CITY OF HAWTHORNE

LOCAL HAZARD MITIGATION PLAN

2019 PLAN UPDATE

March, 2020

Record of Reviews and Revisions

Revision #	Date	Sections Reviewed or Revisions Made	Entered by

Table of Contents '

Section 1: Introduction

The City of Hawthorne (City) has prepared the 2019 Local Hazard Mitigation Plan (LHMP) in order to assess the natural caused risks to the City so as to reduce the potential impact of the hazards by creating mitigation strategies. The 2019 LHMP represents the City's commitment to create a safer, more resilient, community by taking actions to reduce risk and by committing resources to lessen the effects of hazards on the people and property of the City.

This plan complies with the Federal Disaster Mitigation Act (2000), Federal Register 44 CFR Parts 201 and 206, which modified the Robert T. Stafford Disaster Relief and Emergency Assistance Act by adding a new section, 322 - Mitigation Planning. This law, as of November 1, 2004, requires local governments to develop and submit hazard mitigation plans as a condition of receiving Hazard Mitigation Grant Program (HMGP) and other mitigation project grants. The City's Emergency Preparedness Coordinator has coordinated preparation of the LHMP in cooperation with other the City's departments, community stakeholders, partner jurisdictions, agencies and organizations, and members of the public.

This introduction to the LHMP provides a brief description of hazard mitigation planning, local mitigation plan requirements, and an outline of the 2019 LHMP. There is also an overview of Federal Emergency Management Agency (FEMA) programs and grants related to hazard mitigation.

1.1 Hazard Mitigation Planning

Hazard mitigation is any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards. In general, hazard mitigation is work done to minimize the impact of a hazard event before it occurs, with the goal of reducing losses from future disasters. 44 CFR § 201.1(b) describes the purpose of mitigation planning is for local governments to identify the hazards that impact them, to identify actions and activities to reduce losses from those hazards, and to establish a coordinated process to implement the plan, taking advantage of a wide range of resources. For the City, hazard mitigation planning is a process in which the City will:

- Identify and profile hazards that affect the local area;
- Analyze the population and facilities at risk from those hazards;
- Develop a mitigation strategy and actions to lessen or reduce the impact of the profiled hazards.
- Implement the strategy and actions that may involve planning, policy changes, programs, projects, and other activities.

The City's implementation of mitigation actions, which may be short-term or long-term strategies, is the primary objective of the planning process. This type of planning will supplement the City's comprehensive planning and emergency management programs.

1.2 Local Mitigation Planning Requirements

Hazard mitigation planning is governed by the Stafford Act, as amended by the Disaster Mitigation Act of 2000 (DMA 2000), and by federal regulations implementing the Stafford Act. DMA 2000 revised the Stafford Act to require state, local, and tribal governments to develop and submit to FEMA a mitigation plan that outlines processes for identifying the natural hazards, risks, and vulnerabilities of the jurisdiction. Plan approval by FEMA is a prerequisite to receiving federal hazard mitigation grant funds. (See 42 USC § 5165(a).)

To implement the mitigation planning requirements of the Stafford Act, FEMA promulgated 44 CFR Part 201, the federal regulations governing the planning process, plan content, and the process for obtaining approval of the plan from FEMA. The planning requirements set forth in the CFR are identified throughout this plan mirroring the order of the FEMA Regulation Checklist in the Local Mitigation Plan Review Tool.

FEMA has produced a Local Mitigation Plan Review Tool, which has been tailored by Region IX as an appendix to the *Local Mitigation Planning Handbook (2013),* to demonstrate how the mitigation plan meets the regulation in 44 CFR § 201.6, and offers State and FEMA Mitigation Planners an opportunity to provide feedback to the jurisdiction. The Plan Review Tool has a regulation checklist that provides a summary of FEMA's evaluation of whether the plan has addressed all requirements. Local planners can also use the checklist prior to submitting the plan for approval to ensure they have addressed all the requirements. The Local Mitigation Plan Review Tool Regulation Checklist is provided in Appendix A of this document.

1.3 Hazard Mitigation Plan Description

The 2019 LHMP consists of the sections and appendices described below:

Table 1-1: Plan Sections, Appendices, and Descriptions

Section 1: Plan Introduction	Section 1 includes an introduction to hazard mitigation planning, lists the LHMP planning requirements, provides a description of the plan, and discusses grants related to hazard mitigation.
Section 2: Planning Process &	Section 2 describes the planning process for the 2019 LHMP, including an overview of how the LHMP was prepared, identification of the LHMP planning team, involvement of outside agencies and communities, the inclusion of related plans, reports and information, and stakeholder and public outreach activities.
Section 3: Community Description	Section 3 includes a description of the natural and built out state of the City, including climate, geography, demographics and economic conditions.
Section 4: Capability Assessment	Section 4 identifies and evaluates the resources available for hazard mitigation within the City
Section 5: Risk Assessment	Section 5 provides a list of the hazards identified in the 2019 LHMP, a profile of each hazard and hazard summary, and a risk assessment of the planning area.
Section 6: Mitigation Strategy	Section 6 identifies and evaluates the current, ongoing, and completed mitigation projects and programs in the City, and lists mitigation strategies for reducing potential losses.
Section 7: Plan Maintenance Procedures	Section 7 describe procedures for updating the LHMP to keep it current and for continued public engagement in the planning process.
Section 8: Adoption Resolution	Section 8 includes documentation of CalOES and FEMA process, and adoption of the LHMP by the City Council.
Appendix A (	Appendix A contains the FEMA Local Mitigation Plan Review Tool, which documents the City's compliance with the local hazard mitigation plan requirements of 44 CFR Part 201.
Appendix B	Appendix B contains documentation of the planning process for the planning team, including meetings, presentations, emails, etc.
Appendix C (	Appendix C contains documentation of the planning process including meetings, presentations held for the stakeholders and public, and other stakeholder/public outreach efforts.
Appendix D	Appendix D contains the mitigation activity prioritization plan %
Appendix E	Adoption into the City General Plan Safety Element (Resolution) %
Appendix F	Appendix D lists acronyms and abbreviations used in the 2019 LHMP.

1.4 Assembly Bill 2140

The California Disaster Assistance Act limits the state share for any eligible project to no more than 75% of total state eligible costs, except that the state share shall be up to 100% of total state eligible costs connected with certain events. AB 2140 prohibits the state share for any eligible project from exceeding 75% of total state eligible costs unless the local agency is located within a city, county, or city and county that has adopted a local hazard mitigation plan in accordance with the federal DMA 2000 as part of the safety element of its general plan, in which case the Legislature may provide for a state share of local costs that exceeds 75% of total state eligible costs.

The California Government Code, Sections 8685.9 and 65302.6, allow for the State Legislature to provide for a state share of local costs that exceeds 75% of total state eligible costs where the local agency is located within a city, county, or city and county that has adopted a local hazard mitigation plan in accordance with the federal Disaster Mitigation Act of 2000 (P.L.106-390) as part of the safety element of its general plan adopted pursuant to subdivision (g) of Section 65302.

By incorporating the LHMP by reference into the Public Safety Element of the General Plan, the City will be considered eligible for the increased State share of public assistance reimbursement for disaster recovery projects.

The adoption of the LHMP by reference into the Public Safety Element of the General Plan, will allow the City to be eligible for additional disaster recovery funding from the State of California. The Local Hazard Mitigation Plan has been incorporated into the City of Hawthorne General Plan Safety Element document, implementation plans, background studies, and is referenced in the City Council Resolution 19-XXX adopted on [Date] as identified in Section 8.

1.5 Grant Programs with Mitigation Plan Requirements

Currently, five FEMA grant programs provide funding to local entities that have a FEMA-approved local mitigation plan meeting federal hazard mitigation plan requirements. Two of the grant programs are authorized under the Stafford Act. The remaining three programs are authorized under the National Flood Insurance Act and the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act.

1.5.1 Stafford Act Grant Programs

Funding is provided to state, local, and tribal governments that have an approved Hazard Mitigation Plan through the following programs.

Hazard Mitigation Grant Program (HMGP)

The HMGP provides grants to implement long-term hazard mitigation measures after declaration of a major disaster. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters, and to enable mitigation measures to be implemented during the immediate recovery from a disaster. To qualify for HMGP funding, projects must provide a long-term solution to a problem, and the project's potential savings must exceed the cost of implementing the project.

HMGP Funds may be used to protect either public or private property, or to purchase property that has been subjected to, or is in danger of, repetitive damage. The amount of funding available for the HMGP under a particular disaster declaration is limited. Under the program, the federal government may provide a state or tribe with up to 20% of the total disaster grants awarded by FEMA, and may provide up to 75% of the cost of projects approved under the program.

The Pre-Disaster Mitigation (PDM) Program

The PDM provides funds to state, local, and tribal entities for hazard mitigation planning and mitigation projects before a disaster event. PDM grants are awarded on a nationally competitive basis. The cost benefit of a PDM project must be more than the cost of implementing the project. Funds may be used to protect either public or private property or to purchase property that has been subjected to repetitive damage. In April of 2014, FEMA announced $112 million in funding available through two Hazard Mitigation Assistance (HMA) grant programs: Flood Mitigation Assistance (FMA) and PDM. Congress originally appropriated $23 million for PDM grants, but increased the allotment to $63 million. The Federal government provides up to 75% of the cost of projects approved under the program.

1.5.2 National Flood Insurance Act Grant Programs

Flood Mitigation Assistance Grant Program

The goal of the FMA Grant Program is to reduce or eliminate flood insurance claims under the National Flood Insurance Program (NFIP). This program places emphasis on mitigating repetitive loss (RL) properties. The primary source of funding for the FMA program is the National Flood Insurance Fund. Grant funding is available for planning, project, and technical assistance. Project grants are awarded to local entities to apply mitigation measures to reduce flood losses to properties insured under the NFIP. In FY 2014, FMA funding totaled $89 million. The cost-share for this grant is 75% federal and 25% nonfederal.

If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the Federal Government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods. The following table summarizes the City's participation in the program:

Table 1-2: NFIP Participation

NFIP Participation							
CID	Community Name	County	Initial Flood Hazard Boundary Map Identified	Initial Flood Hazard Rate Map Identified	Curr. Eff. Map Date	Reg.-Emer. Date	Tribal
060123#	Hawthorne, City Of	Los Angeles County	05/09/78	12/04/79	(Non-Special Flood Hazard Area)	08/13/79	No

Repetitive Flood Claims Program

The Repetitive Flood Claims (RFC) Program provides funding to reduce or eliminate the long- term risk of flood damage to residential and non-residential structures insured under the NFIP. Structures considered for mitigation must have had one or more claim payments for flood damages.

There were no properties identified as having repetitive losses from flood damage. However, two recommendations mitigating flood hazards were identified in the *Mitigation Action Plan and Prioritization* table (6-4). Specifically, the actions are designed to address the potential repetitive loss properties and flooding within the City from sewer system failures.

Section 2: Planning Process '

The requirements for documentation of the LHMP planning process are described below. This section summarizes the planning area's hazard mitigation planning efforts in 2019. In addition, the section describes public and stakeholder outreach efforts as part of the LHMP planning process. The section also summarizes the review and incorporation of existing plans, studies, and reports used to develop the LHMP. Documentation of the 2019 LHMP planning process for the Hazard Mitigation Planning Team is provided in Appendix B, and documentation of the planning process for the Public and Stakeholders is found in Appendix C. These appendices document the planning meetings and outreach, and include meeting agendas, presentation, materials and other documentation used to conduct the planning process.

FEMA REGULATION CHECKLIST: PLANNING PROCESS %

Documentation of the Planning Process %

44 CFR § 201.6(c)(1): The plan shall include documentation of the planning process ! used to develop the plan, including how it was prepared, who was involved in the ! process, and how the public was involved. !

Elements %

A1. Does the Plan document the planning process, including how it was prepared and ! who was involved in the process for each jurisdiction? 44 CFR § 201.6(c)(1) !
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? 44 CFR 201.6(b)(2) !
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? !
44 CFR 201.6(b)(1) and 201.6(c)(1) !
A4. Does the Plan document the review and incorporation of existing plans, studies, reports, and technical information? 44 CFR 201.6(b)(3) !

The planning process began with the City establishing the planning area and inviting stakeholder within the planning area to participate in the process. In addition, the City identified the financial and technical resources required to update the LHMP. Once all the City Departments' financial and technical resources were identified, the City established the planning team and created a schedule for the process.

2.1 Plan History

This LHMP is an update to the October 27, 2014 LHMP that expired in August 12, 2019.

2.2 Plan Purpose and Authority

The purpose of the LHMP is to identify natural hazards that impact the City, assess the vulnerability and risk posed by those hazards to community-wide human and structural assets, develop strategies for mitigation of those identified hazards, present future maintenance procedures for the plan, and document the planning process. The LHMP is prepared in compliance with DMA 2000 requirements and represents an update of the 2014 Plan listed in Section 2.1.

The City is a General Law City. As such, it is empowered to formally plan and adopt the LHMP.

Funding for the development of the LHMP was provided by a FEMA Section 404 Hazard Mitigation Grant acquired as a subgrantee through CalOES. Constant & Associates was retained by the City to provide consulting services in guiding the planning process and Plan development.

2.3 Planning Process Description

The City has prepared the 2019 LHMP in order to assess the natural, technological, and human-caused risks to the City and to reduce the potential impact of the hazards by creating mitigation strategies. The 2019 LHMP represents the City's commitment to create a safer, more resilient community by taking actions to reduce risk and by committing resources to lessen the effects of hazards on the people and property of the City. The resources and information within the LHMP are intended to:

- Identify and evaluate the risks and vulnerabilities to various hazards
- Assist in the integration of mitigation goals and objectives with other local plans
- Identify existing mitigation activities and prioritize future projects
- Meet the requirements of federal mitigation programs
- Lay the foundation for future LHMP updates and regular LHMP maintenance
- Establish a basis for coordination and collaboration among agencies and the public

In addition, the LHMP is designed to ensure the long-term values of the community are not compromised in the course of preparing for, responding to or recovering from natural and manmade hazards. The process of updating the hazard mitigation plan included four broad tasks:

I. **Assess risks** - The City's General Plan and the 2014 LHMP were reviewed to assure that the hazards identified reflected the best-available assessment of the natural or human-caused risks to the City. A summary of recent events was also compiled to identify if any new hazards are present and whether an increase in the frequency or severity of hazards occurred since the 2014 LHMP. Other multi-hazard mitigation plans that have been approved by FEMA for neighboring jurisdictions were also reviewed.

II. **Organize resources** - Current resources available for hazard mitigation activities within the city were identified to understand the City and community's collective capabilities to prepare for, respond to, and recover from events. Resources identified include plans and programs, technical, fiscal, administrative and political, and education and outreach capabilities.

III. **Develop mitigation strategies** - Current hazard mitigation activities (or the lack thereof) were identified and evaluated by the planning team. The evaluation of current activities allowed those activities to be reviewed in relation to the City's hazard risk assessment, which in turn, identified those hazards that required additional or initial mitigation activities. Mitigation options for each

hazard were then identified, analyzed, and prioritized. These options or alternatives became the core of the City's action plan.

IV. **Implement the LHMP and monitor progress** - The LHMP will be integrated with City's existing emergency response plans and planning mechanisms, including the Public Safety Element of the General Plan. Emergency preparedness operations will be guided by the LHMP, which can also guide and support asset management on project prioritization during the 5-year plan period. Additionally, the LHMP will inform capital improvement programs and project planning.

2.4 Planning Team

In August 2019, the City formed a hazard mitigation planning team tasked with assisting in the update to the LHMP. The team was led by the City's Emergency Services Coordinator and Public Works Director. The hazard mitigation planning team was comprised of staff from various City departments and included the staff/departments contained in **Table 2-1.**

Table 2-1: LHMP Planning Team

Department or Agency	Member Name	Key Role
City PM	Neil Gafney Doug Krauss Samuel English	Co-chair of Planning Team, Primary Point of Contact. Provide guidance to the planning team and serve contact with the consultant. (Samuel English took over in December, 2019.)
Los Angeles County Fire Department	Capt. Reggie Johnson	Provide input for the Fire Department
City Police Department	Aimee Yoshida	Provide input for the Police Department
Public Works Director / City Engineer	Alan Leung	Hawthorne building inventory, land use, regulate development, planning capabilities, strategy and mitigation projects, Hawthorne assets
Public Works Manager	Akbar Farokhi	Public Works director. Provide input on capabilities, facilities, mitigation strategy and projects and regulate development
Parks and Recreation	Von Norris	Hawthorne capabilities, assets, facilities, and mitigation strategy
Planning Director	Sheri Repp Loadsman Greg Tsujiuchi	Provide input on the City General Plan and planning capabilities (Greg Tsujiuchi took over in December, 2019.)

2.4.1 Planning Team Activities

Four meetings were held with the planning team: A full description of planning team activities with documentation is contained in **Appendix B.**

Table 2-2: Planning Activities

Date	Activity	Purpose
7/31/2019	LHMP Planning Team Kickoff Meeting	Introduced Planning Team members, review project management plan, align expectations.
8/28/2019	LHMP Planning Team Meeting #1	Reviewed potential hazards and select those that pose risks, distribute data collection sheets, begin to develop potential mitigation activities.
9/26/2019	LHMP Planning Team Meeting #2	Reviewed risks to City infrastructure and potential losses. Reviewed status of completing previous Plan mitigation actions. Reviewed potential, new mitigation actions based on hazards, potential losses and capabilities.
10/29/2019	LHMP Planning Team Meeting #3	Determined updated plan mitigation actions, including responsible department, costs, timeframe and priority. Reviewed public outreach strategy for draft LHMP.

2.4.2 Other Jurisdictions Agency/Organizational Participation

Neighboring jurisdictions and partner organizations were invited to participate in the planning process. Cities included:

- City of Inglewood
- City of El Segundo
- City of Manhattan Beach
- City of Redondo Beach
- City of Lawndale
- City of Gardena

Other organizations included:

- Los Angeles County Fire Department
- Golden State Water Company
- California Water Service
- Southern California Edison
- Los Angeles County Public Works
- Southern California Gas
- South Bay Regional Public Communications Authority
- Hawthorne School District
- Centinela Valley Union High School District

- Wiseburn School District
- Caltrans
- Federal Aviation Administration (FAA)
- Hawthorne Airport
- Hawthorne President's Council
- Holly Park Homeowners
- North Hawthorne Neighborhood
- Holly Glen Homeowners
- Ramona Neighborhood Association
- 360 at South Bay

The screenshot below contains the email sent to the Planning Team, neighboring jurisdictions and other organizations. **Table 2-3** contains the invitees' jurisdictions and positions for the neighboring cities invited.

Wed 8/21/2019 3:18 PM
Shadbehr, Arnie AShadbehr@cityofhawthorne.org
Local Hazard Mitigation Plan Meeting Invite

Gafney, Neil <ngafney@cityofhawthorne.org>; Krauss, Doug <DKrauss@cityofhawthorne.org>; Pedroza, Ray <RPedroza@cityofhawthorne.org>; Gerten, Bill <BGerten@cityofhawthorne.org>; Norris, Von <vnorris@cityofhawthorne.org>; Farokhi, Akbar <AFarokhi@cityofhawthorne.org>; Leung, Alan <ALeung@cityofhawthorne.org>; Krause, Don <DKrause@cityofhawthorne.org>; Yoshida, Aimee J <AYoshida@cityofhawthorne.org>; English, Samuel <senglish@cityofhawthorne.org>; 'afields@cityofinglewood.org'; 'smitnick@elsegundo.org'; 'bmoe@citymb.info'; 'hmorgan@hawthorne.k12.ca.us'; 'Obrieng@centinela.k12.ca.us'; 'bsilvers@wiseburn.org'; 'lance.marchetta@dot.ca.gov'; 'Mark.Guan@faa.gov'; Monteiro, Alex <amonteiro@cityofhawthorne.org>; 'darvj812@gmail.com'; 'nhca90250@yahoo.com'; 'Joe.Hoefgen@redondo.org'; 'smandoki@lawndalecity.org'; 'jcruz@cityofgardena.org'; 'Reggie.Johnson@fire.lacounty.gov'; 'knutting@gswater.com'; 'rthompson@calwater.com'; 'Constance.Turner@sce.com'; 'MADHAMI@dpw.lacounty.gov'; 'DCampos@semprautilities.com'; 'billydeegan@gmail.com'; 'tonytadros.realtor@gmail.com'; 'bill.beebe@360southbay.org'; Jim Sims <Jim@constantassociates.com>; Lee Rosenberg <lee@constantassociates.com>; Ryan Dufour <Ryan@constantassociates.com>; Janlia Riley <Janlia@constantassociates.com>; dsandusky@jetcenterla.com; lstockton@jetcenterla.com; Fernandez, Guido GFernandez@cityofhawthorne.org

Dear Hawthorne Neighbors, Partners and Colleagues,

The City of Hawthorne is in the process of updating its Local Hazard Mitigation Plan (LHMP) with the goal of FEMA approval in early 2020. The purpose of the LHMP is to identify measures that the City can take to reduce the impacts of events such as earthquakes, severe weather and other hazards on City facilities and infrastructure.

We are forming a Planning Team that will meet periodically to review the progress of the plan and to provide informed input. We are inviting you to send your Emergency Preparedness coordinators or other relevant staff to participate as a member of the Planning Team due to your likely involvement in the event of a disaster in the City of Hawthorne. The Planning Team Meeting #1 details are below:

City of Hawthorne – Betty Ainsworth Sports Center %
Date: Wednesday, August 28, 2019 %
Time: 2:00 PM - 4:00 PM %
Location: 3851 W. El Segundo Blvd, Hawthorne, CA 90250 %
Parking in lot on El Segundo or in lot off of Doty Avenue. %

An initial draft of the LHMP is attached. This draft includes much of the required background information, but the critical content concerning hazards to be addressed, selection of mitigation measures, and other substantive matters will be developed with input from the Planning Team. Please take the time to briefly review prior to the meeting. A more targeted discussion of your involvement will happen at the meeting. If you're unable to attend, we welcome your input via email.

If your Emergency Preparedness staff is able to attend and be part of the Planning Team for this effort, please send an RSVP to Neil Gafney at ngafney@cityofhawthorne.org

We look forward to seeing you there, or receiving any input from your organization.

Thank you.

Arnold (Arnie) Shadbehr !
Interim City Manager !

Table 2-3: Neighboring Jurisdiction Invitations

City	Name	Title
City of Inglewood	Artie Fields	City Manager
City of El Segundo	Scott Mitnick	City Manager
City of Manhattan Beach	Bruce Moe	City Manager
City of Redondo Beach	Joe Hoefgen	City Manager
City of Lawndale	Steve Mandoki	City Manager
City of Gardena	Joseph Cruz	General Services Director

2.5 Community Engagement

Once the planning process commenced, the City provided public notification through its website, Facebook, and social media accounts. Additionally, the City conducted an online survey to solicit input on the hazards that the communities face and the types of mitigation activities the City should undertake. The draft LHMP was placed on the City website for public review and comment. Finally, notification of the draft LHMP review and adoption by the City Council was advertised as required by the Brown Act.

The public survey input from the 29 responders was used to select hazards and rank their affects. Earthquake and Extreme-Heat were ranked as the two top hazards. This input was also used to inform the Calculated Priority Risk Index (CPRI) contained in **Table 4-7**. Finally, survey input was used to select mitigation actions. Input from posting the draft LHMP was used to refine the plan and prepared it for submission for review. **Appendix C** provides documentation of community outreach efforts and public participation.

On December 2, 2019, the City posted a link to the draft LHMP on its website and invited public review and comment. **Appendix C** contains screen shots of the website and social media posting. The City of Hermosa Beach provided the City their response during this public review period and did not recommend any changes or additions to the plan. There were no other public review comments received.

2.6 Incorporation Into Other Planning Mechanisms

The LHMP planning process provided the City with an opportunity to review and expand on policies contained in the general plan. The City views the general plan and the hazard mitigation plan as complementary documents that work together to reduce risk exposure to the residents of Hawthorne. Many of the ongoing recommendations identified in the LHMP are programs recommended in the City General Plan Safety Element.

Per California Assembly Bill 2140, the City intends on adopting the hazard mitigation plan in accordance with the federal Disaster Mitigation Act of 2000 as part of the safety element of the general plan, adopted pursuant to Section 65302 (g) of the California Government Code. Additional planning mechanisms and processes that the City will incorporate hazard mitigation hazards and risks, plan recommendations, and mitigation actions into include the following documents:

- City Emergency Operations Plan
- Stormwater Management Program (Local wastewater companies)
- General Plan
- Vulnerability Assessment (Climate Adaptation Plan)

Incorporation of action items and processes from the 2019 LHMP into various planning documents will be completed as other plans are updated, and when new plans are developed. These efforts may coincide with the Plan Maintenance Method and Schedule activities listed in **Section 7**. Additional action items may be implemented through the creation of new public educational programs, continued interagency coordination, and public input and participation.

2.7 Review of Existing Plans, Reports, Technical Documents, and Data

The review and incorporation of existing plans, studies, reports, and technical information (44 CFR §201.6(b)(3)) has been completed, as required by the federal regulations. During the planning process, members of the planning team reviewed and incorporated information from several existing plans, studies, and reports into the 2019 LHMP.

Table 2-4: Existing Documents Reviewed for LHMP Input

Referenced Document or Technical Source	Resource Type	Description of Reference and Its Use
City of Hawthorne General Plan	Comprehensive Plan	Source for history, demographic and development trend data for the unincorporated county.
Los Angeles County Operational Area Emergency Response Plan	Comprehensive Plan	All hazards emergency response plan.
California Climate Change Center (2006). Our Changing Climate: Assessing the Risks to California. A Summary Report from the California Climate Change Center http://meteora.ucsd.edu/cap/pdffiles/CA_climate_Scenarios.pdf	Technical and Planning Resource	Describes monitoring, analysis, and modeling of climate as well as efforts designed to reduce emissions.
2016 California Building Code of Regulation	Technical and Planning Resource	Sets Statewide building code regulations.
2016 California Fire Code	Technical and Planning Resource	Sets Statewide Fire Code Regulations.

Referenced Document or Technical Source	Resource Type	Description of Reference and Its Use
California Building Energy Efficient Standard	Technical and Planning Resource	Designed to reduce wasteful and unnecessary energy consumption in newly constructed and existing buildings.
California Climate Change Center, (2012). Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. A Summary Report on the Third Assessment from the California Climate Change Center http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf	Technical and Planning Resource	Describes monitoring, analysis, and modeling of climate as well as efforts designed to reduce emissions.
California Governor's Office of Emergency Services http://myhazards.caloes.ca.gov/	Technical and Planning Resource	Provides a tool for the general public to discover hazards in their area (earthquake, flood, fire, and tsunami) and learn steps to reduce personal risk.
California Department of Conservation https://www.conservation.ca.gov/cgs/geohazards	Technical and Planning Resource	Identifies significant geologic hazards exist or are likely to exist so that informed land use and emergency response planning decisions can be made.
Federal Emergency Management Agency	Technical and Planning Resource	Resource for LHMP guidance (How-To series), floodplain and flooding related NFIP data (mapping, repetitive loss, NFIP statistics), and historic hazard incidents. Used in the risk assessment and mitigation strategy.
HAZUS-MH	Technical Resource	Based data sets within the program were used in the vulnerability analysis.
National Centers for Environmental Information https://www.ncdc.noaa.gov/data-access	Technical Resource	Online resource for weather related data and historic hazard event data. Used in the risk assessment.
National Integrated Drought Information System (2019) https://www.drought.gov/drought/	Technical Resource	Source for drought related projections and conditions. Used in the risk assessment.
National Inventory of Dams (2018) https://www.fema.gov/2018-national-inventory-dams	Technical Resource	Database used in the dam failure hazard profiling. Used in the risk assessment.
National Weather Service https://www.weather.gov/	Technical Resource	Source for hazard information, data sets, and historic event records. Used in the risk assessment.

Referenced Document or Technical Source	Resource Type	Description of Reference and Its Use
United States Geological Survey. 2018). Earthquake Hazards Program. Retrieved from https://earthquake.usgs.gov/hazards/hazmaps/conterminous/	Technical Data	Source for geological hazard data and incident data. Used in the risk assessment.
Western Regional Climate Center https://wrcc.dri.edu/	Website Data	Online resource for climate data used in climate discussion.

Section 3: Planning Area Description

3.1 Location

The City has an area of 6.1 square miles, and is situated 19 miles southwest of the City of Los Angeles. The City center is located at 33°55′2″N 118°20′55″W. Hawthorne is bounded by the City of Inglewood to the north, the City of Lawndale to the south and the City of Gardena to the east. It is bordered by unincorporated Los Angeles County to the west and northwest.

3.2 Geology

The City is located within the Los Angeles basin, which is a depression several thousand feet deep in the earth's crust. This part of Southern California is characterized by elongated northwest-southeast trending ridges, valleys, and structural features. The City is within the alluvial plan of the San Gabriel River, which is comprised primarily of rocks, sand, and soil from the mountains to the north. Hawthorne is characterized by level topography with slopes of less than five percent. Ground elevations are approximately 72 feet above sea level to the north and slope south to 45 feet above sea level.

The City is situated near two active faults, the Charnock Fault and the Newport-Inglewood Fault. Additionally, several active faults are located within 50 miles of the City.

3.3 Climate

The Los Angeles metropolitan area has a hot-summer Mediterranean climate (Köppen Csa)[1], with hot, dry summers, and cooler wetter winters. The City experiences significant seasonal variation in monthly rainfall. While the dry-summer and wet-winter pattern characterizes the City's, annual precipitation annually lower than in many Mediterranean climates.

The summer dry season normally runs from June through October, when skies are clear, hot temperatures, and very little change in sensible weather. Average high temperatures are in the 80's F with overnight lows in the lower 60's F. During this season, there is essentially no rainfall. Both July and August average less than 0.1 of an inch of monthly precipitation. Rainfall can occur in the summer from westward-straying monsoon thunderstorms, but this is unusual. Less common is rain from remnants of dissipating eastern Pacific hurricanes.

The winter wet season normally lasts from November through early May. The average highs range from the upper 60's F to 70 F with cooler overnight lows in the upper 40's F and lower 50's F. While there is an increase in rainfall during winter months, winter days are frequently sunny with mild temperatures. The greatest amount of rain falls during the 31 days centered around February 18, with an average total accumulation of 3.2 inches. Because the rainy season begins in late fall and ends in early to mid-spring, precipitation is measured using the water year instead of the calendar year, to give an accurate picture

[1] Köppen, W., 1884: The thermal zones of the Earth according to the duration of hot, moderate and cold periods and of the impact of heat on the organic world.

of each rainy season's precipitation amounts. Each water year begins October 1 and ends the following September 30.

3.4 History

In 1906, Harding and H.D. Lombard, who called their development company the Hawthorne Improvement Company, founded the new settlement of Hawthorne. It was made up of 80 acres of barley fields and previously planted eucalyptus trees on land halfway between Los Angeles and Redondo Beach. Hawthorne was billed as “the most beautiful suburban town,” ideal for hardworking families looking for a simple, child-friendly way of life. Chicken and vegetable farmers were recruited, and lots were offered for reasonable rates.

As an inducement to sell lots, the Hawthorne Improvement Co. built several factories and promised work to those who bought property. There was a furniture factory, an overall factory, a glove factory and a leather factory. By 1908, the town included a grocery store and an all-purpose community building housing a church and school house. Small wood frame homes sprang up on plots of land improved with chicken coops and gardens.

By 1914, Hawthorne was a thriving village. Most of the townspeople were farmers or employees of the thriving Hawthorne Furniture Company. But, in 1914, Hawthorne’s growth was abruptly stunted when the company’s factory burned to the ground and other industries left town. Hawthorne struggled on and was officially incorporated on July 25, 1922. The City saw a vast change in population size and demographics as Southern California’s population grew following World War II.

3.5 Government

The City is a general law city with a Council/Manager form of government. Hawthorne has an elected city council composed of a mayor elected every four years and four city council members elected on staggering four-year terms. The City government has the following departments.

- Building and Safety
- City Attorney
- Finance
- Human Resources
- Parks and Recreation
- Planning
- Police Department
- Public Works

3.6 Economy

The economy of Hawthorne employs 42,300 people. Most economic activity is in service industries. The largest industries in the City are accommodation and food services (5,217 people), health care & social assistance (5,005 people), and retail trade (4,662 people), and the highest paying industries (annual salary) are mining, quarrying, and oil and gas extraction ($66,563), utilities ($54,928), and finance and insurance ($50,297).

Median household income in Hawthorne is $47,636 per annum. Males have an average income that is 1.26 times higher than the average income of females, which is $57,252 per annum. The income inequality in is 0.5, which is higher than the national average.

3.7 Demographics

The 2010 United States Census reported that Hawthorne had a population of 84,293. The 2018 estimated population was 86,965. Population density was 13,835.7 people per square mile. The racial makeup of Hawthorne was:

- White 27,678 (32.8%)
- African American 23,385 (27.7%)
- Native American 565 (0.7%)
- Asian 5,642 (6.7%)
- Pacific Islander 974 (1.2%)
- Other races 22,127 (26.3%)
- Two or more races 3,922 (4.7%)
- Hispanic or Latino of any race were 44,572 persons (52.9%).

The Census reported that 83,754 people (99.4% of the population) lived in households, 208 (0.2%) lived in non-institutionalized group quarters, and 331 (0.4%) were institutionalized.

There were 28,486 households, out of which 12,330 (43.3%) had children under the age of 18 living in them, 10,833 (38.0%) were opposite-sex married couples living together, 6,369 (22.4%) had a female householder with no husband present, 2,357 (8.3%) had a male householder with no wife present. There were 2,309 (8.1%) unmarried opposite-sex partnerships, and 191 (0.7%) same-sex married couples or partnerships. Of the households, 7,125 (25.0%) were made up of individuals and 1,430 (5.0%) had someone living alone who was 65 years of age or older. The average household size was 2.94. There were 19,559 families (68.7% of all households); the average family size was 3.54.

There were 29,869 housing units at an average density of 4,902.7 per square mile (1,892.9/km²), of which 7,623 (26.8%) were owner-occupied, and 20,863 (73.2%) were occupied by renters. The homeowner vacancy rate was 1.5%; the rental vacancy rate was 4.6%. 25,869 people (30.7% of the population) lived in owner-occupied housing units and 57,885 people (68.7%) lived in rental housing units.

During 2009–2013, Hawthorne had a median household income of $44,649 per annum, with 19.2% of the population living below the federal poverty line.

3.8 Land Use

The City is completely developed with the remaining vacant land limited to smaller, scattered parcels. The City contains a mix of residential and multifamily housing types and densities, strip commercial along the major arterials, retail centers, public facilities, and industrial uses near the airport and in the southwest portion of the City. Changes in the demographic characteristics have resulted in a demand for more housing while at the same time, the population has remained relatively constant. The Century Freeway (1-105) greatly increased regional accessibility to Hawthorne resulting in improved opportunities for development.

Section 4: Capabilities Assessment (and Hazard Identification (

The federal regulations require local mitigation plans to identify goals for reducing long-term vulnerabilities to the identified hazards in the planning area (Section 201.6(c)(3)(i)).

FEMA REGULATION CHECKLIST: CAPABILITY ASSESSMENT

44 CFR § 201.6(c)(3): – The plan must include mitigation strategies based on the jurisdiction's "existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools."

Elements

C1. Does the plan document the jurisdiction's existing authorities, policies, programs and resources, and its ability to expand on and improve these existing policies and programs? 44 CFR § 201.6(c)(3).

C2. Does the Plan address the jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? 44 CFR § 201.6(c)(3)(ii).

A hazard mitigation plan's primary focus is the mitigation strategy. It represents the efforts selected by the City to reduce or prevent losses resulting from the hazards identified in the risk assessment. The strategy includes mitigation actions and projects to address the risk and vulnerabilities discovered in the risk assessment. The mitigation strategy consists of the following steps:

- Identify and profile hazards and risk within the City.
- Identify projects and activities that can prevent or mitigate damage and injury to the population and buildings.
- Develop a mitigation strategy to implement the mitigation actions.
- Develop an action plan to prioritize, implement, and administer the mitigation actions.
- Implement the LHMP mitigation action plan.

A capability assessment was conducted of City's authorities, policies, programs, and resources. From the assessment, goals and mitigation actions were developed. The planning team also developed a plan to prioritize, implement, and administer the mitigation actions to reduce risk to existing buildings and new development. This section also includes information regarding Hawthorne's implementation of and continued participation in the NFIP.

4.1 Existing Authorities, Policies, Programs, and Resources

The planning team conducted an assessment of the City's capabilities that contribute to the reduction of long-term vulnerabilities to hazards. The capabilities include authorities and policies, such as legal and regulatory resources, staff, and fiscal resources, e.g., technical personnel such as planners/engineers with knowledge of land development and land management practices, engineers trained in construction practices related to building and infrastructure, planners and engineers with an understanding of natural or human-caused hazards, floodplain managers, surveyors, personnel with GIS skills, and staff with expertise of the hazards in the City. The planning team also considered ways to expand on and improve these existing policies and programs with the goal of integrating hazard mitigation into the day-to-day activities and programs of the City. Tables 4-1, 4-2, 4-3 and 4-4 summarize the existing authorities, policies, programs, and resources to implement mitigation actions and projects.

4.1.1 Planning and Regulatory Capabilities

Table 4-1: Local Legal and Regulatory Capabilities

Regulatory Tools (ordinances, plans, codes)	Hazards Addressed	Description	Updated Since 2014
General Plan	All	Provides a future vision, policies, and proposed actions to guide residents, decision-makers, staff members, project developers, and businesses in City. The General Plan is a guide to evaluate projects, structure City programs, and decide whether to pursue new opportunities. City officials will use the Plan as the basis for decision-making and to guide the development of new policies, ordinances, programs, initiatives and capital expenditures. Expansion and Improvement: The LHMP will be informed by reference into the Public Safety Element of the General Plan.	
Emergency Operations Plan	All	Provides an overview on how the City will respond to emergencies. Expansion and Improvement: The hazards section of the Emergency Operations Plan (EOP) is informed by the LHMP as the two are closely correlated.	
City Code	Earthquake, Flood, Pipeline Rupture Severe Wind	The municipal code is a codification of the City's Ordinances. These include zoning laws and land use permits processes. Expansion and Improvement: Adherence to Municipal Code regulates growth and controls land use patterns.	

4.1.2 Administrative and Technical Capabilities

Table 4-2: Administrative and Technical Capabilities

Personnel Resources	Hazards Addressed	Relation to Hazard Mitigation	Lead Organization
Planners/Engineers / Building Official	Earthquake, Flood, Pipeline Rupture Severe Wind	Issue building permits, review plans for new construction and improvements; conduct plan checks; work with architects, engineers, designers and building owners during pre-construction; inspect all phases of residential and commercial/industrial construction for compliance; enforce municipal code violations.	Planning Department/ Public Works
GIS Consultant	Earthquake, Flood, Pipeline Rupture	Provides data management and cartography services for infrastructure and related hazards. Able to display community values at risk.	Planning Department
Certified Arborist	Climate Change Drought Extreme Heat	Provides recommendations to preserve and protect vegetation in City parks and along right of ways.	Parks and Community Services
Southern California Association of Governments (SCAG)	All	Functions as the Metropolitan Planning Organization for six counties: Los Angeles, Orange, San Bernardino, Riverside, Ventura and Imperial. As the designated Metropolitan Planning Organization, the Association of Governments is mandated by the federal government to research and draw up plans for transportation, growth management, hazardous waste management, and air quality.	
South Bay Cities Council of Government		Provides a leadership forum for South Bay local governments to act collaboratively and advocate for regional issues with a focus on improving transportation and the environment, and strengthening economic development.	

4.1.3 Financial Capabilities

Table 4-3 contains a list of financial capabilities available to the City. Based open procedures for each resource, these financial resources may be used to support mitigation activities.

Table 4-3: Financial Resources

Financial Resource	Purpose	Lead Organization
Utility User Tax	General fund	Department Specific
Sewer Fees	Used for sewer system only	Public Works

Financial Resource	Purpose	Lead Organization
Development Impact Fees	Restricted fund	Department Specific
3/4% Sales Tax Citywide	General fund	Department Specific
General Fund	Program operations and specific projects.	Department Specific
Community Development Block Grants (CDBG)	The CDBG program provides funding for eligible senior activities such as in-home care, art classes, counseling and home delivered meals. The Department of Housing and Urban Development also provides Disaster Recovery Assistance in the form of flexible grants to help cities, counties, and States recover from Presidentially declared disasters, especially in low-income areas, subject to availability of supplemental appropriations.	City Manager's Office, Economic Development
Hazard Mitigation Grant Program (HMPG)	Provides support for post-disaster mitigation plans and projects.	FEMA
Pre-Disaster Mitigation grant program (PDM)	Provides support for pre-disaster mitigation plans and projects.	FEMA
Flood Mitigation Assistance grant program (FMA)	Mitigates structures and infrastructure that have been repetitively flooded.	FEMA

4.1.4 Education and Outreach Capabilities

Table 4-4 lists City financial and public outreach capabilities. These capabilities include programs such as fire safety programs, hazard awareness campaigns, public information or communications offices. Education and outreach capabilities can be used to inform the public on current and potential mitigation activities.

Table 4-4: Education and Outreach Resources

Name	Description (Effect on Hazard Mitigation)	Lead Organization
Hawthorne Television	Local City television station. Public Information portal.	City Manager's Office
City Website	Public Information portal.	Information Technology
City Social Media Accounts	Public Information portal.	Information Technology
City CERT	Community training to increase neighborhood and City resiliency and emergency response capability.	Emergency Manager

4.1.5 National Flood Insurance Program Participation

The City has been designated on the Flood Insurance Rate Map (FIRM), as being in Zone X, which is a Non-Special Flood Hazard Area. Zone X includes areas:

- Outside the 1% annual flood risk floodplain
- Of 1% annual shallow flooding risk where average depths are less than 1 foot
- Of 1% annual stream flooding risk where the contributing drainage area is less than 1.0 square mile
- Protected by levees from the 1% annual flood risk

These areas are not in any immediate danger from flooding caused by overflowing rivers or hard rains. However, it is noted that structures within a Non-Special Flood Hazard Areas are still at risk. Because the City is within Zone X, insurance purchase is not required. Notwithstanding, the City participates in the NFIP. As of September 2018, there is one flood insurance policy in place for City properties.

4.2 Hazard Identification

A hazard analysis consists of identifying, screening, and profiling each hazard. The hazard analysis encompasses natural, human-caused, and technological hazards. Natural hazards result from unexpected or uncontrollable natural events of significant size and destructive power. Human-caused hazards result from human activity and encompass technological hazards. Technological hazards are generally accidental or result from events with unintended consequences (for example, an accidental release of hazardous materials).

The requirements for hazard identification, as stipulated in DMA 2000 and its implementing regulations, are described below.

4.2.1 Hazard Identification and Screening

The goal of mitigation is to reduce the future impacts of hazards, including loss of life, property damage, disruption to the local economy, and the expenditure of public and private funds for recovery.

Ha

FEMA REGULATION CHECKLIST: RISK ASSESSMENT

Hazard Identification %

44 CFR § 201.6(c)(2)(i): The risk assessment shall include a description of the type of all natural hazards that can affect the jurisdiction. !

Elements

B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect the jurisdiction? Requirement § 201.6(c)(2)(i).

B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for the jurisdiction? See 44 CFR § 201.6(c)(2)(i).

B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? Requirement § 201.6(c)(2)(ii).

B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? Requirement § 201.6(c)(2)(ii).

A list of all hazards that had the potential to occur in Hawthorne was presented to stakeholders in a meeting and to the general public through a survey. The list of hazards was derived from the General Plan, the 2014 Emergency Operations Plan, the 2017 Los Angeles County, Multi-Hazard Mitigation Plan, and the California State Hazard Mitigation Plan. Considering the results of the public survey and recommendations from the stakeholders, the planning team decided to include technological and human-caused hazards in the LHMP. The following table lists the hazards described in the LHMP:

Table 4-5: Hazard Identification Table

2019 LHMP Hazards
1. Aircraft Accident
2. Climate Change
3. Drought
4. Earthquake and Seismic Hazards
5. Excess Heat
6. Flood / Flash Flood
7. Pipeline Rupture / Hazardous Material Release
8. Winter Storm / High Wind

The 2019 LHMP lists 8 hazards that affect the planning area based on historical information, the presence of the hazard, and the likelihood of future occurrences of the hazard. The hazard profiles serve as the basis of the hazard assessment.

4.2.2 City Disaster Proclamation History

The planning team reviewed historical information and more recent past events to identify hazards where an emergency or disaster was proclaimed within the City. There was no history of disaster proclamations for the City.

4.2.3 Disaster Proclamation Process

When there is a condition of extreme peril or potential peril to the safety of persons and property, and the condition is beyond the capability of the local jurisdiction to control effectively, the local governing body (city council, board of supervisors or a person authorized by ordinance) may proclaim that a local emergency exists. The local government may request the California Office of Emergency Services (Cal OES) Director to concur in their proclamation of a local emergency and to provide assistance under the California Disaster Assistance Act (CDAA).

A copy of the resolution must be provided to the Los Angeles Operational Area as soon as possible for transmission of the resolution to Cal OES. When a county proclaims a local emergency pursuant to Section 8630 of the Government Code, based upon conditions which include both incorporated and unincorporated territory of the county, it is not necessary for the cities to also proclaim the existence of a local emergency independently.

If sufficient conditions occur, the State may proclaim a state of emergency to fully commit state and mutual aid assistance and provide resources to assist local government. Following the proclamation of a state of emergency, the Cal OES Director may recommend that the Governor request a Presidential declaration of a major disaster under the authority of Public Law 93-288. The Governor's request to the president is submitted through FEMA.

The table below lists the State and Federal disaster declarations affecting Los Angeles County, which encompass the cities within the County. Disaster proclamations for hazards that are not present in Hawthorne (wildland fire, landslides, tsunami, etc.) were excluded from the table.

Table 4-6: Los Angeles County Disaster Proclamation History

Year	Disaster #	Hazard	Declaration
2012-2016	Statewide Drought	Drought	This period was one of the driest in California history since record-keeping began. The 2015 prediction of El Niño to bring rains to California raised hopes of ending the drought. The drought led to Governor Jerry Brown's instituting mandatory 25 percent water restrictions in June 2015.
2013	Heatwave	Extreme Heat	In late June 2013, an intense heat wave struck the Southwestern United States. Various places in Southern California reached up to 122 °F
2009		H1N1 Swine flu	State
2007-2009	Statewide Drought	Drought	The three years of drought conditions were the 12th worst drought period in the State's history, and the first drought for which a statewide proclamation of emergency was issued. The drought of 2007–2009 also saw greatly reduced water diversions from the state water project. The summer of 2007 saw some of the worst wildfires in Southern California history.
2006	DR 1646	Winter storms	State
1994	Northridge Earthquake (M 6.7)	Earthquake	$20B property damage, 57 deaths, up to 125K temporary homeless, 82K structures damaged or destroyed across Southern California
1979	DR 609	California Earthquake	State
1971	DR 299	San Fernando Earthquake	State

4.2.4 Hazard Risk Rating

For the 2019 LHMP the risk for each hazard was rated using the CPRI. The CPRI examines four criteria for each hazard (probability, magnitude/severity, warning time, and duration [Table 4-7]). For each hazard, an index value is assigned for each CPRI category from 0 to 4 with "0" being the least hazardous and "4"

being the most hazardous situation. This value is then assigned a weighting factor and the result is a hazard ranking score (Table 4-8). Table 4.8 is an overall summary of the hazard evaluations for the City.

Table 4-7: Calculated Priority Risk Index

CPRI Category	Degree of Risk Chart			Assigned Weight
	Level ID	Description	Index Value	
Probability	Unlikely	Extremely rare with no documented history of occurrences or events. Annual probability of less than 0.001.	**1**	**45%**
	Possible	Rare occurrences with at least one documented or anecdotal historic event. Annual probability of between 0.01 and 0.001.	**2**	
	Likely	Occasional occurrence with at least two or more documented historic events. Annual probability of between 0.1 and 0.01.	**3**	
	Highly Likely	Frequent events with a well-documented history of occurrence. Annual probability of greater than 0.1.	**4**	
Magnitude-Severity	Negligible	Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure). Injuries or illnesses are treatable with first aid and there are no deaths. Negligible quality of life lost. Shut down of critical facilities for less than 24 hours.	**1**	**30%**
	Limited	Slight property damages (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure). Injuries and illnesses do not result in permanent disability and there are no deaths. Moderate quality of life lost. Shut down of critical facilities for more than 1 day and less than 1 week.	**2**	
	Critical	Moderate property damages (greater than 25% and less than 50% of critical and non-critical facilities and infrastructures). Injuries or illnesses result in permanent disability and at least one death. Shut down of critical facilities for more than 1 week and less than 1 month.	**3**	
	Catastrophic	Severe property damages (greater than 50% of critical and non-critical facilities and infrastructure). Injuries or illnesses result in permanent disability and multiple deaths. Shut down of critical facilities for more than 1 month.	**4**	
Warning Time	< than 6 hours	Population receives less than 6 hours of warning.	**4**	**15%**
	6 to 12 hours	Population receives between 6-12 hours of warning.	**3**	

	12 to 24 hours	Population receives between 12-24 hours of warning.	**2**	
	> than 24 hours	Population receives greater than 24 hours of warning.	**1**	
Duration	< than 6 hours	Disaster event will last less than 6 hours.	**1**	**10%**
	6 to 24 hours	Disaster event will last between 6-24 hours.	**2**	
	24 hrs. to 1 week	Disaster event will last between 24 hours and 1 week.	**3**	
	> than 1 week	Disaster event will last more than 1 week.	**4**	

The team agreed that any hazards receiving a score of 2.25 or higher would be included in the LHMP. Utilizing the ranking technique, the team identified Climate Change and Excess Heat as hazards to include in the 2019 LHMP.

Table 4-8: Hazard Identification and Prioritization Summary

Hazard	Probability (45%)	Magnitude/ Severity (30%)	Warning Time (15%)	Duration (10%)	Weighted Score	Risk Level
Aircraft Accident	2	4	4	2	2.45	Moderate
Climate Change	4	3	1	4	3.05	High
Dam Inundation	1	1	2	2	1.15	Low
Drought	4	2	1	4	2.95	Moderate
Earthquake/Seismic	3	4	4	4	3.55	High
Excess Heat	3	2	2	3	2.55	Moderate
Fire/Wildfire	1	2	4	1	1.75	Low
Flood/Flashflood	2	2	3	3	2.40	Moderate
Pipeline Rupture HAZMAT Release	2	4	4	1	2.80	Moderate
Rail/Transit Accident	1	3	4	1	2.05	Moderate
Winter Storm / Severe Winds	3	2	1	3	2.85	Moderate
Terrorism	1	4	4	1	2.35	Moderate

Risk Level	Severe	High	Moderate	Low
Rank Score	4	3 – 3.9	2 – 2.9	1 – 1.9 %

Hazard Identification and Risk Profiles

The hazards that exist in the City are profiled below. Each hazard profile includes a description of the type, location, extent, previous occurrences, regulatory environment and probability of future events within the description. Maps and graphs are used in this plan to display hazard identification data. Except for the future earthquake probability, which was taken from the third *Uniform California Earthquake Rupture Forecast (UCERF3),* the probability of future hazard events was calculated based on existing data. Probability was determined by dividing the number of events observed by the number of years on record and multiplying by 100. This gives the percentage chance of an event happening in any given year (e.g., three tornados over a 30-year period equates to a 10% chance of a tornado in any given year). The likelihood of future occurrences is categorized into one of the following classifications:

- Highly Likely—Near 100% chance of occurrence in the next year, or happens every year.
- Likely—Between 10% and 100% chance of occurrence in the next year, or has a recurrence interval of 10 years or less.
- Occasional—Between 1% and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
- Unlikely—Less than 1% chance of occurrence in the next 100 years, or has a recurrence interval of greater than every 100 years.

The following hazards in the 2014 LHMP were excluded from the 2019 LHMP due to extremely minimal chance of occurring or inability to develop effective mitigation measures:

- Dam/Reservoir Failure – Due to the City not being in a dam inundation zone
- Fire/Wildfire – Due to the City not being in a wildland/urban interface zone
- Terrorism – Due to the hazard not being easily addressed by mitigation measures. Anti -terrorism preparedness activities are law enforcement sensitive information and should not be included in a public plan.

New hazards included in the 2019 LHMP are:

- Climate Change
- Excess Heat
- Severe Winds

4.3 Hazard Characterization and Profiles

The requirements for hazard profiles are stipulated in DMA 2000 and its implementing regulations. The hazards that the hazard mitigation team selected for the 2019 LHMP have been profiled using federal, state, regional, and local resources that have mapped, documented, or reported on hazards. Both natural and man-made hazards are included. The hazard profiles consist of describing the nature of each hazard, the disaster history of each hazard, locations susceptible to each hazard, the possible extent of each hazard, the regulatory environment, climate change impacts (where applicable) and the probability of future events for each hazard. The geographic extent of each of the identified hazards was identified by utilizing the maps and data contained in the General Plan Safety Element and other resources. The sources of information used to prepare this section of the LHMP are listed in **Section 2.7** or cited as a footnote.

4.3.1 Aircraft Accident

Description:

The National Transportation Safety Board defines an airplane accident as an occurrence associated with the operation of an aircraft that takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage. (See 49 CFR 830.)

History:

The City has experienced several airplane accidents. In approximately the past 30 years, 5 accidents and 9 fatalities have occurred. They include:

I. 1988 – 120th St. and Van Ness / A Piper Aztec crashed - No fatalities
II. May 2000 – El Segundo and Birch / Piper PA46-310, commonly called a Malibu crashed - 3 fatalities
III. July 2009 – Parking Lot next to Airport / Beechcraft G36 Bonanza N618MW - 3 Fatalities
IV. March 21, 2016 - Ultralight plane after takeoff from Hawthorne Airport / Crashed on 120th St. & - 1 fatality &
V. June 11, 2016 - 4600 block of Broadway / Grumman American AA-1B crashed into a townhouse - 2 fatalities

Location:

Hawthorne Municipal Airport, also known as Jack Northrop Field, is an Federal Aviation Administration (FAA) designated general aviation reliever airport owned by the City of Hawthorne. Hawthorne Airport LLC, a strategic partnership of Kearny Real Estate Company, Wedgewood and Howard CDM, has entered into a 45-year ground lease agreement with the City to operate all non-airfield portions of the Airport.

The Airport features 24-hour operation, private VIP facilities, easy freeway access and a free shuttle to Los Angeles International Airport (LAX), in addition to a 4,956-foot long, 100-foot wide lighted runway that can accommodate aircraft weighing up to 90,000 pounds (with dual tandem wheel loading). The Airport is also home to an FAA-operated Air Traffic Control Tower, and houses Wolf Air.

Hawthorne Airport LLC also operates Century Aviation, the Airport's fixed base operations provider, which was acquired in November 2004 under the name Security Aviation.

Additionally, flights from LAX Fly over Hawthorne.

Extent:

In aviation, an accident is defined by the Convention on International Civil Aviation Annex 13 as an occurrence associated with the operation of an aircraft, which takes place from the time any person boards the aircraft with the intention of flight until all such persons have disembarked, and in which a.) a person is fatally or seriously injured, b.) the aircraft sustains significant damage or structural failure, or c.) the aircraft goes missing or becomes completely inaccessible. Annex 13 defines an incident as an occurrence, other than an accident, associated with the operation of an aircraft that affects or could affect the safety of operation. A hull loss occurs if an aircraft is destroyed, damaged beyond repair, lost, or becomes completely inaccessible.

Although a crash by aircraft operated from Hawthorne Airport would be traumatic for the immediate impact area, it is not expected that this would have a long-term impact on service operations within the City. The crash of a major airliner in the City would be catastrophic. A large area would be affected with plane wreckage, burning fuel, destroyed buildings, and casualties beyond the capability of local fire and emergency medical services personnel. Media attention would be overwhelming. Any air accident will involve coordination among federal, state, and local agencies to provide the necessary resources to manage such an event. Mass casualty transportation accidents typically require these agencies to establish a unified command post; activate disaster mortuary teams; set up medical aid stations; and develop a plan for moving patients and resources.

Regulatory Context:

14 CFR Part 139 requires the FAA to issue airport operating certificates to airports that:

- Serve scheduled and unscheduled air carrier aircraft with more than 30 seats;
- Serve scheduled air carrier operations in aircraft with more than 9 seats but less than 31 seats; and
- The FAA Administrator requires to have a certificate.
- This Part does not apply to airports at which air carrier passenger operations are conducted only because the airport has been designated as an alternate airport.

Airport Operating Certificates serve to ensure safety in air transportation. To obtain a certificate, an airport must agree to certain operational and safety standards, and provide for such things as firefighting and rescue equipment. These requirements vary depending on the size of the airport and the type of flights available.

FAA Circular 150 Series provides detailed guidance on airport operations and management.

Probability of Future Events:

Based upon the history of airplane crashes associated with Hawthorne Airport, future crashes with fatalities may be expected to occur within the next ten years.

4.3.2 Climate Change

Description:

The earth's climate is changing. The State has warmed about two degrees (F) in the last century. Throughout the southwestern United States, heat waves are becoming more common, and snow is melting earlier in spring. In the coming decades, changing climate is likely to decrease the flow of water in the Colorado River, threaten the health of livestock, increase the frequency and intensity of wildfires, and convert some rangelands to desert.

Our climate is changing because the earth is warming. People have increased the amount of carbon dioxide in the air by 40% since the late 1700s. Other heat-trapping greenhouse gases (GHG) are also increasing. These gases have warmed the surface and lower atmosphere of our planet about one degree during the last 50 years. Evaporation increases as the atmosphere warms, which increases humidity, average rainfall, and the frequency of heavy rainstorms in many places—but contributes to drought in others. GHGs are also changing the world's oceans and ice cover. Carbon dioxide reacts with water to form carbonic acid, so the oceans are becoming more acidic. The surface of the ocean has warmed about one degree during the last 80 years.

The U.S. Environmental Protection Agency (EPA) describes climate change as “any significant change in the measures of climate lasting for an extended period of time. In other words, climate change includes major changes in temperature, precipitation, or wind patterns, among other effects, that occur over several decades or longer.”

Many people confuse climate change with global warming, the recent and ongoing rise in global average temperatures near Earth’s surface. However, global warming represents only one aspect of climate change. The Earth’s average temperature has risen by 1.4°F over the past century and is projected to rise another 2 to 11.5°F over the next hundred years. Rising global temperatures have been accompanied by changes in weather and climate. Many places have seen changes in rainfall resulting in more floods, droughts, or intense rain, as well as more frequent and severe heat waves. The planet's oceans and glaciers have also experienced changes - oceans are warming and becoming more acidic, ice caps are melting and sea levels are rising. The effects of these indicators include:

- **Greenhouse Gases:** Human activities have increased the emissions of GHGs. As a result of the increase in emissions, average concentrations of heat-trapping gases in the atmosphere are also increasing.
- **Weather and Climate:** Average U.S. and global temperatures are increasing, while attributes of weather and climate, such as precipitation, drought, and tropical cyclone activity, are changing.
- **Oceans:** Average oceanic temperatures are increasing. Sea levels are rising around the world due to thermal expansion and increases from ice melt, and waters are becoming more acidic.
- **Snow and Ice:** Glaciers in the U.S. and around the world are generally shrinking, while snowfall and snow cover in the U.S. have decreased overall. The extent of the Arctic Sea ice is declining.
- **Health and Society:** Warmer temperatures and later fall frosts allow ragweed plants to produce pollen later into the year, potentially prolonging allergy season. The length of ragweed pollen season has increased at 10 out of 11 locations studied in the central U.S. and Canada since 1995. The change becomes more pronounced from south to north.
- **Ecosystems:** Many areas are experiencing earlier spring events, such as peak stream runoff and flower blooms. Bird migration patterns are changing, and wildfire zone size has increased.

History:

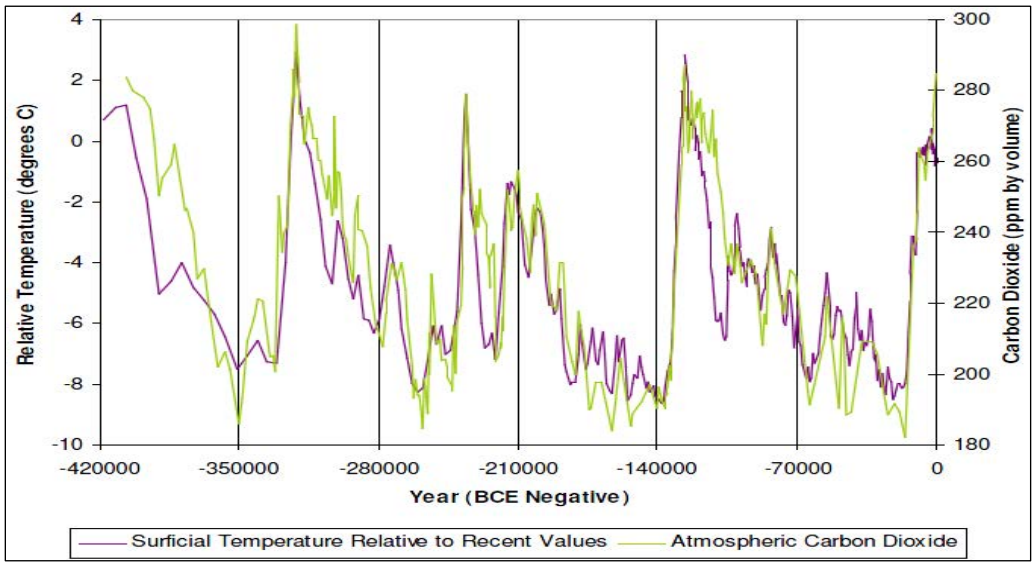
Climate change has occurred throughout the history of the planet. Due to variations in the earth’s inclination to the sun, volcanic activity, and other factors such as asteroid impacts, the amount of solar radiation reaching the earth’s surface rises and falls. The temperature of the planet correlates to the amount of solar radiation arriving at the surface and with it the climate.

In relatively recent history, the last glacial period, popularly known as the Ice Age, occurred from c. 110,000 to 12,000 years ago. This most recent glacial period is part of a larger pattern of glacial and interglacial periods known as the Quaternary glaciation (c. 2,588,000 years ago to present). From this point of view, scientists consider this "ice age" to be merely the latest glaciation event in a much larger ice age, one that dates back over two million years and is still ongoing.

During this last glacial period, there were several changes between glacier advance and retreat. The Last Glacial Maximum, the maximum extent of glaciation within the last glacial period, was approximately 22,000 years ago. While the general pattern of global cooling and glacier advance was similar, local differences in the development of glacier advance and retreat make it difficult to compare the details from continent to continent. Generally, the pattern of temperature variation and glaciation has lagged

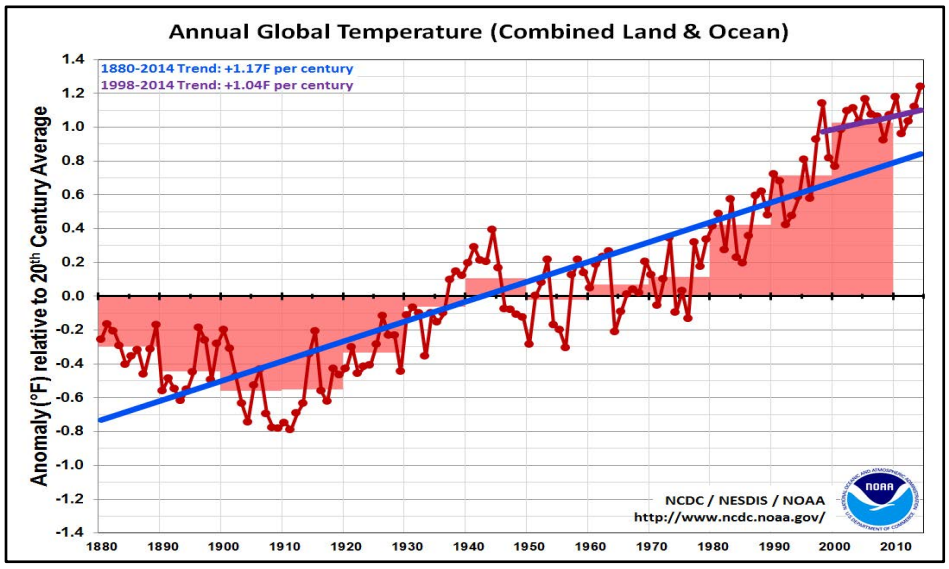
atmospheric carbon dioxide (CO_2) content. **Figure 4-1** depicts global variations during the past 400,000 years as a correlation between temperature and atmospheric CO_2 content in part per million.[2]

Figure 4-1: Temperature and Atmospheric CO2 Variation Past 400,000 Years



Since 22,000 years ago, the planet has slowly warmed and the glaciers retreated to high northern latitudes and mountains. In the last several decades of this period, human activity has likely led to a rapid increase in atmospheric CO_2 and a matching rise in global temperature. The result has been that climate change may be accelerating. **Figure 4.2** provides a graphical depiction of the recent history of temperature rise.[3]

Figure 4-2: Temperature Rise Since 1880



[2] Hogg, A.M., 2008, Glacial cycles and carbon dioxide: A conceptual model. Geophysical Research Letters, 35, L01701.

[3] National Oceanic and Atmospheric Administration (NOAA).

Location:

Warming and climate change are occurring globally with wide variations based on location and latitude. The polar regions have experienced particularly rapid changes in climate with increased ice melt and more sea-ice free days.

Extent:

Climate change is likely to affect the entire earth's population. More widespread drought and associated crop failure, movement of invasive species, more frequent wildfires, increased energy emergencies, and more intense climate events such as storms and extreme heat will occur throughout the County.

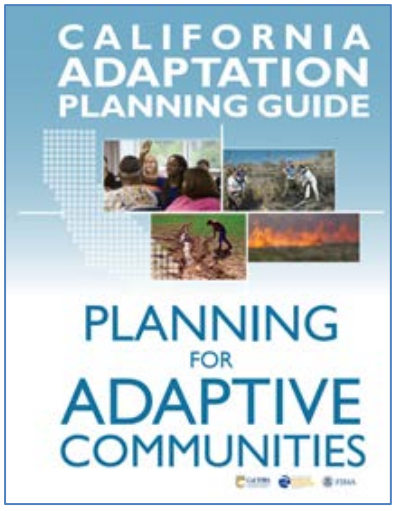
Specific likely impacts on California include:

- **Agriculture:** Increasing droughts and higher temperatures are likely to affect California's top agricultural products: cattle, dairy, and vegetables. Hot temperatures threaten cows' health and cause them to eat less, grow more slowly, and produce less milk. Livestock operations could also be impaired by fire, the lack of water, and changes in the landscape from grassland to woody shrubs more typical of a desert. Reduced availability of water would also create challenges for irrigated farms, which account for two-thirds of the water used in the state.
- **Wildfires and Changing Landscapes:** Higher temperatures and drought are likely to increase the severity, frequency, and extent of wildfires, which could harm property, livelihoods, and human health. On average, more than 2% of the land in California has burned per decade since 1984. Wildfire smoke can reduce air quality and increase medical visits for chest pains, respiratory problems, and heart problems. The combination of more fires and drier conditions may expand deserts and otherwise change parts of California's landscape. Many plants and animals living in arid lands are already near the limits of what they can tolerate. A warmer and drier climate would generally extend deserts to higher elevations and expand their geographic ranges. In some cases, native vegetation may persist and delay or prevent expansion of the desert. In other cases, fires or livestock grazing may accelerate the conversion of grassland to desert in response to a changing climate. For similar reasons, some forests may change to desert or grassland.
- **Pests:** Warmer and drier conditions make forests more susceptible to pests. Drought reduces the ability of trees to mount a defense against attacks from pests such as bark beetles, which have infested 100,000s of acres in California Temperature controls the life cycle and winter mortality rates of many pests. With higher winter temperatures, some pests can persist year-round, and new pests and diseases may become established.
- **Human Health:** Hot days can be unhealthy—even dangerous. Certain people are especially vulnerable, including children, the elderly, the sick, and the poor. High air temperatures can cause heat stroke and dehydration, and affect people's cardiovascular, respiratory, and nervous systems. Higher temperatures are amplified in urban settings where paved and other surfaces tend to store heat. Construction crews may have to increasingly operate on altered time schedules to avoid the heat of the day.
- **Air Quality:** Rising temperatures can increase the formation of ground-level ozone, a key component of smog. Ozone has a variety of health effects, aggravates lung diseases such as asthma, and increases the risk of premature death from heart or lung disease. U.S. EPA and the California Air Resources Board have been working to reduce ozone concentrations. As the climate changes, continued progress toward clean air will be more difficult.

Regulatory Context:

The State of California has stepped into a leadership role in planning for both the reduction of GHG emissions and the adaptation to the potential impacts of climate change. Key laws, regulations, and policies helping to reduce GHG emissions include:

- The California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32 and Senate Bill [SB] 32): AB 32 is the primary legislation that has driven GHG regulation and analysis in California between 2006 and 2016, by instructing the California Air Resource Board (CARB) to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020. Based on CARB's calculations of emissions levels, California must reduce GHG emissions by approximately 15% below 2005 levels to achieve this goal. In September 2016, the Governor signed SB 32, which builds upon the statewide targets for 2020 by establishing a longer-term target so that "statewide greenhouse gas emissions are reduced to 40% below the 1990 levels by 2030." The bill further authorized CARB to adopt regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions.
- California Executive Orders S-3-05 (2005) and B-30-15 (2015): These two executive orders highlight longer-term GHG emissions reduction targets for the state, though such targets have not yet been adopted by the legislature and signed into law. Specifically, Executive Order (EO) S 3 05 seeks to achieve a reduction of GHG emissions of 80 percent below 1990 levels by 2050, consistent with the scientific consensus that developed regions will need to reduce emissions at least 80 percent below 1990 levels to limit global warming to two degrees Celsius. Executive Order B-30-15 seeks to establish an interim target, between the 2020 target established through AB 32 and the long-term targets in EO S-3-05, to achieve a reduction of GHG emissions of 40 percent below 1990 levels by 2030.
- California Environmental Quality Act (CEQA) and Greenhouse Gas Emissions (Senate Bill 97): In 2007, the Natural Resources Agency was directed by the legislature to prepare amendments to the CEQA Guidelines, providing direction to lead agencies on how to analyze and mitigate greenhouse gas emissions.
- Senate Bill 379 (2015) Planning and Zoning Law – This legislation requires that the next revision of a jurisdiction's local hazard mitigation plan on or after January 1, 2017, or, if the local jurisdiction has not adopted a local hazard mitigation plan, beginning on or before January 1, 2022, include a review and update of the safety element to address climate adaptation and resiliency strategies applicable to that city or county. The bill would require the update to include a set of goals, policies, and objectives based on a vulnerability assessment, identifying the risks that climate change poses to the local jurisdiction and the geographic areas at risk from climate change impacts.



California has also prepared programs and guidance for local governments to consider in identifying hazards and adapting to a changing climate.

- California Climate Adaptation Strategy – Executive Order S-13-08: In 2008, the Governor signed EO S-13-08, which directed the California Natural Resources Agency to lead a statewide effort to & develop a climate adaptation strategy. Published in 2009, the statewide plan describes climate trends and the potential impacts

of climate change on key sectors, and it outlines short- and long-term actions that state and local governments can take to address future climate impacts.

- California Adaptation Planning Guide (APG): Published in 2012, this statewide resource serves as a guide to local governments to identify, evaluate, and plan for the range of unavoidable consequences their community may face in the future due to climate change. The APG includes a step-by-step process for conducting a vulnerability assessment and identifying potential adaptation strategies.

Probability of Future Events:

Climate change is an ongoing occurrence. Essentially, it has occurred, is occurring and will continue to occur for several decades, centuries or longer.

4.3.3 Drought

Description:

Drought is an extended period of years when a region is deficient in its water supply, or consistently receives below average precipitation. Drought patterns in the West are related to large-scale climate patterns in the Pacific oceans, such as the El Niño–Southern Oscillation. As these large-scale ocean climate patterns vary in relation to each other, drought conditions in the U.S. shift from region to region. Drought produces a variety of impacts that span many sectors of the economy including: reduced crops, rangeland, and forest productivity; increased fire hazard; reduced water levels; increased livestock and wildlife mortality; and rationing are a few examples of direct impacts. These problems can result in reduced income for farmers and agribusiness, increased prices for food and lumber, unemployment, reduced tax revenues, increased crime, and foreclosures on bank loans to farmers and businesses, and migration. Populations that rely on or are affected by a lack of water or annual rainfall are most directly affected by droughts.

The California Department of Water Resources (DWR) tracks water supply conditions across the state. Indicators include the annual snowpack, precipitation, runoff, and reservoir storage. There are ten major hydrologic regions in the state. By tracking the indicators in the hydrologic regions, the DWR can continually monitor drought conditions and forecast potential drought or dry years in the 58 counties across the state.

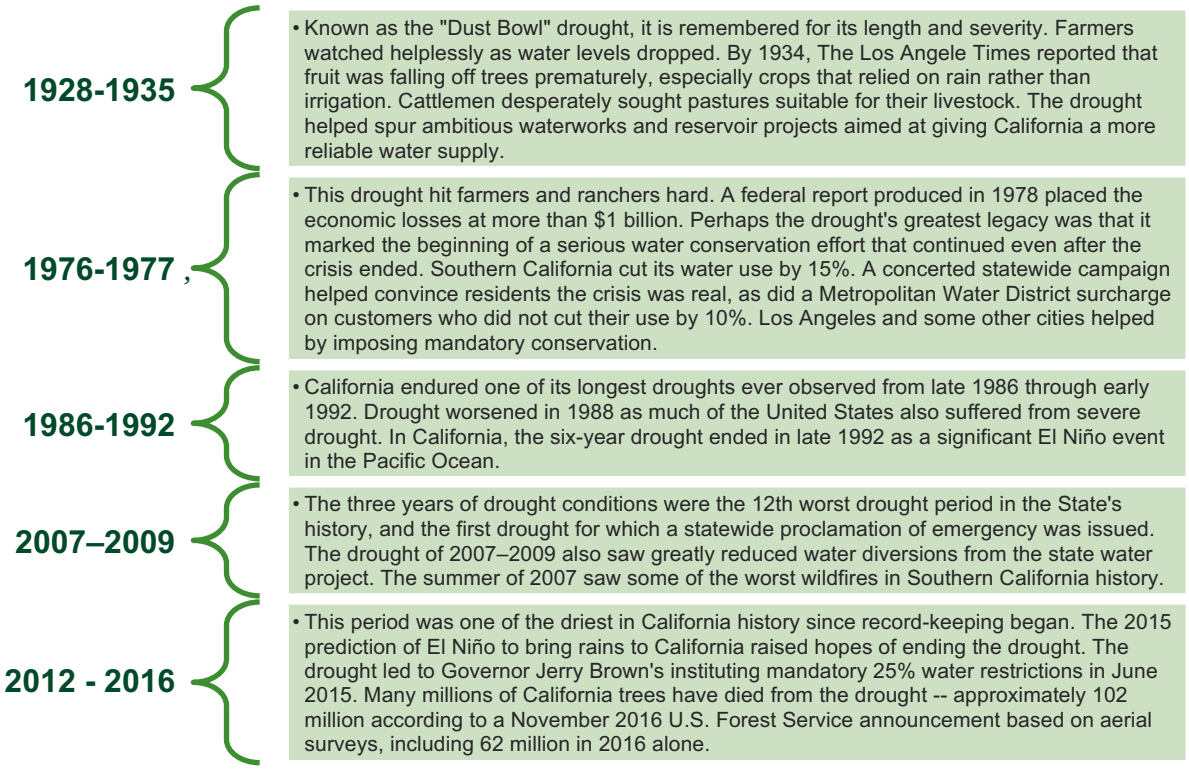
History:

Since record keeping began, California and the western region of the United States has experienced several multi-year drought conditions, which are described briefly in **Figure 4-3**.

Location:

When a drought is in effect, the entire region is affected. California experienced an unprecedented drought beginning in 2012 that lasted through 2016, the longest drought in over a century. Reservoirs, groundwater basins and ecosystems were at half-capacity or less. 2014 was the state's third driest in 119 years of record, based on statewide precipitation.

Figure 4-3: History of Droughts in California



Extent:

At the height of the most recent drought, over 98% of the state of California was experiencing drought conditions. More than 44% of California was in “exceptional” drought — the worst level of drought. On January 17, 2014 Governor Brown declared a drought state of emergency. In late July 2015, the U.S. Drought Monitor classified 58% of California in “exceptional” drought, the most severe on the U.S. Drought Monitor’s five-point scale, and that percentage remained unchanged through September. More than 80 percent was in "extreme" drought (CA Department of Water Resources). On July 15, 2014, the California State Water Resources Control Board approved an emergency regulation to ensure agencies and state residents increase water conservation allowing local agencies to ask courts to fine water users up to $500 per day for failure to implement conservation requirements. Unprecedented precipitation during the winter of 2016 – 2017 resulted in significant drought relief throughout the State.

Impact of Climate Change:

Climate change is already having a profound impact on California water resources, as evidenced by changes in snowpack, sea-level, and river flows. These changes are expected to continue in the future and more precipitation will likely fall as rain instead of snow. This potential change in weather patterns will add additional challenges for water supply reliability.

The mountain snowpack provides as much as a third of California's water supply by accumulating snow during wet winters and releasing it slowly during the spring and summer, when need is the greatest. Warmer temperatures will cause snow to melt faster and earlier, making it more difficult to store and use.

By the end of this century, the Sierra snowpack is projected to experience a 48-65% loss from the historical April 1st average. This loss of snowpack means less water will be available for Californians to use.

Climate change is also expected to result in more variable weather patterns throughout California. More variability can lead to longer and more severe droughts. In addition, rising sea-levels will continue to threaten the Sacramento-San Joaquin Delta, the heart of the California water supply system and the source of water for 25 million Californians and millions of acres of prime farmland.

Regulatory Context:

The State Water Resources Control Board (State Water Board) and the nine Regional Water Quality Control Boards (Regional Boards) protect water quality and allocate surface water rights. The State Water Board was created by the Legislature in 1967. The mission of the Water Board is to ensure the highest reasonable quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses. The joint authority of water allocation and water quality protection enables the Water Board to provide comprehensive protection for California's waters. Regional Boards are semi-autonomous and have broad responsibilities within the framework of State regulatory guidance. The Department of Water Resources is responsible for the management of water usage including the delivery of water to two-thirds of California's population through the State Water Project.

Probability of Future Occurrences:

An extreme multiyear drought as intense as the 2012 - 2016 drought could impact the region with little warning. Combinations of low precipitation and unusually high temperatures could occur over several consecutive years. Intensified by such conditions, extreme wildfires could break out throughout the Los Angeles County, increasing the need for water. Surrounding communities, also in drought conditions, could increase their demand for water supplies relied upon by the planning partnership, causing social and political conflicts. If such conditions persisted for several years, mandatory rationing could impact residents and City businesses.

4.3.4 Earthquake and Seismic Hazards

Descriptions:

An earthquake is a sudden motion or trembling caused by a release of energy accumulated within or along the edge of the earth's tectonic plates. The effects of an earthquake can be felt far beyond the epicenter (where the earthquake originates). Earthquakes usually occur without warning and can cause massive damage and extensive casualties in just a few seconds. Ground motion and shaking, surface fault ruptures, and ground failure are common effects of earthquakes. Ground motion is the vibration or shaking of the ground during an earthquake. When a fault ruptures, seismic waves radiate and cause the ground to vibrate. The severity of the vibration increases as the amount of energy released increases and decreases with distance from the fault or epicenter.

Ground shaking, landslides, liquefaction, and amplification are the specific hazards associated with earthquakes. The severity of these hazards depends on several factors, including soil and slope conditions, proximity to the fault, earthquake magnitude and depth, and the type of earthquake.

- **Ground Shaking:** Ground shaking is the motion felt on the earth's surface caused by seismic waves from an earthquake. It is the primary cause of earthquake damage. The strength of ground shaking depends on the magnitude of the earthquake, the type of fault, and distance from the

epicenter. Buildings on poorly consolidated and thick soils will typically see more damage than buildings on consolidated soils and bedrock.

- **Amplification:** Soils and soft sedimentary rocks near the earth's surface can modify ground shaking caused by earthquakes. One of these modifications is amplification. Amplification increases the magnitude of the seismic waves generated by the earthquake. The amount of amplification is influenced by the thickness of geologic materials and their physical properties. Buildings and other structures built on soft and unconsolidated soils can face greater risk. Amplification can also occur in areas with deep sediment-filled basins and ridge tops.
- **Earthquake-Induced Landslides:** Earthquake-induced landslides are secondary earthquake hazards that occur from ground shaking. They can destroy the roads, buildings, utilities, and other critical facilities necessary to respond and recover from an earthquake and are common in areas with steep slopes.
- **Liquefaction:** Liquefaction, a secondary earthquake hazard, occurs when ground shaking causes wet granular soils to change from a solid state to a liquid state. This results in the loss of soil strength and the soil's ability to support weight. Buildings and their occupants are at risk when the ground can no longer support these buildings and structures. Many communities in Southern California are built on ancient river bottoms and have sandy soil. In some cases, this ground may be subject to liquefaction, depending on the depth of the water table. Liquefaction occurs primarily in saturated and loose, fine- to medium-grained soils, in areas where the groundwater table lies within 50 feet of the ground surface.

The Richter scale is often used to rate the strength of an earthquake and is an indirect measure of seismic energy released. The scale is logarithmic, with each one-point increase corresponding to a 10-fold increase in the amplitude of the seismic shock waves generated by the earthquake. However, in actual energy released, each one-point increase on the Richter scale corresponds to about a 32-fold increase in energy released. Therefore, a magnitude (M) 7.0 earthquake is 100 times (10×10) more powerful than an M 5 earthquake and releases 1,024 times (32×32) the energy.

The Modified Mercalli Intensity (MMI) scale, as shown in **Table 4-9**, quantifies the intensity of ground shaking. Intensity in this scale is a function of distance from the epicenter (the closer a site is to the epicenter, the greater the intensity at that site), ground acceleration, duration of ground shaking, and degree of structural damage. The MMI rates the severity of an earthquake by the amount of damage and perceived shaking.

Table 4-9: Modified Mercalli Intensity Scale

MMI Value	Shaking Severity	Summary Damage	Description
I	Micro	Little to none	Not felt except by a very few under especially favorable conditions.
II	Minor	Little to none	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
III	Minor	Hanging objects move	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly.

MMI Value	Shaking Severity	Summary Damage	Description
			Vibration similar to the passing of a truck. Duration estimated.
IV	Light	Hanging objects move	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Light	Pictures Move	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Moderate	Objects Fall	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Strong	Nonstructural Damage	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Very Strong	Moderate Damage	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
X	Very Violent	Extreme Damage	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
XI	Very Violent	Extreme Damage	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
XII	Very Violent	Total Damage	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.

Source: United States Geological Survey 2016

Earthquake faults are indications of past seismic activity. Those that have been active most recently are the most likely to be active in the future. According to the California Geological Survey Alquist-Priolo Earthquake Fault Zoning Act, an “active” fault is one that has ruptured in the last 11,000 years. Faults that are “potentially active” have been active within the last two million years and are referred to as being in the Quaternary Period.

Location:

The City is part of the seismically active Southern California region, probably best known for the 750-mile-long San Andreas Fault, which stretches from the Mexican Border to San Francisco.

A map of the major faults in Southern California is provided in **Figure 4-4.** An interactive, detailed map of faults is available from the Southern California Earthquake Data Center at https://scedc.caltech.edu/significant/index.html. The City is bounded on the southwest by the Palos Verdes Fault and on the west the Newport-Inglewood Fault. Both faults are less than 5 miles from the City.

Figure 4-4: Major Southern California Faults

Source: Southern California Earthquake Data Center, 2017.

The City is not subject to liquefaction due to the nature of its geological structure. http://geohub.lacity.org/datasets/4842ad85584c430481246852280257c2_9. It is also not susceptible to landslides.

History:

The most significant earthquake event affecting Southern California was the January 17, 1994 Northridge Earthquake. At 4:31 A.M. on Monday, January 17, a moderate but very damaging earthquake with a magnitude of 6.7 struck the San Fernando Valley. In the following days and weeks, thousands of aftershocks occurred, causing additional damage to affected structures. 57 people were killed and more than 1,500 people seriously injured. For days afterward, thousands of homes and businesses were without electricity; tens of thousands had no gas; and nearly 50,000 had little or no water. Approximately 15,000 structures were moderately to severely damaged, which left thousands of people temporarily homeless. 66,500 buildings were inspected. Nearly 4,000 were severely damaged and over 11,000 were moderately damaged. Several collapsed bridges and overpasses created commuter havoc on the freeway system.

Extensive damage was caused by ground shaking, and the earthquake triggered liquefaction and dozens of fires also caused additional severe damage. This extremely strong ground motion in large portions of Los Angeles County resulted in record economic losses. However, the earthquake occurred early in the

morning on a holiday. This circumstance considerably reduced the potential effects. Many collapsed buildings were unoccupied, and most businesses were not yet open.

The direct and indirect economic losses ran into the tens of billions of dollars. **Table 4-10** lists earthquakes with a magnitude of 6.5 or greater that have occurred in Southern California since 1900. The Southern California Earthquake Data Center contains a wealth of information on earthquakes including an extensive list of historical earthquakes with detailed descriptions.

Table 4-10: Southern California Earthquakes above 6.5M since 1900

Magnitude	Name	Location (approx.)	Date
6.8	San Jacinto	San Jacinto	4/21/1918
7.1	Lompoc	Lompoc	11/4/1927
6.9	Imperial Valley	Imperial Valley	5/18/1940
6.6	Fish Creek	Brawley	10/21/1942
7.5	Kern County	Bakersfield	7/21/1952
6.5	San Fernando	Sylmar	2/9/1971
7.3	Landers	Yucca Valley	5/28/1992
6.7	Northridge	Northridge	2/17/1994
7.1	Hector Mine	Joshua Tree	10/16/1999
7.2	Sierra el Mayor	Calexico	4/4/2010

Source: http://scedc.caltech.edu/significant/chron-index.html

While smaller in magnitude than the San Andreas Fault, the Newport-Inglewood Fault is closer in proximity to the City and has been the source of several earthquakes in the last 70 years. The largest of these was the 1933 Long Beach earthquake – a magnitude 6.4 earthquake that resulted in 120 deaths, $50 million in property damage, and the destruction of many unreinforced masonry structures and destruction of school buildings. Other notable earthquakes along the Newport-Inglewood fault line include:

- Signal Hill Earthquake; October 2, 1933; Magnitude 5.4
- Gardena Earthquake; October 22, 1941; Magnitude 5.0
- Torrance Gardena Earthquake; November 14, 1941; Magnitude 5.1
- Newport Beach Earthquake; April 7, 1989; Magnitude 4.7

Extent:

All of Southern California is subject to major earthquakes. The magnitude of any earthquake is directly related to the length of the rupture of the earthquake producing fault. Length of the fault does not however, predict the measure of ground movement. Ground movement and resulting shaking is determined by the depth of the earthquake hypocenter, directionality of the rupture propagation and amplifying or dampening effects of the geomorphology of soils of the affected region. The relatively small 6.3M

earthquake that struck Christchurch, New Zealand in 2011 resulted in severe damage and loss of life due to its very shallow hypocenter. Distance from the fault lessens the potential ground shaking subject to the factors previously cited.

Regulatory Environment:

The Alquist-Priolo Earthquake Fault Zoning Act was signed into California law on December 22, 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The act in its current form has three main provisions:

I. It directs the state's California Geological Survey agency (then known as the California Division of Mines and Geology) to compile detailed maps of the surface traces of known active faults. These maps include both the best-known location where faults cut the surface and a buffer zone around the known trace(s)
II. It requires property owners (or their real estate agents) to formally and legally disclose that their property lies within the zones defined on those maps before selling the property
III. It prohibits new construction of houses within these zones unless a comprehensive geologic investigation shows that the fault does not pose a hazard to the proposed structure.

The Act was one of several that changed building codes and practices to improve earthquake safety. These changes are intended to reduce the damage from future earthquakes.

The State provides extensive regulations on earthquake related issues. A key area for regulation is the California Building Standards Commission (CBSC). It is authorized by California Building Standards Law to administer the development, adoption, approval, publication, and implementation of California's building codes.

The California Building Standards Code, Title 24 serves as the basis for the design and construction of buildings in California. Improved safety, sustainability, maintaining consistency, new technology and construction methods, and reliability are paramount to the development of building codes. California's building codes are published in their entirety every three (3) years. Intervening Code Adoption Cycles produce supplement pages half-way (18 months) into each triennial period. Amendments to California's building standards are subject to a lengthy and transparent public participation process throughout each code adoption cycle.

The California Seismic Safety Commission provides an array of regulatory and advisory information regarding seismic safety at: https://ssc.ca.gov/

Probability of Future Occurrences:

Recent predictions limit the possible maximum earthquake magnitude along the San Andreas fault system to an 8.0 magnitude earthquake with a 7% probability estimate that such an event could occur in Southern California in the next 30 years; over the same period, there is a 75% chance of a magnitude 7.0 event.

In 2017, seismologists discovered that the Newport-Inglewood and Rose Canyon fault systems are actually one continuous fault zone capable of producing up to a 7.4 magnitude earthquake, which could devastate coastal areas with softer soils and liquefaction potential. However, the chance of a major earthquake along this fault line within the foreseeable future is lower than the San Andreas fault, primarily because the Newport-Inglewood Fault is moving at a much slower rate, approximately one one-hundredth of an inch annually, compared to the San Andreas which is moving at about an inch per year.

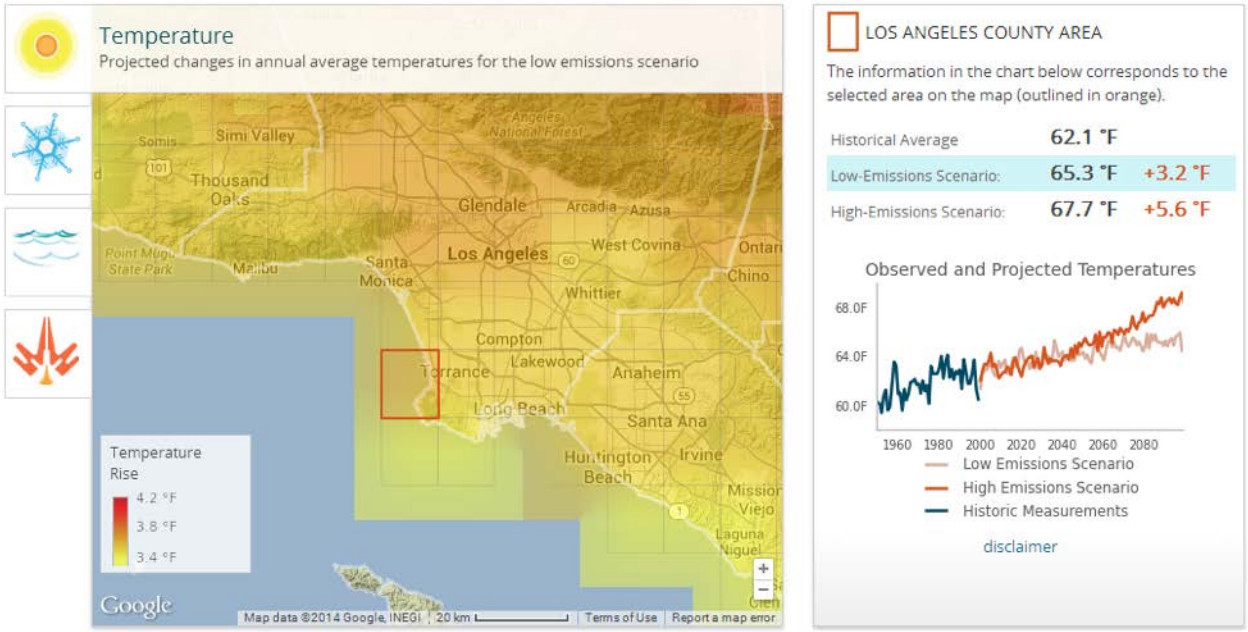
4.3.5 Excess Heat

Description:

Since the early 20th Century, average surface temperatures worldwide have risen at an average rate of 0.15°F per decade (1.5°F per century). In the U.S. average surface temperatures have risen more quickly since the late 1970s (0.36 to 0.55°F per decade), with eight of the top ten warmest years on record since 1880. Scientists predict that over the next century, global temperatures will increase between 2.5°F and 10.4°F.

For the City, scientists expect average temperatures to increase between 3.2°F and 5.6°F as shown in Figure 4-5. Along with changes to average annual temperature, climate change is expected to alter seasonal temperatures, where average July temperatures may increase by as much as 7°F.

Figure 4-5: Temperature Degrees of Change (1960 – 2080)



Source: Cal-adapt, 2014.

Climate change, particularly extreme heat events, present serious health risks to California's most vulnerable populations. The effects of extreme heat (over 84°F) on human health are well documented. Increased temperature or extended periods of elevated temperatures can increase heat-related mortality, cardiovascular-related mortality, respiratory mortality, and heart attacks, while increasing hospital admissions and emergency room visits. Extreme heat can also affect a person's ability to thermo-regulate, causing heat stress and sometimes leading to death.

A number of factors contribute to the vulnerability of an individual to extreme heat. Intrinsic factors that contribute to heat-related risk include age (over 65 and infants and children), and medical conditions (cardiovascular disease, diabetes, and mental illness). Extrinsic factors, or those external to an individual, include neighborhoods with high levels of impervious surfaces and low tree cover, housing units that lack air conditioning, or household access to a vehicle. Along with these intrinsic and extrinsic factors such as race and ethnicity, education level, poverty, immigration status, and profession (particularly individuals who work outside, such as farm and construction workers) may contribute to an individual's vulnerability to heat events.

History:

Since the 1950s, the greater Los Angeles region has experienced a number of heat waves and reached extreme temperatures. Between 1981 and 2000, Los Angeles experienced, an average of 6 days per year with temperatures above 95ºF.

Significant events include:

- According to the National Weather Service, the longest consecutive heat wave in Downtown Los Angeles lasted for eight days, from August 31 to September 7 in 1955. Over the eight days, temperatures exceeded 100ºF on seven of the eight days, and reach a high temperature of 110ºF.
- Burbank reached an all-time high of 113 degrees on September 12, 1971. For nearly four days between September 11 and 14, the average was about 105 degrees.
- In late June 2013, an intense heat wave struck the Southwestern United States. Various places in Southern California reached up to 122°F.

Location:

The National Weather Service (NWS) issues an Excessive Heat Warning/Advisory when an extreme heat event (a “heat wave”) is expected within the next 36 hours. These extreme heat events are influenced by weather patterns generally affecting an entire region, though have varying impacts on different locations within a region depending on topography, proximity to coastal wind patterns, and the design of the surrounding environment.

Extent:

During the 2006 California heat wave, a greater increase in emergency room (ER) visits and hospitalizations for heat-related illnesses occurred in the normally cooler coastal counties (Knowlton et al., 2009; Gershunov et al., 2011). Apparent temperature, a combination of both temperature and humidity, was associated with ER visits during the warm season in California in a recent study (Basu et al., 2012). In addition, relative humidity was associated with ER visits for mental health complaints (Gershunov et al., 2011). While people may be able to acclimatize to warmer summers in general, rare extremes may be beyond their capacity. Additional risks can occur due to micro-environments in homes due to humidity and heat exposures (Basu and Samet, 2002).

Temperatures in most urban areas are significantly higher than in surrounding, less urbanized areas because pavement and building materials absorb sunlight and heat. This phenomenon is known as the urban heat island effect (Imhoff et al., 2010). Daytime temperatures in urban areas are on average 1-6°F higher than in rural areas, while nighttime temperatures can be as much as 22ºF higher as the heat is gradually released from buildings and pavement (U.S. EPA, 2008). Pavements cover a third of a typical U.S. city (Akbari et al., 2009), mostly with asphalt, which reflects only 10% of the sunlight shining upon it. Building density, design and materials, heat from industrial operations, machinery, air conditioners and vehicles, road pavement, and lack of vegetation all contribute to the creation of heat islands.

Impact of Climate Change:

Cal-Adapt projects that urban and rural population centers throughout California will experience an average of 40 to 53 extreme heat days by 2050 and an average of 40 to 99 days by 2099. This compares to a historical average of 4 per year.

Populations in cooler areas in California may be at greater risk of heat-related illness because a.) individuals are less acclimatized to heat, b.) people are less aware of the behaviors that can reduce

exposure (e.g., reduce activity level or go to an air conditioned location) or reduce physiologic stress (e.g., appropriate hydration), and c.) the built environment is not designed for warmer conditions (e.g., homes, workplaces and institutions are less often equipped with air conditioning or it is inadequate for extreme or prolonged heat events). In addition, communities in these locations, inadequately aware of the risk, may not have plans or capacity for emergency mitigation measures.

Regulatory Context:

There are limited regulatory requirements for dealing specifically with occurrences of extreme heat. However, State Building Codes that facilitate the use of energy efficiency features, cool roofs, and porous materials can help to reduce the urban heat island effect which can further exacerbate extreme heat conditions and lead to heat-related public health emergencies.

Probability of Future Occurrences:

The City is likely to see a significant increase in the number of days when temperature exceeds the extreme heat threshold of 84°F. Between 1950 and 2011, the average number of extreme heat days was four. Under the lower emissions scenario by 2050, the number of extreme heat days could increase to more than 30 per year, and by the end of the century, the number of extreme heat days could exceed 50 per year. Warmer days will also be accompanied by warmer nights, which could have a significant, negative effect on public health.

4.3.6 Flood / Flash Flood

Description:

A flood occurs when the existing channel of a stream, river, canyon, or other watercourse cannot contain excess runoff from rainfall or snowmelt, resulting in overflow onto adjacent lands.

A floodplain is the area adjacent to a watercourse or other body of water that is subject to recurring floods. Floodplains may change over time from natural processes, changes in the characteristics of a watershed, or human activity such as construction of bridges or channels.

River channels change as water moves downstream, acting on the channel banks and on the channel bottom. On the outside of a channel curve, the banks are subject to erosion as the water scours against them. On the inside of a channel curve, the banks receive deposits of sand and sediment transferred from the eroded sites. In areas where flow contains a high-sediment load, the course of a river or stream may shift dramatically during a single flood event.

Flooding within the City is caused by localized drainage limitations.

- Localized drainage flooding generally occurs during storm events in which the amount of precipitation accumulates more rapidly than the storm drain system can accommodate. The amount of water is a function of the size and topography of the contributing watershed, the regional and local climate, and land use characteristics.
- Currently, none of the City's land is within a FEMA 100-year floodplain as currently defined; however, City documents report frequent localized drainage flooding, especially in El Niño years and during large precipitation events.

History:

There have been no major floods reported in the City. On December 24, 2001, a strong cold front produced heavy rain and street flooding across sections of Southern California. Reports of street flooding in the communities of Santa Barbara, Ventura and Carson were received from weather spotters and local newspapers. Carson reported that the flooding the caused no deaths or injuries or resulted in no damage.

Location:

Minor street flooding has occurred at the following locations:

- Prairie Ave. from 120th St. to Broadway
- 132nd St. from Hawthorne Blvd. to Prairie Ave.
- Prairie Ave. frontage road from Cordary Ave. to 146th St.
- 148th St. from Prairie Ave. to Ruthbar Ave.
- Ruthbar Ave. from Doty Ave. to Marine Ave.

Extent:

The potential for flooding in the City is generally in response to a series of heavy winter rainstorms, typically occurring in early November through late March. If drainage systems are overwhelmed due to several storms within a short period of time, the lack of capability could result in major roads being blocked, preventing access for many residents and critical response functions.

Impact of Climate Change:

Climate change is likely to increase the number and severity of future floods due to changes in the greater impact of increasing numbers and intensity of winter storms.

Regulatory Context:

There are been numerous federal and State laws that address flooding including the Flood Control Acts of 1917, 1928, 1936 and 1944. The Flood Control Act of 1936, authorized civil engineering projects such as dams, levees, dikes, and other flood control measures through the United States Army Corps of Engineers and other Federal agencies. It dictates that Federal investigations and improvements of rivers and other waterways for flood control and allied purposes shall be under the jurisdiction of the Department of Defense under the supervision of the Chief of Engineers. It further put watersheds, waterflow retardation, and soil erosion prevention under the U.S. Department of Agriculture. Further, those authorities were not to interfere with reclamation projects by the Bureau of Reclamation of the Interior Department.

The U.S. Congress established the NFIP with the passage of the National Flood Insurance Act of 1968. The NFIP is administered by FEMA and enables property owners in participating communities to purchase insurance as protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages.

Probability of Future Events:

While major flooding is not likely to occur in Hawthorne, minor street flooding is possible during any severe winter storm, which can ensue on an annual basis.

4.3.7 Pipeline Rupture / Hazardous Material Release

Description:

Although pipelines are the safest and most reliable way to transport natural gas, crude oil, liquid petroleum products, and chemical products, there is still an inherent risk due to the nature of the hazardous materials. Crude oil is a complex mixture of thousands of different hydrocarbons and varying amounts of other compounds containing sulfur, nitrogen, and oxygen as well as salts, trace metals, and water.

Crude oils can vary from a clear liquid, similar to gasoline, to a thick tar-like material needing to be heated to flow through a pipeline. A petroleum refinery's main job is to split crude oil into its many parts (or fractions) which are then reprocessed into useful products. The type, number, and size of process units required at a particular refinery depends on a variety of factors including the type of crude oil and the products required. The interconnected units making up a refinery are tanks, furnaces, distillation towers (fractionating columns), reactors, heat exchangers, pumps, pipes, fittings, and valves. Products of crude oil refineries include:

- Fuels such as gasoline, diesel fuel, heating oil, kerosene, jet fuel, bunker fuel oil, and liquefied petroleum gas
- Petroleum solvents including benzene, toluene, xylene, hexane, and heptane, which are used in paint thinners, dry-cleaning solvents, degreasers, and pesticide solvents
- Lubricating oils produced for a variety of purposes, and insulating, hydraulic, and medicinal oils
- Petroleum wax
- Greases, which are primarily a mixture of various fillers
- Asphalt

These products can be hazardous not only in their final state but as they are being processed and refined. The principal hazards at refineries are fire and explosion. Refineries process a multitude of products with low flash points. Although systems and operating practices are designed to prevent such catastrophes, they can occur. In a refinery, hazardous chemicals can come from many sources and in many forms. In crude oil, there are not only the components sought for processing, but impurities such as sulfur, vanadium, and arsenic compounds. The oil is split into many component streams that are further altered and refined to produce the final product range. Most, if not all, of these component stream chemicals are inherently hazardous to humans, as are the other chemicals added during processing. Hazards include fire, explosion, toxicity, corrosiveness, and asphyxiation.

Hazardous material releases can occur from industrial facilities at fixed sites or along transportation corridors such as rail and roadways. Past hazardous material releases are contained in the history section. Hazards from releases cause include fire, explosion, toxicity, corrosiveness, and asphyxiation.

History:

Although there have been no pipeline failure or major hazardous material release incidents that have affected communities in the City, several incidents have occurred in the region. Some of the more significant events include:

- San Bruno, California – September 9, 2010, a 30-inch-diameter segment of an intrastate natural gas transmission pipeline known as Line 132, owned and operated by Pacific Gas and Electric Company (PG&E) ruptured in a residential area in San Bruno, California. The rupture occurred at the

intersection of Earl Avenue and Glenview Drive. The rupture produced a crater about 72 feet long by 26 feet wide. PG&E estimated that 47.6 million standard cubic feet of natural gas was released. The released natural gas ignited, resulting in a fire that destroyed 38 homes and damaged 70. Eight people were killed, many were injured, and many more were evacuated from the area.

- Refugio Beach, California – May 19, 2015, a ruptured pipeline along the scenic California coastline leaked more than 100,000 gallons of crude oil, with at least 21,000 gallons dumped into the ocean, creating a nine-mile slick before it could be secured, Governor Jerry Brown declared a state of emergency in response to the environmental disaster. The pipeline, owned by Plains All American Pipeline, was shut off about three hours after the spill, but by then the slick stretched nine miles into the water.
- The Aliso Canyon gas leak (also called Porter Ranch gas leak and Porter Ranch gas blowout was a massive natural gas leak that was discovered by Southern California Gas Company employees on October 23, 2015. Gas was escaping from a well within the Aliso Canyon's underground storage facility in the Santa Susana Mountains near Porter Ranch. On January 6, 2016, Governor Jerry Brown issued a state of emergency. On February 11, 2016, the gas company reported that it had the leak under control. On February 18, 2016, state officials announced that the leak was permanently plugged. An estimated 97,100 ton of methane and 7,300 tons of ethane were released into the atmosphere

Location:

Pipelines owned and operated by Shell Oil, Chevron, Four Corners, and Mobil companies run beneath the City's streets. Pipelines are primarily underground, which keeps them away from public contact and accidental damage. Despite safety and efficiency statistics, increases in energy consumption and population growth near pipelines present the potential for a pipeline emergency incident. Figure 4-6 provides a map of pipelines within the City.

While pipelines are generally the safest method of transporting hazardous chemicals, they are not failsafe. Pipeline product releases, whether in the form of a slow leak or violent rupture, are a risk in any community.

There are numerous industrial facilities in or near the City. The South Bay is home to a large number of industrial sites including refineries and other chemical processing plants. Major operators of the industrial sites include:

- Chevron Refinery
- Space X

Extent:

Most fires, explosions, or pipeline spill incidents occurring at a refinery or on a pipeline are isolated to the site. Pipelines running through the City are unlikely to burst or combust; jet fuel pipelines are filled with oxygen-free liquid, and without oxygen, combustion cannot occur. Pipelines are regulated by the Office of the State Fire Marshall Pipeline Safety Division. Pipelines are also monitored by a complex data web called System Control and Data Acquisition (SCADA) measuring the flow rate, temperature and pressure. The network transfers real-time data via satellite from the pipelines to a control center where the valves, pumps, and motors are remotely operated. If any tampering with the pipeline occurs, an alarm sounds. The ensuing valve reaction is instantaneous, with the alarm system isolating any rupture and setting off a chain reaction that shuts down pipeline pumps and alerts pipeline operators within seconds.

Most jet fuel pipelines run underground, and in populated areas, must be over three feet below the asphalt. The pipes are at least one-inch-thick steel. If the pipe did rupture, valves would cut off and operators would receive an automatic alarm.

Oil spills are considered to be a significant impact along the railways for BSNF Railway and Union Pacific. Small spills can be mitigated and are classified as less than significant. Large oil spills (greater than 50 barrels) may not be completely contained and, therefore, would be considered significant impacts. Significant adverse impacts on biological resources would occur from a major oil spill.

All the industrial facilities have the potential to produce hazardous releases. The details of the type and extent of the potential releases are maintained by the plant operators and the State Department of Toxic Substances Control (DTSC). The facilities are required to notify the County Hazardous Materials Incident Response Team when there is an incident. The County's Board of Supervisors have approved the Hazardous Materials Incident Notification Policy detailing when and how this should be done.

Regulatory Context:

Specific regulatory requirements are defined by:

- Title 49 CFR Part 191 - Transportation of Natural and Other Gas by Pipeline, Annual Reports, Incident Reports, and Safety-Related Condition Reports
- Title 49 CFR Part 192 - Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards
- Title 49 CFR Part 193 - Liquefied Natural Gas Facilities: Federal Safety Standards
- General Order No. 58-A - Standards for Gas Service in the State of California
- General Order No. 58-B - Heating Value Measurement Standard for Gaseous Fuels
- General Order No. 112-F - State of California Rules Governing Design, Construction, Testing, Operation, and Maintenance of Gas Gathering, Transmission, and Distribution Piping Systems

The California Public Utilities Commission (CPUC) ensures that intra-state natural gas and liquid petroleum gas (LPG) pipeline systems are designed, constructed, operated, and maintained according to safety standards set by the CPUC and the federal government. CPUC gas safety engineers are trained and qualified by the federal government. The CPUC enforces natural gas and LPG safety regulations; inspects construction, operation, and maintenance activities; and makes necessary amendments to regulations to protect and promote the safety of the public, the utility employees that work on the gas pipeline systems, and the environment.

The CPUC endorses the system safety approach embodied in the federal government's regulation of Pipeline and Hazardous Materials Safety Administration. State and federal regulators are tasked with ensuring that pipeline and hazardous materials operators have risk management programs in place, that those programs are designed in conformance with state and federal laws and regulations, that the programs are effective in enhancing public safety, the operator's employees safety, environmental safety, and that the safety of the entire system and operation continues to improve.

The CPUC conducts operation and maintenance compliance inspections, accident investigations, reviews utilities' reports and records, conducts construction inspections, conducts special studies, and takes action in response to complaints and inquiries from the public on issues regarding gas pipeline safety.

The CPUC also conducts audits and inspections of gas facilities owned and operated by mobile home parks, and conducts inspections of propane gas pipeline distributions systems.

Intra-state hazardous liquid pipelines are regulated by the Office of the State Fire Marshall (OSFM). Interstate pipelines are regulated by the Pipeline and Hazardous Materials Safety Administration (PHMSA).

Probability of Future Events:

While safety programs aim to prevent hazardous material releases, accidents occur due to equipment failures or human error. Additionally, a large earthquake could rupture piping and other containment systems and derange controls, causing releases, fires and public health incidents. There is a high probability of future hazardous releases from refineries and chemical plants that could affect the City.

4.3.8 Winter Storm / High Winds

Description:

Winter storms may produce high winds. Wind strength depends on differences between the existing high- and low-pressure systems and the distances between them. A steeper pressure gradient resulting from a large pressure difference or short distance between systems causes higher winds.

The climate along California's southern coast is marine Mediterranean. Summers are mild and dry while winters are cool and damp. A dominating factor in the weather of California is the semi-permanent high-pressure area of the northern Pacific Ocean, sometimes called the Pacific high. This pressure center moves northward in summer, holding storm tracks, originating on easterly winds, well to the north. As a result, California receives little or no precipitation during the summer and early autumn.

The time period between October and April comprises the rainy season. During these months, winter storms may occur. This occurs as the Pacific high decreases in intensity in winter and moves further south, permitting storms to move into and across the state, producing widespread rain at low elevations and snow at high elevations. Occasionally the state's circulation pattern includes a series of storm centers that move into California from the southwest. These storms caused by atmospheric rivers or pineapple expresses can produce extremely large volumes of precipitation and last several days.

In the fall, the City may be subject to Santa Ana winds. These winds are strong, extremely dry down-slope winds that originate inland and affect coastal Southern California and northern Baja California. Santa Ana winds are known especially for the hot, dry weather (often the hottest of the year) are infamous for fanning regional wildfires.

History:

Since 1995, the Los Angeles County coast has experienced 36 extreme weather events, resulting in 9 fatalities, 41 severe injuries, and damage to private property. Tornado activity has also occurred near the City. Most of the fatalities and deaths were due to heavy rain and flooding. There have been no tornadoes, high winds or winter storms that have resulted in deaths or property loss in Hawthorne.

During the same period, the County experienced 53 days of winter storms. Minor damage from vegetative debris from winter storms is likely to occur in the City's parks or public spaces with trees and other landscaping.

High wind events in Los Angeles County occur mainly in the Santa Monica and San Gabriel Mountains. While tornadoes have occurred nearby, they have been F-0 events with one exception that occurred in

Long Beach which experienced and F-1 tornado that resulted in one injury. **Table 4-12** lists history of tornados that have been sighted in nearby jurisdictions.

Table 4-11: Historic Tornados Near Hawthorne

Date	Force	Deaths	Injured	Distance (miles)
12/12/2014	0	0	0	7
01/19/2010	1	0	0	15
02/19/2005	0	0	0	22
12/29/2004	0	0	0	6, 10, 17
04/01/1999	0	0	0	24
02/24/1998	0	0	0	21
01/09/1998	1	0	1	10
12/21/1997	1	0	0	23

Location:

All of the City is vulnerable to the effects of winter storms and high winds. Vegetation, debris, and electrical infrastructure knocked down or blown by severe weather, has the potential to cause damage or additional hazards.

Extent:

The Fujita Scale is used to categories tornados. **Table 4-12** lists Fujita scale values with associated affects.

Table 4-12: Fujita Scale and Affects

Damage f scale	Little Damage	Minor Damage	Roof Gone	Walls Collapse	Blown Down	Blown Away
	f0	f1	f2	f3	f4	f5
Windspeed F scale	17 m/s – 32	32 – 50	50 – 70	70 – 92	92 – 116	116 – 142
	F0	F1	F2	F3	F4	F5
	40 mph – 73	73 – 113	113 – 158	158 – 207	207 – 261	261 – 319
To convert f scale into F scale, add the appropriate number						
Weak Outbuilding	-3	f3	f4	f5	f5	f5	f5
Strong Outbuilding	-2	f2	f3	f4	f5	f5	f5
Weak Framehouse	-1	f1	f2	f3	f4	f5	f5
Strong Framehouse	0	F0	F1	F2	F3	F4	F5
Brick Structure	+1	-	f0	f1	f2	f3	f4
Concrete Building	+2	-	-	f0	f1	f2	f3

Fig. 2.4-1 The Fujita tornado scale (F scale) pegged to damage-causing windspeeds. The extent of damage expressed by the damage scale (f scale) varies with both windspeed and the strength of structures.

Source NOAA

Impact of Climate Change:

Warming central Pacific Ocean water has the potential to produce more frequent and longer winter storms originating in the intertropical convergence zone (ITCZ). Pacific Northwest National Laboratory researchers concluded that the number of days on which atmospheric rivers (formed in the ITZC and a major cause of severe winter storms) reach the West Coast each year, could increase by a third this century, if greenhouse gas pollution continues to rise sharply.

Currently, the West Coast is likely to receive rain or snow from atmospheric rivers between 25 and 40 days each year, the analysis concluded. By century's end, that's expected to rise to between 35 and 55 days annually. Meanwhile, the number of days each year on which the atmospheric rivers bring "extreme" amounts of rain and snow to the region could increase by more than a quarter.

Regulatory Environment:

There are very few formal regulations that pertain to severe weather events in general.

Probability of Future Occurrences:

Based on history, winter storms and high wind events including Santa Ana winds or microburst tornadic activity can be expected, perhaps annually, across widespread areas of Los Angeles County including the City.

Figure 4-6: Oil Pipelines

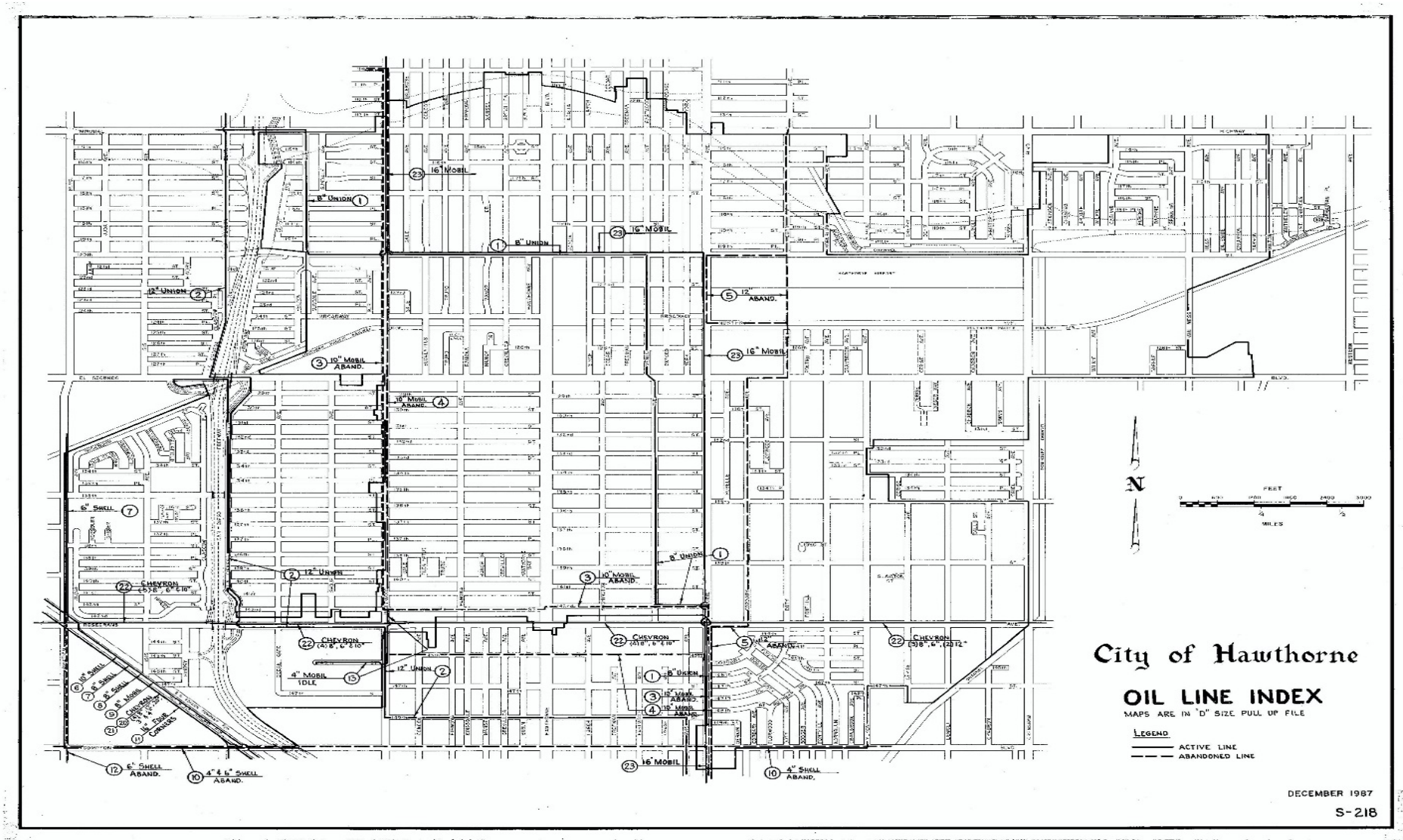
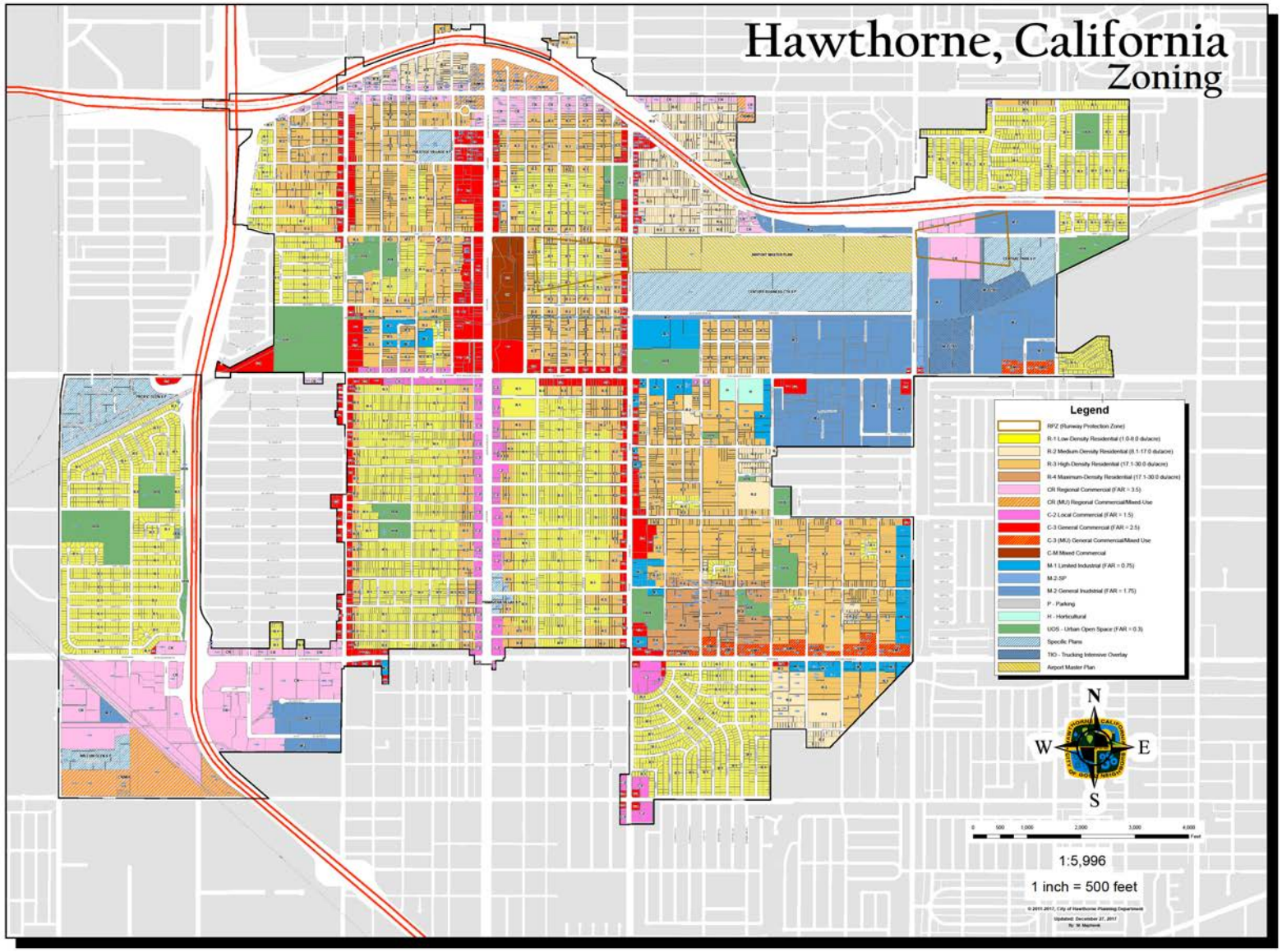


Figure 5.1: City of Hawthorne Zoning Map



5. Risk Assessment

The process of risk assessment combines hazard identification with an understanding of the vulnerability of the infrastructure inventory of the existing (or planned) property development(s) and population(s) exposed to a hazard.

Some assets are relied upon as part of critical response activities, while others are considered essential to the operations and viability of the City. Critical facilities are of particular concern because these facilities provide vital products and services to the general public for public safety, emergency response, and/or disaster recovery functions. The critical facilities have been identified and are illustrated in **Table 5-1**. This step provides a general description of land uses and development trends within the community so that mitigation options can be considered in view of land use planning and future land use decisions. The LHMP contains a comprehensive description of the character of the City in Section 3, Planning Area Description. Analyzing the profile of the City supports identifying potential problem areas and serves as a guide for incorporating the goals and ideas contained in LHMP into other community development plans.

5.1 Assets (Services & Facilities)

Community assets can be identified and integrated into the LHMP. Identifying assets already available to the community can reduce redundancies as well as optimize/reinforce current assets. In total, the City had an assessed valuation of secured and unsecured property of $6.59 billion in 2016, up 8.3% from the previous year. Understanding the assets of the community allows planners to analyze the potential values at risk and costs or repair or replacement.

The individual asset inventory includes the identification of:

- **People** – This includes population estimates, visiting population estimates (migrants, national parks or special events) and persons with disabilities and other access or functional needs population.
- **Economy** – Economic drivers include building assets but also include inventory within buildings, downtime and loss of wages. In addition, primary economic sectors (major employers) where their loss would have a significant impact to the community.
- **Built Environment** – Existing structures, infrastructure systems, critical facilities, cultural resources, and future development.
- **Natural Resources** – Critical habitats and areas that provide protective functions.

5.2 Populations and Businesses at Risk

Residential population data for the City was obtained from the State of California Department of Finance E-1 Population Estimates for Cities, Counties, and the State — January 1, 2019. The population is estimated to be 87,854. The 2010 Census Data lists the building inventory in the City to have 11,181 residential buildings and 1,191 commercial-industrial buildings. The zoning district map in **Figure 5-1** above shows the distribution of residential and business districts throughout the city.

5.3 Identification of Critical Facilities and Assets $

The location and operations of high-risk facilities such as critical infrastructures and key assets in or near Hawthorne are a significant concern with respect to a disaster. The planning team used FEMA's "Public Assistance Guide" (FEMA 322) that defines critical facilities as shelters, hospitals, Emergency Operations Centers, data centers, utility plants or high hazardous materials facilities, as well as the FEMA Hazard Mitigation Handbook that described three categories of facilities for analysis to revise the list: critical facilities such as City operations and public safety; high potential loss facilities such as businesses, churches, schools, and facilities with hazardous materials; and critical infrastructure such as streets and bridges, airports, and oil refineries. Table 5-1 lists the critical facilities for the 2019 LHMP.

Table 5-1: Critical Facilities

Facility Name	Category	Site Purpose
City Hall	Administration	Seat of Government, Operations Center
Fire Station 160	Public Safety	Fire/EMS response
Fire Station 161	Public Safety	Fire/EMS response
Fire Station 162	Public Safety	Fire/EMS response
Memorial Center Complex	Parks and Recreation	Sports Center/Shelter
Water Treatment Plant	Sanitation	Wastewater treatment
Hawthorne Airport	Transportation	Municipal airport
Hawthorne Police Department	Public Safety	Law enforcement response
Water Treatment Plant 4623 Michu Ln.	Sanitation	Wastewater treatment
Water Treatment Plant 12601 Ramona St.	Sanitation	Wastewater treatment
Water Treatment Plant 12617 Eucalyptus St.	Sanitation	Wastewater treatment
Water Treatment Plant 47611/2123rd St.	Sanitation	Wastewater treatment

5.4 Land Use Trends And Development

The City of Hawthorne is completely developed with the remaining vacant land limited to smaller, scattered parcels. The City contains a mix of residential and multi-family housing types and densities, strip commercial along the major arterials, retail centers, public facilities, and industrial uses near the airport and in the southwest portion of the City.

Changes in the demographic characteristics have resulted in a demand for more housing while at the same time, the population has remained relatively constant.

The Century Freeway (1-105) greatly increases regional accessibility to Hawthorne resulting in improved opportunities for development.

5.5 Cultural and Natural Resources Inventory

The City has unique historical and natural resources. They include:

- The Beach Boys Historic Landmark is a memorial which commemorates the site of the childhood home of Brian, Dennis, and Carl Wilson of The Beach Boys. The monument, located at 3701 W. 119th Street, Hawthorne, stands on the former location of the Wilsons' house, which was demolished in the mid-1980s during construction of the Century Freeway.

Biological resources include natural and altered biotic habitats (vegetative communities and corresponding wildlife habitat), as well as associated flora and fauna. The City is highly urbanized and landscaped with mostly non-native species. No rare or endangered plant or animal species have been identified within the City.

There are no significant natural habitats in the City. Wildlife species present in the City are typical of any disturbed, highly urbanized setting and are not considered rare, endangered, or threatened. The City is also devoid of wetland and riparian habitat. The City's most significant plant resources are imported trees and ornamental plants. While these offer only limited biological value, they do contribute to the aesthetic and historical character of the City.

5.6 Risk Assessment and Potential Loss

A risk assessment determines the vulnerability of assets within the City by evaluating the inventory of City-owned existing property and the population exposed to a hazard. A quantitative vulnerability assessment is limited to the exposure of people, buildings, and infrastructures to the identified hazards. This risk assessment includes only those hazards that have the ability to cause damage to buildings and infrastructure. More detailed assessments of risk that would include deaths and injuries, and economic losses, are beyond the scope of this plan. Table 5-2 provides an analysis of potential losses for the City owned infrastructure other than roads and bridges.

Table 5-2: City-Owned Infrastructure

Facilities	Impacting Hazards								$ Value			
	Airplane Crash	Climate Change	Drought	Earthquake Seismic	Excess Heat	Flood/Flash Flood	Pipeline Rupture HazMat	Winter Storm / High Winds	Facility	Contents	Improvements	Total Value
Hawthorne City Hall	X			X			X		15,727,000	1,364,000	371,000	17.462,000
Fire Station 160	X			X			X		509,000		112,000	621,000
Fire Station 161	X			X			X		3,334,000	3,334,000	3,334,000	3,334,000
Fire Station 162	X			X			X		543,000		70,000	613,000
Memorial Center Complex	X			X			X		16,516,000	16,516,000	16,516,000	16,516,000
Aquatic Center	X			X			X		2,604,000	2,604,000	2,604,000	2,604,000
Ramona Park	X	X	X	X	X		X	X	122,000	2,000	457,000	581,000
Hollyglen Park	X	X	X	X	X		X	X	123,000	2,000	673,000	798,000
Jim Thorpe Park	X	X	X	X	X		X	X	3,039,000	3,039,000	3,039,000	3,039,000
Holly Park	X	X	X	X	X		X	X	517,000	16,000	1,386,000	1,919,000
Water Treatment Plant 12601 Ramona St.	X			X			X		8,168,000		248,000	8.416,000
Hawthorne Airport	X			X			X		2,766,000	451,000	113,705,000	116,922,000
Bicentennial Park	X	X	X	X	X		X	X	66,000	1,000	641,000	708,000
Hawthorne Police Department	X			X			X		35,530,000	35,530,000	35,530,000	35,530,000
Apartment Building 12724 Grenvilla Ave.	X			X			X		511,000		49,000	560,000
Apartment Building 12720 Grenvilla Ave.	X			X			X		338,000			338,000
Apartment Building 12726 Grenvilla Ave.	X			X			X		338,000			338,000
Welcome Signage Hawthorne and Imperial Highway	X			X			X		59,000			59,000
Welcome Signage Hawthorne and Rosecrans	X			X			X		59,000			59,000
Welcome Signage Hawthorne and 138th St.	X			X			X		59,000			59,000
Welcome Signage	X			X			X		59,000			59,000
Apartment 11605 Gale Ave	X			X			X		884,000		30,000	914,000
Apartment 11537 Gale Ave	X			X			X		884,000		30,000	914,000

Apartment 12592 Truro Ave.	X			X			X		810,000		24,000	834,000
Eucalyptus Park	X	X	X	X	X		X	X	1,942,000	6,000	987,000	2,935,000
Water Treatment Plant 4623 Michu Ln.	X			X			X		311,000			311,000
Water Treatment Plant 12601 Ramona St.	X			X			X		6,336,000		138,000	6.474,000
Water Treatment Plant 12617 Eucalyptus St.	X			X			X		3,301,000		76,000	3,377,000
Water Treatment Plant 47611/2123rd St.	X			X			X		376,000			376,000
Total	**29**	**6**	**6**	**29**	**6**		**29**	**6**	**$108,578,000**	**$9,260,000**	**$124,108,000**	**$241,946,000**

5.7 Analysis of Potential Losses

FEMA requires that an estimation of loss be conducted for the identified hazards to include the number of potential structures impacted by the hazards and the total potential costs. The analysis of potential losses calculated in Table 5-3 used the best data currently available to produce the estimations of loss. These estimates may be used to understand relative risk from hazards and potential losses. There are uncertainties in any loss estimation method, resulting from lack of scientific study and the exact result of hazard effects on the built environment, and from the use of approximations that are necessary for a comprehensive analysis.

In addition, this assessment does not include analysis of non-City owned facilities, even though they are deemed critical. The City does not have replacement or content values or insured values for critical infrastructure, private businesses, schools and churches. A mitigation action was developed to acquire that information so a complete analysis of critical facilities could be completed to show total potential loss in the City.

A quantitative assessment has been prepared for the critical facilities affected by each hazard assessed, and multiplied by a value of percent damage. The percent damage was determined by the geographic area at stake, previous history of damage from the type of hazard, and potential for severity from the hazard profiles.

Table 5-3: Estimated Damage to Critical Facilities From Hazards (Dollars)

Hazard Type	# of facilities	Percent Damage	Replacement Value	Content Value	Estimated Replacement Loss	Estimated Content Loss	Total Estimated Loss
Aircraft Accident	29	5%	232,686,000	9,260,000	11,634,300	463,000	12,097,300
Climate Change	6	10%	7,896,000	5,670,000	789,600	567,000	1,356,600
Drought	6	20%	7,896,000	5,670,000	1,579,200	1,134,000	2,713,200

Hazard Type	# of facilities	Percent Damage	Replacement Value	Content Value	Estimated Replacement Loss	Estimated Content Loss	Total Estimated Loss
Earthquake and Seismic Hazards	29	50%	232,686,000	9,260,000	116,343,000	4,630,000	120,973,000
Excess Heat	6	10%	7,896,000	5,670,000	789,600	567,000	1,356,600
Flood / Flash Flood (Unknown)							
Pipeline Rupture / Hazmat Release	29	10%	232,686,000	9,260,000	23,268,600	926,000	24,194,600
Winter Storm / High Winds	6	10%	7,896,000	5,670,000	789,600	567,000	1,356,600

Section 6: Mitigation Strategy

The Federal regulations require local mitigation plans to identify goals for reducing long-term vulnerabilities to the identified hazards in the planning area (Section 201.6(c)(3)(i)).

FEMA REGULATION CHECKLIST: CAPABILITY ASSESSMENT

44 CFR § 201.6(c)(3): – The plan must include mitigation strategies based on the ! jurisdiction's "existing authorities, policies, programs and resources, and its ability to ! expand on and improve these existing tools." !

Elements %

C1. Does the plan document the jurisdiction's existing authorities, policies, programs and ! resources, and its ability to expand on and improve these existing policies and programs? 44 ! CFR § 201.6(c)(3). !

C2. Does the Plan address the jurisdiction's participation in the NFIP and continued ! compliance with NFIP requirements, as appropriate? 44 CFR § 201.6(c)(3)(ii). !

C3. Does the Plan include goals to reduce or avoid long-term vulnerabilities to identified ! hazards? 44 CFR § 201.6(c)(3)(i). !

C4. Does the Plan identify and analyze a comprehensive range of specific mitigation ! actions and projects for the jurisdiction being considered to reduce the effects of ! hazards, with emphasis on new and existing buildings and infrastructure? See 44 CFR § ! 201.6(c)(3)(ii). !

C5. Does the Plan contain an action plan that describes how the actions identified will ! be prioritized (including cost-benefit review), implemented, and administered by the ! jurisdiction? 44 CFR § 201.6(c)(3)(iii). !

C6. Does the plan describe a process by which local governments will integrate the ! requirements of the mitigation plan into other planning mechanisms, such as ! comprehensive or capital improvement plans, when appropriate? !

A hazard mitigation plan's primary focus is the mitigation strategy. It represents the efforts selected by the City to reduce or prevent losses resulting from the hazards identified in the risk assessment. The strategy includes mitigation actions and projects to address the risk and vulnerabilities discovered in the risk assessment. The mitigation strategy consists of the following steps:

- Identify and profile hazards and risk within the City.
- Identify projects and activities that can prevent or mitigate damage and injury to the population and buildings.
- Develop a mitigation strategy to implement the mitigation actions.
- Develop an action plan to prioritize, implement, and administer the mitigation actions.
- Implement the LHMP mitigation action plan.

A capability assessment was conducted of City of authorities, policies, programs, and resources. Based upon this assessment, and the hazard analysis and risk assessment, goals and mitigation actions were developed. The planning team also developed a process to prioritize, implement, and administer the mitigation actions to reduce risk to existing facilities and new development.

6.1 Hazard Mitigation Statement

The 2019 LHMP represents the City's commitment to create a safer, more resilient community by taking actions to reduce risk and by committing resources to lessen the effects of hazards on the people and property of the City.

6.2 Hazard Mitigation Goals and Objectives

Mitigation goals are guidelines that represent what the community wants to accomplish through the mitigation plan. Goals are broad statements that represent a long-term, community-wide vision. The planning team reviewed example goals and objectives from the previous LHMP, and determined which goals best met the City's objectives for mitigation. The 2019 LHMP created a new streamline set of hazard mitigation goals. In addition to the overarching hazard mitigation goals, the City worked with City Planning to develop the strategies in alignment with the City General Plan Safety Element. The goals align with the hazards in the 2018 General Plan and reflect input provided by stakeholders and the public. Table 6-1 lists the goals for the 2019 LHMP.

Table 6-1: Hazard Mitigation Goals

2019 Goals
Goal 1: Protect life, property, and reduce potential injuries from natural, technological, and human-caused hazards.
Goal 2: Improve public understanding, support of and the need for hazard mitigation measures.
Goal 3: Promote disaster resistance for Hawthorne's natural, existing, and future built environment.
Goal 4: Strengthen partnerships and collaboration to implement hazard mitigation activities.
Goal 5: Enhance the City's ability to effectively and immediately respond to disasters.

6.3 Mitigation Actions/Projects and Implementation Strategy

Mitigation actions are specific activities or projects that serve to meet the goals that the community has identified. Mitigation actions and projects are more specific than goals or objectives, and often include a mechanism, such as an assigned timeframe, to measure the success and ensure the actions are

accomplished. The planning team conducted a review of the mitigation actions and strategies from the 2014 LHMP. With information from the risk analysis, capability assessment, and status of the actions implemented since the 2014 LHMP, the planning team integrated outstanding action items with other City planning efforts to develop new mitigation actions and projects to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure. Potential mitigation projects identified by the City are included in **Table 6-3**.

The requirements for prioritization of mitigation actions, as provided in the federal regulations implementing the Stafford Act as amended by DMA 2000, are described below.

FEMA REGULATION CHECKLIST: MITIGATION STRATEGY; PLAN REVIEW AND REVISION

Implementation of Mitigation Actions

44 CFR § 201.6(c)(3)(iii): The mitigation strategy section shall include "an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction.

Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs."

Element

C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost-benefit review), implemented, and administered by the jurisdiction? 44 CFR § 201.6(c)(3)(iii)

Plan Review and Revision

44 CFR § 201.6(d)(3): "A local jurisdiction must review and revise its plan to reflect…changes in priorities…"

Based on these criteria, the City prioritized potential mitigation projects and included them in the action plan discussed below in **Table 6-3**. The mitigation action plan developed by the planning team includes the action items that the City intends to implement during the next five years, assuming funding availability. The action plan includes the implementing department, an estimate of the timeline for implementation, and potential funding sources.

6.3.1 Previous Mitigation Actions/Projects Assessment %

FEMA REGULATION CHECKLIST: PLAN REVIEW AND REVISION

Progress in Local Mitigation Efforts !

44 CFR § 201.6(c)(d)(3): "A local jurisdiction must review and revise its plan to reflect . . . progress in local mitigation efforts . . .." !

Element !

D2. Was the Plan revised to reflect progress in local mitigation efforts? 44 CFR § ! 201.6(d)(3). !

The 2014 LHMP contained 21 mitigations actions. Many of the mitigation actions were completed or carried out to some degree or are considered ongoing. Some of the mitigation actions were duplicative, others were better categorized as emergency preparedness activities, and others were either not addressed during the time period, or were not feasible to accomplish. **Table 6-2** provides the status of mitigation actions from the 2014 LHMP.

Table 6-2: Status of Mitigation Actions from Previous LHMP

Mitigation Activity	Hazards Mitigated	Responsible Department	Resources	Estimated Project Cost	Status
LHMP.2012.01: Continue to upgrade sewer system pipelines from aged pipelines to contemporary pipelines able to withstand earthquakes.	Earthquake	Public Works	Sewer Fund	$1,000,000/ year	YES. Over 1000 feet of new sewer installed and almost 2000 feet upgraded or replaced.
LHMP.2012.02: Continue to configure online monitoring of the sewer system of 90 miles in 50 locations to identify potential blockages and releases.	Flooding	Public Works	Sewer Fund	$50,000	YES. The City operates 50 SmartCover sewer monitors.
LHMP.2012.04: Ensure that the water treatment plant improvements are implemented for the filtration system to minimize minerals and nitrates and to provide additional aeration for methane removal.	Drought	Public Works	Water Fund	Staff Time	YES. Water treatment plant was upgraded and brought back on line in 2013-14 and continues to operate.

Mitigation Activity	Hazards Mitigated	Responsible Department	Resources	Estimated Project Cost	Status
LHMP.2012.05: Continue to ensure that new buildings comply with CBC seismic requirements.	Earthquake	Building Safety	Plan Check Application Process (General Fund)	Staff Time	YES. Ongoing
LHMP.2012.07: Continue to coordinate with pipeline owners including So Cal Gas, Chevron, Exxon, Golden State Water, Cal Water, So Cal Edison, ATT, and MCI to ensure ongoing pipeline mechanical integrity.	Pipeline Failure	Public Works	Provided by Pipeline Carrier	Staff Time	YES. Ongoing
LHMP.2012.08: Consider conducting a survey to determine the location of underground pipelines throughout the Cities and developing maps accordingly.	Pipeline Failure	Public Works	General Fund	Staff Time	YES. Ongoing coordination with utility companies
LHMP.2012.09: Continue training emergency response teams for Hazmat/terrorism events.	Hazmat, Terrorism	Police, Fire, and Public Works	General and Special Funds	$250,000	YES. Ongoing
LHMP.2012.10: Continue to coordinate with agencies to implement water use restrictions and projects during periods of drought and water emergencies.	Drought	Public Works	Staff Time, Grant Funds, and Rebate Programs	Varies	YES. Ongoing coordination with water agencies as needed and continued expansion of drought tolerant landscaping in public right of way and City facilities.
LHMP.2012.11: Ensure the ongoing implementation of tree trimming throughout the Cities.	Severe Storm	Public Works	Staff Time	Hawthorne: $142,000 annually for 1,200 trees	YES. Ongoing
LHMP.2012.12: Consider configuring the Public Works Yard with emergency backup power.	Severe Storm	Public Works	General Fund	$60,000	YES. Ongoing

Mitigation Activity	Hazards Mitigated	Responsible Department	Resources	Estimated Project Cost	Status
LHMP.2012.13: Consider configuring the Memorial Center with emergency backup power.	Severe Storm	Parks and Recreation	General Fund	$180,000	YES. In progress and should be completed in 2020.
LHMP.2012.18: Consider reviewing potential mitigation projects for the Water Tower.	Earthquake Reservoir Failure	Public Works in coordination with Water Agency	Special Fund	$50,000	No action but still under consideration
LHMP.2012.19: Consider improving emergency communications by implementing a redundant communications system, including an evaluation of communication protocols.	Earthquake	Public Works	General Fund		No action but still under consideration
LHMP.2012.20: Consider purchasing a utility helicopter to serve the South Bay in the event of an emergency.	Multi-Hazard	Public Works	General Fund	$2,000,000	No action but still under consideration
LHMP.2012.21: Consider purchasing mobile generators to generate backup power in the event of an emergency.	Multi-Hazard	Public Works	General Fund	$80,000	YES. One large mobile generator was acquired.
LHMP.2012.22: Consider purchasing emergency shelters and medical supplies and/or coordinate agreements with local businesses to maintain supplies in the event of an emergency.	Multi-Hazard	Public Works	General Fund	$150,000	No action but still under consideration
LHMP.2012.23: Consider posting the hazard mitigation plan on the City website to provide awareness for natural hazards.	Multi-Hazard	Public Works	Staff Time	Staff Time	YES. This updated plan will be posted on City website.

Mitigation Activity	Hazards Mitigated	Responsible Department	Resources	Estimated Project Cost	Status
LHMP.2012.24: Consider developing and distributing public education materials for natural hazards.	Multi-Hazard	Public Works	Staff Time	Staff Time	YES. Ongoing by City Emergency Preparedness staff
LHMP.2012.25: Consider purchasing wheel loaders and dump trucks and configuring storage facilities at the Memorial Center.	Earthquake	Public Works	Staff Time	$450,000 for vehicles	YES. Recently replaced existing back hoe and continue to maintain fleet of necessary equipment.

6.3.2 New Mitigation Actions

Mitigation actions are specific activities or projects that serve to meet the goals that the community has identified. Mitigation actions and projects are more specific than goals or objectives, and often include a mechanism, such as an assigned time period, to measure the success and ensure the actions are accomplished. The planning team conducted a review of the mitigation actions and strategies from the 2014 LHMP. With information from the risk assessment, capability assessment, and status of the actions implemented since the 2014 LHMP, the planning team 29 new mitigation actions and projects to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure.

Table 6-3 lists the potential mitigation actions developed by the planning team. For each mitigation action, the following information is listed: type of mitigation project; hazard(s) addressed; type of development affected by action; and the source of the mitigation project idea.

Table 6-3: New Mitigation Actions

Goal	Action Item #	Action Description	Mitigation Type	Related Hazards	Implementing Organizations	Estimated Costs
Goal 1: Protect life, property, and reduce potential injuries from natural caused hazards.	1.1	Develop a program to assess the City for soft story buildings requiring seismic retrofitting. Consider implementing a Soft Story Seismic Retrofit Ordinance.	Prevention	Seismic	Planning Department / Building & Safety	$35,000
	1.2	Encourage seismic strength evaluations of critical facilities in the City to identify building integrity.	Prevention	Seismic	Building & Safety	TBD dependin g on scope of program

Goal	Action Item #	Action Description	Mitigation Type	Related Hazards	Implementing Organizations	Estimated Costs
	1.3	Evaluate City and non-City facilities identified as potential shelter sites for structural integrity.	Prevention	All Hazards	Community Services	$7,500
	1.4	Identify and pursue funding opportunities to develop and implement local mitigation activities and provide information on tools; partnership opportunities, and funding resources to assist in implementing mitigation activities.	Emergency Services	All Hazards	Public Works / Planning Department	$20,000
Goal 2: Improve public understanding, support and need for hazard mitigation measures.	2.1	Develop a public outreach and awareness program about the hazards in Hawthorne and mitigation actions community members can do in their homes.	Public Education	All Hazards	PIO	$4,000
	2.2	Increase public awareness of the natural, human-caused, and technological hazards to businesses as a means to reduce the potential damage from each hazard through educational and outreach.	Public Education	All Hazards	PIO	$12,500
	2.3	Develop inventories of City-owned at-risk buildings and infrastructure and prioritize mitigation projects.	Prevention	All Hazards	Planning Department / Building & Safety / Public Works	$25,000
	2.4	Place more stress on the risks associated with natural and manmade hazards at public awareness campaigns conducted by various City departments.	Public Education	All Hazards	PIO/All	$7,000

Goal	Action Item #	Action Description	Mitigation Type	Related Hazards	Implementing Organizations	Estimated Costs
Goal 3: Promote disaster resistance for Hawthorne's natural, existing, and future built environment.	3.1	Improve hazard assessment information to make recommendations for avoiding new development in high hazard areas and encouraging preventative measures for existing development in areas vulnerable to natural, man-made, and technological hazards.	Property Protection	All Hazards	Planning Department	$5,000
	3.2	Seek to implement codes, standards, and policies that will protect life and property from the impacts of hazards.	Regulatory	All Hazards	Planning Department	$7,500
	3.3	Inventory and develop replacement values for all City-owned assets to help the City better understand the values of assets at risk.	Emergency Services	All Hazards	Risk Management	$20,000
	3.4	Integrate appropriate items from the Local Hazard Mitigation Plan (LHMP) into the Safety Element of the General Plan and other regulatory documents as appropriate.	Regulatory	All Hazards	Planning Department	$20,000
	3.5	Propose policy to ensure mitigation projects for critical facilities, services, and infrastructure.	Prevention	All Hazards	City Manager	$5,000
	3.6	Inspect and repair the City reservoirs.	Structural Project	Flooding	Public Works coordinate with Cal. Water Co. (leases reservoir)	Inspection - $10,000 Repair - $10m

Goal	Action Item #	Action Description	Mitigation Type	Related Hazards	Implementing Organizations	Estimated Costs
	3.7	Conduct seismic strengthening of the City sewer system	Structural Project	Seismic	Public Works	$3m
	3.8	Conduct City Bridge Repair	Structural Project	Seismic	Public Works	$500,000
	3.9	Retrofit and upgrade City storm drain system	Structural Project	Seismic/ Flood	Public Works	$2.5m
Goal 4: Strengthen partnerships and collaboration to implement hazard mitigation activities.	4.1	Strengthen communication and coordination with public agencies, residents, non-profit organizations, business and industry to create interest in the implementation of mitigation measures.	Emergency Services	All Hazards	PIO	$2,000
	4.2	Increase effectiveness of City emergency services by implementing mitigation programs and projects that aid emergency responders and public safety departments during emergencies.	Prevention	All Hazards	Police Department	$10m
	4.2.1	Hire an Emergency Medical Manager to respond to medical emergencies that may occur in a disaster	Emergency Services	All Hazards	Police Department	$150,000
	4.2.2	Participate in South Bay Emergency Alert System	Prevention	All Hazards	Police Department / Emergency Services	$165,000
	4.3	Encourage leadership within the City and businesses to prioritize and implement local and regional hazard mitigation activities.	Emergency Services	All Hazards	City Manager	$10,000

Goal	Action Item #	Action Description	Mitigation Type	Related Hazards	Implementing Organizations	Estimated Costs
	4.4	Continue developing and strengthening inter-jurisdictional coordination and cooperation in the area of emergency services.	Emergency Services	All Hazards	City Manager	$7,500
	4.5	Continue to develop mutual aid agreements and memorandum of understanding with agencies to serve emergency and disaster purposes.	Regulatory	All Hazards	City Manager	$5,000
Goal 5: Enhance the City's ability to effectively and immediately respond to disasters.	5.1	Create a redundant data center and complete fiber to that location and decentralize key components of the City's core network to allow the network to survive the failure of any one site from a disaster.	Technology	All Hazards	IT	Need estimates from consultant/contractor
	5.2	Coordinate with the utility companies and vendors to strengthen, safeguard, or take other appropriate measures such as providing supplemental services, to protect and secure high-voltage lines, water, sewer, natural gas and petroleum pipelines, and trunk electrical and telephone conduits from hazards.	Prevention	All Hazards	Public Works	$5,000

Goal	Action Item #	Action Description	Mitigation Type	Related Hazards	Implementing Organizations	Estimated Costs
	5.3	Build a cadre of committed, trained, volunteers to augment disaster response and recovery efforts in compliance with the California Disaster Service Worker program guidance, e.g., shelter workers, animal rescue and care, Community Emergency Response Team, communications staff, medical and health, and human services, during and after a disaster.	Emergency Services	All Hazards	Emergency Services	$11,000
	5.4	Develop the City's Continuity of Operations / Continuity of Government Plan and update the Emergency Operations Plan.	Emergency Services	All Hazards	Risk Management	$50,000
	5.5	Coordinate with Hawthorne Police Department and South Bay Regional Communication Authority on hazard mitigation efforts for Hawthorne to protect two-way radio equipment from hazards by bracing antennas, securing repeaters, etc., from hazards.	Technology	Seismic	IT	$200,000

6.3.3 Mitigation Action Plan

The mitigation action plan developed by the planning team includes the action items that the City intends to implement during the next five years, assuming funding availability. The action plan, shown in **Table 6-4** includes the implementing department, an estimate of the timeline for implementation, and potential funding sources.

The new mitigation actions include a broad range of approaches to hazard mitigation such as retrofitting, code enforcement, development of new regulations, public education, development of redundant facilities, and others. Measures are included to mitigate risks to existing buildings and infrastructure, as well as new buildings and infrastructure. The mitigation action plan assigns primary responsibility for each

of the action items to an implementing department. The implementing department is the controlling department that will assign funding and oversee activity implementation, monitoring, and evaluation.

The planning team does not presume the expertise to prescribe which projects will be implemented. The prioritization of projects in the LHMP is a means to provide a basis for implementing the mitigation strategies, but all new mitigation actions and projects will be formally prioritized and selected by the implementing department. This will accommodate the project funding, schedule of the department, staff requirements, and ability to integrate the new project into existing and ongoing projects. Departments will take into account the funding source, the cost effectiveness of the project, alternative projects, the compatibility of the new project with ongoing projects, the extent to which the project addresses the risks assessed in Section 5, and the potential of economic and social damage.

Prioritization

To assist with implementing the mitigation action plan, the planning team used the following ranking process to provide a method to prioritize the projects for the Action Plan. Designations of High, Medium, and Low priorities have been assigned to each action item using the following criteria.

Does the action:	Solve the problem? Address vulnerability assessment? Reduce the exposure or vulnerability to the highest priority hazard? Address multiple hazards? Offer benefits that equal or exceed costs? Implement a goal, policy, or project identified in the General Plan or Capital Improvement Plan?
Can the action:	Be implemented with existing funds? Be implemented by existing state or federal grant programs? Be completed within the five-year life cycle of the LHMP?
Will the action:	Be implemented with currently available technologies? Be accepted by the community? Be supported by community leaders? Adversely affect segments of the population or neighborhoods? Require a change in local ordinances or zoning laws? Result in positive or neutral impact on the environment? Comply with all local, state, and federal environmental laws and regulations?
Is there:	Sufficient staffing to undertake the project? Existing authority to undertake the project?

Each positive response is equal to one point. Answers to the criteria above determined the priority according to the following scale:

1–6 = Low priority 7–12 = Medium priority 13–18 = High priority

Using the criteria above, the planning team employed the Social, Technical, Administrative, Political, Legal, Economic, and Environmental (STAPLEE) method to rank actions in the mitigation action plan. The results are contained in **Appendix D**.

Benefit-Cost Analysis

FEMA provides detailed guidance for analyzing the economic feasibility of mitigation activities. Benefit-Cost Analysis (BCA) is the method by which the future benefits of a hazard mitigation project are

determined and compared to its costs. The end result is a Benefit-Cost Ratio (BCR), which is calculated by a project's total benefits divided by its total costs. The BCR is a numerical expression of the "cost-effectiveness" of a project. A project is considered to be cost effective when the BCR is 1.0 or greater, indicating the benefits of a prospective hazard mitigation project are sufficient to justify the costs.

FEMA requires a BCA to validate cost effectiveness of proposed hazard mitigation projects prior to funding. There are two drivers behind this requirement: 1.) the Office of Management and Budget's (OMB) Circular A-94 Revised, "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs" and (2) the Stafford Act.

Conducting BCA for a mitigation activity can assist the City in determining whether a project is worth undertaking now, in order to avoid disaster related damages later. Cost-effectiveness analysis evaluates how to best spend a given amount of money to achieve a specific goal. Determining the economic feasibility of mitigating hazards can provide decision makers with an understanding of the potential benefits and costs of an activity, as well as a basis for comparing alternative projects. Additional information on BCA is available at: https://www.fema.gov/benefit-cost-analysis

Funding

The funds required to implement the mitigation action plan will come from a variety of sources including: Federal Hazard Mitigation Grants, City budget, bonds, fees and assessments, and others. Some projects are (or will be) included in capital improvement budgets, while some, especially ongoing projects, are included in department operating budgets.

Prior to beginning a project or when federal funding is involved, the implementing department will use a FEMA approved benefit/cost analysis approach to identify the actual costs and benefits of implementing these mitigation actions. For non-structural projects, implementing departments will use other appropriate methods to weigh the costs and benefits of each action item, and then develop a prioritized list.

Implementation

Mitigation projects were assigned one of three categories as a tentative schedule for implementation; short-range, mid-range, and long-range. Projects that are currently being implemented by various departments are assigned to the ongoing category. Implementation of short-range projects will typically begin within the next three years. Mid-range projects will require some planning and likely require funding beyond what is currently allocated to the various departments in the City's general fund. Projects in the mid-range category will generally begin implementation in the next three to five years. Long range projects will require great planning and funding and will generally begin implementation within five years and beyond.

Table 6-4: Mitigation Action Plan and Prioritization

Action Item #	Priority	Action Description	Hazard	Timeline	Funding Source	Estimated Cost	Implementing Department
1.1	High	Develop a program to assess the City for soft story buildings requiring seismic retrofitting. Consider implementing a Soft Story Seismic Retrofit Ordinance.	Seismic	Long-range	General Fund or Other	$35,000	Planning Department / Building & Safety
1.2	High	Encourage seismic strength evaluations of critical facilities in the City to identify building integrity.	Seismic	Long-range	General Fund or Other	TBD depending on scope of program	Building & Safety
1.3	High	Evaluate City and non-City facilities identified as potential shelter sites for structural integrity.	Seismic	1-2 Years	General Fund or Other	$75,000	Public Works
1.4	High	Identify and pursue funding opportunities to develop and implement local mitigation activities. Provide information on tools; partnership opportunities, and funding resources to assist in implementing mitigation activities.	All Hazards	Long-range	General Fund or Other	$20,000	Public Works / Planning Department
1.5	High	Continue to ensure that new buildings comply with CBC seismic requirements.	Seismic	Long-range	General Fund or Other	$7,500	Community Services
1.6	High	Consider improving emergency communications by implementing a redundant communications system, including an evaluation of communication protocols.	All Hazards	1-2 Years	General Fund or Other	TBD depending on scope of program	IT

Action Item #	Priority	Action Description	Hazard	Timeline	Funding Source	Estimated Cost	Implementing Department
2.1	High	Develop a public outreach and awareness program about the hazards in Hawthorne and mitigation actions community members can do in their homes.	All Hazards	Ongoing	General Fund or Other	$4,000 Annually	PIO
2.2	High	Increase public awareness of the natural, human-caused, and technological hazards to businesses as a means to reduce the potential damage from each hazard through educational and outreach.	All Hazards	Ongoing	General Fund or Other	$12,500 Annually	PIO
2.3	High	Develop inventories of City-owned at-risk buildings and infrastructure and prioritize mitigation projects.	All Hazards	1-2 Years	PDM Grant	$25,000	Planning Department / Building & Safety / Public Works
2.4	High	Place more stress on the risks associated with natural and manmade hazards at public awareness campaigns conducted by various City departments.	All Hazards	Ongoing	General Fund or Other	$7,000 Annually	PIO/All
3.1	High	Improve hazard assessment information to make recommendations for avoiding new development in high hazard areas and encouraging preventative measures for existing development in areas vulnerable to natural, man-made, and technological hazards.	All Hazards	1 Year	General Fund or Other	$5,000	Planning Department
3.2	High	Seek to implement codes, standards, and policies that will protect life and property from the impacts of hazards.	All Hazards	Ongoing	General Fund or Other	$7.500 Annually	Planning Department

Action Item #	Priority	Action Description	Hazard	Timeline	Funding Source	Estimated Cost	Implementing Department
3.3	High	Inventory and develop replacement values for all City-owned assets to help the City better understand the values of assets at risk.	All Hazards	1 Year	General Fund or Other	$20,000	Risk Management
3.4	High	Integrate appropriate items from the Hazard Mitigation Plan (LHMP) into the Safety Element of the General Plan and other regulatory documents as appropriate.	All Hazards	1 Year	General Fund or Other	$20,000	Planning Department
3.5	High	Propose policy to ensure mitigation projects for critical facilities, services, and infrastructure.	All Hazards	1 Year	General Fund	$5,000	City Manager
3.6	High	Inspect and repair the City reservoirs.	Flooding	3-5 Years	PDM or General Fund	Inspection - $10,000 Repair - $10,000,000	Public Works coordinate with Cal. Water Company (leases reservoirs)
3.7	High	Consider conducting a survey to determine the location of underground pipelines throughout the Cities and developing maps accordingly.	Pipeline Rupture/ Hazardous Material Release	Ongoing coordination with utility companies	General Fund	$20,000 Annually	Public Works
3.8	High	Conduct tree survey and perform required maintenance.	Drought, Seismic / Winter Storm / High Winds	Ongoing	General Fund	$2,000,000	Parks and Recreation
3.8.1	High	Ensure the ongoing implementation of tree trimming throughout the City.	Drought, Seismic / Winter Storm / High Winds	Ongoing	General Fund	$142,000 annually for 1,200 trees	Parks and Recreation

Action Item #	Priority	Action Description	Hazard	Timeline	Funding Source	Estimated Cost	Implementing Department
3.9	High	Consider configuring the Public Works Yard with emergency backup power.	Seismic	1-2 Years	PDM or General Fund	$60,000	Public Works
3.10	High	Consider configuring the Memorial Center with emergency backup power.	Seismic	1-2 Years	PDM of General Fund	$180,000	Public Works
3.11	High	Consider reviewing potential mitigation projects for the Water Tower.	Flooding	1-2 Years	PDM of General Fund	$50,000	Public Works
3.12	High	Conduct seismic strengthening of the City .sewer system	Seismic	Over Next 5 Years	PDM of General Fund	$3,000,000	Public Works
3.13	High	Conduct City owned bridge repairs.	Seismic	Over Next 5 Years	PDM of General Fund	$500,000	Public Works
3.14	High	Retrofit and upgrade City storm drain system.	Seismic/Flood	Over Next 5 Years	PDM of General Fund	$2,000,000	Public Works
4.1	High	Strengthen communication and coordination with public agencies, residents, non-profit organizations, business and industry to create interest in the implementation of mitigation measures.	All Hazards	Ongoing	PDM of General Fund	$2,000 Annually	PIO

Action Item #	Priority	Action Description	Hazard	Timeline	Funding Source	Estimated Cost	Implementing Department
4.2	High	Increase effectiveness of City emergency services by implementing mitigation programs and projects that aid emergency responders and public safety departments during emergencies.	All Hazards	Ongoing	UASI and Other DHS grants	$10,000,000	Police Department
4.2.1	High	Hire an Emergency Medical Manager to respond to medical emergencies that may occur in a disaster	All Hazards	Within one year	General Fund	$150,000	Police Department
4.2.2	High	Participate in South Bay Emergency Alert System	All hazards	Over Next 5 Years	General Fund	$165,000 over 5 Years	Police Department / Emergency Services
4.3	High	Encourage leadership within the City and businesses to prioritize and implement local and regional hazard mitigation activities.	All Hazards	Ongoing	General Fund or Other	$10.000 Annually	City Manager
4.4	High	Continue developing and strengthening inter-jurisdictional coordination and cooperation in the area of emergency services.	All Hazards	Ongoing	General Fund or Other	$7,500 Annually	City Manager
4.5	High	Continue to develop mutual aid agreements and memorandum of understanding with agencies to serve emergency and disaster purposes.	All Hazards	Ongoing	General Fund or Other	$5,000 Annually	City Manager
4.6	High	Continue to coordinate with pipeline owners including So Cal Gas, Chevron, Exxon, Golden State Water, Cal Water, So Cal Edison, ATT, and MCI to ensure ongoing pipeline mechanical integrity.	Pipeline/ Hazardous Material	Ongoing	General Fund or Other	Varies on Annual Basis	Public Works

Action Item #	Priority	Action Description	Hazard	Timeline	Funding Source	Estimated Cost	Implementing Department
4.7	High	Continue to coordinate with agencies to implement water use restrictions and projects during periods of drought and water emergencies.	Drought/Climate Change	Ongoing	General Fund or Other	Varies on Annual Basis	Public Works
5.1	Medium	Create a redundant data center and complete fiber to that location and decentralize key components of the City's core network to allow the network to survive the failure of any one site from a disaster.	All Hazards	1-2 Years	General Fund or Other	Need estimates from consultant/ contractor	IT
5.2	High	Coordinate with the utility companies and vendors to strengthen, safeguard, or take other appropriate measures such as providing supplemental services, to protect and secure high-voltage lines, water, sewer, natural gas and petroleum pipelines, and trunk electrical and telephone conduits from hazards.	All Hazards	Ongoing	General Fund or Other	$5,000 Annually	Public Works
5.3	High	Build a cadre of committed, trained, volunteers to augment disaster response and recovery efforts in compliance with the California Disaster Service Worker program guidance, e.g., shelter workers, animal rescue and care, Community Emergency Response Team, communications staff, medical and health, and human services, during and after a disaster.	All Hazards	Ongoing	General Fund or Other	$11,000 Annually	Emergency Services
5.4	High	Develop the City's Continuity of Operations / Continuity of Government Plan and update the Emergency Operations Plan.	All Hazards	1-2 Years	General Fund or Other	$50.000	Risk Management

Action Item #	Priority	Action Description	Hazard	Timeline	Funding Source	Estimated Cost	Implementing Department
5.5	High	Coordinate with Hawthorne Police Department and South Bay Regional Communication Authority on hazard mitigation efforts for Hawthorne to protect two-way radio equipment from hazards by bracing antennas, securing repeaters, etc., from hazards.	Seismic	1-2 Years	PDM of General Fund	$200,000	IT
5.6	Medium	Consider purchasing a utility helicopter to serve the South Bay in the event of an emergency.	Aircraft Accident, Seismic, Flood, Pipeline/ Hazardous Material, Winter Storm	TBD	UASI or other DHS Grant	$2,500,000 Plus annual salary and operating costs	Finance
5.7	High	Consider purchasing emergency shelters and medical supplies and/or coordinate agreements with local businesses to maintain supplies in the event of an emergency.	Aircraft Accident, Seismic, Excess Heat, Flood, Pipeline/ Hazardous Material, Winter Storm	Ongoing	UASI or other DHS Grant	$150,000 Initial outlay + maintenance	Emergency Manager

Section 7: Plan Maintenance Procedures

FEMA REGULATION CHECKLIST: PLANNING PROCESS %
Documentation of the Planning Process %

44 CFR § 201.6(c)(1): The plan shall include documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

Elements
A5. Is there discussion on how the community will continue public participation in the plan maintenance process? 44 CFR 201.6(c)(4)(iii)
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? 44 CFR 201.6(c)(4)(i)

Implementation and maintenance of the plan is critical to the overall success of hazard mitigation planning. This section details the process that the City will use to monitor, update, and evaluate the plan within the five-year cycle of the plan's revision to ensure the LHMP remains an active and relevant document. The format of the plan aligns with the regulation checklist and is divided into sections of information. When it is time to maintain or revise the LHMP, data can be easily located and incorporated, resulting in an easy method to keep the plan current and relevant.

The planning team represents City staff from each department and other stakeholders that contributed to the development of the 2019 plan. The planning team oversaw the development of the plan, and made recommendations on key elements of the plan, including the maintenance strategy.

It was important to the City that each department be represented in the planning team and given the opportunity to provide input during the plan development. This philosophy will be continued for future plan revisions through evaluations, maintenance, and updates of data, processes, and programs. The planning team will convene annually to perform annual reviews of the LHMP and its implementation. The planning team will include representation from residents, citizen groups, and stakeholders within the planning area.

If planning team members can no longer serve on the planning team, the Department Director will assign another staff person to be on the planning team so that every City department is represented.

7.1 Monitoring and Evaluation

The hazard mitigation plan includes a range of action items to reduce losses from hazard events. Together, the action items provide a framework for activities that the City can choose to implement over the next five years. The effectiveness of the plan depends on the incorporation of the action items into existing City plans, policies, and programs. Although the City Manager's Office will have primary

department responsibility for the LHMP's continual review, coordination, and promotion, plan implementation and evaluation will be a shared responsibility among all departments and agencies that contributed to the mitigation action plan.

The City Manager and Department Directors will be jointly responsible for the plan's implementation and maintenance through existing City programs. Department Managers will be responsible for implementing mitigation strategies and actions specific to their department operations. The Emergency Preparedness Coordinator will assume the lead responsibility for facilitating plan maintenance and coordinating the planning team.

Each April, the planning team will begin the process of reviewing the LHMP and the implementation of mitigation actions to develop an annual progress report. This process can also assist the budget review process by providing information on mitigation projects and activities that have been completed or implemented. The annual progress report process will serve to align annual reviews of the hazard mitigation plan to incorporate information. As updates to the LHMP are completed, the public will be made aware of the changes to the LHMP and make recommendations or comments.

The planning team will monitor the hazard mitigation strategies during the year and at a meeting held in January of each year, team members will provide information for the evaluation of the progress of the 2019 LHMP. This evaluation will include:

- A summary of any hazard events that occurred during the prior year and their impact on the planning area
- A review of successful mitigation initiatives identified in the 2019 LHMP
- A brief discussion about the targeted strategies that were not completed
- A re-evaluation of the action plan to determine if the timeline for identified projects needs to be amended, and the reason for the amendment, e.g., funding issues
- Any recommendations for new projects
- Any changes in or potential for new funding options (grant opportunities)
- Any impacts of other planning programs or initiatives in the City that involve hazard mitigation

The planning team will write a progress report that will be provided to the City's budget planning team for review and incorporation in the budget process as mitigation projects are completed or implemented. The hazard mitigation plan progress report will also be posted on the City website on the page dedicated to the hazard mitigation plan, provided to the local media through a press release, and presented in the form of a report to the City Council. The planning team will strive to complete the progress report process by March of each year.

7.2 Plan Update

Section 201.6.d.3 of 44CFR requires that local hazard mitigation plans be reviewed, revised as appropriate, and resubmitted for approval in order to remain eligible for benefits awarded under the Disaster Mitigation Act. The City intends to update its hazard mitigation plan on a 5-year cycle.

Based on needs identified by the planning team, the update will, at a minimum, include the following elements:

- The hazard risk assessment will be reviewed and updated using the most recent information and technologies.

- The action plan will be reviewed and revised to account for any initiatives completed, dropped, or changed and to account for changes in the risk assessment.
- Any new City policies identified under other planning mechanisms, as appropriate.
- The draft LHMP update will be sent to appropriate agencies and organizations for comment.
- The public will be given an opportunity to comment on the updated version prior to adoption.
- The City Council will adopt the updated plan.

At a minimum of six months prior to the expiration date of the 2019 LHMP, the planning team will implement a plan revision schedule to formally update the 2019 plan. The plan will be revised using the latest FEMA hazard mitigation guidance documents, such as the Mitigation Planning Tool and Regulation Checklist to ensure compliance with current hazard mitigation planning regulations.

7.3 Continued Public Involvement

The overall success of the LHMP is through implementation of the plan's hazard mitigation strategy and activities to reduce the effects of hazards, protect people and property, and improve the City's efforts to respond to and recover from disasters. Members of the public and the City will ultimately benefit from the implementation of the LHMP and must be given the opportunity to provide input to the continuous cycle of LHMP planning.

The City will strive to keep the public aware of hazard mitigation projects that take place as a result of the LHMP. Public information will be released through press releases, City website announcements, public hearings, council and commission meetings, and the City social media channels.

Projects that mitigate hazards are included in the City's annual budget planning process. City workshops are held and meetings are convened, and the public is made aware of the planning through City Council meetings, open workshop sessions, and social media announcements during this time. The budget planning process will serve as an annual opportunity to conduct outreach to the public on updates to the hazard mitigation planning process.

A survey can be developed to gather input on how the community feels about the progress being made on LHMP activities. The City will also provide social media announcements and information about hazard mitigation projects to the public on a regular basis, but at a minimum, the public will be engaged to learn about current LHMP activities, and given the opportunity to provide comments and information on an annual basis to update and maintain the LHMP. The Emergency Preparedness Coordinator will be responsible to ensure the public is included and involved in the annual public plan update and outreach.

When the time comes to begin revising the 2019 LHMP, the plan update process will be implemented, which will include continued public involvement and input through attendance at designated public meetings, web postings, social media announcements, community fairs and events, and surveys. As part of this effort, a series of public meetings will be held and public comments will be solicited on the revisions to the LHMP according to the five-year cycle. **Table 7-1** summarizes successful public involvement efforts previously conducted by the City, and proposed activities for public involvement and dissemination of information that shall be pursued whenever possible and appropriate.

Table 7-1: Past and proposed continued public involvement activities or opportunities identified by the City

Type of Activity	Public Involvement Activity or Opportunity	
	PAST	PROPOSED
Outreach	The City conducts annual events including, but not limited to National Night Out to support local police and city government, Good Neighbor's Day to bring community members together, and is involved with numerous Chamber of Commerce events. All these activities are used to conduct outreach and inform the public about disaster preparation, response, and related actions necessary in an emergency situation.	Develop a public outreach and awareness program about the hazards in Hawthorne and mitigation actions community members can do in their homes.
Education	City agencies, such as Police, and Emergency Management, and federal and congressional officials have conducted training events such first aid and CPR, active shooter, annual Community Emergency Response Team (CERT) training, school lockdown drills, emergency alert notification, American Red Cross training and smoke alarm distribution, as ways to educate the public and community leaders in responding to circumstances and situations.	Increase public awareness of the natural, human-caused, and technological hazards to businesses as a means to reduce the potential damage from each hazard through educational and outreach. Place more stress on the risks associated with natural and manmade hazards at public awareness campaigns conducted by various City departments. Consider developing and distributing public education materials for natural hazards.
Outreach	Through local and federal officials, occasional seminars and town hall meetings are convened bringing subject matter experts together to discuss issues of importance varying from earthquake preparedness to active shooter, and specialized programs like "run-hide-fight". This outreach is conducted on city-wide level down to local HOA's and smaller groups including schools and churches	Strengthen communication and coordination with public agencies, residents, non-profit organizations, business and industry to create interest in the implementation of mitigation measures.
Education		Place more stress on the risks associated with natural and manmade hazards at public awareness campaigns conducted by various City departments. Consider developing and distributing public education materials for natural hazards.

Section 8: Plan Approval And Adoption

FEMA REGULATION CHECKLIST: PLAN ADOPTION

Adoption by the Local Governing Body

44 CFR § 201.6(c)(5): The local hazard mitigation plan shall include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan. 44 CFR §201.6(c)(5)

Element
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval?

Per 44 CFR 201.6(d)(1), the City hazard mitigation plan must be submitted to the State Hazard Mitigation Officer (SHMO) for review. The State will then send the plan to the appropriate FEMA Regional Office for formal review and approval. The State will coordinate between the City and FEMA, once the plan is sent to FEMA for the final review and approval. FEMA has the authority to conduct the final review and approve the LHMP pending adoption by the City Council.

The 2019 Hawthorne LHMP meets all requirements on the regulation checklist and was adopted by City Council on [date added]. A scanned copy of the resolution is included on the following page. Accordingly, the City meets the requirements of the Stafford Act, as amended, and 44 CFR § 201.6(c)(5).

Insert approval resolution. '

APPENDIX A - LOCAL MITIGATION PLAN REVIEW TOOL

REGION IX LOCAL HAZARD MITIGATION PLAN REVIEW TOOL

The *Local Hazard Mitigation Plan Review Tool* demonstrates how the Local Hazard Mitigation Plan meets the regulation in 44 CFR §201.6 and offers State and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- $ The **Regulation Checklist** provides a summary of FEMA's evaluation of whether the plan has addressed all requirements.
- $ The **Plan Assessment** identifies the plan's strengths as well as documents areas for future improvement. This section also includes a list of resources for implementation of the plan.
- $ The **Multi-Jurisdiction Summary Sheet** is a mandatory worksheet for multi-jurisdictional plans that is used to document which jurisdictions are eligible to adopt the plan.
- $ The **Hazard Identification and Risk Assessment Matrix** is a tool for plan reviewers to identify if all components of Element B are met.

Jurisdiction: City of Hawthorne, CA	**Title of Plan:** City of Hawthorne Local Hazard Mitigation Plan	**Date of Plan:** December 19, 2019
Local Point of Contact: Samuel English		**Address:** 4455 W. 126th St Hawthorne, Ca 90250
Title: Legal Risk Specialist		
Agency: City of Hawthorne		
Phone Number: (310) 349-2965		**E-Mail:** senglish@cityofhawthorne.org

State Reviewer: **Kelly Riley**	**Title:** **Emergency Services Coordinator**	**Date:** **01/14/2020**
Date Received at State Agency	01/14/2020	
Date Sent to FEMA	02/10/2020	

FEMA Reviewer: Xing Liu	**Title:** **Sr. Community Planner**	**Date:** 2/21/2020
Date Received in FEMA Region IX	2/13/2020	
Date Not Approved		
Date Approvable Pending Adoption	3/9/2020	
Date Approved		

SECTION 1:
REGULATION CHECKLIST

INSTRUCTIONS: The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the plan by element/sub-element and to determine if each requirement has been 'Met' or 'Not Met.' The 'Required Revisions' summary at the bottom of each element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is 'Not Met.' Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in the *Local Plan Review Guide* in Section 4, Regulation Checklist.

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)		**Location in Plan** (section and/or page number)	**Met**	**Not Met**
ELEMENT A. PLANNING PROCESS				
A1. Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	a. Does the plan provide documentation of how the plan was prepared? This documentation must include the schedule or timeframe and activities that made up the plan's development as well as who was involved.	pp. 8-12 How – pp 8-12 Schedule, timeframe, activities pp -10 Who- pp 9	X	
	b. Does the plan list the jurisdiction(s) participating in the plan that are seeking approval?	Not Applicable. This is a single jurisdiction plan.	X	
	c. Does the plan identify who represented each jurisdiction? (At a minimum, it must identify the jurisdiction represented and the person's position or title and agency within the jurisdiction.)	p. 9. pp. 9	X	

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)		**Location in Plan** (section and/or page number)	**Met**	**Not Met**
A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	a. Does the plan document an opportunity for neighboring communities, local, and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development, as well as other interested parties to be involved in the planning process?	pp. 10 – 12 pp. 10-12, appendix C pp. 138	X	
	b. Does the plan identify how the stakeholders were invited to participate in the process?	pp. 10 – 12 pp. 10-12, appendix C pp. 139	X	
A3. Does the plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	a. Does the plan document how the public was given the opportunity to be involved in the planning process?	p. 12 & appendix C pp. 12, appendix C pp. 139-146	X	
	b. Does the plan document how the public's feedback was incorporated into the plan?	p. 12 pp. 12	X	
A4. Does the plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))		pp. 12 – 15 pp 12 - 15	X	
A5. Is there discussion of how the community will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))		pp. 81-82 pp 85	X	
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	a. Does the plan identify how, when, and by whom the plan will be **monitored** (how will implementation be tracked) over time?	pp. 79-81 pp 83,-84	X	
	b. Does the plan identify how, when, and by whom the plan will be **evaluated** (assessing the effectiveness of the plan at achieving stated purpose and goals) over time?	pp. 79 – 82 pp 83-84	X	
	c. Does the plan identify how, when, and by whom the plan will be **updated** during the 5-year cycle?	pp. 79 – 82 pp 83 - 85	X	
ELEMENT A: REQUIRED REVISIONS				

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)		**Location in Plan** (section and/or page number)	**Met**	**Not Met**
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT (Reviewer: See Section 4 for assistance with Element B)				
B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	a. Does the plan include a general description of all natural hazards that can affect each jurisdiction?	pp. 24 – 53 pp – 25, 28	X	
	b. Does the plan provide rationale for the omission of any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area?	N/A All likely natural hazards included (see p. 24) pp - 29	X	
	c. Does the plan include a description of the **type** of all natural hazards that can affect each jurisdiction?	pp. 24 – 53 CC – pp 31-32 DRT – pp 36 EQ –pp 38 EH – pp 44 FLD –pp 46 WS –pp 50 HW –pp 51	X	
	d. Does the plan include a description of the **location** for all natural hazards that can affect each jurisdiction?	pp. 24 – 53 CC – pp 34 DRT – pp 36-37 EQ –pp 40-41 EH – pp 45 FLD – pp 47 WS – pp 52 HW – pp 52	X	
	e. Does the plan include a description of the **extent** for all natural hazards that can affect each jurisdiction?	pp.24 – 53 pp – 26 CC – pp 34 DRT – pp 37 EQ –pp 41-42 EH – pp 45 FLD –pp 47 WS –pp 52-53 HW –pp 57, 59-61	X	

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)		**Location in Plan** (section and/or page number)	**Met**	**Not Met**
B2. Does the plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	a. Does the plan include information on **previous occurrences** of hazard events for each jurisdiction?	pp. 24 – 53 CC – pp 32 DRT – pp 37 EQ –pp 41-42 EH – pp 45 FLD –pp 47 WS –pp 51 HW –pp 51-52	X	
	b. Does the plan include information on the **probability** of future hazard events for each jurisdiction?	pp. 24 – 53 CC – pp 36 DRT – pp 38 EQ –pp 42 EH – pp 45 FLD –pp 47 WS –pp 53 HW –pp 53	X	
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	a. Is there a description of each hazard's **impacts** on each jurisdiction (what happens to structures, infrastructure, people, environment, etc.)?	pp. 56 – 58, and pp.24 – 53 CC – pp 32 DRT – pp 37-38 EQ – pp 57, 59-61 EH – pp 45-46 FLD –57, 59-61 WS –57, 59-61 HW –pp 57,59-61	X	

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)		**Location in Plan** (section and/or page number)	**Met**	**Not Met**
	b. Is there a description of each identified hazard's overall **vulnerability** (structures, systems, populations, or other community assets defined by the community that are identified as being susceptible to damage and loss from hazard events) for each jurisdiction?	pp. 30 – 55, 56 – 58 pp 56-58 CC – pp 34 DRT – pp 59-61 EQ – pp 57, 59-61 EH – 59 -61 FLD –pp 57, 59-61 WS –pp 57, 59-61 HW –pp 57, 59-61	X	
B4. Does the plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))		n/a Not in 100 year floodplain	X	
ELEMENT B: REQUIRED REVISIONS				
ELEMENT C. MITIGATION STRATEGY				
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	a. Does the plan document each jurisdiction's existing authorities, policies, programs and resources?	pp. 19 – 22 pp 13-15 pp 21-23	X	
	b. Does the plan document each jurisdiction's ability to expand on and improve these existing policies and programs?	pp. 20 – 22 pp 20-22 planning and regulatory type met, pp 21, section 4.1.1, administrative and technical met pp 22, section 4.1.2 financial does not s	x	
C2. Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))		pp. 47 – 48 pp 24	X	

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)		**Location in Plan** (section and/or page number)	**Met**	**Not Met**
C3. Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))		P 61 Pp 62-64	X	
C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	a. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects to reduce the impacts from hazards?	Table 6x (no page number) Pp 76-82 Pp 154-164	X	
	b. Does the plan identify mitigation actions for every hazard posing a threat to each participating jurisdiction?	Table 6x (no page number) Pp 76-82	X	
	c. Do the identified mitigation actions and projects have an emphasis on new and existing buildings and infrastructure?	pp. 63 -66 (continuing actions) pp 65 – 68 and pp. 66 – 70, new actions pp 68 - 73	X	
C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	a. Does the plan explain how the mitigation actions will be prioritized (including cost benefit review)?	p. 71 pp 73-82	X	
	b. Does the plan identify the position, office, department, or agency responsible for implementing and administering the action, potential funding sources and expected timeframes for completion?	Table 6x (no page numbers) Pp 76-82	X	
C6. Does the plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	a. Does the plan identify the local planning mechanisms where hazard mitigation information and/or actions may be incorporated?	pp. 12 – 13 pp 12-13	X	

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)		**Location in Plan** (section and/or page number)	**Met**	**Not Met**
	b. Does the plan describe each community's process to integrate the data, information, and hazard mitigation goals and actions into other planning mechanisms?	pp. 12 – 13 pp 12-15 Priorities Appendix D, pp 154 -164	X	
	c. The updated plan must explain how the jurisdiction(s) incorporated the mitigation plan, when appropriate, into other planning mechanisms as a demonstration of progress in local hazard mitigation efforts.	pp. 12 – 13 pp 9, 12-13, 65-68	X	
ELEMENT C: REQUIRED REVISIONS				
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (Applicable to plan updates only)				
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))		pp. 55 – 56 pp 55-61	X	
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))		pp. 67 – 70 pp 68-73	X	
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))		pp. 70 – 71 pp 68-72 priorities Appendix D, pp 154-164	X	
ELEMENT D: REQUIRED REVISIONS				
ELEMENT E. PLAN ADOPTION				
E1. Does the plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))		n/a Pending APA		X
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))		n/a Pending APA		X

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	**Location in Plan** (section and/or page number)	**Met**	**Not Met**
ELEMENT E: REQUIRED REVISIONS			
ELEMENT F. ADDITIONAL STATE REQUIREMENTS (Optional for State Reviewers only; not to be completed by FEMA)			
F1.			
F2.			
ELEMENT F: REQUIRED REVISIONS			

SECTION 2: !
PLAN ASSESSMENT

INSTRUCTIONS: The purpose of this Plan Assessment is to offer the local community more comprehensive feedback to the community on the quality and utility of the plan in a narrative format. The Plan Assessment **must** be completed by FEMA.

The Assessment is an opportunity for FEMA to provide feedback and information to the community on: 1) suggested improvements to the plan; 2) specific sections in the plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and information on other FEMA programs, specifically Risk MAP and Hazard Mitigation Assistance programs.

The Plan Assessment is divided into two sections:

1) Plan Strengths and Opportunities for Improvement #
2) Resources for Implementing Your Approved Plan #

Plan Strengths and Opportunities for Improvement is organized according to the plan elements listed in the Regulation Checklist. Each element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item, and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each element.

The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature, and should be open-ended and to provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future plan revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.

Resources for Implementing Your Approved Plan provides a place for FEMA to offer information, data sources and general suggestions on the overall plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

Strengths:

1) Creative use of multiple means (including various social media platforms) to get public feedback. Thanks for the inclusion of public opinion in the risk prioritization.
2) Table 7-1 is a great summary of past and proposed continued public involvement activities. Not only does it document what worked well in the past but it builds on past experience to identify new opportunities to increase public awareness to risk.

Opportunities for Improvement:

1) The Repetitive Flood Claims (RFC) Program has been eliminated as of 2013. Please remove reference to the program in future plans.
2) Most of the continued public involvement activities described in the plan are preparedness-centric- could you think of ways to encourage public involvement as the City conducts annual evaluations of proposed mitigation actions and prioritizes implementation of mitigation actions?

Element B: Hazard Identification and Risk Assessment

Strengths:

1) The plan took public input into account when deciding what are priority hazards to profile for the LHMP. !
2) For every profiled hazard, the plan provides insights on regulatory tools that can be leveraged to mitigate risks to the particular hazard. !

Opportunities for Improvement:

1) FEMA record shows 10 NFIP policies for the City instead of 1. Please check with the City floodplain management official about latest flood insurance policy numbers for your plan update.
2) For the vulnerability/potential losses analysis, it would be helpful to include maps, for hazard types that are applicable, that show locations of the assets and population that are at risk as well as the potential extent of the impact.

3) While the plan has a fairly robust analysis on potential losses for City owned infrastructure and critical facilities, in future plans, please consider expanding the risk assessment to vulnerable populations.

Element C: Mitigation Strategy

Strengths:

1) You have a clear logic built into the discussion around the prioritization of mitigation action implementation and strategies for determining benefit cost.
2) You provide a comprehensive and thorough account of the status of mitigation action implementation from the previous planning cycle. Consider including discussions around why certain actions that were deemed still relevant did not get implemented.

Opportunities for Improvement:

1) You discussed ways to expand planning and regulatory capabilities- for your next plan update, please consider including a more thorough discussion of how the City plan on expanding its administrative, technical, and financial capabilities to mitigate against risk.
2) It seems like flood and seismic were the only two hazard types that got assigned specific mitigation actions. Other proposed actions were generic and for all hazards, and many of them fall under preparedness, education or outreach. In your next plan update, you're encouraged to think about specific mitigation measures around the other profiled hazards (winter storm, extreme heat, etc.)

Element D: Plan Update, Evaluation, and Implementation (*Plan Updates Only*)

Strengths:

1) There is clear language around the timeline, process, and responsible parties for plan monitor, evaluation, and implementation

Opportunities for Improvement:

1) While the hazard mitigation plan is on a 5-year update cycle, the plan can be amended anytime during each cycle. For future plans, consider including language that describes how the plan may be amended based on changed conditions and/or priorities.

B. Resources for Implementing and Updating Your Approved Plan

This resource section is organized into three categories:

1) Guidance and Resources #
2) Training Topics and Courses #
3) Funding Sources #

Guidance and Resources

Local Mitigation Planning Handbook
https://www.fema.gov/media-library/assets/documents/31598
Beyond the Basics
http://mitigationguide.org/
Mitigation Ideas
https://www.fema.gov/media-library/assets/documents/30627
Plan Integration: Linking Local Planning Efforts
https://www.fema.gov/media-library/assets/documents/108893
Integrating Disaster Data into Hazard Mitigation Planning
https://www.fema.gov/media-library/assets/documents/103486
Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning
https://www.fema.gov/ar/media-library/assets/documents/4317
Community Rating System User Manual
https://www.fema.gov/media-library/assets/documents/8768
U.S. Climate Resilient Toolkit
https://toolkit.climate.gov/
2014 National Climate Assessment
http://nca2014.globalchange.gov/
Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation
http://ipcc-wg2.gov/SREX/images/uploads/SREX-All_FINAL.pdf
FY15 Hazard Mitigation Assistance Unified Guidance
https://www.fema.gov/media-library/assets/documents/103279
Climate Resilient Mitigation Activities for Hazard Mitigation Assistance
https://www.fema.gov/media-library/assets/documents/110202

Training

More information at https://training.fema.gov/emi.aspx or through your State Training Officer

Mitigation Planning
IS-318 Mitigation Planning for Local and Tribal Communities
https://training.fema.gov/is/courseoverview.aspx?code=is-318
IS-393 Introduction to Hazard Mitigation
https://training.fema.gov/is/courseoverview.aspx?code=is-393.a
G-318 Preparing and Reviewing Local Plans
G-393 Mitigation for Emergency Managers
Hazard Mitigation Assistance (HMA) Grant Programs

IS-212.b Introduction to Unified HMA
http://www.training.fema.gov/is/courseoverview.aspx?code=IS-212.b
IS-277 Benefit Cost Analysis Entry Level
http://www.training.fema.gov/is/courseoverview.aspx?code=IS-277
E-212 HMA: Developing Quality Application Elements
E-213 HMA: Application Review and Evaluation
E-214 HMA: Project Implementation and Programmatic Closeout
E-276 Benefit-Cost Analysis Entry Level

GIS and Hazus-MH

IS-922 Application of GIS for Emergency Management
http://www.training.fema.gov/is/courseoverview.aspx?code=IS-922
E-190 ArcGIS for Emergency Managers !
E-296 Application of Hazus-MH for Risk Assessment
E-313 Basic Hazus-MH !

Floodplain Management

E-273 Managing Floodplain Development through the NFIP
E-278 National Flood Insurance Program/ Community Rating System

Potential Funding Sources

Hazard Mitigation Grant Program
POC: FEMA Region IX and State Hazard Mitigation Officer
Website: https://www.fema.gov/hazard-mitigation-grant-program

Pre-Disaster Mitigation Grant Program
POC: FEMA Region IX and State Hazard Mitigation Officer
Website: https://www.fema.gov/pre-disaster-mitigation-grant-program

Flood Mitigation Assistance Grant Program
POC: FEMA Region IX and State Hazard Mitigation Officer
Website: https://www.fema.gov/flood-mitigation-assistance-grant-program

Emergency Management Performance Grant Program
POC: FEMA Region IX
Website: https://www.fema.gov/emergency-management-performance-grant-program

SECTION 3:
MULTI-JURISDICTIONAL SUMMARY SHEET

INSTRUCTIONS: For multi-jurisdictional plans, this summary sheet must be completed by listing each participating jurisdiction that is eligible to adopt the plan.

MULTI JURISDICTION SUMMARY SHEET					
#	Jurisdiction Name	Jurisdiction Type	Eligible to Adopt the Plan?	Plan POC	Email
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

SECTION 4:
HAZARD IDENTIFICATION AND RISK ASSESSMENT MATRIX (OPTIONAL)

INSTRUCTIONS: This matrix can be used by the plan reviewer to help identify if all of the components of Element B have been met. List out natural hazard names that are identified in the plan in the column labeled "Hazards" and put a "Y" or "N" for each component of Element B.

HAZARD IDENTIFICATION AND RISK ASSESSMENT MATRIX								
Hazard	Requirement Met? (Y/N)							
	Type	Location	Extent	Previous Occurrences	Probability	Impacts	Vulnerability	Mitigation Action
Climate Change	P 31-32	P 34	P 34	P 32	P 36	P 32	P 34	P 65-72
Drought	P 36	P 36-37	P 37	P 37	P 38	P 37-38	P 59-61	
Earthquake	P 38	P 40-41	P 41 -42	P 41-42	P 42	P 57, 59-61	P 57, 59-61	P 65-72
Excess Heat	P 44	P 45	P 45	P 45	P 45	P 45-46	P 59-61	
Flood	P 46	P 47	P 47	P 47	P 47	P 57, 59-61	P 57, 59-61	
Winter Storm	P 50	P 52	P 52-53	P 51	P 53	P 57, 59-61	P 57, 59-61	
High Wind	P 51	P 52	P 57, 59-61	P 51-52	P 53	P 57, 59-61	P 57, 59-61	

APPENDIX B – PLANNING TEAM MEETING DOCUMENTATION

Appendix B contains documentation of the planning process for the LHMP planning team, including meetings, presentations, emails, etc.

Table B-1: LHMP Planning Team Meetings

Meeting Date	Meeting Title	Meeting Materials
7/31/2019	LHMP Kickoff Meeting	Invitation Sign-in Sheet Presentation (cover only) Meeting Minutes
8/28/2019	LHMP Planning Team Meeting #1	Invitation to Stakeholders Sign-in Sheet Presentation (cover only) Meeting Minutes
9/26/2019	LHMP Planning Team Meeting #2	Invitation to Stakeholders Sign-in Sheet Presentation (cover only) Meeting Minutes
10/29/2019	LHMP Planning Team Meeting #3	Invitation to Stakeholders Sign-in Sheet Presentation (cover only) Meeting Minutes

Meeting 1 – LHMP Kickoff Meeting

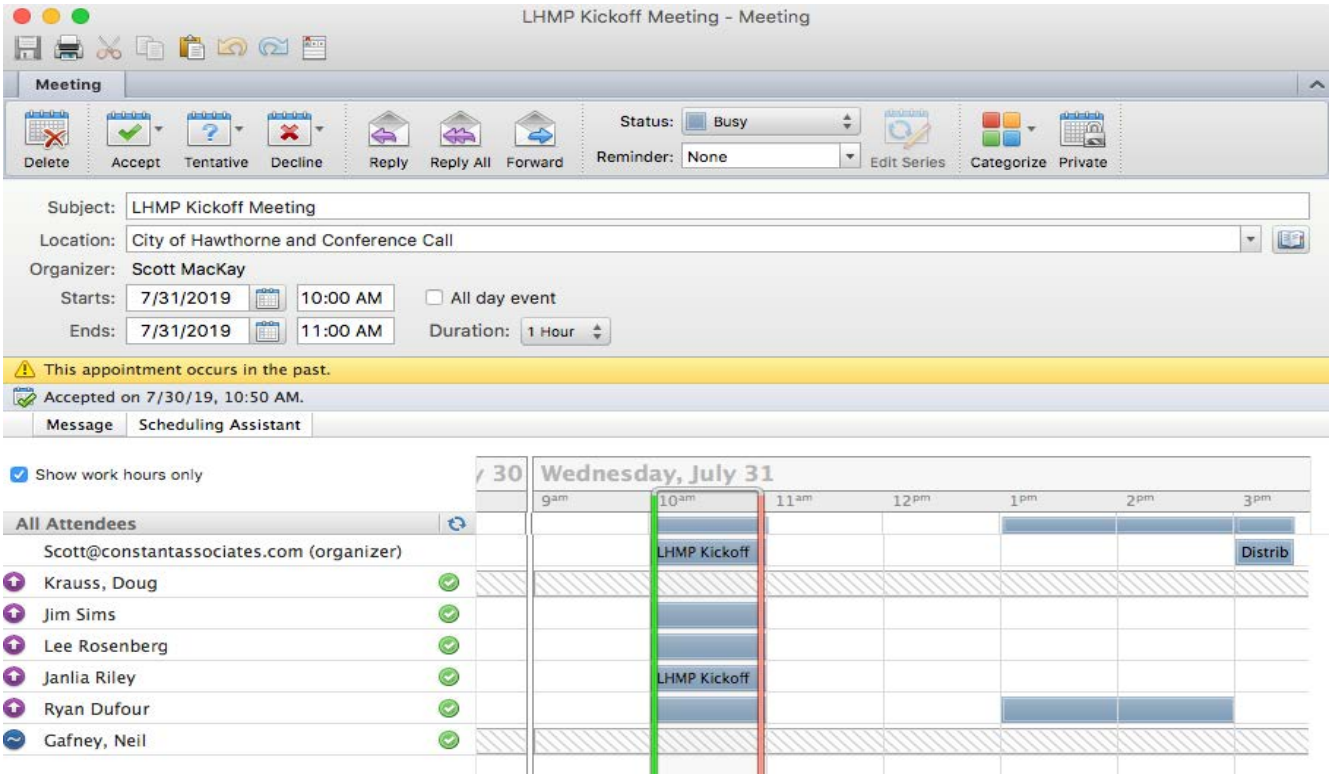
Date and Time

Wednesday, July 31, 2019
10:00 a.m. – 11:00 a.m.

Location

Hawthorne City Hall, 2nd Floor Engineering Conference Room,
4455 W. 126th Street, Hawthorne, CA 90250

Invitation



City of Hawthorne
LHMP Update Project
Kick-off Meeting

SIGN-IN SHEET

KICK-OFF MEETING

LOCAL HAZARD MITIGATOIN PLAN (LHMP) UPDATE PROJECT

Wednesday, July 31st, 2019
10:00 AM – 11:00 AM

Hawthorne City Hall, 2nd Floor Engineering Conference Room
4455 W. 126th Street
Hawthorne, CA 90250

#	Name	Department/Organization	Telephone	Email	Signature
1.	NEIL GAFNEY	EMERGENCY MANAGER	310-349-1685	NGAFNEY@CITYOFHAWTHORNE.ORG	
2.	Doug Krauss	Admin Analyst	310-349-2987	DKRAUSS@CITYOFHAWTHORNE.ORG	
3.	Ryan Dufour	Constant	424-320-2588	rjour@constantassociates.com	
4.	JANLIA RILEY	CONSTANT	424.320.2583	janlia@constantassociates.com	
5.	Jim Sims	CONSULT	213-447-1960	jim@constantassociates.com	
6.	Scott Mackey	Constant	424-320-2587	Scott@constantassociates.com	
7.					
8.					
9.					

CONSTANT ASSOCIATES

Presentation Cover (Kickoff Meeting) &

Meeting Minutes (Kickoff Meeting)

City of Hawthorne
LHMP Update Project
Kick-off Meeting

MEETING MINUTES

KICK-OFF MEETING

CITY OF HAWTHORNE LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE PROJECT

Wednesday, July 31st, 2019
10:00 AM – 11:00 AM

Hawthorne City Hall, 2nd Floor Engineering Conference Room
4455 W. 126th Street
Hawthorne, CA 90250

Table I: Action Items

#	Task	Responsible	Due Date
1	Send Planning Team Updated Survey	CONSTANT	8/1
2	Send URL to Ryan to embed in Documents	Neil	7/31
3	Send Word version of Hazard Mitigation Data Collection Forms	CONSTANT	7/31
4	Send digital version of previous LHMP	Doug	7/31
5	Send CONSTANT information on those joining the planning team (Position, Dept, E-mail, Phone Number)	Doug	8/7
6	Upload Survey onto the Hawthorne Website	All	8/5
7	Revise FEMA Letter	Scott	8/2
8	Send out Calendar Invite for next meeting on August 28th	Doug	8/2

1. Welcome
    a. Scott MacKay welcomed the team to the meeting and began introductions of the team.
    b. The team went around the room and introduced themselves and noted their roles for the project.
        i. CONSTANT:
            1. Scott, Contract Manager
            2. Jim Sims, Project Manager
            3. Janlia Riley, Deputy Project Manager
            4. Ryan Dufour, Support Staff
            5. Lee Rosenberg, Subject Matter Expert and Lead Writer
        ii. City:
            1. Neil Gafney, Project Manager
            2. Doug Krauss, Project Manager

2. Review Meeting Materials

City of Hawthorne
LHMP Update Project
Kick-off Meeting

a. Agenda
b. Slide Deck
c. Sign-in Sheet

3. Purpose of the Meeting
    a. Description of the Project
        i. Scott noted that the purpose of this meeting was to describe the project in detail to ensure both teams understood the scope.
        ii. Neil asked how extensive slide shows would operate for groups (i.e. The Planning Team) that did not have as much background information about LHMPs.
        iii. Scott stated that CONSTANT can tailor slide decks that match the extent of information needed for specific groups.
        iv. Doug asked how much extra work would be taken to add the climate adaptation factor to an LHMP than it would have ten years ago when it was not required.
        v. Lee stated that while it would take time it was not difficult to add the climate adaptation factor into the new LHMP
    b. Review Project Schedule
        i. Neil noted that he will be retiring at the end of the year.
        ii. The team stated that they hoped to submit the plan by late November/early December for FEMA and City Council approval.
    c. Roles and Responsibilities

4. Local Hazard Mitigation Plan Update
    a. Lee Rosenberg stated that the reason an extensive amount of materials and outreach have been asked for at the beginning of the project was to ensure that the LHMP was specific to Hawthorne from the outset.
    b. Neil asked how often an LHMP submission is sent back for revision to the project.
    c. Scott noted that CalOES and FEMA send back LHMPs with revisions almost every time regardless of whether revisions are minimal or extensive.
    d. Neil stated that next week Hawthorne was holding an event called “National Night Out” and that there would be an Emergency Preparedness booth and that it may be a good event for handing out survey information.
    e. Jim stated that this would be a great opportunity to place surveys at the booth.
    f. CONSTANT will update Community Survey and create a flyer with information to go on the website. Neil will take photos of the event.
    g. Neil asked about the number of meetings and people would be needed at each meeting given that the previous joint LHMP had seven meetings.
    h. Lee noted that these meetings could be held but Cal OES had begun to prefer the survey method as there were generally more responses.

City of Hawthorne
LHMP Update Project
Kick-off Meeting

5. Roles & Responsibilities
    a. Scott stated that CONSTANT will be leading the project, coordinating information, writing the document, and assisting the Neil and Doug as much as possible.
    b. Scott reiterated that it was important that CONSTANT received needed information as quickly as possible given the truncated timeline of the project.

6. Questionnaires & Forms
    a. Lee stated that the Mitigation Checklist would be the first form they would need to receive back from the planning team members.
    b. Lee stated that this information should include anything included from the first LHMP and any hazards that have occurred since.
    c. Lee stated that for the LHMP the city would also need to inform CONSTANT if they were a part of the National Flood Insurance Program and how much money they paid into the program.
    d. Lee stated that for the "Hawthorne Capabilities Data Collection" form should include all disaster plans currently in place including the city's EOP.
    e. Lee stated that the CONSTANT team would need a list of the city's critical infrastructure and their insurance values to be included in the plan.
    f. Lee stated that gaining the Hawthorne perspective as soon as possible would help to create a more robust plan.

7. Next Steps
    a. Doug stated that the departments he wanted to include were Building and Safety, City Planning, Police Department, Finance, Parks and Recreation, and Public Works were the groups that Doug identified as needing to be brought in.
    b. Next meeting was tentatively scheduled for August 28th.
    c. Lee noted that this next meeting should include all internal stakeholders previously listed or at least a department representative.
    d. Scott asked Doug if they wanted to send out calendar invites or if they would prefer the CONSTANT Team to do so.
    e. Doug stated that he would prefer to send out the calendar invites for the first meeting.

8. Questions & Discussion
    a. Jim reiterated that the critical path was to receive the data that created the Hawthorne perspective so that the plan could be the best fit the city's needs.
    b. Doug asked how many copies of the questionnaire should be filled out by each department or if they only needed one copy.

c. Scott stated that the questionnaire should be sent out to major businesses in the city, e.g. SpaceX, so that they could fill out the forms of the critical infrastructure they rely on.
d. Doug asked if it should be sent out to all departments including the contracted County Fire groups.
e. Lee stated that while not necessary it is better to make sure the planning process is inclusive of all possible stakeholders.
f. Doug asked if they should ask Utilities companies even though they likely would not respond.
g. Scott stated that they should send out copies of the form to the Utilities companies regardless of the expected response.
h. Jim stated that they would need to send the draft LHMP to neighboring cities and municipalities for feedback.

9. Adjourn

Table II: Meeting Attendees

Name	Organization	Telephone	E Mail
Neil Gafney	Emergency Manager City of Hawthorne	(310) 349-1685	ngafney@cityofhawthorne.org
Doug Krauss	Administrative Analyst City of Hawthorne	(310) 349-2987	Dkrauss@cityofhawthorne.org
Scott MacKay	CONSTANT Associates	(424) 320-2507	scott@constantassociates.com
Jim Sims	CONSTANT Associates	(213) 447-1960	jim@constantassociates.com
Janlia Riley	CONSTANT Associates	(424) 320-2583	janlia@constantassociates.com
Ryan Dufour	CONSTANT Associates	(424) 320-2588	ryan@constantassociates.com
Lee Rosenberg	CONSTANT Associates	(424) 320-2580	lee@constantassociates.com

Meeting 2 – LHMP Planning Team Meeting #1

Date and Time

Wednesday, August 28, 2019
2:00 p.m. – 4:00 p.m.

Location

City of Hawthorne, Betty Ainsworth Sports Center
3851 W. El Segundo Blvd., Hawthorne 90250

Invitation

Subject: Local Hazard Mitigation Plan Meeting Invite
Date: Wednesday, August 21, 2019 at 3:17:32 PM Pacific Daylight Time
From: Shadbehr, Arnie
To: Gafney, Neil, Krauss, Doug, Pedroza, Ray, Gerten, Bill, Norris, Von, Farokhi, Akbar, Leung, Alan, Krause, Don, Yoshida, Aimee J, English, Samuel, 'afields@cityofinglewood.org', 'smitnick@elsegundo.org', 'bmoe@citymb.info', 'hmorgan@hawthorne.k12.ca.us', 'Obrieng@centinela.k12.ca.us', 'bsilvers@wiseburn.org', 'lance.marchetta@dot.ca.gov', 'Mark.Guan@faa.gov', Monteiro, Alex, 'darvj812@gmail.com', 'nhca90250@yahoo.com', 'Joe.Hoefgen@redondo.org', 'smandoki@lawndalecity.org', 'jcruz@cityofgardena.org', 'Reggie.Johnson@fire.lacounty.gov', 'knutting@gswater.com', 'rthompson@calwater.com', 'Constance.Turner@sce.com', 'MADHAMI@dpw.lacounty.gov', 'DCampos@semprautilities.com', 'billydeegan@gmail.com', 'tonytadros.realtor@gmail.com', 'bill.beebe@360southbay.org', Jim Sims, Lee Rosenberg, Ryan Dufour, Janlia Riley, dsandusky@jetcenterla.com, lstockton@jetcenterla.com, Fernandez, Guido

Dear Hawthorne Neighbors, Partners and Colleagues,

The City of Hawthorne is in the process of updating its Local Hazard Mitigation Plan (LHMP) with the goal of FEMA approval in early 2020. The purpose of the LHMP is to identify measures that the City can take to reduce the impacts of events such as earthquakes, severe weather and other hazards on City facilities and infrastructure.

We are forming a Planning Team that will meet periodically to review the progress of the plan and to provide informed input. **We are inviting you to send your Emergency Preparedness coordinators or other relevant staff** to participate as a member of the Planning Team due to your likely involvement in the event of a disaster in the City of Hawthorne. The Planning Team Meeting #1 details are below:

City of Hawthorne
Betty Ainsworth Sports Center
Date: Wednesday, August 28, 2019
Time: 2:00 PM - 4:00 PM
Location: 3851 W. El Segundo Blvd, Hawthorne, CA 90250
Parking in lot on El Segundo or in lot off of Doty Avenue.

An initial draft of the LHMP is attached. This draft includes much of the required background information, but the critical content concerning hazards to be addressed, selection of mitigation measures, and other substantive matters will be developed with input from the Planning Team. Please take the time to briefly review prior to the meeting. A more targeted discussion of your involvement will happen at the meeting. If you're unable to attend, we welcome your input via email.

If your Emergency Preparedness staff is able to attend and be part of the Planning Team for this effort, **please send an RSVP to Neil Gafney at ngafney@cityofhawthorne.org**

We look forward to seeing you there, or receiving any input from your organization.

Thank you.

Arnold (Arnie) Shadbehr

City of Hawthorne
LHMP Update Project
Planning Team Meeting #1 – Sign-In Sheet

SIGN-IN SHEET

PLANNING TEAM MEETING #1

CITY OF HAWTHORNE LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE PROJECT

Wednesday, August 28th, 2019
2:00 PM – 4:00 PM

Hawthorne City Hall
Sports Center Classroom
4455 W. 126th Street
Hawthorne, CA 90250

#	Name	Organization	Telephone	Email	Signature
1.	Neil Gafney	City of Hawthorne	310-349-1685	ngafney@cityofhawthorne.org	
2.	Doug Krauss	City of Hawthorne	310-349-2987	dkrauss@cityofhawthorne.org	
3.	Ray Pedroza	City of Hawthorne	310-349-1656	rpedroza@cityofhawthorne.org	
4.	Bill Gerten	City of Hawthorne	310-349-1622	bgerten@cityofhawthorne.org	
5.	Von Norris	City of Hawthorne	310-349-1644	vnorris@cityofhawthorne.org	
6.	Akbar Farokhi	City of Hawthorne	310-349-2983	afarokhi@cityofhawthorne.org	

CONSTANT ASSOCIATES

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City of Hawthorne
LHMP Update Project
Planning Team Meeting #1 – Sign-In Sheet

7.	Alan Leung	City of Hawthorne	310-349-2997	aleung@cityofhawthorne.org	
8.	Don Krause	City of Hawthorne	310-345-0285	dkrause@cityofhawthorne.org	
9.	Aimee Yoshida	City of Hawthorne	310-349-2715	ayoshida@cityofhawthorne.org	
10.	Sam English	City of Hawthorne	310-349-2965	senglish@cityofhawthorne.org	
11.	Guido Fernandez	City of Hawthorne	310-349-1636	gfernandez@cityofhawthorne.org	
12.	Artie Fields	City of Inglewood		afields@cityofinglewood.org	
13.	Scott Mitnick	City of El Segundo	310-524-2301	smitnick@elsegundo.org	
14.	Bruce Moe	City of Manhattan Beach		bmoe@citymb.info	
15.	Joe Hoefgen	City of Redondo Beach		Joe.Hoefgen@redondo.org	
16.	MICHAEL REYES ~~Steve Mandoki~~	City of Lawndale	310 973-3220	MREYES ~~smandoki~~@lawndalecity.org	
17.	Joseph Cruz	City of Gardena		jcruz@cityofgardena.org	
18.	Captain Reggie Johnson	Los Angeles County Fire Department		Reggie.Johnson@fire.lacounty.gov	

CONSTANT ASSOCIATES

City of Hawthorne
LHMP Update Project
Planning Team Meeting #1 – Sign-In Sheet

19.	Katherine Nutting	Golden State Water Company		knutting@gswater.com	
20.	Robert Thompson	California Water Service		rthompson@calwater.com	
21.	Constance Turner	Southern California Edison		Constance.Turner@sce.com	
22.	Maryam Adhami	Los Angeles County Public Works		MADHAMI@dpw.lacounty.gov	
23.	Denise Campos	Southern California Gas		DCampos@semprautilities.com	
24.	John Krok	South Bay Regional Public Communications Authority		jkrok@rcc911.org	
25.	Helen Morgan	Hawthorne School District	310 676-2276	hmorgan@hawthorne.k12.ca.us	Helen Morgan
26.	Greg O'Brien	Centinela Valley Union High School District		Obrieng@centinela.k12.ca.us	
27.	Blake Silvers	Wiseburn School District		bsilvers@wiseburn.org	

CONSTANT ASSOCIATES

City of Hawthorne
LHMP Update Project
Planning Team Meeting #1 – Sign-In Sheet

28.	Lance Marchetta	CalTrans		lance.marchetta@dot.ca.gov	
29.	Mark Guan	FAA		Mark.Guan@faa.gov	
30.	Donnie Sandusky	Hawthorne Airport LLC		dsandusky@jetcenterla.com	
31.	Levi Stockton	Hawthorne Airport LLC		lstockton@jetcenterla.com	
32.	Alex Monteiro	Hawthorne President's Council		amonteiro@cityofhawthorne.org	
33.	Darvis Johnson	Holly Park Homeowners		darvj812@gmail.com	
34.	Ruben Sanchez	North Hawthorne Neighborhood		nhca90250@yahoo.com	
35.	Bill Deegan	Holly Glen Homeowners		billydeegan@gmail.com	
36.	Tony Tadros	Ramona Neighborhood Association		tonytadros.realtor@gmail.com	
37.	Bill Beebe	360 at South Bay		bill.beebe@360southbay.org	
38.	Scott MacKay	Constant Associates		scott@constantassociates.com	

CONSTANT ASSOCIATES

City of Hawthorne
LHMP Update Project
Planning Team Meeting #1 – Sign-In Sheet

39.	Janlia Riley	Constant Associates		janlia@constantassociates.com	[signature]
40.	Ryan Dufour	Constant Associates		ryan@constantassociates.com	[signature]
41.	Lee Rosenberg	Constant Associates		lee@constantassociates.com	VIRTUAL
42.	Joseph Wright	H.P. #10A	323-756-2989	Pick6 Joe @ Yahoo.Com.	JW.
43.	Kevin Thomas	City of Gardena	(310)217-9657	KevinThomas@cityofgardena.org	[signature]
44	PAUL LOCKE	HOLLY PARK	323-7546555		
45	Kywanne Bowie	City of Hawthorne	310349-1640	Kbowie@cityofhawthorne.org	
46	Sonya Smith	Hawthorne School Dist.	310-6762276	ssmith@hawthorne.k12.org	
47	Silverio Chavez	Hawthorne Airport	(310)3491637	schavez@cityofHawthorne.org	
49	Gerardo Iriarte	City of Hawthorne	310 982-0570	giriarte@cityofhawthorne.org	

CONSTANT ASSOCIATES

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Presentation Cover (Planning Team Meeting #1) &

Meeting Minutes (Planning Team Meeting #1)

City of Hawthorne
LHMP Update Project
Planning Team Meeting #1

MEETING MINUTES

PLANNING TEAM MEETING #1

CITY OF HAWTHORNE LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE PROJECT

Wednesday, August 28th, 2019
2:00 PM – 4:00 PM

Hawthorne Memorial Center
Betty Ainsworth Sports Center Classroom
3901 W. El Segundo Blvd.
Hawthorne, CA 90250

Table 1 Action Items

#	Item	Due Date	Responsible Party
1	Complete First Draft of LHMP	9/20/19	CONSTANT
2	Compile Online Survey Responses	9/20/19	Neil
3	Send CONSTANT Team information on location of Pipelines within city limits	9/6/19	Complete
4	Disseminate meeting minutes	9/4/19	CONSTANT

1. Welcome
    a. Janlia welcomed the entire planning team.

2. Introductions
    a. Each person including Neil, Doug, Scott, Janlia, and Ryan introduced themselves.

3. Review Meeting Materials
    a. Agenda
        i. Scott reviewed the agenda for and then began the meeting.
        ii. Scott noted the key aspect of this meeting was to identify the hazards that should be included in the LHMP.
        iii. Scott reviewed the plan timeline, what an LHMP is, and how it will be reviewed.
        iv. Scott noted that having an approved LHMP means that the City of Hawthorne would be able to apply for federal mitigation grant funding for future projects.
        v. Scott also noted having an LHMP would allow for the city to receive more federal money if a disaster was to occur.

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vi. Scott stated the LHMP plan and content would be separated into two parts. The first is a capabilities and risk assessment to identify the hazards the plan should focus on. The second is mitigation strategy planning which will be based off the first part of the plan.
vii. Scott reviewed the timeline noting that CONSTANT was aiming to submit the LHMP by December to CalOES and FEMA after that.

4. Identify Hazards
    a. Lee began discussion by reviewing the different hazards that have affected California in recent history and noted that while some hazards are severe, there are some that the team does not need to worry about.
    b. Lee proceeded to discuss how the team should go about identifying and prioritizing hazards.
    c. Lee asked the planning team to review these when they have a chance and noted that FEMA only requires natural hazards, but California requires LHMPs to include climate change.
    d. Lee stated that the hazard description must include probability, magnitude, warning time, and duration as factors that impact the score each hazard would receive.
    e. Lee noted that one hazard that was unique to Hawthorne was a potential pipeline rupture or HAZMAT release.
    f. Scott asked the planning team if they had access to the locations of the pipeline and if they were able to share with the team.
    g. The planning team stated that they would share this with CONSTANT.
    h. Lee stated that the current draft of the plan would not include terrorism.
    i. The planning team suggested that terrorism should be included given that Inglewood is a neighboring town and they will have the football stadium there in the near future.
    j. Scott noted that the plan focuses on mitigation measures so if there were mitigation steps that could be taken would be included in the plan.
    k. Lee noted that this plan is for the City of Hawthorne and it is the duty of CONSTANT to create the LHMP the city officials and planning team seek.
    l. Lee listed the hazards identified so far as: airplane crash, climate change, drought, earthquake, excess heat, flood/flash flood, high winds, urban fire, winter storm, and terrorism.
    m. Lee noted however that this list is not final and subject to changed based on preferences of the planning committee.
    n. The representative from Hawthorne school district noted that there were 5 school districts in the city limits.
    o. Lee noted that school districts are Special Districts under State Law and are generally not included in a city LHMP process so he would not need the information from the school districts about critical infrastructure.

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5. Next Steps
    a. The next meeting has been scheduled for September 26th at 10 AM -12 PM at 3901 El Segundo Blvd. (room TBD)

6. Questions & Discussion
    a. Scott noted that the plan will be most successful if each member of the planning department would review each draft of the plan through their departmental lens to create the most robust plan possible.
    b. Lee noted that mitigation plans should focus solely on the city itself whereas an emergency operations plan may focus on more possible options outside of the city including neighboring cities or counties.
    c. The representative from Gardena asked what level of effort a neighboring city could provide to the plan creation. Scott noted it was an advisory role given that they have their own mitigation measures and regional expertise.

7. Adjourn

Table 2 Meeting Attendees

#	Name	Department
1	Neil Gafney	City of Hawthorne
2	Doug Krauss	City of Hawthorne
3	Ray Pedroza	City of Hawthorne
4	Akbar Farokhi	City of Hawthorne
5	Alan Leung	City of Hawthorne
6	Don Krause	City of Hawthorne
7	Michael Reyet	City of Lawndale
8	Helen Morgan	Hawthorne School District
9	Kevin Thomas	City of Gardena
10	Joseph Wight	Holly Park HOA
11	Paul Low	Holly Park HOA
12	Kywanna Bowie	City of Hawthorne
13	Sonya Smith	Hawthorne School District
14	Silverio Chavez	Hawthorne Airport
15	Gerardo Irrarte	City of Hawthorne
16	Scott MacKay	CONSTANT
17	Janlia Riley	CONSTANT
18	Ryan Dufour	CONSTANT
19	Lee Rosenberg	CONSTANT

Meeting 3 – LHMP Kickoff Meeting #2

Date and Time

Thursday, September 26, 2019
10:00 a.m. – 12:00 p.m.

Location

City of Hawthorne, Memorial Center,
3901 W. El Segundo Blvd., Hawthorne, CA 90250 !

Invitation

Subject: Hazard Mitigation Planning Meeting #2 Invite
Date: Wednesday, September 11, 2019 at 1:55:23 PM Pacific Daylight Time
From: Gafney, Neil
To: Pedroza, Ray, Gerten, Bill, Norris, Von, Farokhi, Akbar, Leung, Alan, Krause, Don, Yoshida, Aimee J, English, Samuel, Helen Morgan, ssmith@hawthorne.k12.ca.us, mreyes@lawndalecity.org, Jesse Villalpando, reggie.johnson@fire.lacounty.gov, Campos, Denise, Bowie, Kywanna, kevinthomas@cityofgardena.org, pick6joe@yaoo.com
CC: Krauss, Doug, Gafney, Neil, Janlia Riley, Scott MacKay, Lee Rosenberg, Jim Sims, Ryan Dufour, Chavez, Silverio, Iriarte, Gerardo
Attachments: HawthorneLHMP_PlanningTeamMeeting1_MeetingMinutes.pdf, 4_Mitigation Strategies Revised.pdf

Hawthorne Neighbors, Partners and Colleagues:
As the city progresses towards the next step in developing the updated Local Hazard Mitigation Plan (LHMP), and on behalf of the City Manager, I would like to invite you to the 2nd Planning Team meeting on Thursday, September 26, from 10-noon.
A separate calendar invite will be sent following this message for convenient scheduling (or just reply to this email).

The first meeting (minutes attached) identified potential hazards for consideration, and ranking impacts necessary to begin the analysis of mitigation strategies to address these hazards. The hazards are listed below that will be discussed on the 26th. We ask each participant to be prepared to discuss any approaches they feel will assist in addressing these hazards.

- ***Airplane Crash***
- ***Drought***
- ***Extreme Heat***
- ***Pipeline Rupture/HAZMAT***
- ***Climate Change***
- ***Earthquake/Seismic***
- ***Flood/Flash Flood***
- ***Winter Storm/Strong Winds***

The agenda will discuss mitigation for these hazards

Included for reference to help understand and prepare for this meeting are previous mitigation strategies from the 2014 report.

We look forward to seeing you on the 26th.

Meeting Details:
LHMP Planning Meeting #2
Memorial Center, 3901 W. El Segundo Blvd.
Thursday, September 26, 10am-noon

Teleconference:
Dial: 267-930-4000
Participant PIN: 180-384-561

Look for the calendar invite I will send shortly, and please accept, if available. If you have any questions please let me know.

Regards,

Neil Gafney
Emergency Preparedness Coordinator
City of Hawthorne
ngafney@cityofhawthorne.org
O: 310-349-1685 C: 310-428-3496

City of Hawthorne
LHMP Update Project
Planning Team Meeting #1 – Sign-In Sheet

SIGN-IN SHEET

PLANNING TEAM MEETING #1

CITY OF HAWTHORNE LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE PROJECT

Thursday, September 26th, 2019
10:00 AM – 12:00 PM

Memorial Center
3901 W. El Segundo Blvd., Pluto & Saturn Rooms
Hawthorne, CA 90250

#	Name	Organization	Telephone	Email	Signature
1.	Neil Gafney	City of Hawthorne	310-349-1685	ngafney@cityofhawthorne.org	
2.	Doug Krauss	City of Hawthorne	310-349-2987	dkrauss@cityofhawthorne.org	
3.	Ray Pedroza	City of Hawthorne	310-349-1656	rpedroza@cityofhawthorne.org	
4.	Akbar Farokhi	City of Hawthorne	310-349-2983	afarokhi@cityofhawthorne.org	
5.	Alan Leung	City of Hawthorne	310-349-2997	aleung@cityofhawthorne.org	
6.	Don Krause	City of Hawthorne	310-345-0285	dkrause@cityofhawthorne.org	

CONSTANT ASSOCIATES

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City of Hawthorne
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18.	Jesse Villalpando			Jvillalpando451@gmail.com	
19.	Jim Sims	Constant Associates	424-320-2586	jim@constantassociates.com	
20.	Janlia Riley	Constant Associates	424-320-2583	janlia@constantassociates.com	
21.	Ryan Dufour	Constant Associates	424-320-2588	ryan@constantassociates.com	
22.	Lee Rosenberg	Constant Associates	424-320-2580	lee@constantassociates.com	Via phone
23.	Vontray Norris	CofH	310 349-1640	VNorris@cityofHawthorne.org	
24	William Gerten	CofH	310 349-1664	bgerten@cityofhawthorne.org	

Presentation Cover (Planning Team Meeting #2) &

Meeting Minutes (Planning Team Meeting #2)

City of Hawthorne
LHMP Update Project
Planning Team Meeting #2

MEETING MINUTES

PLANNING TEAM MEETING #2

CITY OF HAWTHORNE LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE PROJECT

Thursday, September 26th, 2019
10:00 AM – 12:00 PM

Memorial Center
3901 W. El Segundo Blvd., Pluto & Saturn Rooms
Hawthorne, CA 90250

Table 1 Action Items

#	Item	Due Date	Responsible Party
1	Complete Second Draft of LHMP	10/22/19	CONSTANT
2	Send out Invite for Planning Meeting #3	10/15/19	Neil
3	Develop and disseminate meeting minutes	10/3/19	CONSTANT
4	Add Alert South Bay as mitigation measure	10.03/19	CONSTANT

1. Welcome & Introductions
    a. Jim introduced himself and had the planning team go around the room to introduce themselves.
    b. Neil noted that Doug Krauss has left the City and announced that Sam English will be taking over Doug's role for the future of the project.
2. Meeting Materials
    a. Agenda
    b. Slide Deck
    c. Sign-in Sheet
3. Plan Update
    a. Jim noted that the CONSTANT team has reviewed the previous mitigation plan and have begun to update the LHMP.
    b. Jim noted that a rough first draft of the LHMP has been completed and that CONSTANT typically creates 3 drafts that will be available for review by the planning team and public before being sent to Cal OES and FEMA for review.
    c. Neil noted that with this iteration of the plan the City will be able to make grant applications next year contingent upon plan approval.

d. Jim noted today's meeting purpose was to work through the previous mitigation measures and how the City has worked towards completing the goals set in the previous iteration of the plan.

4. Mitigation Strategy, Goals, and Actions
    a. Previous Mitigation Actions
        i. Jim noted that the City has shown more progress on their previous goals than other jurisdictions typically do.
        ii. A team member asked about HMP 2012.12 if it was ongoing or if it had been confirmed to be completed. Neil noted that he did not have the information but would ask Akbar or Doug for their reasoning.
        iii. Neil asked the Parks & Rec team if they would have HMP 2012.13 completed by 2019 or 2020 for a new generator at the Memorial Center. Vontray Norris confirmed it should be completed by 2020.
        iv. William Gerten noted that they could potentially get rid of their generator used at the Public Works yard due to the fact that it is diesel.
        v. Multiple team members noted a primary need would be to acquire and upgrade generators so there can be one for each location in the city.
        vi. Neil asked about HMP 2012.20 asking if the helicopter currently owned by the city would be considered a utility helicopter. Team members noted it was an observational helicopter and would not be considered a utility helicopter.
    b. Hazard Mitigation Goals
        i. Jim briefly discussed the 5 major goals of the City's updated plan.
        ii. Goal 1: Protect life, property, and reduce potential injuries from natural, technological, and human-caused hazards.
            1. Neil asked why technological issues were included in Goal 1 given that the HMP focused solely on natural hazards. Jim noted that "technological" would be removed from the goal as it was not necessary for the city.
        iii. Goal 2: Improve public understanding, support and need for hazard mitigation measures.
            1. Neil asked Jim when they should provide information to the public for comment and feedback. Jim noted that this would occur over a 30-day period before taking the plan to the City

Council. Jim stated this would happen when the Planning Team deemed the plan was final or nearly complete.

2. Team member asked where public feedback was sent, and Neil noted it would be sent to him initially and would then be forwarded to the CONSTANT Team.

iv. Goal 3: Promote disaster resistance for City's existing and future built environment.

v. Goal 4: Strengthen partnerships and collaboration to implement hazard mitigation activities.

1. Neil noted they are making 3 steps in this area. He is meeting with other emergency managers from neighboring cities once a month. He has also been looking into engaging with the school districts and with businesses in the City.

vi. Goal 5: Enhance City's ability to effectively and immediately respond to disasters.

c. Hazards

i. Jim noted the list of hazards and made the distinction that given that there have been 3 airplane accidents in the last 15 years it "Airplane Accident" hazard would be included in the plan.

ii. Jim noted that Climate Change is required by Cal OES to be included in the plan and that severe weather was the key concern that grows out of climate change. However, severe weather should continue to be included as a separate hazard since it would occur even without climate change.

iii. Neil noted that the South Bay released a COG plan that included climate change and Lee ensured the planning team that important information from this document would be included in this plan.

iv. Sonya Smith asked why the hazards were listed in a particular order and if they should be in a different order. Lee noted that he placed the hazards in alphabetical order.

v. Neil asked if the matrix of severity and ranking would be included in the plan. Lee noted that the matrix would be included in the appendix to note why each hazard was selected in the plan.

d. Mitigation Actions

i. Jim noted that the mitigation actions have been organized by each goal and the CONSTANT team has begun to create a number of mitigation measures that could be included in the plan.

ii. Jim asked for input on Goal 1's mitigation measures so far. There were no comments, but Neil noted he would work to engage the Planning Department on these mitigation actions as they were not in attendance at the meetings.

iii. Neil asked about Goal 2.4 and if it had already been completed after Meeting 1 when he passed along critical infrastructure plans to the CONSTANT Team.

iv. Neil asked if the General Plan (3.4) would stay on its current timeline or need to be updated as well. Jim noted that the General Plan would remain on its own timeline but the updated HMP would be included in it when updated next.

v. The Planning Team noted that 5.1 should be included given that the City has a large amount of fiber running through the City and there are multiple redundant data centers with backup information.

5. Public Outreach
    a. Jim noted the ways in which the team has begun public outreach including the survey results and posting the draft of the LHMP onto the website for 30 days for public feedback.
    b. Sonya stated it might be possible for the school district to engage with public outreach given that 95% of the parents live within the City of Hawthorne.
    c. Jim noted that the Alert South Bay should be included as a mitigation measure into the plan and that the CONSTANT Team would work ensure this.
6. Work Left to Do
    a. Jim noted that the entire planning process would be documented and included in the appendix and that the final document will be "cross walked" with what FEMA believes should be included in the plan.
    b. Jim noted that the draft of the HMP would first be submitted to Cal OES for review and would be returned with comments. Jim stated it would then be passed on to FEMA for the final review.
    c. Jim noted both of these edits would be handled by the CONSTANT Team and once it is returned from FEMA it would have to be submitted and approved by the Hawthorne City Council for adoption.
    d. Lee added that before it was ready to go to Cal OES it would need to be posted on the website for public review for 30 days.

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e. Neil asked what compiling hazard maps with infrastructure layers meant and Lee noted that this would include fault maps, any liquefiable soil maps, the pipeline maps given in the last meeting to show FEMA the planning team has given extra effort to note every possible hazard.

7. Questions & Discussion
   a. Neil asked if the next planning meeting would be held at the end of October and Lee noted that this next draft could be completed by this date.
   b. The planning team settled on Oct. 29th 2-4 PM for next meeting with Public Works staff in attendance.
8. Next Steps
9. Adjourn

Table 2 Meeting Attendees

#	Name	Department
1.	Neil Gafney	City of Hawthorne
2.	Don Krause	City of Hawthorne
3.	Joseph Wight	Holly Park HOA
4.	Sonya Smith	Hawthorne School District
5.	Chris Wiley	City of Hawthorne
6.	Captain Reggie Johnson	Los Angeles County Fire Department
7.	Vontray Norris	City of Hawthorne
8.	William Gerten	City of Hawthorne
9.	Jim Sims	CONSTANT
10.	Janlia Riley	CONSTANT
11.	Ryan Dufour	CONSTANT
12.	Lee Rosenberg	CONSTANT

Meeting 4 – LHMP Planning Team Meeting #3

Date and Time

Tuesday, October 29, 2019
2:00 p.m. – 4:00 p.m.

Location

City of Hawthorne, Betty Ainsworth Sports Center
3851 W. El Segundo Blvd., Hawthorne 90250

Invitation

Subject:
Date:
From: Gafney, Neil
To: Pedroza, Ray, Gerten, Bill, Norris, Von, Farokhi, Akbar, Leung, Alan, Krause, Don, Yoshida, Aimee J, English, Samuel, 'Helen Morgan', ssmith@hawthorne.k12.ca.us, mreyes@lawndalecity.org, Jesse Villalpando, reggie.johnson@fire.lacounty.gov, Campos, Denise, Bowie, Kywanna, kevinthomas@cityofgardena.org, pick6joe@yahoo.com, Loadsman, Sheri, Wang, Peter, Chavez, Silverio, Iriarte, Gerardo
CC: Gafney, Neil, Janlia Riley, Scott MacKay, Ryan Dufour, Jim Sims, Lee Rosenberg
Attachments: Hawthorne Planning Meeting #3 Reference.docx, Hawthorne_LHMP_Meeting2Minutes_v4.pdf

Hawthorne Neighbors, Partners and Colleagues:
As the city progresses towards the next step in developing the updated Local Hazard Mitigation Plan (LHMP), and on behalf of the City Manager, I would like to invite you to the 3rd Planning Team meeting on Tuesday, October 29, from 2-4pm. A separate calendar invite will be sent in a few days for convenient scheduling (or just reply to this email).

The meeting minutes from the 2nd meeting (attached) addressed the process forward, review of the hazard mitigation goals, the next iteration steps, and began review of mitigation activities from the previous LHMP (task 2 of the meeting #3 reference).

In addition, deliverables due for the 3rd meeting include updates to task 3, new mitigation activities. Task 3, (table 6-X of meeting #3 reference) is a standard list of typical mitigation activities many cities consider for their future mitigation plans. If you are listed as an implementing organization, and feel those actions are appropriate, please **come prepared to provide the Resources and Project Cost Estimates for each action.** If you do not feel they are appropriate to consider over the next 5 years, simply indicate to delete those actions,

The agenda will focus on any update to existing mitigation activities and future activities for these hazards.

Included for reference to help understand and prepare for this meeting are previous mitigation strategies from the 2014 report.

We look forward to seeing you on the 29th.

Meeting Details:
LHMP Planning Meeting #3
Hawthorne Memorial Center
Betty Ainsworth Sports Center – Conference Room
3851 W. El Segundo Blvd.
Tuesday, October 29, 2-4pm

Teleconference:
Dial: 267-930-4000
Participant PIN: 180-384-561

Look for the calendar invite I will send shortly, and please accept, if available. If you have any questions, please let me know.

Regards,

Neil Gafney
Emergency Preparedness Coordinator
City of Hawthorne
ngafney@cityofhawthorne.org
O: 310-349-1685 C: 310-428-3496

City of Hawthorne
LHMP Update Project
Planning Team Meeting #3 – Sign-In Sheet

SIGN-IN SHEET

PLANNING TEAM MEETING #3

CITY OF HAWTHORNE LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE PROJECT

Tuesday, October 29th, 2019
2:00 PM – 4:00 PM

Betty Ainsworth Sports Center
3851 W. El Segundo Blvd., Sports Center Conference Room
Hawthorne, CA 90250

#	Name	Organization	Telephone	Email	Signature
1.	Neil Gafney	City of Hawthorne	310-349-1685	ngafney@cityofhawthorne.org	
2.	Doug Krauss	City of Hawthorne	310-349-2987	dkrauss@cityofhawthorne.org	
3.	Ray Pedroza	City of Hawthorne	310-349-1656	rpedroza@cityofhawthorne.org	
4.	Akbar Farokhi	City of Hawthorne	310-349-2983	afarokhi@cityofhawthorne.org	
5.	Alan Leung	City of Hawthorne	310-349-2997	aleung@cityofhawthorne.org	
6.	Don Krause	City of Hawthorne	310-345-0285	dkrause@cityofhawthorne.org	

CONSTANT ASSOCIATES

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City of Hawthorne
LHMP Update Project
Planning Team Meeting #3 – Sign-In Sheet

7.	Aimee Yoshida	City of Hawthorne	310-349-2715	ayoshida@cityofhawthorne.org	
8.	Michael Reyes	City of Lawndale	310-973-3220	mreyes@lawndalecity.org	
9.	Captain Reggie Johnson	Los Angeles County Fire Department		Reggie.Johnson@fire.lacounty.gov	
10.	Helen Morgan	Hawthorne School District	310-676-2276	hmorgan@hawthorne.k12.ca.us	
11.	Joseph Wright	Holly Park HOA	323-756-2989	pick6joe@yahoo.com	
12.	Kevin Thomas	City of Gardena	310-217-9657	kevinthomas@cityofgardena.org	
13.	Paul Lowe	Holly Park HOA	323-754-6555		
14.	Kywanna Bowie	City of Hawthorne	310-349-1640	kbowie@cityofhawthorne.org	
15.	Sonya Smith	Hawthorne School District	310-676-2276	ssmith@hawthornesd.org	
16.	Silverio Charez	Hawthorne Airport	310-349-1637	schavez@cityofhawthorne.org	
17.	Gerardo Iriarte	City of Hawthorne	310-982-0570	giriarte@cityofhawthorne.org	

CONSTANT ASSOCIATES

City of Hawthorne
LHMP Update Project
Planning Team Meeting #3 – Sign-In Sheet

18.	Jesse Villalpando			Jvillalpando451@gmail.com	
19.	Jim Sims	Constant Associates	424-320-2586	jim@constantassociates.com	
20.	Janlia Riley	Constant Associates	424-320-2583	janlia@constantassociates.com	
21.	Ryan Dufour	Constant Associates	424-320-2588	ryan@constantassociates.com	
22.	Lee Rosenberg	Constant Associates	424-320-2580	lee@constantassociates.com	(remote)

Samuel English City of Hawthorne 310)349-2965 senglish@cityofhawthorne.org

Sheri Repp-Loadsman
City of Hawthorne
sloadsman@cityofHawthorne.org

VOH Norris 11 310 349-1640 VNorris@CityofHawthorne.org

CHRIS WILEY CITY OF HAWTHORNE POLICE DEPARTMENT 310-349-2731 CWILEY@CITYOFHAWTHORNE.ORG

Presentation Cover (Planning Team Meeting #3) &

Planning Team Meeting #3

City of Hawthorne
Local Hazard Mitigation Plan (LHMP) Update Project

Tuesday, October 29, 2019

CONSTANT ASSOCIATES

Hazard Mitigation Goals Review

Goals are broad statements that represent a long-term, community-wide vision.

2019 Hazard Mitigation Goals
Goal 1: Protect life, property, and reduce potential injuries from natural, technological, and human-caused hazards.
Goal 2: Improve public understanding, support and need for hazard mitigation measures.
Goal 3: Promote disaster resistance for City's existing and future built environment.
Goal 4: Strengthen partnerships and collaboration to implement hazard mitigation activities.
Goal 5: Enhance City's ability to effectively and immediately respond to disasters.

CONSTANT ASSOCIATES

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Meeting Minutes (Planning Team Meeting #3)

City of Hawthorne
LHMP Update Project
Planning Team Meeting #3

MEETING MINUTES

PLANNING TEAM MEETING #3

CITY OF HAWTHORNE LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE PROJECT

Tuesday, October 29th, 2019
2:00 PM – 4:00 PM

Betty Ainsworth Sports Center
3851 W. El Segundo Blvd., Sports Center Conference Room
Hawthorne, CA 90250

Table 1 Action Items

#	Item	Due Date	Responsible Party
1	Finalize and disseminate the meeting minutes	11/6/19	CONSTANT
2	Update the estimated costs for the Action items provided	11/6/19	Neil
3	Action 3.6 – Look into the agreement with CalWater	11/4/19	Sam
4	Action 5.1 – Discuss with Josh Armstrong (IT)	11/4/19	Neil

1. Welcome & Introductions
    a. Jim introduced himself, the CONSTANT team and the Planning Team members made introductions
    b. Jim reminded the team of CONSTANT's role and the process thus far in working with Neil on the LHMP update for the City
2. Meeting Materials
    a. Meeting Agenda, Slide Deck, and Sign-in Sheet were shared and was pointed out to the Team that these would be included in the Plan to document the planning process
3. Mitigation Strategy, Goals, and Actions
    a. Previous Mitigation Actions from the previous plan was shared and the team
        i. Item 2012.13 task timeline was updated to year 2020 from the discussion from previous meeting, otherwise no other changes to rest of the tasks listed
        ii. Discussion regarding item 2012.20 as to whether it was still valid with the team agreeing that it is still valid with no changes
    b. New Hazard Mitigation Actions

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i. Lee led the Team in reviewing the goals and hazards actions identified for the new plan

ii. Neil provided his cost out as a sample for seven of the action items

iii. Live edits to the new mitigation actions and the cost estimates were made with the Team's collaboration

1. Action 1.1 – The Team agreed to adding the responsibility to Building and Safety
2. Actions 1.2 and 1.3 – The Team discussed the clarification of the difference between city and non-city owned facilities between the two tasks and noted DAFN considerations
    a. Presently the Memorial Center is identified as the only shelter site for the City, therefore there is a need to identify more City facilities (to use guidelines such as Red Cross utilized)
    b. It was also noted that the School District has MOU with Red Cross for shelter
3. Action 1.4 – Responsibility was transferred Public Works, whom would be responsible for researching and apply to grants and could very likely result in hiring outside consultants to help with any RFP writing and process
4. Actions 2.1, 2.2, 2.5 – provided by Neil, no edits to the description
5. Action 2.3 – The Team agreed that this task should be combined with Action 1.4
6. Action 2.4 – It was agreed by the Team that the inventories should be comprised of City-owned building and infrastructure for this task. It was also noted that there is currently not a list of the at-risk City-owned buildings yet.
7. Action 3.1 – The Team noted that this action should include the implementation of daily routine of flight ordinance, such as excessive height
8. Action 3.2 – The Team noted this task is an ongoing business activity with ongoing costs and therefore is still relevant
9. Action 3.3 – The Team agreed that the replacement values of inventory and inventory replacement should on pertain to City-owned assets

City of Hawthorne
LHMP Update Project
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10. Action 3.4 – The Team confirmed that the City's General Plan is not updated as periodically as for example the LHMP, therefore there is the need to potentially update the General Plan as well as any other regulatory documents
11. Action 3.5 – Neil noted that this responsibility should be the City Manager only and should just include "proposing" any policies
12. Action 3.6 – The City's reservoir is maintained by CalWater under agreement and the City would need to check for any necessary upgrades. Sam will look into the agreement with CalWater and if identified within the past five years, this action should remain
13. Actions 4.1, 4.4, 4.5 – provided by Neil, no edits to the description
14. Action 4.2 – This action was identified as the responsibility of Torrance Police Department (PD), as fire services are contracted out to Los Angeles County. The upgrades and items necessary, like sirens, use for equipment for PD, replacing alert system, supplies, replacing alert system, etc. can be extensive (eg. The EOC does not have adequate power for emergencies), therefore it was agreed to add a sub-Action to this item for upgrading the needed alert system
15. Action 4.3 – The responsibility was changed to just the City Manager
16. Action 5.1 – The Team agreed that Action 5.1 and 5.4 should be combined, and Neil will speak to Josh Armstrong (IT Department) regarding this action and the estimated costs
17. Action 5.2 – The Team confirmed that this task is for coordinating activities only and therefore is an ongoing staff function
18. Action 5.3 – provided by Neil, no edits to the description
19. Action 5.4 – This action is to be combined with action 5.1 and now changed to focus on the development of the City's Continuity of Operation and Continuity of Government Plan. This should also include updating the Emergency Operations Plan

City of Hawthorne
LHMP Update Project
Planning Team Meeting #3

20. Action 5.5 – The Team discussed the use of radio systems during seismic activities and agreed to change the coordination from Los Angeles County to HPD and RCC
21. Neil will review the action costs he provided and resend figures as necessary

iv. Estimated costs should be annual costs (per annual grant application) and are estimated projected costs only

v. Lee will work on the STAPLEE method to help prioritize projects

4. Work Left to Do
   a. Draft Plan will be finalized and send out for public review for the period duration from November 5 – December 4, 2019
      i. This will include posting on the City website, social media channels, and sharing with adjacent cities
   b. Jim reminded the Team of the remaining steps of the planning process, to include submission to CalOES/FEMA, and Council adoption
5. Questions & Discussion
   a. A member of the team posted the question of whether this is be sent to the Planning Commission to review and it was confirmed that it is the decision of the Planning Team, but can do immediately if so desired

Table 2 Meeting Attendees

#	Name	Department
1.	Neil Gafney	City of Hawthorne
2.	Samuel English	City of Hawthorne
3.	Sheri Repp Loadsman	City of Hawthorne Planning Department
4.	Aimee Yoshida	City of Hawthorne PD
5.	Chris Wiley	City of Hawthorne PD
6.	Von Norris	City of Hawthorne
7.	Joseph Wight	Holly Park HOA
8.	Paul Lowe	Holly Park HOA
9.	Sonya Smith	Hawthorne School District
10.	Jim Sims	CONSTANT
11.	Janlia Riley	CONSTANT
12.	Lee Rosenberg	CONSTANT

APPENDIX C – PUBLIC ENGAGEMENT DOCUMENTATION

Appendix C contains documentation of stakeholder engagement and outreach. It includes survey format and results, webpage and social media account postings, and public notification material.

Table C-1: Public Engagement and Documentation

Event Date	Event Activity	Documentation
8/3/2019	Homeowners Association Meeting	Photos of event
8/5/2019	Social Media and Media Campaign	Posting on City Website Posting on City Facebook account Local Community TV channel broadcast
8/6/2019	Survey on City Website	Survey questions and results
8/6/2019	National Night Out Booth	Photos of event
9/20/2019	Extra Social Media Campaign	Posting on NextDoor
12/2/2019	Draft LHMP posted on City website and sent to the following jurisdictions for review and comment: City of Inglewood City of El Segundo City of Manhattan Beach City of Redondo Beach City of Lawndale City of Gardena	Posting on City Website Posting on City Facebook account Email to neighboring jurisdictions and Operational Area

Outreach Survey Overview and Questions &

CITY OF HAWTHORNE
LOCAL HAZARD MITIGATION PLAN PROJECT
LHMP Community Survey

LHMP Community Survey Overview

A Plan for Reducing Disaster Risk

The City of Hawthorne is developing a Local Hazard Mitigation Plan or LHMP. The purpose of an LHMP is to 1) evaluate the threat posed by natural disasters and 2) establish a city-wide strategy for managing that risk. This plan will allow Hawthorne to receive both state and federal hazard mitigation grants and disaster relief funds. Moreover, it will guide the city efforts to minimize the impact of disasters and climate change on Hawthorne's residents and businesses.

Public Input is Critical

Public input and feedback are crucial to building an effective LHMP. This is because hazard mitigation is a whole-community effort. Everyone has a role in keeping Hawthorne safe! As such, there will be multiple opportunities for you to share your thoughts, concerns, and interests. However, the first step is to help us understand YOU.

Help Us to Help You

Fill out the attached survey to share your thoughts on key disaster issues and tell the city how it can best help your household prepare for a natural disaster. All survey answers are anonymous and will only be used to help develop the city's disaster management plans. Additional comment/answer space is available at the end of the survey if you need additional space.

CITY OF HAWTHORNE
LOCAL HAZARD MITIGATION PLAN PROJECT
LHMP Community Survey

LHMP Community Survey Questions

1. Residents and businesses in Hawthorne face a number of potential hazards. How concerned are you about the following hazards in Hawthorne? (Check one for each hazard)

	Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned
Earthquake	☐	☐	☐	☐	☐
Severe Storms	☐	☐	☐	☐	☐
Drought	☐	☐	☐	☐	☐
Extreme Heat	☐	☐	☐	☐	☐
Strong Winds	☐	☐	☐	☐	☐
Tornadoes	☐	☐	☐	☐	☐
Floods	☐	☐	☐	☐	☐
Windstorms	☐	☐	☐	☐	☐

2. How prepared is your household to cope with a hazard event? (Check one)

☐ Not sure	☐ Not at all prepared	☐ Somewhat prepared	☐ Adequately prepared	☐ Well prepared	☐ Very well prepared

3. Which of the following actions has your household taken to prepare for hazard events? (Check all that apply)

- ☐ Prepare a disaster kit
- ☐ Stored water (one gallon/person per day)
- ☐ Purchased earthquake insurance
- ☐ Installed smoke detectors on each level of the house
- ☐ Taken a Community Emergency Response Team (CERT) Course
- ☐ Stored medical supplies (first aid kit, prescription & over the counter meds)
- ☐ Created a home evacuation plan
- ☐ Designated a family meeting place
- ☐ Other (please specify):
- ☐ Stored non-perishable food
- ☐ Received First Aid/CPR training
- ☐ Purchased flood insurance
- ☐ Installed carbon monoxide detectors on each level of the house
- ☐ Have fire extinguishers in appropriate areas of the house
- ☐ Stored a battery powered radio, flashlights, and extra batteries
- ☐ Identified utility shut-offs / have shut-off tools available
- ☐ None

_____

_____

_____

_____

CITY OF HAWTHORNE
LOCAL HAZARD MITIGATION PLAN PROJECT
LHMP Community Survey

4. Which of the following sources of information have helped you to prepare for a hazard event? (Check all that apply)

- ☐ Emergency preparedness information from a government source
- ☐ Attending meetings that have provided disaster preparedness information
- ☐ Community Emergency Response Team (CERT) Training
- ☐ Disaster exhibit at a local fair or community event
- ☐ Church disaster preparedness event
- ☐ Civic organization disaster preparedness (Red Cross, etc.)
- ☐ Personal experience with previous hazards or disasters
- ☐ School or other academic institution distribution of materials
- ☐ Locally news or regional media source
- ☐ Phone book or marketing distribution of materials
- ☐ Other (please specify):

_____

5. How important do you find the following community-wide actions or activities that may reduce the risk of hazards in Hawthorne?

	Not Important	Somewhat Important	Very Important	Extremely Important
Prevention activities such as administrative or regulatory actions that influence the way land is developed and buildings are built (ex: planning, zoning, & building codes)	☐	☐	☐	☐
Property protection actions that modify existing buildings to protect them from a hazard or removal from the hazard area, such as acquisition, relocation, elevation, and structural retrofits	☐	☐	☐	☐
Structural projects intended to lessen hazard impact by modifying the natural progression of the hazard, such as detention/retention basins, retaining walls, storm sewers, and restoration efforts to increase the natural environment's capacity to absorb hazard impacts	☐	☐	☐	☐
Emergency services actions that protect people and property during and immediately after a hazard event, such as warning systems, evacuation planning, emergency response training, and protection of critical emergency facilities or systems	☐	☐	☐	☐
Public education and awareness activities to inform community members about hazards and the techniques they can use to protect and prepare their property and themselves, including outreach projects, CERT, school programs, library materials, and safety fair events	☐	☐	☐	☐
Other (Please Specify): _____	☐	☐	☐	☐

CITY OF HAWTHORNE
LOCAL HAZARD MITIGATION PLAN PROJECT
LHMP Community Survey

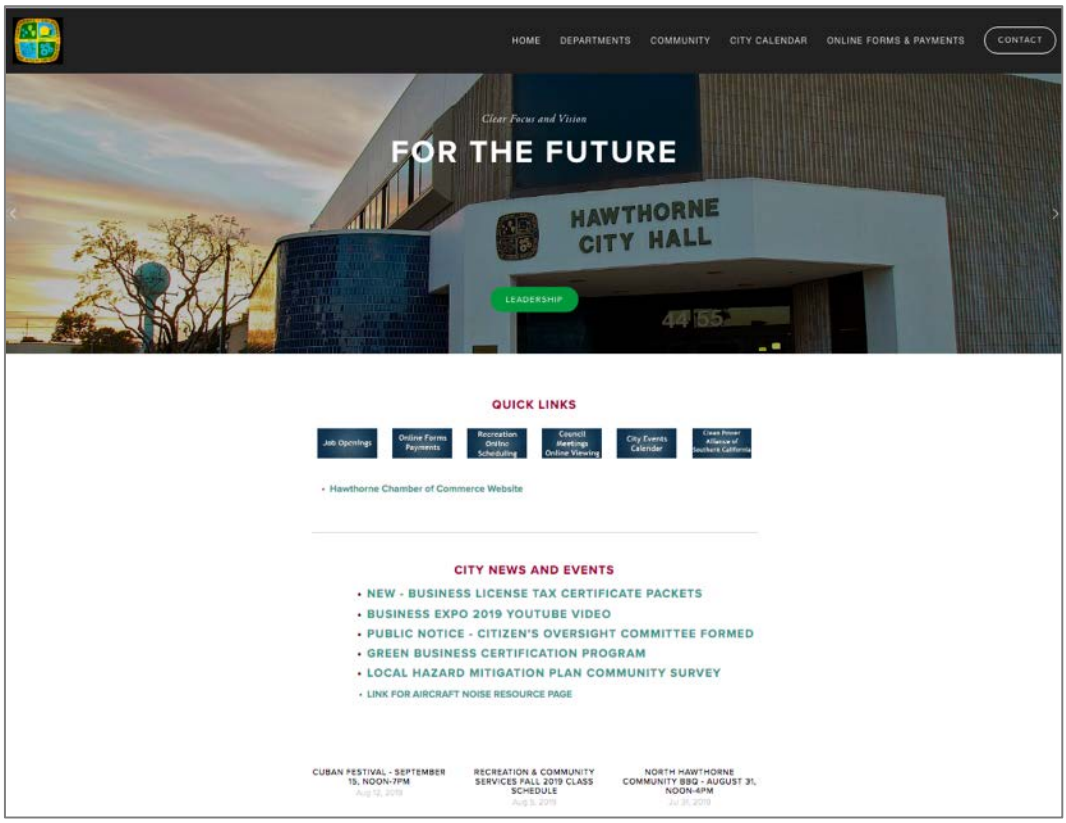
6. **Do you or anyone in your household have disabilities and/or access and functional needs and would you be interested in early warning notifications or specialized response to evacuate during disasters?**
   - ☐ Yes
   - ☐ No
   - ☐ Other (Please Specify):

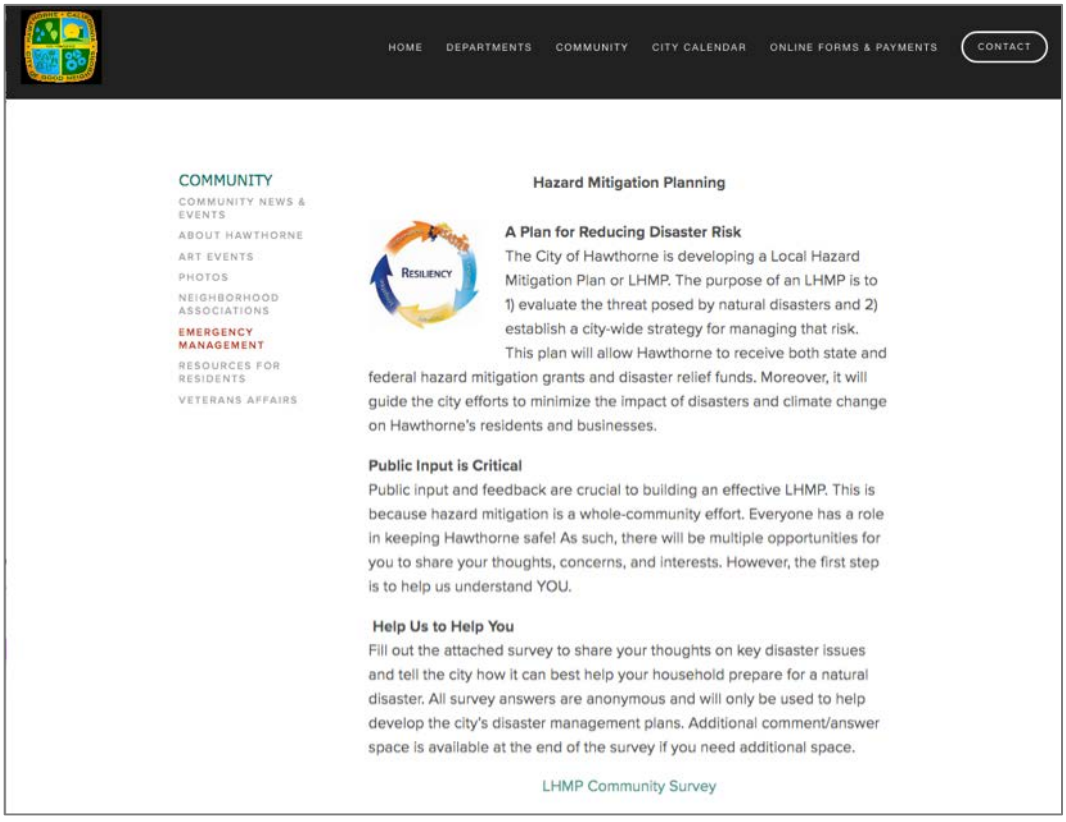
7. **If you answered yes to Question 6: do you have a certified service animal that you would be interested in evacuating with you or a household member to a shelter during a disaster?**
   - ☐ Yes
   - ☐ No
   - ☐ Other (Please Specify):

8. **If you answered yes to Question 6: would you be interested in more information about Disaster Assistance for people with disabilities and / or access and functional needs?**
   - ☐ Yes
   - ☐ No
   - ☐ Other (Please Specify):

Additional Comments/Answer Space:

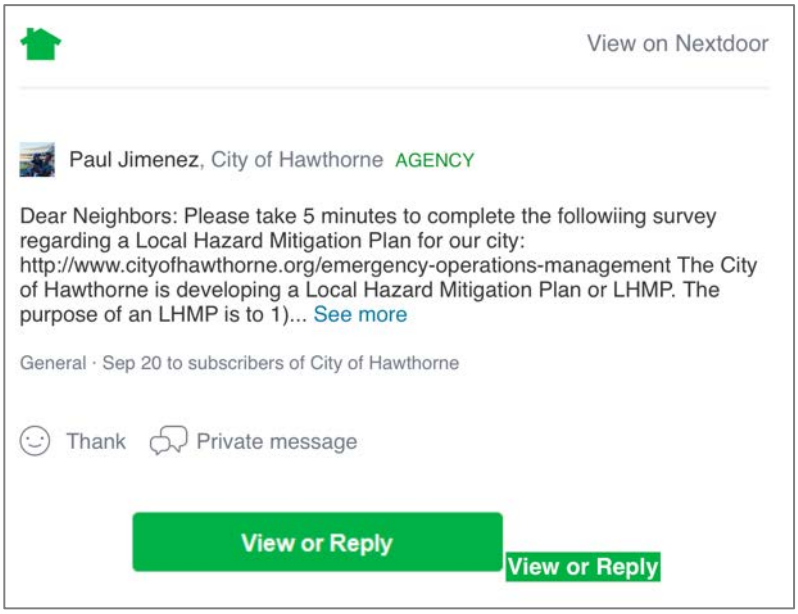
Website Posting and Online Survey &





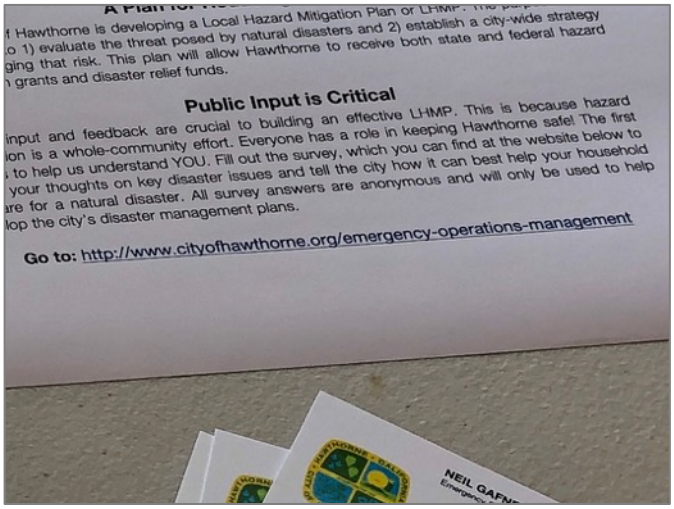
Social Media Posting – Facebook &

Social Media Posting - NextDoor



Local Community TV Channel Broadcast &

Homeowners Association Meeting &



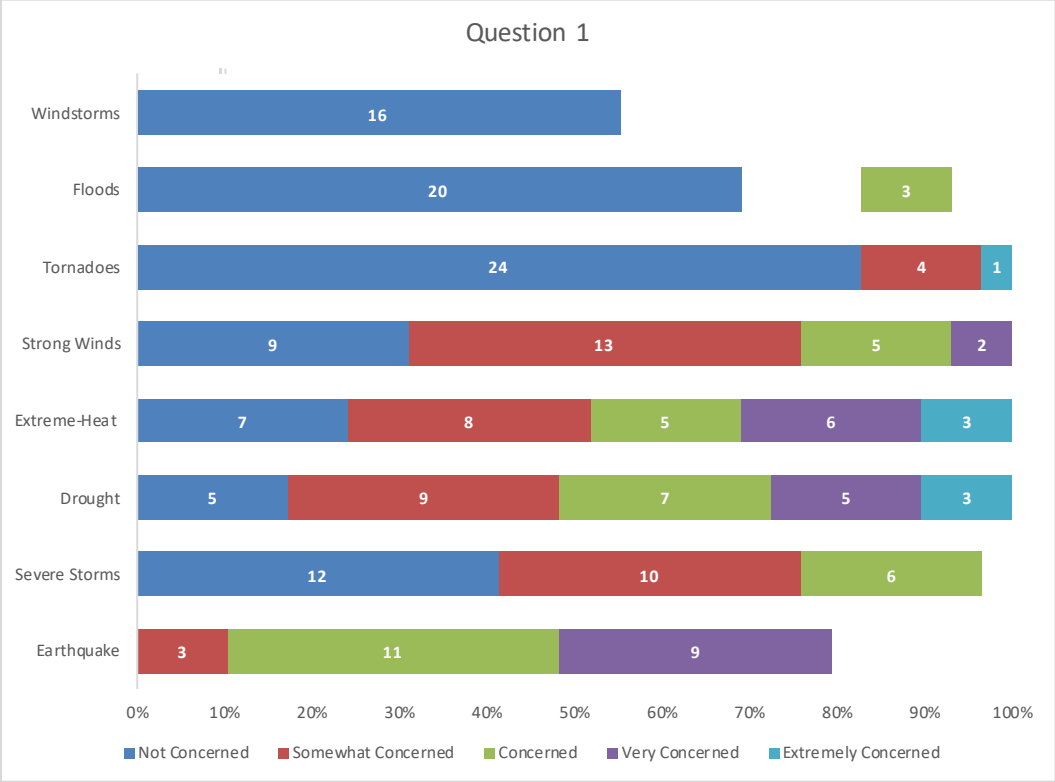
Photos from the local Homeowners Association meeting on August 3, 2019.

National Night Out Event Booth &

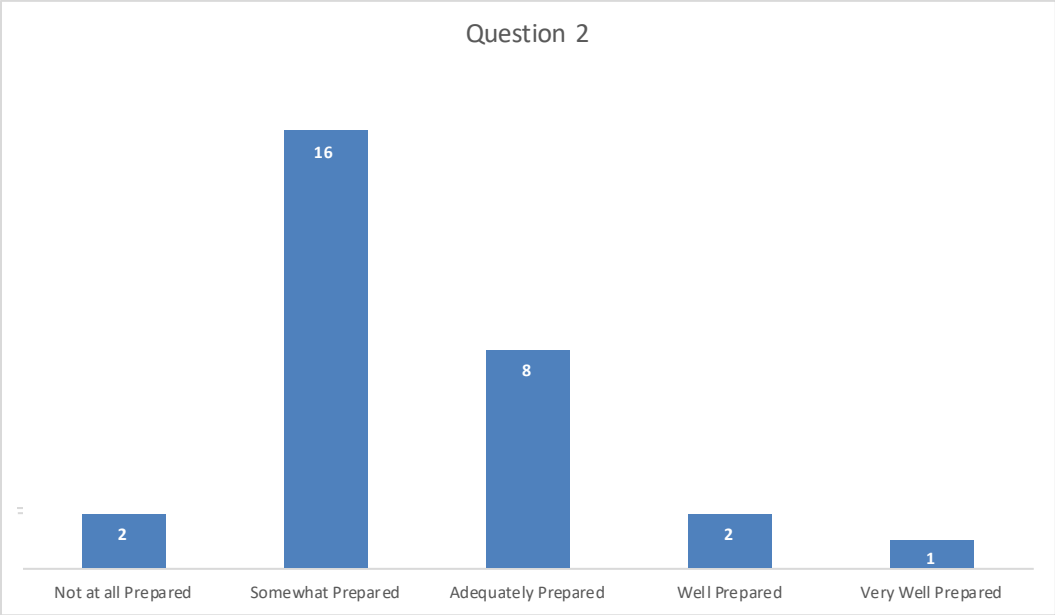
Photos from the City's booth at the National Night Out event on August 6, 2019.

Survey Results

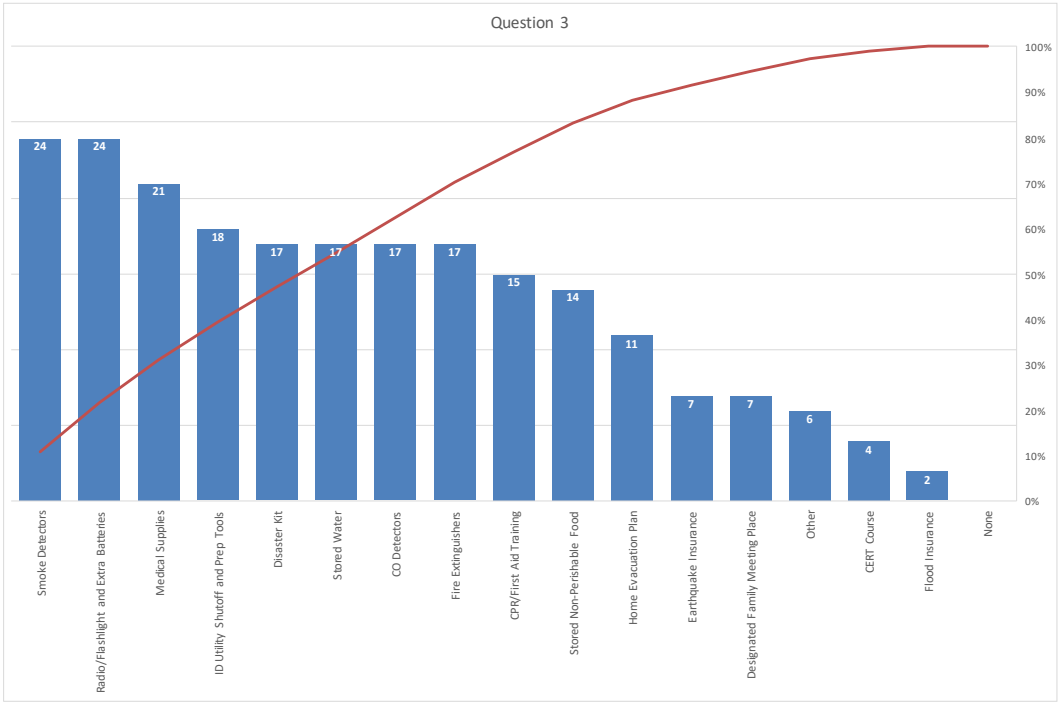
Question 1. Residents and businesses in Hawthorne face a number of potential hazards. How concerned are you about the following hazards? (Check on for each hazard)



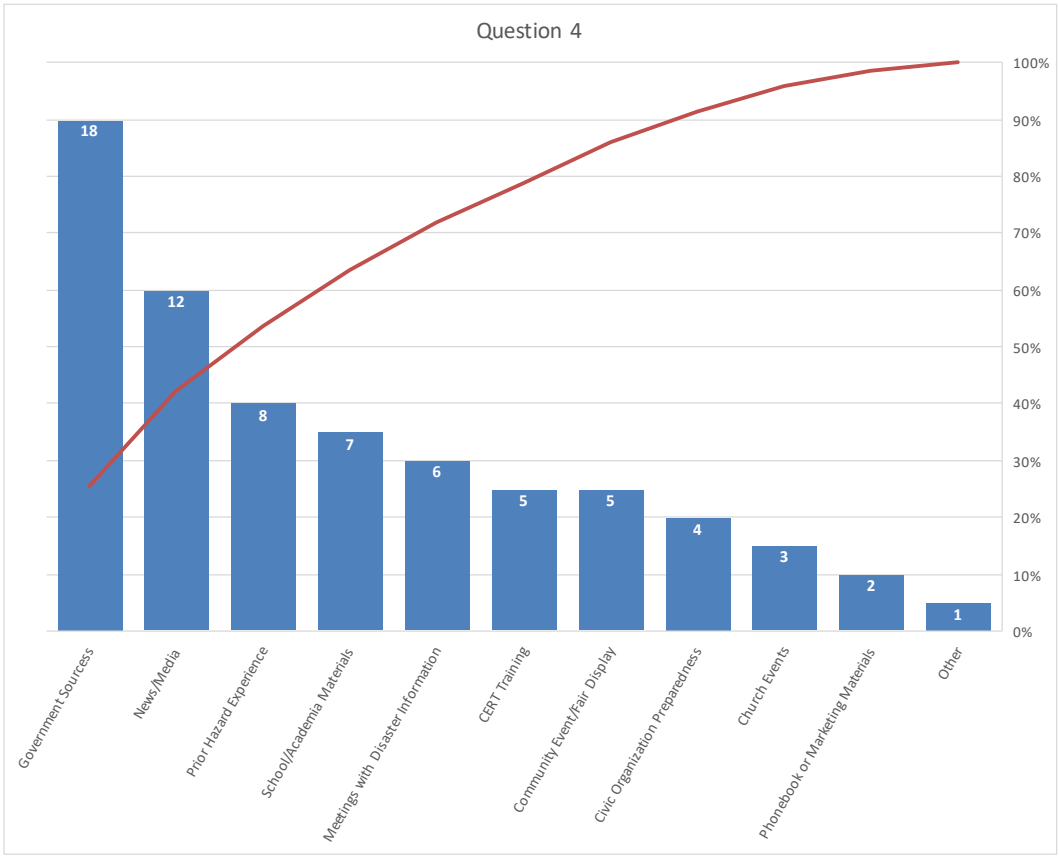
Question 2. How prepared is your household to cope with a hazard event? (Check one)



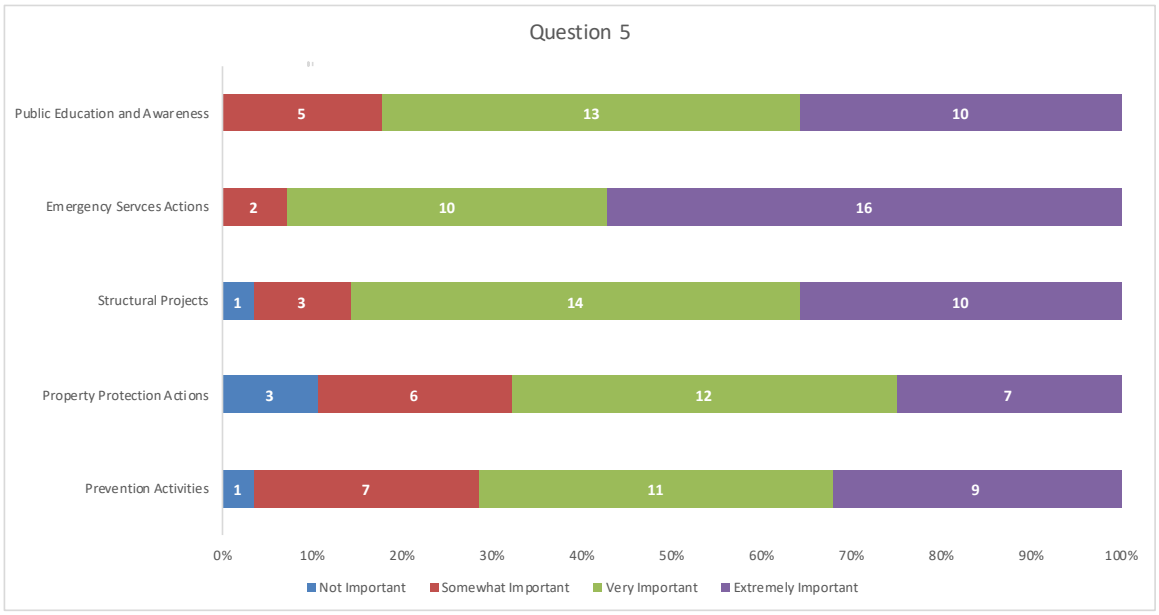
Question 3. Which of the following actions has your household taken to prepare for hazard events? (Check all that apply)



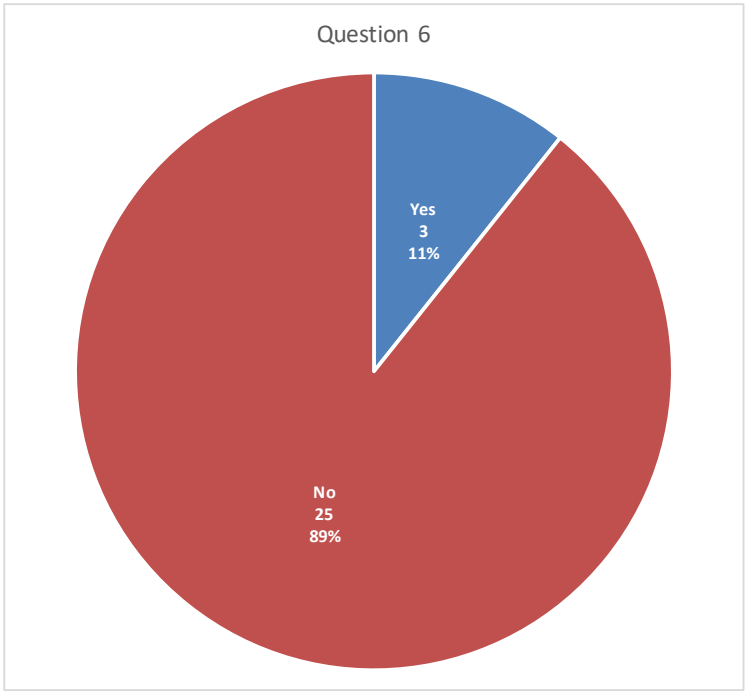
Question 4. Which of the following sources of information have helped you to prepare for a hazard event? (Check all that apply)



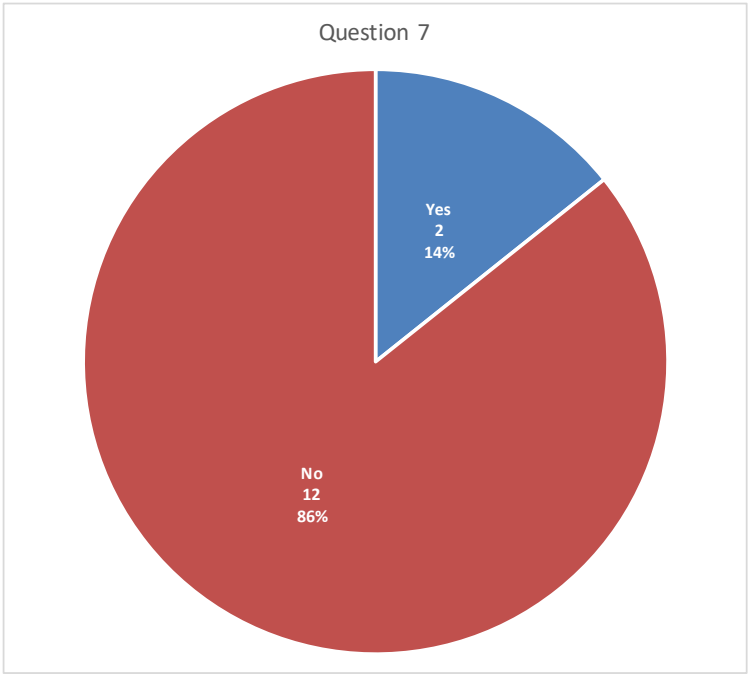
Question 5. How important do you find the following community-wide actions or activities that may reduce the risk of hazards in Hawthorne?



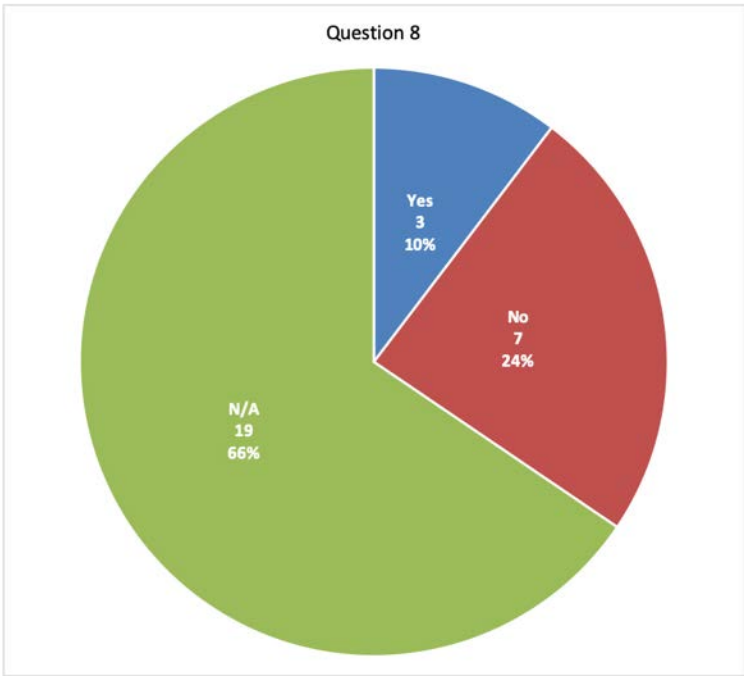
Question 6. Do you or anyone in your household have disabilities and/or access and functional needs and would you be interested in early warning notifications or specialized response to evacuate during disasters?



Question 7. If you answered yes to question 6: do you have a certified service animal that you would be interested in evacuating with you or a household member to a shelter during a disaster?



Question 8. If you answered yes to question 6: would you be interested in more information about Disaster Assistance for people with disabilities and/or access and functional needs?



Additional Comments / Answer Space:

- You should start a community based task force dedicated to community Disaster Preparedness

APPENDIX D – MITIGATION ACTION PRIORITIZATION (STAPLEE)

The following worksheets were developed to support the planning team evaluate hazard mitigation options using the STAPLEE method. These worksheets follow the FEMA State and Local Mitigation Planning How-To Guide: Developing the Mitigation Plan – Identifying Mitigation Actions and Implementation Strategies published by FEMA in 2003.

STAPLEE Prioritization Tool
(Scoring: "+" = 1 point, "-" = -1 point, "n/a" = 0 point, "n/k" = not known)

	S Social		T Technical			A Administrative			P Political			L Legal			E Economic				E Environmental					
Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	**Priority Total (net)**
1.1 Develop a program to assess the City for soft story buildings requiring seismic retrofitting. Consider implementing a Soft Story Seismic Retrofit Ordinance.	+	+	+	+	n/k	+	0	0	+	+	+	+	+	0	+	-	+	-	0	0	+	+	+	**13**
1.2 Encourage seismic strength evaluations of critical facilities in the City to identify building integrity.	+	+	+	+	+	+	0	0	+	+	+	+	+	+	+	-	+	-	0	0	+	+	+	**15**

Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	**Priority Total (net)**
1.3 Continue to ensure that new buildings comply with CBC seismic requirements.	+	+	+	+	+	+	+	0	+	+	+	+	+	0	+	-	+	-	0	0	+	+	+	**15**
1.4 Evaluate City and non-City facilities identified as potential shelter sites for structural integrity.	+	+	+	+	+	0	0	0	+	+	+	+	+	+	+	-	+	0	0	0	0	+	+	**14**
1.5 Identify and pursue funding opportunities to develop and implement local mitigation activities. Provide information on tools; partnership opportunities, and funding resources to assist in implementing mitigation activities.	+	+	+	+	+	0	0	0	+	+	+	+	+	+	+	0	+	0	0	0	0	+	+	**15**
1.6 Consider improving emergency communications by implementing a redundant communications system, including an evaluation of communication protocols.	+	+	+	+	+	0	-	0	+	+	+	+	+	+	+	-	+	0	0	0	0	+	+	**13**

Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	**Priority Total (net)**
2.1 Develop a public outreach/ awareness program about the hazards in Hawthorne and mitigation actions community members can do in their homes.	+	+	+	+	+	0	0	0	+	+	+	+	+	+	+	0	+	0	0	0	0	+	+	**15**
2.2 Increase public awareness of hazards to businesses as a means to reduce the potential damage from each hazard through educational and outreach.	+	+	+	+	+	0	0	0	+	+	+	+	+	+	+	0	+	0	0	0	0	+	+	**15**
2.3 Develop inventories of City owned at-risk buildings and infrastructure. Prioritize mitigation projects.	+	+	+	+	+	+	0	0	+	+	+	+	+	-	+	0	+	0	+	0	0	+	+	**15**
2.4 Place more stress on the risks associated with natural and manmade hazards at public awareness campaigns conducted by various City departments. Consider developing and distributing public education materials for natural hazards.	+	+	+	+	+	0	0	0	+	+	+	+	+	0	+	0	+	0	0	0	0	+	+	**14**

Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	**Priority Total (net)**
3.1 Improve hazard assessment information to make recommendations for avoiding new development in high hazard areas. Encouraging preventative measures for existing development in areas vulnerable to natural, man-made, and technological hazards.	+	+	+	+	+	0	0	0	+	+	+	+	+	-	+	0	+	0	+	0	+	+	+	**15**
3.2 Seek to implement codes, standards, and policies that will protect life and property from the impacts	+	+	+	+	+	+	0	0	+	+	+	+	+	+	+	0	+	0	0	0	0	+	+	**16**
3.3 Inventory and develop replacement values for all City-owned assets to help the City better understand the values of assets at risk.	+	+	+	+	+	+	0	0	+	+	+	+	+	+	+	0	+	0	0	0	0	+	+	**16**
3.4 Integrate appropriate items from the LHMP into the Safety Element of the General Plan and other	+	+	+	+	+	+	0	0	+	+	+	+	+	+	+	+	+	0	0	0	0	+	+	**17**

Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	**Priority Total (net)**
3.5 Propose policy to ensure mitigation projects for critical facilities, services, and infrastructure.	+	+	+	+	+	+	0	0	+	+	+	+	+	+	+	0	+	0	+	0	0	+	+	**17**
3.6 Inspect and repair the City reservoirs.	+	+	+	+	+	0	0	0	+	+	+	+	+	0	+	-	+	0	+	0	0	+	+	14
3.7 Consider conducting a survey to determine the location of underground pipelines throughout the Cities and developing maps accordingly.	+	+	+	+	+	0	0	+	+	+	+	+	+	0	+	0	+	0	0	0	+	+	+	17
3.8 Conduct tree survey and perform required maintenance.	+	+	+	0	+	+	+	0	+	+	+	+	+	0	+	0	0	0	0	0	0	+	+	14
3.8.1 Ensure the ongoing implementation of tree trimming throughout the City.	+	+	+	0	+	+	+	0	+	+	+	+	+	0	+	0	0	0	0	0	0	+	+	14

Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	**Priority Total (net)**
3.9 Consider configuring the Public Works Yard with emergency backup power.	+	+	+	+	+	0	0	+	+	+	+	+	+	0	+	-	+	0	0	0	0	0	+	13
3.10 Consider configuring the Memorial Center with emergency backup power.	+	+	+	+	+	0	0	+	+	+	+	+	+	0	+	-	+	0	0	0	0	0	+	13
3.11 Consider reviewing potential mitigation projects for the Water Tower.	+	+	+	+	+	0	0	+	+	+	+	+	+	0	+	-	+	0	+	0	0	+	+	15
3.12 Conduct seismic strengthening of the City sewer system.	+	+	+	+	+	0	0	+	+	+	+	+	+	0	+	-	+	0	+	0	0	+	+	15
3.13 Conduct City owned bridge repairs.	+	+	+	+	+	0	0	+	+	+	+	+	+	0	+	-	+	0	+	0	0	+	+	15

Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	**Priority Total (net)**
3.14 Retrofit and upgrade City storm drain system.	+	+	+	+	+	0	0	+	+	+	+	+	+	0	+	-	+	0	+	0	0	+	+	15
4.1 Strengthen communication and coordination with public agencies, residents, non-profit organizations, business and industry to create interest in the implementation of mitigation measures.	+	+	+	+	+	+	0	+	+	+	+	+	+	0	+	0	+	0	0	0	0	0	+	+	16
4.2 Increase effectiveness of City emergency services by implementing mitigation programs and projects that aid emergency responders and public safety departments during emergencies.	+	+	+	+	+	0	0	+	+	+	+	+	+	0	+	-	+	-	0	0	0	+	+	13
4.2.1 Hire an Emergency Medical Manager to respond to medical emergencies that may occur in a disaster	+	+	+	+	0	+	0	+	+	+	+	+	+	0	+	-	0	0	0	0	+	+	+	14

Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	**Priority Total (net)**
4.2.2 Participate in South Bay Emergency Alert System	+	+	+	+	+	+	0	0	+	+	+	+	+	0	+	-	0	0	0	0	0	+	+	**13**
4.3 Encourage leadership within the City and businesses to prioritize and implement local and regional hazard mitigation activities.	+	+	+	+	+	+	0	0	+	+	+	+	+	0	+	0	+	0	0	0	0	+	+	**15**
4.4 Continue developing and strengthening inter-jurisdictional coordination and cooperation in the area of emergency services.	+	+	+	+	+	+	0	0	+	+	+	+	+	0	+	0	+	0	0	0	0	+	+	**15**
4.5 Continue to develop mutual aid agreements and memorandum of understanding with agencies to serve emergency and disaster purposes.	+	+	+	+	+	+	0	0	+	+	+	+	+	0	+	0	+	0	0	0	0	+	+	**15**

Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	**Priority Total (net)**
4.6 Continue to coordinate with pipeline owners including So Cal Gas, Chevron, Exxon, Golden State Water, Cal Water, So Cal Edison, ATT, and MCI to ensure ongoing pipeline / mechanical integrity.	+	+	+	+	+	+	0	+	+	+	+	+	+	0	+	0	+	0	+	0	+	+	+	**18**
4.7 Continue to coordinate with agencies to implement water use restrictions and projects during periods of drought and water emergencies.	+	+	+	+	+	+	0	0	+	+	0	+	+	-	+	0	+	0	+	0	0	+	+	**14**
5.1 Create a redundant data center and complete fiber to that location. Decentralize key components of the City's core network to allow the network to survive the failure of any one site from a disaster.	+	+	+	+	+	0	-	+	+	+	+	+	+	0	+	-	+	0	0	0	0	+	+	**12**

Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	**Priority Total (net)**
5.2 Coordinate with the utility companies and vendors to strengthen, safeguard, or take other appropriate measures such as providing supplemental services, to protect and secure high-voltage lines, water, sewer, natural gas and petroleum pipelines, and trunk electrical and telephone conduits from hazards.	+	+	+	+	+	+	0	+	+	+	+	+	+	0	+	0	+	0	+	0	+	+	+	**18**
5.3 Build a cadre volunteers to augment disaster response and recovery efforts in compliance with the California Disaster Service Worker program guidance, Community Emergency Response Team, communications staff, medical and health, and human services, during and after a disaster.	+	+	+	+	+	+	0	0	+	+	+	+	+	0	+	0	+	0	0	0	0	+	+	**15**

Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	**Priority Total (net)**
5.4 Develop the City's Continuity of Operations / Continuity of Government Plan and update the EOP.	+	+	+	+	+	0	0	0	+	+	+	+	+	0	+	-	+	-	+	0	0	+	+	**13**
5.5 Coordinate with HPD and RCC Los Angeles County on hazard mitigation efforts for Hawthorne to protect two-way radio equipment from hazards by bracing antennas, securing repeaters, etc. from hazards.	+	+	+	+	+	0	0	0	+	+	+	+	+	0	+	-	+	0	+	0	0	+	+	**14**
5.6 Consider purchasing a utility helicopter to serve the South Bay in the event of an emergency.	+	+	+	+	+	0	-	-	+	+	+	+	+	0	+	-	+	-	0	0	0	+	+	**10**
5.7 Consider purchasing emergency shelters and medical supplies and/or coordinate agreements with local businesses to maintain supplies in the event of an emergency.	+	+	+	+	0	0	0	0	+	+	+	+	+	0	+	-	+	0	0	0	0	+	+	**14**

APPENDIX E – ADOPTION INTO THE GENERAL PLAN (SAFETY ELEMENT (RESOLUTION) (

APPENDIX F – ACRONYMS

APG	Adaptation Planning Guide
BCA	Benefit-Cost Analysis
BCR	Benefit-Cost Ratio
Cal OES	California Office of Emergency Services
CARB	California Air Resource Board
CBSC	California Building Standards Commission
CDAA	California Disaster Assistance Act
CDBG	Community Development Block Grants
CEQA	California Environmental Quality Act
CO_2	Carbon Dioxide
CPRI	Calculated Priority Risk Index
CPUC	California Public Utilities Commission
DMA 2000	Disaster Mitigation Act of 2000
DTSC	State Department of Toxic Substances Control
DWR	Department of Water Resources
EO	Executive Order
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
ER	Emergency Room
F	Fahrenheit
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FMA	Flood Mitigation Assistance
GHG	Greenhouse Gas
HMA	Hazard Mitigation Assistance
HMGP	Hazard Mitigation Grant Program
ITCZ	Intertropical Convergence Zone
LAX	Los Angeles International Airport

LHMP	Local Hazard Mitigation Plan
LPG	Liquid Petroleum Gas
M	Magnitude
MMI	Modified Mercalli Intensity
NFIP	National Flood Insurance Program
NWS	National Weather Service
OMB	Office of Management and Budget's
OSFM	Office of the State Fire Marshall
PDM	Pre-Disaster Mitigation
PG&E	Pacific Gas and Electric Company
PHMSA	Pipeline and Hazardous Materials Safety Administration
RFC	Repetitive Flood Claims
RL	Repetitive Loss
SCADA	System Control and Data Acquisition
SHMO	State Hazard Mitigation Officer
STAPLEE	Social, Technical, Administrative, Political, Legal, Economic, and Environmental