identify the floodplain areas within the planning area, along with the locations of critical public facilities (e.g., fire stations, police stations, schools, and government buildings).

Figure S-5-A illustrates the floodplain limits depicted on the 1997 FIRM maps. The floodplain limits for the Sweetwater River and the lower portion of Paradise Creek reflect the limits, prior to the construction of the Army Corps of Engineers (ACOE) Sweetwater River Channelization project. These FIRM panels indicate substantial potential flooding along the Sweetwater River.

The ACOE project reduced the floodplain width along the Sweetwater River through the construction of channel improvements and flood control levees<sup>12</sup>. The floodplain and levee protection zones illustrated on Figure S-5-B reflects the ACOE channelization improvements and represents the most up-to-date FEMA information available.

<sup>12</sup> A Letter of Map Revision (LOMR) was processed in 1997 to update the flood hazard mapping with FEMA to show the effect of the channelization project. At the time of the publication of the General Plan (2010), FEMA is in the process of updating the FIRM panels. Since the levees are over 10 years old, the levees will fall into FEMA’s Provisionally Accredited Levee (PAL) program. The levees will be shown as “provisional” on future FIRM panels until the documentation has been provided to FEMA indicating that the condition of the levees are adequate according to FEMA’s requirements. The Cities of National City and Chula Vista are cooperating with the County of San Diego to recertify the levees. If the documentation is not accepted by FEMA, the levees would not be certified, and the levee protection zones on both sides of the Sweetwater River would revert to being within a special flood hazard area.

In addition to the riverine flood-prone areas identified on the FEMA FIRM panels, the planning area also may experience flooding within low-lying coastal areas due to tidal surges and in scattered areas throughout the City along smaller tributaries.

### **Dam Failure**

Dam failure can cause a significant amount of loss of life and structures due to flash flooding occurring soon after the initial break. Dam failure is usually the result of age, poor design, or structural damage caused by a major event, such as an earthquake or flood. Dam failures are considered low probability, high-loss events.

Two major dam failures have been recorded in San Diego County. They both occurred as a result of the Hatfield Flood of 1916, which caused the failure of both the Sweetwater and Lower Otay Dams, resulting in 22 deaths and \$4.5 million in damages<sup>13</sup>.

The three closest dams to National City are the:

- Sweetwater Dam (5.33 miles away);
- Bonita Long Canyon Dam (4 miles away); and
- Eastlake Dam (9.5 miles away).

Figure S-6 illustrates the dam failure hazard for the planning area. As shown on the map, there are some parts of the planning area, primarily along the southern boundary, that would be subject to inundation if the Sweetwater Dam failed.

### **Flood Protection**

#### **Coastal Storms, Coastal Erosion, and Tsunamis**

Coastal storms, erosion, and tsunamis are mapped and profiled as a group since many of the same factors and risks are involved. Coastal storms can cause increases in tidal elevations, wind speed, and erosion. Between 1950 and 2005, there have been eight Proclaimed States of Emergency for weather/storms in San Diego County. In January and February of 1983, the strongest El Niño-driven coastal storms caused over \$116 million in beach and coastal damage. Other coastal storms that caused notable

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<sup>13</sup> County of San Diego (2007, August). Floodplain Management Plan.



damage occurred during the El Niño winters of 1977-1978, 1997-1998, and 2003-2004<sup>14</sup>.

Coastal erosion is the gradual wearing away of coastal land and occurs when more sediment is lost along a particular shoreline than is redeposited by the water body. The risk of damage due to coastal erosion in National City is very low because there are no steep cliffs along the shoreline.

Tsunamis are waves caused by fault disturbances along the ocean floor. They travel at very fast speeds until they reach the coastline, where their speed and wavelength decrease and their height increase greatly. The largest tsunami effect recorded in San Diego occurred on May 22, 1960, and had a maximum wave height of 2.1 feet. In this event, 80 meters of dock were destroyed and a barge sunk in Quivera Basin in Mission Bay. Damage does not necessarily occur in direct relationship to wave height. Other tsunamis have occurred in San Diego County with higher wave heights, but did not cause as much damage as the 1960 tsunami.

National City is relatively well protected from coastal storms and erosion because of its position within the San Diego Bay behind Coronado Island and the Silver Strand, an isthmus that connects Coronado to the main land. The tsunami risk primarily occurs along most of the coast and the mouths of Paradise Creek and Sweetwater River, as shown on Figure S-7.

## **FIRE AND EMERGENCY SERVICES**

### **Structure Fires and Wildfire**

There are several fire risk factors affecting the planning area. An increase in the population of minors and seniors has caused greater dependence issues, as seniors and children require more assistance when evacuating a structure. The high cost of housing has led to the overcrowding of homes. In addition, approximately 85% of the homes in National City are over 30 years old, and approximately 43% are over 50 years old<sup>15</sup>. This is the age at which electrical and heating systems are more likely to cause fires, if not properly maintained<sup>16</sup>.

<sup>14</sup> County of San Diego. (2010, January). Multi-Jurisdiction Hazard Mitigation Plan, Final Draft.

<sup>15</sup> U.S. Census Bureau, American FactFinder. (2000.) Census 2000, Summary File 3. Retrieved May 3, 2010 from: <http://factfinder.census.gov/home/en/datanotes/expsf3.htm>.

<sup>16</sup> Citygate Associates, LLC (2009, January). Fire Response Study for the National City Fire Department.

Figure S-8 identifies the concentration of structure fire incidents between April 2005, and March 2008, in the planning area. The fire incidents during this time period were spread throughout the planning area, entirely east of I-5. The exhibit shows that structure fire risk is relatively similar everywhere within the non-industrial portions of the city.


The planning area has pockets of grass, brush and trees in between developed areas and in the hills located to the east. The proximity of native vegetation and the climate of the region contribute to a moderate to high risk of wildfire in the planning area, as illustrated on Figure S-9.<sup>17</sup> The greatest risk for wildfires is within the southeastern portion of the planning area, due to its proximity to the Sweetwater Regional Park and other areas with higher concentrations of native vegetation. The remaining portion of the planning area contains a moderate risk for wildfires.

### Fire Protection and Emergency Medical Services

The City’s Fire Department provides fire protection and emergency medical services in National City and the lower Sweetwater Fire Protection District, which covers the unincorporated area of Lincoln Acres. There are two fire stations serving the planning area. Station 34 is located at 343 East 16<sup>th</sup> Street, and Station 31 is located at 2333 Euclid Avenue in unincorporated Lincoln Acres. The administration office is located at 1243 National City Boulevard. The Fire Department is comprised of three divisions: Administration, Fire Prevention, and Operations, and maintains a staff of 49 personnel that provide fire control, emergency medical service, rescue, and fire prevention and education.

The Fire Department is dependent on automatic aid and mutual aid partners, typically from San Diego, Chula Vista, Federal Fire, and the Bonita Fire Protection District. From fiscal year 2005/2006 through fiscal year 2007/2008, the National City Fire Department had a response time of seven minutes 45 seconds 90 percent of the time for 911-emergency calls.

Prior to approval of a development project or issuance of a building permit, the City of National City Fire Department and the Sweetwater Authority verify that the peak load water supply requirement can be met. Fire flow requirements vary depending on a number of factors such as a building’s use, size, type of construction, building

  
**Peak load water supply** – The supply of water available to meet both domestic water and fire fighting needs during the particular season and time of day when domestic water demand on a water system is at its peak. (Governor’s Office of Planning and Research)

<sup>17</sup>County of San Diego. (2010, January). Multi-Jurisdiction Hazard Mitigation Plan, Final Draft.





material, and density. The National City Fire Department issues fire flow requirement letters to building contractors identifying the fire flow requirements for specific building types, and the Sweetwater Authority reviews and comments on those letters to ensure that its water mains have the capability to handle those requirements.<sup>18</sup>

The National City Fire Department contracts with a private ambulance provider, to provide emergency medical services to the planning area. Fire department personnel typically arrive on scene first and provide basic and advanced life support services. When paramedic ambulance crews arrive to provide advanced life support services, fire department personnel regularly assist.

In most instances, depending on staffing levels, the Fire Department provides a paramedic on both Engine 34 and Engine 31, in addition to paramedic services on ambulances provided by the ambulance provider.

#### **EMERGENCY AND DISASTER PREPAREDNESS AND RESPONSE**

During fiscal year 2005-2006, the President directed the Secretary of the Department of Homeland Security to develop and administer a National Incident Management System (NIMS), which provides a consistent nationwide approach for federal, state, local, and tribal governments to work together more effectively and efficiently to prevent, prepare for, respond to, and recover from disasters. National City has integrated NIMS into the emergency management system by providing all Emergency Operations Center (EOC) staff members with appropriate NIMS training. EOC staff members may perform multiple functions when the EOC is activated. Each City Department has assigned functions and positions. The goal is to have three individuals trained for each EOC position to allow for sustained 24 hour, 7 day-a-week EOC operations. The EOC manages the Department Operations Centers (DOCs), when they are activated, who in turn manage the field operations. The EOC requests additional resources from the County EOC when necessary<sup>19</sup>.

The City adopted an updated Emergency Operations Plan in May 2010. The plan describes a comprehensive emergency management system which provides for a planned response to disaster situations associated with natural disasters, technological incidents, and nuclear-related incidents. It

<sup>18</sup> Hernandez, Robert. (2009, February 9). National City Fire Department. Personal Communication.

<sup>19</sup> Amedee, Walter (2009, October 14). National City Fire Department. Personal communication.

describes the overall responsibilities for protecting life and property and assuring the overall well being of the population. The plan also identifies the sources of outside support that might be provided by other jurisdictions as well as the private sector<sup>20</sup>.

**CRIME PREVENTION AND POLICE PROTECTION**

According to the National City Police Department, the total violent and property crime incidents in the City decreased in 2009 from 2008 (see Table S-1, below).

The National City Police Department considers gang activity to be one of the root causes of violent crime problems in National City. There are four gangs and approximately 650 known gang members in National City<sup>21</sup>.

**TABLE S-1  
Crime Incidents in National City (2005-2009)**

Offense	2005	2006	2007	2008	2009
<b>Violent Crime</b>					
Homicide	4	2	6	0	2
Rape	16	9	19	24	14
Robbery	182	211	180	183	194
Aggravated Assault	254	302	219	278	216
<b>Total Violent</b>	<b>456</b>	<b>524</b>	<b>424</b>	<b>485</b>	<b>426</b>
<b>Property Crime</b>					
Burglary	376	453	379	365	307
Larceny	1409	1125	842	1024	1,051
Motor Vehicle Theft	941	885	948	793	565
Arson	15	12	8	4	NR
<b>Total Property</b>	<b>2741</b>	<b>2475</b>	<b>2177</b>	<b>2186</b>	<b>1623</b>

Source: Abruscato, Karen. (2009). National City Police Department.  
NR = Not Reported

**Crime Prevention through Environmental Design**

Crime prevention through environmental design (CPTED) is a multi-disciplinary approach to reducing crime and increasing

<sup>20</sup> City of National City. (2000). Emergency Plan.

<sup>21</sup> Abruscato, Karen. (2009). National City Police Department.



perceived safety. It seeks to dissuade offenders from committing crimes by manipulating the physical environment in which those crimes occur.<sup>22</sup> The three most common built environment strategies applied in CPTED are natural surveillance, natural access control and natural territorial reinforcement. Natural surveillance increases the perceived threat of apprehension to a criminal, who believes he can be seen. Natural surveillance can be implemented by designing sites in such a way as to maximize visibility and foster social interaction among legitimate users of both private and public space. Natural access control attempts to limit the opportunity for crime by taking steps to clearly differentiate between public space and private space. It is accomplished through the conscientious placement of entrances and exits, fencing, lighting and landscaping, as to limit access or control flow of ingress and egress to an area. Finally, territorial reinforcement promotes social control through a heightened definition of space and ownership. An environment designed to clearly delineate private space creates a sense of ownership. “Owners” typically have a vested interest and are more likely to challenge intruders. Also, it creates an environment where “strangers” or “intruders” stand out and are more easily identified.

### Police Protection

The National City Police Department employs 92 officers and 43 professional staff members. The police station is located at 1200 National City Boulevard. The Department’s actual average response times are divided into five categories (see Table S-2). The Department seeks to maintain a response time of less than six minutes for Priority 1 calls. Presently, this response time is being met.

**TABLE S-2**  
**Actual Average Police Response Times**  
**(January 1-June 30, 2009)**


Category	Time
Priority 1 – Emergency	5:04
Priority 2 – Urgent	9:06
Priority 3 – Serious	21:34
Priority 4 – Non-Urgent	38:00
Priority 5 – Self-Initiated/Other	3:38


Note: Priority-5 usually occurs when an officer makes his own stop and it is called into dispatch for accountability purposes; therefore, it has a fast response time.


<sup>22</sup> International Clearinghouse on Crime Prevention through Environmental Design. (n.d.) *FAQs*. Retrieved April 8, 2010 from <http://www.thecptedpage.wsu.edu/>.



Source: Abruscato, Karen. (2009). National City Police Department.

  
**Hazardous Material** - A substance that is toxic, ignitable or flammable, or reactive and/or corrosive. (State of California)

  
**Radiation** - any form of energy propagated as rays, waves or energetic particles that travel through the air or a material medium.

  
**Hazardous Materials Facilities** - Facilities that manufacture, store or routinely utilize hazardous materials in their operations.

## HAZARDOUS MATERIALS, BROWNFIELDS AND MILITARY INSTALLATIONS

### Hazardous Materials Facilities and Transport

Hazardous materials include toxic chemicals, radioactive materials, infectious substances and hazardous wastes. Health and environmental risks associated with hazardous materials are related to releases that can occur at facilities (fixed site) or along transportation routes (off-site). Releases can occur as a result of human carelessness, technological failure, intentional acts, and natural hazards. Hazardous materials releases, depending on the substance involved and type of release, can directly cause injuries and death and contaminate air, water, and soils<sup>23</sup>.

Some hazardous materials present a radiation risk. Radioactive materials, if handled improperly, or if radiation is accidentally released into the environment, can be dangerous because of the harmful effects of certain types of radiation on the human body. Figure S-10 illustrates toxic/radiologic plume areas within the planning area<sup>24</sup>.

Hazardous materials facilities are regulated by the San Diego County Department of Environmental Health’s (DEH) Hazardous Material Division (HMD). HMD’s primary goal is the protection of human health and the environment by ensuring that hazardous materials, hazardous waste, medical waste, and underground storage tanks are properly managed. There are a total of 13,034 sites with permits to store and maintain chemical, biological and radiological agents, and explosives in the County (permitted sites)<sup>25</sup>. Table S-3 summarizes permitted sites within both National City and the County overall and also illustrates the relative concentration of hazardous materials facilities within each area.

According to data compiled by the Environmental Health Coalition (EHC), National City has a greater number of hazardous materials facilities per square mile than the incorporated areas of San Diego County, particularly within the Westside (Old Town) neighborhood where some of these facilities are within close proximity to residential uses.

<sup>23</sup> County of San Diego. (2010, February). *Multi-Jurisdiction Hazard Mitigation Plan*, Final Draft.

<sup>24</sup> County of San Diego. (2010, February). *Multi-Jurisdiction Hazard Mitigation Plan*, Final Draft.

<sup>25</sup> County of San Diego. (2010, February). *Multi-Jurisdiction Hazard Mitigation Plan*, Final Draft.



Through implementation of National City's Westside Specific Plan, the city is in the process of addressing this mix of land uses that are part of the Westside neighborhood.

**Table S-3  
Permitted Sites**

	National City's Westside (as of April 2006) <sup>1</sup>	National City <sup>2</sup>	San Diego County (Total) <sup>2</sup>
Number of Permitted Facilities	71	376	13,034
Square Miles	0.36	8.58	691
Facilities per Square Mile	197	43.8	18.8

Source: 1. EHC, 2006; County of San Diego DEH. 2. *Multi-Jurisdiction Hazard Mitigation Plan*, Final Draft (2010, February).



**Brownfield** – Real property for which expansion, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous material, pollutant, or contaminant. (US Environmental Protection Agency)

Additionally, three freeways (i.e. I-5, I-805, and SR-54) and freight rail lines pass through the City, making it susceptible to hazardous spills, releases, or accidents. The major transit corridors of I-5 and I-805 have been the locations of the majority of incidents that the County's Hazardous Incident Response Team (HIRT) has responded to in recent years.<sup>26</sup>

### Brownfields

Brownfields, in addition to being contaminated, or thought to be contaminated, are generally underutilized due to perceived remediation costs and liability concerns. Due to National City's industrial and shipping-based history, a substantial amount of the acreage west of I-805 contains brownfields.

National City's brownfields program is city-wide, but in recent years has targeted three areas: the Downtown (150 acres), the Harbor (317 acres) and the Westside (165 acres). This program is continuing to develop its tools, such as grant funding, targeted site assessments, and a revolving loan fund to assess and remediate impacted lands. The Brownfields Program provides information to the general public and assists developers in completing brownfield redevelopment projects that are of benefit to the community<sup>27</sup>

### Military Installations

The military utilizes hazardous materials in its operations, including the powering of large ships and submarines. The

<sup>26</sup> County of San Diego. (2010, February). *Multi-Jurisdiction Hazard Mitigation Plan*, Final Draft.

<sup>27</sup> Beard, Patricia (2009, October 15). National City Redevelopment Department. Personal communication.

U.S. Navy’s Safety Department at Naval Base San Diego has responsibilities that include mishap investigation, reporting and recordkeeping, workplace inspections, hazardous material control and management, employee reports of unsafe/unhealthy working conditions, relations with federal Occupational Safety and Health Administration (OSHA) officials, and training<sup>28</sup>.

## C. Citywide Goals and Policies

### SEISMIC AND GEOLOGIC HAZARDS

**Goal S-1: Minimized risk to the community from earthquakes, seismic, and geologic hazards.**

**Policy S-1.1:** Rely on the most current and comprehensive geologic hazard mapping available to assist in the evaluation of potential seismic hazards (including, but not limited to, surface rupture, ground shaking, ground failure, and seiche) associated with new development and redevelopment.

**Policy S-1.2:** Enforce development standards and building restrictions as a means to limit seismic-related risks to acceptable levels.

**Policy S-1.3:** Require new development and redevelopment to comply with recognized standards for geologic hazards, soils (including but not limited to subsidence and liquefaction), and seismic hazards to ensure public safety.

**Policy S-1.4:** Control site preparation procedures and construction phasing to reduce erosion and exposure of soils to the maximum extent possible.

**Policy S-1.5:** Minimize potential safety hazards (such as slope instability, mudslides, and land slides) and disturbance of the natural terrain through specific development regulations for hillsides with steep slopes (greater than 25 percent grade).

**Policy S-1.6:** Identify unreinforced masonry buildings and other structures that would be at risk of collapse during seismic events and encourage the removal or retrofitting of these structures, as deemed appropriate.

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<sup>28</sup> Naval Base San Diego (n.d.). Safety. Retrieved February 12, 2010 from <https://www.cnmc.navy.mil/sandiego/Programs/Operations/Safety/index.htm>.



**Policy S-1.7:** Encourage earthquake preparedness within the community.

**Why is this important?**

Approximately 15,776 homes and 892 businesses in National City have the potential to be affected by earthquakes or other seismic hazards, including shaking, liquefaction and landslides<sup>29</sup>. Identifying the risks, implementing prevention measures, and preparing for seismic events will help to minimize losses associated with these hazards.

**FLOOD HAZARDS AND INUNDATION**

**Goal S-2: Minimized hazards relating to flooding and inundation.**

**Policy S-2.1:** Prioritize funding and implementation of needed flood control and drainage improvements.

**Policy S-2.2:** Ensure that new development adequately provides for on- and off-site mitigation of potential flood hazards and drainage problems.

**Policy S-2.3:** Locate new infrastructure and essential public facilities, including hospitals and healthcare facilities, outside of flood hazard zones, when feasible, or ensure that construction and other development methods are utilized, which minimize potential damage to such facilities, so as to maintain the structural and operational integrity of essential public facilities during flooding.

**Policy S-2.4:** Adopt regulations that limit the risk of loss to reasonable levels within mapped floodplain hazard areas or areas subject to potential inundation by levee failure, dam failure, or as the result of a tsunami.

**Policy S-2.5:** Encourage modifications to floodways to restore creek capacity, stabilize creek banks, and restore habitat or water quality, where feasible.

**Policy S-2.6:** Allow for modification of the land within the 100-year flood zone where necessary to protect the safety of existing and future developments.

<sup>29</sup> County of San Diego. (2010, January). Multi-Jurisdiction Hazard Mitigation Plan, Final Draft.



**Policy S-2.7:** Require new development and significant redevelopment projects to assess stormwater runoff impacts on the local and regional storm drain and flood control system, and to develop detention and drainage facilities to ensure that increased risks of flooding do not result from development.

**Policy S-2.8:** Promote the use of bioswales, tree wells, green roofs, and other infiltration mechanisms to reduce of the volume of stormwater runoff. .

**Policy S-2.9:** Prohibit the construction of flood barriers within the 100-year flood zone which would divert flood water or increase flooding in other areas.

**Policy S-2.10:** Consult with other responsible agencies to construct creek improvements to protect public health and safety while maintaining or restoring creeks to their natural state, where feasible.

**Policy S-2.11:** Establish cooperative working relationships among responsible agencies (e.g., U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, California Department of Water Resources) and support existing efforts to mitigate floods.

**Why is this important?**

Approximately 3,600 homes, 380 businesses, and 50 critical facilities in National City are located within either the 100-year or 500-year floodplain and are; therefore, at risk for flooding. An additional 500 residential buildings, 180 commercial buildings, and 50 critical facilities within the City are at risk for inundation due to dam failure.<sup>30</sup> Regulating development in areas at risk for flooding and inundation reduces potential damage and loss of life and property.

Tsunami risk exists primarily along the City’s waterfront, most of which is under Port or Navy jurisdiction. Approximately, 1,300 people, five commercial buildings and five critical facilities are located within an area subject to tsunami risk, as illustrated on Figure S-5. A tsunami could potentially have deleterious effects on the maritime industry, which is concentrated in this area.

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<sup>30</sup> County of San Diego. (2010, January). Multi-Jurisdiction Hazard Mitigation Plan, Final Draft.





## FIRE AND EMERGENCY MEDICAL SERVICES

**Goal S-3: Minimized wildland and urban structural fire risk and increased protection of lives and property.**

**Policy S-3.1:** Add or expand fire stations and equipment, as necessary and as fiscal and staffing resources allow, to ensure adequate fire response coverage.

**Policy S-3.2:** Ensure daily staffing needs are met for the City's fire stations in order to achieve service standards, as fiscal resources allow.

**Policy S-3.3:** Consult with the Sweetwater Authority to upgrade water mains and install fire hydrants as necessary.

**Policy S-3.4:** Maintain and enforce standards for weed and brush abatement to provide clearances around structures and minimize fire hazard risk.

**Policy S-3.5:** Enforce the City's fire code including minimum road width standards for fire equipment access.

**Policy S-3.6:** Support housing rehabilitation programs that reduce structural fire risks due to heating or electrical problems.

**Policy S-3.7:** Promote fire prevention through public education programs.

### **Why is this important?**

Approximately 15,750 homes, 880 businesses, and 125 critical facilities are at moderate to high risk from wildfire in National City, as illustrated on Figure S-9<sup>31</sup>. San Diego County has experienced serious losses due to wildfires in the past, especially in 2003 and 2007, when multiple wildfires simultaneously burned through the county and resulted in the destruction of thousands of residential and commercial buildings. Fires also contribute to respiratory ailments, as they generate and disperse fine particulate matter, carbon monoxide, and other irritants. Due to the large proportion of older buildings in National City, there is a higher risk for structure fires.

<sup>31</sup> County of San Diego. (2010, January). Multi-Jurisdiction Hazard Mitigation Plan, Final Draft.

**Goal S-4: High-quality emergency and pre-hospital medical services for National City residents.**

**Policy S-4.1:** Participate in regional planning efforts to ensure that quality emergency and pre-hospital medical care is available to National City residents.

**Policy S-4.2:** Work towards achieving a standard response time for the first-due unit of arriving within seven minutes 90 percent of the time from the receipt of a 911 emergency call for medical patients and/or small fires, and work towards achieving at least 14 personnel arriving within 11 minutes 90 percent of the time from the receipt of a 911 emergency call for a multi-unit response.

**Policy S-4.3:** Expand and maintain the existing National City Fire Department Paramedic Program to have at least one paramedic on the two fire engines and fire truck every day.

**Why is this important?**

The sooner a seriously injured or sick person receives help, the more likely he or she is to survive. Emergency medical personnel can mean the difference between life and death by offering several immediate medical services, depending on a patient's condition. Paramedics also monitor and care for a patient in the ambulance while transporting him or her to the hospital.

**EMERGENCY AND DIASTER PREPAREDNESS AND RESPONSE**

**Goal S-5: Minimized loss of life and property and disruptions in the delivery of vital public and private services during and following emergencies and disasters.**

**Policy S-5.1:** Work with other emergency response agencies to ensure adequate response coverage throughout the city and efficient utilization of public safety facilities and services.

**Policy S-5.2:** Consult with San Diego County, the U.S. Navy, and other appropriate agencies regarding disaster preparedness planning, to establish evacuation routes for all types of emergencies, and to ensure the health and safety of residents during an emergency.

**Policy S-5.3:** Strengthen disaster planning and training activities by City departments.



**Policy S-5.4:** Work with the County of San Diego each time the Multi-Jurisdictional Hazard Mitigation Plan is revised and updated.

**Policy S-5.5:** Promote public safety through community education programs.

**Policy S-5.6:** Adopt and enforce requirements for emergency access in new development and redevelopment.

**Why is this important?**

In the event that a crisis occurs, a prompt and effective response from emergency personnel can reduce trauma, bring order to chaos, and can be the determining factor between life and death.

**CRIME PREVENTION AND POLICE PROTECTION**

**Goal S-6: Minimized threats to public safety from criminal activities.**

**Policy S-6.1:** Promote the use of Crime Prevention through Environmental Design concepts, including, but not limited to:

- Establishing public spaces that encourage activity coordination, site cleanliness, rapid repair, and removal or refurbishment of decayed physical elements.
- Providing for natural surveillance of outdoor spaces through proper placement of windows in surrounding buildings, lighting, and landscaping.
- Establishing natural access controls into and around private property through the use of doors, shrubs, fences, and gates.
- Distinguishing between private and public space through the use of landscaping, front porches, and other design elements, where appropriate.

**Policy S-6.2:** Encourage city residents to form neighborhood watch programs.

**Policy S-6.3:** Strive to meet staffing ratios and response times that accommodate the demands of continued growth and development, tourism, and other events requiring police services:

- Work to achieve a service ratio of two officers per 1,000 population as fiscal resources allow.
- Strive for a standard response time of less than six minutes for Priority 1 police calls as staffing and fiscal resources allow.

**Policy S-6.4:** Support the establishment of additional police stations or local satellite or storefront police offices as necessary and feasible to enhance community safety and meet established service standards.

**Policy S-6.5:** Maintain an active participatory role for the Police Department in the community to the extent budgeting and staffing allows.

**Policy S-6.6:** Encourage programs for at-risk youth.

**Why is this important?**

Proper design and effective use of the built environment can lead to a reduction in the incidence and fear of crime. Safe, clean, and attractive neighborhoods promote bustling public spaces. When places are active with people and provide clear visibility into and out of public spaces, potential offenders are less likely to commit crimes because of all the “eyes-on-the-street.” Bad behavior is deterred due to the higher risk of getting caught.

**HAZARDOUS MATERIALS, BROWNFIELDS, AND MILITARY INSTALLATIONS**

**Goal S-7: Minimized risks to life, property, and the environment associated with the storage, transport, and disposal of hazardous materials.**

**Policy S-7.1:** Promote hazardous waste minimization and use of best available technology in City operations.

**Policy S-7.2:** Continue to consult with the County and other appropriate agencies in the administration and enforcement of hazardous materials permit requirements.

**Policy S-7.3:** Facilitate coordinated, effective response to hazardous materials emergencies in the City to minimize health and environmental risks.

**Policy S-7.4:** Promote public awareness of emergency preparedness in the event of a hazardous materials release.



**Policy S-7.5:** Ensure the compatibility of uses which store, collect, treat, or dispose of hazardous materials with adjacent uses.

**Policy S-7.6:** Consider environmental justice issues as they are related to potential health impacts associated with land use decisions, including enforcement actions, to reduce the adverse health effects of hazardous materials on residents regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location.

**Policy S-8.7:** Work with the U.S. Navy to minimize public safety impacts from hazardous materials used in military operations.

**Goal S-8: The redevelopment of brownfields with appropriate uses that reduce safety hazards and enhance the character of the community.**

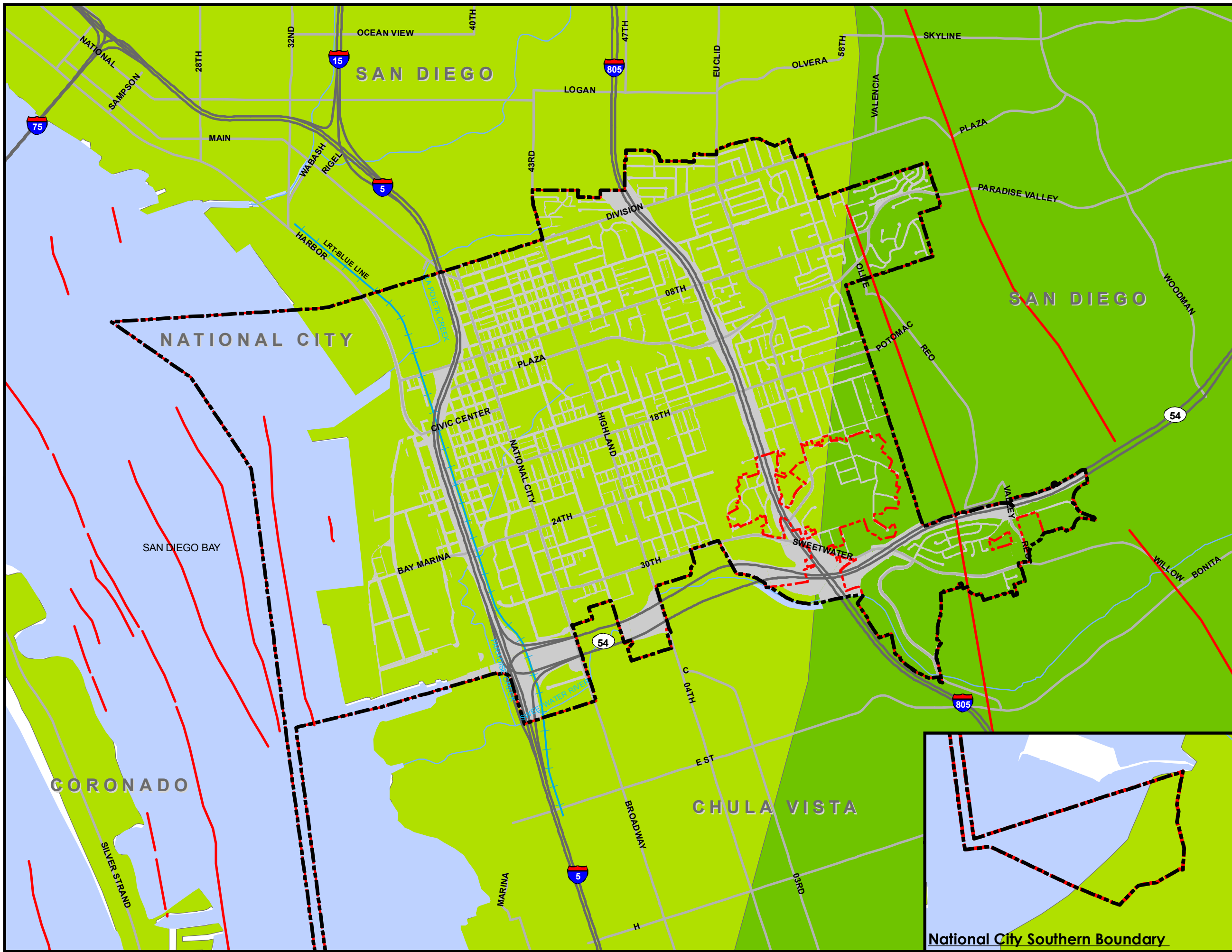
**Policy S-8.1:** Prioritize remediation and redevelopment of brownfield sites within and adjacent to residential and mixed-use areas.

**Policy S-8.2:** Require owners of contaminated sites to develop a remediation plan, as required by State and Federal law.

**Policy S-8.3:** Maintain an inventory of permitted and clean-up sites and monitor future uses at those locations.

**Why is this important?**

Proper storage, use, disposal, and transport of hazardous materials are necessary to reduce the risk of contamination to surface and groundwater, land resources, air, and environmentally sensitive areas. Serious injuries, loss of life and economic disruption can occur as a result of accidents related to hazardous materials. Educating residents about these dangers, minimizing exposure to hazardous materials, ensuring that County permitting requirements are met, and promoting awareness of emergency preparedness are all measures that will help to reduce the risks associated with hazardous materials.



### Legend

**Earthquake Faults**

- Fault Lines

**Probabilistic Peak Ground Acceleration**

- 20 (Low)
- 25 (Medium Low)

**Base Layers**

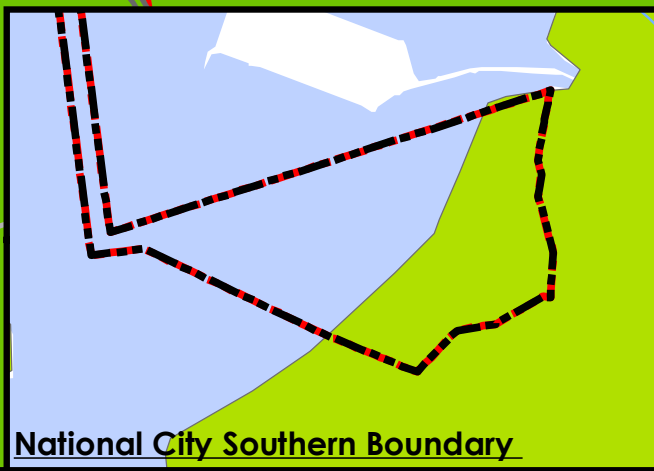
- National City Planning Area Boundary
- National City Boundary
- Freeways
- Major Roads
- Railroad

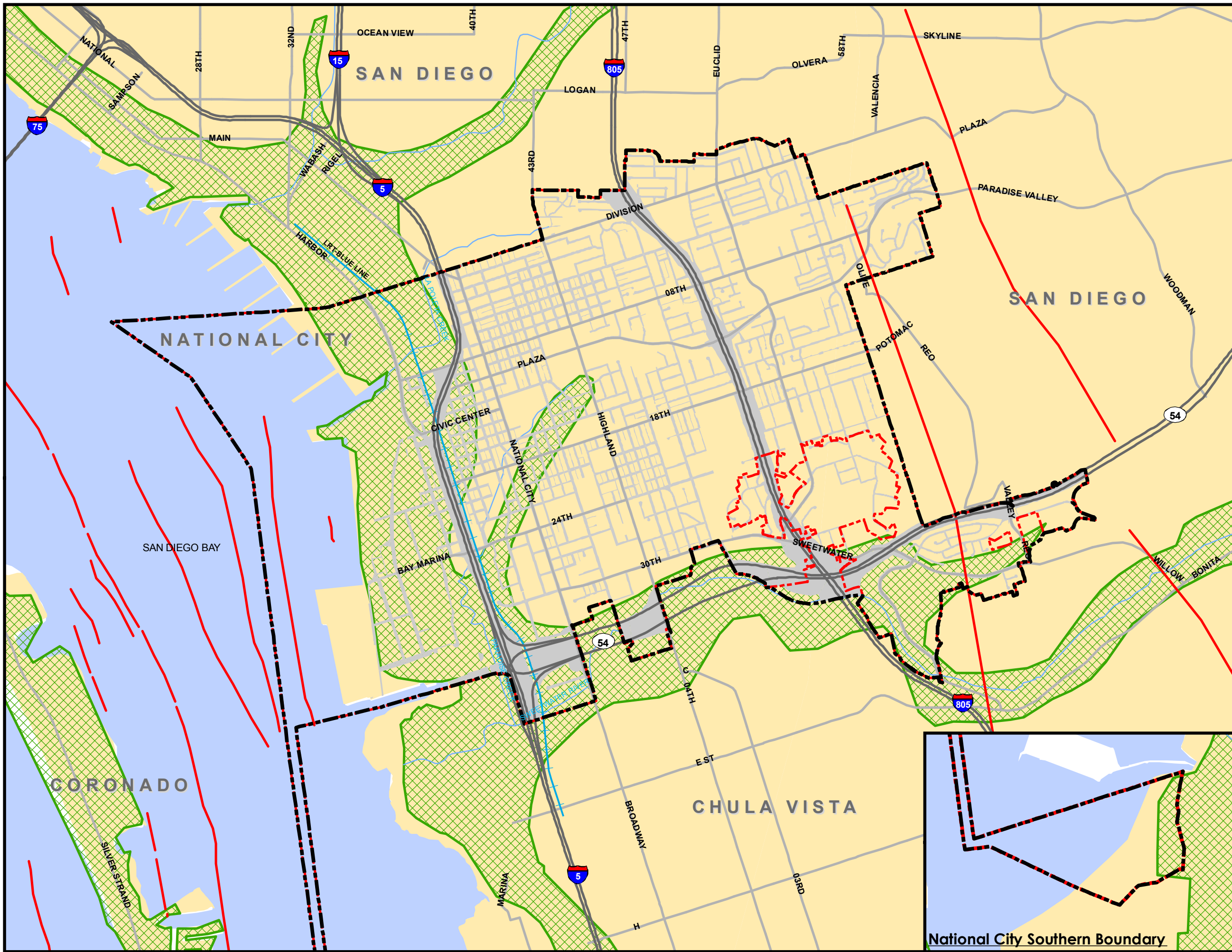
**Figure S-1**  
**Earthquake Hazard Map**

0 0.25 0.5 1  
 Miles

**NATIONAL CITY**  
 1837  
 INCORPORATED

X-XX





### Legend

**Earthquake Faults**  
 — Fault Lines

**Liquefaction Layers**  
 [Green cross-hatched box] NEHRP Soft Soil Types that may amplify effects of Earthquakes to Liquefaction

**Probabilistic Peak Ground Acceleration**  
 [Yellow box] 0.15 - 0.25 (Low Liquefaction Risk)

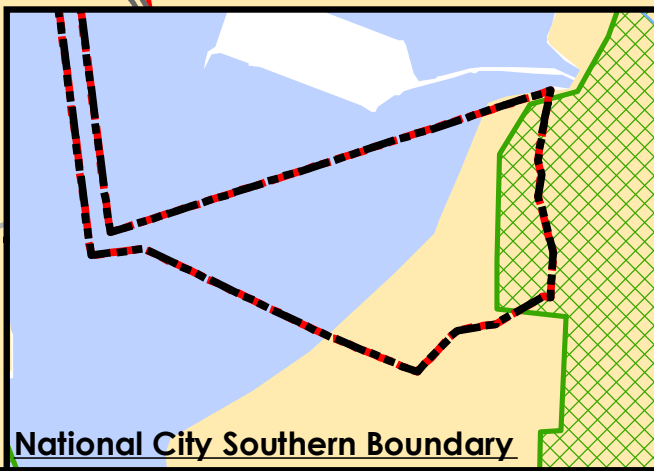
**Base Layers**  
 [Dashed black line] National City Planning Area Boundary  
 [Dashed red line] National City Boundary  
 [Thick grey line] Freeways  
 [Thin grey line] Major Roads  
 [Blue line with cross-ticks] Railroad

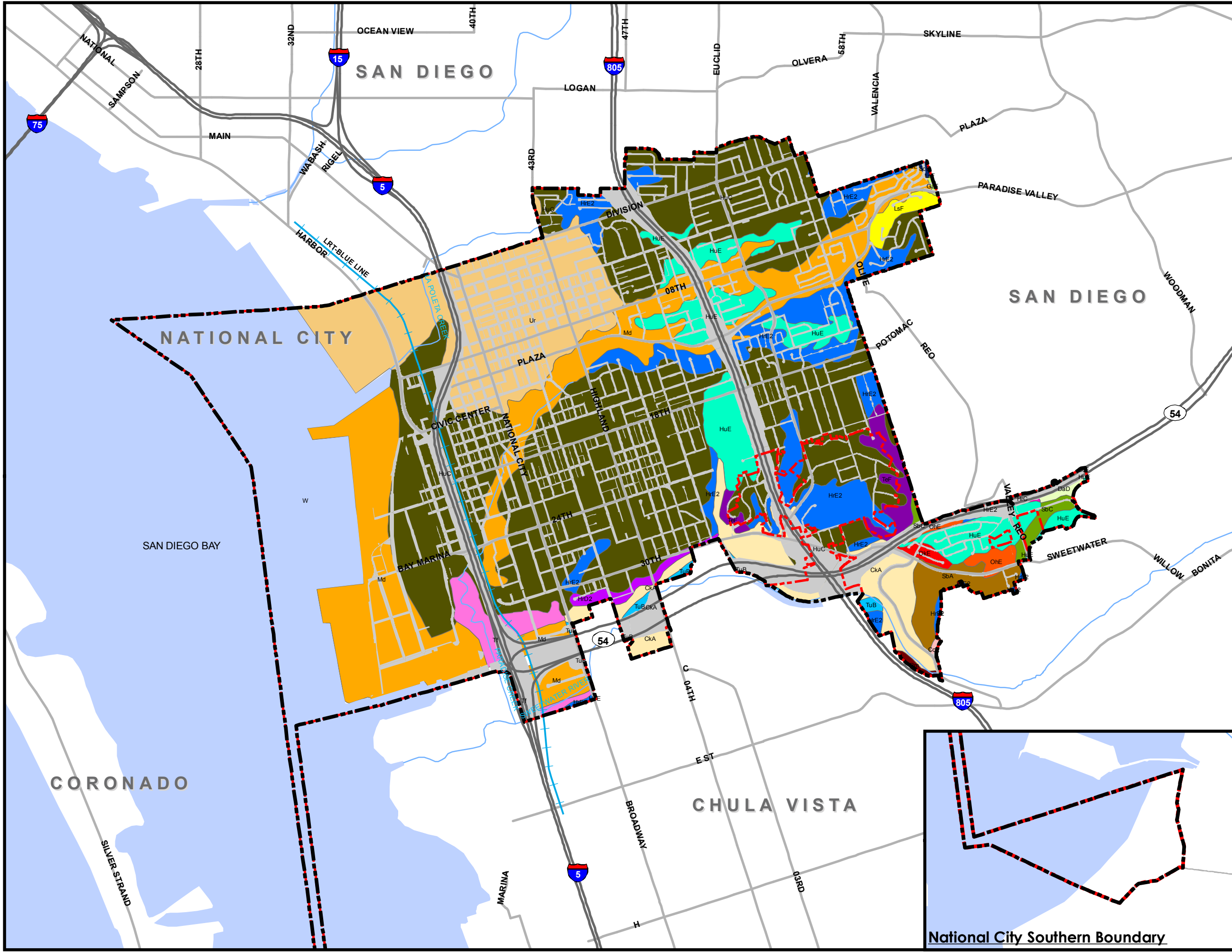
**Figure S-2**  
**Liquefaction Hazard Map**

0 0.25 0.5 1  
 Miles

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X-XX





### Legend

**Soils**

- CcE, Carlsbad-Urban land complex
- CkA, Chino silt loam saline
- DaD, Diablo clay
- DcF, Diablo-Urban land complex
- GaE, Gaviota fine sandy loam
- HrC, Huerhuero loam
- HrD2, Huerhuero loam
- HrE2, Huerhuero loam
- HuC, Huerhuero-Urban land complex
- HuE, Huerhuero-Urban land complex
- LsE, Linne clay loam
- LsF, Linne clay loam
- Md, Made land
- OhE, Olivenhain cobbly loam
- OkE, Olivenhain-Urban land complex
- Rm, Riverwash
- SbA, Salinas clay loam
- SbC, Salinas clay loam
- ScB, Salinas clay
- TeF, Terrace escarpments
- Tf, Tidal flats
- TuB, Tujunga sand
- Ur, Urban land

**Base Layers**

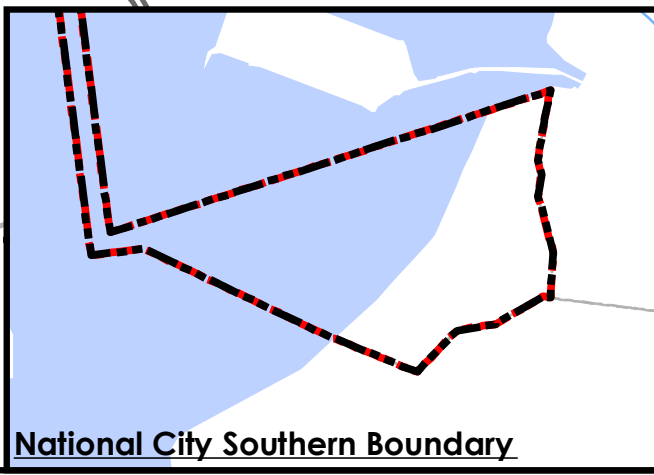
- National City Planning Area Boundary
- National City Boundary
- Freeways
- Major Roads
- Railroad

**Figure S-3  
Soils Map**

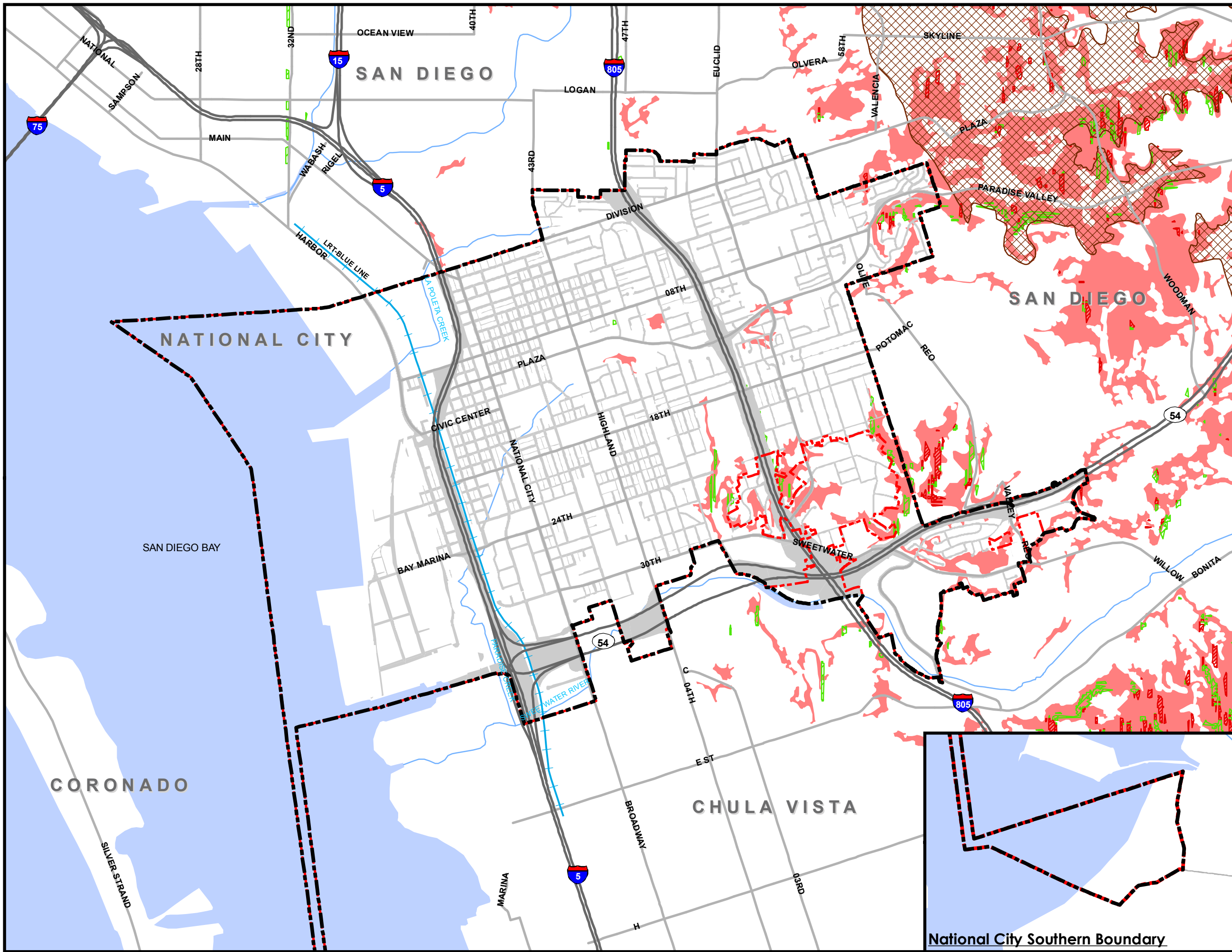
0 0.25 0.5 1  
Miles

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X-XX







### Legend

**Soil-Slip Susceptibility (USGS2003)**

- HIGH (Red hatched pattern)
- MODERATE (Green hatched pattern)

**Geohazards Layers**

- Landslides (Yellow hatched pattern)
- Slide Prone Formations (Cross-hatched pattern)
- Steep Slopes (+25%) (Red solid fill)

**Base Layers**

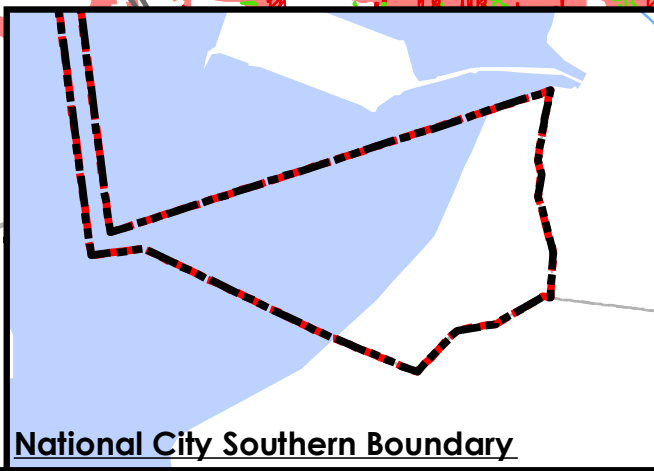
- National City Planning Area Boundary (Black dashed line)
- National City Boundary (Red dashed line)
- Freeways (Thick grey line)
- Major Roads (Thin grey line)
- Railroad (Blue line with cross-ticks)

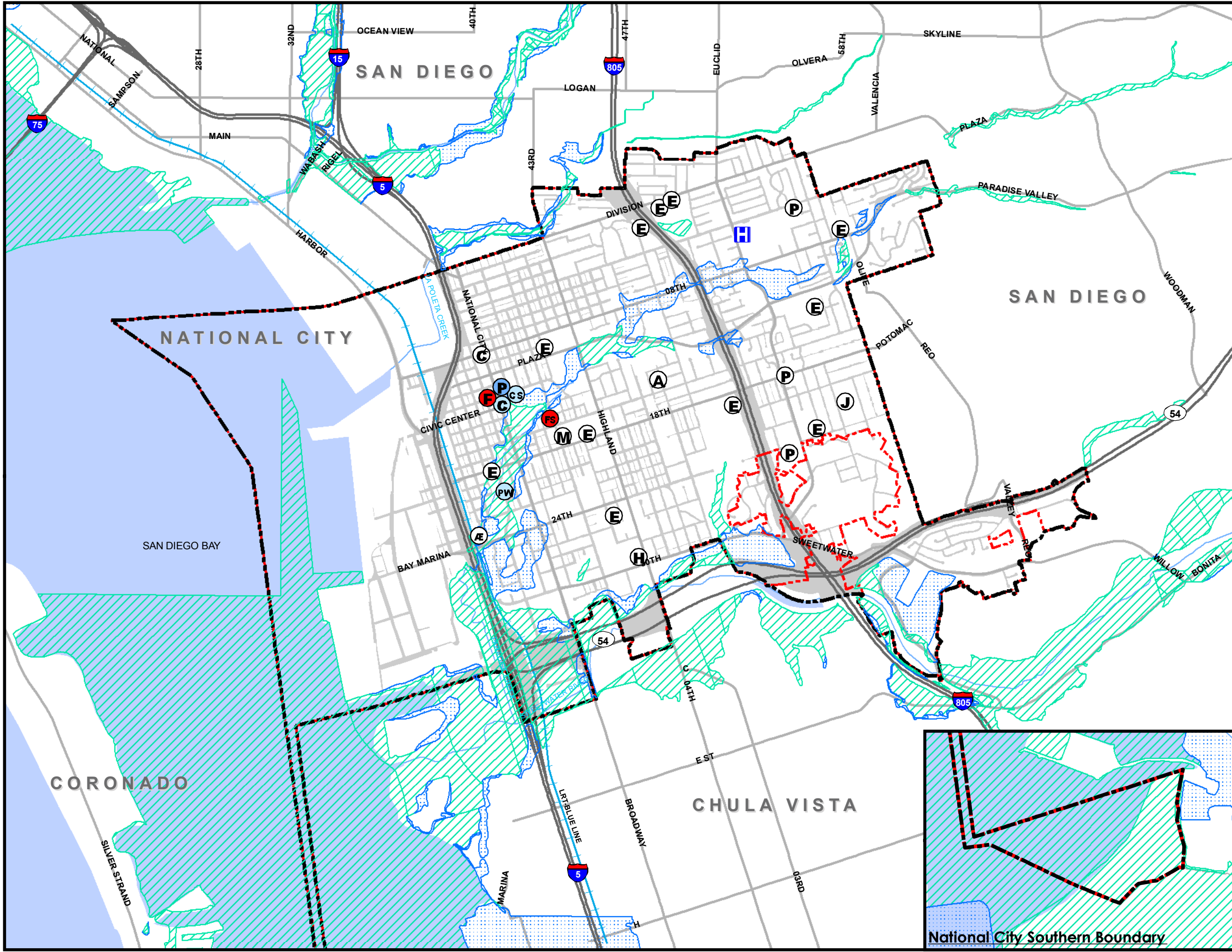
**Figure S-4  
Landslide Hazard Map**

0 0.25 0.5 1  
Miles

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X-XX





### Legend

**Flood Layers**

- FEMA FIRM 500-year Floodplain (Low Risk)
- FEMA FIRM 100-year Floodplain (High Risk)

**Critical Facilities**

City Facilities

- City Hall
- Community Services
- Public Works Department
- National City Police Department
- Fire Station 34
- National City Fire Department
- Hospital

Schools

- ADMINISTRATION
- ADULT ED
- COMMUNITY DAY
- ELEMENTARY
- HIGH SCHOOL
- JUNIOR HIGH
- MIDDLE
- PRIVATE

**Base Layers**

- National City Planning Area Boundary
- National City Boundary
- Freeways
- Major Roads
- Railroad

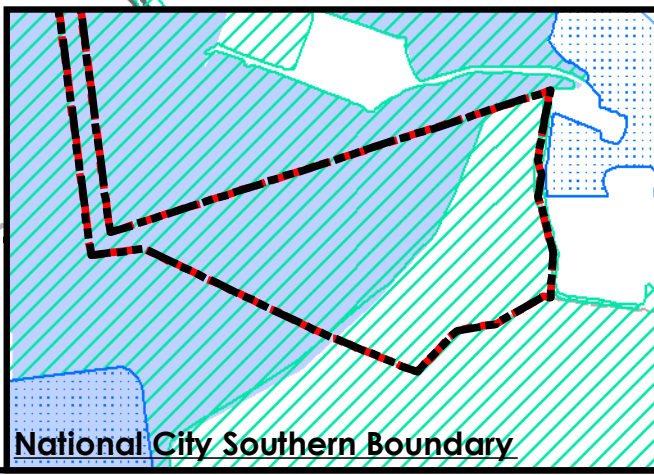
Source: Flood hazards delineated from FEMA FIRM panels 1903, 1904, 1911-1914, 1916, 1918 (Date: June 19, 1997)

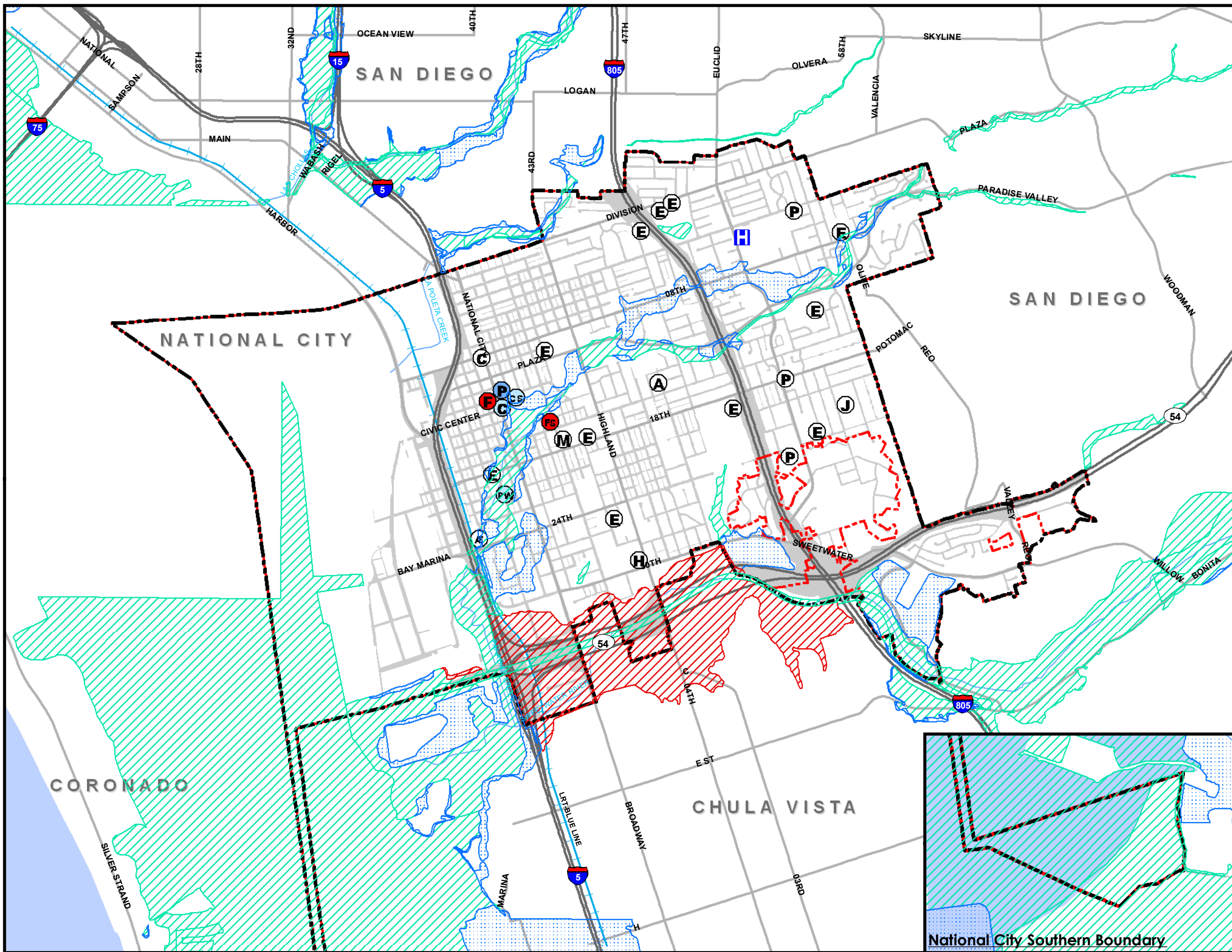
**Figure S-5-A  
Flood Hazard Zones**

0 0.25 0.5 1  
Miles

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X-XX





### Legend

**Flood Layers**

- FEMA FIRM 500-year Floodplain (Low Risk)
- FEMA FIRM 100-year Floodplain (High Risk)
- Area Protected By Levee

**Critical Facilities**

City Facilities

- C City Hall
- CS Community Services
- PW Public Works Department
- P National City Police Department
- FS Fire Station 34
- F National City Fire Department
- H Hospital

Schools

- A ADMINISTRATION
- E ADULT ED
- G COMMUNITY DAY
- E ELEMENTARY
- H HIGH SCHOOL
- J JUNIOR HIGH
- M MIDDLE
- P PRIVATE

**Base Layers**

- National City Planning Area Boundary
- National City Boundary
- Freeways
- Major Roads
- Railroad

Source: Flood hazards delineated from FEMA FIRM panels 1903, 1904, 1911-1914, 1916, 1918 (Date: June 19, 1997), and modified per flood boundary updates according to the following FEMA letter of map revisions (LOMRs): 1) Case No. 97-09-422P (April 9, 1997 and revalidated June 20, 1997), 2) Case No. 04-09-1445X (November 4, 2004), and 3) Case No. 08-09-1802P (July 8, 2009). Note: Flood boundaries are approximate in nature because graphic information was compiled from multiple sources. Refer to FEMA for detailed information.

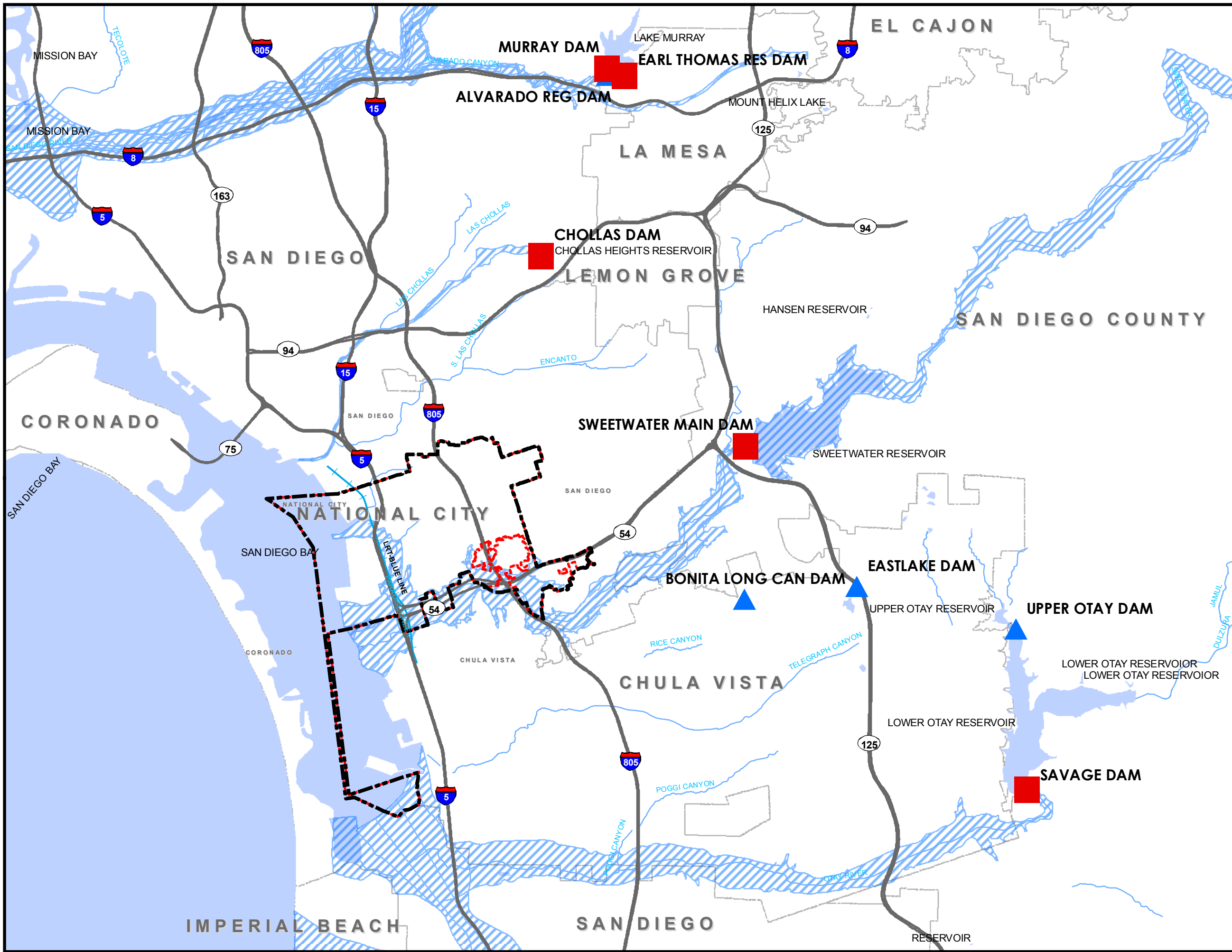
**Figure S-5-B  
Flood Hazard Zones**

0 0.25 0.5 1  
Miles

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National City Southern Boundary

X-XX



### Legend

**Dam Inundation Areas**  
 Dam Inundation Area (High Risk)

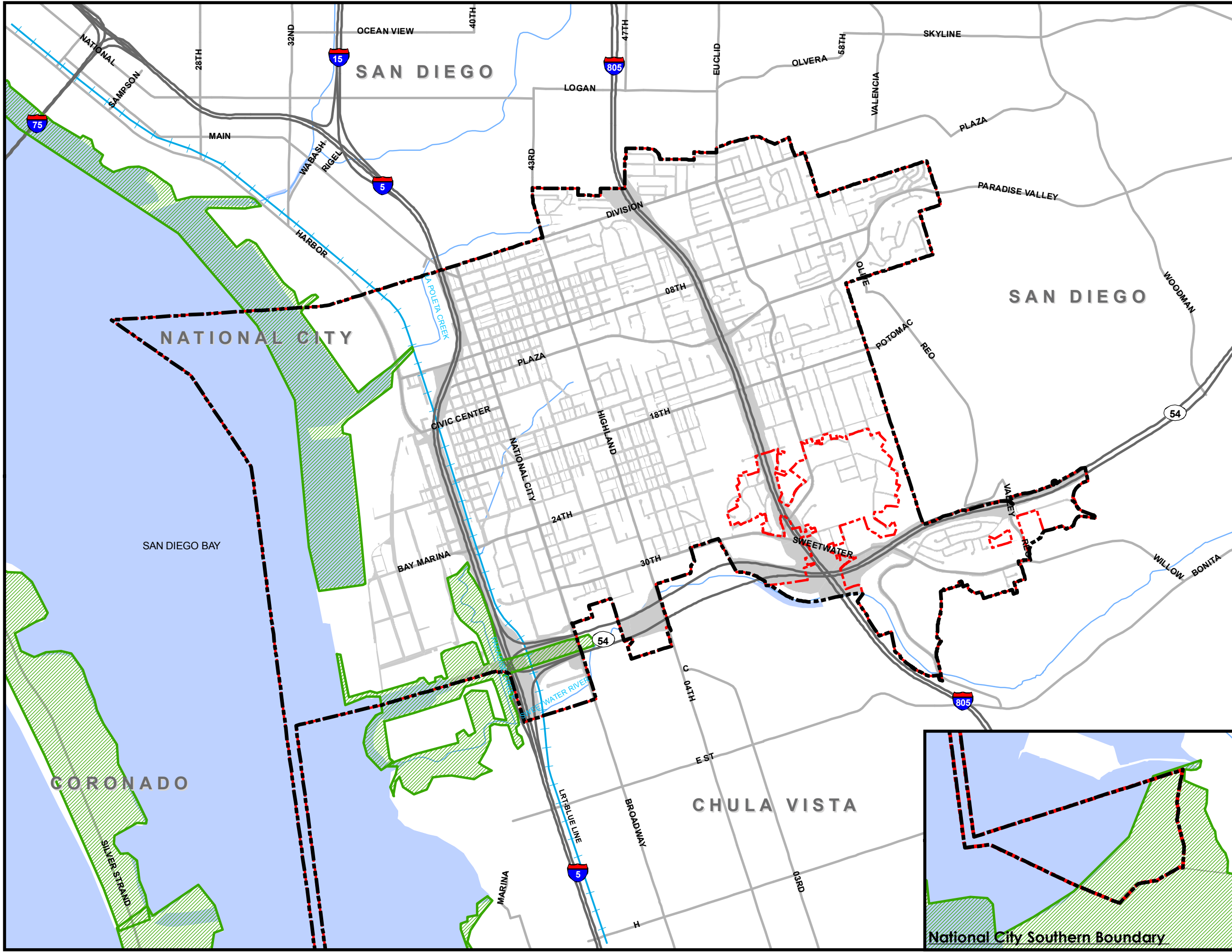
**Dam Location / Relative Hazard Rating**  
 High (Emergency Action Plan Required) And In Place  
 Significant (Emergency Action Plan Required) And In Place

**Base Layers**  
 National City Planning Area Boundary  
 National City Boundary  
 Freeways  
 Major Roads  
 Railroad

**Figure S-6**  
**Dam Failure Hazard Map**

0 0.75 1.5 3  
Miles

X-XX



### Legend

**Tsunami Layer**

- Maximum Tsunami Projected Runup (High Risk)

**Base Layers**

- National City Planning Area Boundary
- National City Boundary
- Freeways
- Major Roads
- Railroad

**Figure S-7**  
**Tsunami Hazard Map**

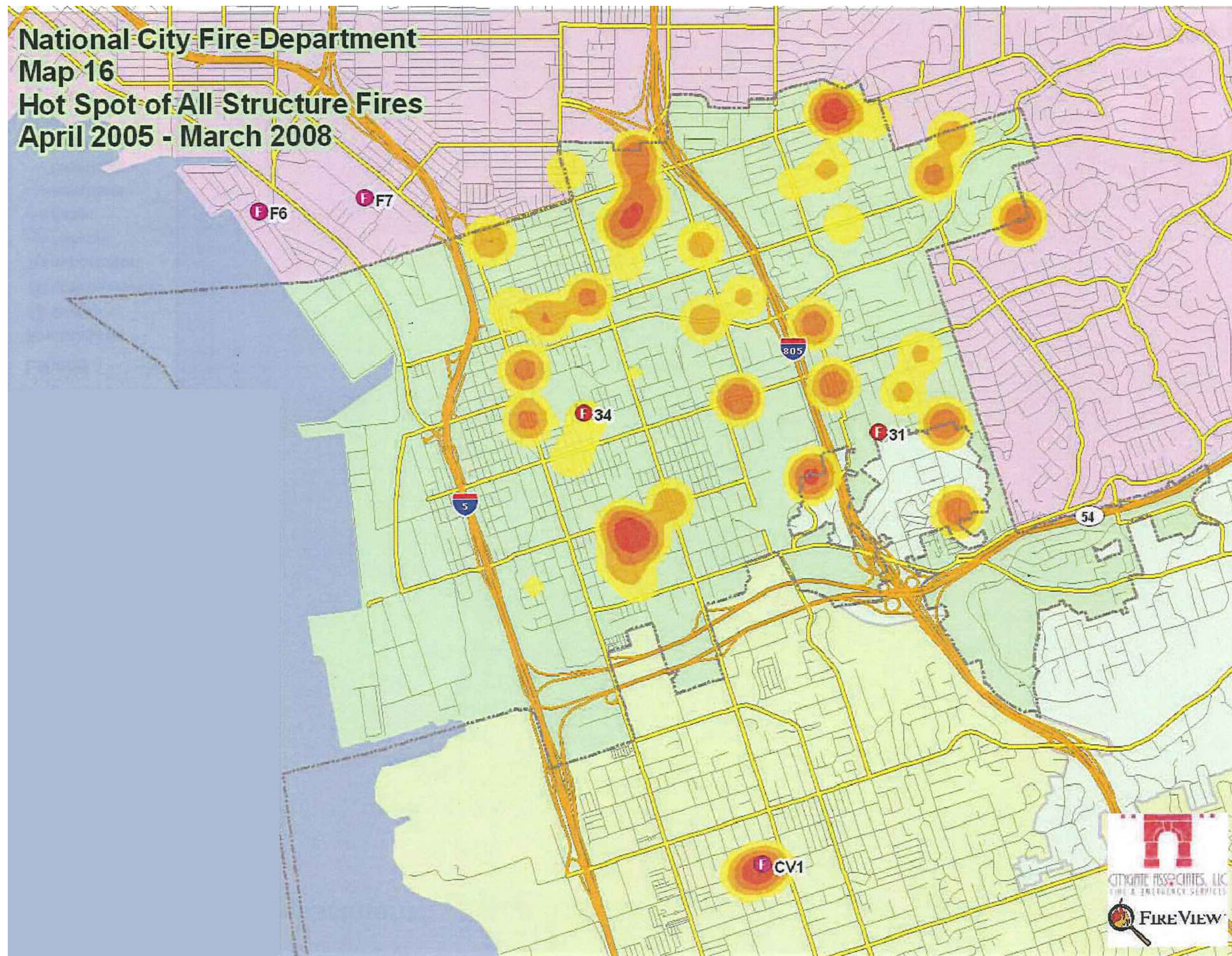
0 0.25 0.5 1  
Miles

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**National City Southern Boundary**

X-XX

**National City Fire Department  
Map 16  
Hot Spot of All Structure Fires  
April 2005 - March 2008**



**Legend**

**Legend**

**Fire Stations**

- Existing
- Other Departments

**Hot Spot of All Structure Fires  
Concentration of Incidents**

- Very High
- High
- Moderate
- Low
- None

**Transportation**

- Freeways
- Ramps
- Major Roads
- Local Roads

**Municipalities**

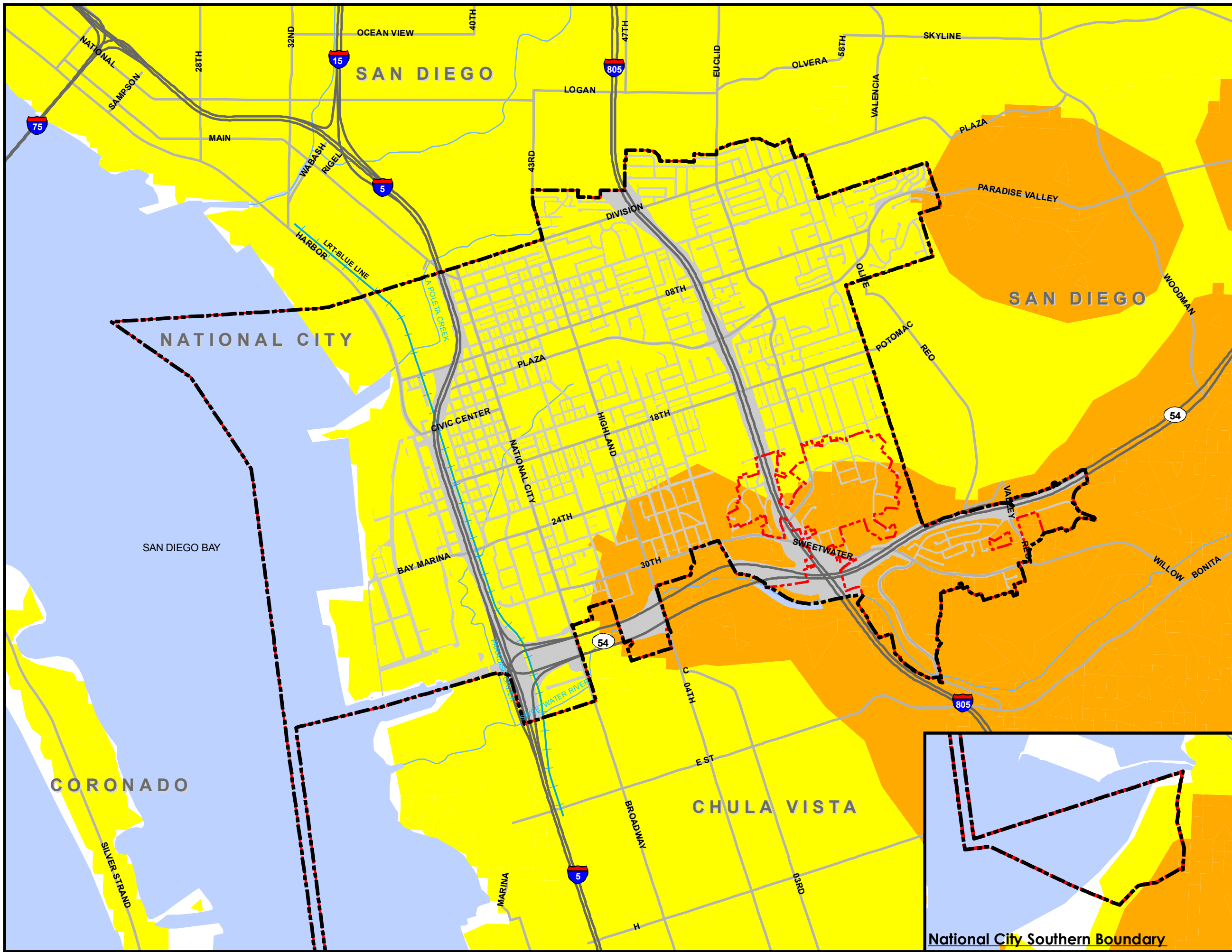
- NATIONAL CITY
- CHULA VISTA
- SAN DIEGO
- CORONADO
- S.D. COUNTY

**Figure S-8  
Hot Spot of All Structure Fires  
April 2005 - March 2008**

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X-XX





### Legend

**Fire Hazard Level**

- Moderate (Yellow)
- High (Orange)

**Base Layers**

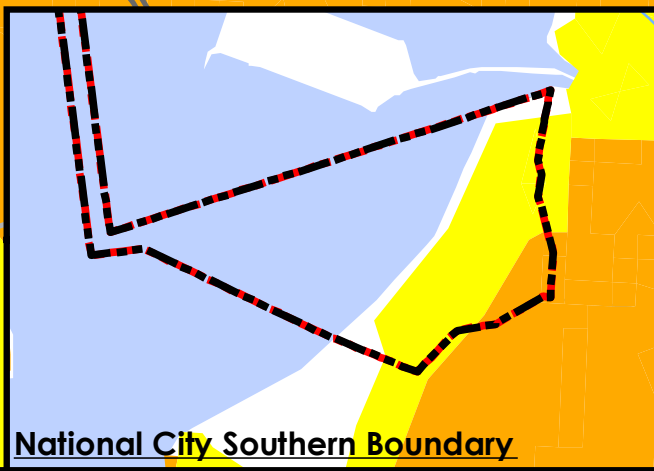
- National City Planning Area Boundary (Dashed black line)
- National City Boundary (Dashed red line)
- Freeways (Thick grey line)
- Major Roads (Thin grey line)
- Railroad (Blue line with cross-ticks)

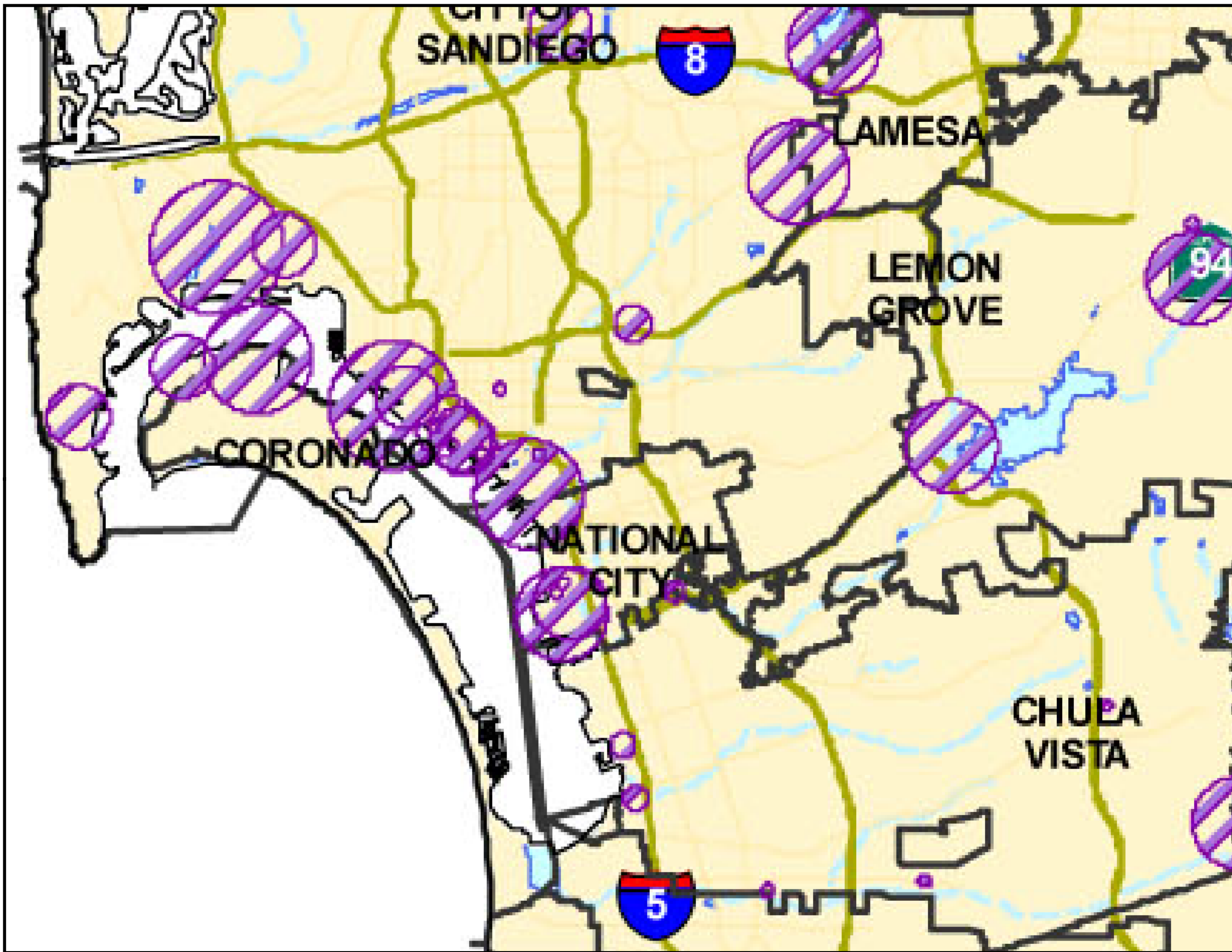
**Figure S-9  
Wildfire Risk**

0 0.25 0.5 1  
Miles

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X-XX





### Legend







-  Toxic or Radiologic Plume Area
-  Incorporated City Boundary
-  Streams
-  Freeways
-  Major Roads
-  Lakes

Figure S-10  
Toxic/Radiologic Hazard Map

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