



**City of Baldwin Park**  
**General Plan**  
**DRAFT Safety Element**





# Safety Element

City of Baldwin Park General Plan



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**Baldwin Park**

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growing safer • stronger • resilient

Public Review Draft June 2023



# Contents

<b>1. Introduction .....</b>	<b>1</b>
<b>2. Emergency Preparedness and Safety Services.....</b>	<b>4</b>
<b>3. Natural Hazards .....</b>	<b>11</b>
<b>4. Transportation Incidents.....</b>	<b>19</b>
<b>5. Hazardous Materials.....</b>	<b>21</b>
<b>6. Climate Change.....</b>	<b>24</b>
<b>7. Appendix A:</b>	
<b>Climate Change Vulnerability Assessment.....</b>	<b>27</b>

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## INTRODUCTION

Urban environments contain a variety of hazards, both natural and created by people, that have the potential to endanger public safety. The City of Baldwin Park prioritizes the well-being and safety of community members by recognizing natural and human-caused hazards, undertaking effective emergency response and management, and incorporating resilience into City activities and the development process. This Safety Element provides the context to identify and understand hazards that could threaten the community and includes practices and policies to enable the continued prosperity and resilience of Baldwin Park.

### Baseline Considerations

Recognizing the presence and extent of local and regional hazards allows the City to shape policies and programs accordingly.

**Earthquakes:** No active faults traverse Baldwin Park. However, several major faults have been identified in the region that have the potential to cause local damage. Large earthquakes of magnitude 7.0 and greater are expected to occur along at least one of the regional active faults within a time period equivalent to the historic record. Due to Baldwin Park's central location relative to major faults, intense ground shaking in the event of a major earthquake can be anticipated. In a densely populated urban area, the impact of strong ground shaking is directly related to the density and type of buildings and the number of people exposed to the effects.

**Fires:** Baldwin Park is an urbanized community where structural fires rather than wildland fires pose the greatest fire risk. Developments posing the greatest fire threat include multi-story, wood frame, higher-density apartments; multi-story office buildings; extensive developed areas and buildings with combustible roofing materials; and structures where hazardous materials are handled, used, or stored.

**Flooding:** Baldwin Park abuts the San Gabriel River, and several major flood control channels cross the city north to south. In addition, the city lies immediately south of





the Santa Fe Dam, which impounds runoff from the San Gabriel Mountains. These flood control features provide a high degree of protection from flooding. All of Baldwin Park has been classified by the Federal Emergency Management Agency (FEMA) as an area with minimal chance of flooding, and only minor flooding has occurred in the past. A priority for the City continues to be drainage improvements in areas prone to minor flooding.

**Dam Inundation:** Several dams in the San Gabriel Valley region that could pose a hazard to the City of Baldwin Park were they to fail. In the event of a failure, the dam with the most significant impact is the Santa Fe Dam noted above. Such events would pose flood risks to very large downstream populations. Failure of this dam during a catastrophic event, such as a severe earthquake, is considered a very unlikely event due to the dam's method of construction; it has performed well in past earthquakes and failure is not expected to occur.

**Railroad Hazards:** The City contains three miles of railroad lines and has five at-grade crossings. Freight and commuter rail services run along the rail corridors. A major train derailment could result in a considerable loss of life and property, particularly in heavily populated industrial and residential areas.

**Traffic Hazards:** Baldwin Park is served by two major freeways, Interstates 605 and 10, both of which carry large volumes of vehicle traffic on any given day. The probability of an incident involving a large commercial-type vehicle is great due to the large volume of traffic not just on both freeways but on surface streets as well.

**Pollution Exposure:** The San Gabriel Valley Area Superfund site, also known as the Baldwin Park Operable Unit, is one of four Superfund sites that has contributed to multiple areas of groundwater contamination in the San Gabriel Basin. The site includes groundwater contamination underlying portions of the cities of Azusa, Irwindale, Baldwin Park, West Covina, La Puente, and Industry. The contamination site is believed to be the result of improper handling and disposal of industrial solvents and contaminants from nearby industrial uses.

**Hazardous Waste:** Several businesses in Baldwin Park are generators, transporters, treaters, storers, and/or disposers of hazardous waste. These businesses are generally concentrated in the southern and northeastern industrial areas of the city. A few toxic and hazardous sites in need of corrective action are located throughout the city. These include one leaking underground storage site and one Superfund site.

**Climate Change:** Excessive heat, droughts, and other weather-related conditions associated with a changing global climate have begun to adversely affect many habitats, animals, agricultural resources, and urban environments. In natural and agricultural areas, excessive heat conditions could lead to water shortages and increased stress on plants. In cities, hotter and longer summers could require the need for more cooling centers and affect outdoor activities—including construction. Droughts could affect long-term potable water supplies in Baldwin Park and the region. Furthermore, natural hazards intensified by climate change could include wildfires within the Puente Hills and flooding events along flood zones as the result of extreme storms.

## Superfund

"Superfund" is the name assigned to a federal program adopted in 1980—the Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA—to allow the U.S. Environmental Protection Agency to clean up significantly contaminated properties and force responsible parties to remediate the contamination or reimburse the government for its clean-up work.



## Key Terms to Know

- » **Particulate Matter.** Particulate matter (or particle pollution) is a complex mixture of extremely small particles and liquid droplets. Particle pollution comprises several components, including acids (such as nitrates and sulfates), organic chemicals, metals, soil, and/or dust particles. The size of particles is directly linked to their potential to cause health problems. Once inhaled, these particles can affect the heart and lungs and result in serious adverse health conditions.
- » **Superfund Site.** A contaminated site created by the legal or illegal deposit of hazardous materials either above ground or buried, waste, or otherwise improperly managed. These sites include manufacturing facilities, processing plants, and landfills.
- » **Local Hazard Mitigation Plan.** A local hazard mitigation plan (LHMP) identifies hazards, vulnerabilities, and risks affecting a local, State, or tribal government, and prioritizes actions to reduce the risks. Such plans are required by the Federal Emergency Management Agency (FEMA) for a jurisdiction to receive certain federal assistance in response to a disaster.
- » **Vulnerability Assessment.** A vulnerability assessment is the process of identifying, quantifying, and prioritizing (or ranking) the vulnerabilities related to natural or human-caused disasters that could affect a community.
- » **Dam Inundation.** The area downstream of the dam that would be flooded in the event of a failure (breach) or uncontrolled release of water.
- » **Toxic Release Inventory.** The Toxic Release Inventory (TRI) is a resource for learning about toxic chemical releases and pollution prevention activities reported by industrial and federal facilities.
- » **Cortese List.** Government Code Section 65962.5 (typically referred to as the “Cortese List”) identifies sites that require additional oversight during the local permitting process as well as compliance with the California Environmental Quality Act (CEQA).
- » **Greenhouse Gas (GHG) Emissions.** Greenhouse gases, or GHGs, are compound gases that trap heat or longwave radiation in the atmosphere. Their presence in the atmosphere makes the Earth’s surface warmer. Sunlight or shortwave radiation easily passes through these gases and the atmosphere and is trapped below, creating a phenomenon known as the greenhouse effect. According to the U.S. Environmental Protection Agency, the largest source of GHGs in the U.S. is the burning of fossil fuels for electricity, heat, and transportation.
- » **Urban Heat Island.** Heat islands are urbanized areas that experience higher temperatures than outlying open space or natural rural areas. Buildings, roads, and other infrastructure absorb and re-emit the sun’s heat more than natural landscapes such as forests and water bodies, causing urban areas to be warmer.



## EMERGENCY PREPAREDNESS AND SAFETY SERVICES

Emergency preparation helps tremendously in reducing property damage and loss of life in the event of a disaster. Baldwin Park is susceptible to a variety of disasters and emergencies that can have devastating effects. Local officials play a crucial role in educating residents and businesses about prevention—the most important tool in emergency preparedness—and appropriate, effective response.

Generally, response efforts and emergency management plans are created to address many types of hazards so that public officials are prepared with a plan adaptable to various potential hazards. These plans allow community members to work together with City, County, State, and federal partners before a disaster occurs to get familiar with their roles in disaster mitigation, preparedness, response, and recovery.

Key tenants of emergency management are preparedness, planned response to emergency events, recovery of critical services during and following an emergency, and evacuation plans.

**Preparedness:** Emergency preparedness requires preparation of plans addressing life safety, emergency response, and evacuation; purchase and storage of emergency supplies; and training and exercises to practice response activities.

**Response:** Emergency response activities typically focus on actions necessary to save lives and prevent further property damage during an emergency/disaster. Many of these activities are conducted in tandem with the Police and Fire Departments' standard emergency response procedures. To guide response activities, the City will rely on implementing the Emergency Operations Plan and work closely with various emergency partners.

*Los Angeles County Fire Department Fire station No. 29*





Baldwin Park Explorer Academy

**Recovery:** Recovery activities typically occur after an emergency/disaster event. These activities focus on re-establishing services to impacted areas, repair and/or reconstruction of damaged buildings and infrastructure, and assisting residents and businesses with permitting and approvals of building plans.

**Evacuation:** A critical preparation component is to have clearly identified routes that can move community members to safe locations. Figure S-1 identifies the major roadways within the city designated for use as evacuation routes. Any individual disaster scenario requires location-specific solutions to address evacuation, based on the location of the disaster’s occurrence. For example, a hazardous materials spill is likely to be focused in a particular location, whereas an earthquake can have more widespread implications.

**Emergency Operations Plan**

Baldwin Park maintains a detailed Emergency Operations Plan (EOP), which is the central strategy for hazard prevention and response. The EOP is reviewed annually and approved by the federal government every five years. The EOP establishes the emergency organization, assigns tasks, specifies policies and general procedures, and provides for coordination of planning efforts for the various emergency staff utilizing the State’s Standardized Emergency Management System and National Incident Management.

**Mitigation**

The City has prepared an All Hazard Mitigation Plan (AHMP) in response to the Disaster Mitigation Act of 2000, as required by FEMA (called a Local Hazard Mitigation Plan in federal law). This law requires local governments to prepare a plan that identifies potential hazards, losses, mitigation, needs, goals, and strategies. The AHMP supplements the City’s comprehensive emergency management program.

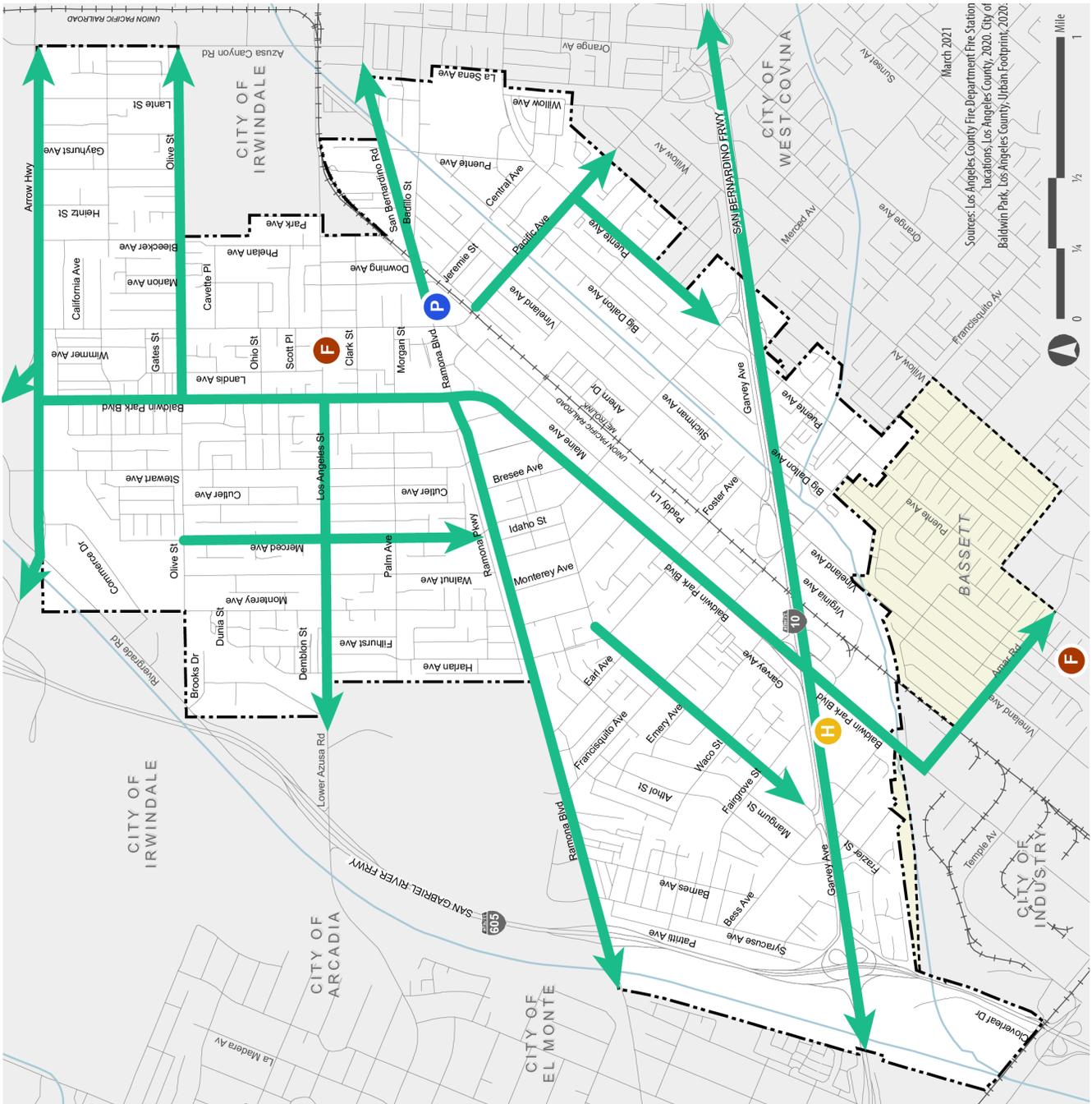
Planning ahead helps residents, businesses, and government agencies effectively respond when disaster occurs and keeps the City eligible for federal funding. The long-term benefits of mitigation planning include:

- » Greater understanding of local hazards
- » Being able to prioritize the use of limited resources on hazards that could have the most adverse and widespread impacts
- » Financial savings through partnerships for planning and mitigation
- » Reduced long-term impacts and damages to human health and structures, and lower repair costs
- » A more sustainable, disaster-resistant city

**Police Services**

Law enforcement services are provided by the City of Baldwin Park Police Department, which operates out of City Hall. Baldwin Park uses community-based policing and problem-solving methods to address crime along with traditional methods of policing.

**Foot and Bike Patrol:** As part of the community-based policing programs, the Baldwin Park Police Department maintains a Foot and Bike Patrol in various parts of the community. Bike patrols have increased communication and accessibility between the community and Department. Bike patrols allow mobility in congested areas and are



**Figure S-1:**  
**Emergency Services and**  
**Evacuation Network**

- Emergency Services**
- F Fire Stations
  - P Police Station
  - H Hospital
- Emergency Routes**
- Evacuation Routes
- Base Map Features**
- City of Baldwin Park Boundary
  - Sphere of Influence
  - Freeways
  - Railroads
  - Water Channels



relied upon for regular park patrol, special event patrol (such as parades and festivals), and special assignments such as shopping center parking lot patrol.

**Baldwin Park Explorers:** Baldwin Park Explorers are volunteer scouts who participate in civilian observer ride-alongs and assist the police with crime prevention, security at major events, disaster assistance, and crowd and traffic control. The program is designed for youth between ages 14 and 21.

**Neighborhood and Business Watch Programs:** Neighborhood and Business Watch Programs are crime prevention programs sponsored by the Police Department to increase communication between the community and the Department, build knowledge throughout the community of personal safety issues and crime prevention, and support business owners and residents with crime-related problems.

### Fire Hazards, Prevention, and Response Services

In Baldwin Park, structural fires (rather than wildland fires) present the greatest fire risk. No areas of Baldwin Park have been identified by the California Department of Forestry and Fire Protection (CALFire) as lying within a wildfire hazard severity risk zone. The types of development posing the greatest fire threat include multi-story, wood frame, higher density apartments; multi-story office buildings; developed areas and buildings with combustible roofing materials; and structures where hazardous materials are handled, used, or stored. Structural fires typically are caused by carelessness, faulty equipment, or ignorance of fire prevention measures. These fires have the potential to threaten lives due to people being in buildings.





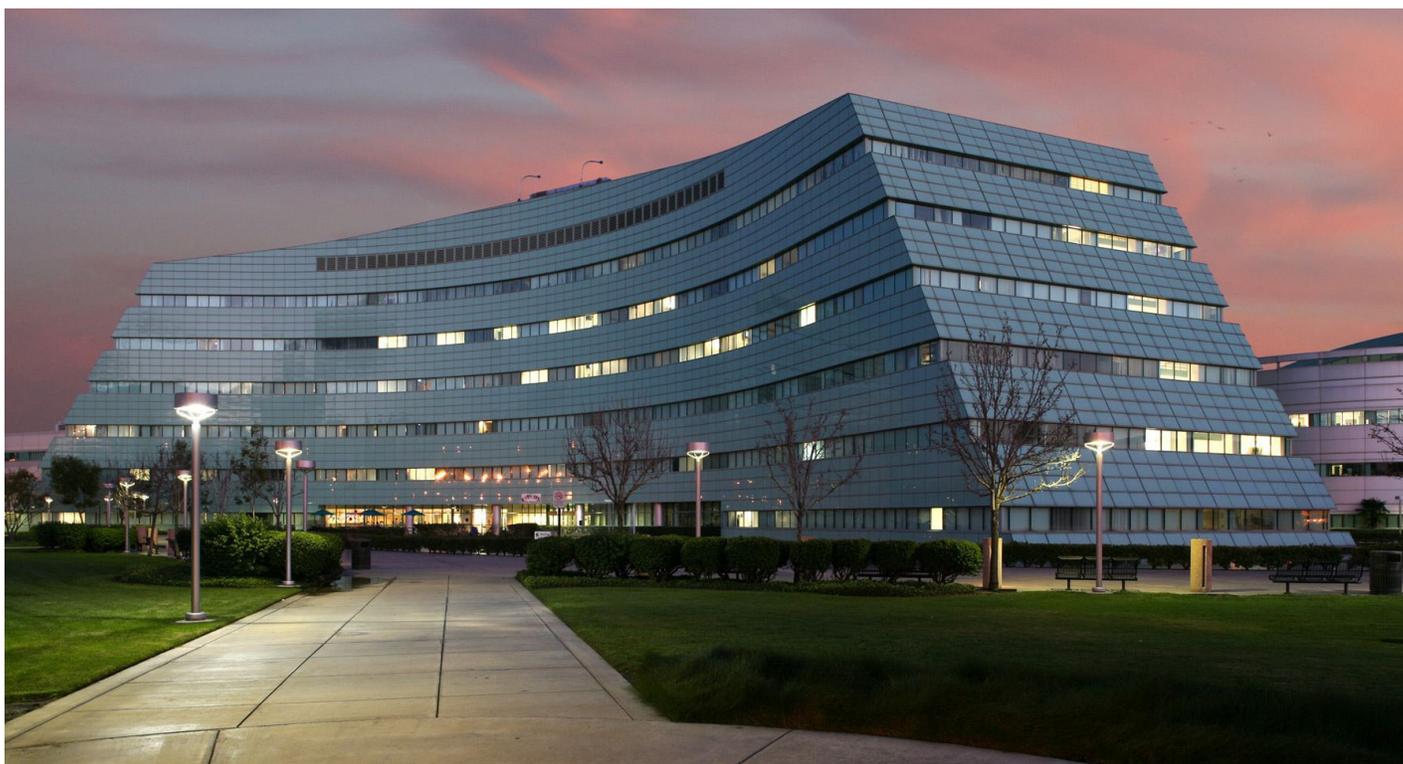
The City contracts with the Los Angeles County Fire Department (LACoFD) for emergency medical services, fire and rescue services, and safe haven services. LACoFD operates Station No. 29 in Baldwin Park and two others in adjacent jurisdictions. Service to the northeast area of the city generally comes from Station No. 48 in Irwindale, and Station No. 87 in Basset serves all areas south of I-10. LACoFD cooperates with the San Gabriel Valley Fire Authorities in West Covina under an automatic aid agreement, which allows Baldwin Park and West Covina stations to provide mutual response assistance.

The City works towards reducing the potential for dangerous fires by coordinating with the County Fire Department to implement fire hazard education and fire protection programs. The Uniform Fire Code is used to reduce structural fire hazards. Additionally, the City coordinates with local water districts and the LACoFD to ensure water pressure is adequate for fire-fighting purposes.

## Emergency Medical Facilities

Quality medical facilities support residents' health and safety of residents and contribute to quality of life. The largest medical facility in Baldwin Park is the Kaiser Permanente Medical Center located at 1011 Baldwin Park Avenue adjacent to I-10. This medical center is a general medical and surgical hospital with 254 beds, providing emergency, urgent care, pharmacy, and outpatient services. While this Kaiser Permanente facility serves an extensive network of patients throughout the regions, the hospital supports the Baldwin Park community through financial support for community services, such as the Teri G. Muse Family Service Center, human resource support, and volunteer support at community activities.

*Kaiser Permanente Baldwin Park Medical Center*





**Goal S-1. Ensure that Baldwin Park has a strong sense of readiness to address emergency situations and activities.**

**Policy 1.01:** Maintain a level of preparedness to respond to emergency situations that will save lives, protect property, and facilitate recovery with minimal disruption.

**Policy 1.02:** Effectively coordinate with neighboring cities, regional agencies, local school districts, local businesses, and community organizations to conduct emergency and disaster preparedness exercises that test operational and emergency response plans.

**Policy 1.03:** Provide public education to promote community awareness and preparedness for self-action in the event of a major disaster or emergency.

**Policy 1.04:** Encourage emergency service providers to broadcast consistent public messaging regarding emergency situations so as not to confuse the public.

**Action S-1.1:** Conduct an annual assessment of the Emergency Operations Plan and prepare necessary revisions to maintain relevancy.

**Action S-1.2:** Update the City’s All Hazard Mitigation Plan every five years, and integrate the findings and mitigation actions/strategies into other City documents like the Capital Improvements Program, Infrastructure Master Plans, and other planning documents.

**Action S-1.3:** Maintain ongoing coordination and cooperation with participating jurisdictions and work closely with emergency responders, community partners, and residents to engage in comprehensive disaster planning to improve regional capabilities to respond to disaster situations.

**Action S-1.4:** Conduct annual training for staff, and maintain, test, and update equipment to meet current standards.

**Action S-1.5:** Work with emergency service providers to implement a robust public notification system via social media, the City website, and other emergency messaging platforms such as Nixle, WEA, etc.

**Goal S-2. Provide a safe environment for City residents, the business community, and visitors.**

**Policy 2.01:** Periodically evaluate levels of service to ensure Baldwin Park has appropriate levels of police service.

**Policy 2.02:** Promote programs and partnerships that encourage residents to take a proactive role in community safety and the welfare of their neighborhoods.



**Policy 2.03:** Continue to cooperate with the Los Angeles County Sheriff's Office, along with other nearby police departments, to provide back-up police assistance in emergency situations.

**Policy 2.04:** Promote the use of defensible space concepts (e.g., site and building lighting, visual observation of open spaces, secured areas) in project design to enhance public safety.

**Action S-2.1:** As part of the preparation of the City's annual budget and development of the multiyear capital improvement program, conduct an annual assessment of crime prevention law enforcement services.

**Action S-2.2:** Coordinate with residents, businesses, school districts, and community and neighborhood organizations to develop and expand partnerships to prevent crime, build public trust, and proactively address public safety issues.

**Action S-2.3:** Continue to develop and carry out crime prevention programs such as the Neighborhood and Business Watch Programs.

**Action S-2.4:** Ensure that all police officers receive comprehensive cultural competency training to best serve the needs of Baldwin Park's diverse population.

## Goal S-3. Reduce the risk of fire and minimize consequences from fire events.

**Policy 3.01:** Periodically evaluate level of service to ensure Baldwin Park has appropriate levels of fire service.

**Policy 3.02:** Maintain fire and building code requirements for new construction to ensure provision of adequate fire protection.

**Policy 3.03:** Maintain mutual aid agreements with surrounding jurisdictions for fire protection.

**Policy 3.04:** Provide public information about fire safety and emergency preparedness to residents, schools, and organizations.

**Action S-3.1:** Refer development requests for new developments, redevelopments, and major remodels to the Los Angeles County Fire Department for review and comment through the Development Review Committee.

**Action S-3.2:** In cooperation with the Los Angeles County Fire Department, conduct an annual assessment of fire prevention and suppression services to evaluate the adequacy of facilities and equipment serving the City, the status and adequacy of mutual aid agreements, personnel staffing and program needs, training requirements, and equipment, facility, and staffing needs based on anticipated growth, level of service, and incident rates.

**Action S-3.3:** In cooperation with the Los Angeles County Fire Department, establish a program to monitor the effectiveness of fire prevention and education programs, and identify sources of funding for such programs.

## NATURAL HAZARDS

Natural hazards refer to natural phenomena that, because of their location, severity, and frequency, have the potential to adversely affect humans and structures. Earthquakes and intensive storm events are examples of natural hazards. Climate change affects global temperature and precipitation patterns, which influence the intensity and, in some cases, the frequency of certain extreme environmental events such as wildfires, heatwaves, floods, droughts, and storms.

Emergency preparation and response strategy for both first responders and the community can prevent or mitigate adverse consequences.

### Seismic Hazards

Seismic hazards refer to the physical phenomenon associated with and precipitated by earthquakes, including ground shaking, landslides, and liquefaction, among others. The intensity of these unfavorable consequences resulting from seismic shifts varies depending upon the epicenter location, locally occurring geologic conditions, and the density and type of development in the impacted area. Baldwin Park lies within a seismically active region and is therefore subject to risks and hazards associated with earthquakes (Figure S-2). A major earthquake occurring along any of the faults—notably the San Andreas fault system—could cause substantial impacts and damage, resulting in collapsed buildings, damaged roads, bridges, fires, flooding, and other threats to life and property.

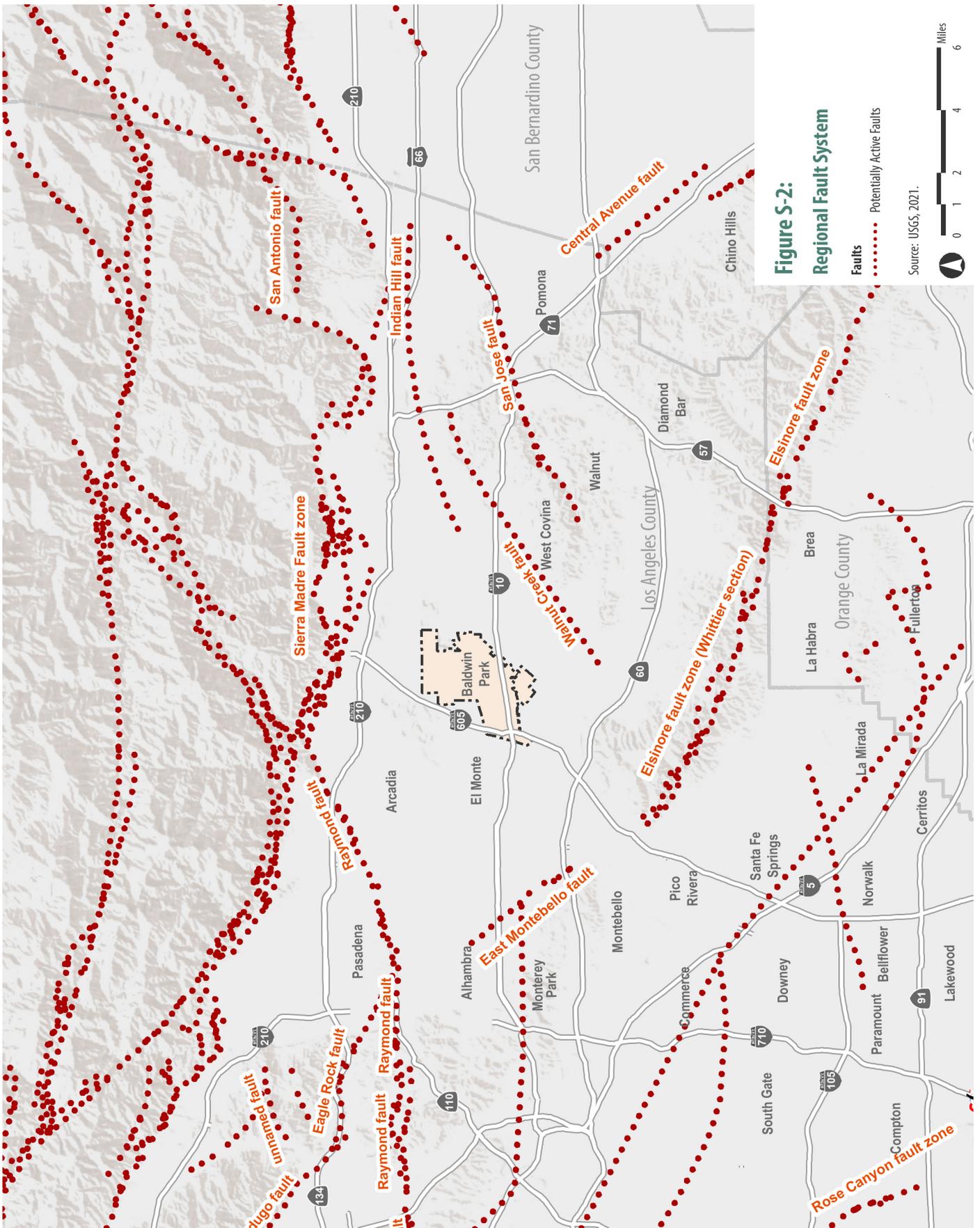
### Earthquakes

Earthquakes in California occur with some frequency. The two most significant historical earthquakes affecting the Los Angeles region have been the Whittier Narrows (magnitude 5.9 in 1987) and Northridge (magnitude 6.7 in 1994) earthquakes.

Baldwin Park has a predominantly older housing and commercial building stock, with most of the buildings constructed prior to 1960. These older structures could be vulnerable to considerable damage in the event of a significant seismic event. Aftershocks and the secondary effects of fire, hazardous material/chemical accidents, and possible failure of dams and waterways could aggravate the situation. Failure of the Santa Fe Dam (located 1.5 miles north of the city) during a seismic event has the potential to impact Baldwin Park and many communities in the San Gabriel Valley. However, due to the method of construction and the dam's past performance during previous earthquakes, catastrophic failure of this dam and resultant flooding are considered unlikely.

*Structural damage caused by the 1994 Northridge Earthquake.*





**Figure S-2:**  
**Regional Fault System**

**Faults**  
..... Potentially Active Faults

Source: USGS, 2021.



### Liquefaction

Liquefaction is a process in which water-saturated sediment temporarily loses strength and acts as a fluid, similar to when you wiggle your toes in wet sand near the water at the beach. This effect can also be caused by earthquake shaking.

### Liquefaction

Liquefaction is a seismically induced secondary hazard that occurs from ground shaking. Liquefaction hazards can occur in areas where groundwater exists near the ground surface. Water service providers in Baldwin Park indicate that the depth to groundwater is more than 50 feet, which makes liquefaction hazards generally low. However, historical liquefaction maps show the occurrence of liquefaction in the southwestern portion of Baldwin Park (Figure S-3). Existing City development project review practices include review of soils and geotechnical reports which document in-field conditions. Standard engineering techniques are required as appropriate to guard against seismic-related hazards, including liquefaction.

### Minimizing Risk

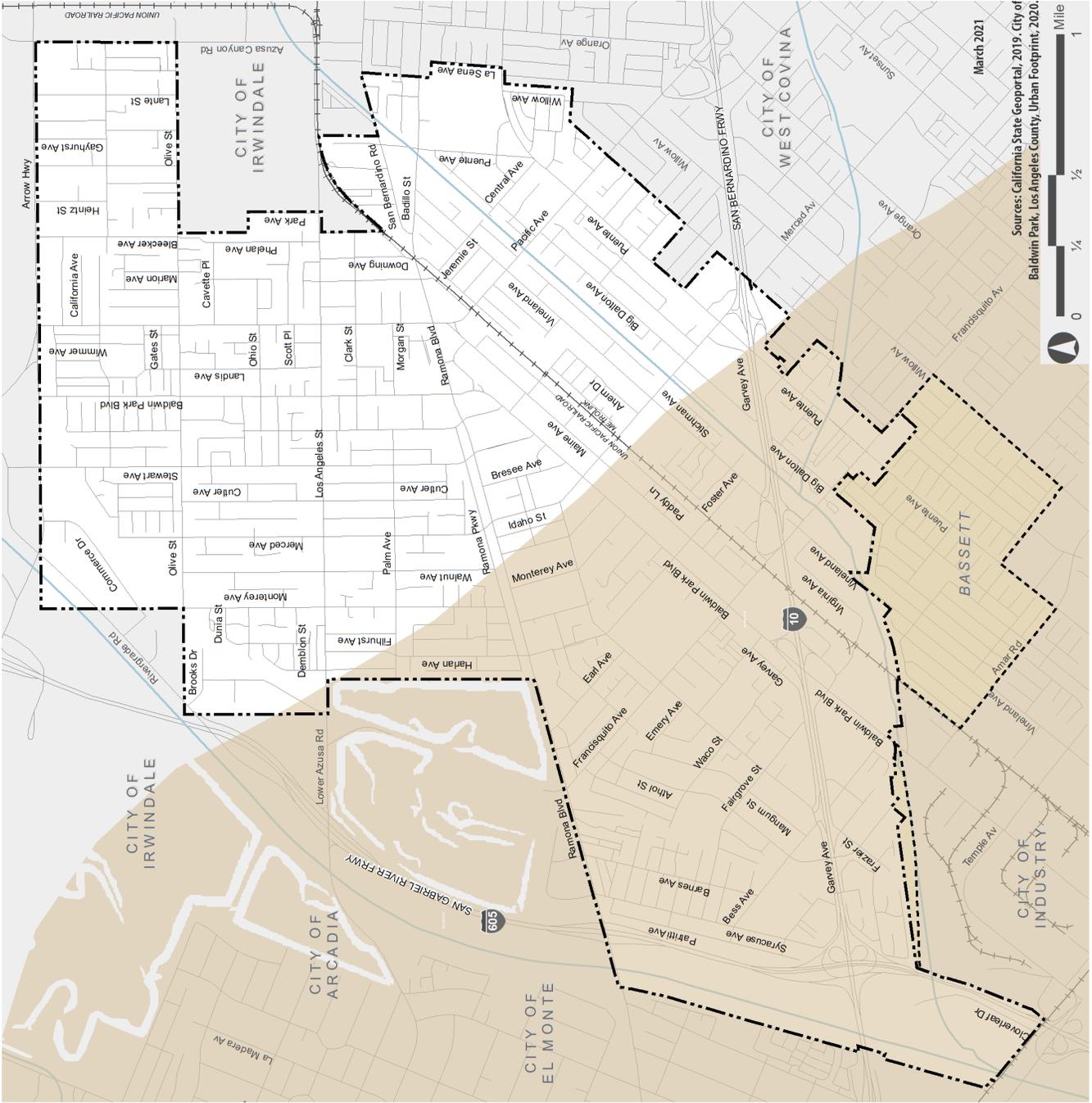
To minimize risk and help the community prepare for, respond to, and recover from earthquakes, the City implements a three-pronged approach:

- » **Prepare.** Preparation at all levels of government and by residents, businesses, schools, and institutions is vital. Earthquake preparedness can include obtaining medical supplies and food for several days, knowing how to respond during an earthquake, and creating a family or business evacuation plan and/or safety plan. Medical and safety service staff are required to consistently conduct training in response to large disaster, with the City responsible for coordinating with other agencies and medical facilities.
- » **Protect.** New construction projects are required to meet building codes to ensure new buildings are earthquake resistant. Thus, “protect” initiatives focus on addressing older buildings and critical infrastructure. Seismic retrofitting of older existing buildings is critical, not just for the remaining unreinforced masonry buildings but also homes on raised foundations that have not been strengthened. Due to the cost, most homeowners do not carry earthquake insurance (only about 10 percent statewide do), and the costs of addressing earthquake damage likely will be incredibly high following a major event. “Protect” extends to critical infrastructure to ensure that roads, utility lines, and communications networks can continue to function post-earthquake.
- » **Recover.** After an earthquake, returning the community to normal functioning operations and services will be critical to mitigate potential economic and social stresses. In the short term, communications and multi-agency coordination is critical to respond to aid and evaluation of damage to infrastructure. Recovery should then focus on the repair and rebuilding of public facilities and services, businesses, and housing. The Governor’s Office of Emergency Services provides detailed information for governments in post-recovery responses and approaches.



**Figure S-3:**  
**Local Seismic Hazards**

- Seismically Induced Hazard Zones**
- Liquefaction
- Base Map Features**
- City of Baldwin Park Boundary
  - Sphere of Influence
  - Freeways
  - Railroads
  - Water Channels



March 2021  
Sources: California State Geoportal, 2019; City of Baldwin Park, Los Angeles County, Urban Footprint, 2020.



### Goal S-4. Prepare the community of Baldwin Park to respond to a major seismic event and minimize risk of injury, loss of life, property damage, and social service and economic impacts.

**Policy 4.01:** Require all new developments, redevelopments, and major remodels to comply with the most recent California Building Code seismic design standards and applicable supplemental design criteria.

**Policy 4.02:** Educate the community on actions to take before, during, and after a major earthquake.

**Action S-4.1:** Identify a plan of action and consult with different responsible agencies to respond to and recover from a major earthquake.

**Action S-4.2:** Implement a program for encouraging upgrades to seismically hazardous (unreinforced masonry) buildings within the City of Baldwin Park.

#### Flooding and Dam Inundation Hazards

Historically, large areas of the San Gabriel Valley were subject to seasonal flooding associated with major storms, with stormwaters overflowing the banks of the San Gabriel and Rio Hondo Rivers and spreading across adjacent lands. Beginning in the 1950s, the U.S. Army Corps of Engineers and Los Angeles County Department of Public Work impounded the floodwaters behind dams (including the Santa Fe Dam) and channelized the rivers to protect the growing region from flood hazards associated with 100-year and 500-year storm events, thus creating a high degree of flood protection.

FEMA has not mapped any 100-year or 500-year flood zones in Baldwin Park, meaning that flood hazards are minimal and flood insurance is not required for Baldwin Park property owners with a federally backed mortgage.

Hazards associated with major storm events can best be addressed via regular street cleaning, debris removal, and maintenance of local storm drain facilities. Also, retrofitting hard-surface drainage control facilities with bioswales, landscaped parkways, and similar low-impact development (LID) approaches can reduce the volume and slow the speed of stormwater runoff—and also provide groundwater recharge benefits.

#### Dam Inundation

Four nearby dams or reservoirs could cause severe consequences in Baldwin Park if any one of these were to fail: San Dimas Reservoir, Puddingstone Reservoir, San Gabriel No. 1 Dam, and the Santa Fe Dam. FEMA requires that all dam owners develop Emergency Action Plans for warning, evacuation, and post-flood actions, since dam failure poses catastrophic risks to local communities. Dam failure is unlikely as these facilities were engineered to withstand ground shaking and other stresses.



### San Dimas Dam

San Dimas Dam is a concrete gravity dam located in the San Gabriel Mountains that is operated by the Los Angeles County Department of Public Works. The dam controls flooding from the San Dimas Creek, which is a major drainage and tributary of the San Gabriel River. The dam serves as a flood control facility and remains dry for most of the year, only storing water after significant winter storms. If a failure were to occur, the flood water would occur in a southwest direction and cause some overflow along the Big Dalton Wash and in small pockets east of the wash (Figure S-4). Most of the overflow would be captured by the Big Dalton Wash and would converge onto Walnut Creek.

### Puddingstone Dam and Reservoir

Puddingstone Reservoir is a 250-acre artificial lake located in the City of San Dimas. The Puddingstone Reservoir serves as a flood control basin and is operated by the Los Angeles County Department of Public Works. The reservoir stores floodwater from the Walnut Creek and San Dimas wash. If the reservoir were to fail, flood water could reach a small portion of the city along the southeastern edge (Figure S-4).

### San Gabriel No. 1 Dam

The San Gabriel Dam is a rock-fill dam on the San Gabriel River located within the Angeles National Forest. The dam impounds the main stem of the San Gabriel River about 2.5 miles downstream from the confluence of the river's East and West Forks, which drain a large portion of the San Gabriel Mountains. The dam provides flood control, groundwater recharge flows, and hydroelectricity to the San Gabriel Valley. If a breach were to occur, the dam's inundation path would flow in a southwestern direction and could impact a large portion of the southern areas of the city (Figure S-4).

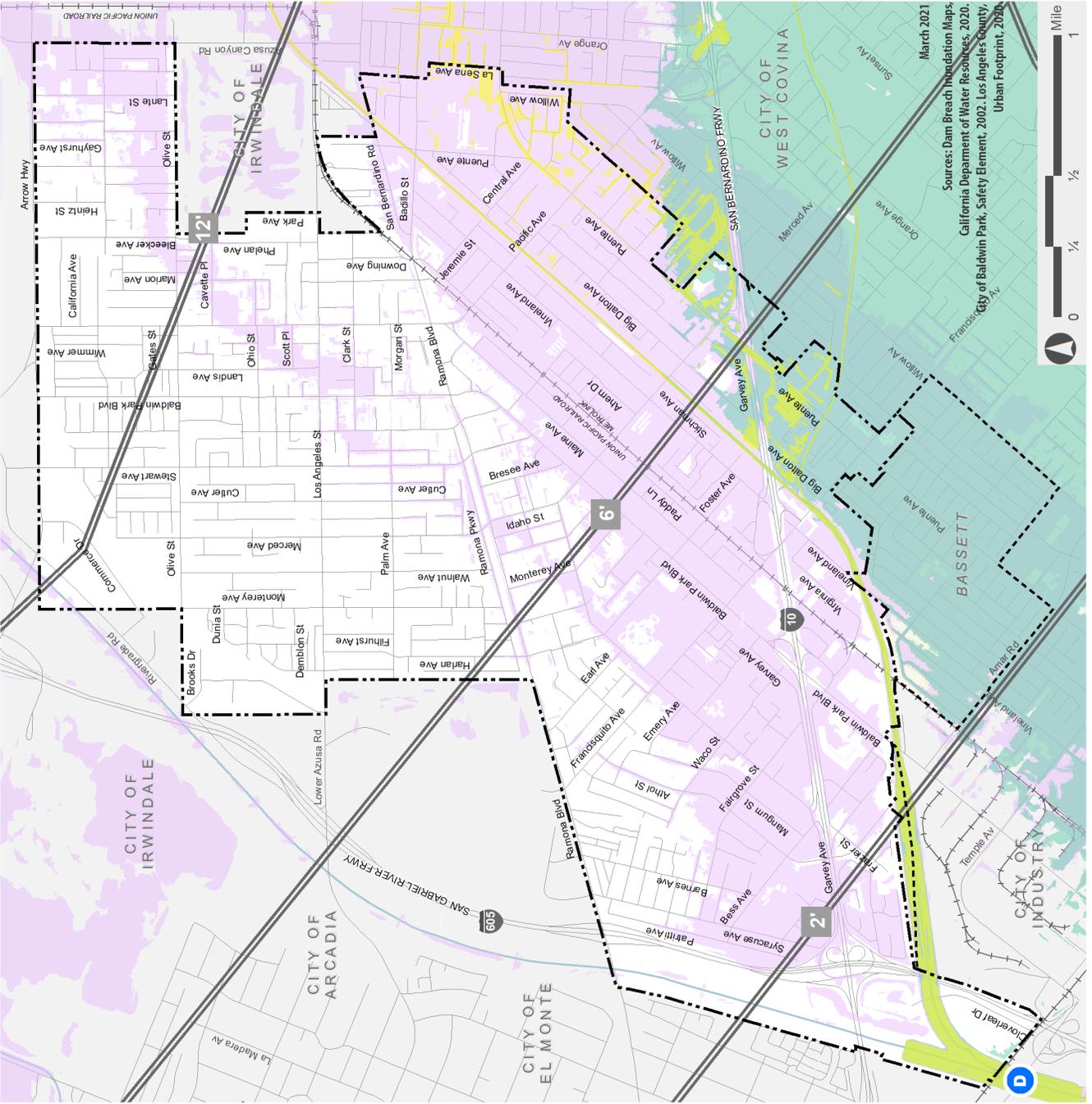
### Santa Fe Dam

The Santa Fe Dam and Reservoir is a flood control basin located immediately north of the city that is owned and operated by the U.S. Army Corps of Engineers. The primary purpose of the dam is to provide flood risk management to the communities along the San Gabriel River downstream of the basin. It is normally empty except during or immediately after periods of significant runoff. The chances of failure are remote; however, a dam breach could have catastrophic consequences for Baldwin Park due to its proximity. Baldwin Park is approximately 0.5 miles downstream of the Santa Fe Dam and lies within the dam's flood plain/inundation path (Figure S-4).

In 2011, the U.S. Army Corps of Engineers determined that while the 60-year-old Santa Fe Dam had no major flaws, a major earthquake or massive flood could damage the basin. The Corps also determined that some of the dam's structural designs needed retrofitting to reinforce its structural integrity and its ability to withstand a catastrophic event. The U.S. Army Corps of Engineers has undertaken an evaluation process to assess the continued safe operation of the dam.

### 100-Year Flood

A "100-year flood" has a one percent chance of occurring in any given year. A "500-year flood" has a 1 in 500 (0.2%) chance of occurring in any given year and would likely be more catastrophic than the 100-year flood.



**Figure S-4:**  
**Inundation Hazards**

- Inundation Boundaries**
  - Santa Fe Dam & Inundation
  - San Dimas Dam
  - Puddingstone Reservoir
  - San Gabriel No. 1 Dam
- Water Structures**
  - Dam Downstream Facility
- Base Map Features**
  - City of Baldwin Park Boundary
  - Sphere of Influence
  - Freeways
  - Railroads
  - Water Channels

March 2021  
Sources: Dam Breach Inundation Maps  
California Department of Water Resources, 2020.  
City of Baldwin Park, Safety Element, 2002. Los Angeles County,  
Urban Footprint, 2020.





## Goal S-5. Ensure resiliency against flooding hazards.

**Policy 5.01:** Work in cooperation with the Los Angeles County Department of Public Works to identify and construct needed local and regional storm drainage improvements to relieve localized flooding problems.

**Policy 5.02:** Design storm drainage infrastructure to accommodate existing and anticipated storm flows associated with changing climatic conditions.

**Policy 5.03:** Monitor the work of the Army Corps of Engineers and other federal agencies' response plan to maintain the Santa Fe Dam and to reduce the risk of seismic failure.

**Policy 5.04:** Require new development, redevelopment, or major remodels to reduce on-site drainage flows below existing levels and increase groundwater recharge where appropriate.

**Action S-5.1:** Prepare an assessment of capacity needs of flood control and storm drainage infrastructure resulting from extreme weather caused by climate change.

**Action S-5.2:** Encourage the use of permeable paving materials in hardscape areas, swale designs in landscape or grassy areas, and the discharge of roof drainage into pervious, greenbelt, and seepage pit areas to slow runoff, maximize infiltration, and reduce downstream impacts from development.

*Santa Fe Dam flood control facilities.*



## TRANSPORTATION INCIDENTS

The potential for a disastrous transportation-related event exists within Baldwin Park due to the high volume of transportation (commercial and private) into and out of Los Angeles County. Generally, transportation accidents are incidents that are handled by local jurisdictions or jurisdictional mutual aid responses. A transportation accident, combined with a volatile hazardous substance or a large number of people, has the potential for becoming an event that requires a major mobilization of local, County, State, and federal agencies. Potential significant transportation incidents could include train derailments, highway collisions, or major trucking collisions.

### Train Derailment

The City of Baldwin Park contains three miles of railroad (Metrolink/Union Pacific) and five at-grade crossings within its boundaries. Union Pacific operates freight service, and Metrolink operates the San Bernardino Line commuter rail service. The Baldwin Park Metrolink train station is located between Pacific Avenue and Ramona Boulevard next to Baldwin Park City Hall. Metrolink operates commuter trains during weekdays and weekends. Union Pacific operates freight service at periodic intervals.

Train derailments can be caused by collisions with another object, such as an automobile or train vehicle, operational error, or mechanical failure of tracks or wheels. A major train derailment could result in a considerable loss of life and property, particularly in heavily populated industrial and residential areas. Two of the most significant train incidents in Metrolink history occurred in 2005 in the City of Glendale (resulting in 11 deaths and 177 injuries) and in 2008 in the Chatsworth neighborhood in the City of Los Angeles (causing 25 deaths and 135 injuries). Such incidents require massive emergency response by the local authorities, including hundreds of emergency personnel involved in the rescue and recovery efforts. Since these accidents, Metrolink has undertaken efforts to significantly improve the safety of their vehicle trains and infrastructure, such as adding Positive Train Control system and upgrading vehicles with crash energy management technology.

Baldwin Park Metrolink Station





## Trucking and Highway Incidents

Baldwin Park is served by two major freeways, Interstates 605 and 10, both of which carry large volumes of vehicle traffic on any given day. Two propane companies with loading terminals are also located in Baldwin Park. The probability of an incident involving a large commercial-type vehicle is great due to the large volume of traffic on both freeways and on surface streets. A major truck incident in a heavily populated industrial area or residential area could result in considerable loss of life and property.

Potential hazards could include overturned tank trailers, direct impact either into a residence or industrial building, or entering the normal flow of traffic. Each of these hazards encompass threats, such as hazardous material incidents, fires, severe damage to adjacent vehicles or buildings, and impacts to pedestrians or those in adjacent buildings or vehicles.

### Goal S-6. Work with transportation agencies to ensure a safe and secure transportation network.

**Policy 6.01:** Coordinate with local, regional, State, and federal transportation agencies to enhance the safety of highways, surface streets, and railroads.

**Policy 6.02:** Minimize transportation hazards to residential areas and other sensitive land uses.

**Action S-6.1:** Evaluate the local street system on continuous basis to address areas where traffic safety might be compromised and implement countermeasures as appropriate.

**Action S-6.2:** Continue to establish designated trucks routes away from streets that are inappropriate or inadequate to serve substantial through truck traffic.

**Action S-6.3:** Coordinate with Union Pacific and Metrolink to monitor, evaluate, and upgrade at-grade crossings where necessary.





## HAZARDOUS MATERIALS

Hazardous materials releases can pose a significant risk to a community's safety. Hazardous materials are identified materials which are toxic, flammable, explosive, corrosive, infectious, radioactive, or any combination of these characteristics. Hazardous materials are widespread in industrial, business, agricultural, and residential settings.

### Toxic Release Inventory Program

The U.S. Environmental Protection Agency's (EPA) Toxic Release Inventory (TRI) program tracks the industrial management of toxic chemicals that may be harmful to human health and the environment. Facilities in different industry sectors must report annually how much of each chemical is released to the environment and/or managed through recycling, energy recovery, and treatment. This information is submitted and compiled in the TRI program. The two TRI facilities in Baldwin Park (near the City's boundaries) are a metal processing plant and petroleum business (Figure S-5).

### Cortese List

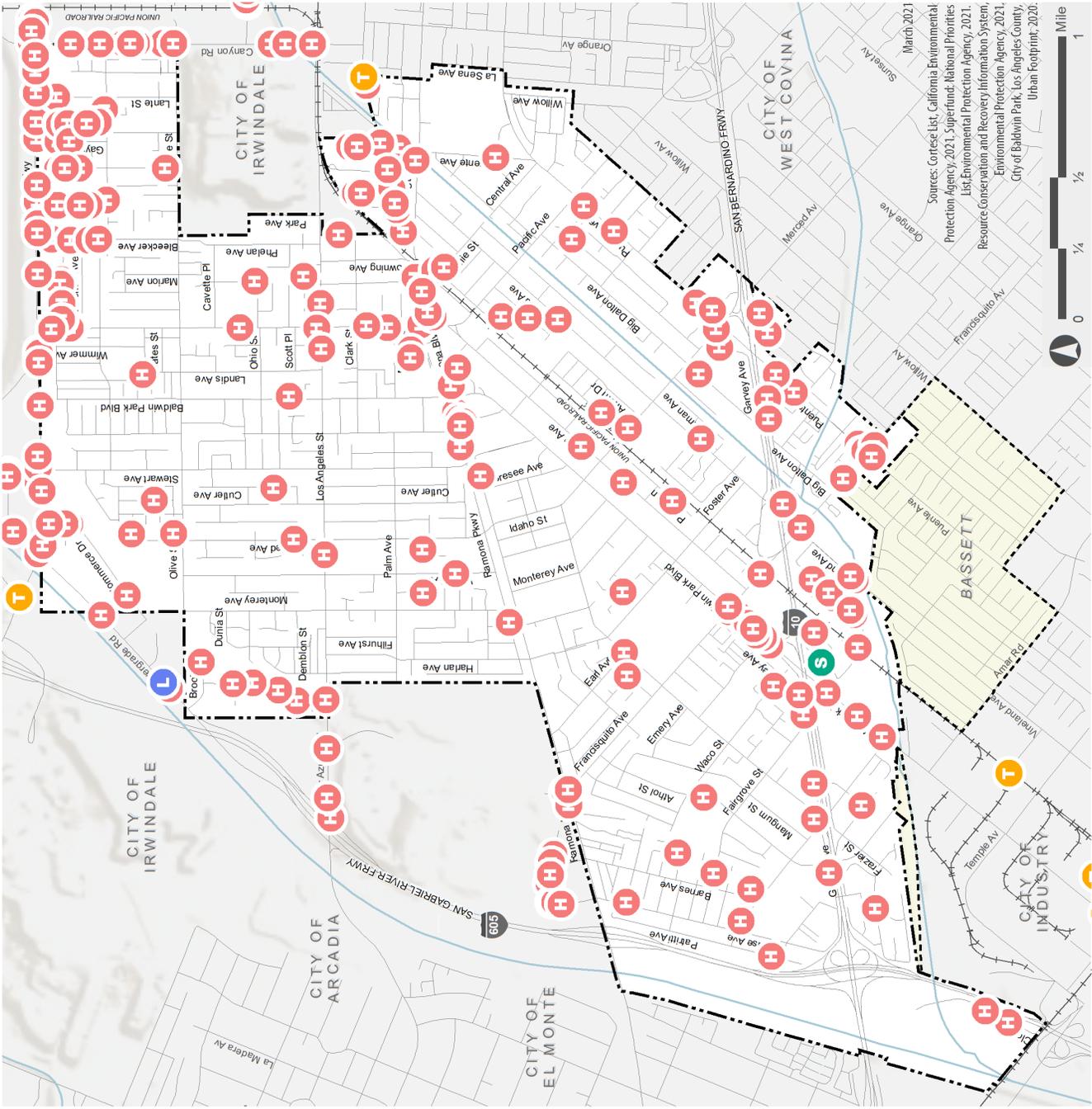
Government Code Section 65962.5 (typically referred to as the "Cortese List") identifies sites that require additional oversight during the local permitting process, as well as compliance with the California Environmental Quality Act (CEQA). The list is generally a compilation of properties and businesses that generate, store, and/or have been impacted by the presence of hazardous materials/wastes. Many properties identified on this list may be undergoing corrective action, cleanup, or abandoned and in need of these activities. As of 2021, Baldwin Park contains two sites identified on this list that include a leaking underground storage tank and a Superfund site (Figure S-5).

The San Gabriel Valley Area Superfund site, also known as the Baldwin Park Operable Unit, is one of four Superfund sites addressing multiple areas of groundwater contamination in the San Gabriel Basin. It is an eight-square-mile site that underlies portions of the cities of Azusa, Irwindale, Baldwin Park, West Covina, La Puente, and Industry. The contamination site is believed to be the result of improper handling and disposal of industrial solvents and contaminants from nearby industrial uses. The EPA has undertaken efforts to remediate the site since the mid-1980s and has implemented water treatment facilities as part of the cleanup effort. As of 2019, more than 165 billion gallons of contaminated groundwater had been treated, more than 94,000 pounds of contamination removed from the ground water, and more than 40,000 pounds of contamination removed from the soil.

### Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) is a national program management and inventory system for hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities. In Baldwin Park, dozens of these facilities exist throughout the city, primarily concentrated in industrial areas along Arrow Highway, I-10, and Badillo Street.





**Figure S-5:  
Hazardous & Toxic Sites**

**Toxic Release Inventory Program**

- T** Toxic Release Inventory Sites

**Cortese List Toxic & Hazardous Sites**

- L** Leaking Underground Storage Tanks
- S** Superfund Sites

**Other Hazards**

- H** Hazardous Waste Handling Facilities

**Base Map Features**

- City of Baldwin Park Boundary
- Sphere of Influence
- Freeways
- Railroads
- Water Channels

Sources: Cortese List, California Environmental Protection Agency, 2021; Superfund, National Priorities List, Environmental Protection Agency, 2021; Resource Conservation and Recovery Information System, Environmental Protection Agency, 2021; City of Baldwin Park, Los Angeles County, Urban Footprint, 2020.





## CLIMATE CHANGE

Climate change is a long-term shift in average weather patterns that are typical in local, regional, and global climates. Climate adaptation is the process of adjusting to climate change to moderate its potential impacts.

The greenhouse gas (GHG) emissions we generate are the leading cause of climate change. The level of GHG in our atmosphere has soared since the beginning of the 21st century. The burning of fossil fuels—coal, oil, and gas—for electricity, heat, and transportation is the primary source of human-generated emissions. These activities have had a broad range of observed effects that have made weather patterns less predictable. Climate change has been linked to more frequent and more intense weather events such as hurricanes, floods, winter storms, and heatwaves. Curbing dangerous climate change requires very deep cuts in emissions and implementing climate adaptation strategies.

The State has developed two scenarios to estimate future potential emissions levels and their impacts:

- » **Moderate Emissions Scenario** where greenhouse gas emissions peak around 2040 and then decline to lower than 1990 levels by the end of the century; and
- » **Business as Usual Scenario** where emissions continue to rise strongly through 2050 and plateau around 2100.

### Variations in Annual Precipitation

Baldwin Park (and the rest of California) is projected to experience significant variations in annual precipitation, resulting in really wet or dry years. Exceptionally dry years could lead to drought conditions and wet years could lead to more significant flooding events. Historically, Baldwin Park receives 14 to 18 inches (on average) each year.

Baldwin Park's projected rainfall is estimated to increase to 11.7 to 19.6 inches in the moderate scenario and 10.2 to 23.4 inches in a business-as-usual scenario by the end of the century. As described above, flooding is not of concern in Baldwin Park. However, annual precipitation events are projected to include years with extreme rainfall. This could cause an overflow in channels and other storm drainage infrastructure. Potential flooding from an overflow in storm drainage systems could cause damage to streets, utilities, and residential and commercial properties.

### Increased Temperature

In Baldwin Park, the historical annual average maximum temperature ranges from 78.38 to 79.6°F, with an average of 79.2°F. Extreme heat days, which are days when the daily maximum temperature is above the threshold temperature of 99.1°F, historically only occur on average for three days each year. However, by the end of the century, this is expected to increase by 17 days in the moderate scenario and 37 days in the business-as-usual scenario. These significant increases in temperatures can have dangerous impacts such as more frequent and prolonged heatwaves, wildfires, and droughts.

### Climate Change Vulnerability

For a more detailed discussion on climate change effects and impacts, refer to the Climate Change Vulnerability Assessment in Appendix A.

## Heatwaves and Drought

Severe heatwaves can seriously affect sensitive populations such as elderly residents, lower-income populations who cannot afford air conditioning systems or potential price surges for water and electricity, and homeless individuals without access to cooling centers. These weather events can cause severe symptoms such as heat exhaustion, heat stroke, and severe dehydration, and sometimes even death. People with chronic diseases are at greater risk of complications and death during a heatwave. Those with disabilities could also face difficulty accessing resources to stay cool and hydrated. Additionally, low-income communities of color and homeless individuals might not have access to cooling centers or potable water. These events can also cause widespread power outages due to increased use of air conditioning.

A drought is a period of unusually persistent dry weather that continues long enough to cause serious problems such as regional water supply shortages. Research suggests that extended drought occurrences could become more pervasive in future decades. Drought conditions can also put on a strain on water supply due to increased demand for water during extreme heat events.

## Wildfires

Heatwaves combined with drought and Santa Ana wind conditions can increase the likelihood and severity of wildfires within areas of severe wildfire hazard throughout the Los Angeles region. The effects of smoke can be more severe for sensitive populations, such as those with respiratory illnesses and other chronic diseases, the elderly, children,

*Tree shading at Morgan Park*





and communities of color who have historically lived in areas with more exposure to poor air quality.

Although Baldwin Park is not susceptible to wildfires due to its urbanized nature, the city could be affected by poor air quality caused by wildfire smoke. The Bobcat Fire of 2020 produced concentrations of toxic contaminants such as PM2.5 at levels that exceeded federal air quality standards for weeks throughout the region. In Los Angeles County, wildfires are projected increase under both scenarios, by an additional 3.6 to 6.3 acres each year by end of the century.

## Goal S-8. Respond to changing climate conditions to build a more resilient and adaptive Baldwin Park.

**Policy 8.01:** Design future utility and infrastructure improvements to anticipate increased demands resulting from changing climatic conditions.

**Policy 8.02:** Promote education and outreach to residents and businesses regarding the effects of changing climatic conditions on the economy, environment, and special populations (elderly, homeless, immuno-compromised, etc.).

**Policy 8.02:** Maintain and enhance the city's urban forest and shade shelter areas, including shaded playgrounds, bus shelters, etc.

**Action S-8.1:** Develop a heat response plan to set up systems to predict and communicate with the public about heat events, coordinate response, and designate cooling centers. Upgrade City facilities used as cooling centers and evacuation centers to accommodate changing future needs and conditions.

**Action S-8.2:** Track and monitor activation and usage of City facilities used as cooling centers and evacuation locations to identify trends associated with increased use.

**Action S-8.3:** Expand efforts to plant additional trees, gardens, and vegetation within neighborhoods and areas with minimal tree canopies.

**Action S-8.4:** Coordinate with public health departments on the increased risk to community health from reduced air quality, higher temperatures, reduction in mental and physical well-being, and an increase in occurrence and spread of infectious disease.

**Action S-8.5:** Encourage use of pavement materials designed to reflect solar energy, speed up evaporation, and otherwise stay cooler than traditional pavements in private development projects, and incorporate into public works projects.

**Action S-8.6:** Continue to work in close collaboration with water and energy providers in identifying and implementing demand management strategies.

## APPENDIX A: VULNERABILITY ASSESSMENT

### Introduction

Climate change is a long-term shift in average weather patterns that are typical in local, regional, and global climates. Climate adaptation is the process of adjusting to climate change in order to moderate its potential impacts. This Vulnerability Assessment addresses climate-related issues by addressing wildfire, local resiliency, and adaptive issues.

The greenhouse gas (GHG) emissions we generate are the leading cause of climate change. The level of GHG in our atmosphere has soared since the beginning of the 21st century. The burning of fossil fuels—coal, oil, and gas—for electricity, heat, and transportation is the primary source of human-generated emissions. These activities have had a broad range of observed effects that have made weather patterns less predictable. Climate change has been linked to more frequent and more intense weather events such as hurricanes, floods, winter storms, and heatwaves. Curbing dangerous climate change requires very deep cuts in emissions and implementing climate adaptation strategies.

California law requires each city and county to review and update, as necessary, the local General Plan Safety Element to address climate adaptation and develop resiliency strategies. This requires preparing a vulnerability assessment identifying the risks that climate change poses to that local geographic area. The California Adaptation Planning Guide 2.0 outlines the vulnerability assessment process as follows:

1. **Identify Exposure:** Provide an overview of existing hazards within the city and how these hazards will change due to the effects of climate change. Climate projection data from the Cal-Adapt<sup>1</sup> tool are used to understand how these changes will occur by mid-and late-century.
2. **Discuss Sensitivity and Potential Impacts:** Discuss the potential impacts that climate change will have on various populations and critical assets within the community.
3. **Assess for Adaptive Capacity:** Assess the City's and partner agencies' ability to cope with climate impacts. This is determined by a review of existing plans, policies, and programs.
4. **Vulnerability Scoring:** Scores potential impacts and adaptive capacity for reach population and asset at risk for each climate change-related effect identified in Step 2.

The information gathered from the vulnerability assessment is then used to develop a set of goals, policies, and objectives for climate adaptation. However, compliance with State laws is only part of the picture. Responding to the potential impacts of climate change is critical to ensuring the City remains prepared to address a range of potential impacts including extreme heat days, severe rainstorms, possible droughts, and wildfires.

<sup>1</sup> The Cal-Adapt tool is a publicly available tool that provides data and insights on how climate change might affect California at the local level. The tool was developed by UC Berkeley's Geospatial Innovation Facility and utilizes data gathered from California's scientific community. This assessment utilizes data accessed from the Cal-Adapt website in July and September 2021.



## Exposure

Direct changes (primary impacts) to the local climate include changes in average temperature and annual precipitation. Secondary impacts are those associated with these direct changes such as heatwaves, intense rainstorms, landslides, droughts, and wildfires. Information useful in understanding the potential for both primary and secondary impacts includes<sup>2</sup>:

- » Past major natural hazard events
- » Differences between current conditions and those projected for the middle and end of the 21st century
- » The pace at which these changes are projected to occur
- » The scale of the area in which these changes are projected to occur

### Past Major Natural Hazard Events

Within the northern San Gabriel Valley region, major climate-related events since the 1980s years have included fires and landslides, as summarized in Table 1. These events have all occurred within the foothills of the Angeles National Forest, over 2.5 miles north of the northern boundary of Baldwin Park.

Baldwin Park is generally flat with limited changes in elevation. No forestland or large open areas are located nearby, with the exception of local parks and the Santa Fe Dam Recreational Area to the immediate north. Given existing topography and limited wildland, the risk from wildfires and landslides is low.

**Table SA-1: Major Historic Natural Hazard Events in Near Baldwin Park**

Event	Date	Location	Damages
Stable Fire	November 1980	Bradbury	57 structures destroyed
Curve Fire	September 2002	Azusa Canyon	72 structures destroyed
Station Fire	August 2009	Angeles National Forest, La Cañada-Flintridge	209 structures destroyed; 2 fatalities
Mountain Cove Fire	August 2020	Azusa Canyon	No information available
Bobcat Fire	September 2020	Central San Gabriel Mountains	170 structures destroyed

Sources: Los Angeles Almanac, Wildfires in Los Angeles County, 2021; City of Baldwin Park, Local Hazard Mitigation Plan, 2004.

<sup>2</sup> The data used to understand the points listed above are sourced from California's Cal-Adapt tool and the City of Baldwin Park's 2004 Local Hazard Mitigation Plan (LHMP).



### Projected Climate Change Effects

Cal-Adapt<sup>3</sup> has developed two scenarios, called Representative Concentration Pathways (RCPs), to estimate future potential emission levels:

- » **RCP 4.5:** A “medium” emissions scenario that models a future where greenhouse gas emissions peak around 2040 and then decline to lower than 1990 levels by the end of the century. This moderate emissions scenario assumes that society will make significant strides in the reduction of greenhouse gas emissions; and
- » **RCP 8.5:** A “business as usual” scenario where emissions continue to rise strongly through 2050 and plateau around 2100.

While the best available data are used in these models, climate change projections involve inherent uncertainty. This uncertainty largely derived from the fact that climate projections depend on future greenhouse gas emission scenarios that are estimates and cannot be known, and that different climate change models result in differing outcomes or impacts. The different scenarios also indicate the level of risk involved when developing climate adaptation strategies. The medium emissions scenario relies on less aggressive strategies due to progress towards emissions reduction and the business as usual scenario relies on more aggressive strategies due to a continuance in rising emissions.

#### Changes in Annual Precipitation

California’s climate varies between wet and dry years. Research suggests that for much of California, wet years will become wetter and dry years will become drier. While California is not predicted to experience a significant change in average annual precipitation in the next 50 to 75 years, precipitation will likely be delivered in more intense storms and within a shorter wet season. The modeled historical baseline for annual precipitation in Baldwin Park ranges between 14.0 to 18.0 inches. Table SA-2 summarizes the changes in annual precipitation under each of the emissions scenarios.

**Table SA-2: Projected Changes in Annual Precipitation in Baldwin Park**

	Change from baseline	30-year average	30-year Range
<b>Baseline (1961-1990)</b>			
Modeled historical	-	16.3 inches	14.0 - 18.0 inches
<b>Mid-Century (2035-2064)</b>			
Medium Emissions	-0.5 inches	15.8 inches	12.2 - 20.8 inches
High Emissions	-0.3 inches	16.0 inches	12.1 - 21.3 inches
<b>End-Century (2070-2099)</b>			
Medium Emissions	0.0 inches	16.3 inches	11.7 - 19.6 inches
High Emissions	-0.3 inches	16.0 inches	10.2 - 23.4 inches

Source: Cal-Adapt Local Climate Change Snapshot for Baldwin Park, 2021

<sup>3</sup> Cal-Adapt synthesizes volumes of downscaled climate change projections and climate impact research from California’s scientific community. Cal-Adapt has been developed by the Geospatial Innovation Facility at University of California, Berkeley with funding and advisory oversight by the California Energy Commission and California Strategic Growth Council.



Just like California as a whole, Baldwin Park is projected to experience minimal fluctuation in the 30-year average precipitation through the end of the century, while the range in annual precipitation is expected to become greater, indicating that Baldwin Park could experience significant annual variations of really wet or dry years. Exceptionally dry years could lead to drought conditions and wet years could lead to more significant flooding events.

**Increased Temperatures**

Overall temperatures are projected to rise in California during the 21st century. In Baldwin Park, the historic annual average maximum temperature ranges from 78.38 to 79.6°F, with an average of 79.2°F. Extreme heat days, which are days when the daily maximum temperature is above the threshold temperature of 99.1°F, have a historical average of three days per year. By the end of the century, this is expected to increase by 17 days per year in the medium scenario and 37 days per year in the high emissions scenario. Tables SA-3 and SA-4 summarize the projected increases in annual average temperatures and extreme heat days under both scenarios. These significant increases in temperatures can have dangerous impacts such as more frequent and prolonged heatwaves, fires, and droughts.

**Table SA-3: Projected Changes in Average Maximum Temperature in Baldwin Park**

	Change from baseline	30-year average	30-year Range
<b>Baseline (1961-1990)</b>			
Modeled historical	-	79.2°F	78.8 - 79.6°F
<b>Mid-Century (2035-2064)</b>			
Medium Emissions	+4.3°F	83.5°F	81.2 - 86.0°F
High Emissions	+5.2°F	84.4°F	81.9 - 86.5°F
<b>End-Century (2070-2099)</b>			
Medium Emissions	+5.4°F	84.6°F	82.5 - 87.6°F
High Emissions	+8.5°F	87.7°F	84.9 - 91.4°F

Source: Cal-Adapt Local Climate Change Snapshot for Baldwin Park, 2021

**Table SA-4: Projected Changes in Extreme Heat Days in Baldwin Park**

	Change from baseline	30-year average	30-year Range
<b>Baseline (1961-1990)</b>			
Modeled historical	-	3 days	1 - 4 days
<b>Mid-Century (2035-2064)</b>			
Medium Emissions	+12 days	15 days	9 - 37 days
High Emissions	+16 days	19 days	12 - 41 days
<b>End-Century (2070-2099)</b>			
Medium Emissions	+17 days	20 days	13-55 days
High Emissions	+37 days	40 days	26 - 88 days

Source: Cal-Adapt Local Climate Change Snapshot for Baldwin Park, 2021



### Wildfires

Heatwaves, combined with drought and Santa Ana wind conditions, can increase the likelihood and severity of wildfires. Although Baldwin Park is not susceptible to wildfires due to a lack of open and forestland areas nearby, the city could be affected by poor air quality caused by wildfire smoke. For example, the Bobcat Fire of 2020 produced concentrations of toxic contaminants such as PM2.5 at levels that exceeded federal air quality standards throughout the Los Angeles region.

Where and how wildfire activity will occur is difficult to project due to the uncertainty of influencing factors, such as development patterns and pest infestations. However, the Cal-Adapt tool does provide a high-level assessment of the likeliness of an increase in wildfire activity. The tool uses a statistical model based on historical data of climate, vegetation, population density, and fire history. Since Baldwin Park does not have any fire hazard severity zones within its boundaries, Table SA-5 summarizes wildfire projections for Los Angeles County. Wildfires occurring in the region are likely to impact air quality in Baldwin Park.

**Table SA-5: Projected Wildfire Activity in Los Angeles County**

	Change from baseline	30-year average	30-year Range
<b>Baseline (1961-1990)</b>			
Medium Emissions	-	12235.2 acres	11780.7 - 12502.8 acres
High Emissions	-	12159.4 acres	11800.7 - 12419.5 acres
<b>Mid-Century (2035-2064)</b>			
Medium Emissions	+1897.3 acres	14132.5 acres	13338.6 - 15078.3 acres
High Emissions	+1834.0 acres	13993.4 acres	12559.2 - 14686.1 acres
<b>End-Century (2070-2099)</b>			
Medium Emissions	+1552.6 acres	13787.8 acres	13063.7 - 14572.0 acres
High Emissions	+876.5 acres	13035.9 acres	11715.6 - 13911.7 acres

Source: Cal-Adapt Local Climate Change Snapshot for Baldwin Park, 2021

### Droughts

Drought is characterized as a period of unusually persistent dry weather that continues long enough to cause serious problems, such as regional water supply shortages. One dry year does not normally constitute a drought in California but serves as a reminder of the need to plan for droughts. Drought is a gradual phenomenon that occurs slowly over a multi-year period. Research suggests that extended drought occurrences could become more pervasive in future decades. The modeled historical baseline shows that in Baldwin Park the maximum length of a dry spell ranges from 142 to 166 days. These are expected to increase by eight to 16 days by the middle and end of the century (see Table SA-6).



**Table SA-6: Projected Maximum Lengths of Dry Spell Period in Baldwin Park**

	Change from baseline	30-year average	30-year Range
<b>Baseline (1961-1990)</b>			
Modeled Historical	-	154 days	142- 166 days
<b>Mid-Century (2035-2064)</b>			
Medium Emissions	+8 days	162 days	145 - 182 days
High Emissions	+10 days	164 days	142 - 184 days
<b>End-Century (2070-2099)</b>			
Medium Emissions	+8 days	162 days	147 - 182 days
High Emissions	+16 days	170 days	137 - 204 days

Source: Cal-Adapt Local Climate Change Snapshot for Baldwin Park, 2021

## Sensitivity and Potential Climate Change Impacts

Climate change effects including heatwaves, wildfire, drought, and flooding can impact population certain population groups and assets more severely than others.

### Heatwaves

Severe heatwaves can seriously affect sensitive populations such as elderly residents, lower-income populations who cannot afford air conditioning systems or potential price surges for water and electricity, and homeless individuals without access to cooling centers. These weather events can cause severe symptoms, such as heat exhaustion, heat stroke, and severe dehydration, and sometimes even death. People with chronic diseases are at greater risk of complications and death during a heatwave. Those with disabilities could also face difficulty accessing resources to stay cool and hydrated. Additionally, low-income communities of color and homeless individuals might not have access to cooling centers or potable water.

Extreme heat events can put a strain on electrical supply, transmission, and distribution systems, which in turn increase the risk of very costly and disruptive blackouts. Disruptions to the power grid will almost always result in disruptions in other infrastructure systems, especially in urban systems, triggering serious cross-sector cascading infrastructure system failures in some locations, at least for short periods. Though a widespread and prolonged power failure has not affected Baldwin Park, the potential damage as a result of one would negatively impact services provided to local residents and businesses, the function of City government, and residents’ quality of life. To respond, maintain, and coordinate power, there will need to be fuel for generators, infrastructure in place to protect vital services, and people who can implement emergency power plans.

Water supply can also become overburdened during extreme heat events due to increased demand and reductions in the natural replenishments of local water storage facilities. A warming climate reduces the Sierra Nevada snowpack and causes an earlier spring runoff, which could result in reduced water storage capacity. Additionally, California regularly experiences drought conditions that impact local water supplies.

three water purveyors provide water services in the City of Baldwin Park: Valley County Water District (VCWD), San Gabriel Valley Water Company, and Valley View Mutual Water Company. The VCWD is the largest water supplier and serves most of Baldwin



Park as well as Irwindale, West Covina, and Azusa. VCWD sources its water from a local groundwater basin, known as the Main San Gabriel Basin, water purchased from the Covina Irrigating Company, and treated imported water from Metropolitan Water District of Southern California (MWD). Most of the water is sourced from the Main San Gabriel Basin. The basin has seen historic lows due to recent droughts (2001-2017 especially). Despite near-average rainfall between 2019-2020, local stormwater capture and recharge was only 78 percent of the average.<sup>4</sup> The exceptionally dry ground has been absorbing stormwater runoff instead of flowing into local storage facilities. However, water conservation and management strategies have been improving water supply. Water use has decreased by 30 percent since 2006, which has helped stave off water shortages.

### Safety Element Considerations

The following are issues for consideration in the Safety Element:

- » Strain on utilities: As mentioned, extreme heat events cause an increased demand for water and power. Policies should support effective management of electrical supply to mitigate any potential blackouts and impacts to critical infrastructure. Incorporating water conservation and management policies is also critical to minimizing strains on the water supply system.
- » Access to cooling centers and devices: The City coordinates with Los Angeles County to operate a cooling center. The City could look into expanding or upgrading the centers or provide technical/financial assistance to property owners for implementing weatherization measures on their properties.
- » Heat reduction: The City should consider ways to reduce heat island effect. These could be in the form of zoning requirements or incentives for green or cool roofs, installation of cool pavements and shade structures in public works projects, encouraging green infrastructure, enhancing the tree canopy, etc.

### Wildfires

Wildfires themselves are not an immediate hazard to Baldwin Park since no fire hazard severity zones are located within the city boundaries. However, wildfire smoke can significantly impact air quality and could be especially dangerous to sensitive populations. Smoke releases high concentrations of particulate matter and carbon monoxide. Other air pollutants such as acrolein, benzene, and formaldehyde are present in smoke, but in much lower concentrations than particulate matter and carbon monoxide. The effects of smoke range from eye and respiratory tract irritation to more serious disorders, including reduced lung function, bronchitis, exacerbation of asthma, and premature death. These effects can be more severe for sensitive populations, such as those with respiratory illnesses and other chronic diseases, the elderly, and children.

Other populations at risk of experiencing the impacts of wildfire include low-income communities and/or communities of color who have historically lived in areas or worked in areas with more exposure to poor air quality. Low-income communities of color might also not be able to afford to implement air purification measures in their homes.

### Safety Element Considerations

The Safety Element contains several goals and policies relating to fire prevention. The City's General Plan also includes an Air Quality Element. The following are additional issues that should be considered in the updated Safety Element:

<sup>4</sup> Main San Gabriel Basin Water Master, 2019-2020 Annual Report, 2020.



- » Air quality alerts: The City can partner with and support the Southern California Air Quality Management District in disseminating air quality alerts to residents.
- » Weatherization measures: The City could support property owners interested in implementing weatherization measures on their properties with technical assistance, streamlined permitting, and with financial assistance as feasible, including Community Development Block Grant funding.

## Drought

As the climate continues to warm, a tighter squeeze on water supplies will occur. Rising surface temperatures also imply greater moisture loss in vegetation and on the ground surface. These conditions can put stress on existing water supply and water storage facilities.

Drought can also cause respiratory illnesses since there is no rainwater available to flush out airborne pollutants. This could have severe effects on those with respiratory illnesses or other disabilities. Additionally, low-income populations and communities of color are potentially more likely to experience water shortages during periods of drought as they may be unable to afford any price surges caused by increased demand for water.

### Safety Element Considerations

- » Water conservation: The Safety Element should address issues related to water conservation to ensure that supplies are not exhausted during periods of drought.

## Flooding

The City of Baldwin Park is not situated within an area prone to flood hazards, according to Federal Emergency Management Agency (FEMA) maps. However, projections in annual precipitation show likely years with extreme rainfall. This could cause an overflow in channels and other storm drainage infrastructure, including nearby dams. Potential flooding from an overflow in storm drainage systems could cause damage to local infrastructure, such as streets, utilities, and residential and commercial properties.

### Safety Element Considerations

- » Expansion of storm drainage systems: The City, in cooperation with the Los Angeles County Department of Public Works, should evaluate the need to expand the capacity of flood control and storm drainage facilities to minimize flood hazards resulting from extreme weather events.

## Adaptive Capacity

The City and regional agencies have developed policies, plans, and programs to moderate the potential damages caused by climate change and/or natural hazards, as summarized in this section.

### Existing Plans and Reports

#### Baldwin Park General Plan

The General Plan provides a long-term vision and policy guidance for future development of the community. Actions taken, laws enacted, and agreements made by the City must be consistent with the policies of the General Plan. State law requires the General Plan to include eight chapters (or otherwise address the required content): land use, circulation, housing, noise, safety, open space, conservation, and environmental justice. In 2014, the City adopted a new General Plan element: the Health and Sustainability



Element. The element provides guidance on how to integrate health and sustainability into local planning efforts. The plan lays the groundwork for:

- » More compact and equitable development through green building infrastructure and that supports the use of alternative transportation options
- » Improving air quality, promoting conservation efforts, reducing greenhouse gas emissions, and minimizing pollution
- » Increasing open space and recreational areas citywide

### Local Hazard Mitigation Plan

The City's All Hazard Mitigation Plan (AHMP), last updated in 2004, provides a framework for the identification and coordination of hazard mitigation strategies and is required to be updated in order to qualify the City for federal disaster assistance. The AHMP provides an assessment of risk and vulnerability associated with local natural and human-made hazards such as earthquake/liquefaction, drought, transportation incidents, hazardous materials, etc. An update to the AHMP is recommended and should include an assessment of the impacts of climate change on existing hazards.

### Prepared Energy Action Plan

In 2012, Baldwin Park and 26 other member cities of the San Gabriel Valley Council of Government (SGVCOG) participated in the Energy Action Plan project. The project, which is administered by Southern California Edison, is meant to implement strategies to achieve statewide energy efficiency. Baldwin Park identified key electricity efficiency targets in its plan that included:

- » 15 percent reduction in existing residential electricity use
- » 10 percent reduction in existing nonresidential electricity use
- » Reduction in municipal electricity use to 10 percent below 2004 levels

The City also listed several near-term municipal projects that would support energy conservation efforts such as retrofitting City-owned streetlights, upgrading to energy efficient appliances at City Hall, and other retrofits at various City-owned properties. In 2019, four cities updated their plans' policies and visions (Arcadia, Covina, Pomona, and San Marino). The City of Baldwin Park should explore making updates to the 2012 Energy Action Plan to incorporate recent findings and explore innovations.

### Urban Water Management Plan

The Valley County Water District, which is the primary water supplier for Baldwin Park, is required by State law to prepare an Urban Water Management Plan. The plan is updated every five years and was last updated in 2015. The plan's objective is to describe and evaluate sources of water supply and to implement demand management activities.

### California's Fourth Climate Change Assessment Los Angeles County Summary Report

The Los Angeles County Regional Summary Report, prepared in 2018, is one of a series of 12 climate vulnerability assessments in California that provide an overview of climate science, climate adaptation strategies, and key research gaps needed to safeguard the region from climate change. The Summary Report breaks down regional vulnerability by land use, infrastructure and services, and communities.

### Responsible Agencies

Baldwin Park is reliant on several critical agencies for hazard mitigation services and public safety. These agencies are assessed to determine their capacity to adapt to



climate impacts based on existing policies, plans, and/or programs.

- » Fire Services. The City contracts with the Los Angeles County Fire Department (LACoFD) for emergency medical services, fire and rescue services, and safe haven services. LACoFD operates Station No. 29 in Baldwin Park and two others in adjacent jurisdictions. Service to the northeast area of the city generally comes from Station No. 48 in Irwindale and Station No. 47 in Industry serves all areas south of the I-10 freeway. LACoFD cooperates with the San Gabriel Valley Fire Authorities in West Covina under an automatic aid agreement, which allows Baldwin Park and West Covina stations to provide mutual response assistance.
- » Law Enforcement. Law enforcement services are provided by the City of Baldwin Park Police Department, which operates out of its headquarters adjacent to City Hall. The department provides law enforcement through its basic police patrol service. The patrol function is supplemented by their highly specialized Detective Bureau, which conducts all follow-up investigations to reported crime. The department’s Community Relation Bureau increases the community’s involvement in crime prevention, provides education in various aspects of public safety, and conducts Neighborhood Watch and Business Watch meetings.

## Vulnerability Scoring

A scoring system can help identify priority climate vulnerabilities. The vulnerability scores identified here are based on the combination of potential impact and adaptive capacity. The scoring process is qualitative and uses California Adaptation Planning Guide guidance. Table SA-7 summarizes the scoring rubric used to prioritize vulnerabilities. Table SA-8 summarizes overall vulnerability scores based on the potential impact and adaptive capacity score.

**Table SA-7: Potential Impact and Adaptive Capacity Scoring Rubric**

Event	Data	Location
Low	Impact is unlikely based on projected exposure; would result in minor consequences to public health, safety, and/or other metrics of concern.	The population or asset lacks capacity to manage climate impact; major changes would be required.
Medium	Impact is somewhat likely based on projected exposure; would result in some consequences to public health, safety, and/or other metrics of concern.	The population or asset has some capacity to manage climate impact; some changes would be required.
High	Impact is highly likely based on projected exposure; consequences to public health, safety, and/or other metrics of concern	The population or asset has high capacity to manage climate impact; minimal to no changes are required.

**Table SA-8: Vulnerability Score Matrix**

Potential Impacts	<b>High</b>	3	4	5
	<b>Medium</b>	2	3	4
	<b>Low</b>	1	2	3
		<b>High</b>	<b>Medium</b>	<b>Low</b>
<b>Adaptive Capacity</b>				



Table SA-9 provides a description of each vulnerability for various populations and assets at risk of experiencing climate change-related impacts within the City. The scores presented in Table 9 help identify the most pressing issues requiring adaptation action. The scores can range from 1 to 5, with 1 being a low priority and 5 being a high priority. Generally, a high priority risk is one where the potential climate change impact is high and the City’s current capacity to address the impact requires enhanced interventions to meet projected climatic conditions.

**Table SA-9: Vulnerability Scoring**

Vulnerability Description	Potential Impact	Adaptive Capacity	Vulnerability Scoring
Increased human health risk (heat-related illnesses, poor air quality, worsening of existing health conditions, etc.)	High	Medium	4
Reduced water supply availability due to extended drought periods	High	Medium	4
Increased exposure of people to wildfires	Low	High	1
Increased energy system stress during droughts and extreme heat events	High	Medium	4
Increase in water demand	High	Medium	4
Increased demand for emergency response services	Low	High	1
Increased demand for emergency facilities (e.g. hospitals, cooling centers, telecommunication systems, and evacuation centers)	Low	High	1
Increased risk of damage to emergency facilities	Low	High	1