# CITY OF HERMOSA BEACH
# LOCAL HAZARD
# MITIGATION PLAN

## Record of Reviews and Revisions

| Revision # | Date | Sections Reviewed or Revisions Made | Entered by |
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## 7. Mitigation Strategy



## 8. Implementation



## 9. Changes from 2011 LHMP



## Appendices

The City of Hermosa Beach (City) has prepared the 2017 Local Hazard Mitigation Plan (LHMP) in order to assess the natural, technological, and human-caused risks to the City of Hermosa Beach and to reduce the potential impact of the hazards by creating mitigation strategies. The 2017 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 (DMA 2000) (Public Law 106-390), 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 of Hermosa Beach has coordinated preparation of the LHMP in cooperation with stakeholders, partner agencies, 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 2017 LHMP. There is also an overview of Federal Emergency Management Agency (FEMA) programs and grants related to hazard mitigation.

## 1.1 The Federal Disaster Mitigation Act of 2000

The DMA 2000 provides the legal basis for the FEMA mitigation planning requirements for State, local, and Indian Tribal governments as a condition of mitigation grant assistance. The DMA 2000 mitigation planning provisions, along with other sections of the Act, provide a significant opportunity to reduce disaster losses across the nation. The language in DMA 2000, taken as a whole, emphasizes the importance of strong State, Tribal, and local planning processes, and comprehensive mitigation program management at the State level. FEMA strongly believes that with hazard mitigation planning, as with similar efforts, that the process is as important as the resultant plan. Therefore, the plan is considered the written record, or documentation of the planning process or development of a product (such as goals, or hazard identification).

The development, approval, and implementation of this LHMP can dramatically reduce future risk and loss by evaluating risk and identifying mitigation actions. Having an LHMP that is current and certified by FEMA will also assist the City in qualifying for several types of funding offered by FEMA including Hazard Mitigation Grant Program (HMGP) HMPG funding, which can be used to enhance the resiliency of facilities, is governed by Sections 404 and 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), 42 U.S.C. 5172. The Stafford Act provides FEMA with the authority to fund cost-effective mitigation measures under the Public Assistance program in conjunction with the repair of disaster-damaged public facilities. In addition, the LHMP improves the City's access to other types of Federal disaster assistance, including funds for permanent repairs.

## 1.2 Local Hazard Mitigation Planning Purpose

As the costs of damage from natural disasters continue to increase, governmental agencies and the general public have recognized the importance of identifying effective ways to reduce vulnerability and losses from natural disasters. The LHMP assists communities in reducing impacts from hazards by evaluating vulnerabilities to various hazards, identifying resources, creating an orderly data collection process, developing strategies for risk reduction, and helping to guide and coordinate mitigation activities.

## 1.3 City of Hermosa Beach Hazard Mitigation Planning

The City's LHMP has been developed to meet the requirements of DMA 2000 and reduce risks posed by hazards in order to protect the community. Regular updates to the LHMP are required to occur every five years to comply with the guidance of DMA 2000. The most recent update to the LHMP occurred in 2011. Completion of this updated LHMP and approval by FEMA will support the City's efforts to reduce hazards, and to apply for pre- and post-disaster funding opportunities. This increased eligibility for grant programs affords the City an opportunity to prepare for the future and work with neighbors to protect the local community.

## 1.4 Scope and Organization

The LHMP is comprised of a base plan and a series of appendices to document the process of developing the plan. **Table 1-1** provides an outline of the LHMP. 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.

Table 1-1: Hazard Mitigation Plan Sections and Descriptions

| Section | Description |
|---|---|
| **Section 1: Introduction** | Includes an introduction to hazard mitigation planning, lists the LHMP planning requirements, and provides a description of the plan. |
| **Section 2: Planning Process** | Describes the planning process for the update to the LHMP, including an overview of how the LHMP was prepared, identification of the LHMP planning team, involvement of outside agencies and the community, the inclusion of related plans, reports and information as well as stakeholder and public outreach activities. |
| **Section 3: Community Profile** | Provides information on the geography, demographics, infrastructure, and land uses of the city that are important considerations in evaluating hazards and developing appropriate mitigation strategies. |
| **Section 4: Hazard Assessment** | Profiles of each of the potential hazards that could affect Hermosa Beach, and provides a summary of the potential exposure and vulnerability to each hazard. |
| **Section 5: Risk Assessment** | Identifies the built environment, economy, natural resources, and people that may be exposed or vulnerable to the identified hazards. |
| **Section 6: Capability Assessment** | Identifies and evaluates the resources available for hazard mitigation activities within the city including plans and programs, technical, fiscal, administrative and political, and education and outreach capabilities. |
| **Section 7: Mitigation Strategy** | Provides an assessment on the status of current, ongoing, and completed mitigation projects and programs and identifies new mitigation strategies that reflect the vulnerabilities, capabilities, and needs of the community. |
| **Section 8: Implementation** | Describes how the City will implement and maintain the LHMP through mitigation actions and ongoing outreach. |
| **Section 9: Changes from 2011 LHMP** | Identifies the changes in hazards, demographic profile, and strategies to mitigate hazards since the LHMP was last updated in 2011. |
| **Appendices:** | |
| **Appendix A:** | Local Mitigation Plan Review Tool Crosswalk |
| **Appendix B:** | References |
| **Appendix C:** | Planning Process Documentation |
| **Appendix D:** | Community Engagement Documentation |
| **Appendix E:** | Mitigation Action Plan Prioritization |
| **Appendix F:** | Plan Maintenance Documentation |
| **Appendix G:** | Plan Adoption Resolution |
| **Appendix H:** | Public Safety Element and LHMP Integration |
| **Appendix I:** | Glossary of Terms |

## 1.5 Authority

The requirements for adoption of this LHMP by all local governing bodies, as set forth in the Stafford Act and as amended by DMA 2000, and its implementing regulations are described below. The City Council approved this LHMP on March 27, 2018. The local planning requirements are documented throughout the LHMP and in **Appendix A**, FEMA Crosswalk. This is documented in the governing body meeting resolution documented in the **Appendix G.**

FEMA REGULATION CHECKLIST: PLAN ADOPTION

Adoption by the Local Governing Body

**44 CFR § 201.6(c)(5):** The local hazard mitigation plan shall include "[d]ocumentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council)."

Element

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

*Source: FEMA, Local Mitigation Plan Review Tool, March 2013.*

## 1.6 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 programs are authorized under the National Flood Insurance Act and the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act.

### 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 percent of the total disaster grants awarded by FEMA under Stafford Act programs, and may provide up to 75 percent of the cost of any projects approved under the program.

#### *Pre-Disaster Mitigation (PDM) Program*

The PDM program provides funds to state, local, and tribal entities for hazard mitigation planning and mitigation projects prior to a disaster event. PDM grants are awarded on a nationally competitive basis. The economic 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. For 2016 Congress appropriated $90 million for PDM. The Federal government provides up to 75 percent of the cost of projects approved under the PDM program.

### National Flood Insurance Act Grant Programs

The Flood Mitigation Assistance (FMA) Grant Program was created as part of the National Flood Insurance Reform Act (NFIRA) of 1994 with the goal of reducing or eliminating claims under the NFIP. Consistent with Biggert-Waters Flood Insurance Reform Act of 2012 (Public Law 112-141), the FMA Grant Program is focused on mitigating repetitive loss (RL) properties and severe repetitive loss (SRL) properties.

#### *Flood Mitigation Assistance Grant Program*

The primary source of funding for the FMA program is the National Flood Insurance Fund. For 2016, Congress appropriated $199 million for FMA programs. Grant funding is available for planning, project, and technical assistance. Project grants are awarded to local entities to reduce flood losses to properties insured under the NFIP. The cost-share for this grant is 75 percent federal and

25 percent nonfederal. However, a 90 percent federal and 10 percent nonfederal cost-share is available in certain situations to mitigate severe repetitive loss (SRL) properties.

### *Repetitive Flood Claims (RFC) Program*

The 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. All RFC grants are eligible for up to 100 percent federal assistance.

### *Severe Repetitive Loss Program*

The SRL Program provides funding to reduce or eliminate the long-term risk of flood damage to residential structures insured under the NFIP. Structures considered for mitigation must have had at least four NFIP claim payments over $5,000 each, with a cumulative amount of such claims payments exceeds $20,000; or for which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building, and at least two of the referenced claims must have occurred within any ten-year period, and must be greater than 10 days apart. The cost-share for this grant is 75 percent federal, 25 percent nonfederal. There is a cost-share of 90 percent federal, 10 percent nonfederal, available to mitigate SRL properties when the state or tribal plan addresses ways to mitigate SRL properties.

# 2. Planning Process

This section summarizes hazard mitigation planning efforts in 2017 and describes public and stakeholder outreach efforts. The section also summarizes the review and incorporation of existing plans, studies and reports used to develop the LHMP. The requirements for documenting the LHMP planning process are described below.

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)

**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)

*Source: FEMA, Local Mitigation Planning Handbook Review Tool, March 2013*

Documentation of planning team participation in the 2017 LHMP planning process is provided in **Appendix C**. Documentation of the community engagement process is found in **Appendix D**. These appendices document the planning meetings and outreach, and include meeting agendas, presentation materials and other documentation used to conduct the planning process.

## 2.1 Overview of Hazard Mitigation Plan Update Process

The City of Hermosa Beach (City) has prepared the 2017 Local Hazard Mitigation Plan (LHMP) in order to assess the natural, technological, and human-caused risks to the City of Hermosa Beach and to reduce the potential impact of the hazards by creating mitigation strategies. The 2017 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:

1. **Assess risks** - PLAN Hermosa, the City's General Plan and Coastal Land Use Plan and the 2011 LHMP were reviewed to assure that the hazards identified reflected the best-available assessment of the natural or human-caused risks to the city of Hermosa Beach. A summary of recent events was also compiled to identify any new hazards are present and whether an increase in the frequency or severity of hazards occurred since the 2011 LHMP. Other multi-hazard mitigation plans that have been approved by FEMA for neighboring jurisdictions were also reviewed.
2. **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 includes plans and programs, technical, fiscal, administrative and political, and education and outreach capabilities.
3. **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.
4. **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 PLAN Hermosa. 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.

## 2.2 General Plan Safety Element

In October 2006, the California State Legislature passed AB 2140 – the California Disaster Assistance Act - which went into effect January 1, 2007. AB 2140 limits the state's share of funding for disaster recovery projects to 75% of the recovery costs unless a local jurisdiction has complied with the legislation by incorporating the Local Hazard Mitigation Plan as part of the safety element of the general plan, at which point up to 100% of the recovery costs may be covered by the State.

By incorporating the LHMP by reference into the Public Safety Element of the General Plan, Hermosa Beach 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, would 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 PLAN Hermosa document, implementation plans, background studies, and is referenced in the City Council Resolution 18-7124 adopted on March 27, 2018 as identified in **Appendix H**.

## 2.3 Hazard Mitigation Planning Team

In early 2017, 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 Manager, who is responsible for managing the update to the LHMP. 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: Hazard Mitigation Planning Team

| Department | Name | Title |
|---|---|---|
| **Fire Department** | Brandy Villanueva | Emergency Manager, Project Manager |
| **City Manager** | Kristy Morris | Environmental Analyst |
| **City Manager** | Leeanne Singleton | Environmental Analyst |
| **Community Development** | Kim Chafin | Senior Planner |
| **Community Development** | Bob Rollins | Building Official |
| **Public Works** | Ells Freeman | Public Works Superintendent |
| **Public Works** | Lucho Rodriguez | Senior Engineer |

Key efforts by the hazard mitigation planning team included:

- Review of progress since the last HMP update
- Review of existing City plans and programs
- Identification of critical assets
- Hazards identification and risks assessment
- Mitigation strategies development
- Engagement with community in the planning process
- Solicitation and incorporation of feedback from external stakeholders and the public

Neighboring jurisdictions were invited to participate in the planning process. They included the Cities of El Segundo, Gardena, Hawthorne, Hermosa Beach, Inglewood, Lawndale, Lomita, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Torrance and Los Angeles County. The screenshot below contains the email sent to the neighboring jurisdictions. **Table 2-2** contains the invitees' jurisdictions and positions,

**From:** Brandy Villanueva
**Sent:** Tuesday, May 02, 2017 5:57 PM
**To:** Alexa Davis (RHE); Arnold Shadbehr-Acting CM HAW ; Brandy Villanueva; Brian Walker (Inglewood) ; Deborah Holland (Lawndale-2); Dennis Hernandez (Hawthorne-2); DMAC G-Jeffrey Robinson ; Ewa Nikodem (Rolling Hills 2); FC Chris Donovan (ES); FC Robert Metzger (RB); Gary Sugano Acting CM (Lomita-2); Gina Konrad; Greg Grammer (Rolling Hills Estates); Issac Yang (Redondo Beach 1); Jaime Guerrero (Lawndale); Jason Kilpatrick (Redondo Beach-3); Laura Vander Neut (Lomita 1); Marcelle Herrera (Palos Verdes Estates) ; Mark Velez (PVE); Mike Boyd (MB); Mike Falkow (Inglewood-2); Ray Cruz (Rolling Hills) ; Ronald Laursen (Manhattan Beach); Scott Hafdell (MB1); Shawn Bonfield (ES); Soraya Sutherlin (Torrance); Tracy Bonano (Rancho Palos Verdes); Uikilifi Niko (Gardena); Vicente Osorio (Gardena)
**Subject:** Hermosa Beach Local Hazard Mitigation Plan

Dear Area G Cities:

The City of Hermosa Beach is preparing a Local Hazard Mitigation Plan (LHMP), an important disaster preparedness tool that serves to reduce loss of life and property by lessening the impact of disasters.

In order to be eligible to receive grant funding, the plan must be created and then approved by California Office of Emergency Services (CalOES) and the Federal Emergency Management Agency (FEMA).

**HOW YOU CAN HELP**

- Take the online survey here: https://www.surveymonkey.com/r/Z8R6TWQ
- Attend our **Local Hazard Mitigation Plan Town Hall on Wednesday, May 3 at 7 p.m.** in the City Council Chambers (1315 Valley Dr.), where input, questions and suggestions from the community will be included in the City's LHMP plan to reduce losses when facing a catastrophic event.
- Review the draft of the Local Hazard Mitigation Plan: http://www.hermosabch.org/index.aspx?page=898 and submit your comments via email to oem@hermosabch.org. Public comment period will be open until May 15, 2017.

If you have any questions, please feel free to contact me.

Thank you

Brandy Villanueva
Emergency Management Coordinator
Hermosa Beach Fire Department

☎: 310-318-0340 office, 310-947-0341 cell
: bvillanueva@hermosabch.org
✉: 1315 Valley Drive, Hermosa Beach, CA 90254
www.hermosabch.org
Hours: Monday – Thursday, 7:00am – 6:00pm

Table 2-2: Neighboring Jurisdiction Invitations

| Name | City | Title |
|---|---|---|
| **Alexa Davis** | Rolling Hills Estates | Assistant to City Manager |
| **Arnold Shadbehr** | Hawthorne | Acting City Manager |
| **Brian Walker** | Inglewood | Emergency Services Manager |
| **Deborah Holland** | Lawndale | Municipal Services Manager |
| **Dennis Hernandez** | Hawthorne | Risk Manager |
| **Ewa Nikodem** | Rolling Hills | Administrative Assistant |
| **Chris Donovan** | El Segundo | Fire Chief |
| **Robert Metzger** | Redondo Beach | Fire Chief |
| **Gary Sugano** | Lomita | Assistant City Manager |
| **Gina Konrad** | Hermosa Beach | Administrative Assistant |
| **Greg Grammer** | Rolling Hills Estates | Assistant City Manager |
| **Issac Yang** | Redondo Beach | Fire Division Chief |

| | | |
|---|---|---|
| **Jaime Guerrero** | Lawndale | Emergency Services Coordinator |
| **Jason Kilpatrick** | Redondo Beach | Police Communications Supervisor |
| **Laura Vander Neut** | Lomita | Management Analyst |
| **Marcelle Herrera** | Palos Verdes Estates | Police Community Relations Officer/Emergency Services Coordinator |
| **Mark Velez** | Palos Verdes Estates | Acting Police Chief |
| **Mike Falkow** | Inglewood | Assistant City Manager |
| **Ray Cruz** | Rolling Hills | City Manager |
| **Ronald Laursen** | Manhattan Beach | Fire Battalion Chief |
| **Scott Hafdell** | Manhattan Beach | Fire Battalion Chief |
| **Shawn Bonfield** | El Segundo | Fire Battalion Chief//Emergency Preparedness |
| **Soraya Sutherli** | Torrance | Emergency Manager |
| **Tracy Bonano** | Rancho Palos Verdes | Senior Administrative Analyst/Emergency Manager |
| **Uikilifi Niko** | Gardena | Police Captain |
| **Vicente Osorio** | Gardena | Lieutenant, Administrative Services and Emergency Services Coordinator |

The 2011 City LHMP was the starting point for updating the LHMP. The hazard mitigation planning team used their previous hazards, assets, capabilities and mitigation actions as the basis for this update. The 2017 LHMP includes additional hazards such as climate change, drought, extreme heat, hazardous material releases, and terrorism as additional potential risk producing incidents. Climate change is included as a stand-alone hazard and incorporated, where appropriate, as an element of other hazards.

The team met five times to review development of the LHMP. These meeting were staggered to focus each meeting on a specific section of LHMP development. Documentation of the planning team meetings including agenda, meeting notes, presentations and sign-in sheets are included in **Appendix C**.

- **September 28, 2016** – Project kickoff meeting. This meeting was conducted between the City, and the consultant project manager and subject matter expert. The purpose was to review the project timeline, expectations, and roles and responsibilities.
- **January 11, 2017** – Planning team members reviewed the current progress of the LHMP update and included an analysis of potential hazards to include in the new LHMP. The meeting included discussion of climate change and sea-level rise and the need to align the Public Safety Element of the General Plan with the LHMP to be consistent with AB 2140.
- **February 8, 2017** – Planning team members reviewed hazards analysis and risk assessment. They selected mitigation goals and determined requirements to complete the LHMP including providing assets at risk, community capabilities and detailed mitigation strategies.
- **March 16, 2017** – Planning team members reviewed the updated hazard mitigation goals and conducted an analysis of the hazard mitigation activities. Each mitigation activity

was assigned to a responsible City department and aligned with a potential source of funding.

- **April 19, 2017** – Planning team members reviewed and provided input on a first draft of the updated Hazard Mitigation Plan.

## 2.4 Community Engagement Process

Once the planning process commenced, the City provided public notification through its website, and Facebook and Twitter accounts. Additionally, the City conducted an online survey to solicit input on the hazards that the City faces 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. **Appendix D** provides documentation of community outreach efforts and public participation.

## 2.5 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 2017 LHMP. These reports are categorized as local, regional, state, or federal resources and are listed below.

*Local*

- Plan Hermosa – General Plan/Coastal Land Use Plan was used to develop mitigation measures and describe land use patterns
- Hermosa Beach 2013-2021 Housing Element provided information on land use developing trends provided information on land use developing trends
- City of Hermosa Beach Strategic Plan provided information on land use developing trends
- Civic Facilities Assessment was used to develop mitigation actions based on facility vulnerabilities
- Sea Level Rise - Social Vulnerability Assessment provided information on the effects of sea level rise on various communities in the City
- Sea Level Rise - Infrastructure Vulnerability Assessment provided information on the effects of sea level rise on various communities in the City
- Hazard Materials Plan provided information on potential hazardous material releases
- Emergency Operations Plan contains hazard descriptions and a set of preparedness and response processes to address incidents. The EOP provided information used to develop mitigation activities
- Storm Water Program & Water Quality 2010 provided information on the potential for future flooding incidents

*Regional*

- SCAG 2017 Local Profile for the City of Hermosa Beach was used to provide information on the community profile for the City including demographics, economy, government and transportation
- LA County Office of the Assessor provided values for determining potential losses due to hazards and was used to develop **Table 5-1**, the City's asset inventory

*State*

- State of California Multi-Hazard Mitigation Plan 2013. The State LHMP was reviewed to ensure alignment of the City LHMP with state's hazard profiles and mitigation strategies.
- California Climate Adaptation Planning Guide (APG): The 2012 APG provides information on the effects of climate change on California, and provided adaptation planning guidance used in the development of the climate change hazard profile.
- 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 provides information on the potential effects of climate change.
- California Building Code of Regulation provided information on potential mitigation actions with respect to structures including design, construction and location
- California Fire Code provided information on potential mitigation actions with respect to structures including design, construction and location
- California Building Energy Efficient Standard provided information for consideration in developing climate change mitigation measures

*Federal*

- Ross, S.L., and Jones, L.M, eds., (2013). The SAFRR (Science Application for Risk Reduction) Tsunami Scenario, USGS Open-File Report 2013-1170 and CGS Special Report 229, http://pubs.usgs.gov/of/2013/1170/ was used to characterize the tsunami hazard
- United States Geological Survey. (2016, April). Earthquake Hazard. Retrieved from USGS: http://earthquake.usgs.gov/learn/glossary/?term=earthquake%20hazard Was used to characterize the earthquake hazard
- United States Geological Survey. (2016, April). Liquefaction Hazards Map. Retrieved from USGS: http://earthquake.usgs.gov/regional/nca/qmap/ Was used to characterize risk due to liquefaction
- United States Geological Survey. (2016, June). Earthquake Hazards Program. Retrieved from http://earthquake.usgs.gov/regional/nca/wg02/results.php Was used to characterize the earthquake hazard
- United States Geological Survey. (2016) http://earthquake.usgs.gov/learn/topics/mag_vs_int.php provided the Mercalli scale from a government source
- Federal Disaster Mitigation Act of 2000 served as a legal reference for developing the Plan update
- Federal Register 44 CFR Parts 201 and 206 provided details on implementation of the DMA 2000
- US Census Bureau, American Fact Finder, and Longitudinal Employment-Household Dynamics provided current demographic information

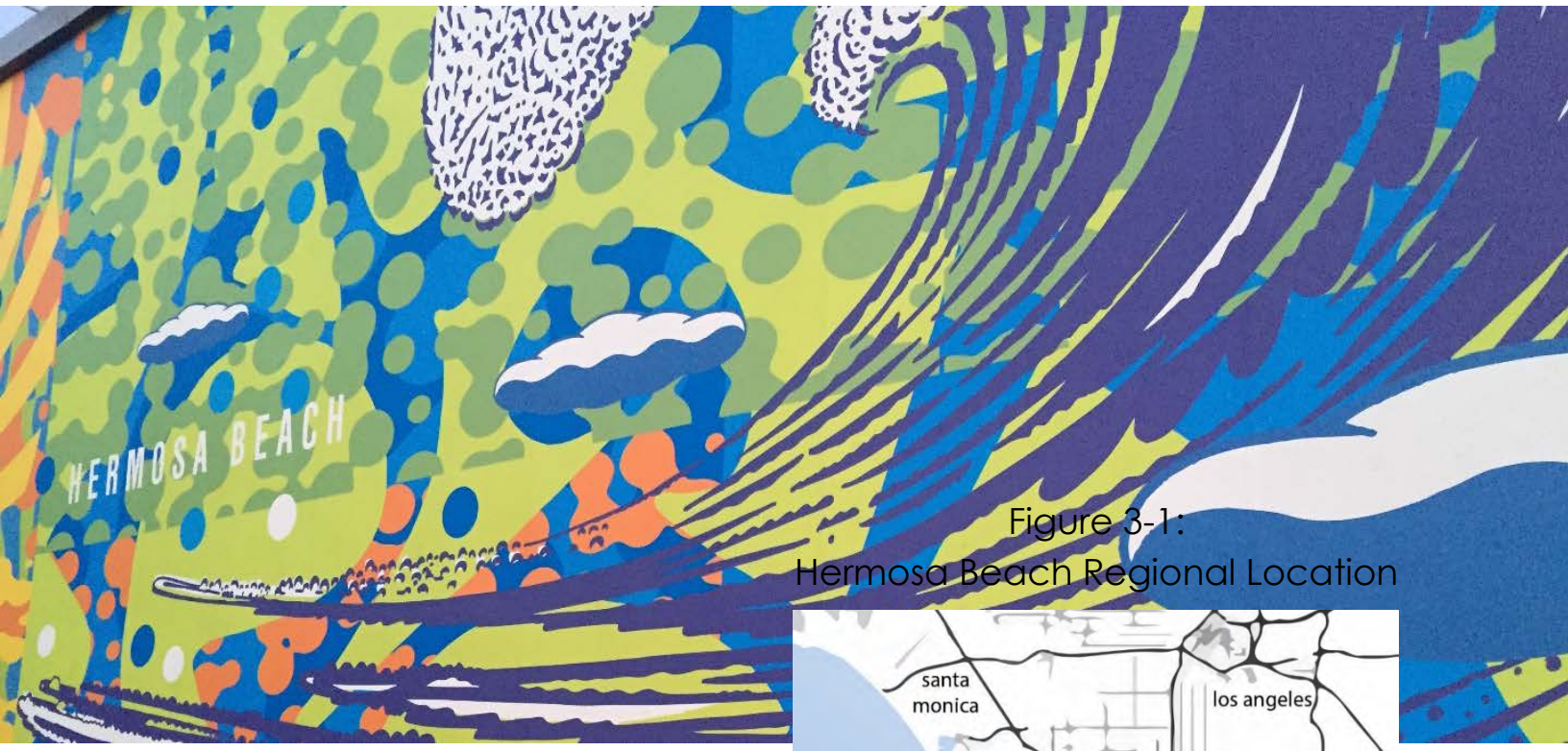
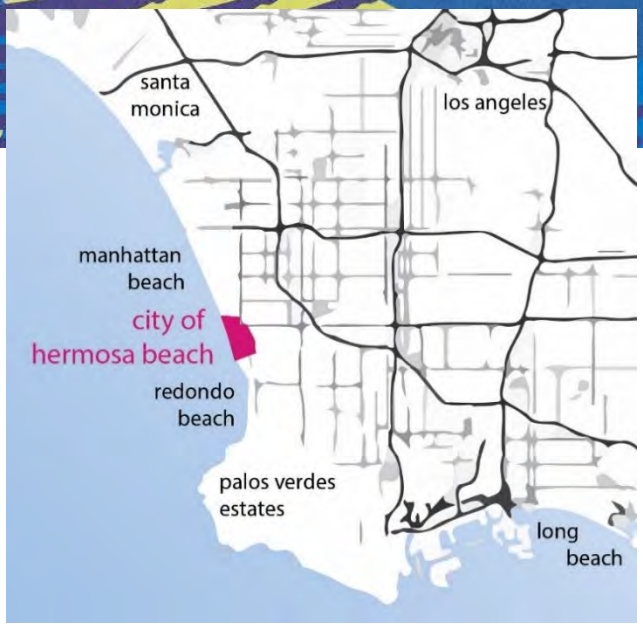



Figure 3-1:
Hermosa Beach Regional Location




*Source: City of Hermosa Beach, 2017.*

# 3. Community Profile

Understanding the landscape and character of the City is crucial to effectively developing mitigation strategies that recognize and respond to the unique geographic, economic, and demographic conditions of Hermosa Beach. These conditions are also an important factor to consider when evaluating risk, exposure, and vulnerability to both natural and human-caused hazards. This section describes the geographic, historic, demographic, governmental, economic, cultural, and land use/mobility profile of the City of Hermosa Beach.

## 3.1 Geography and Climate

Hermosa Beach is located along the southern end of the Santa Monica Bay in Los Angeles County. Regional topographic features including the Santa Monica Bay and Mountains and the Palos Verdes Peninsula, serve as the backdrop to Hermosa Beach. The Pacific Ocean serves as the western city boundary, while the city is bordered by Manhattan Beach to the north, and Redondo Beach to the south and east. Hermosa Beach is located approximately 17 miles southwest of downtown Los Angeles and 14 miles northwest of Long Beach (see **Figure 3-1**).

The city limits for Hermosa Beach encompass a relatively small land area, approximately 1.4 square miles. Hermosa Beach includes nearly two miles of shoreline and varies in width between

one-half mile and approximately one mile inland. Elevations in the City range from sea-level and rise up to 250 feet in elevation.

Approximately 43% of the total land area in Hermosa Beach is located within the Coastal Zone, the boundaries of which are defined by the Coastal Act. There are no rivers, creeks, or channelized water bodies located in Hermosa Beach.

Hermosa Beach is considered to have a semi-arid, dry Mediterranean climate. Average temperatures range from 55 degrees Fahrenheit in the winter to 74 degrees Fahrenheit during the summer. Average yearly rainfall is 12.1 inches per year with almost all precipitation occurring between the months on November and April. There is an average of over 280 predominantly sunny days annually. During the late spring and early summer, coastal fog, known as June gloom, can occur usually in the early morning and late afternoon. The City is subject to moderate to severe winter storms that often follow the El Niño–Southern Oscillation (ENSO) pattern which increases annual precipitation[i]. Santa Ana winds also affect the City. Theses winds are strong, extremely dry down-slope winds that originate inland and affect coastal Southern California. Santa Ana winds blow mostly in autumn and winter, but can arise at other times of the year. The winds originate from cool, dry high-pressure air masses in the Great Basin and are known for the hot dry weather (often the hottest of the year) and are infamous for fanning regional wildfires.

## 3.2 History of Hermosa Beach

Hermosa Beach today is a reflection of the community's early history, originally as a summer and weekend beach destination for Los Angeles residents visiting by way of the Pacific Electric Rail, and later as a full-time, full service community. The tracts originally laid out by the Hermosa Land and Water Company more than a century ago, included smaller lots and block sizes, a mix of small scale commercial and residential uses, and a distributed network of schools and parks.

### Rancho and Early Development

Hermosa Beach and its immediate surrounding communities are situated on land that once constituted part of Rancho Sausal Redondo. During the late 19th Century, the rancho grew barley and other grains to graze sheep, horses and cattle.

In 1900, a tract of 1,500 acres was purchased for $35 per acre, and this small strip of beach front property became Hermosa Beach. By 1901 the first tract of Hermosa Beach was subdivided between the boardwalk and Hermosa Avenue, with the land between Hermosa Avenue and Summit Avenue (later named Monterey Boulevard) subdivided later that same year.

The first pier was built in 1904, made of wood and extended approximately 500 feet into the ocean. By 1910, Hermosa Beach was a stop on the Pacific Electric Railway, which included stops in Santa Monica, Venice, and Redondo. The new rail line brought a slew of

*Aerial view of Hermosa Beach circa 1925*

tourists to the area, promoting Hermosa Beach as a recreational getaway.

*The Surf and Sand Club (Biltmore Hotel)*

## Hermosa Beach Cityhood

In January of 1907 the small beach community became the 19th incorporated city in Los Angeles County. To attract new residents and investors, the City spent thousands of dollars on improvements to its streets and lighting, participating in a "Good Roads Campaign," providing well-paved boulevards connecting the city to the region. In 1913, plans were approved to develop a permanent concrete boardwalk, known today as The Strand, with matching ornamental lighting.

By the mid-1920s most of the coastal tracts had been subdivided for commercial or residential use. The dominant residential building type throughout Hermosa Beach during this era was the vernacular beach cottage, popular among most Southern California beach communities. In many cases these beach cottages contained elements of the popular Craftsman style. The Spanish Colonial Revival, Shingle, Arts and Crafts, and Period Revival styles were also prevalent among residences constructed during this time.

In 1923 the Surf and Sand Club announced plans for a clubhouse located on The Strand between 14th and 15th streets. The elaborate clubhouse attracted many new members to the club, with an artificially heated swimming pool, dressing rooms and lockers, ballroom, and 124 sleeping rooms with their own bathrooms. In the 1930s the building became the Hermosa Biltmore Hotel. The iconic structure changed hands and roles a number of times before being torn down in 1969.

## Post-World War II Growth

Following World War II, Southern California experienced a large population boom. Hermosa Beach experienced a similar boom, with the number of residents growing from 7,196 in 1940 to 16,115 by 1960. This resulted in the construction of many homes in the formerly rural area east of Camino Real (Pacific Coast Highway) with larger lots on Prospect Avenue compared to those along the coast.

The Civic Center complex was designed by Savo Stoshitch between 1961 and 1965, and includes buildings for City Hall, Public Library, Police Station and Fire Station. During the 1960s, the Santa Fe Railroad stopped using the Hermosa to Redondo line and removed the train tracks. The right-of-way was later protected from development by voter referendum and purchased by the City to create the Hermosa Valley Greenbelt during the late 1980s.

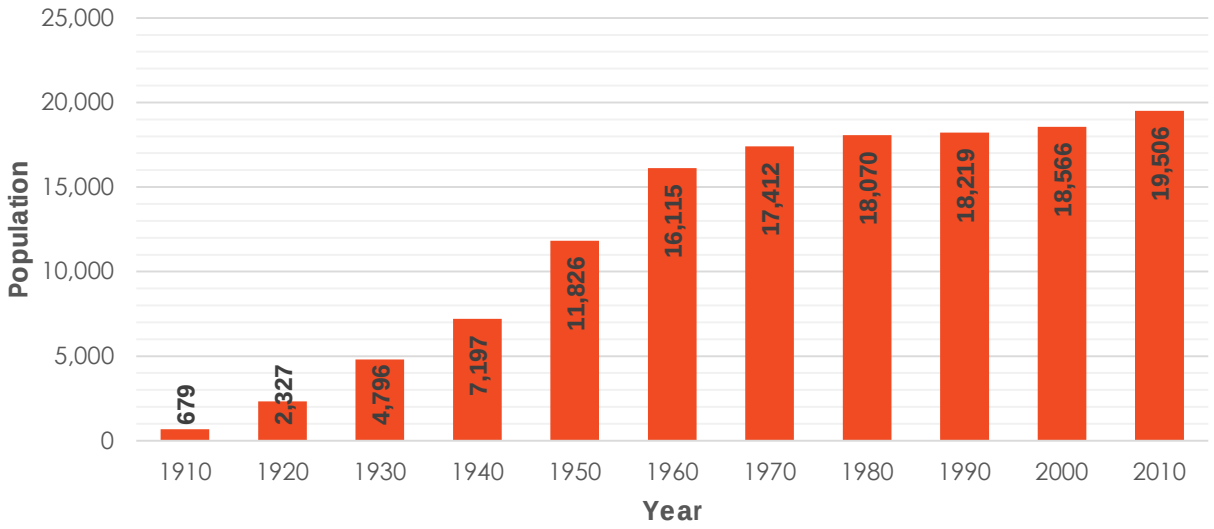
*City Hall Dedication 1965*

## 3.3 Population and Demographics

### *Overall Population*

In 2016, the City of Hermosa Beach had an estimated population of 19,801[ii]. The population of Hermosa Beach has been relatively steady for the last forty years, with an annual average growth rate of 0.3% (see **Figure 3-2**). The population of Hermosa Beach is also not expected to increase dramatically in the future with residential population estimates projected to reach a maximum of 20,400 residents by 2040, or an annual average growth rate of 0.1%.

Figure 3-2: Hermosa Beach Population (1910 - 2010)




*Source: US Census Bureau, 2010.*

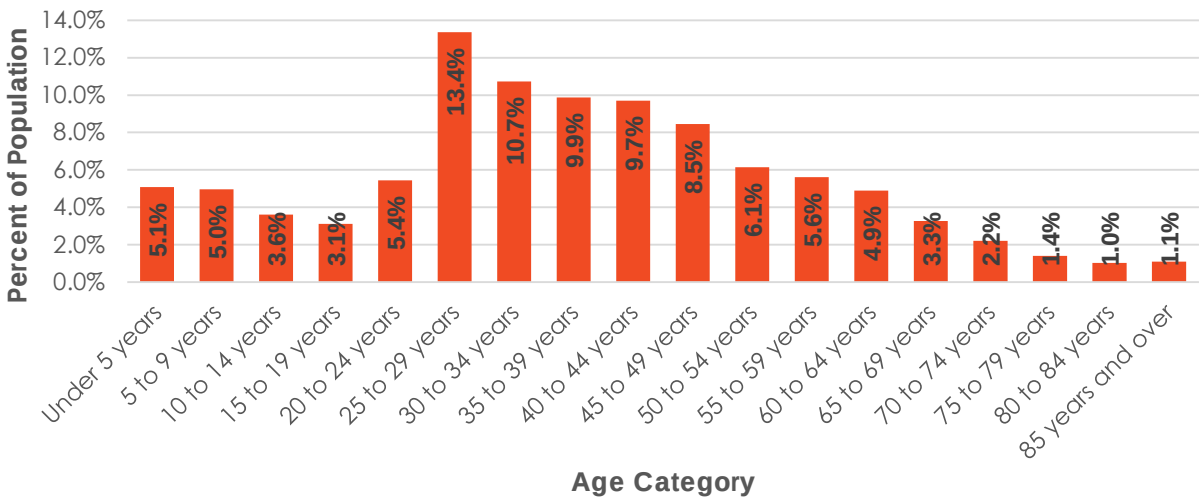
### *Population Density*

With a land area of 1.4 square miles, Hermosa Beach has a high population density, with approximately 13,900 people per square mile. In comparison, Los Angeles County has an average population density of approximately 2,500 people per square mile, while neighboring cities like Manhattan Beach and Redondo Beach have population densities of 9,000 and 11,200 people per square mile, respectively[iii].

### *Population by Age*

In 2016, Hermosa Beach had a median age of 39 years, which is slightly higher than the median age of 36 for Los Angeles County. As depicted in **Figure 3-3**, the largest share of population in Hermosa Beach is the 25-29 age group representing 13.4% of the total population, followed by the 30-34 (10.7%) and 35-39 (9.9%). Youth in Hermosa Beach (age 19 and under) represents 16.8% of the total population and seniors (age 65 and over) represent 9.0% of the total population. According to the Southern California Association of Governments (SCAG), both the youth and senior populations in Hermosa Beach have increased in recent years while the 21-34 age group is decreasing, though it is still the largest share of demographics.

Figure 3-3: Population by Age




*Source: US Census Bureau, 2010.*

### *Households*

According to the 2017 SCAG Local Profile, the City of Hermosa Beach had approximately 10,000 housing units in 2016, of which 95% or 9,477 were occupied. Of those occupied units 45% were owner-occupied and 55% were renter-occupied (see **Figure 3-4**).

The average household size is relatively small at 2.1 persons per household, though up from 2.0 persons per household at the 2000 Census count. In comparison, Los Angeles County has an average of 3.0 persons per household. The distribution of household sizes is predominantly smaller households, with 74% of households in Hermosa Beach having just 1 or 2 occupants (see **Figure 3-5**).

In terms of household types, family households (which includes any household with related persons) represented 42% of all occupied households, while non-family households (which includes anyone living alone or living with unrelated persons) represented 58% of all occupied units. Additionally 19.7% of households included children under the age of 18, and 14.5% were households with at least one person over the age of 65.

### *Housing Costs and Values*

According to the SCAG Local Profile, Hermosa Beach had a median household income of $104,756 in 2016, with 13% of the population having an annual

Figure 3-4: Housing Occupancy

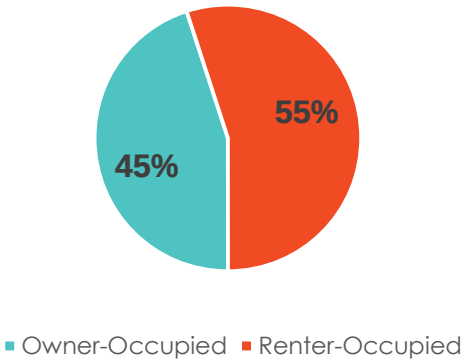
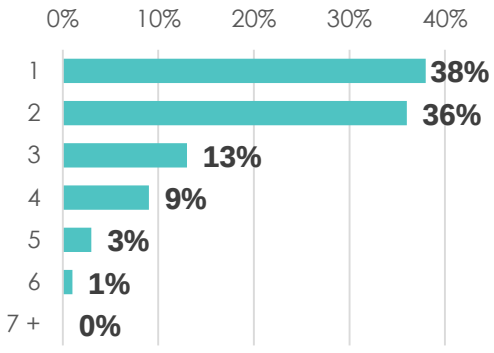



Figure 3-5: Persons Per Household



household income of $35,000 or less. In 2016, the median home sale prices in Hermosa Beach was $1.43 million, which has increased by 182 percent since the year 2000 when median home sale prices were $506,000. In total, Hermosa Beach had an assessed valuation of secured and unsecured property of $6.59 billion in 2016, up 8.3% from the previous year[iv].

### *Special Needs Populations*

Understanding and examining the application of hazard mitigation policies to disabled and functional needs populations is important in identifying the potential needs and can help to facilitate increased access to services. FEMA's Office of Equal Rights addresses this by suggesting agencies and organizations planning for natural disasters identify disabled/functional needs populations, make recovery centers more accessible, and review practices and procedures to remedy any discrimination in relief application or assistance.

Available Census data, as shown in **Table 3-1**, found that approximately 1,125 people in Hermosa Beach between the 16 and 64 years of age, or 15% of the working age population, indicated a work-related disability. Of those aged 65 and over, 959 disabilities were reported. Included within these disabilities are persons whose disability hinders their ability to go outside the home (3.3% of the working age and 17.5% of the senior population).

Table 3-1: Disabilities by Type and Age

| Disability by Age | Persons | Percent of total population |
|---|---|---|
| **Age 5 to 15 - total persons** | 1,228 | |
| **Sensory disability** | - | 0.0% |
| **Physical disability** | 27 | 2.2% |
| **Mental disability** | 45 | 3.7% |
| **Self-care disability** | 27 | 2.2% |
| **Age 16 to 64 - total persons** | 7,340 | |
| **Sensory disability** | 181 | 2.5% |
| **Physical disability** | 318 | 4.3% |
| **Mental disability** | 212 | 2.9% |
| **Self-care disability** | 51 | 0.7% |
| **Go-outside-the-home disability** | 239 | 3.3% |
| **Employment disability** | 1,125 | 15.3% |
| **Age 65 and over - total persons** | 1,248 | |
| **Sensory disability** | 170 | 13.6% |
| **Physical disability** | 273 | 21.9% |
| **Mental disability** | 132 | 10.6% |
| **Self-care disability** | 165 | 13.2% |
| **Go-outside-the-home disability** | 219 | 17.5% |
| ***Source: City of Hermosa Beach 2013-2021 Housing Element*** | | |

## 3.4 Local Economy

The local economy of Hermosa Beach has traditionally consisted of retail trade, restaurants, and personal services establishments to meet the needs of local residents and visitors to the beach. According to the South Bay Workforce Investment Board, Hermosa Beach had approximately 1,400 businesses registered in the city, and 6,900 people that are employed in Hermosa Beach in 2016[v].


*Retail, restaurants, and offices are located in the heart of Hermosa Beach along Pier Avenue.*

The largest employers in Hermosa Beach include 24 Hour Fitness, the City of Hermosa Beach, and Vons Supermarket The vast majority of these businesses (1,026 businesses or 73% of all businesses) have four employees or less, while an additional 200 businesses or 14% have between five and nine employees. Hermosa Beach also has a labor force of approximately 12,500 residents, the majority of whom work outside of the city, though there is a growing segment of the labor force, up to 10%, that work primarily from home.

The two miles of shoreline in Hermosa Beach and generally sunny disposition brings a large number of visitors to Hermosa Beach. On a typical warm summer, weekend day, beach-goers can increase the number of people in Hermosa Beach by as many as 100,000 people. The LA County Ocean Lifeguards maintain beach visitor counts, which indicate that on average, close to 500,000 individuals visit the beach each month, with peak summer periods reaching more than 1.5 million visitors per month.

## 3.5 Arts and Culture

Throughout the city's history, the beach has been an integral part of local culture with an abundance of seaside activities. Surfing and beach volleyball are two activities that are firmly integrated into the city's history and culture. Hermosa Beach has been home to many surfing professionals over the years and has hosted events promoting surfing, such as Hermosa Beach Surfing Club's Annual Dance. Known as the mecca of surfboard shaping, Hermosa Beach is known for some of the earliest surfboard manufacturing, with several surfboard shapers still operating today.

An iconic part of Southern California beach culture, volleyball in Hermosa Beach dates back as far as 1938 when the Los Angeles Times reported on "fierce volleyball games" in Hermosa Beach. Organized leagues and tournaments have and continue to serve as an important recreational outlet in Hermosa Beach.

*Fiesta Hermosa is held every Memorial Day and Labor Day weekend.*

Hermosa Beach is also well known for its arts, events, and entertainment offerings. Hermosa Beach is home to the Lighthouse Café, a prominent West

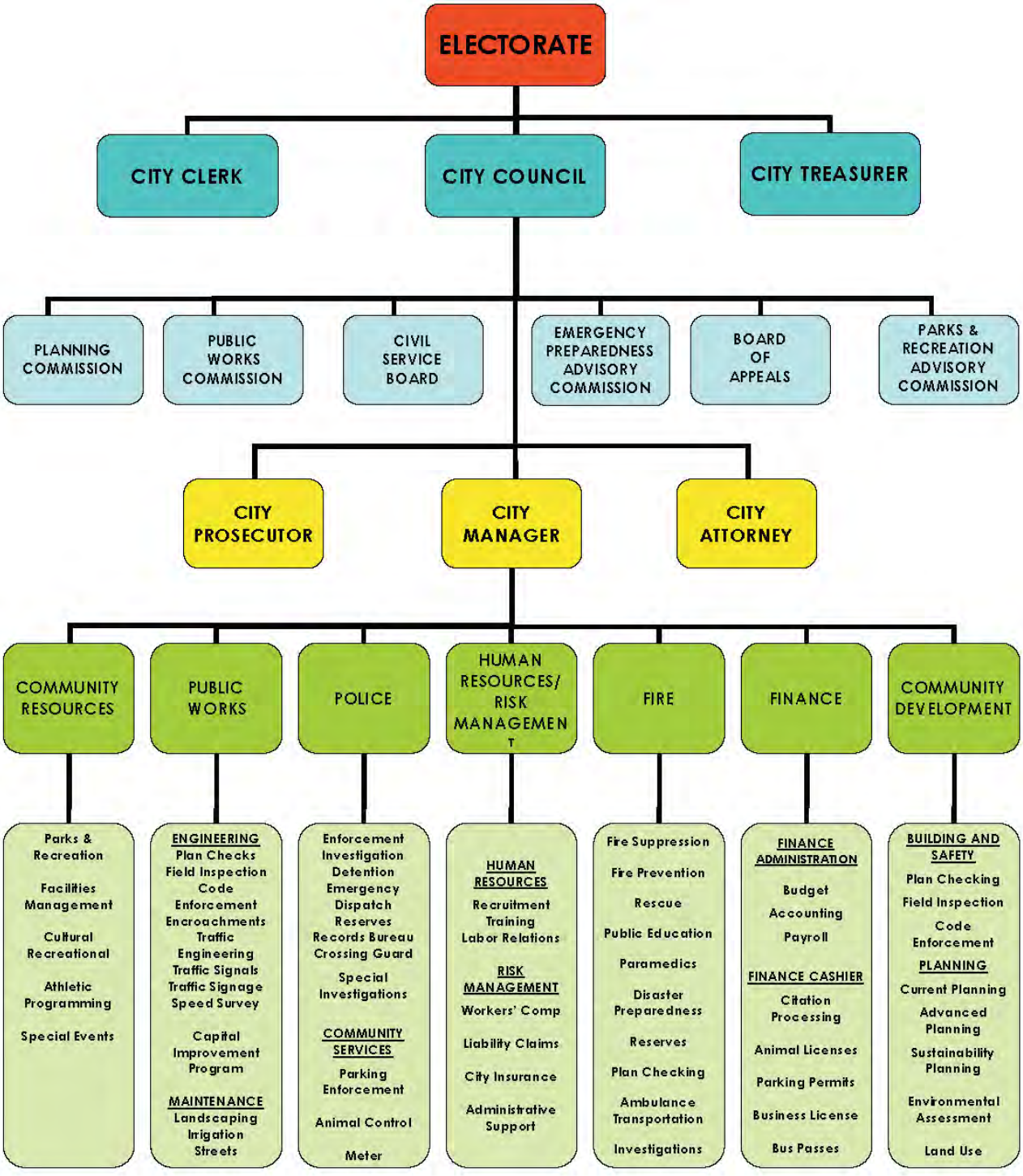
Coast jazz club from the 1950s through the 1970s. The weekends of Memorial Day and Labor Day bring nearly 150,000 visitors over the course of the three-day weekends to the Fiesta Hermosa street fair, which features hundreds of crafters, artists, local businesses, live bands, and children's entertainment. The City's parks, beach, and plaza also serve as the venue for approximately 100 special events such as volleyball tournaments, athletic races, community fundraisers, live entertainment, and film or art festivals.

## 3.6 Government Organization

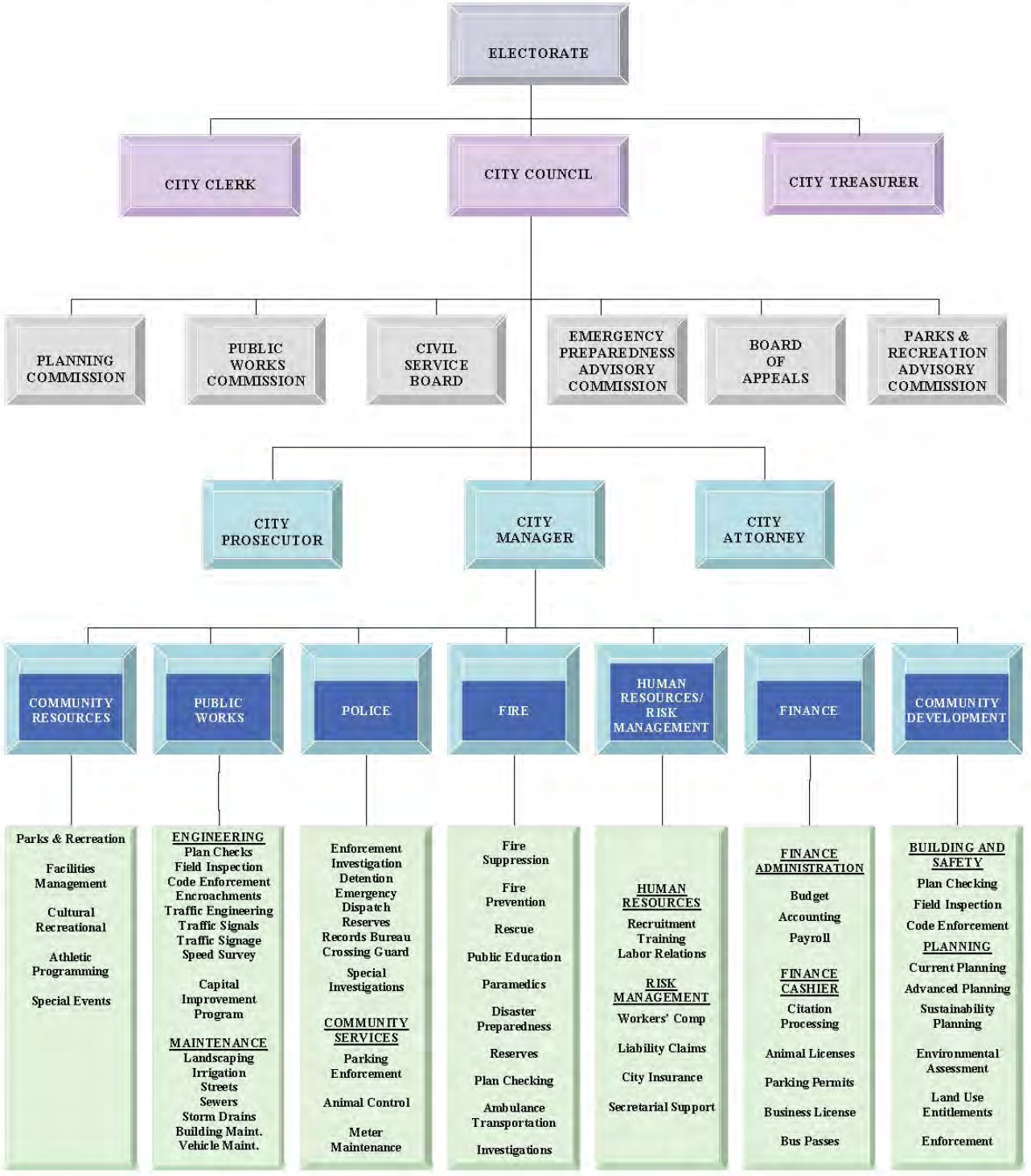
The City of Hermosa Beach is a general law city and operates under the Council-Manager form of government. Members of the City Council are elected at large for a four-year term and each Council member serve as Mayor for a period of nine months during their four-year term. The City Treasurer and City Clerk as also elected to four-year terms. The City Council additionally relies on the expertise of several advisory commissions to help facilitate the review of projects, programs, and legislation. The advisory commissions include the Planning Commission, Public Works Commission, Civil Service Board, Emergency Preparedness Advisory Commission, Board of Appeals, and Parks & Recreation Advisory Commission.

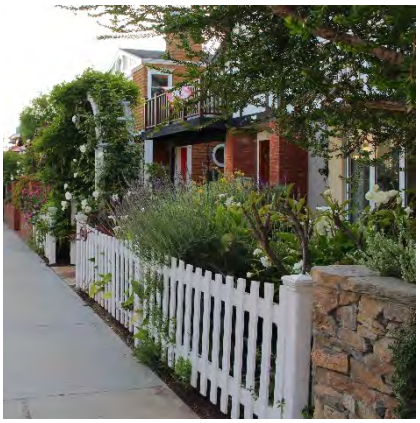
The City Manager oversees the day to day operations of the City which includes approximately 145 employees within the Community Resources, Public Works, Police, Fire, Human Resources/Risk Management, Finance, and Community Development Departments (See **Figure 3-6** – City of Hermosa Beach Organizational Chart).

Figure 3-6: City of Hermosa Beach Organizational Chart



# CITY OF HERMOSA BEACH ORGANIZATIONAL CHART






## 3.7 Land Use and Development Trends

Land uses in Hermosa Beach are largely defined by its residential neighborhoods and commercial corridors or districts, with public and recreational spaces like parks, the beach, and community facilities found distributed throughout the City. There are four broad categories of land uses that can be currently found in Hermosa Beach: residential, commercial, light industrial, and institutional uses. The distribution of land uses is described below and identified in **Figure 3-7**.

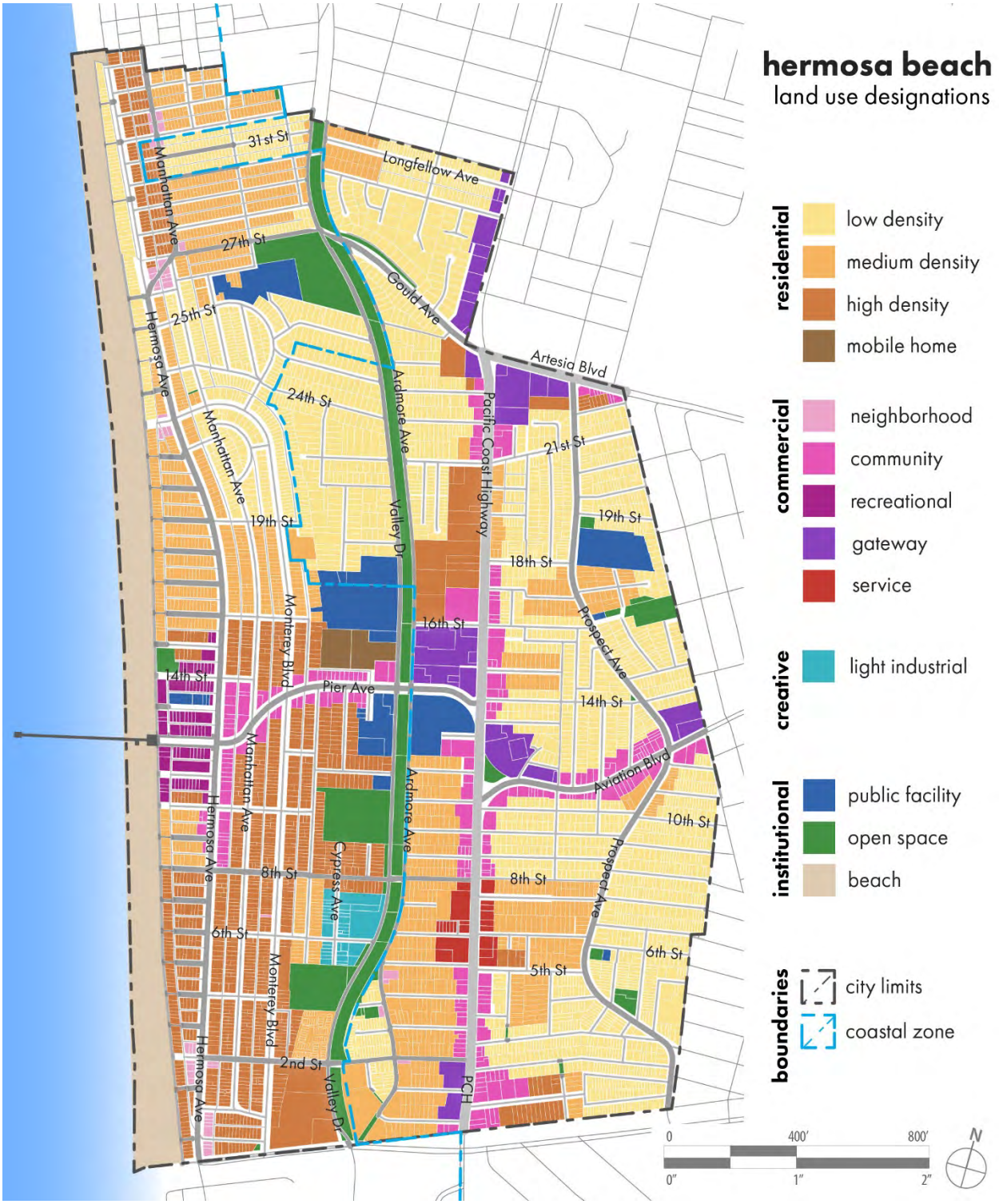
**Residential uses,** in terms of land area, are the predominant use in Hermosa Beach, accounting for approximately 67% of the city's total land area. Residential uses range in scale and density throughout the city to define and create residential neighborhoods, with a range of single-family homes, small scale apartments or condominiums, and larger multi-family housing developments. Single-family land uses are found throughout the city, with some blocks and neighborhoods in the northeast, east, and southeast areas of the city that are exclusively or predominantly filled with single-family uses.

**Commercial uses** include a wide variety of retail, restaurant, office, and other uses that provide goods or services and help to drive the local economy. These uses can be found primarily along the city's corridors and in Downtown, with pockets of small scale commercial found in residential neighborhoods. Commercial uses along Hermosa Avenue, PCH, Prospect Avenue, and Manhattan Avenue primarily consist of restaurants, stores, and services to serve the neighborhood and nearby beachgoers. Collectively these uses account for approximately 7% of the city's total land area.

**Light industrial or manufacturing uses** in Hermosa Beach account for approximately 4% of the city's total land area and are generally located in a 4-acre industrial area near Cypress Avenue, including light manufacturing, warehouses, construction supply, surfboard manufacturing, auto shops, and air conditioning and heating manufacturing uses.

**Institutional land uses** account for 147 acres or 22% of the total land area. Institutional land uses include schools, government-owned facilities, parks, the beach and open space, and essential operations areas such as parking, utility buildings, the City maintenance yard and other facilities, or utility easements.

Figure 3-7: Hermosa Beach Land Use Designations



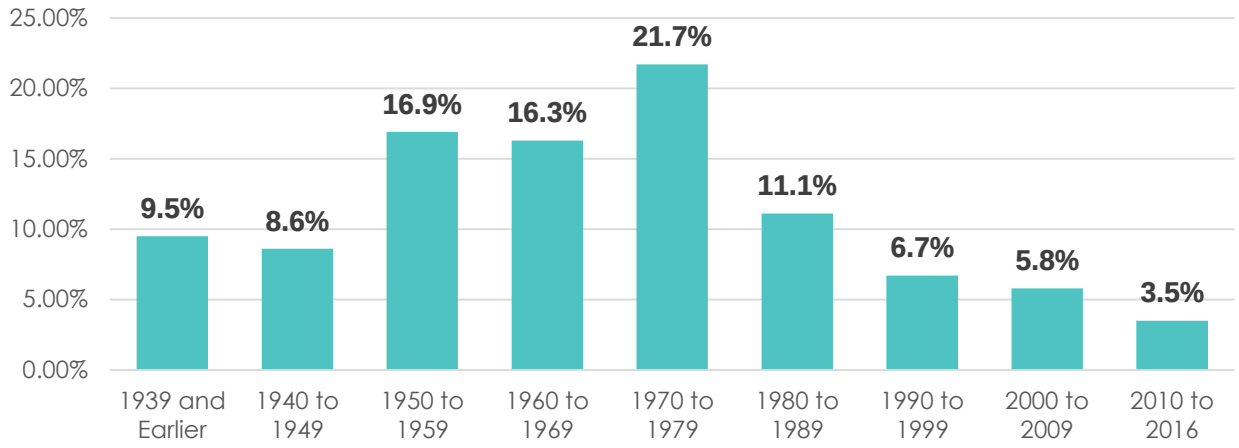

*Source: City of Hermosa Beach, 2017.*

There are approximately 10,000 housing units in Hermosa Beach of which approximately 50 percent are single-family (attached or detached units), 21 percent are small multi-family units (between two and four units), 27 percent are in buildings with five units or more, and approximately 1 percent are mobile homes.

Multi-family housing units are predominantly found in the southwest area of Hermosa Beach. The northwest portion of the City and The Strand have an even mix of single-family and multi-family housing options. There are two mobile home areas - one located north of Pier Avenue, between Loma and Valley Drive, which is a resident-owned park, and the other along 10th Street between Ardmore and PCH. There are also higher density multi-family units on PCH between 16th and 21st Street.

In terms of age, 51.3 percent of the housing units in Hermosa Beach were built prior to 1970, with the largest share of buildings constructed between 1970 and 1979 (21.7 percent). Units built since 1980 accounts for 27.1 percent of all housing stock (see **Figure 3-8**).

Figure 3-8: Age of Housing Units




*Source: SCAG Local Profile, 2017.*

As Table 3-8 depicts, very little has changed in land use patterns since the previous plan was approved in 2011. Between 2010 and 2016 slightly more than 300 housing units were added most of which were new construction on existing home sites that were "knockdown" properties. The population increased by less than two percent over the same period of time.

While the type and extent of hazards that may affect the City have change since the 2011 LHMP was adopted, land use patterns have not changed to the degree that the impacts of potential hazards have changed. The more salient issue is the large increase in property values over the period between 2011 and 2017. This increase in value, above inflation rates, make thes potential cost of hazards greater,

## 3.8 Mobility and Transportation

The ways in which people get around are important indicators of the success of a transportation system, shedding light on which modes are most popular, convenient, and safe. Residents and visitors of Hermosa currently enjoy a well-connected mobility network that effectively circulates people across multiple modes, including opportunities to walk, roll, ride a bicycle, take transit,

and drive to the rich selection of destinations and commerce across the city and into the surrounding region.

Primary roadways in Hermosa Beach include Pacific Coast Highway (PCH or State Route 1), Ardmore Avenue/Valley Drive, Artesia Boulevard (State Route 91), Aviation Boulevard, Prospect Avenue, Pier Avenue, Hermosa Avenue, and Herondo Street. Regional access is via by the San Diego Freeway (Interstate 405) located approximately 3 miles east of the city border. Transit service in Hermosa Beach is provided by three transportation agencies—Beach Cities Transit, the Los Angeles County Metropolitan Transportation Authority (Metro), and the Los Angeles Department of Transportation (LADOT)—and includes a demand-responsive paratransit service.

The US Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) program combines federal, state, and Census Bureau data to provide local labor market information on where workers live and work. In terms of commuting patterns Hermosa Beach residents are more likely to drive alone, and less likely to carpool, take public transit, or walk/bike compared to Los Angeles County residents. Hermosa Beach residents are also nearly twice as likely to report working from home compared to LA County residents.

Of the employed residents of Hermosa Beach, more than percent leave the city everyday to go to work. As seen in **Figure 3-9**, residents commute in large numbers along the Pacific Coast Highway corridor toward El Segundo and Culver City, up to Santa Monica and Beverly Hills, and inland to Torrance, Burbank, and Downtown Los Angeles. Conversely, 90% of those who work in Hermosa Beach live outside of the city. Employees generally commute shorter distances from nearby jurisdictions within the South Bay region, including Redondo Beach, Manhattan Beach, Torrance, Hawthorne, and other nearby locales (see **Figure 3-10**).

Figure 3-9:
Resident Commuting Patterns

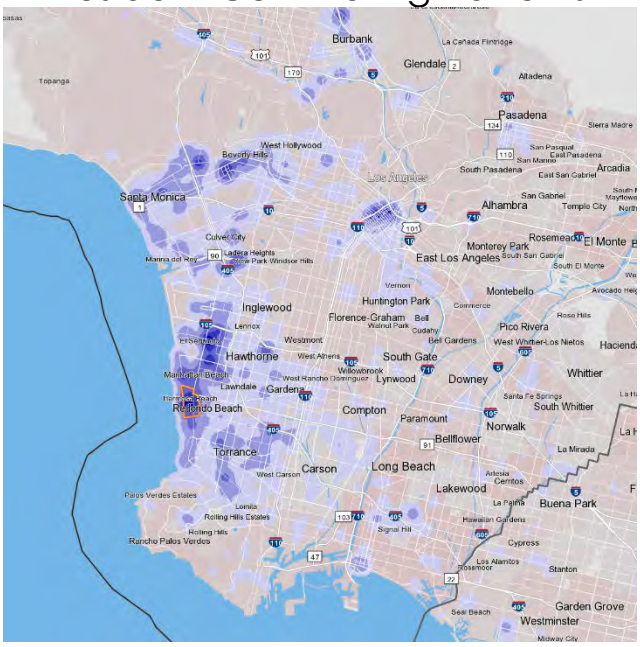
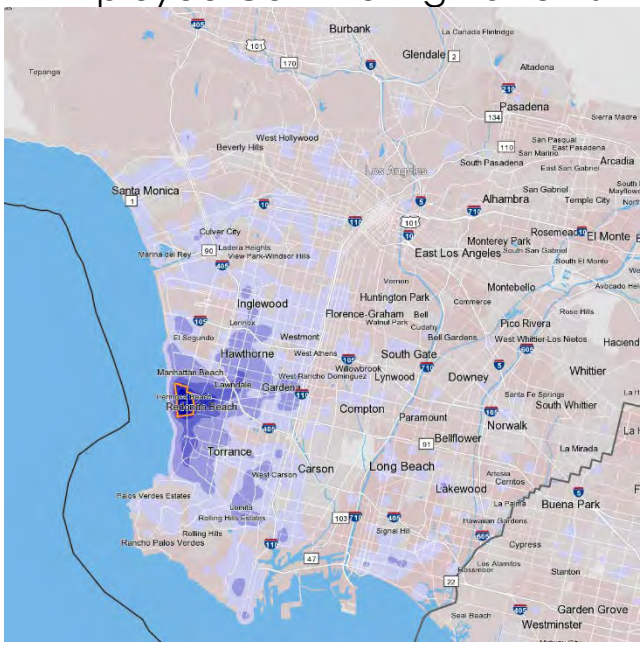



Figure 3-10:
Employee Commuting Patterns




*Source: US Census Bureau, 2013.*

## 3.9 Past Disasters

Natural disasters that have occurred in Hermosa Beach, or have occurred in the region and caused damage in Hermosa Beach are summarized in **Table 3-2** and described in greater detail in the individual hazard profiles in Chapter 4.

Table 3-2: Past Disasters in or near Hermosa Beach.

| Date | Event | Hazard | Extent of Damage |
|---|---|---|---|
| **1930** | Tsunami from Santa Monica Underwater Landslide | Tsunami | A magnitude 5.2 earthquake near Santa Monica triggered an underwater landslide and tsunami along the Santa Monica Bay shoreline. At least one drowning was attributed to the tsunami in Redondo Beach where the wave runup reached six meters. |
| **1933** | Long Beach Earthquake (M 6.4) | Earthquake | Resulted in 120 deaths, $50 million in property damage, and the destruction of many unreinforced masonry structures and destruction of school buildings in the area, including fatalities and damage to buildings in Hermosa Beach. |
| **1955** | Heatwave | Extreme Heat | According to the National Weather Service, the longest consecutive heat wave in Downtown Los Angeles lasted for eight days, from Aug. 31 to Sept. 7 in 1955. Over the eight days, temperatures exceeded 100 degrees on seven of the eight days, and reach a high temperature of 110 degrees. |
| **1964** | Tsunami from Great Alaska Earthquake | Tsunami | The magnitude 9.2 earthquake in the gulf of Alaska was one of the most globally damaging tsunamis on record. This tsunami caused approximately 1.0 meters of wave run up in Santa Monica. |
| **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 |
| **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. |
| **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 |
| **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. |
| **1955** | Heatwave | Extreme Heat | According to the National Weather Service, the longest consecutive heat wave in Downtown Los Angeles lasted for eight days, from Aug. 31 to Sept. 7 in 1955. Over the eight days, temperatures exceeded 100 degrees on seven of the eight days, and reach a high temperature of 110 degrees. |

# 4 Hazard Assessment

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).

## 4.1 Hazard Identification

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

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).

*Source: FEMA, Local Mitigation Planning Handbook Review Tool, March 2013.*

As the first step in the hazard analysis, the Hazard Mitigation Team identified and screened hazards by reviewing the range of potential hazards and considering the following questions:

- Is the hazard included in the State of California Hazard Mitigation Plan?
- Has the hazard occurred in the City and been declared a Presidential or State emergency or disaster in the past 30 years?
- Is the hazard included in the previous LHMP?
- Is the hazard included in the PLAN Hermosa?

**Table 4-1** was used to provide a quantitative approach and guide the team in prioritizing the hazards with the highest probability of significantly impacting the City. For the 2016 LHMP the risk for each hazard was rated using the Calculated Priority Risk Index (CPRI). The CPRI examines four criteria for each hazard (probability, magnitude/severity, warning time, and duration. 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, presented in **Table 4-2**.

## Table 4-1: Hazard Prioritization Index

| Category: Probability | Assigned Weight: 45% | Score |
|---|---|---|
| **Unlikely** | Extremely rare with no documented history of occurrences or events. Annual probability of less than 0.001. | 1 |
| **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 |

| Category: Magnitude | Assigned Weight: 30% | Score |
|---|---|---|
| **Negligible** | Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure).<br>Injuries or illnesses are treatable with first aid and there are no deaths.<br>Negligible quality of life lost.<br>Shut down of critical facilities for less than 24 hours. | 1 |
| **Limited** | Slight property damages (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure).<br>Injuries and illnesses do not result in permanent disability and there are no deaths.<br>Moderate quality of life lost.<br>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).<br>Injuries or illnesses result in permanent disability and at least one death.<br>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).<br>Injuries or illnesses result in permanent disability and multiple deaths.<br>Shut down of critical facilities for more than 1 month. | 4 |

Table 4-1: Hazard Prioritization Index (continued)

| Category: Warning Time | Assigned Weight: 15% | Score |
|---|---|---|
| **< than 6 hours** | Population receives less than 6 hours of warning. | 4 |
| **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 |

| Category: Duration | Assigned Weight: 10% | Score |
|---|---|---|
| **< than 6 hours** | Disaster event will last less than 6 hours. | 1 |
| **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 2.00 or higher would be included in the LHMP. Utilizing the ranking technique, the team identified climate change, earthquakes, extreme heat, severe winter storms/high wind, and flooding/sea-level rise as high risk, and drought, tsunami, and terrorism as moderate risks in Hermosa Beach. While wildfire is a common hazard in California and is addressed in the State Mitigation Plan, the City does not have a wildland/urban interface.

Table 4-2: Hazard Identification and Prioritization Summary

| Hazard | Probability (45%) | Magnitude/ Severity (30%) | Warning Time (15%) | Duration (10%) | Weighted Score | Risk Level |
|---|---|---|---|---|---|---|
| **Climate Change** | 4 | 3 | 3 | 4 | 3.55 | High |
| **Earthquake** | 3 | 4 | 4 | 4 | 3.55 | High |
| **Severe Weather** | 4 | 3 | 2 | 3 | 3.30 | High |
| **Flooding + Sea Level Rise** | 4 | 3 | 2 | 2 | 3.20 | High |
| **Hazardous Material Release** | 4 | 2 | 4 | 1 | 3.10 | High |
| **Drought** | 4 | 2 | 1 | 4 | 2.95 | Moderate |
| **Extreme Heat** | 3 | 2 | 2 | 3 | 2.55 | Moderate |
| **Tsunami** | 2 | 3 | 4 | 1 | 2.50 | Moderate |
| **Terrorism** | 2 | 3 | 4 | 1 | 2.50 | Moderate |
| **Wildfire** | 1 | 1 | 3 | 1 | 1.30 | Low |

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

## 4.2 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 2017 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 PLAN Hermosa and other resources. The sources of information used to prepare this section of the LHMP are listed in Appendix B or cited as a footnote.

## Climate Change

*Hazard Definition*:

Various gases in the earth's atmosphere, classified as atmospheric greenhouse gas emissions (GHGs), play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, the radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This is known as the greenhouse effect.

According to the California Association of Environmental Professionals Beyond 2020 whitepaper, scientific studies have demonstrated a causative relation between increasing man-made GHG emissions and a long-term trend in increasing global average temperatures. This conclusion is the consensus of the vast majority of climate scientists who publish in the field. The effects of past increases in temperature on the climate and the earth's resources are well documented in the scientific literature, which is best summarized in the Intergovernmental Panel on Climate Change's (IPCC) periodic reports, the latest of which is the Fifth Assessment Report, released in 2014.

The IPCC's work to model and evaluate future climatic conditions indicates that if GHG emissions to continue to increase at current rates, there will be substantial adverse effects to both humans and the natural environment. Many scientific bodies around the world have concluded that avoiding the most severe outcomes of climate change will require keeping global average temperatures to rising no more than two degrees Celsius by the end of the century and limiting carbon dioxide emissions to below 450 parts per million (IPCC 2014). In order to limit global temperature increases to two degrees Celsius, the IPCC and organizations like the Union of Concerned Scientists have indicated that the United States and other developed countries would need to reduce greenhouse gas emissions anywhere from 78 to 95 percent below 1990 levels, with most organizations identifying an approximately 80 percent reduction below 1990 levels by 2050 to provide stabilization at the two degree Celsius threshold.

Although the State of California has taken action through legislation and executive orders to curb the generation or release of additional greenhouse gas emissions, the state still faces intensifying impacts of climate change in coming decades, as a result of emissions already released into the atmosphere. The California Climate Adaptation Strategy indicates that California should expect overall hotter and drier conditions, with a continued reduction in winter snow (with concurrent increases in winter rains), as well as increased average temperatures and accelerating sea level rise. In addition to changes in average temperatures, sea level, and precipitation patterns, the intensity of extreme weather events is also changing. Climate change temperature projections identified in the 2009 California Climate Adaptation Strategy suggest the following:

- Average temperature increase is expected to be more pronounced in the summer than in the winter season.

- Inland areas are likely to experience more pronounced warming than coastal regions.
- Heat waves are expected to increase in frequency, with individual heat waves also showing a tendency toward becoming longer and extending over a larger area, thus more likely to encompass multiple population centers in California at the same time.
- Because GHGs remain in the atmosphere for decades, temperature changes over the next 30 to 40 years are already largely determined by past emissions. By 2050, temperatures are projected to increase by an additional 1.8 to 5.4°F [degrees Fahrenheit] (an increase one to three times as large as that which occurred over the entire twentieth century).
- By 2100, the models project temperature increases between 3.6 and 9°F.

According to the 2009 California Climate Adaptation Strategy, the impacts of climate change in California have the potential to include but are not limited to the areas discussed below:

- **Public Health:** Climate change is expected to lead to an increase in ambient (i.e., outdoor) average air temperature, with greater increases expected in summer. Larger temperature increases are anticipated in inland communities as compared to the California coast. The potential health impacts from sustained and significantly higher than average temperatures include heat stroke, heat exhaustion, and the exacerbation of existing medical conditions such as cardiovascular and respiratory diseases, diabetes, nervous system disorders, emphysema, and epilepsy. Numerous studies have indicated that there are generally more deaths during periods of sustained higher temperatures. The elderly, infants, and socially isolated people with pre-existing illnesses who lack access to air conditioning or cooling spaces are among the most at risk during heat waves.
- **Floods and Droughts:** The impacts of flooding may include population displacement, severe psychosocial stress with resulting mental health impacts, exacerbation of pre-existing chronic conditions, and infectious disease. Additionally, impacts can range from a loss of personal belongings, and the emotional ramifications from such loss, to direct injury and/or mortality.

  Drinking water contamination outbreaks in the United States are associated with extreme precipitation events. Runoff from rainfall is also associated with coastal contamination that can lead to contamination of shellfish and contribute to food-borne illness. Floodwaters may contain household, industrial, and agricultural chemicals, as well as sewage and animal waste. Flooding and heavy rainfall events can wash pathogens and chemicals from contaminated soils, farms, and streets into drinking water supplies. Flooding may also overload storm and wastewater systems, or flood septic systems, also leading to possible contamination of drinking water systems.

  Drought impacts develop more slowly over time. Risks to public health that Californians may face from drought include impacts on water supply and quality, food production (both agricultural and commercial fisheries), and risks of waterborne illness. As surface water supplies are reduced as a result of drought conditions, the amount of groundwater pumping is expected to increase to make up for the water shortfall. The increase in groundwater pumping has the potential to lower the water tables and cause land subsidence. Communities that utilize well water will be adversely affected by drops in water tables or through changes in water quality. Groundwater supplies have higher levels of total dissolved solids compared to surface waters. This introduces a set of effects for consumers, such as repair and maintenance costs associated with mineral deposits in

water heaters and other plumbing fixtures, and on public water system infrastructure designed for lower salinity surface water supplies. Drought may also lead to increased concentration of contaminants in drinking water supplies.

- **Water Resources:** The state's water supply system already faces challenges to provide water for California's growing population. Climate change is expected to exacerbate these challenges through increased temperatures and possible changes in precipitation patterns. The trends of the last century, especially increases in hydrologic variability, will likely intensify in this century. The state can expect to experience more frequent and larger floods and deeper droughts. Rising sea level will threaten the Delta water conveyance system and increase salinity in near-coastal groundwater supplies.
- **Forests and Landscapes:** Global climate change has the potential to intensify the current threat to forests and landscapes by increasing the risk of wildfire and altering the distribution and character of natural vegetation. If temperatures rise into the medium warming range, wildfire occurrence statewide could increase from 57 to 169 percent by 2085. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state.

*Location:*

Climate change is likely to affect the entire earth's population. Warming and climate change are occurring globally with wide variations based on location and latitude. 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 at a statewide level, which has indirect implications for Hermosa Beach. The potential direct effects of climate change in Hermosa Beach will come in the form of rising sea levels, and greater incidents of severe weather and extreme heat, which are articulated in subsequent hazard profiles.

*History:*

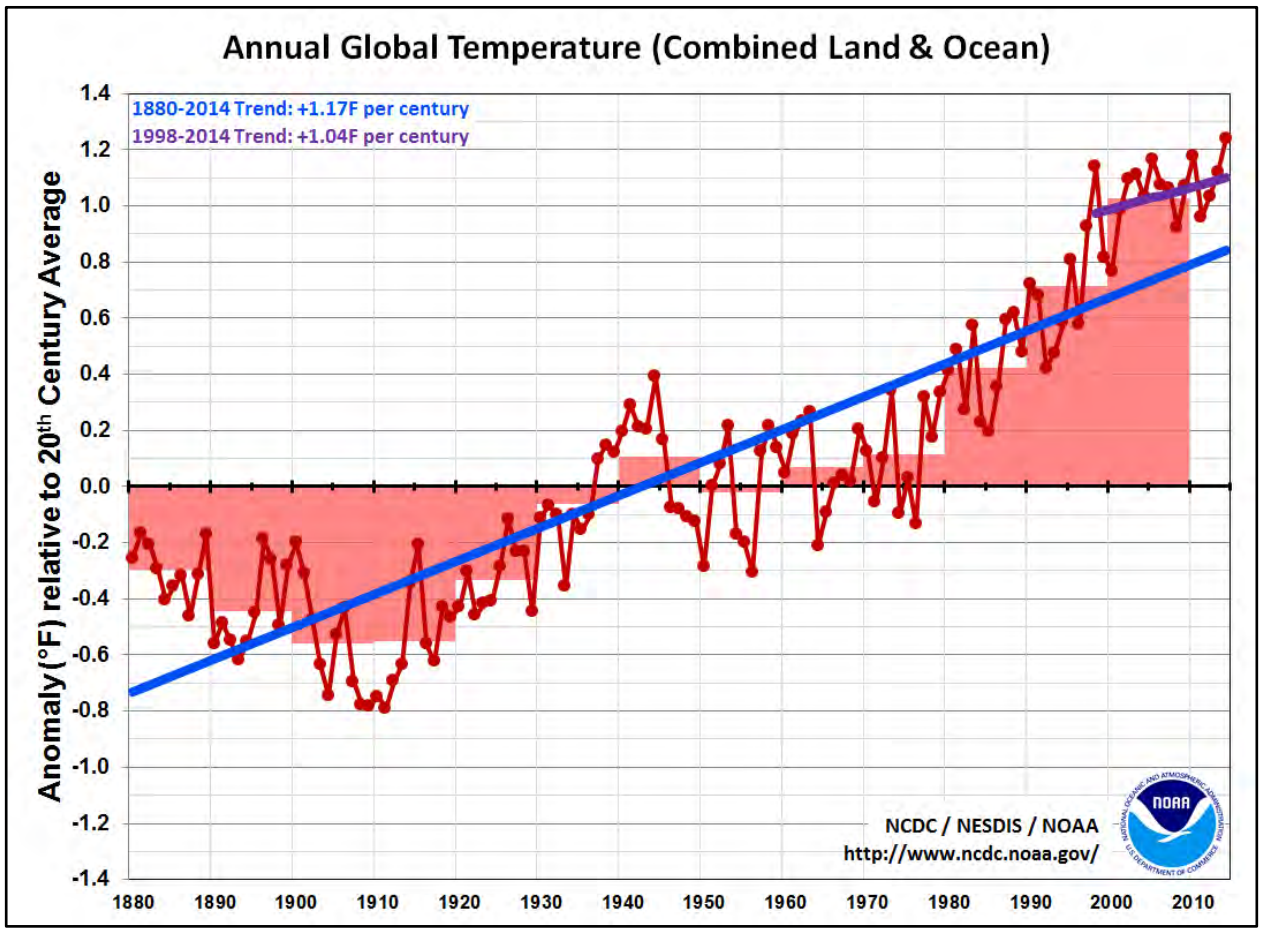
Climate change has occurred throughout the history of the planet. Due to variations in the earth's inclination to the sun, volcanic activity and other factors such as asteroid impacts, the amount of solar radiation reaching the earth's surface rises and falls. The temperature of the planet correlates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

In the past 22,000 years, 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 CO2 and a matching rise in global temperature. The result has been that climate change may be accelerating. **Figure 4-1** provides a graphical depiction of the recent history of temperature rise.

Figure 4-1: Annual Global Temperature Rise Since 1880




*Source: National Oceanic and Atmospheric Administration, 2010.*

*Extent:*

The extent of future impacts of climate change will depend on action to reduce atmospheric greenhouse gas levels and mitigation activities to lessen the effects of associated hazards. The extent of flooding, severe weather, and extreme heat is described in subsequent hazard profiles.

*Probability of Future Occurrences:*

Climate change is an ongoing occurrence. Essentially, it has occurred, is occurring and will continue to occur for several decades, centuries or longer. The probability of flooding, severe weather, and extreme heat occurring in the future, is described in subsequent hazard profiles, including the increased probability due to climate change.

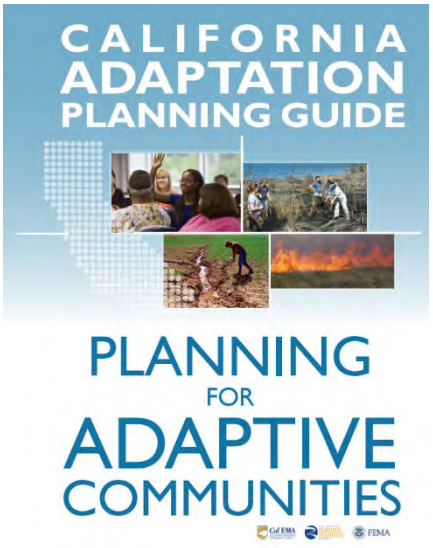
*Regulatory Context:*

The State of California has stepped into a leadership role in planning for both the reduction of greenhouse gas 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 percent 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 percent 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.
- **CEQA and Greenhouse Gas Emissions (Senate Bill 97):** In 2007, the Natural Resources Agency was directed by the legislature to prepare amendments to the California Environmental Quality Act (CEQA) Guidelines, providing direction to lead agencies on how to analyze and mitigate greenhouse gas emissions.

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.

## Earthquakes

*Hazard Definition:*

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.

### Potential Impacts of Climate Change: **Earthquakes**

Because liquefaction potential is related to groundwater depth, the number and size of areas subject to potential liquefaction could become larger as sea-level rises and causes water tables to rise.

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.[vi] 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 4-3**, 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 4-3: Modified Mercalli Intensity Scale

| MMI Value | Description of Shaking Severity | Summary Damage Description | 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. 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. |

| MMI Value | Description of Shaking Severity | Summary Damage Description | Description |
|---|---|---|---|
| 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:*

Hermosa Beach 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 4-2.** An interactive, detailed map of faults is available from the Southern California Earthquake Data Center. Hermosa Beach is bounded on the southwest by the Palos Verdes Fault and on the northeast by the Newport-Inglewood Fault. Both faults are less than 5 miles from Hermosa Beach.

Figure 4-2: Major Southern California Faults


*Source: Southern California Earthquake Data Center, 2017.* ★ *Hermosa Beach*

There are areas of Hermosa Beach that are subject to landslides or liquefaction. As shown in **Figure 4-3**, much of the area west of Hermosa Avenue and an area north of Herondo Street

between Monterey Boulevard and Valley Drive are located atop soils susceptible to liquefaction, all within the Coastal Zone.

Also shown in **Figure 4-3**, there are three areas of Hermosa Beach with steep slopes with the potential for earthquake-induced landslides: along Gould Terrace, at South Park, and along the City's eastern border near 8th Street.

## Figure 4-3: City Areas Subject to Liquefaction or Landslide


*Source: California Department of Mines and Geology, 1999.*

*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, but 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 4-4** lists earthquakes with a magnitude of 6.5 or greater that have occurred in Southern California since 1900. The Southern California Earthquake Data Center[vii] contains a wealth of information on earthquakes including an extensive list of historical earthquakes with detailed descriptions.

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

| Magnitude | Name | Location (approx.) | Date | Notes |
|---|---|---|---|---|
| **6.8** | San Jacinto | San Jacinto | 4/21/1918 | |
| **7.1** | Lompoc | Lompoc | 11/4/1927 | 2-meter tsunami |
| **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 | $50M property damage, 12 deaths |
| **6.5** | San Fernando | Sylmar | 2/9/1971 | $500M property damage, 65 deaths |
| **7.3** | Landers | Yucca Valley | 5/28/1992 | |
| **6.7** | Northridge | Northridge | 2/17/1994 | $20B property damage, 57 deaths, up to 125K temporary homeless, 82K structures damaged or destroyed |
| **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, the Newport-Inglewood Fault is closer in proximity to Hermosa Beach 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[viii]. 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.

*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 percent probability estimate that such an event could occur in Southern California in the next 30 years; over the same period, there is a 75 percent 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.[ix]

*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:

1) 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)
2) 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
3) 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: http://www.seismic.ca.gov/cog.html

### Winter Storm/High Winds

*Hazard Definition:*

Winter storms produce high winds and surf that affect Hermosa Beach. 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. In Hermosa Beach, winter storms produce high winds and surf, and heavy rainfall which is associated with flooding. 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

## Potential Impacts of Climate Change:
## Severe Weather

Warming central Pacific Ocean water has the potential to produce more frequent and longer winter storms originating in the intertropical convergence zone (ITCZ).

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, Pacific Northwest National Laboratory researchers concluded after running model simulations.

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.

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 addition to winter storms, 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.

*Location:*

All of the City is vulnerable to the effects of winter storms that produce high winds and surf. Vegetation, debris, and electrical infrastructure knocked down or blown by severe weather has the potential to cause damage or additional hazards. High surf affects the beach where it causes beach erosion and blockage of storm water outfalls that results in loss of flood control capacity,

*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[x]. 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 Hermosa Beach.

During the same period, the County experienced 51 days of winter storms. Minor damage from vegetative debris from winter storms has occurred along the beachfront and the City's parks or public spaces with trees and other landscaping.

High surf often accompanies winter storm events. High surf occurs almost every year resulting I beach erosion and potential damage to the Hermosa Beach Pier. Both the Pier and the beach are tourist attractions, and damage to either could result in economic losses.

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 F1 tornado that resulted in one injury.

**Table 4-5** lists history of tornados that have been sighted in nearby jurisdictions.

Table 4-5: Historic Tornados Near Hermosa Beach

| Date | Force [xi] | Deaths | Injured | Distance (miles) |
|---|---|---|---|---|
| **12/12/2014** | 0 | 0 | 0 | 10 |
| **01/19/2010** | 1 | 0 | 0 | 19 |
| **02/19/2005** | 0 | 0 | 0 | 26 |
| **12/29/2004** | 0 | 0 | 0 | 9, 14, 22 |
| **04/01/1999** | 0 | 0 | 0 | 29 |
| **02/24/1998** | 0 | 0 | 0 | 26 |
| **01/09/1998** | 1 | 0 | 1 | 14 |
| **12/21/1997** | 1 | 0 | 0 | 26 |

*Extent:*

A tornado in the City may have more effect as shown in **Table 4-6** below.

**Table 4.6: Fujita Scale and Effects**

| 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 – 40 mph | 32 – 73 | 50 – 113 | 70 – 158 | 92 – 207 | 116 – 261 | 142 – 319 |
| | | F0 | F1 | F2 | F3 | F4 | F5 |
| 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

*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.

*Regulatory Environment:*

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

## Flooding + Sea-level Rise

*Hazard Definition:*

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.

There are two major types of flooding within the City: localized drainage flooding and coastal flooding.

- 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.
- Coastal flooding generally occurs with storm surges during high tides along the beach areas. This flooding typically occurs during winter months when storm create high waves that wash ashore.

### Potential Impacts of Climate Change: Flooding + Sea Level Rise

Climate change is likely to increase the number and severity of future floods. The *Vulnerability and Adaptation to Sea-Level Rise: An Assessment for the City of Hermosa Beach* report contains detailed information on the potential extent of sea-level rise and flooding, and the community's vulnerability to rising sea levels. The beachfront area is most susceptible to the effects of climate change induced more severe flood incidents. As sea-levels rise throughout the century, urban areas within several blocks of the current mean high tide line will be subject to coastal flooding particularly during King Tides and storm events. Other specific and significant impacts of sea-level rise for the City include:

- Increased erosion of beaches
- Coastal flooding with higher storm surges, flood elevations
- Permanent inundation of natural habitat
- Reduced capacity to absorb runoff
- Saltwater intrusion into coastal groundwater

*Location:*

Coastal flooding poses a threat to life and safety, and can cause severe damage to public and private property. Large portions of Hermosa Beach beachfront development lie less than 15 feet above sea level. Normally, the very wide beach buffers these areas from the high surf. During heavy storm seasons, this beach can be eroded to such an extent that these properties are

subject to wave run-up. This has occurred during past El Niño events and during astronomical high tides. Resulting damage has been primarily to private property.

Currently, none of the city's land is within a Federal Emergency Management Agency (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:*

The City is not adjacent to any major rivers that pose an immediate threat from riverine flooding. It has not had a significant flood event since the area was first settled in the 19th century. The City is not presently vulnerable to inundation caused by the failure of water reservoirs or dams. There is a threat of coastal flooding along the shoreline and the potential for urban flooding. Coastal flooding poses a threat to life and safety, and can cause severe damage to public and private property. Coastal flooding can be attributed to the following mechanisms:

- Swell runup from intense offshore Pacific Ocean winter storms
- Runup from wind waves generated by land-falling storms
- Tsunamis generated by subduction faults along the Aleutian-Alaskan and Peru-Chile Trenches (see Hazard-Specific Section: Tsunami)
- Swell runup from waves generated off Baja California by tropical cyclones
- Effects of land-falling tropical cyclones

The Southern California coastline is exposed to waves generated by winter and summer storms originating in the Pacific Ocean. It is not uncommon for these storms to cause 15-foot breakers. The occurrence of such a storm event, in combination with high astronomical tides and strong winds can cause a significant wave runup and allow storm waves to move further inland and reach higher elevation than normal along the coastline. When this occurs, erosion and coastal flooding may result in damage to inadequately protected structures and facilities located along low-lying portions of the shoreline.

The City has not experience any specific incidents due to sea level rise. However, as sea level rise increases, future storm events can expected to cause damage to the beach due to erosion and result in salt water intrusion into ground water further inland.

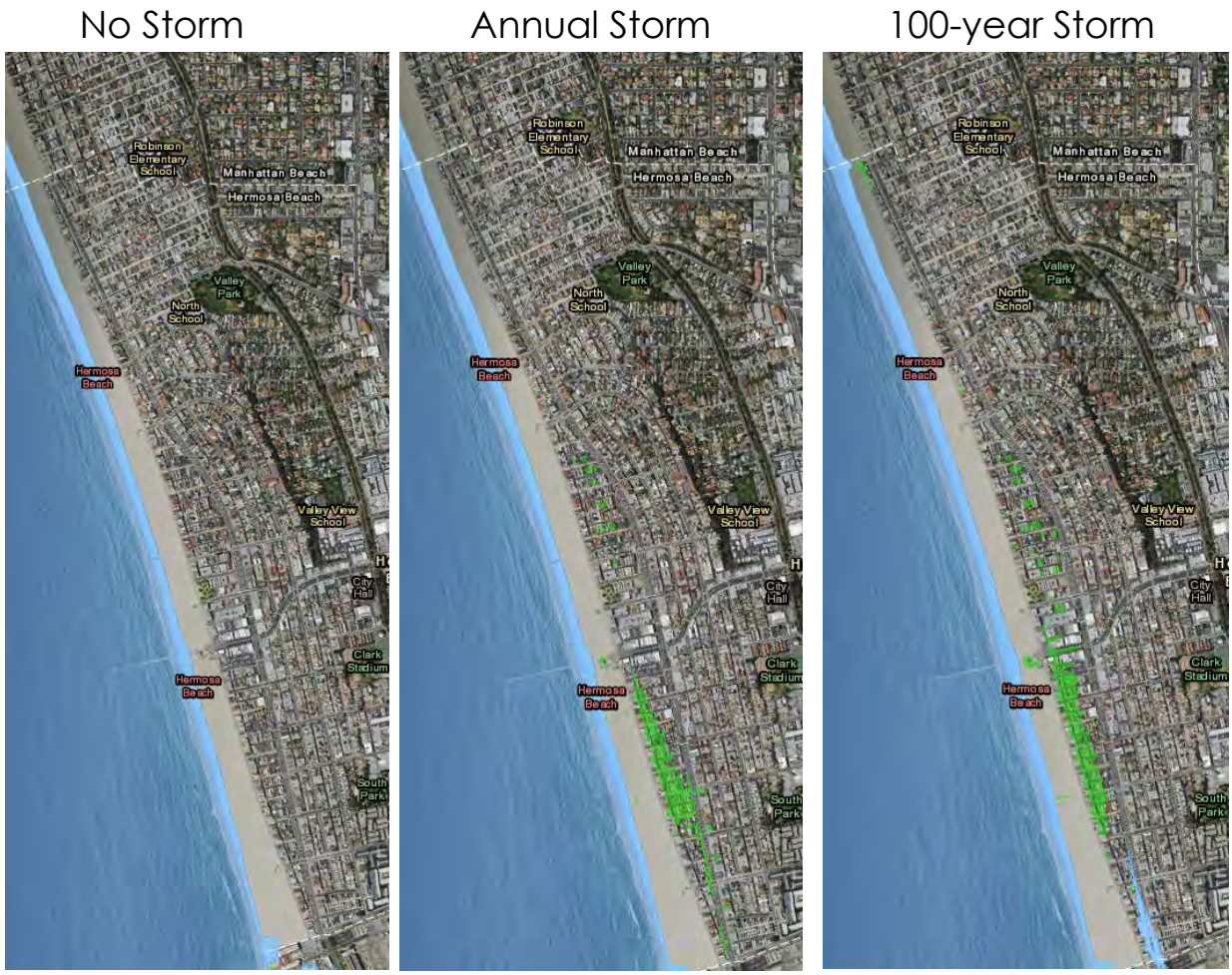
*Extent:*

To the extent future coastal erosion increases as a result of sea-level rise and related changes in sediment dynamics, and if future beach replenishment is not maintained, Hermosa Beach should expect a reduction of the protective beach buffer in front of the City. As a result, future flooding and storm surge could have a more destructive and farther-inland reaching impact than if the beach remains stable.

The United States Geological Survey (USGS) has developed the Coastal Storm Modeling System (CoSMoS) to make detailed predictions (meter-scale) of storm-induced coastal flooding, erosion and cliff failures over large geographic scales. This model has been refined for coastal areas in Los Angeles County to consider various sea level rise, storm, and erosion scenarios. Within Hermosa Beach, the 100-year flood zone is projected to increase by about 300% under a scenario of 150 cm of sea level rise (from 0.034 square miles at present to 0.1 square miles with 55 inches of sea level rise). The projected flood zone extends beyond the sandy beach into developed portions of the Coastal Zone, encompassing more than 200 buildings, including 143 residential structures, and about 1,000 residents. The potential extent of flooding that may occur

with 150 cm of sea level rise and various storm scenarios - no storm, annual storm, 100-year storm - is depicted in **Figures 4-4**. Since there is still some degree of uncertainty into the timing and extent of possible flooding, the topography of Hermosa Beach serves as an outer limit of flooding potential, with the maximum flooding potential under a 150 cm sea level rise scenario depicted in **Figure 4-5**. A 150 cm sea level rise scenario is depicted in pink in Figure 4-5.

Figure 4-4: Sea-level Rise Projections




*Source: USGS Coastal Storm Modeling System (CoSMoS), 2017.*

### *Probability of Future Occurrences:*

Coastal and urban flooding may occur during any year most likely during winter months as a result of storms during high astronomic tides. During El Niño years, flooding has an increased probability. As sea-levels rise, flooding will occur more frequently and with greater impacts.

### *Regulatory Environment:*

44 CFR Chapter I, Subchapter B – Insurance and Hazard Mitigation provides detailed guidance on the National Flood Insurance Act of 1968 and the many changes and additions to it. Additional guidance is provided by Housing and Urban Development Act of and the Flood Disaster Protection Act of 1973.

Figure 4-5: Sea-level Rise Projections (maximum extent)


*Source: USGS Coastal Storm Modeling System (CoSMoS), 2017.*

The National Flood Insurance Program (NFIP) regulations, a part of FEMA regulations, are set forth at 44 CFR 59 through 44 CFR 80. These regulations, updated yearly, include, but are not limited to issues related to flood insurance and mitigation, such as community floodplain activities, land management, policy rating and the actual standard flood insurance Policy. FEMA Publication F-775 lists the related sections of 44 CFR and includes links to finding those regulations, related laws and other useful sites. More specific information on FEMA flood guidance is available in the Flood Insurance Manual, Effective October 1, 2016.

The Watershed Protection and Flood Prevention Act of 1954 (WPFPA) which has been amended numerous times, authorizes the Secretary of Agriculture to provide technical and financial assistance to entities of state and local governments and tribes (project sponsors) for planning and installing watershed projects. The WPFPA was passed in 1954 when Congress recognized the serious natural resource and economic damages suffered in our Nation's watersheds from flooding and sedimentation. The WPFPA has been amended several times to address a broad range of natural resource and environmental issues.

The WPFPA authorizes the Secretary of Agriculture to assist local organizations in preparing and carrying out plans for "works of improvement", including undertakings for: 1) flood prevention, 2) the conservation, development, utilization, and disposal of water, or 3) the conservation and proper use of land in watershed or sub-watershed areas. The Secretary is also authorized to provide cost share assistance to project sponsors in order to obtain wetland and floodplain conservation easements. The acquisition of such easements is for perpetuating, restoring, and enhancing the wetlands and floodplains so they are able to retain excessive floodwaters, improve water quality and quantity, and provide habitat for fish and wildlife.

## Hazardous Materials Release

*Hazard Definition:*

A hazardous material is any material that, due to its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released. Hazardous materials include but are not limited to hazardous substances, hazardous wastes, and any material that a business or local implementing agency has a reasonable basis to believe would be injurious to the health and safety of persons or would be harmful to the environment if released.

The LHMP does not focus on the hazards contained in everyday products, but rather on the hazards associated with potential releases of hazardous substances from transportation corridors and fixed facilities within the City. Exposure to hazardous materials can cause injury, illness, or death. Effects may be felt over seconds, minutes, or hours (short-term effects) or not emerge until days, weeks, or even years after exposure (long-term effects). Some substances are harmful after a single exposure of short duration, but others require long episodes of exposure or repeated exposure over time to cause harm.

Hazardous materials in the City primarily consist of paints, solvents, adhesives, gasoline, household cleaners, batteries, pesticides and herbicides, and. The toxicity of a specific substance is one important factor in determining the risk it poses, but other factors can be just as important, if not more so. Factors affecting the severity of a hazardous material release include:

- Toxicity
- Quantity
- Dispersal characteristics
- Location of release in relation to population and sensitive environmental areas
- Efficacy of response and recovery actions

Mobile incidents include those that occur on a roadway or a railroad. These incident-related releases are dangerous because they can occur anywhere, including near human populations, critical facilities or environmentally sensitive areas. Mobile incident-related releases can also be more difficult to mitigate because of the great area over which any given incident might occur and the potential distance of the incident site from response resources.

The release of hazardous substances from stationary sources can be caused by human error, equipment failure, intentional dumping, acts of terrorism, or natural phenomena. Earthquakes pose a particular risk, because they can damage or destroy facilities containing hazardous substances. The threat posed by a hazardous-material event can be amplified by restricted access, reduced fire suppression and spill containment capability, and cutoff of response personnel and equipment.

The Los Angeles County Fire Department Health Hazardous Materials Division is the designated Certified Unified Program Agency (CUPA) for Hermosa Beach. The CUPA was created by the California legislature to minimize the number of business inspections and fees imposed on businesses associated with the handling of hazardous materials.

*History:*

The State Water Resources Control Board (SWRCB) maintains the GeoTracker database, which provides information to easily identify the location of a hazardous waste site and details

regarding the type of contamination and remediation action. In 2014, GeoTracker reported one leaking underground storage tank (LUST) site in the planning area (SWRCB 2014). As of 2015, GeoTracker identified the site's status as "completed – case closed," meaning there are no active LUST sites in the planning area (SWRCB 2015). Including the site mentioned above, GeoTracker identifies 15 LUST sites that have completed cleanup and monitoring activities.

In addition to the information sources listed above, the E&B Oil Drilling and Production Project Final Environmental Impact Report certified in 2014 identifies the City Maintenance Yard at 555 6th Street as contaminated from historical uses, with existing lead and total petroleum hydrocarbon (TPH) contamination in the northeast corner of the yard and extending onto the property to the immediate north. Ten of the 73 soil samples taken at the site exceeded Regional Water Quality Control Board guidelines for TPH. Six of the samples exceeded the US Environmental Protection Agency (EPA) Region 9 Industrial Regional Screening Levels for lead. In addition, a series of groundwater borings conducted in 2013 found the presence of TPH, lead, barium, and arsenic in the groundwater below the yard that exceeded the Maximum Contaminant Levels established for drinking water by the Regional Water Quality Control Board.

The Refugio oil spill on May 19, 2015 deposited 142,800 U.S. gallons of crude oil into one of the most biologically diverse coastlines of the west coast. Beaches across southern California, including Hermosa Beach, were closed for several days as a result. The cost of the cleanup was estimated by the company to be $96 million. The oil spill, located immediately north of Refugio State Beach in Santa Barbara County, originated in a 2 feet diameter underground pipeline named Line 901 owned by Plains All American Pipeline. Crude oil produced by offshore platforms was transported from onshore receiving plants to another pipeline that transported the oil inland for processing. The oil pipeline operators in Midland, Texas had turned off an alarm that would have notified them of the leak as they were dealing with a separate problem with a pump. The 28-year-old pipeline was not equipped with an automatic shut-off valve and was eventually shut down by control operators when they were notified of the leak from parties who visually located the spill. Hundreds of animals along the coast were coated with the thick crude oil and many died.

*Location:*

As described above there is only one location of known contamination in Hermosa Beach, the City's Maintenance Yard. The contaminated site is currently operational and is not included in the GeoTracker database. Given the history of the site, which has been used in a similar capacity since the late nineteenth century, potential contamination could come from a number of activities related to the function of the site, including oil changes and fleet maintenance, storage of materials such as paint or cleaning materials, and collection of waste or debris from sites throughout the city. These are common activities at maintenance yards, and it is not uncommon for these sites to be further evaluated for potential contamination. According to PLAN Hermosa, land uses allowed on and around the City Maintenance Yard would be light industrial. Nonetheless, any construction on the site that would entail uses for commercial or residential purposes would require remediation and cleanup activities be implemented as outlined in 40 CFR Part 260, Hazardous Remediation Waste Management Requirements.

The California Department of Toxic Substances Control (DTSC) provides a summary of all registered routes for transportation of hazardous material in the state. As of February 2014, there were no registered routes in Hermosa Beach (DTSC 2015). However, the City has designated truck

routes that can be used for transportation of hazardous materials. Such major transportation include Pacific Coast Highway (State Route 1) and portions of Pier Avenue, Valley Drive, Herondo Street, and Artesia Boulevard. When acutely toxic hazardous materials are transported, the California Highway Patrol must be notified; the Hermosa Beach Police Department and the Hermosa Beach Fire Department must also be notified if city streets are used. The City does not designate specific haul routes for hazardous materials.

Several large petroleum refineries are located near Hermosa Beach. The closest is the Chevron, El Segundo refinery and others are located nearby in Carson, Torrance and Wilmington. The refineries have experienced past toxic material releases and could produce additional releases in the future. In February 2015, an explosion at the Torrance Exxon/Mobile refinery left two people injured. The explosion also launched an 80,000-pound piece of equipment within feet of a structure that housed a highly volatile and toxic substance, modified hydrofluoric acid. Release of the hydrofluoric acid could have resulted in thousands of deaths and injuries in the surrounding area.

*Extent:*

The extent of a hazardous material spill may vary from significant impacts causing injuries and evacuation to minor impacts requiring minimal cleanup. Hazardous materials releases can be harmful in the following ways:

- Chemical, biological, and radiological agents can cause significant health risks to those exposed to them; biological agents can be additionally dangerous if they are infectious. Flammable and explosive materials also present life safety concerns when exposed to heat.
- Oil spills can present an immediate fire hazard and can contaminate drinking water supplies.
- Any release of hazardous material requires a thorough and careful clean-up of the site and decontamination of those exposed. Clean-up and recovery is time and cost consuming.
- Delays caused by hazardous materials releases and the ensuing evacuation and cleanup processes could lead to significant economic losses due to traffic delays (mobile releases) or operational shut-down (fixed facilities).
- Overall, hazardous materials can cause death, serious injury, long-lasting health effects, and damage to buildings, the environment, homes, and other property.

*Probability of Future Occurrences:*

Based on previous occurrences, the likelihood of small hazardous materials releases is high and can occur at any time.

*Regulatory Environment:*

The Hazardous Materials Transportation Act (HMTA), enacted in 1975, is the principal federal law regulating the transportation of hazardous materials. Its purpose is to "protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate, interstate, and foreign commerce" under the authority of the United States Secretary of Transportation. The Act was passed as a means to improve the uniformity of existing regulations for transporting hazardous materials and to prevent spills and illegal dumping endangering the public and the environment, a problem exacerbated by uncoordinated and fragmented regulations.

Regulations are enforced through four key provisions encompassing federal standards under Title 49 of the United States Code:

- Procedures and Policies
- Material Designations & Labeling
- Packaging Requirements
- Operational Rules

In 1990, Congress enacted the Hazardous Materials Transportation Uniform Safety Act (HMTUSA) to clarify the maze of conflicting state, local, and federal regulations. Like the HMTA, the HMTUSA requires the Secretary of Transportation to promulgate regulations for the safe transport of hazardous material in intrastate, interstate, and foreign commerce. The Secretary also retains authority to designate materials as hazardous when they pose unreasonable risks to health, safety, or property. The statute includes provisions to encourage uniformity among different state and local highway routing regulations, to develop criteria for the issuance of federal permits to motor carriers of hazardous materials, and to regulate the transport of radioactive materials.

Originally published in 1973 under the authority of §311 of the Clean Water Act, the Oil Pollution Prevention regulation sets forth requirements for prevention of, preparedness for, and response to oil discharges at specific non-transportation-related facilities. To prevent oil from reaching navigable waters and adjoining shorelines, and to contain discharges of oil, the regulation requires these facilities to develop and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans and establishes procedures, methods, and equipment requirements (Subparts A, B, and C). In 1990, the Oil Pollution Act (OPA) amended the Clean Water Act to require some oil storage facilities to prepare Facility Response Plans (FRP). On July 1, 1994, the EPA finalized the revisions that direct facility owners or operators to prepare and submit plans for responding to a worst-case discharge of oil.

## Federal

- **Resource Conservation and Recovery Act:** At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is the EPA, under the authority of the Resource Conservation and Recovery Act (RCRA). The RCRA established an all-encompassing federal regulatory program for hazardous substances that is administered by the EPA. Under the act, the EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances.
- **Hazardous Materials Transport Regulations:** The US Department of Transportation (USDOT) regulates transportation of hazardous materials between states. The USDOT Federal Railroad Administration enforces the Hazardous Materials Regulations, which are promulgated by the Pipeline and Hazardous Materials Safety Administration for rail transportation. These regulations include requirements that railroads and other transporters of hazardous materials, as well as shippers, have and adhere to security plans and also train employees involved in offering, accepting, or transporting hazardous materials on both safety and security matters.
- **Comprehensive Environmental Response, Compensation, and Liability Act:** Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as Superfund, in 1980. The act established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified

- **Regulation of Polychlorinated Biphenyls and Lead-Based Paint:** The Toxic Substances Control Act of 1976 (Title 15, United States Code, Section 2605) banned the manufacture, processing, distribution, and use of polychlorinated biphenyls (PCB) in enclosed systems. The EPA Region 9 PCB Program regulates remediation of polychlorinated biphenyls in several states, including California. The Residential Lead-Based Paint Hazard Reduction Act of 1992 amended the Toxic Substances Control Act to include Title IV, Lead Exposure Reduction. The EPA regulates renovation activities that could create lead-based paint hazards in target housing and child-occupied facilities and has established standards for lead-based paint hazards and lead dust cleanup levels in most pre-1978 housing and child-occupied facilities.

## State

- **California Hazardous Materials Release Response Plans and Inventory Law:** The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires hazardous materials business plans to be prepared and inventories of hazardous materials to be disclosed, including an inventory of the hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee safety and emergency response training (California Health and Safety Code, Division 20, Chapter 6.95, Article 1).
- **Hazardous Waste Control Act:** The Hazardous Waste Control Act is codified in California Code of Regulations Title 26, which describes requirements for the proper management of hazardous wastes. The act created the state's hazardous waste management program, which is similar to but more stringent than the federal RCRA program.
- **Government Code Section 65962.5 (Cortese List):** The provisions of Government Code Section 65962.5 are commonly referred to as the Cortese List. The Cortese List is a planning document used by the state and local agencies to provide information about hazardous materials release sites. Government Code Section 65962.5 requires the California Environmental Protection Agency (Cal/EPA) to develop an updated Cortese List annually, at minimum. The DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information for the list.
- **California Emergency Response Plan:** California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local governments and private agencies. Response to hazardous material incidents is one part of this plan. The plan is managed by the California Governor's Office of Emergency Services, which coordinates the responses of other agencies, including Cal/EPA, California Highway Patrol, the Regional Water Quality Control Board, and the LA County Emergency Services.
- **California Coastal Act**: The California Coastal Act of 1972 created the California Coastal Commission to enact policies and standards in its coastal development permit decisions. Among many issues, the California Coastal Commission and the coastal development permit program protect against oil and hazardous substance spills and regulate the disposal of hazardous substances at sea.

## Local

- **Certified Uniform Program Agency:** The Los Angeles County Fire Department Health Hazardous Materials Division is the designated Certified Unified Program Agency (CUPA) for Hermosa Beach. The CUPA was created by the California legislature to minimize the number of business inspections and fees imposed on businesses.

- **City of Hermosa Beach Emergency Operations Plan**: The City's Emergency Operations Plan addresses Hermosa Beach's planned response to emergencies associated with natural disasters, technological incidents, and national security emergencies (City of Hermosa Beach 2011). It provides an overview of operational concepts, identifies components of the City's emergency management organization in the Standardized Emergency Management System and National Incident Management System, and describes the overall responsibilities of the federal, state, and county entities and the City for protecting life and property and ensuring the overall well-being of the population.

## Drought

*Hazard Definition:*

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.

*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

### Potential Impacts of Climate Change: **Drought**

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.

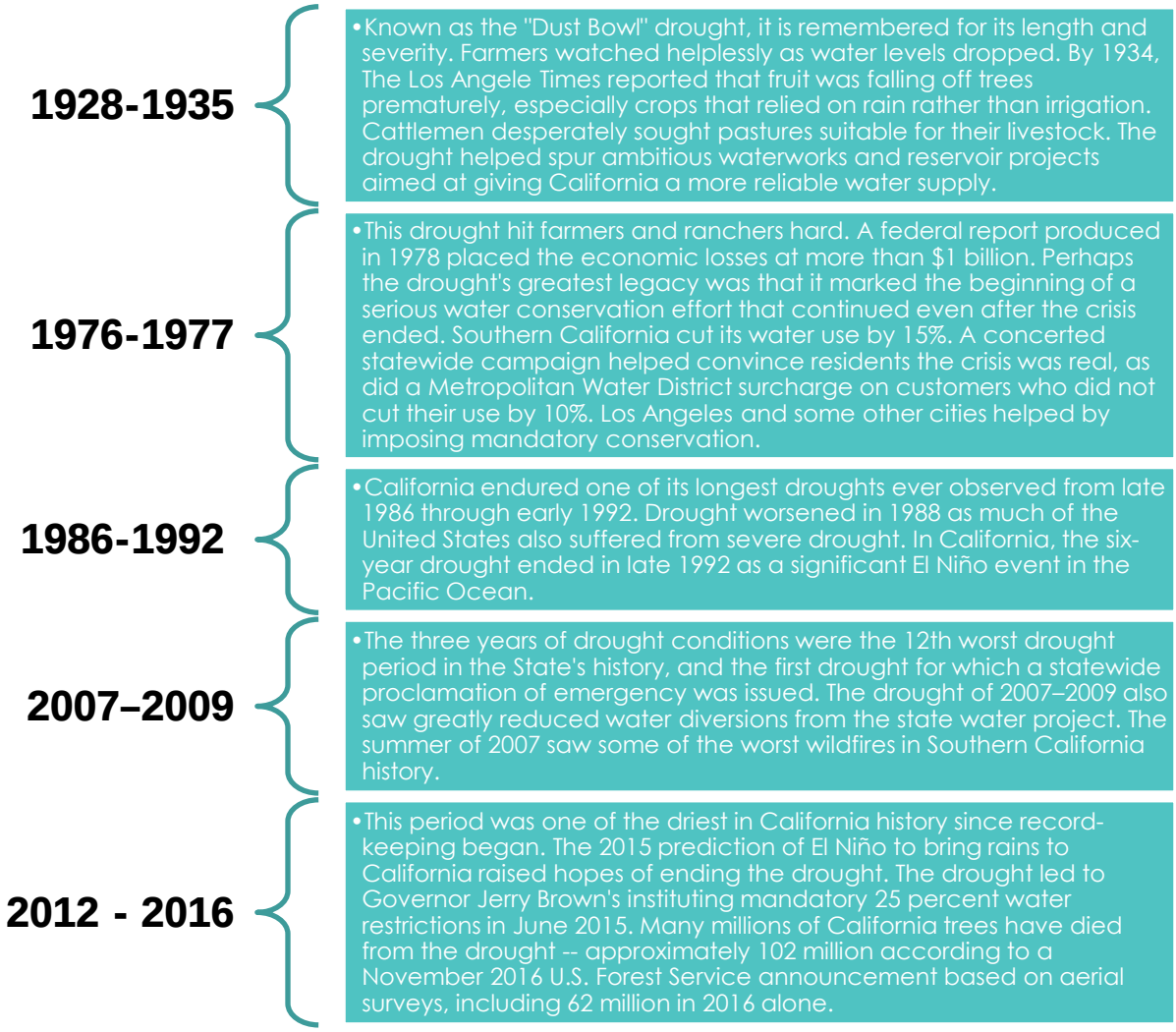
Climate change is also expected to result in more variable weather patterns throughout California. More variability can lead to longer and more severe droughts. In addition, rising sea-levels will continue to threaten the Sacramento-San Joaquin Delta, the heart of the California water supply system and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

or less. 2014 was the state's third driest in 119 years of record, based on statewide precipitation.

*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 4-6**. Drought is a common occurrence in Southern California. Severe drought can be expected to occur on average once every 10 years. Droughts usually last a few years, so that the chance of draught in any year is approximately one in three.

Figure 4-6: History of Droughts in California

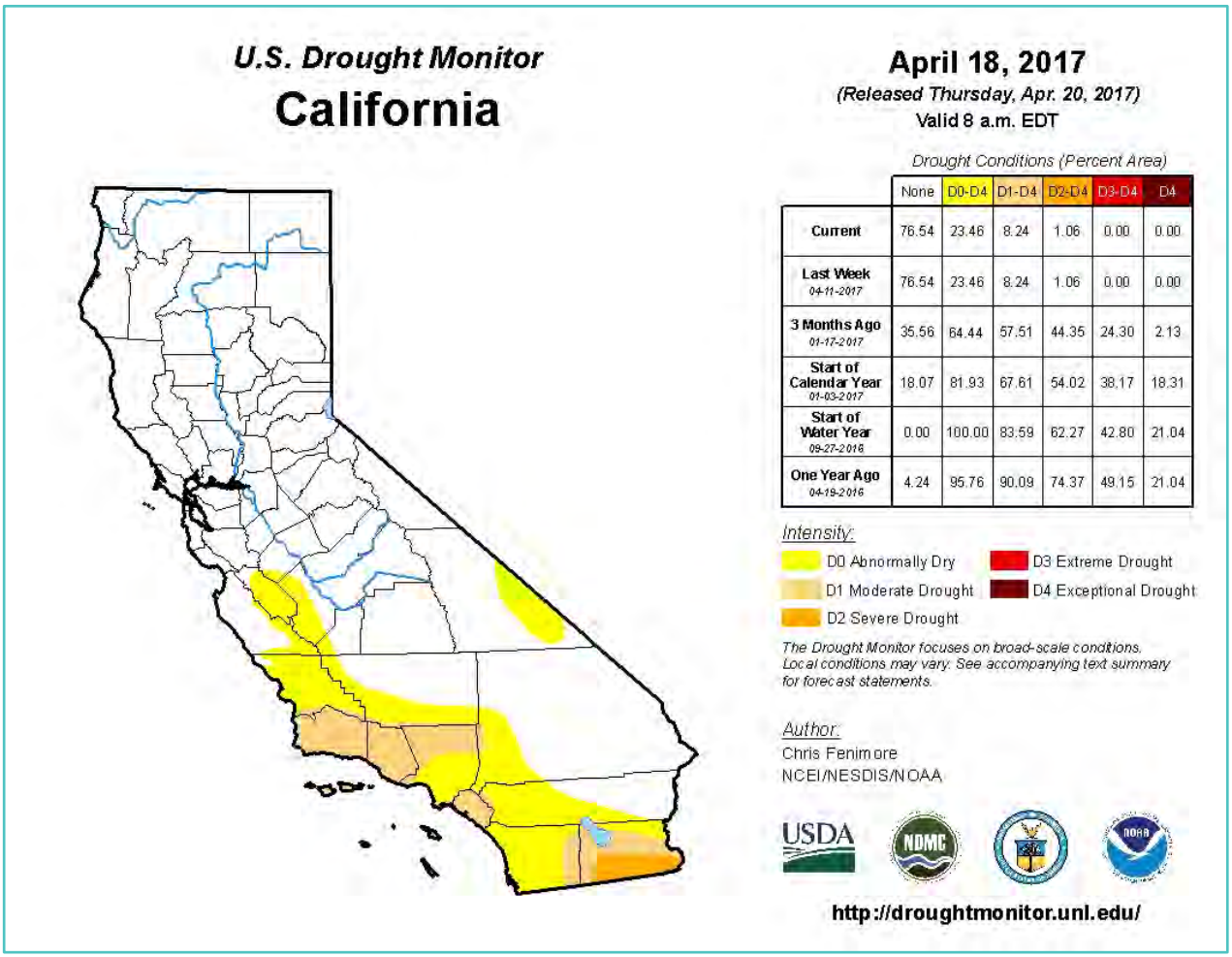



*Extent:*

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 is 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). **Figure 4-7** displays draught conditions as of April, 2017, 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.

Figure 4-7: California Drought Monitor April 18, 2017




*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. Severe drought can be expected to occur on average once every 10 years. Droughts usually last a few years, so that the chance of draught in any year is approximately one in three or 33 percent.

*Regulatory Environment:*

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.

## Extreme Heat

*Hazard Definition:*

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 seven of the top ten warmest years on record since 1998. Scientists predict that over the next century, global temperatures will increase between 2.5°F and 10.4°F.

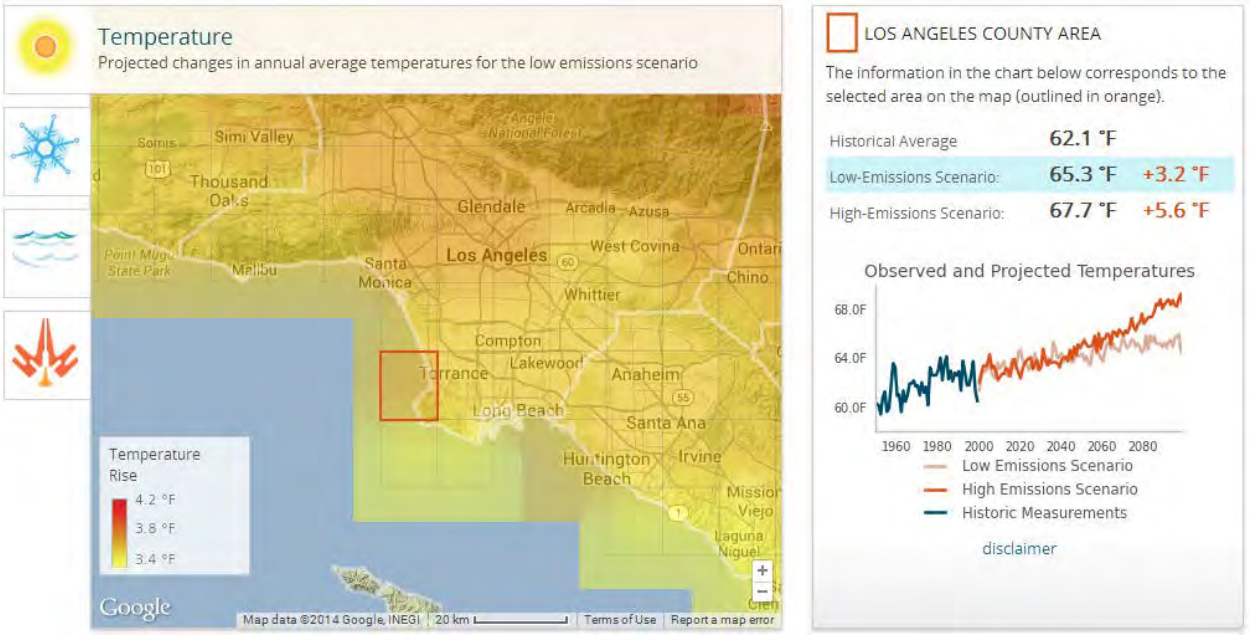
For Hermosa Beach, scientists expect average temperatures to increase between 3.2°F and 5.6°F as shown in Figure 6.5. Along with changes to average annual temperature, climate change is expected to alter seasonal temperatures, where average July temperatures may increase by as much as 7°F (See **Figure 4-8**).

### Potential Impacts of Climate Change: **Extreme Heat**

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.

## Figure 4-8: 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 this, 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.

### *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.

### *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 95 degrees Fahrenheit.

Significant events include:

- According to the National Weather Service, the longest consecutive heat wave in Downtown Los Angeles lasted for eight days, from Aug. 31 to Sept. 7 in 1955. Over the eight days, temperatures exceeded 100 degrees on seven of the eight days, and reach a high temperature of 110 degrees.
- Burbank reached an all-time high of 113 degrees on Sept. 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

*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 22° F 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 percent 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.

*Probability of Future Occurrences:*

Hermosa Beach 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.

*Regulatory Environment:*

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.

## Tsunami

*Hazard Definition:*

A tsunami is a series of waves generated in a body of water caused by a disturbance that displaces a large volume of water. Generally, subduction zone earthquakes of magnitude 7.5 or greater at plate boundaries may cause tsunamis. Tsunamis also may be generated by submarine and subaerial landslides (which may also be caused by earthquakes), submarine volcanic eruptions, and the collapse of volcanic edifices. The southern California area has been and may continue to be affected by tsunamis from both distant sources, such as large earthquakes elsewhere in the Pacific Rim, and from relatively local sources off the coast of Southern California, such as local earthquakes and landslides.

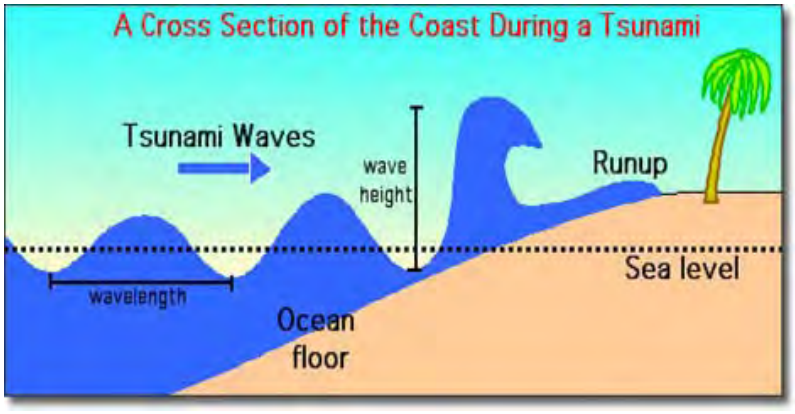
### Potential Impacts of Climate Change: **Tsunami**

As base flood elevations rise with increased sea levels, so too does the runup potential of tsunamis. The impacts of climate change on these factors are still being refined, but an increase in tsunami run-up is probable as a result of projected sea-level rise.

In open water, tsunamis exhibit long wave periods of up to several hours, and wavelengths that can extend up to several hundred miles. These characteristics distinguish tsunamis from typical wind-generated swells on the ocean, which might have a period of about 10 seconds and a wavelength of 300 feet. Tsunamis may travel across the ocean at speeds of about 500 miles per hour. The height or amplitude of a tsunami wave in deep water is generally one to three feet or less, and thus may not be noticeable to people on ships. As tsunami waves approach land, however, and as the ocean shallows, the waves slow to around 30 to 60 miles per hour, but grow significantly in height.

Tsunami run-up (see **Figure 4-9**) occurs when a peak in the tsunami wave travels from the near-shore region onto the shore. Run-up is a measurement of the height of the water onshore observed above a reference sea-level. It refers to both the distance inland, and the elevation above normal high tide, that a tsunami can reach after moving past the normal shoreline during dry-land inundation from a given point on the coast. Run-up is generally expressed as elevation above normal high tide. Run-up elevation numbers from the same tsunami will vary along a coastline due to the influence of offshore bathymetry and onshore topography.

Figure 4-9: Tsunami Creation and Run-up




*Source: SMS-Tsunami-Warning.com*

Tsunamis not only affect beaches open to the ocean, but also may cause damage to ports, harbors, bays, tidal flats, and the shores of large coastal rivers. Due to their long wavelengths, tsunami waves can also diffract around land masses. Therefore, the notion that offshore islands, peninsulas, and even man-made breakwaters may provide protection is false.

Studies have shown steep undersea slopes in the Santa Monica Bay and off San Clemente Island. There may be others in the Santa Catalina Channel.

*Location:*

Both nearby and distant earthquakes may cause tsunamis that affect Hermosa Beach. Nearby events resulting in an underwater landslide may produce short warning times of only a few minutes. Distant earthquakes would produce tsunamis that would take several hours to arrive. The Pacific Tsunami Warning Center, produces warnings watches and advisories to aid emergency managers in responding to potential tsunamis.

*History:*

The West Coast states of Washington, Oregon, and California have experienced tsunamis from as far away as Alaska, South America, Japan, and Russia. The most damaging on record is the tsunami caused by the 1964 Great Alaska earthquake. More recently, harbors in the region were damaged by events in Japan (2011) and Chile (2010). Other tsunamis in the region were produced by local earthquakes and landslides (both underwater and from land). There have been a total of 94 reported tsunamis affecting the west coast since 1812, of which 17 have had a runup over 1 meter. The total damage has been $241 million and resulted in 25 deaths.[xii] **Table 4-7** includes a list of historical tsunamis that have generated at least one meter of wave run up near Hermosa Beach.

Table 4-7: Tsunamis with Run-up of 1 Meter or Greater

| Date | Source (epicenter) | Magnitude Earthquake | Max Runup (meters) |
|---|---|---|---|
| **8/13/1868** | N. Chile | 8.5 | 1.8 (Wilmington) |
| **5/10/1877** | N. Chile | 8.3 | 1.7 (Wilmington) |
| **8/31/1930** | Santa Monica | 5.2 (underwater landslide) | 6.1 (Redondo Beach) |
| **3/28/1964** | Gulf of Alaska | 9.2 | 1.0 (Santa Monica) |

*Source: NOAA, http://www.ngdc.noaa.gov/nndc/servlet/ShowDatasets*

*Extent:*

Tsunamis may affect the entire coastal region of Southern California, and within Hermosa Beach could extend inland as far as Hermosa Avenue depending on run-up and tidal level. Tsunami inundation maps have been produced collectively by tsunami modelers, geologic hazard mapping specialists, and emergency planning scientists from the California Geological Society, Cal OES, and the Tsunami Research Center at the University of Southern California. The tsunami inundation maps for California cover most residentially and transient populated areas along the state's coastline. Coordinated by Cal OES, these official maps are developed for all populated areas at risk to tsunamis and represent a combination of the maximum considered tsunamis for each area. **Figure 4-10** contains a predictive map of potential tsunami run-up for the City. As sea levels rise, the extent of City land subject to potential inundation will increase.

Figure 4-10: Potential Tsunami Runup in Hermosa Beach


*Probability of Future Occurrences:*

A tsunami may represent a hazard ensuing from a near-source, regional earthquake resulting in an underwater landslide. The Santa Monica Bay Area is also threatened by distant-source earthquakes originating in subduction zones elsewhere in the Pacific basin, particularly from the

Alaska and Aleutian Subduction Zone. Data from the California Seismic Safety Commission indicates that since 1872, Alaska earthquakes have produced tsunami run-ups in the Bay Area on nine separate occasions, yielding a recurrence interval of 15.67 years. Historically, the run-ups from these events have been several inches at most.

*Regulatory Environment:*

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

## Terrorism

*Hazard Definition:*

The definition of terrorism by the Federal Bureau of Investigation (FBI) is "the unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives." The FBI defines cyber terrorism as the use of computer network tools to shut down critical national infrastructures (e.g., energy, transportation, government operations) or to coerce or intimidate a government or civilian population.

Terrorists may use one or more of the following types of weapons: chemical biological, incendiary, radiological, or explosive. In addition to large-scale attacks, a full range of assault styles must be considered, including simple bombings, active shooter, assassinations with small arms, major bombings, and others. Use of explosive devices remains the weapon of choice for terrorist activity. Related activities include bomb threats which disrupt the normal operations of transit systems, government or corporate facilities. Primary locations likely to be targets include airports, mass transit targets, government facilities, and high population density locations, although so-called "soft targets" such as schools, local entertainment facilities, etc. are at risk. The potential for nuclear, biological or chemical terrorism is also a concern. These types of emergencies would necessitate detailed contingency planning and preparation of emergency responders to protect their communities.

Weapons of mass destruction (WMD) typically used by terrorists are categorized by an acronym that lists the types of materials/weapons: CBRNE stands for chemical, biological, radiological, nuclear, and explosives – BNICE stands for biological, nuclear, incendiary, chemical, and explosives. The nature of each category of weapon is described briefly below:

- **Chemical:** chemical weapons include blood and choking agents, nerve agents, blister agents, and toxic industrial chemicals. The advantages of using chemical weapons for a terrorist include they are easy to make, readily available, inexpensive, have an immediate effect, and are easily spread. The disadvantages are they require significant quantities for a mass effect, and the production and deployment are potentially hazardous to the terrorist. Some chemical agents are odorless and tasteless and are difficult to detect, while others have distinct odors. They can have an immediate effect (a few seconds to a few minutes) or a delayed effect (several hours to several days). Routes of exposure for chemical weapons are inhalation, ingestion, absorption, and injection. Unlike many of the biological weapons, first responders can take self-protective measures by wearing personal protective equipment, first aid measures and effective medical interventions are available, and chemical agent exposures can be decontaminated and agents neutralized.

- **Biological:** biological weapons are defined as bacteria, viruses, or toxins used to produce illness or death in people, animals, or plants. The advantages of biological weapons are that they are easy to make, readily available, and relatively inexpensive. The disadvantages include delayed effects and potential deployment hazards to the terrorist. Routes of exposure for biological weapons are inhalation, ingestion, absorption, and injection. Biological agents can be dispersed as airborne particles or aerosols on food items or in water, or through an injection. Terrorists may use biological weapons because the agents odorless, tasteless, and extremely difficult to detect.
- **Radiological / Nuclear:** radioactive or nuclear weapons are typically in the form of a traditional fission device such as an atom bomb, a radiological dispersal device, often called a dirty bomb, or a conventional explosion at a nuclear facility. The advantages of radiological or nuclear weapons are that the materials are available, cause devastating effects and a great psychological impact on the population. The disadvantages include delayed effects, deployment is hazardous to the terrorists, and they are extremely expensive – in the millions of dollars for a nuclear weapon. Radiation cannot be detected by human senses. Consequences may include death, severe health risks to the public, damage to the environment, and extraordinary loss of, or damage to, property. The health effects of radiological or nuclear materials include radiation burns, fragmentation wounds, acute radiological poisoning, and long term effects, such as cancers and birth defects.
- **Explosives:** explosive weapons are most terrorist's weapon of choice. 86% of domestic terrorist incidents involve the use of explosives. Explosives are readily available and have dramatic results, are low risk, require few skills to build and use, are easy to execute, allow for remote attacks, and don't require many people to execute. There are low explosives and high explosives. The effects include blast pressure, both positive and negative, fragmentation, and thermal. There are pipe bombs or bombs that can be easily concealed into a backpack, box, vehicles, or virtually any type of container, with numerous trigger mechanisms to set off the bomb. Bombings account for up to 50% of worldwide terrorist attack patterns.

Cyber-terrorism: according to the U.S. Federal Bureau of Investigation, cyber terrorism is any "premeditated, politically motivated attack against information, computer systems, computer programs, and data which results in violence against non-combatant targets by sub-national groups or clandestine agents." As nations and critical infrastructure became more dependent on computer networks for their operations, new vulnerabilities are created. A cyber terrorist attack is designed to cause physical violence or extreme financial harm. Possible cyber terrorist targets include the banking industry, military installations, power plants, air traffic control centers, and water systems, but could be against any facility that relies on computers, computer systems and programs for their operations.

Active shooter: The United States Department of Homeland Security[xiii] defines the active shooter as "an individual actively engaged in killing or attempting to kill people in a confined and populated area; in most cases, active shooters use firearms and there is no pattern or method to their selection of victims." Active shooters may also use explosive devices during assaults to increase the likelihood of casualties or to commit suicide. Most incidents occur at locations in which the killers find little impediment in pressing their attack. Locations are generally described as soft targets that have limited security measures to protect members of the public. In most

instances, shooters commit suicide, are shot by police, or surrender when confrontation with responding law enforcement becomes unavoidable.

*History:*

No data exists to show that Hermosa Beach experienced acts of terrorism. The history of terrorism on United States soil includes the large-scale attacks of September 11, 2001, on the World Trade Center in New York and the Pentagon in Washington, D.C. and the ensuing anthrax attacks, the 1995 bombing of the Murrah Federal Building in Oklahoma City, and, the earlier bombing of the World Trade Center in 1993. There have been numerous smaller scale shootings, bombings and fires that have been labeled as terrorist incidents.

*Location:*

The form and locations of many natural hazards are identifiable and, even in some cases, predictable; however, there is no defined geographic boundary for terrorism. Based on previous events, it is presumed that critical facilities and services and large gatherings of people are at higher risk. Public transportation facilities have been a repeated target of terrorists. This is due to the open nature of the facilities, the large numbers of people that use them and the paralyzing affects that terrorist attacks have on communities' ability to provide transportation for daily life. Terrorist attacks on transportation systems thus have an impact that is much greater than to loss of human life and injuries and the damage done to infrastructure. By shutting down vital services and requiring increased security, they have a disproportionate economic cost.

*Extent:*

The damage caused by a terror attack is dependent on the method of attack. Large bomb attacks could destroy major infrastructure, kill many people and disrupt regional functioning for a significant time. Cyber-terrorism would cause very different types of damage, possibly severely hampering local government operations and local business with no direct injuries or loss of life. In addition to direct physical damage, terrorist attacks breed fear. Even an unsuccessful attempt to attack the region would seriously impact the comfort level of residents and could affect local business.

*Probability of Future Occurrences:*

The time and place of individual terrorist acts cannot be forecast with great accuracy. However, anti-terrorist organizations such as local law enforcement, the Northern California Regional Intelligence Center and federal agencies work collaboratively to detect, deter and disrupt potential terrorist activity. Terrorists can strike not just large cities, but in any community of any size. While no amount of planning and mitigation can remove 100 percent of the risk from terrorism, hazard mitigation and preparedness can help reduce the risk. Given the lack of information on observed historical damages, frequency of occurrence, intensity and damage parameters, no estimate is available for the probability of a future occurrence of a terrorist event.

It is not possible to estimate the probability of a terrorist attack. The approach experts use to prioritize mitigation and preparedness efforts is to identify critical sites and assess the vulnerability of these sites to terrorist attack. Vulnerability of these sites is determined subjectively by considering factors such as visibility (e.g., does the public know this facility exists in this location?), accessibility (e.g., is it easy for the public to access this site?) and occupancy (e.g., is there a potential for mass casualties at this site?).

Public transportation systems are potentially subject to terrorist attacks and have been the venue for numerous previous terrorist incidents. The open nature of buses, trains and ferries, and the confluence of transit facilities with other public meeting places and tourism attractions results in heightened vulnerabilities. In circumstances, such as these, multiple organizations bear responsibility for mitigation activities.

Buildings and other structures constructed to resist earthquakes and fires usually have qualities that also limit damage from blasts and resist fire spread and spread of noxious fumes. Efforts to retrofit buildings to resist earthquakes often provide cost-effective opportunities to incorporate measures to mitigate against attacks using bombs, chemical and biological agents.

*Regulatory Environment:*

There are numerous laws and regulations that relate to terrorism both at the state and federal levels. Key laws that are particularly applicable to the City are:

- 18 United States Code Title 113B Section 2323f which describes prohibitions for bombings of places of public use, government facilities, public transportation systems and infrastructure facilities
- The Critical Infrastructure Information Act of 2002 (CII Act) facilitates greater sharing of critical infrastructure information among the owners and operators of the critical infrastructures and government entities with infrastructure protection responsibilities, thereby reducing the nation's vulnerability to terrorism


# 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 4, Community Profile. 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, Hermosa Beach had an assessed valuation of secured and unsecured property of $6.59 billion in 2016, up 8.3% from the previous year[xiv]. 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.

**Table 5-1** lists the assets in Hermosa Beach.

## Table 5 - 1: 2017 Hermosa Beach Asset Inventory

| Name | Address | Value | Category | Hazard Vulnerability |
|---|---|---|---|---|
| Hermosa Beach City Hall Complex | 1315 Valley Drive | $12.1 million | Built Environment | All |
| Hermosa Beach Fire Department – temporary building | 540 Pier Avenue | $29,702 | Built Environment | All |
| Hermosa Beach Public Works yard | 555 6th Street | $1.7 million | Built Environment | All |
| Hermosa Beach Community Center Complex & Emergency Operations Center | 710 Pier Avenue | $13.4 million | Built Environment | All |
| Clark Field & Clark Building | 861 Valley Drive | $1.5 million | Built Environment | All |
| Hermosa Beach Parking Structure | 13th Street and Hermosa Avenue | $9.0 million | Built Environment | All |
| Hermosa Beach Prospect Avenue Building | Prospect Avenue and 6th Street | | Built Environment | All |
| Ardmore Park | 491 Ardmore Drive | | Natural Resource | All |
| Valley Park | Valley Drive & Gould Avenue | | Natural Resource | All |
| Hermosa Valley Greenbelt | | | Natural Resource | All |
| Noble Park | 1400 The Strand | | Natural Resource | All |
| South Park | 425 Valley Drive | $1.1 million | Natural Resource | All |
| Lawn Bowling Green | Valley Drive & 9th Street | | Natural Resource | All |
| Edith Rodaway Friendship Park | Prospect Avenue & Hollowell Avenue | | Natural Resource | All |
| Hermosa Beach Ocean and Sandy Shore | 2 miles of shoreline running entire western boundary of Hermosa Beach | | Natural Resource | All |
| Hermosa Beach Chamber of Commerce | 1007 Hermosa Avenue | | Economy | All |
| Roadways | All roads are maintained by HB except Pacific Coast Highway and Artesia Boulevard | | Built Environment | All |
| California Water Service Water Tower | 1600 Golden Avenue | | Built Environment | All |
| Sewer Lines connected to LA County Sanitation District trunk lines flows to LA County Sanitation District's Joint Water Pollution Control Plant | 37 miles | | Built Environment | All |

| Name | Address | Value | Category | Hazard Vulnerability |
|---|---|---|---|---|
| West Coast sub basin of the Coastal Plain in the LA Watershed | | | Built Environment | Earthquake, Wind, Flood, Climate Change, Terrorism |
| Storm Drainage | County-owned & City-owned lines that run east to west along major roads including 16th St, Pier Ave. and 2nd St. | | Built Environment | All |
| Outfalls | 11 located on the beach or in the Pacific Ocean | | Built Environment | All |
| Telecommunications Line | 13 internet providers – 1 cable, 2 copper, 3 DSL, 1 Fiber, 1 Fixed wireless, 5 Mobile | | Built Environment | All |
| Seven Pump Stations | 3500 The Strand | | Built Environment | Earthquake, Wind, Tsunami |
| Landing Site of multiple Transpacific Submarine Cables | 2nd Street and 25th Street | | Built Environment | Earthquake, Tsunami |
| Frontier Switching Station | 102 Pacific Coast Highway | | Built Environment | All |
| Herondo Drainage System | | | Built Environment | All |
| Southern California Gas – Natural Gas providers. | All businesses and residents | | Built Environment | All |
| Southern California Edison – Electricity provider | All businesses and residents – overhead and underground distribution lines | | Built Environment | All |
| Hermosa Valley School | 1645 Valley Drive | | Built Environment | All |
| Hermosa View School | 1800 Prospect Avenue | | Built Environment | All |
| North School | 417 25th Street | | Built Environment | All |
| LA County Lifeguard Headquarters | 1201 The Strand | | Built Environment | All |
| Vons Shopping Center | 715 Pier Avenue | $5.72 million | Built Environment/ Economy | All |
| Trader Joes | 1100 Pacific Coast Highway | $1.23 million | Built Environment/ Economy | All |
| Sunrise Senior Assisted Living | 1837 Pacific Coast Highway | | Built Environment | Earthquake, Flood, Wind |
| Marine Land Motor Home Park | 531 Pier Avenue | $3.47 million | Built Environment | Earthquake, Flood, Wind |
| Our Lady of Guadalupe | 320 Massey Street | | Built Environment/ People | Earthquake, Wind |
| St. Cross Episcopal Church | 1818 Monterey Street | | Built Environment/ People | All |
| Hope Chapel | 2420 PCH | | Built Environment/ People | All |

| Name | Address | Value | Category | Hazard Vulnerability |
|---|---|---|---|---|
| Church of Christ | 1062 Aviation Boulevard | | Built Environment/ People | All |
| Beach Cities Christian fellowship | 730 11th Street | | Built Environment/ People | All |
| First Church of Christ Scientist | 1547 Manhattan Avenue | | Built Environment/ People | All |
| Wave Church | 730 11th Street | | Built Environment/ People | All |
| Hermosa Beach Rotary | P.O. Box 204, Hermosa Beach | | People | All |
| Hermosa Kiwanis | P.O. Box 121, Hermosa Beach | | People | All |
| South Bay Alano Club | 702 11th Place | $484,727 | Built Environment/ People | All |
| Los Angeles Airport | 1 world Way, Los Angeles, CA 90045 | $34.3 billion | Built Environment | All |
| Chevron Refinery | 324 El Segundo Boulevard, El Segundo, CA 90245 | | Built Environment/ Economy | All |
| Exxon Mobile Refinery | 3700 W. 190th Street Torrance, CA 90504 | | Built Environment/ Economy | All |
| Beach Cities Health District | 514 N. Prospect Avenue Redondo Beach, CA 90277 | $1.6 million | Built Environment/ People | All |
| Little Company of Mary Hospital | 4101 Torrance Boulevard, Torrance | $121 million | Built Environment/ People | All |
| Torrance Memorial Physician Network | 703 Pier Avenue | $1.6 million | Built Environment/ People | All |
| Torrance Memorial Hospital | 3330 Lomita Boulevard, Torrance | $11.1 million | Built Environment/ People | All |
| Harbor-UCLA Medical Center | 1000 West Carson Street, Torrance | $1.5 million | Built Environment/ People | All |
| Concierge Mobile Animal Hospital | 703 Pier Avenue | $1.6 million | Built Environment/ People | All |
| Hermosa Animal Hospital | 560 PCH, Hermosa Beach, CA 90254 | $3.5 million | Built Environment/ People | All |
| VCA Coast Animal Hospital | 1560 PCH, Hermosa Beach, CA 90254 | $602,676 | Built Environment/ People | All |

## 5.2 Hazard Impacts and Potential Losses

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 infrastructure to the identified hazards. This risk assessment includes only those hazards that have the ability to cause damage to buildings and infrastructure, therefore, hazardous materials, drought, public health and climate change are not included in the assessment. More detailed assessments of risk that would include deaths and injuries, and economic losses, are beyond the scope of this plan.

**Populations and Businesses at Risk**

Residential population data the City obtained from the State of California Department of Finance E-1 Population Estimates for Cities, Counties, and the State — January 1, 2016/2017. The

population is estimated to be 19,616. Approximately 1,125 people in Hermosa Beach between 16 and 64 years of age, or 15% of the working age population, indicated a work-related disability. Of those aged 65 and over, 959 disabilities were reported. Included within these disabilities are persons whose disability hinders their ability to go outside the home (3.3% of the working age and 17.5% of the senior population).

**Economic Risks**

The 2010 Census Data lists the building inventory in Hermosa Beach as 10,162 residential units in 6,332 structures. There are 519 commercial structures. The average house value in 2016 was $1,422,000.[xv] Hermosa Beach is a "bedroom community" as evidenced by a household count of +10,000 and an in-city business count of under 1,000.

The City is a popular tourist and visitor destination. As a beach city, the three highest occupations are management, sales, and administrative support. Visitor counts in the summer exceed 1,000,000 per month. Many of the City's businesses provide tourist services such as restaurants, and tourist and surf shops. The largest employers are: 24 Hr. Fitness – 182 employees, City of Hermosa Beach – 129 employees, Vons Companies – 115 employees, Sangria/American Junkie – 94 employees.

**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 5-2** 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 qualitative assessment has been prepared for the critical facilities affected by each hazard assessed, and includes a value for 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 5-2: Summary of Potential Loss**

| Hazard Type | Impacts/Costs/Mitigations |
|---|---|
| Climate Change | Impacts: Climate change will cause multiple effects to infrastructure and community public health. Warmer weather associated with climate change will result in more heat related illness. Drier weather will place increasing demands on imported and well water, and may lead to long lasting draughts that result in water rationing.<br><br>Costs: Climate change costs are difficult to specify. They will occur and accrue over centuries. As temperatures rise, additional costs for climate |

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| | control such as air conditioning will occur. Less precipitation may result in depletion of stored and ground water reserves with potential for increased water costs and rationing. Much of these costs will be borne by individuals and families. Increased costs will also affect businesses and government owned facilities. Researchers at UC Berkeley (Science, May 2017) concluded that for every 1-degree Fahrenheit increase in global temperatures, the U.S. economy stands to lose about 0.7 percent of its Gross Domestic Product, with each degree of warming costing more than the last.<br><br>Hazard Specific Mitigation Measures: 3-3, 4-1 |
| Earthquake | Impacts: A wide range of potential earthquake events may affect the City. The impacts of any particular earthquake will be determined by the magnitude and epicentral distance of the event. There is a 7% likelihood of an 8MM, extremely damaging earthquake occurring in the Los Angeles Basin within the next 30 years and a 70% chance of a 7MM event. The most immediate effects will be damaged structures, fires, loss of power, and water and waste water, and deranged transportation systems. Housing and other structures near the beach are more likely to be affected due to being built on liquefiable soils. The loss of housing stock, combined with degradation of lifeline infrastructure and transportation systems will result in the need for large scale care and shelter services, evacuations and economic decline. The City will be impacted both by the losses within its borders and by the regional impacts which will require massive response and recovery efforts. Recovery will likely require decades.<br><br>Costs: Regional costs from structural damage, fires and population support will likely exceed 200 billion dollars. Long term costs will be substantially higher due to economic decline resulting from loss of support services and jobs, displaced populations and changes to the tax base. Immediate insurable losses to the City could easily be over $100,000,000. Housing and other structures near the beach are more likely to be affected due to being built on liquefiable soils.<br><br>Hazard Specific Mitigation Measures: 1-2, 1-3, 1-4, 1-5, 1-10, 1-11, 3-4. 3-5 |
| Winter Storms | Impacts: Winter storms and high winds are likely to occur on an annual basis. Their primary impacts are beach erosion, downed powerlines and vegetative debris. Damage to structures is unlikely other than that caused by falling trees or limbs.<br><br>Costs: Winter storm costs include debris removal and beach replenishment. They are typically less than $100,000 per event.<br><br>Hazard Specific Mitigation Measures: 1-10, 3-3, 4-1 |

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| Flooding/Sea Level Rise | Impacts: Flooding in the City is generally moderate and occurs near the City and County outfalls on the beach resulting in pooled water. There are no City owned structures in the 100-year flood plain. As sea levels rise, more of the City will be susceptible to coastal flooding.<br><br>Climate related sea level rise will likely result in increased and potentially more severe beach erosion and inundation are more likely. This may result in economic losses due to decreased tourism and visitors. Properties near the shore may be inundated frequently or may require relocation or need to be elevated. Sea level rise will also increase vulnerability to salt water intrusion into the ground water near the beach resulting in increased costs to prevent it.<br><br>Costs: Current flood cost are likely to be less than $100,000 per year. As sea levels rise, cost will increase for flood fighting and flood protective measures.<br><br>Hazard Specific Mitigation Measures: 1-2, 1-10, 3-3, 4-1 |
| Hazardous Material | Impacts: The potential impacts of hazardous materials releases vary greatly due to the location and nature of the incident. The most serious, likely impacts would result from a toxic release due to a fire at one of the several nearby refineries. Under certain wind conditions, air quality could be severely degraded. The refineries have the potential to produce hydrogen fluoride, hydrogen cyanide, hydrogen sulfide, acrolein, benzene and possibly other air pollutants of concern. In sufficient concentrations, these pollutants can cause injuries and death, and potentially result in a mass fatality incident.<br><br>Costs: Costs associated with a toxic release are difficult to quantify due to the variability of potential scenarios. Past toxic releases from refineries in the State have resulted in hundreds of reports of breathing difficulty, nausea, headache, actual heart attacks, and panic attacks. When shelter-in-place procedures are implemented, the incidents have caused lost work time and decreased economic activity.<br><br>Hazard Specific Mitigation Measures: 1-7, 1-8, 1-9, 1-13 |
| Drought | Impacts: Drought produces a variety of impacts that span many sectors of the economy. Reduced crop 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 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 City is dependent on imported water for most of its needs. During prolonged draughts, water rationing is possible resulting in potentially higher water costs and loss of private and public |

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| | landscaping.<br><br>Costs: Potential costs from draught to the City and its communities are difficult to quantify and are dependent upon duration and severity. In addition to increased costs for water, prolonged draught may result in reduced property values, loss of tax revenues and migration, all of which will cause economic losses.<br><br>Hazard Specific Mitigation measures: 2-4 |
| Extreme Heat | Impacts: Extreme heat events present serious health risks to the City'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. Extreme heat in the region often results in large numbers of visitors to the beach and increased economic activity.<br><br>Costs: Extreme heat results in increased electricity usage and additional health care costs. While additional power costs affect both commercial and residential properties, added health care cost impact individuals and families. Extreme heat may reduce economic activity if prolonged.<br><br>Hazard Specific Mitigation measures: 1-11, 3-3 |
| Tsunami | Impacts: Tsunamis have the potential to inundate a large area of the City. Current predictive modes indicate that tsunami runup may reach Hermosa Avenue along the entire waterfront of the City. In addition to massive property damage, a tsunami may cause death and injury if low lying areas are not effectively evacuated.<br><br>Costs: A maximum tsunami event could result in $100,000,000 of damage. Deaths and injuries may be prevented due to the length of warning time most likely available.<br><br>Hazard Specific Mitigation Measures: 1-14 |
| Terrorism | Impacts: Terrorist events have numerous effects. They result in death and injury, property damage and decreased economic activity. Additionally, terrorism has a psychological impact on communities that varies dependent on the incident's severity. Psychological impacts may potentially last for years and result in long term societal changes such as increased security measures at public places, additional law enforcement staff and impediments to travel.<br><br>Costs: Cost associated with terrorist events vary widely. Large property losses are possible although, within the City, single property losses are |

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| | likely to be less than $10,000,000. Death and injury costs resulting from a terrorist incident such as an active shooter could be substantially higher but are difficult to value.<br><br>Hazard Specific Mitigation Measures: 1-16 |


# 6 Capability Assessment

The reason for conducting a capability assessment is to identify the City's capacity to successfully implement mitigation activities. Understanding internal and external processes, resources, and skills helps to form the foundation of a successful LHMP. Understanding strengths and weaknesses also helps ensure that goals and objectives are realistic and attainable.

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. Staff resources include technical personnel such as planners with knowledge of development and land management practices, engineers with an understanding of natural or human-caused hazards, and staff with expertise of the hazards. The planning team also considered ways to expand on and improve existing policies and programs with the goal of integrating hazard mitigation into the day-to-day activities and programs of the City.

In carrying out the capability assessment, several areas were examined:

- Planning and Program Capabilities
- Administrative and Political Capabilities
- Technical Capabilities
- Fiscal Capabilities
- Education and Outreach Capabilities
- NFIP Participation and Floodplain Management Activities
- Previous and Ongoing Mitigation Activities

## 6.1 Planning and Program Capabilities

These include local ordinances, policies and laws to manage growth and development. Examples include land use plans, capital improvement plans, transportation plans, emergency preparedness and response plans, building codes and zoning ordinances. Key plans and programs capabilities are listed in **Table 6 – 1.**

Table 6 – 1: Plans and Program Capabilities

| Name | Description (Effect on Hazard Mitigation) | Hazards Addressed | Updated since 2010 |
|---|---|---|---|
| Plan Hermosa – General Plan/Coastal Land Use Plan | PLAN Hermosa, the General Plan/Coastal Land Use Plan for Hermosa Beach, provides a future vision, policies, and proposed actions to guide residents, decision-makers, staff members, project developers, and businesses in Hermosa Beach. For City staff, PLAN Hermosa 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. The LHMP will be adopted as a part of PLAN Hermosa Beach Health and Safety Element thereby improving coordination between the two plans. | All | Yes Draft 2015 – Adoption anticipated in 2017 |
| Municipal Code | The municipal code is a codification of the City of Hermosa Beach's Ordinances. These include zoning laws and land use permits processes. Adherence to Municipal Code regulates growth and controls land use patterns. The LHMP recommends changes to improve the Municipal code to mitigate earthquake. | All | Yes |
| City of Hermosa Beach Strategic Plan | The Strategic Plan provides long term over aching goals for the City staff to achieve to accomplish the mission and vision of Hermosa Beach. The Strategic Plan provides the framework for other plans such as the LHMP and General Plan. In turn, the LHMP mitigation measures will be considered as the Strategic Plan is reviewed and updated. Particular attention will be paid to climate change and sea level rise. | All | Yes |
| Hermosa Beach Municipal Carbon Neutral Plan | This plan redirects energy towards ineffective measures to newer measures that have proven to be effective. The focus is on transportation, and building natural energy with electricity, gas, water and waste. This plan addresses activities and processes designed to reduce atmospheric carbon release and reduce the effects of climate change. As the Carbon Neutral Plan is reviewed and updated, the LHMP will inform description of the hazards from CO2 emissions and the impact on climate change. | All | Yes, Adopted in 2015 |
| Civic Facilities Assessment | Determines the challenges and needs of the critical infrastructure within the city and provides options on how to address the needs. The assessments were used to select and prioritize mitigation actions based upon the vulnerabilities of City facilities. As mitigation measures for civic facilities are | All | Yes |

| Name | Description (Effect on Hazard Mitigation) | Hazards Addressed | Updated since 2010 |
|---|---|---|---|
| | implemented, the assessment will be updated and any remaining hazard mitigation measures of the facilities re-prioritized based on changes. | | |
| Sea Level Rise - Social Vulnerability Assessment | The plan was developed in cooperation with the environmental impact report for the Plan Hermosa update. The assessment provided the impact of sea level rise on the City's communities from a social justice and vulnerability perspective. It supported prioritizing climate change mitigation activities. The LHMP provides mitigation measures to address the impacts of sea level rise. These can be added to the Sea Level Rise - Social Vulnerability Assessment. | Sea-Level Rise | Yes, Created 2014 |
| Sea Level Rise - Infrastructure Vulnerability Assessment | This study was developed through a grant from the California Coastal Conservancy. It was used to describe the effects of sea level rise and determine the values at risk due in the future. As sea levels continue to rise, this assessment can be updated to reflect more accurate data. The LHMP provides mitigation measures to address the impacts of sea level rise. These can be added to the Sea Level Rise - Infrastructure Vulnerability Assessment. | Sea-Level Rise | Yes, Created 2016 |
| Enhanced Watershed Management Plan | A Beach Cities Enhanced Watershed Management Program (EWMP) has been prepared for the Beach Cities Watershed Management Area, which covers the Santa Monica Bay and Dominguez Channel watersheds. The City of Hermosa Beach, along with the Cities of Redondo Beach, Manhattan Beach, and Torrance and the Los Angeles County Flood Control District, formed the Watershed Management Group and developed the plan. The plan summarizes watershed-specific water quality priorities; outlines a plan program consisting of specific strategies, control measures, and best management practices (BMPs) necessary to achieve water quality targets; and describes the quantitative analyses completed to support target achievement and permit compliance. The LHMP includes a mitigation action to develop and implement a City-wide water wise program to reduce water usage and improve water quality. | Flooding | Yes, Adopted 2015 |
| Healthy Air Hermosa 2012 | Provides regulations adopted by the city of Hermosa Beach to ensure that the residents have healthy air to breath. The LHMP provides mitigation measures that address climate change related to improvement of air quality. | Climate Change | 2012, Updated 2016 |
| Hazard Materials Plan | Provides the hazardous materials within the community and along with the regulations on how to manage and discard the hazardous waste. The LHMP may provide mitigation measures that address hazardous material releases and supports managing hazardous waste. The LHMP contains mitigation actions that address hazardous materials. These include maintaining the City's website and other outlets with information regarding the safe handling and disposal of household hazardous waste materials. | Hazardous Materials | |

| Name | Description (Effect on Hazard Mitigation) | Hazards Addressed | Updated since 2010 |
|---|---|---|---|
| Emergency Operations Plan | Provides an overview on how the City of Hermosa Beach will respond to emergencies. The hazards section of the EOP is informed by the LHMP as the two are closely correlated. The LHMP will be used to update and improve the EOP. | All | 2016 |

## 6.2 Administrative and Political Capabilities

These capabilities include staff and their skills and tools used for mitigation planning and implementation such as engineers, planners, emergency managers, GIS analysts and building inspectors. **Table 6 -2** lists administrative and political capabilities.

Table 6 - 2: Administrative and Political Capabilities

| Name | Description (Effect on Hazard Mitigation) | Hazards Addressed |
|---|---|---|
| Emergency Preparedness Advisory Commission (EPAC) | The Emergency Preparedness Commission provides advice and recommendations to the City Council on how the City and the residents can prepare and respond swiftly and responsibility to emergencies. The LHMP provides several mitigation actions to increase and improve outreach programs to better prepare residents to respond to disasters. | All |
| Southern California Association of Governments (SCAG) | The Southern California Association of Governments 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. City participation in SCAG working groups and Association meetings will use information on hazard characterization and mitigation measures in the LHMP improve the understanding of and address SCAG focuses upon such as transportation, growth management and resiliency. | All |
| South Bay Cities Council of Government | Provide 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. City participation in South Bay Cities Council of Government working groups and Council meetings will use information on hazard characterization and mitigation measures in the LHMP to improve the understanding of and address the key issues SCAG focuses upon such as transportation, growth management and resiliency. | All |
| Hermosa Beach Staff | The staff members of Hermosa Beach will be participating as subject matter experts. Members from Public Works, Community Development, Fire, and City Manager's office will be on the planning committee. The LHMP will support efforts by City staff to implement the mitigation actions it contains. It will also provide information to improve the effectiveness of other planning efforts. | All |

## 6.3 Technical Capabilities

These capabilities include community (including public and private) staff and their skills and tools used for mitigation planning and implementation. Technical capabilities are listed in **Table 6 – 3.**

Table 6 - 3: Technical Capabilities

| Name | Description (Effect on Hazard Mitigation) | Hazards Addressed |
|---|---|---|
| Cal Water Service Company | Provides water resources within the City of Hermosa Beach. The LHMP contains mitigation actions to partner with lifeline infrastructure providers to improve the resiliency of their service. | All |
| Southern California Gas Company | Provides gas service within the City of Hermosa Beach. The LHMP contains mitigation actions to partner with lifeline infrastructure providers to improve the resiliency of their service. | All |
| Southern California Edison | Provides electricity to the City of Hermosa Beach. The LHMP contains mitigation actions to partner with lifeline infrastructure providers to improve the resiliency of their service. | All |
| Los Angeles County Office of Emergency Management | Los Angeles County Office of Emergency Management is the operational area coordinating agency responsible for providing emergency response and recovery assistance along with planning, mitigation, and preparedness. The LHMP provides the basis for discussing and improving the understanding of the hazard the City faces with the Operational Area responsible for resource and mutual aid support during disaster response. | All |
| LA County Lifeguards | The Los Angeles County lifeguards are an asset to the City of Hermosa Beach as they protect the residents while visiting the beach and will be utilized to provide emergency notifications should there be a tsunami. The mitigation measure to study and implement a hazard notification and warning system will improve the ability of LA County lifeguards to notify and evacuate the beach in event of a tsunami. | All |

## 6.4 Fiscal Capabilities

These capabilities include general funds, property sales, bonds, development impact fees, or other fees. **Table 6 -4** lists fiscal capabilities.

Table 6 - 4: Fiscal Capabilities

| Name | Description (Effect on Hazard Mitigation) | Hazards Addressed |
|---|---|---|
| City of Hermosa Beach Fees | The City of Hermosa Beach Fee schedule provides the fees associated with various permits, programs, and fines. The fee schedule is updated annually. The LHMP provides a mitigation action that could increase City fees for development projects. | All |
| General Fund | Provides funding for capital improvements, maintenance and support for City infrastructure. The LHMP contains several projects that will tap into the General Fund. Its guidance can improve the setting priorities for General Fund allocations. | All |
| Coastal Commission/Coastal Conservancy | Received 3 direct grants and 1 indirect grant from the Coastal Commission and Coastal Conservancy to conduct studies and develop policy associated with sea level rise. The LHMP contains projects that could be funded by Coastal Commission/Coastal Conservancy grants. LHMP guidance can improve the setting priorities for Coastal Commission/Coastal Conservancy grant applications. | Climate Change/Sea Level Rise |
| Other special funds, bonds or grants | The City has the capability to pursue bond or grant funding that is either directly connected to hazard mitigation, or indirectly supports hazard mitigation by upgrading City facilities and infrastructure. The LHMP contains several projects that will tap into special funds, bonds or grants. Its guidance can improve the setting priorities for special funds, bonds or grants allocations. | All |

## 6.5 Education and Outreach Capabilities

These capabilities include programs such as fire safety programs, hazard awareness campaigns, public information or communications offices. **Table 6 – 5** lists education and outreach capabilities.

Table 6 - 5: Education and Outreach Capabilities

| Name | Description (Effect on Hazard Mitigation) | Hazards Addressed |
|---|---|---|
| Community Emergency Response Team | CERT is a volunteer organization that promotes individual and community preparedness. Training is offered to teach critical skills to assist family and neighbors following a disaster. The LHMP contains a thorough description of City hazards. Use of this material can improve CERT training with respect to potential incidents and disasters. | All |
| Home Fire Safety 2015 | The Home Fire Safety plan encourages residents to be mindful of potential fire dangers located within their homes and encourage modifications to decrease the potential home fires. The LHMP contains mitigation actions to address home fire safety. These can be included in the Home Fire Safety 2015 plan to improve the awareness of residents of potential home fire hazards. | Fire |
| Map Your Neighborhood | Map Your Neighborhood is a community emergency preparedness campaign aimed at encouraging residents to plan and prepared together for disasters. The description of hazards and maps contained in the LHMP can improve the ability of residents to understand and plan for community hazards. | All |

## 6.6 NFIP Participation and Floodplain Management Activities

FEMA REGULATION CHECKLIST: RISK ASSESSMENT

Vulnerability Description: NFIP Insured Structures

**44 CFR § 201.6(c)(2)(ii):** The plan must "address NFIP insured structures that have been repetitively damaged by floods."

Elements

B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? See 44 CFR § 201.6(c)(2)(ii)

Source: FEMA, *Local Mitigation Plan Review Guide*, March 2013.

The City was designated as an NFIP community on June 28, 1974. The flood insurance rate maps were last updated on September 26, 2008 and designated with an M which means No Elevation Determined – All Zone A, C and X.

- Zone A: Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply. A Areas with a 1% annual chance of flooding and a 26% chance of

flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.

- Zone C and X (unshaded): Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone C may have ponding and local drainage problems that don't warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100- year flood.

The City does not have any facilities with a repetitive loss (RL) or any substantive insurance claims associated with flooding. The City will not be adding any new development within the 100-year floodplain in compliance with local ordinances and the requirements of the California Coastal Commission.

## 6.7 Previous and Ongoing Mitigation Measures

| FEMA REGULATION CHECKLIST: PLAN REVIEW AND REVISION |
|---|
| Progress in Local Mitigation Efforts<br>**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). |
| *Source: FEMA, Local Mitigation Plan Review Tool, March 2013.* |

The 2011 LHMP contained 96 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 - 6** provides the status of mitigation actions from the 2011 LHMP.

# Table 6 - 6: 2011 Mitigation Actions Status

| Project ID | Description | Status and Timeframe |
|---|---|---|
| **MULTI-HAZARD ACTION ITEMS** | | |
| **MH-1** | Integrate the goals and action items from the City of Hermosa Beach Natural Hazard Mitigation Plan into existing regulatory documents and programs, where appropriate. | Ongoing – General/ Coastal Plan, Included in new Mitigation Action 1-11 which is more specific. |
| **MH-2** | Identify and pursue funding opportunities to develop and implement local mitigation activities. | Deleted. Was not specific or actionable. |
| **MH-3** | Establish a formal role for the Hazard Mitigation Advisory Committee (Committee) to develop a sustainable process for implementing, monitoring, and evaluating citywide mitigation activities. | Carryover, Included in new Mitigation Action 1-1. |
| **MH-4** | Identify, improve, and sustain collaborative programs focusing on the real estate and insurance industries, public and private sector organizations, non-profit organizations, and individuals to avoid activity that increases risk to natural hazards. | Not addressed. Deleted. Was not specific or actionable. |
| **MH-5** | Develop inventories of at-risk buildings and infrastructure and prioritize mitigation projects. | Not addressed Removed, duplicate of MH 61. |
| **MH-6** | Strengthen emergency services preparedness and response by linking emergency services with natural hazard mitigation programs and enhancing public education on a local scale. | Ongoing. Deleted. Was not specific or actionable. |
| **MH-7** | Develop, enhance, and implement education programs aimed at mitigating natural hazards, and reducing the risk to citizens, public agencies, private property owners, businesses, and schools. | Ongoing. Deleted. Was not specific or actionable. |
| **MH-8** | Incorporate the requirements of the National Incident Management System (NIMS) into various aspects of the City's emergency response organization. | Ongoing. Deleted. Complete as required by SEMS. |
| **MH-9** | Promote public education to increase awareness of hazards and opportunities by providing a response/reply section on the website where residents can comment on the current mitigation plan. Residents will be encouraged to make suggestions to future revisions of the plan. | Ongoing. Included in mitigation action 2-1. |
| **MH-10** | Develop and implement education and outreach programs to increase public awareness of the risks associated with natural hazards. Develop a "how to" mitigation display booth to be used at special events. This display would include pictures and information, such as that contained in FEMA's Retrofitting for Homeowners Guide, Elevating Your Flood Prone Home, how to elevate critical structures and utilities and information on the NFIP. | Ongoing. |
| **MH-11** | Develop a Business Continuity Planning Display. The display will be designed to raise the awareness level of why it is important to have a Business Continuity Plan, how to develop a plan, and will encourage businesses to make sure that their plan fits in with the City's plan. This display will be appropriate for use at local Chamber of Commerce meetings and activities, civic group gatherings and other business-related gatherings. | Need to carry over and redefine. This is a preparedness measure. |
| **MH-12** | Seek funding and complete improvements to the City's EOC. Once facility upgrades and improvements are complete, train staff in changes to facility and any revisions in Standard Operating Procedures. Significant population increases during summer days should be a primary consideration as EOC upgrades and improvements are implemented. | Completed |
| **MH-13** | Develop an Animals in Disaster Display that will be used at the SPCA, 4-H Clubs, Agricultural Fair, in Veterinarians Offices, pet stores and other places that animal owners may gather. The display will have information about preparing animals for disasters by making a disaster plan and a disaster supply kit for | Ongoing. . This is a preparedness measure. |

| Project ID | Description | Status and Timeframe |
|---|---|---|
| | each animal. The display will encourage animal owners to decide ahead of time where animals will be sheltered. | |
| **MH-14** | Provide the City Emergency Preparedness Guidebook to hotels to be available in each room or lot for visitor's information. | Carry over. . This is a preparedness measure. |
| **MH-15** | Educate the public on existing self- help agencies available within the City. Create a public speaking series on hazard related topics and utilize the media for the distribution and publication of hazard information. | Ongoing. . This is a preparedness measure. |
| **MH-16** | Promote and encourage Board of Education members to attend the Multi-Hazard Program for Schools through the Emergency Management Institute. Promote and expand the Mitigation Project to high school students in the City. The Project focuses on mitigation projects and disaster preparedness public awareness. | Carry Over – redefine Hermosa Beach School District. . This is a preparedness measure. |
| **MH-17** | Provide business continuity workshops for business owners to learn the importance of disaster mitigation and how to create an emergency operations plan for their business. Maintain resource centers in City Hall. Display racks include Emergency Preparedness Guidebook, FEMA's Are You Ready, the Special Needs Survey, brochures on disaster supplies kits and plans, etc. | Ongoing. This is a preparedness measure. |
| **MH-18** | Identify opportunities for partnering with citizens, private contractors, and other jurisdictions to increase availability of equipment and manpower for efficiency of response efforts. | Deleted. Was not specific or actionable. |
| **MH-19** | Develop and maintain community emergency response teams (CERT). | Development is completed, Maintenance is ongoing. This is a preparedness measure. |
| **MH-20** | Familiarize public officials of requirements regarding public assistance for disaster response. | Completed – Training for new Council Members. This is a preparedness/recovery measure. |
| **MH-21** | Develop and complete a baseline survey to gather perceptions of private citizens and the business community regarding natural hazard risks and identify mitigation needs. Repeat the survey in five years to monitor successes and failures of natural hazard mitigation programs. | Competed. Part of the mitigation planning process. Addressed in Section 8.3 of the new LHMP. |
| **MH-22** | Coordinate the maintenance of emergency transportation routes though communication among the City roads department, neighboring jurisdictions, and the County's Department of Transportation. | Completed |
| **MH-23** | Enhance weather monitoring to attain earlier severe storm warnings. | Completed. This is a preparedness measure. |
| **MH-24** | Conduct a full review of the Natural Hazards Mitigation Action Plan every 5 years by evaluating mitigation successes, failures, and areas that were not addressed. | Completed |
| **MH-25** | Establish a committee representative of all areas of the City that will include vets, pet store owners, the Humane Society, animal shelters, the Extension Office and other interested parties to work on animal-specific evacuation and sheltering needs. Develop informational literature on animal disaster plans and supply kits and have them available in veterinary clinics and pet stores. | Ongoing. This is a preparedness measure. |
| **MH-26** | Determine what kinds of minor repairs and temporary protection activities (e.g., temporary roofing, protect against loss of life/injury, shoring, protect contents) can be done in the immediate aftermath of a disaster. | Completed. This is a preparedness measure. |
| **MH-27** | Establish and implement the National Incident Management System (NIMS) in | Ongoing. This is a |

| Project ID | Description | Status and Timeframe |
|---|---|---|
| | each agency/department. | preparedness measure. Not specific or actionable. |
| **MH-28** | Incorporate the training goals and objectives used by fire/EMS, law enforcement, public works, healthcare providers and other support personnel into selected hazardous material team training. This will foster the unified command relationship that will serve as the incident management blueprint for all disaster response. | Completed – NIMS/ICS. This is a preparedness measure. |
| **MH-29** | Assess availability of backup power resources (generators) of hospitals, nursing homes, and fire, police, rescue, and emergency management personnel; upgrade resources as necessary. | Not Addressed. Included in mitigation action 1-2. |
| **MH-30** | Enhance response capability of City and municipal fire, police, and emergency medical services personnel to special populations. | Completed. Not specific or actionable. |
| **MH-31** | Routine maintenance of the community's infrastructure will be done to minimize the potential for system failure because of or during a disaster | Ongoing. Not specific or actionable. |
| **MH-32** | Continue to provide disaster preparedness information to the public. | Ongoing. This is a preparedness measure. |
| **MH-33** | Equip existing buildings so they can be used as shelters. | Complete – supplies in a storage shelter. This is a preparedness measure. |
| **MH-34** | Install and improve back-up power in critical facilities. | Not Addressed. Duplicates MH-29. |
| **MH-35** | Review priorities for restoration of the community's infrastructure and vital public facilities following a disaster. | Not addressed. Not specific or actionable. |
| **MH-36** | Determine which building owners (and their contractors) are responsible for hauling construction and demolition debris to proper landfills. | Completed – part of our trash hauler contract. This is a preparedness measure. |
| **MH-37** | Determine how, when, and under what circumstances the government will demolish structures. | Carry over. Revised and included in new mitigation action 3.6 |
| **MH-38** | Conduct damage assessment to determine if structures are safe and capable of being used. | Applicable after a disaster only. This is a response activity. |
| **MH-39** | Review observed damage with a view toward revising codes to help mitigate damage from future disasters. | Not specific or actionable. |
| **MH-40** | Purchase a complete GIS/GPS setup and provide training on said setup to all pertinent community personnel. | This is a preparedness measure. |
| **MH-41** | Utility and communications systems supporting emergency services operations will be retrofitted or relocated to withstand the impacts of disasters. | Ongoing. Included new mitigation measure 3.5. |
| **MH-42** | Encourage the development of mutual aid systems at the local level, including the Emergency Management Assistance Compact | Completed |
| **MH-43** | Identify new sources of support such as philanthropic foundations, community foundations, and professional organizations such as the Urban Land Institute or American Planning Association who might be able to provide technical or financial support for recovery planning. | Carry over. This is a preparedness measure. |
| **MH-44** | Ensure repairs or construction funded by Federal disaster assistance conform to applicable codes and standards. | Applicable after a disaster only. Included in new |

| Project ID | Description | Status and Timeframe |
|---|---|---|
| | | mitigation measure 1-10. |
| **MH-45** | Conduct interim planning to locate, set up, and manage temporary sites where business and government functions can continue their operations during recovery. | Completed |
| **MH-46** | Determine 'abandoned structure' policy to determine in what instances government will demolish structures and what the process will be to accomplish this task. | Carry over. Duplicate of MH-37. Revised and included in new mitigation action 3.6 |
| **MH-47** | Determine temporary protection measures; install plastic sheeting on roofs, cover exterior openings such as windows or doors, draining trapped water in ceilings or draining accumulated flood waters, temporary shoring to avoid imminent building collapse or damage. | Not a mitigation action. This is a response activity. |
| **MH-48** | Encourage utility and communications systems supporting emergency services operations will be retrofitted or relocated to withstand the impacts of disasters. | Duplicate of MH – 41. |
| **MH-49** | Adoption of updates to Uniform Building Code by municipality and adopt amendments as necessary for hazard mitigation. | Ongoing. Included in new mitigation measure 1-10. |
| **MH-50** | Establish policy to ensure mitigation projects are in place to safeguard critical facilities. | Not Completed. Not specific or actionable. Included new mitigation measure 3.5. |
| **MH-51** | Develop policy for government to determine what reconstruction criteria should be applied to structures damaged during a disaster. | Not Completed. Included in new mitigation measure 1-10. |
| **MH-52** | Use the mitigation plan to help the City's Comprehensive Land Use Plan meet State Land Use Planning Goal designed to protect life and property from natural disasters and hazards through planning strategies that restrict development in areas of known hazards. | Completed |
| **MH-53** | Develop public and private partnerships to foster natural hazard mitigation program coordination and collaboration in the City. | Ongoing. Not specific or actionable. |
| **MH-54** | Work with State's Office of Planning & Research to review regulations pertaining to the City to make sure that adequate zoning regulations are in place to reduce future development in high hazard areas. | Ongoing/In progress |
| **MH-55** | Strengthen emergency operations by increasing collaboration and coordination among public agencies, non-profit organizations, business, and industry. | Ongoing.. This is a preparedness measure. |
| **MH-56** | Establish measurable standards to evaluate mitigation policies and programs and provide a mechanism to update and revise the mitigation plan. | Ongoing. |
| **MH-57** | Encourage construction and subdivision design that can be applied to steep slopes to reduce the potential adverse impacts from development. | Completed |
| **MH-58** | Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operations plans and procedures. | Ongoing. Not specific or actionable. |
| **MH-59** | Encourage the development of unifying organizations to ensure communication and dissemination of natural hazard mitigation information. | Ongoing. Not specific or actionable. |
| **MH-60** | Improve communication between County DOT and City road departments to work together to prioritize and identify strategies to deal with road problems | Not addressed. Not specific or actionable. |
| **MH-61** | Identify critical facilities at risk from natural hazards events. | Completed |
| **MH-62** | Support/encourage electrical utilities to use underground construction methods where possible to reduce power outages from windstorms. | Completed |
| **MH-63** | Use technical knowledge of natural ecosystems and events to link natural resource management and land use organizations to mitigation activities and | Not addressed. Not specific or |

| Project ID | Description | Status and Timeframe |
|---|---|---|
| | technical assistance. | actionable. |
| **MH-64** | Establish clear roles for participants, meeting regularly to pursue and evaluate implementation of mitigation strategies. | Carry Over to new LHMP. Included in Section 8.2, Plan Maintenance. |
| **MH-65** | Improve efficiency and effectiveness of the existing City EOC through purchase of equipment, improved processes, and delivery of required training. | Completed |
| **MH-66** | Conduct a detailed vulnerability assessment in the future in order to accurately identify the extent of damages to vulnerable buildings, infrastructure, and critical facilities. | Completed |
| **MH-67** | Conduct a study to determine sufficient information to identify disaster-prone areas such as floodplains, earthquake fault lines, storm surge zones, etc. | Completed |
| **EARTHQUAKE ACTION ITEMS** | | |
| **EQ-1** | Integrate new earthquake hazard mapping data for the City of Hermosa Beach and improve technical analysis of earthquake hazards. | Completed |
| **EQ-2** | Identify funding sources for structural and nonstructural retrofitting of structures that are identified as seismically vulnerable. | Not addressed. Included in new mitigation measure 1.3. |
| **EQ-3** | Continue City strength evaluations of critical facilities in the City to identify vulnerabilities for mitigation of public infrastructure and critical facilities to meet current seismic standards. | Not addressed. Included in new mitigation measure 1.3. |
| **EQ-4** | Direct the retrofitting of un-reinforced masonry structures that are owned by the City. | Carry over. Included in new mitigation measure 1.3. |
| **EQ-5** | Require earthquake retrofit (tie downs) for residential improvement projects (using a 50% improvement threshold). | Carry over and redefine. Revised and included in new mitigation activity 1.4. |
| **EQ-6** | Tie downs required at the Marine World Mobile Home Park | Not addressed – Property governed by State, not City of HB |
| **EQ-7** | Encourage California Water Services (owner) to maintain structure integrity of water tanks. | Carry over |
| **EQ-8** | Develop and implement a public awareness campaign to retrofit homes. | Not addressed. Revised and included in new mitigation activity 1.4. |
| **EQ-9** | Minimize earthquake damage risk by retrofitting critical facilities. | Carry over. Revised and included in new mitigation activity 1.3. |
| **EQ-10** | Integrate new earthquake hazard mapping data for the City and improve technical analysis of earthquake hazards. | Same as EQ-1 |
| **EQ-11** | Encourage reduction of nonstructural and structural earthquake hazards in homes, schools, businesses, and government offices. | Nonstructural - ongoing |
| **EQ-12** | Provide demonstration programs or brochures regarding retrofitting the home for earthquake safety | Not completed. Revised and included in new mitigation activity 1.4. |
| **EQ-13** | Encourage seismic strength evaluations of critical facilities in the City to identify vulnerabilities for mitigation of schools and universities, public infrastructure, and critical facilities to meet current seismic standards. | Same as EQ-3. |
| **FLOODING ACTION ITEMS** | | |
| **FLD-1** | Analyze each repetitive flood property within the City of Hermosa Beach and | Not addressed. City |

| Project ID | Description | Status and Timeframe |
|---|---|---|
| | identify feasible mitigation options. | has nor repetitive flood loss properties. |
| **FLD-2** | Recommend revisions to requirements for development within the flood- prone areas, where appropriate. | Not addressed |
| **FLD-3** | Identify and inventory City-owned flood-prone areas. | Completed |
| **FLD-4** | Prepare and adopt a storm runoff ordinance. | Completed |
| **FLD-5** | Record locations of all structures within the floodplain, as well as, areas of repetitive losses due to flooding. | Completed. |
| **FLD-6** | Prohibit or limit below grade construction in low-lying areas by the beach. | Completed |
| **FLD-7** | Minimize the risk of erosion through policy development. | In progress. Included in new mitigation activities 1.6 and 4.1. |
| **FLD-8** | During processing of development permits and Capital Improvement Projects the City will continue to supply and enforce standards associated with NFIP | Ongoing. |
| **TSUNAMI ACTION ITEMS** | | |
| **TS-1** | Maintain existing warning siren systems in the Fire Station located at 540 Pier Avenue. | Siren Removed |
| **TS-2** | Post Tsunami Warning Signs at Beach | Completed |
| **TS-3** | Tsunami Public Education Campaign | Ongoing. Not specific or actionable. |
| **TS-4** | Install Tsunami signs and warning sirens into public education facilities. | Not completed. Included in new mitigation activity 1-14. |
| **WINDSTORM ACTION ITEMS** | | |
| **WS-1** | Continue to implement programs to minimize losses to lives, property, and public infrastructure caused by falling trees. | Ongoing. Not specific or actionable. |
| **WS-2** | Enhance strategies for debris management for windstorm events. | Ongoing. This is a preparedness activity. |
| **WS-3** | Support and encourage electrical utilities to use underground construction methods where possible to reduce power outages from windstorms. | Duplicate of MH-62. |
| **WS-4** | Continue enforcement of wind- resistant building siting and construction codes. | Ongoing. Included in mitigation activity 1-10. |

# 7 Mitigation Strategy

The mitigation strategy of the LHMP is to maintain and enhance a disaster-resilient City by reducing the potential for loss of life, property damage, and environmental degradation from natural disasters, while supporting economic recovery from such disasters. This goal is unchanged from the previous LHMP and continues to be the goal of the City in designing its mitigation program.

FEMA REGULATION CHECKLIST: MITIGATION STRATEGY

Local Hazard Mitigation Goals

**44 CFR § 201.6(c)(3)(i):** The plan shall include a "description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards."

Element

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

Identification and Analysis of Mitigation Actions

**44 CFR § 201.6(c)(3)(ii):** The mitigation strategy shall include "a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Elements

**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)

*Source: FEMA, Local Mitigation Plan Review Tool, March 2013.*

## 7.1 Overview of Mitigation Strategy and Goals

Mitigation goals are guidelines that represent what the community wants to accomplish through the LHMP. Goals are broad statements that represent a long-term, community-wide vision. The planning team reviewed example goals and objectives and determined which goals best met CITY's objectives for mitigation. The goals also align with the hazards in the LHMP and input provided by stakeholders and the public. **Table 7-1** lists the goals for the LHMP.

Table 7-1: 2017 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 and rapidly initiate disaster recovery actions. |

## 7.2 Identification and Analysis of Mitigation Actions

The City's previous LHMP efforts were included in the 2011 LHMP. Many of the mitigation strategies are still relevant although a large number that were general in nature were removed. **Table 7-2** provides a revised set of future, city-specific mitigation actions.

Table 7-2: 2017 Hazard Mitigation Goals

| Hazard Type | Mitigation Type | Responsibility | Funding Source |
|---|---|---|---|
| CC – Climate Change | Mit. – Mitigation | EM – Emergency Manager | GF – General Fund |
| DR – Drought | Prep. – Preparedness | PW –Public Works | PA – Project Applicant |
| EQ – Earthquake | Resp. – Response | BD – Building Department | BLF – Business License Fee |
| EH – Extreme Heat | | PD – Planning Department | BG – Bonds or Grants |
| FL – Flood | | EA - Environmental Analyst | GPMF – General Plan Maintenance Fee |
| HZ – Hazardous Materials | | | |
| SW – Storms and High Winds | | | |
| TR – Terrorism | | | |
| TS – Tsunami | | | |

# Table 7-2: City-Specific Actions and Hazards Mitigated

| Strategy Number | Mitigation Strategy | Hazard | Mitigation Type | Responsibility | Funding Source | Priority |
|---|---|---|---|---|---|---|
| **Goal 1: Protect life, property, and reduce potential injuries from natural, technological, and human-caused hazards.** | | | | | | |
| 1-1 | Establish an internal Hazard Mitigation Planning Team to develop a sustainable process for implementing, monitoring, and evaluating citywide mitigation activities. | All | Mit. | EM | GF | Med. |
| 1-2 | Conduct a backup power resources assessment(generators, alternative power sources) of critical infrastructure such as fire, police, city hall, public works yard, community center complex and EOC and upgrade resources as necessary. | EQ, FL, SW | Mit. | Lead: EM Support: PW | GF | Med |
| 1-3 | Identify residential structures that are not seismically resilient and implement programs to support retrofitting | EQ | Mit. | CD | GF | Med |
| 1-4 | Require new and redevelopment projects to prepare geotechnical reports (tool used to communicate site conditions, design and construction recommendations) to include potential liquefaction and/or landslide issues and mitigation strategies and site construction recommendations." | EQ | Mit. | CD | PA | Med. |
| 1-5 | Require new development and redevelopment projects to analyze and mitigate relevant sea level rise impacts. | FL | Mit. | L: CD S: PW | GF, PA | Med. |
| 1-6 | Fund and deploy a community warning system that includes sirens and loudspeakers. | TS, EQ, FL, FR | Mit. | OES | GF, Grant | High |
| 1-7 | Identify hazardous materials that are stored and transported (ground, air, and sea) throughout the city and maintain a data base to support response capabilities of the City. | HZ | Mit. | LA County CUPA, CD | GF | High |
| 1-8 | Maintain City's website and other outlets with information regarding the safe handling and disposal of household hazardous waste materials. | HZ | Mit. | CUPA | BLF | High |
| 1-9 | Provide incentives to the community for the proper disposal of Toxic Materials (Maintain City's website and other outlets with information regarding the safe handling and disposal of household chemicals.) | HZ | Mit. | EA | BG | Med. |
| 1-10 | Continue to adopt, implement, and enforce the latest editions of the California Building and Fire Codes, with appropriate local amendments based on risk (e.g., seismic hazards, flooding), type of occupancy, and location (e.g., floodplain, fault). | EQ, FL, TR, WS | Mit. | CD | GF | High |
| 1-11 | Continue to develop, implement, revise, and maintain emergency plans which shall include, but not be limited to: EOP, COOP, Debris Removal Plan, Public Safety Element of the General Plan, and the Disaster Recovery and Resiliency Plan. | CC, EQ, FL, EH | Mit. | EM | GF | High |
| 1-13 | Develop a process and team to prepare for, | HZ | Mit. | L: EM | GF | Med. |

| Strategy Number | Mitigation Strategy | Hazard | Mitigation Type | Responsibility | Funding Source | Priority |
|---|---|---|---|---|---|---|
| | monitor, and respond to hazardous material releases within the City. | | | S: EA | | |
| 1-14 | Implement a City-wide water wise plan to survey public and private water usage and implement water conservation measures. | DR | Mit. | CD | GF | Med. |
| 1-15 | Conduct a needs assessment and develop a plan for community sheltering to include populations with disabilities and other AFN, and animals. | All | Prep. | EM | GF | Med. |
| 1-16 | Develop a plan for dispensing medical countermeasures. | TR | Prep. | EM | GF | Low |
| 1-17 | Investigate, design and implement engineering improvements to the City's storm water outfall system's operation and resiliency. | FL | Mit. | LA County, EA | GF, Grant | High |
| **Goal 2: Improve public understanding, support and need for hazard mitigation measures.** | | | | | | |
| 2-1 | Develop a public outreach and awareness campaign that informs the community regarding the hazards that can impact the city and how to implement mitigation actions at their homes to prepare themselves and their families. | All | Mit. | EM | GF | Med. |
| 2-2 | Partner with the Chamber of Commerce and local businesses to develop and implement an emergency preparedness program for businesses and visitors to the City. | All | Mit. | EM | GF | Med. |
| 2-3 | Enhance community understanding of sea level rise and the potential impacts it will have on the City. | FL | Mit. | L: CD<br>S: EA | GF | High |
| 2-4 | Develop a public outreach and awareness campaign about drought, water conservation measures and the use of recycled water. | DR | Mit | EM, EA | GF/BG | High |
| 2-5 | Encourage local business to develop a business COOP. | All | Resp. | EM | GF | Med. |
| **Goal 3: Promote disaster resistance for City's existing and future built environment.** | | | | | | |
| 3-1 | Utilize the internal Hazard Mitigation Planning Team to identify, pursue and secure funds that support risk reduction measures. | All | Mit. | EM | GF | Med. |
| 3-2 | Periodically update the Public Safety Element and concurrently amend the Local Hazard Mitigation Plan to maintain eligibility for maximum grant funding. | All | Mit. | CD | GPMF | High |
| 3-3 | Encourage all new development (including rehabilitation, renovation, and redevelopment) to incorporate "Green" building activities, increase tree plantings, use fire-resistant materials, and include projects to mitigate sea level rise and flooding. Activities may include the use of low impact development standards, energy efficient features, or active and passive solar heating and water pumping systems. | CC<br>EH<br>SW | Mit. | CD | PA | High |
| 3-4 | Develop and implement a Citywide building retrofit policy to include URMs and second soft story and other seismically vulnerable structures in the City. | EQ | Mit. | L: CD<br>S: PW, EM | GF | Med. |

| Strategy Number | Mitigation Strategy | Hazard | Mitigation Type | Responsibility | Funding Source | Priority |
|---|---|---|---|---|---|---|
| 3-5 | Develop a retrofitting action plant improve the structural integrity of city owned structures. | EQ | Mit. | L: CD<br>S: PW, EM | GF | High |
| 3-6 | Develop a post disaster recovery policy that establishes the procedures and permit requirements surrounding abandoned structures, condemned buildings, and reconstruction. The policy will need to address debris removal, hazardous materials management, utility reconnection, and designated historical landmarks. | All | Prep. Resp. | CD | GF/BG | High |
| **Goal 4: Strengthen partnerships and collaboration to implement hazard mitigation activities.** | | | | | | |
| 4-1 | Develop a long-term adaptive shoreline management program with a strong preference for beach replenishment over shoreline protective structures. Replenish beaches after major erosion events. | SW | Prep. Resp. | EM | GF | High |
| 4-2 | Coordinate with the utility companies and vendors to strengthen, safeguard, improve the resiliency of their infrastructure and facilities to address the impact of disasters on their vital lifeline services provided to the community. | EQ, FL, TS | Mit. | EM | GF | High |
| **Goal 5: Enhance City's ability to effectively and immediately respond to disasters and rapidly initiate disaster recovery actions.** | | | | | | |
| 5-1 | Continue to educate, train, and exercise City staff in compliance with California Disaster Services Workers program, SEMS/NIMS Compliance, and all other State and Federal requirements. | All | Mit. | EM | GF | Med. |
| 5-2 | Build a cadre of committed, and trained volunteers to augment disaster response and recovery efforts in compliance with the California Disaster Service Worker program guidance. These volunteer teams may include but are not limited to: Community Emergency Response Team, American Red Cross shelter workers, animal rescue and care teams, and Amateur Radio communications teams. | All | Mit. | EM | GF | High |
| 5-3 | Develop a volunteer management plan (including spontaneous unaffiliated volunteers) to support City disaster response and recovery efforts. | All | Prep. | EM | GF | High |
| 5-4 | Partner with Hermosa Beach City School District to review, update, and maintain a multi-hazard emergency operation plan. | All | Prep. | EM | GF | High |

## 7.3 Mitigation Action Plan

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…"

*Source: FEMA, Local Mitigation Plan Review Guide, March 2013.*

Element

**D3.** Was the plan revised to reflect changes in priorities? 44 CFR § 201.6(d)(3). Source: FEMA, *Local Mitigation Plan Review Tool*, March 2013.

*Note: For coverage of Element C6, integration of the action plan, see Section 9.2, below.*

Based on these criteria, the City prioritized potential mitigation projects using the STAPLEE method. Results are contained in **Appendix F**. 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.

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

The Planning Team decided to prioritized the updated mitigation actions based upon changes in the approach used to develop them. First, the mitigation actions were aligned with the mitigation goals rather than by hazard. Secondly, five newly added hazards including climate change, severe weather/sea-level rise, hazardous materials, extreme heat and terrorism were included. These new hazards were added to more fully address the potential risks City communities potentially face. Finally, prioritization was aligned with the policies contained in the City's General Plan, Health and Safety Element to support compliance with Assembly Bill 2140.

To assist with implementing the LHMP, 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:

< 30 = Low priority  30-40 = Medium priority  > 40 = High priority

**Appendix E** contains analysis of each of the Mitigation Activities based upon the STAPLEE method.

## Benefit-Cost Analysis

Conducting benefit/cost analysis for a mitigation activity can assist in determining whether a project is worth undertaking now, in order to avoid disaster related damages later. Cost-effectiveness analysis evaluates how to spend a given amount of money to achieve a specific goal. Determining the economic feasibility of mitigation activities can provide decision makers with an understanding of the potential benefits and costs, as well as a basis for comparing projects.

## Funding

The funds required to implement the mitigation action plan will come from a variety of sources including: Federal Hazard Mitigation Grants, fares, 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 project lead will use a FEMA approved benefit/cost analysis approach to identify the costs and benefits of implementing these mitigation actions. For non-structural projects, departments will use other appropriate methods to weigh the costs and benefits of each action item, and develop a prioritized list.

# 8. Implementation

Mitigation projects were assigned one of three categories as a tentative schedule for implementation: short-range, mid-range, and long-range. 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 City 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.7. Plan Maintenance Procedures

This section provides direction on processes for implementing the LHMP and keeping it current, relevant and useful over its five-year life. It addressed integrating the LHMP into other planning process such as the General Plan Safety Element and the yearly budget, and ongoing outreach to the public.

## 8.1 Implementation, Updating and Enhancement

While the planning process is important in creating the LHMP, the real value is in developing an actionable document that leads to reduced risk. To this end, the City and other partners will endeavor to accomplish the mitigation action based upon priority and available resources.

### Role of Planning Committee in Implementation and Maintenance

The planning team represents City staff and other stakeholders that contributed to the development of the LHMP. The planning team oversaw the development of the 2017 plan and provided recommendations on key elements of the LHMP, including the maintenance strategy.

Each member of the planning team was given the opportunity to provide input during the LHMP development. This philosophy will be continued for future LHMP revisions through evaluations, maintenance, and updates of data, processes, and programs. The planning team will convene annually to perform reviews of the LHMP and its implementation.

If planning team members can no longer serve on the planning team, the City's lead planner will assign another staff person to be on the planning team so that every department or agency is represented.

## 8.2 Monitoring

The City is responsible for over keeping the LHMP relevant over its five-year life. As such, the planning team must engage in continual monitoring of the effectiveness of the mitigation actions accomplished and evaluate changes in the hazards profiles and the need for new mitigation activities. The objective is to both update the status of the plan and modify the mitigation actions as required.

### Maintenance Schedule

Annually during April, the planning team will review the LHMP and the implementation of mitigation actions to develop an annual progress report. This may assist the City's annual 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 incorporate new information into the LHMP. As updates to the LHMP are completed, the City will keep the public informed of the changes and newly recommended mitigation activities. The LHMP progress report will also be posted on the City website on a dedicated page, provided to the local media through a press release, and presented in the form of a report to local agencies. The planning team will strive to complete the review and deliver the progress report process by June of each year.

Section 201(.6.d)(.3) of 44_CFR requires that local LHMPs be reviewed, revised as appropriate, and resubmitted for approval in order to remain eligible for benefits awarded under the DMA. The City intends to update its LHMP on a 5-year cycle.

FEMA REGULATION CHECKLIST: PLAN MAINTENANCE PROCESS

Monitoring, Evaluating, and Updating the Plan

44 CFR § 201.6(c)(4)(i): The plan shall include a plan maintenance process that includes a "section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle."

Element

**A6.** Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating, and updating the mitigation plan within a five-year cycle)?

Incorporation into Other Planning Mechanisms

44 CFR § 201.6(c)(4)(ii): The plan shall include a plan maintenance process that includes a "process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate."

Element

**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?

*Source: FEMA, Local Mitigation Plan Review Tool, March 2013.*

### Maintenance Evaluation Process

The planning team will monitor the hazard mitigation strategies during the year. At least once each year, team members will meet to provide information for and evaluate the progress of the 2017 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 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 that involve hazard mitigation

The planning team will write a progress report that will be provided to the City's agencies for review and incorporation in the budget process as mitigation projects are completed or implemented.

### Update Process

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 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 have an opportunity to provide input on the updated version prior to adoption
- The City will adopt the updated LHMP

At a minimum of six months prior to the expiration date of the 2017 LHMP, the planning team will implement a LHMP revision schedule to formally update the LHMP. The LHMP will be revised using the latest FEMA hazard mitigation guidance documents, such as the Mitigation Planning Tool and Regulation Checklist to comply with current hazard mitigation planning regulations.

## 8.3 Continued Public Involvement

The overall success of the LHMP is through implementation of its 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. 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 distributed through press releases, the City website, social media, and public notices.

When the time comes to begin revising the LHMP, the current FEMA directed update process will be implemented. This will include continued public involvement and input through website and other social media postings, press releases to local media, and surveys.


This section describes changes to the LHMP organization and structure since the previous plan.

# 9. Changes Since Prior Plan

The following sections reflect changes since the 2011 plan and include methods for Incorporation of previously-approved plan into sxisting planning mechanisms

## 9.1 Changes in Planning Process and Mitigation Actions

| FEMA REGULATION CHECKLIST: PLAN UPDATE |
|---|
| Plan Update to Reflect Development Changes<br>**44 CFR § 201.6(d)(3):** A local jurisdiction must review and revise its plan to reflect changes in development. |
| Element<br>**D1.** Was the plan revised to reflect changes in development? 44 CFR § 201.6(d)(3) |
| *Source: FEMA, Local Mitigation Plan Review Tool, March 2013.* |

The revised LHMP is a more comprehensive and actionable plan. Following the review, the planning team met to analyze and agree on the elements of the LHMP, approve the draft mitigation activities and priorities, and recommend forwarding the draft plan to the City Council for approval and to FEMA and Cal OES for reviews.

## 9.2 Changes in Hazards

The LHMP includes additional hazards such as climate change, drought, extreme heat, hazardous material releases, and terrorism as additional potential risk producing incidents. Climate change is included as a stand-alone hazard and incorporated, where appropriate, as an element of other hazards. This action complies with FEMA LHMP development and California

Assembly Bill 2140 direction. Sea-level rise which is a result of climate change and results in clear risks to the City was included in the analysis of flood hazards.

## 9.3 Description of Method for Incorporation of Previously-Approved Plan into Existing Planning Mechanisms

The City uses several processes as planning guidance for land use, facility management and capital improvements. These guidance documents will incorporate mitigation activities from the LHMP as they are updated and implemented.

### Hazard Mitigation Team Annual Review

The City of Hermosa Beach has developed a method to ensure that regular review and update of its LHMP occurs. FEMA regulations require an update every five years. The Hazard Mitigation Team will convene annually to review and discuss mitigation progress and any new concerns that may benefit from mitigation activities. At the annual meetings, the Hazard Mitigation Team will review each goal and objective to evaluate its:

- Relevance to the evolving situation in Hermosa Beach or the Southern California region
- Consistency with changes in State and Federal policy
- Relevance to current and expected conditions

The Hazard Mitigation Team will review the Risk Assessment portion of the plan to determine if the information should be updated or modified. The parties responsible for various implementation actions will report on:

- Status of their projects
- Implementation processes that have worked well
- Any difficulties encountered
- How coordination efforts are proceeding
- Whether any strategies should be revised

### Integration with Other Planning Mechanisms

The following planning mechanism are interrelated with the LHMP. The LHMP provides substantive information that supports and strengthens the following:

General Plan

The Local Hazard Mitigation Plan has been incorporated by reference into the Public Safety Element of the General Plan (PLAN Hermosa) to comply with AB 2140. PLAN Hermosa has a series of Implementation Actions that will be addressed in the coming years that are consistent with the mitigation strategies identified in the LHMP.

City staff will also prepare an annual report for PLAN Hermosa to identify actions that have been completed, actions that should be addressed in the upcoming year, and actions that may need to be modified or amended. The annual report is one mechanism in which additional hazard mitigation activities can be reviewed and addressed.

To ensure the Public Safety Element and LHMP remain consistent in the future, each plan includes reciprocal strategies to ensure that one is amended, the other is reviewed and amended if needed. The strategies within each respective plan are as follows:

- **Public Safety Element Implementation Action SAFETY-25.** Periodically update the Local Hazard Mitigation Plan and concurrently amend the Public Safety Element to maintain eligibility for maximum grant funding.
- **LHMP Mitigation Strategy 3-2.** Periodically update the Public Safety Element and concurrently amend the Local Hazard Mitigation Plan to maintain eligibility for maximum grant funding.

Municipal Code

The municipal code is a codification of the City of Hermosa Beach's Ordinances. These include zoning laws and land use permits processes. Adherence to Municipal Code regulates growth and controls land use patterns. The LHMP contains mitigation actions that recommend changes to Municipal Code with respect to development and zoning.

City of Hermosa Beach Strategic Plan

The Strategic Plan provides long term over aching goals for the City staff to achieve to accomplish the mission and vision of Hermosa Beach. The Strategic Plan provides the framework for other plans such as the LHMP and General Plan. In turn, the LHMP mitigation measures will be considered as the Strategic Plan is reviewed and updated. Particular attention will be paid to climate change and sea level rise.

Hermosa Beach Municipal Carbon Neutral Plan

This plan redirects energy towards ineffective measures to newer measures that have proven to be effective. The focus is on transportation, and building natural energy with electricity, gas, water and waste. This plan addresses activities and processes designed to reduce atmospheric carbon release and reduce the effects of climate change. As the Carbon Neutral Plan is reviewed and updated, the LHMP will inform description of the hazards from CO2 emissions and the impact on climate change.

Civic Facilities Assessment

Determines the challenges and needs of the critical infrastructure within the city and provides options on how to address the needs. The assessments were used to select and prioritize mitigation actions based upon the vulnerabilities of City facilities. As mitigation measures for civic facilities are implemented, the assessment will be updated and any remaining hazard mitigation measures of the facilities re-prioritized based on changes.

Emergency Operations Plan (EOP)

The EOP provides an overview on how the City of Hermosa Beach will respond to emergencies. The hazards section of the EOP is informed by the LHMP as the two are closely correlated. Hazard descriptions in the EOP and LHMP are closely correlated. As one plan is updated, the appropriate hazards section of the other will be updated as well.

## Annual Budget Approvals

The City of Hermosa Beach prepares, reviews, and approves budgets on an annual basis. The preparation of the annual budget involves budget requests from each department, review by the City Manager and Finance Director, and workshops/study sessions with the City Council. The annual budgeting process is an opportunity to incorporate hazard mitigation strategies into the work program and allocate funding for the next fiscal year.


# Appendix A: Local Mitigation Plan Review Tool Crosswalk

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States 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

| | | |
|---|---|---|
| Jurisdiction: City of Hermosa Beach | Title of Plan: 2017 City of Hermosa Beach Local Hazard Mitigation Plan | Date of Plan: May 2017 |
| Local Point of Contact: Brandy Villanueva | Address: 1315 Valley Drive, Hermosa Beach, CA 90254 | |
| Title: City Emergency Manager | | |
| Agency: City of Hermosa Beach Office of Emergency Services | | |
| Phone Number: 310-318-0341 | E-Mail: bvillanueva@hermosabch.org | |

| | | |
|---|---|---|
| State Reviewer: | Title: | Date: |

| | | |
|---|---|---|
| FEMA Reviewer: | Title: | Date: |
| Date Received in FEMA Region *(insert #)* | | |
| Plan Not Approved | | |
| Plan Approvable Pending Adoption | | |
| Plan Approved | | |

| 1. REGULATION CHECKLIST<br><br>**Regulation** (44 CFR 201.6 Local Mitigation Plans) | Location in Plan (section and/or | 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)) | Chapter 2 pages 11 - 15, Appendix C | | |
| 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)) | Section 2.3 page 13 | | |
| A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1)) | Section 2.4 page 14, Appendix D | | |
| A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3)) | Section 2.5 pages 14 - 15 | | |
| A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii)) | Section 8.3 page 97 | | |
| 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)) | Sections 8.2 pages 96-97 | | |
| ELEMENT A: REQUIRED REVISIONS | | | |

| ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT | | | |
|---|---|---|---|
| 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)) | Section 4.2 pages 35-70 | | |
| 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)) | Section 3.9 page 31, Section 4.2 pages 35-70 | | |
| 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)) | Section 4.1 page 33-35 | | |
| B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii)) | Section 6.6 page 80, No structures in City | | |
| 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)) | Sections 6.1 – 6.5, pages 76-80 | | |
| 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)) | Section 6.6 page 80 | | |
| C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i)) | Section 7.1 page 88 | | |
| 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)) | Section 7.2 pages 88-91 | | |

| | | | |
|---|---|---|---|
| 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)) | Section 7.3 Page 92-93, Appendix E | | |
| 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)) | Section 9.3, pages 98-99 | | |
| 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)) | Section 3.7 pages 27-29 | | |
| D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3)) | Section 6.7 pages 80-85 | | |
| D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3)) | Section 7.3 pages 92-93, Appendix E | | |
| 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)) | Pending review | | |
| E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5)) | Not applicable | | |
| ELEMENT E: REQUIRED REVISIONS<br>Will be adopted when "Approvable Pending Adoption" by FEMA. | | | |
| ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA) | | | |
| F1. Plan must discuss climate change and its potential effect on the jurisdictions' hazards and the potential to create new hazards for the area. | Section 4.2 pages 35-40, Page 47, 49, 58, 60, 61 | | |
| F2. | | | |

# Appendix B: References

1. 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
2. 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
3. http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf
4. California Governor's Office of Emergency Services. (2013). State Hazard Mitigation Plan. Retrieved from http://www.caloes.ca.gov/HazardMitigationSite/Documents/006-SHMP%202013%20Chapter%205.pdf
5. California Governor's Office of Emergency Services. (2009). State of California, 2009, Tsunami Inundation maps. Retrieved from http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/Pages/index.aspx
6. Cayan, D., et al. (2009). Climate Change Scenarios and Sea Level Rise Estimates for California - 2008 Climate Change Scenarios Assessment - Final Report. Scripps Institution of Oceanography - California Nevada Applications Program. http://www.energy.ca.gov/publications/displayOneReport.php?pubNum=CEC-500-2009-014-F
7. Committee on Sea Level Rise in California, Oregon, and Washington, and Board on Earth Sciences and Resources and Ocean Studies Board, Division on Earth and Life Studies, (2012). Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future, The National Academies Press, http://ssi.ucsd.edu/scc/images/NRC%20SL%20rise%20W%20coast%20USA%2012.pdf
8. Moser and Ekstrom, (2014). Vulnerability and Adaptation to Sea-Level Rise
9. Ross, S.L., and Jones, L.M, eds., (2013). The SAFRR (Science Application for Risk Reduction) Tsunami Scenario, USGS Open-File Report 2013-1170 and CGS Special Report 229, http://pubs.usgs.gov/of/2013/1170/
10. United States Geological Survey. (2016, April). Earthquake hazard. Retrieved from USGS: http://earthquake.usgs.gov/learn/glossary/?term=earthquake%20hazard
11. United States Geological Survey. (2016, April). Liquefaction Hazards Map. Retrieved from USGS: http://earthquake.usgs.gov/regional/nca/qmap/
12. United States Geological Survey. (2016, June). Earthquake Hazards Program. Retrieved from http://earthquake.usgs.gov/regional/nca/wg02/results.php
13. United States Geological Survey. (2016) http://earthquake.usgs.gov/learn/topics/mag_vs_int.php

# Appendix C: Planning Process Documentation

Appendix C contains documentation of the planning process including meetings of the planning team. The planning process material is presented in chronological order along with a brief explanation of its contents. Key planning process events are summarized in **Table C-1**.

| Table C-1: Planning Process | | |
|---|---|---|
| Date | Activity | Purpose |
| 9/28/2017 | Project Client/Consultant Kickoff Meeting | Initiate the LHMP update process. |
| 1/11/2017 | Planning Team Meeting Nr. 1 | Review the LHMP update process including planning team member responsibilities, project schedule and value. |
| 2/9/2017 | Planning Team Meeting Nr. 2 | Review and select appropriate hazards, hazard risk assessments and mitigation goals. |
| 3/16/2016 | Planning Team Meeting Nr. 3 | Review the mitigation strategies and select appropriate responsible department. Determine potential funding sources. Initiate STAPLEE prioritization process. |
| 4/19/17 | Planning Team Meeting Nr. 4 | Review plan updates, begin the Staple/e process, plan community comment meeting. |

## Proposed Key Milestones and Work Schedule

| Task/Month | Jan | Feb | Mar | Apr | May |
|---|---|---|---|---|---|
| 1. Develop a Detailed Planning Process | | | | | |
| 2. Data Collection and Review | | | | | |
| 3. Conduct Planning Team Meetings | Planning Team Meeting 1:Project Overview | Planning Team Meeting 2: Hazards | Planning Team Meeting 3: Mitigation Strategies | Planning Team Meeting 4: Plan Review | |
| 4. Develop and Deliver Drafts and Final Mitigation Plan | | | Distribute First Draft to Planning Team | Distribute Second Draft to Planning Team, Public | Final Draft to Cal OES/FEMA for approval and then finalize plan |
| 5. Public Education and Participation | | Conduct Survey | Conduct Public Outreach Event - Hazards | | Conduct Public Outreach Event – Mitigation Strategies |
| 6. Implement the Plan and Monitor Progress | Ongoing | | | | |

**The schedule above is an initial overview and subject to change by the City of Hermosa Beach at any time and maybe extended. The expected total time for project completion is up to Cal OEs/FEMA review is five (5) months.*

Below are the meeting materials from the January 11, 2017 planning meeting.

## AGENDA

Wednesday, January 11, 2017
10:00 AM - 11:00 AM
Hermosa Beach Fire Department
540 Pier Ave, Hermosa Beach, CA 90254

I. **Welcome**
   a. Introductions
   b. Administration
II. **Meeting Purpose**
   a. Review Hazard Mitigation Planning Process
   b. Planning Team Responsibilities
   c. Hazards Identification Exercise
III. **Review Hazard Mitigation Planning Process**
   a. Background
   b. Purpose
   c. Components
   d. Schedule
IV. **Planning Team Responsibilities**
   a. Identify Hazards
   b. Provide Information
   c. Review Draft Documents
V. **Hazards Identification Exercise**
VI. **Action Items & Next Steps**

# OVERVIEW

## Meeting Purpose

This is an overview to prepare for the Hermosa Beach Hazard Mitigation Plan Update Planning Meeting on Wednesday, January 11, 2017. The purpose of this meeting is to meet and brief all the planning team members on the process, approach, and roles and responsibilities of personnel participating in the planning project.

During this planning meeting, we will accomplish the following objectives:

1. Ensure the planning team members understand the project, and agree with the project approach and timeline.
2. Convey to the planning team members the purpose and necessity of having a Hazard Mitigation Plan (HMP), the project scope of work, and the importance of their input for the successful completion of the project.
3. Provide the planning team members with a description of what their roles and responsibilities will be during the planning process.
4. Determine a schedule for the planning project and determine the best means of communication between the project managers and the planning team.
5. Identify hazards for the plan.

## What is Hazard Mitigation?

*Hazard mitigation is* ***"any action taken to reduce or eliminate the long-term risk to human life and property from natural hazard."*** *The State of California enacted Senate Bill No. 379, which requires all local planning areas to assess vulnerabilities associated with climate change and incorporate the plan into the City's General Plan - Safety Element.* Hazards can result in human death, and destruction of property and infrastructure. The work done to minimize the impact of hazard events to life and property is called hazard mitigation. Often, these damaging events reoccur in the same locations (i.e. earthquakes along fault lines) and cause repeated damage. Because of this, hazard mitigation is often focused on reducing repetitive losses, thereby breaking the disaster cycle. The essential steps of hazard mitigation are to:

1. Identify and profile hazards that affect the local area.
2. Analyze the people and facilities at risk from those hazards.
3. Develop mitigation actions to lessen or reduce the impact of the profiled hazards.

## Why the Need for a Hazard Mitigation Plan?

The Federal Disaster Mitigation Act (2000) and Federal Register 44 CFR Parts 201 and 206 require local governments to develop and submit HMPs as a condition of receiving Hazard Mitigation Grant Program and other mitigation project grants. This includes pre-disaster mitigation funding and post-disaster mitigation funding.

## What are the Requirements for a Hazard Mitigation Plan?

The requirements for an HMP are described in 44 CFR Parts 201 and 206. FEMA has produced a *Local Mitigation Plan Review Tool* to demonstrate how the HMP meets the regulation in 44 CFR § 201.6. 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 primary tasks that will take place during the planning process include:

1. Capability analysis.
2. Vulnerability assessment.
3. Hazards identification.
4. Defining a hazard mitigation strategy through actions and projects.
5. Implementing the hazard mitigation actions and projects.

## Project Manager Roles and Responsibilities

The City Project Manager will liaise with the Constant & Associates (C&A) Project Manager throughout the project. Responsibilities of the City Project Manager include the following:

1. Serve as the point of contact throughout the project.
2. Coordinate and host meetings with the planning team, stakeholders and public.
3. Provide project related material, information, and associated data within the project schedule.
4. Provide timely review of project deliverables (typically within 10 working days).
5. Inform the C&A Project Manager of any anticipated delays.

## Project Stakeholders and the Public

The HMP planning process includes stringent requirements, including input from stakeholders and the public. Generally, project stakeholders include local jurisdictions, neighboring jurisdictions, and agencies that might respond during a disaster. It is important to ensure consistent representation from participating organizations. The public is represented by community members and community organizations that have vesting interests in the project and any actions selected to mitigate hazards. C&A will gather input from the planning team members, stakeholders, and public, and use this input along with current documents to develop the HMP. The planning team members will be responsible for providing information related to the City and their specific departments.

## Next Steps

Following this meeting, we need to schedule a meeting with the planning team to gather documents that may provide input for the capability analysis, vulnerability assessment, and hazards identification. We look forward to getting started on this project, and anticipate a successful venture for all.

# MEETING MINUTES

Wednesday, January 11, 2017
10:00 AM- 11:00 AM
Hermosa Beach Fire Department
540 Pier Ave, Hermosa Beach, CA 90254

***The second planning meeting is scheduled for Wednesday, February 8, 2017.***

Table 1: Action Items

| # | Item | Due Date | Responsible Party |
|---|---|---|---|
| 1. | Develop meeting minutes and distribute to Brandy Villanueva. | Complete | Francisco Soto |
| 2. | Update critical facilities list. | Wednesday, January 25, 2016 | Planning Team |
| 3. | Review past mitigation activities. | Wednesday, January 25, 2016 | Planning Team |
| 4. | Obtain infrastructure vulnerability assessment from Kristy Morris. | Wednesday, January 25, 2016 | Brandy Villanueva |
| 5. | Invite Kristy Morris to the next planning meeting. | Wednesday, January 25, 2016 | Brandy Villanueva |
| 6. | Send Sea Level Rise language to Francisco Soto. | Wednesday, January 25, 2016 | Leeanne Singleton |

## I. Welcome/Administration

a. Introductions
   i. Meeting attendees provided their name, position and agency
   ii. Francisco Soto introduced himself as the project manager and point of contact for any questions

b. Materials provided
   i. Agenda
   ii. PowerPoint Presentation
   iii. LHMP Outline
   iv. LHMP Timeline
   v. Sign-in sheet

c. Agenda
   i. Francisco went over the areas of key discussion for the meeting

## II. Meeting Purpose

a. Purpose
   i. Review Hazard Mitigation Planning Process
   ii. Determine Our Planning Team
   iii. Planning Team Responsibilities
   iv. Identify Hazards

b. Objectives
    i. Ensure team understands project & agrees with approach and timeline
    ii. Convey purpose and necessity of LHMP
    iii. Provide description of roles and responsibilities for planning team members
    iv. Determine schedule and communication methods

## III. Review of Hazard mitigation Planning Process

a. The planning team was given an overview of hazard mitigation.

b. Reviewed were the laws that govern Local Hazard Mitigation Plans (LHMP).
    i. Disaster Mitigation Act 2000

c. Cities need to develop LHMP's to be eligible for pre and post disaster grants.

d. LHMP's should be updated every five years.

## IV. Planning Team Responsibilities

a. Those involved in the planning team will help revise the LHMP because of their knowledge and expertise of the City. Additionally, they have the knowledge and authority to implement mitigation strategies.

b. The role of the planning team will be to:
    i. Work together to develop/review/revise drafts of 2017 LHMP
    ii. Assist with risk assessments and vulnerability analysis
    iii. Review and determine mitigation strategies
    iv. Assist with opportunities for outreach to stakeholder agencies/public
    v. Review plan prior to submitting for Cal OES/FEMA review and local adoption
    vi. Implement plan, monitor its impact, and prepare for future revisions of the LHMP

c. There will be an additional three planning meetings to attend.

## V. Scope of Work

a. Vulnerability Assessment
    i. Identify unique vulnerabilities to the City
    ii. Analyze climate change and future land-use
b. Hazard Identification
    i. Describe hazards unique to the City
    ii. Rate hazards on likelihood and effects
    iii. Analyze hazards to understand values at risk
c. Develop Potential Loss Estimates
    i. Based upon hazards, calculate potential losses for critical facilities

by conducting an inventory of facilities in specific geographic locations and their estimated replacement value

d. Public Outreach
    i. We will conduct at least one public meeting with EPAC in March.
    ii. Public meeting will be supplemented with postings on social media and the city webpage. All materials (sign-in sheets, agendas, public input, and screenshots) must be submitted with the plan for approval
e. Capability Assessment
    i. Identify what tools and processes exist to support mitigation activities
f. Develop Mitigation Strategies
    i. Mitigation strategy composed of 3 components: mitigation goals, mitigation actions, and an action plan for implementation
    ii. This mitigation strategies should save lives and protect property
g. Plan Documentation
    i. We will Document how the plan reflects changes in development, progress in local mitigation efforts, and changes in priorities
    ii. Document that the plan was formally adopted by the governing entity
h. Hazards to be included in the LHMP include:
    i. Climate Change
    ii. Drought
    iii. Earthquakes
    iv. Floods
    v. Hazardous Material
    vi. Severe storms/winds
    vii. Terrorism/Weapons of Mass Destruction
    viii. Tsunami
i. We will refer to the plan as a "Local Hazard Mitigation Plan"
j. We will align the LHMP with the safety element of the general plan
k. Climate change will include all the hazards associated with its impacts.
l. Exxon Mobile possess the biggest man made hazard risk to the City. We will ensure this is addressed in the plan

## VI. Project Management

1. Project Approach
    i. We will hold meetings with the planning team to show progress and receive approval on the documents as they are being developed
    ii. The LHMP will be developed in tandem, with Lee Rosenberg taking the lead on revisions and supported by Francisco Soto
2. Review Process
    a. Everyone on the planning team will be involved in the review process
    b. The planning team will get 10 business days to review any materials

provided. After 10 business days, it will be assumed that the documents are approved

3. Final Deliverables
    i. The City Council will review the final LHMP before submission to California Office of Emergency Services.
4. Project Timeline
    i. The planning team was given time to review the project schedule and provide questions or comments. We are scheduled to be complete the plan by May 2017.
5. Communications
    i. We will be developing and disseminating meeting minutes within 5 business days of a meeting.

Table 2: Meeting Participants

| # | Name | Agency/ Organization | Email | Telephone |
|---|---|---|---|---|
| | Rodriguez, Lucho | City of Hermosa Beach | lrodriguez@hermosabch.org | 310-318-0210 |
| | Rosenberg, Lee | Constant & Associates | | 424-320-2696 |
| | Singleton, Leeanne | City of Hermosa Beach | | 310-318-0210 |
| | Soto, Francisco | Constant & Associates | francisco@constantassociates.com | 424-320-2696 |
| | Villanueva, Brandy | City of Hermosa Beach | bvillanueva@hermosabch.org | 310-318-0341 |

# Local Hazards Mitigation Plan Revisions
## Planning Meeting

SIGN-IN SHEET

Wednesday, ~~July~~ January 11, 2016
10:00 AM- 11:00 AM
Hermosa Beach City Hall
540 Pier Ave, Hermosa Beach, CA 90254
Dial in: 267-930-4000
Pin: 811-180-369

***Please review the contact information provided, complete blank fields and make corrections as needed. Thank you.***

| # | Name | Agency/ Organization | Email | Telephone | Signature |
|---|---|---|---|---|---|
| 1. | Bonano, Pete | Hermosa Beach Fire Department | pbonano@hermosabch.org | 310-376-2479 | |
| 2. | Chafin, Kim | Hermosa Beach Fire Department | kchafin@hermosabch.org | 310-318-0242 | |
| 3. | Rodriguez, Lucho | Hermosa Beach Fire Department | lrodriguez@hermosabch.org | 310-318-0210 | |
| 4. | Soto, Francisco | Constant & Associates | francisco@constantassociates.com | 424-320-2696 | |
| 5. | Villanueva, Brandy | Hermosa Beach Fire Department | bvillanueva@hermosabch.org | 310-318-0341 | Brandy Villanueva |
| 6. | Leeann Singleton | Hermosa Beach City Managers Office | | | |



C&A Constant Associates Inc

Below are the meeting materials from the February 8, 2017 planning meeting.

## AGENDA

Wednesday, February 8, 2017
10:00 AM - 12:00 PM
Hermosa Beach Fire Department
540 Pier Ave, Hermosa Beach, CA 90254

I. **Welcome**

II. **Meeting Purpose**

III. **Plan Update**

IV. **Hazard Review**

V. **Mitigation Strategies, Goals, and Actions**

VI. **Hazard Mitigation Plan Requirements**

VII. **Schedule/Remaining Tasks**

VIII. **Adjourn**

# OVERVIEW

## Meeting Purpose

This document is an overview to prepare for the City of Hermosa Beach Hazard Mitigation Plan (HMP) project second planning meeting. This informal meeting will allow the City planning team to be briefed on the current status and next steps of the planning process in the City HMP project.

During this planning meeting, we will accomplish the following objectives:

- Update the planning team members on current status of the project and review the project timeline
- Review identified hazards and confirm their application to City properties
- Identify past occurrences of confirmed hazards
- Risk assessment
- Identify facilities with previous and potential hazards
- Identify frequency of previous impacts from hazards
- Prioritize structures based on criticality
- Identify level of loss per structure
- Identify costs associated with previous hazards and replacement value
- Identify opportunities for mitigation
- Identify capabilities based on core capabilities
- Review current and identify future stakeholder and public outreach

### Defining and Prioritizing Hazard Vulnerability and Risk

According to the International Organization for Standardization (ISO), Risk Management, Risk is defined as the potential losses associated with a hazard, defined in terms of expected probability and frequency, exposure, and consequences. Risk is the combination of the probability of an event and its consequences, where probability is the extent to which an event is likely to occur, event is the occurrence of a particular set of circumstances, and consequences are the outcome of an event.

Once hazards are identified, previous and potential losses are used to prioritize risk based on the hazard. To correlate hazards with risk the following tools are used: level of loss, geographic extent, frequency and return periods, and mitigation potential.

Level of loss includes injury or death to people, costs of loss to structures and property and impact to the environment. Geographic extent includes identifying how many City properties are impacted from a hazardous event. Frequency and return periods refers to how often a hazard occurs in a specified timeframe. Mitigation potential prioritizes structures or projects that are already integrated into the City planning process either through hazard mitigation or other planning mechanisms. The mitigation effort can be integrated into other planning processed in many ways but the City has the opportunity to account for those projects as hazard mitigation projects.

### FEMA Mission Areas and Core Capabilities

Mission areas, as identified by FEMA, are prevention, protection, mitigation, response and recovery. To address mitigation, we focus on mitigation and response. The State HMP uses the mitigation mission area to further define mitigation core capabilities that focus on:

- Community resilience
- Long-term vulnerability reduction
- Risk and disaster resilience
- Assessment of threats and hazards identification

The State HMP additionally considers response core capabilities that include:

- Critical transportation
- Infrastructure systems
- Mass search and rescue operations
- Operational communications
- Public and private services and resources along with several others.

The City government's mission and services are directly related to these core capabilities. The City can use these as the framework to define City-specific capabilities. Defining the City's capabilities is the outline for identifying mitigation actions. The City can use the State of California's capability priorities as well as other county and local jurisdictional priorities to align City priorities. Integration of these priorities can help both the City and partner agencies obtain funding and to implement a broader mitigation strategy.

The City can review the National Flood Insurance Program and work with local agencies to identify structures within the Flood Insurance Rate Map (FIRM).

**Project Stakeholders and the Public**

Additional potential stakeholders such as neighboring jurisdictions and the County were identified as potential points for engagement. Additionally, the public must provide input to the HMP planning process and have the opportunity to provide feedback on the draft plan. C&A will support the City to develop a public engagement outreach plan.

**Next Steps**

The next step is to identify mitigation actions. Once identified, we will begin formulating how to achieve mitigation actions and integrate them into the City's general planning efforts. Once that's complete, well finalize the HMP.

# MEETING MINUTES

Wednesday, February 8, 2017
10:00 AM- 11:00 AM
Hermosa Beach Fire Department
540 Pier Ave, Hermosa Beach, CA 90254

***The third planning meeting is scheduled for Wednesday, March 8, 2017.***

Table 1: Action Items

| # | Item | Due Date | Responsible Party |
|---|---|---|---|
| 1. | Distribute meeting minutes to Brandy | Complete | Francisco Soto |
| 2. | Send Francisco the Staff Report from the Santa Barbara Oil Spill | Monday, February 27, 2017 | Kristi Morris |
| 3. | Send Francisco the Flood Insurance Rate Maps (FIRM) | Monday, February 27, 2017 | Lucho Rodriguez |
| 4. | Send Francisco a list of City projects that are grant funded | Monday, February 27, 2017 | Brandy Villanueva |
| 5. | Determine the value of the City Parking Structure and add this to the list of Critical | Monday, February 27, 2017 | Brandy Villanueva |
| 6. | Determine the value of the North School and add this to the list of Critical Infrastructure. | Monday, February 27, 2017 | Brandy Villanueva |

## I. Welcome/Administration

a. Introductions
   i. Meeting attendees provided their name, position and agency
   ii. Francisco Soto introduced himself as the project manager and point of contact for any questions

b. Materials provided
   i. Agenda
   ii. PowerPoint Presentation
   iii. Read Ahead
   iv. Sign-in sheet

c. Agenda
   i. We had four new members of the planning team. The group was asked to introduce themselves

## II. Meeting Purpose

a. Purpose
    i. Review updates since our last meeting
    ii. Review the identified hazards
    iii. Review mitigation strategies, goals and actions
    iv. Review the remaining schedule and task
b. Since we had a couple new planning team members join the meeting. We provided the group with an overview of a hazard mitigation plan.

## III. Review updates since our last meeting

a. Identified hazards that can potentially impact the City
b. Reviewed past mitigation items
c. Identified critical infrastructure in the City

## IV. Hazard Review

a. Lee Rosenberg reviewed the hazards identified by the planning team at the previous meeting
b. It was determined that climate change, drought, earthquakes, floods, hazardous material, windstorms, and terrorism will be included in the hazard identification section of the Hazard Mitigation Plan (HMP)
c. The City has Injection wells that the County maintains to recycle water. This water from the injection wells is used to irrigate parks
d. Extreme heat will be added as an element of climate change
e. Santa Ana winds will be added as an element of wind storms/high winds
f. Active shooter incidents will be added as an element of terrorism
g. Redondo Beach has a storm drain that has the potential to affect the Hermosa Beach coast. We will include this in the hazardous material section.
h. The Santa Barbara oil spill will be added to the past occurrences section of hazardous materials.
i. Lee Rosenberg walked the group through the priority risk index and rated each hazard based on its severity, occurrence, duration, and impact.
j. Hermosa Beach is not involved in the National Flood Insurance Program.
k. The City will construct a retention basin to control flood. They received a three million dollar grant from the State Water Resource Control Board. An action item for this project will be created to address the City's Mitigation efforts.
l. The City has a parking structure that will be included to the Critical Infrastructure list.

m. The North School will be added to the list of Critical Infrastructure. The facility is located on 417 N. 25th Street.

## V. Mitigation Strategies, goals, and Action Items

a. Lee Rosenberg reviewed the purpose of mitigation activities and provided the group with a sample mitigation activity.

b. The group was provided an opportunity to review the Hazard Mitigation Goals and provide feedback. The group decided that these goals encompassed the City's mitigation goals.

## VI. Schedule/Remaining Task

a. The next step is to conduct an outreach strategy. Brandy is working with the City Public Information Officer (PIO) to develop the strategy.

b. Identify mitigation actions

c. Integrate mitigation actions into the draft HMP

d. Finalize the HMP

Table 2: Meeting Participants

| # | Name | Agency/ Organization | Email | Telephone |
|---|---|---|---|---|
| 1 | Chafin, Kim | City of Hermosa Beach | kchafin@hermosabch.org | 310-318-0242 |
| 2 | Freeman, Ells | City of Hermosa Beach | rfreeman@hermosabch.org | 310-318-1954 |
| 3 | Morris, Kristy | City of Hermosa Beach | kmorris@hermosabch.org | 310-318-3603 |
| 4 | Rodriguez, Lucho | City of Hermosa Beach | lrodriguez@hermosabch.org | 310-318-0210 |
| 5 | Rollins, Bob | City of Hermosa Beach | brollins@hermosabch.org | 310-318-0219 |
| 6 | Rosenberg, Lee | Constant & Associates | | 424-320-2580 |
| 7 | Singleton, Leeanne | City of Hermosa Beach | | 310-318-0210 |
| 8 | Soto, Francisco | Constant & Associates | francisco@constantassociates.com | 424-320-2696 |
| 9 | Villanueva, Brandy | City of Hermosa Beach | bvillanueva@hermosabch.org | 310-318-0341 |

City of Hermosa Beach
**Local Hazards Mitigation Plan Revisions**
Sign-In Sheet

# Local Hazards Mitigation Plan Revisions
## Planning Meeting 2

SIGN-IN SHEET

Wednesday, February 8, 2017
10:00 AM - 12:00 PM
Hermosa Beach Fire Department
540 Pier Ave, Hermosa Beach, CA 90254

***Please review the contact information provided, complete blank fields and make corrections as needed. Thank you.***

| # | Name | Agency/ Organization | Email | Telephone | Signature |
|---|---|---|---|---|---|
| 1. | Chafin, Kim | Hermosa Beach Community Development | kchafin@hermosabch.org | 310-318-0242 | |
| 2. | Rodriguez Lucho | Hermosa Beach Public Works | lrodriguez@hermosabch.org | 310-318-0210 | |
| 3. | Rosenberg, Lee | Constant & Associates | lee@navigatingpreparedness.com | | |
| 4. | Singleton, Leeanne | Hermosa Beach City Managers Office | lsingleton@hermosabch.org | | |
| 5. | Soto, Francisco | Constant & Associates | francisco@constantassociates.com | 424-320-2696 | |
| 6. | Villanueva, Brandy | Hermosa Beach City Managers Office | bvillanueva@hermosabch.org | 310-318-0341 | |



Constant & Associates Inc

City of Hermosa Beach
**Local Hazards Mitigation Plan Revisions**
Sign-In Sheet

| # | Name | Agency/ Organization | Email | Telephone | Signature |
|---|---|---|---|---|---|
| 7. | [illegible] | HB PW | [illegible] | 310-379-1954 | |
| 8. | Bob Rollins | HB Com Dev | brollins@hermosabch.org | 310 318 0219 | |
| 9. | Kristy Morris | HB City Manager | Kmorris@hermosabch.org | 310 750 8603 | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |



Constant & Associates, Inc.

Below are the meeting materials from the March 16, 2017 planning meeting.

# AGENDA

Thursday, March 16, 2017
1:00 PM - 3:00 PM
Hermosa Beach Fire Department
540 Pier Ave, Hermosa Beach, CA 90254

**I. Welcome**
c. Introductions
d. Administration

**II. Meeting Purpose**

**III. Plan Update**

**IV. Stakeholder Update**

**V. Mitigation Strategies, Goals, and Actions**

**VI. Public Outreach**

**VII. Action Items**

**VIII. Adjourn**

# MEETING MINUTES

Thursday, March 16, 2017
1:00 PM - 3:00 PM
Hermosa Beach Fire Department
540 Pier Ave, Hermosa Beach, CA 90254

***There are no additional planning meetings scheduled at this time.***

Table 1: Action Items

| # | Item | Due Date | Responsible Party |
|---|---|---|---|
| 1. | Distribute meeting minutes | Complete | Scott MacKay |
| 2. | Review Critical Infrastructure to differentiate between what is owned and maintained by the City and what is privately owned and maintained. | Friday, March 24, 2017 | Brandy Villanueva |
| 3. | Adjust language to move it to more rapid recovery, adjusting Goal 5 to include the word recovery. | Friday, March 24, 2017 | Lee Rosenberg |
| 4. | Reword: Goal 3, to remove the word resistance. “”Strength the City’s existing and future built environment to better withstand disasters.” | Friday, March 24, 2017 | Lee Rosenberg |
| 5. | Update action items to reflect changes in the planning meeting. | Friday, March 24, 2017 | Lee Rosenberg |

## I. Welcome/Administration

a. Introductions
   i. Meeting attendees provided their name, position and agency

b. Materials provided
   i. Agenda
   ii. Mitigation Action Item Worksheet
   iii. Sign-in sheet

c. Agenda
   i. Scott MacKay will be taking over the project for Francisco Soto who is leaving Constant and Associates.

## II. Meeting Purpose

a. Purpose
    i. Present an update on the plan
    ii. Review mitigation action items
    iii. Review the work that is left to complete the plan

## III. Plan Update

a. Finalized the City's Hazard review and prioritized the hazards using the STAPLEE
b. Updated City capabilities
c. Determined the value of the City's critical infrastructure
d. Worked with Brandy to create and refined mitigation action items
e. Distributed action items to the planning team
f. Brandy noted that the team was good at providing feedback to the plan elements
g. Need to ensure there is a clear definition of what is privately owned versus maintained by the City

## IV. Stakeholder Update

a. Brandy noted that the team was good at providing feedback to the plan elements

## V. Mitigation Strategies, Goals, and Actions

a. Identified hazards include: Climate Change, Drought, Earthquake, Flooding/Sea Level Rise, Hazardous Materials, Sever Winter Storm/Wind Storm, Terrorism, and, Tsunami
b. Francisco reviewed the goals identified for the HMP. Goals are broad statements that represent a long-term, community-wide vision. The goals identified for this version of the HMP include:
    i. Protect life, property, and reduce potential injuries from natural, technological, and human-caused hazards
    ii. Improve public understanding, support and need for hazard mitigation measures
    iii. Promote disaster resistance for the City's existing and future built environment
    iv. Strengthen partnerships and collaboration to implement hazard mitigation activities
    v. Enhance the City's ability to effectively and immediately respond to disasters
c. Action Items

i. Reduce the effects of hazards, with an emphasis on buildings and infrastructure

ii. Include an action plan describing how actions identified will be prioritized, implemented, and administered

iii. Describe a process for integrating the mitigation plan into other planning mechanisms as appropriate

d. Francisco reviewed the action items with the planning team for accuracy, to identify a responsible party and a funding source for implementation

e. There were various changes made to the mitigation action items. The action items will be updated to reflect these changes and sent to Brandy for review

## VI. Public Outreach

a. When the plan is finalized, we will begin the public outreach portion of the project. Brandy is working with the City Public Information Officer to develop an outreach plan

b. A disaster preparedness survey was sent to the City to be placed on the City's website and advertised through social media

c. The planning team needs to determine what public meeting they would want to use to present the HMP

d. When the plan is finalized, a draft copy will be sent to surrounding jurisdictions for review and comment

## VII. Action Items

a. The following items are outstanding and need to be completed before the plan is submitted to the California Governor's Office of Emergency Services

a. Conduct public outreach

b. Include planning process in appendix

c. Compile hazard maps with infrastructure layers

d. Complete the FEMA HMP Plan Review Crosswalk Tool

e. Submit draft HMP to Cal OES for review

f. Review/implement FEMA comments

g. Present draft HMP to City Council for adoption

## VIII. Adjourn

City of Hermosa Beach
**Local Hazards Mitigation Plan Revisions**
Sign-In Sheet

# Local Hazards Mitigation Plan Revisions
## Planning Meeting 3

### SIGN-IN SHEET

Thursday, March, 2017
1:00 PM - 3:00 PM
Hermosa Beach Fire Department
540 Pier Ave, Hermosa Beach, CA 90254

***Please review the contact information provided, complete blank fields and make corrections as needed. Thank you.***

| # | Name | Agency/ Organization | Email | Telephone | Signature |
|---|---|---|---|---|---|
| 1. | Chafin, Kim | Hermosa Beach Community Development | kchafin@hermosabch.org | 310-318-0242 | |
| 2. | Freeman, KE | City of Hermosa Beach | kfreeman@hermosabch.org | 310-318-1954 | Not Attending |
| 3. | MacKay, Scott | Constant & Associates | scott@constantassociates.com | 424-320-2587 | |
| 4. | Morris, Kristy | City of Hermosa Beach | kmorris@hermosabch.org | 310-318-3603 | Not Attending |
| 5. | Rodriguez Lucho | Hermosa Beach Public Works | lrodriguez@hermosabch.org | 310-318-0210 | |
| 6. | Rollins, Bob | City of Hermosa Beach | brollins@hermosabch.org | 310-318-0219 | Not Attending |



Constant & Associates, Inc.

City of Hermosa Beach
**Local Hazards Mitigation Plan Revisions**
Sign-In Sheet

| # | Name | Agency/ Organization | Email | Telephone | Signature |
|---|---|---|---|---|---|
| 7. | Rosenberg, Lee | Constant & Associates | lee@navigatingpreparedness.com | | Joined via conference call |
| 8. | Singleton, Leeanne | Hermosa Beach City Managers Office | lsingleton@hermosabch.org | | |
| 9. | Soto, Francisco | Constant & Associates | francisco@constantassociates.com | 424-320-2696 | |
| 10. | Villanueva, Brandy | Hermosa Beach City Managers Office | bvillanueva@hermosabch.org | 310-318-0341 | Brandy Villanueva |
| 11. | | | | | |
| 12. | | | | | |
| 13. | | | | | |
| 14. | | | | | |
| 15. | | | | | |
| 16. | | | | | |



Constant & Associates, Inc.

Below are the meeting materials from the April 19, 2017 planning meeting.

# AGENDA

Wednesday, April 19, 2017
9:00 AM - 11:00 AM
Hermosa Beach City Hall
1315 Valley Drive, Hermosa Beach, CA 90254
Dial In: 267-930-4000 Pin: 212-600-627

I. **Welcome**
   a. Introductions

II. **Meeting Purpose**

III. **Plan Review**

IV. **Hazard Mitigation Prioritization/STAPLE/E**

V. **Public Information Comment Meeting (5/3)**

VI. **Schedule/Remaining Tasks**

VII. **Adjourn**

# MEETING MINUTES

Wednesday, April 19, 2017
9:00 AM - 11:00 AM
Hermosa Beach City Hall
1315 Valley Drive, Hermosa Beach, CA 90254

***There are no additional planning meetings scheduled at this time.***

Table 1: Action Items

| # | Item | Due Date | Responsible Party |
|---|---|---|---|
| | Distribute meeting minutes | Complete | Scott MacKay |
| | Send Area G Cities to Scott | Complete | Brandy Villanueva |
| | Update plan with additional edits and formatting. Deliver to C&A for Review | Monday, April 24, 2017 | Brandy Villanueva |
| | Complete Staple/e and deliver to C&A | Monday, April 24, 2017 | Brandy Villanueva |
| | Provide listing of CUPA sites in the city | Tuesday, April 25, 2017 | Brandy Villanueva |
| | Provide updated plan and presentation deck for public meeting to be posted on Hermosa Beach Website | Wednesday, April 26, 2017 | Scott MacKay |

## I. Welcome/Administration

a. Introductions
   i. Meeting attendees provided their name, position and agency
b. Materials provided
   i. Agenda
   ii. Staple/e Worksheet
   iii. Sign-in sheet

## II. Meeting Purpose

a. Purpose
   i. Review updates on the plan
   ii. Begin Hazard Mitigation Prioritization and complete Staple/e
   iii. Discuss Public Comment Meeting and review presentation

## III. Plan Review

a. Re-ordering plan
b. Update Meeting section to be uniform
c. Adjust most likely hazards to be listed first (Table 4.2)
d. Break out climate change and extreme heat as two hazards

e. Need to add CUPA site listing
f. Move Asset inventory to section 5
g. Review and update documents listed section 2.4 and check with Table 6.1
h. Add description for Mutual Aid under table 6.4
i. Review table 6.6 to ensure prior mitigation sets are updated
j. Update section 9
k. Review if we need 3.9 or can cover past disasters in section 4
l. Review table 1.1 to ensure it matches new plan order
m. Add contact information to appendix
n. Update Appendix C with 4/19/17 meeting
o. Update key milestones and work schedule
p. Update Appendix D to add April 3rd date survey sent
q. Update Appendix F – Adjust lines so words are not cut off
r. Add Santa Barbara oil spill event to past disasters
s. Add language to address Torrance and Chevron Refinery concerns

### IV. Hazard Mitigation Prioritization Staple/e

a. Reviewed the Staple/e chart
b. Began ranking process for mitigation activities

### V. Public Comment Meeting

a. Reviewed presentation deck
b. Discussed meeting logistics
c. Need to update deck with images and plan color scheme

### VI. Adjourn

Table 2: Meeting Participants

| # | Name | Agency/ Organization | Email | Telephone |
|---|---|---|---|---|
| 1. | MacKay, Scott | Constant & Associates | scott@constantassociates.com | 424-320-2587 |
| | Rosenberg, Lee | Constant & Associates | | 424-320-2580 |
| | Singleton, Leeanne | City of Hermosa Beach | lsingleton@hermosabch.org | 310-318-0252 |
| | Villanueva, Brandy | City of Hermosa Beach | bvillanueva@hermosabch.org | 310-318-0340 |

# Local Hazards Mitigation Plan Revisions
## Planning Meeting 4

SIGN-IN SHEET

Tuesday, ~~March~~ April 19, 2017
9:00 AM - 11:00 AM
Hermosa Beach City Hall
1315 Valley Drive, Hermosa Beach, CA 90254

***Please review the contact information provided, complete blank fields and make corrections as needed. Thank you.***

| # | Name | Agency/ Organization | Email | Telephone | Signature |
|---|---|---|---|---|---|
| 1. | Chafin, Kim | Hermosa Beach Community Development | kchafin@hermosabch.org | 310-318-0242 | |
| 2. | Freeman, R | City of Hermosa Beach | rfreeman@hermosabch.org | 310-318-1954 | |
| 3. | MacKay, Scott | Constant & Associates | scott@constantassociates.com | 424-320-2587 | |
| 4. | Morris, Kristy | City of Hermosa Beach | kmorris@hermosabch.org | 310-318-3603 | |
| 5. | Rodriguez Lucho | Hermosa Beach Public Works | lrodriguez@hermosabch.org | 310-318-0210 | |
| 6. | Rollins, Bob | City of Hermosa Beach | brollins@hermosabch.org | 310-318-0219 | |

City of Hermosa Beach
**Local Hazards Mitigation Plan Revisions**
Sign-In Sheet

| # | Name | Agency/ Organization | Email | Telephone | Signature |
|---|---|---|---|---|---|
| 7. | Rosenberg, Lee | Constant & Associates | lee@navigatingpreparedness.com | | |
| 8. | Singleton, Leeanne | Hermosa Beach City Managers Office | lsingleton@hermosabch.org | | |
| 9. | Villanueva, Brandy | Hermosa Beach Fire Department | bvillanueva@hermosabch.org | 310-318-0340 | |
| 10. | FABIO MACIAS | H.B FIRE DEP. | | | |
| 11. | | | | | |
| 12. | | | | | |
| 13. | | | | | |
| 14. | | | | | |
| 15. | | | | | |
| 16. | | | | | |

# Appendix D: Community Engagement Documentation

Appendix D contains documentation of the planning process including meetings, presentations held for the stakeholders and public, and other stakeholder/public outreach efforts. Engagement materials are presented in chronological order along with a brief explanation of its contents. The public survey input from the 38 responders was used to select hazards and rank their affects. Earthquake and energy emergency were ranked as the two top hazards. This input was also used to inform the Hazard Identification and Prioritization Summary contained in Table 4-2. Finally, survey input was used to select mitigation actions. Input from the public meeting held was used to refine the Plan and prepared it for submission for review

*Sample 1: Hazard Mitigation Public Survey posted on the City website from April 3 through April 30, 2017.*

City of Hermosa Beach Local Hazard Mitigation Plan Survey

1. Hermosa Beach residents and businesses may encounter a variety of hazards and/or disasters. How concerned are you about the following hazards impacting you, your business and the City of Hermosa Beach? (Check one response for each hazard)

| Hazard | Not Concerned | Somewhat Concerned | Concerned | Very Concerned | Extremely Concerned |
|---|---|---|---|---|---|
| Climate Change/Sea-level Rise | O | O | O | O | O |
| Earthquake/Seismic | O | O | O | O | O |
| Flood | O | O | O | O | O |
| Fire | O | O | O | O | O |
| Drought | O | O | O | O | O |
| Energy Emergency | O | O | O | O | O |
| Hazardous Material and Oil Spills | O | O | O | O | O |
| Terrorism/Cyber Terrorism | O | O | O | O | O |
| Extreme Heat | O | O | O | O | O |
| Severe Winter Storms/High Winds | O | O | O | O | O |
| Other (Please specify) | | | | | |

2. How prepared are you and your family to cope with the hazards listed in question 1?

| | Not Prepared at All | Somewhat Prepared | Adequately Prepared | Very Well Prepared | Not Sure |
|---|---|---|---|---|---|
| **Check one** | O | O | O | O | O |

3. Please indicate how you feel about the following statement: It is the responsibility of government (local, state and federal) to provide educational materials and campaigns that encourage citizens to take action to reduce the risks associated with the hazards identified in question 1.

| | Strongly Disagree | Somewhat Disagree | Neither Agree or Disagree | Somewhat Agree | Strongly Agree |
|---|---|---|---|---|---|
| **Check one** | O | O | O | O | O |

4. Please indicate how you feel about the following statement: It is my personal responsibility to be educated and take actions that reduce my exposure to the risks associated with the hazards identified in question 1.

| | Strongly Disagree | Somewhat Disagree | Neither Agree or Disagree | Somewhat Agree | Strongly Agree |
|---|---|---|---|---|---|
| **Check one** | O | O | O | O | O |

5. Which of the following steps have you and/or your family taken to prepare for hazardous events? (Check all that apply)

- ☐ Prepared a disaster supply kit (Tools, gloves, dust masks, flashlights, eye protection, etc.)
- ☐ Stored water (one gallon a day/person for 5 days)
- ☐ Stored non-perishable food for 5 days
- ☐ Received first aid/CPR training
- ☐ Taken a Community Emergency Response Team (CERT) classes and/or joined a local CERT team
- ☐ Stored medical supplies (first aid kit, prescription medicines, extra glasses) at home, work and auto
- ☐ Created a family reunification communication plan
- ☐ Identified utility shutoffs at your home
- ☐ Installed smoke and carbon monoxide detectors on each floor of your house
- ☐ Developed a family emergency evacuation plan
- ☐ Practiced a home evacuation drill at least once a year
- ☐ Have working portable fire extinguishers in appropriate areas such as the kitchen
- ☐ Purchased flood insurance
- ☐ Purchased earthquake insurance
- ☐ None

6. Which of the following do you use to gather information to prepare for hazardous events? (Check all that apply)

- ☐ Government outreach such as federal, state of local website and social media
- ☐ Community meetings that address disaster preparedness information
- ☐ Attend CERT training
- ☐ Attend exhibit at a local community event
- ☐ Civic organization involved in disaster preparedness such as American Red Cross or church
- ☐ Personal experience with previous hazard or disaster
- ☐ School or academic institution courses
- ☐ Local and regional media sources (Other than social media)
- ☐ Distribution of printed material
- ☐ Phone book
- ☐ Other (Please specify)

7. Which of the following methods for receiving hazard and disaster preparedness information do you think are most effective? (Check all that apply)


- ☐ Social media
- ☐ Website
- ☐ Newspaper articles
- ☐ Telephone book
- ☐ Radio announcement
- ☐ Schools and academic institutions
- ☐ City newsletters
- ☐ Workshops
- ☐ Chamber of commerce or other civic group
- ☐ Fire department
- ☐ Law enforcement agency
- ☐ Church and/or religious groups
- ☐ Public library
- ☐ Red Cross
- ☐ Public meetings
- ☐ Reverse 911
- ☐ Nixle
- ☐ Public awareness campaigns
- ☐ Other (Please specify)

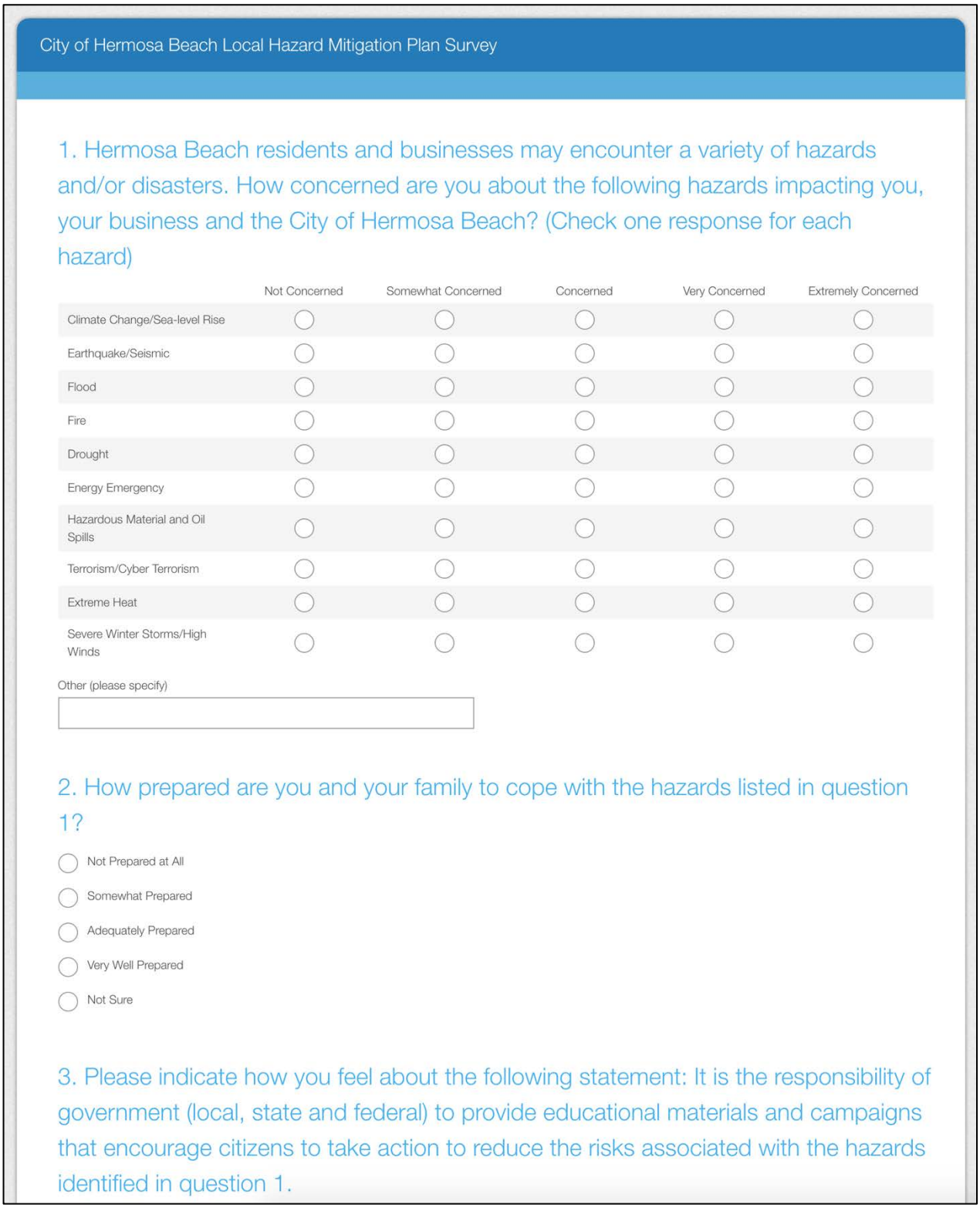
8. In your opinion, what types of projects should the City be addressing in order to reduce the damage and disruption from hazards? Please rank each option as low, medium or high priority.

| | Low Priority | Medium Priority | High Priority |
|---|---|---|---|
| Strengthen building codes and regulations to address mitigation efforts in high hazard areas. | O | O | O |
| Retrofit critical infrastructure within the community. | O | O | O |
| Collaborate with Cal-Trans, Southern California Edison and other business to encourage the implementation of mitigations efforts to safeguard critical infrastructure which provides service within Hermosa Beach | O | O | O |
| Provide the public with information about the potential hazards within the City and the possible mitigation actions to address these hazards. | O | O | O |
| Implement projects that mitigate the potential impacts of climate change. | O | O | O |
| Educate property owners about mitigation actions and the variety of funding programs that support the implementation of the actions. | O | O | O |
| Other (Please specify) | | | |

9. How important do you find the following citywide actions or activities that may reduce the risks of hazards?

| | Not Important | Somewhat Important | Very Important | Extremely Important |
|---|---|---|---|---|
| Prevention and mitigation actions such as the development and implementation of policies that address land development, construction, and retrofitting that will impact the potential damage resulting from a hazardous event. | 0 | 0 | 0 | 0 |
| Structural projects intended to reduce the impact of a hazard by modifying the natural progression of the hazard such as detention/retention basins retaining walls and storm sewers. | 0 | 0 | 0 | 0 |
| Emergency preparedness actions that protect people and property during and immediately after a hazardous event, such as warning systems, evacuation planning, emergency response training and protection of critical infrastructure. | 0 | 0 | 0 | 0 |
| Public education and awareness campaigns such as CERT, school based programs, and public meetings designed to inform community about local hazards and the preparedness actions that can be used to protect themselves and their property. | 0 | 0 | 0 | 0 |
| Other (Please specify) | | | | |

Screenshot of the survey on the City Website



City of Hermosa Beach Local Hazard Mitigation Plan Survey

1. Hermosa Beach residents and businesses may encounter a variety of hazards and/or disasters. How concerned are you about the following hazards impacting you, your business and the City of Hermosa Beach? (Check one response for each hazard)

| | Not Concerned | Somewhat Concerned | Concerned | Very Concerned | Extremely Concerned |
|---|---|---|---|---|---|
| Climate Change/Sea-level Rise | ○ | ○ | ○ | ○ | ○ |
| Earthquake/Seismic | ○ | ○ | ○ | ○ | ○ |
| Flood | ○ | ○ | ○ | ○ | ○ |
| Fire | ○ | ○ | ○ | ○ | ○ |
| Drought | ○ | ○ | ○ | ○ | ○ |
| Energy Emergency | ○ | ○ | ○ | ○ | ○ |
| Hazardous Material and Oil Spills | ○ | ○ | ○ | ○ | ○ |
| Terrorism/Cyber Terrorism | ○ | ○ | ○ | ○ | ○ |
| Extreme Heat | ○ | ○ | ○ | ○ | ○ |
| Severe Winter Storms/High Winds | ○ | ○ | ○ | ○ | ○ |

Other (please specify)

2. How prepared are you and your family to cope with the hazards listed in question 1?

- ○ Not Prepared at All
- ○ Somewhat Prepared
- ○ Adequately Prepared
- ○ Very Well Prepared
- ○ Not Sure

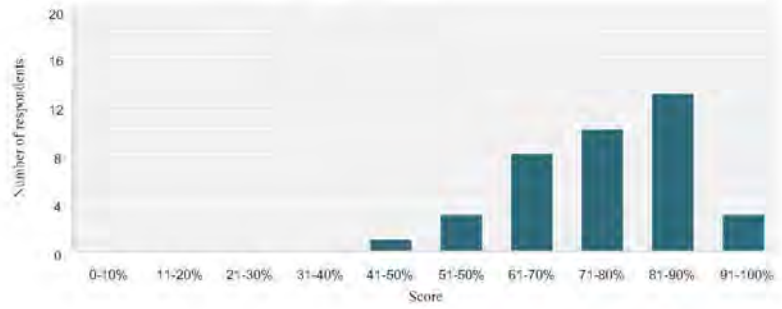
3. Please indicate how you feel about the following statement: It is the responsibility of government (local, state and federal) to provide educational materials and campaigns that encourage citizens to take action to reduce the risks associated with the hazards identified in question 1.

The following are the results from our Hazard Mitigation Public Survey

City of Hermosa Beach Local Hazard Mitigation Plan Survey

Quiz Summary

76% • 9.8/13 PTS




**Statistics**

| Lowest Score | Median | Highest Score |
|---|---|---|
| **46%** | **77%** | **92%** |
| Mean: **76%** | | |
| Standard Deviation: **12%** | | |

**Question Ranking**

| Questions (3) | Difficulty | Average Score |
|---|---|---|
| Q2 How prepared are you and your family to cope with the hazards listed in question 1? | 1 | 42% |
| Q3 Please indicate how you feel about the following statement: It is the responsibility of government (local, state and federal) to provide educational materials and campaigns that encourage citizens to take action to reduce the risks associated with the hazards identified in question 1. | 2 | 81% |
| Q4 Please indicate how you feel about the following statement: It is my personal responsibility to be educated and take actions that reduce my exposure to the risks associated with the hazards identified in question 1. | 3 | 91% |

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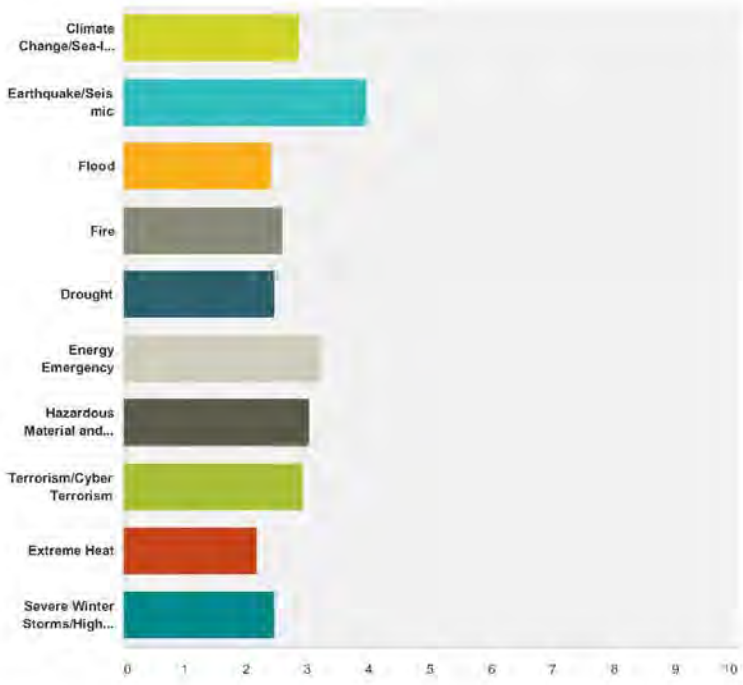
City of Hermosa Beach Local Hazard Mitigation Plan Survey

## Q1 Hermosa Beach residents and businesses may encounter a variety of hazards and/or disasters. How concerned are you about the following hazards impacting you, your business and the City of Hermosa Beach? (Check one response for each hazard)

Answered: 38 Skipped: 0




| | Not Concerned | Somewhat Concerned | Concerned | Very Concerned | Extremely Concerned | Total | Weighted Average |
|---|---|---|---|---|---|---|---|
| Climate Change/Sea-level Rise | 21.05% 8 | 15.79% 6 | 28.95% 11 | 23.68% 9 | 10.53% 4 | 38 | 2.87 |
| Earthquake/Seismic | 0.00% 0 | 5.26% 2 | 23.68% 9 | 39.47% 15 | 31.58% 12 | 38 | 3.97 |
| Flood | 29.73% 11 | 21.62% 8 | 32.43% 12 | 10.81% 4 | 5.41% 2 | 37 | 2.41 |
| Fire | 7.89% 3 | 47.37% 18 | 28.95% 11 | 10.53% 4 | 5.26% 2 | 38 | 2.58 |

2 / 17

City of Hermosa Beach Local Hazard Mitigation Plan Survey

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Drought | 13.51%<br>5 | 45.95%<br>17 | 24.32%<br>9 | 13.51%<br>5 | 2.70%<br>1 | 37 | 2.46 |
| Energy Emergency | 5.26%<br>2 | 26.32%<br>10 | 28.95%<br>11 | 21.05%<br>8 | 18.42%<br>7 | 38 | 3.21 |
| Hazardous Material and Oil Spills | 15.79%<br>6 | 18.42%<br>7 | 28.95%<br>11 | 21.05%<br>8 | 15.79%<br>6 | 38 | 3.00 |
| Terrorism/Cyber Terrorism | 5.26%<br>2 | 42.11%<br>16 | 21.05%<br>8 | 18.42%<br>7 | 13.16%<br>5 | 38 | 2.92 |
| Extreme Heat | 28.95%<br>11 | 36.84%<br>14 | 21.05%<br>8 | 13.16%<br>5 | 0.00%<br>0 | 38 | 2.18 |
| Severe Winter Storms/High Winds | 15.79%<br>6 | 42.11%<br>16 | 23.68%<br>9 | 15.79%<br>6 | 2.63%<br>1 | 38 | 2.47 |

| # | Other (please specify) | Date |
|---|---|---|
| 1 | Biologic | 5/2/2017 11:32 PM |
| 2 | Civil unrest with the increasing frequency of crime in our neighborhoods and growing number of visitors. | 5/2/2017 8:15 PM |
| 3 | Off shore oil tanker spill, explosion, closely built, dense areas | 5/2/2017 11:24 AM |
| 4 | Power plant emergencies | 5/2/2017 10:57 AM |
| 5 | In the case of an earthquake, I am very concerned about the over abundance of useless power lines that are left over from cable companies when service is ended. | 5/2/2017 10:23 AM |
| 6 | Tsunami | 5/2/2017 10:07 AM |
| 7 | large scale events, emergency response time and congestion | 5/2/2017 9:37 AM |

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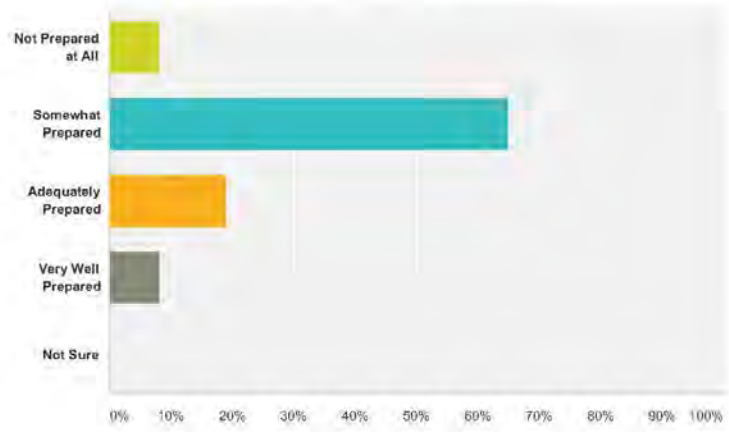
City of Hermosa Beach Local Hazard Mitigation Plan Survey

## Q2 How prepared are you and your family to cope with the hazards listed in question 1?

Answered: 37 Skipped: 1




Quiz Statistics

| Percent Correct | Average Score | Standard Deviation | Difficulty |
|---|---|---|---|
| 8% | 1.3/3.0 (42%) | 0.73 | 1/3 |

| Answer Choices | Score | Responses | |
|---|---|---|---|
| Not Prepared at All | 0/3 | 8.11% | 3 |
| Somewhat Prepared | 1/3 | 64.86% | 24 |
| Adequately Prepared | 2/3 | 18.92% | 7 |
| ✔ Very Well Prepared | 3/3 | 8.11% | 3 |
| Not Sure | 0/3 | 0.00% | 0 |
| Total | | | 37 |

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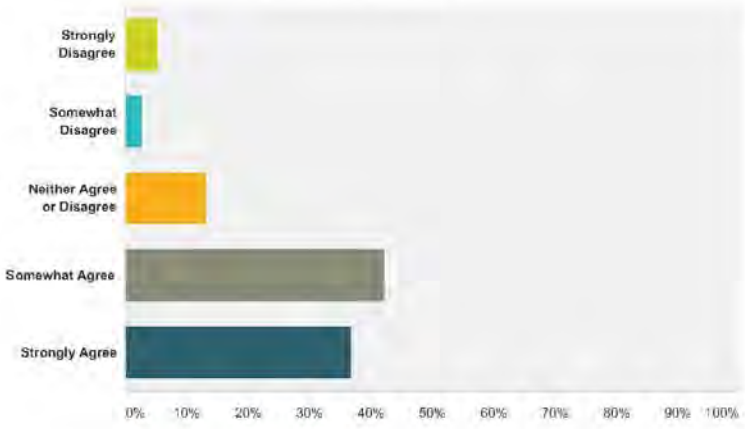
City of Hermosa Beach Local Hazard Mitigation Plan Survey

**Q3 Please indicate how you feel about the following statement: It is the responsibility of government (local, state and federal) to provide educational materials and campaigns that encourage citizens to take action to reduce the risks associated with the hazards identified in question 1.**




| Quiz Statistics | | | |
|---|---|---|---|
| **Percent Correct** 37% | **Average Score** 4.0/5.0 (81%) | **Standard Deviation** 1.05 | **Difficulty** 2/3 |

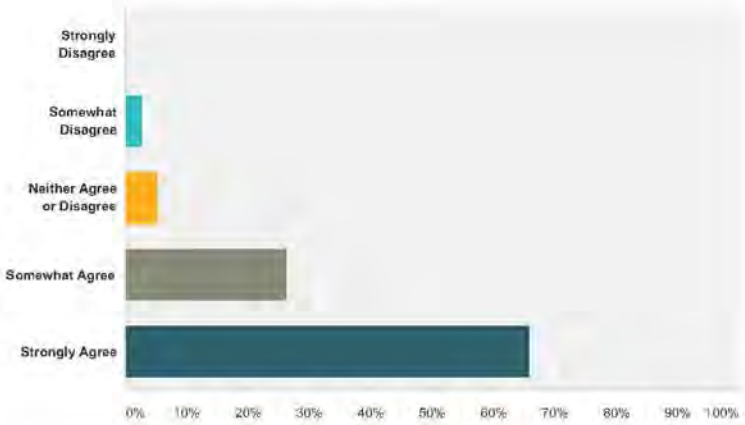
| Answer Choices | Score | Responses | |
|---|---|---|---|
| Strongly Disagree | 1/5 | 5.26% | 2 |
| Somewhat Disagree | 2/5 | 2.63% | 1 |
| Neither Agree or Disagree | 3/5 | 13.16% | 5 |
| Somewhat Agree | 4/5 | 42.11% | 16 |
| ✓ Strongly Agree | 5/5 | 36.84% | 14 |
| Total | | | 38 |

5 / 17

City of Hermosa Beach Local Hazard Mitigation Plan Survey

## Q4 Please indicate how you feel about the following statement: It is my personal responsibility to be educated and take actions that reduce my exposure to the risks associated with the hazards identified in question 1.

Answered: 38 Skipped: 0




| Quiz Statistics | | | |
|---|---|---|---|
| **Percent Correct** 66% | **Average Score** 4.6/5.0 (91%) | **Standard Deviation** 0.72 | **Difficulty** 3/3 |

| | Answer Choices | Score | Responses | |
|---|---|---|---|---|
| | Strongly Disagree | 1/5 | 0.00% | 0 |
| | Somewhat Disagree | 2/5 | 2.63% | 1 |
| | Neither Agree or Disagree | 3/5 | 5.26% | 2 |
| | Somewhat Agree | 4/5 | 26.32% | 10 |
| ✓ | Strongly Agree | 5/5 | 65.79% | 25 |
| Total | | | | 38 |

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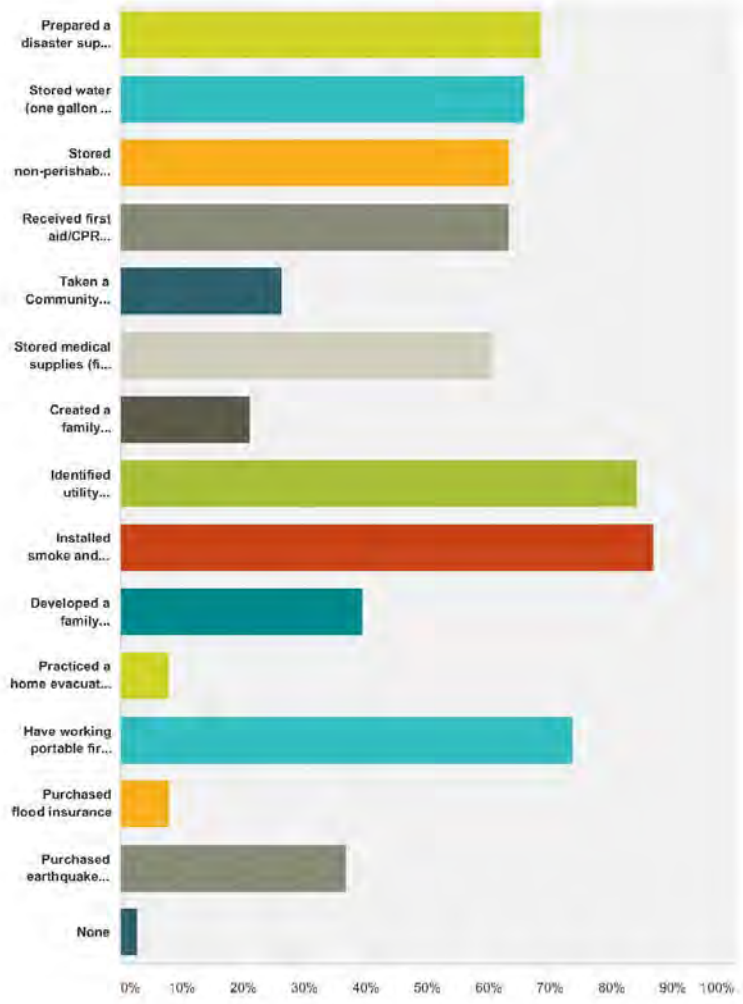
City of Hermosa Beach Local Hazard Mitigation Plan Survey

## Q5 Which of the following steps have you and/or your family taken to prepare for hazardous events? (Check all that apply)

Answered: 38 Skipped: 0




| Answer Choices | Responses | |
|---|---|---|
| Prepared a disaster supply kit (Tools, gloves, dust masks, flashlights, eye protection, etc.) | 68.42% | 26 |

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City of Hermosa Beach Local Hazard Mitigation Plan Survey

| | | |
|---|---|---|
| Stored water (one gallon a day/person for 5 days) | 65.79% | 25 |
| Stored non-perishable food for 5 days | 63.16% | 24 |
| Received first aid/CPR training | 63.16% | 24 |
| Taken a Community Emergency Response Team (CERT) classes and/or joined a local CERT team | 26.32% | 10 |
| Stored medical supplies (first aid kit, prescription medicines, extra glasses) at home, work and auto | 60.53% | 23 |
| Created a family reunification communication plan | 21.05% | 8 |
| Identified utility shutoffs at your home | 84.21% | 32 |
| Installed smoke and carbon monoxide detectors on each floor of your house | 86.84% | 33 |
| Developed a family emergency evacuation plan | 39.47% | 15 |
| Practiced a home evacuation drill at least once a year | 7.89% | 3 |
| Have working portable fire extinguishers in appropriate areas such as the kitchen | 73.68% | 28 |
| Purchased flood insurance | 7.89% | 3 |
| Purchased earthquake insurance | 36.84% | 14 |
| None | 2.63% | 1 |
| **Total Respondents: 38** | | |

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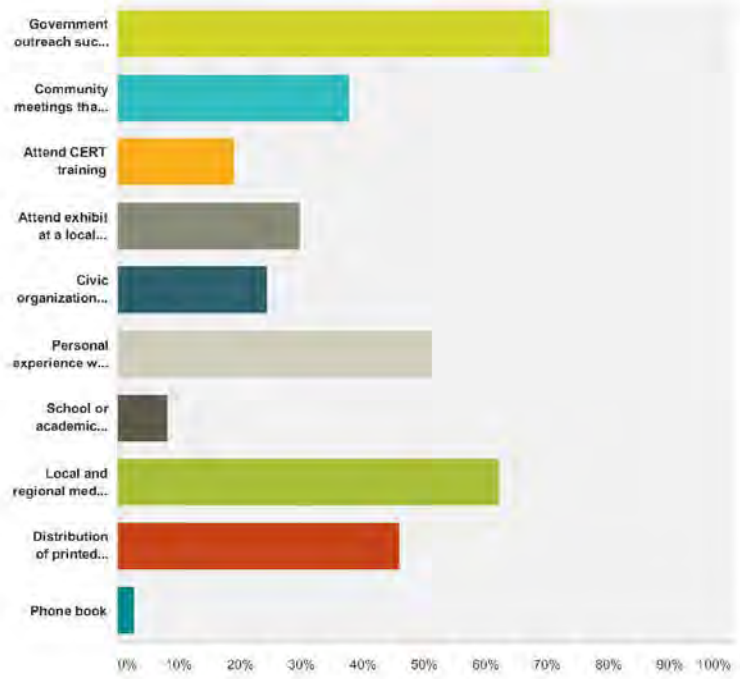
City of Hermosa Beach Local Hazard Mitigation Plan Survey

## Q6 Which of the following do you use to gather information to prepare for hazardous events? (Check all that apply)

Answered: 37 Skipped: 1




| Answer Choices | Responses | |
|---|---|---|
| Government outreach such as federal, state of local website and social media | 70.27% | 26 |
| Community meetings that address disaster preparedness information | 37.84% | 14 |
| Attend CERT training | 18.92% | 7 |
| Attend exhibit at a local community event | 29.73% | 11 |
| Civic organization involved in disaster preparedness such as American Red Cross or church | 24.32% | 9 |
| Personal experience with previous hazard or disaster | 51.35% | 19 |
| School or academic institution courses | 8.11% | 3 |
| Local and regional media sources (Other than social media) | 62.16% | 23 |
| Distribution of printed material | 45.95% | 17 |
| Phone book | 2.70% | 1 |

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City of Hermosa Beach Local Hazard Mitigation Plan Survey

| Total Respondents: 37 | | |
|---|---|---|
| # | Other (please specify) | Date |
| 1 | internet | 5/3/2017 10:16 AM |
| 2 | Books, Internet | 5/2/2017 9:01 PM |
| 3 | I would like to participate in CERT training. | 5/2/2017 8:15 PM |

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City of Hermosa Beach Local Hazard Mitigation Plan Survey

**Q7 Which of the following methods for receiving hazard and disaster preparedness information do you think are most effective? (Check all that apply)**

Answered: 38 Skipped: 0

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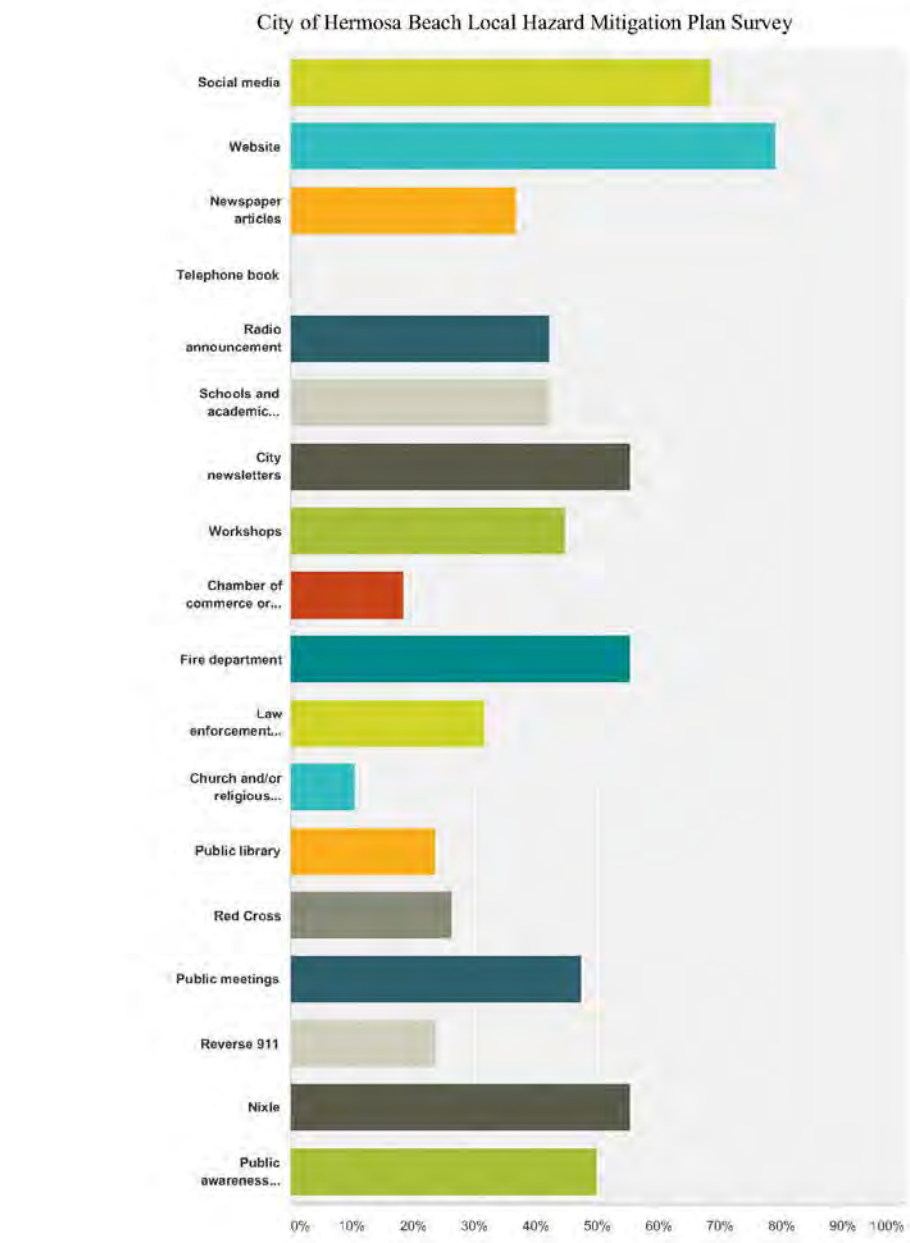


| Answer Choices | Responses |
|---|---|
| Social media | 68.42% |

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City of Hermosa Beach Local Hazard Mitigation Plan Survey

| | | |
|---|---|---|
| Website | 78.95% | 30 |
| Newspaper articles | 36.84% | 14 |
| Telephone book | 0.00% | 0 |
| Radio announcement | 42.11% | 16 |
| Schools and academic institutions | 42.11% | 16 |
| City newsletters | 55.26% | 21 |
| Workshops | 44.74% | 17 |
| Chamber of commerce or other civic group | 18.42% | 7 |
| Fire department | 55.26% | 21 |
| Law enforcement agency | 31.58% | 12 |
| Church and/or religious groups | 10.53% | 4 |
| Public library | 23.68% | 9 |
| Red Cross | 26.32% | 10 |
| Public meetings | 47.37% | 18 |
| Reverse 911 | 23.68% | 9 |
| Nixle | 55.26% | 21 |
| Public awareness campaigns | 50.00% | 19 |
| Total Respondents: 38 | | |

| # | Other (please specify) | Date |
|---|---|---|
| 1 | I live the idea having the same helpful information at several locations in the city. I like getting churches involved. You could add any local businesses such as salons and barber shops where people are waiting. In restaurants you can have pamphlets with info about the beach cities for visitors but also include safety info for folks to pick up. To get the social media folks involved you will need to make it a game. Perhaps ask a school or gaming co to provide free a game around disasters and being prepared. It could probably be a tax write off for them and a way for companies to partner with the community. | 5/3/2017 9:21 AM |
| 2 | What is reverse 911? | 5/2/2017 7:52 AM |

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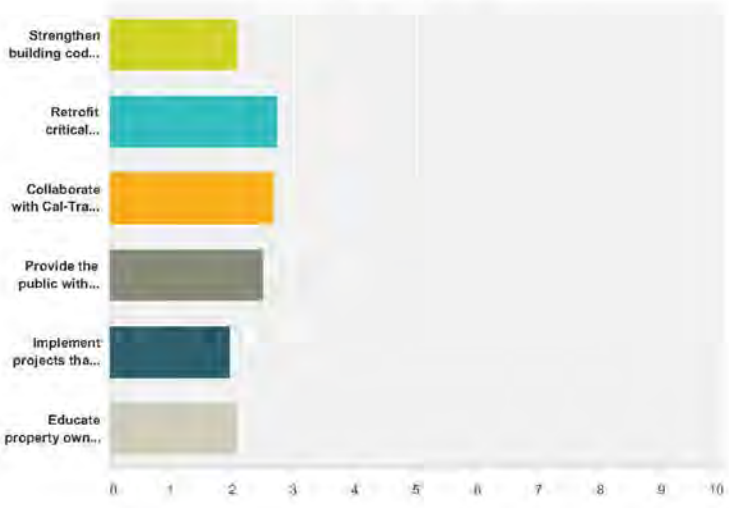
City of Hermosa Beach Local Hazard Mitigation Plan Survey

## Q8 In your opinion, what types of projects should the City be addressing in order to reduce the damage and disruption from hazards? Please rank each option as low, medium or high priority.

Answered: 38 Skipped: 0




| | Low Priority | Medium Priority | High Priority | Total | Weighted Average |
|---|---|---|---|---|---|
| Strengthen building codes and regulations to address mitigation efforts in high hazard areas. | 26.32% 10 | 39.47% 15 | 34.21% 13 | 38 | 2.08 |
| Retrofit critical infrastructure within the community. | 5.26% 2 | 15.79% 6 | 78.95% 30 | 38 | 2.74 |
| Collaborate with Cal-Trans, Southern California Edison and other business to encourage the implementation of mitigations efforts to safeguard critical infrastructure which provides service within Hermosa Beach | 5.41% 2 | 21.62% 8 | 72.97% 27 | 37 | 2.68 |
| Provide the public with information about the potential hazards within the City and the possible mitigation actions to address these hazards. | 10.81% 4 | 27.03% 10 | 62.16% 23 | 37 | 2.51 |
| Implement projects that mitigate the potential impacts of climate change. | 37.84% 14 | 27.03% 10 | 35.14% 13 | 37 | 1.97 |
| Educate property owners about mitigation actions and the variety of funding programs that support the implementation of the actions. | 24.32% 9 | 43.24% 16 | 32.43% 12 | 37 | 2.08 |

| # | Other (please specify) | Date |
|---|---|---|

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City of Hermosa Beach Local Hazard Mitigation Plan Survey

| | | |
|---|---|---|
| 1 | I feel that we are fairly educated on climate change because of our proximity to the ocean so I didn't rank it high as a city priority though I do feel it is a high priority overall. I didn't know there was available funding for mitigation so I'd like to know more about them. | 5/2/2017 8:15 PM |
| 2 | Clear and concise evacuation directions | 5/2/2017 9:37 AM |
| 3 | infrastructure first- those 80 year old sewer lines are going to blow any moment, especially since the city is allowing overbuilding! | 5/2/2017 7:59 AM |

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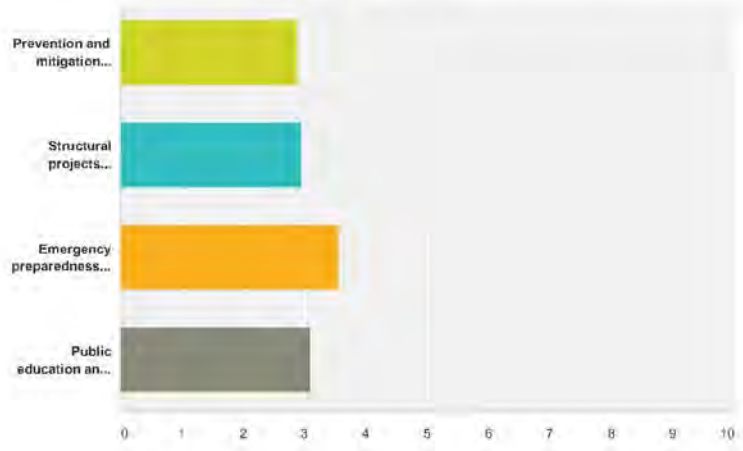
City of Hermosa Beach Local Hazard Mitigation Plan Survey

## Q9 How important do you find the following citywide actions or activities that may reduce the risks of hazards?

Answered: 38 Skipped: 0




| | Not Important | Somewhat Important | Very Important | Extremely Important | Total | Weighted Average |
|---|---|---|---|---|---|---|
| Prevention and mitigation actions such as the development and implementation of policies that address land development, construction, and retrofitting that will impact the potential damage resulting from a hazardous event. | 15.79% 6 | 7.89% 3 | 47.37% 18 | 28.95% 11 | 38 | 2.89 |
| Structural projects intended to reduce the impact of a hazard by modifying the natural progression of the hazard such as detention/retention basins retaining walls and storm sewers. | 15.79% 6 | 10.53% 4 | 36.84% 14 | 36.84% 14 | 38 | 2.95 |
| Emergency preparedness actions that protect people and property during and immediately after a hazardous event, such as warning systems, evacuation planning, emergency response training and protection of critical infrastructure. | 2.63% 1 | 5.26% 2 | 26.32% 10 | 65.79% 25 | 38 | 3.55 |
| Public education and awareness campaigns such as CERT, school based programs, and public meetings designed to inform the community about local hazards and the preparedness actions that can be used to protect themselves and their property. | 5.26% 2 | 18.42% 7 | 39.47% 15 | 36.84% 14 | 38 | 3.08 |

| # | Other (please specify) | Date |
|---|---|---|

16 / 17

City of Hermosa Beach Local Hazard Mitigation Plan Survey

| | | |
|---|---|---|
| 1 | These last two, get the businesses, churches involved to help in this one. | 5/3/2017 1:21 AM |
| 2 | Communication is critical. I'd want to know about HAM radio trainings and access to equipment. It wouldn't hurt for neighborhoods to coordinate micro plans via neighborhood watch captains. Also identify locations for elderly and disabled, special needs individuals and those who need help with transport. We love our pets. They are usually not allowed in shelters. We should be thinking of them as well. | 5/2/2017 12:15 PM |
| 3 | While the "idea" of Cert is a solid one, current program communications are weak and lack effective solutions. | 5/2/2017 1:37 AM |

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*Sample 2: City of Hermosa Beach Website front page promotion for Hazard Mitigation Planning Process*

*Sample 3: Screenshot of information posted regarding the upcoming community meeting and online survey*

HOME | ABOUT US | WHAT'S NEW | RESIDENTS | BUSINESS | VISITORS | CITY DEPARTMENTS | I WANT TO...

Calendar | Employment | Municipal Code | Contact Us

city of HERMOSA beach

THE BEST LITTLE BEACH CITY

- Calendar of Events
- Classes & Activities
- City News & Updates
- E-Newsletter
- eNotification Sign Up
- School District Event Calendar
- SpeakupHermosa!

What's New

Search...

## CITY NEWS & UPDATES

Share & Bookmark | [+] Feedback | Print | AA Font Size

### Community Encouraged to Help City Prepare Local Hazard Mitigation Plan

**Posted Date:** 4/18/2017 1:30 PM

CITY OF HERMOSA BEACH INVITES COMMUNITY TO PARTICIPATE IN PREPARING DISASTER HAZARD MITIGATION PLAN

HERMOSA BEACH, Calif. – April 11, 2017 – The City of Hermosa Beach is preparing a Hazard Mitigation Plan (HMP), an important disaster preparedness tool that serves to reduce loss of life and property by lessening the impact of disasters, and will seek input from the community in the creation of this plan.

Local governments are required to develop this plan, which must be approved by California Office of Emergency Services (CalOES) and the Federal Emergency Management Agency (FEMA) in order to be eligible for grant funding. This includes both pre- and post-disaster mitigation funding opportunities for existing Hermosa Beach facilities.

To prepare this plan, the City is hosting a community-wide survey available here: https://www.surveymonkey.com/r/Z8R6TWQ for residents and business owners to identify local hazards and prepare mitigation actions to lessen or reduce these hazards.

In addition to the survey, the City will host a **Local Hazard Mitigation Plan Town Hall on Wednesday, May 3 at 7 p.m.** in the City Council Chambers (1315 Valley Dr.), where input, questions and suggestions from the community will be included in the City's plan to reduce losses when facing a catastrophic event.

**What is Hazard Mitigation?**
FEMA describes hazard mitigation as "any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards."

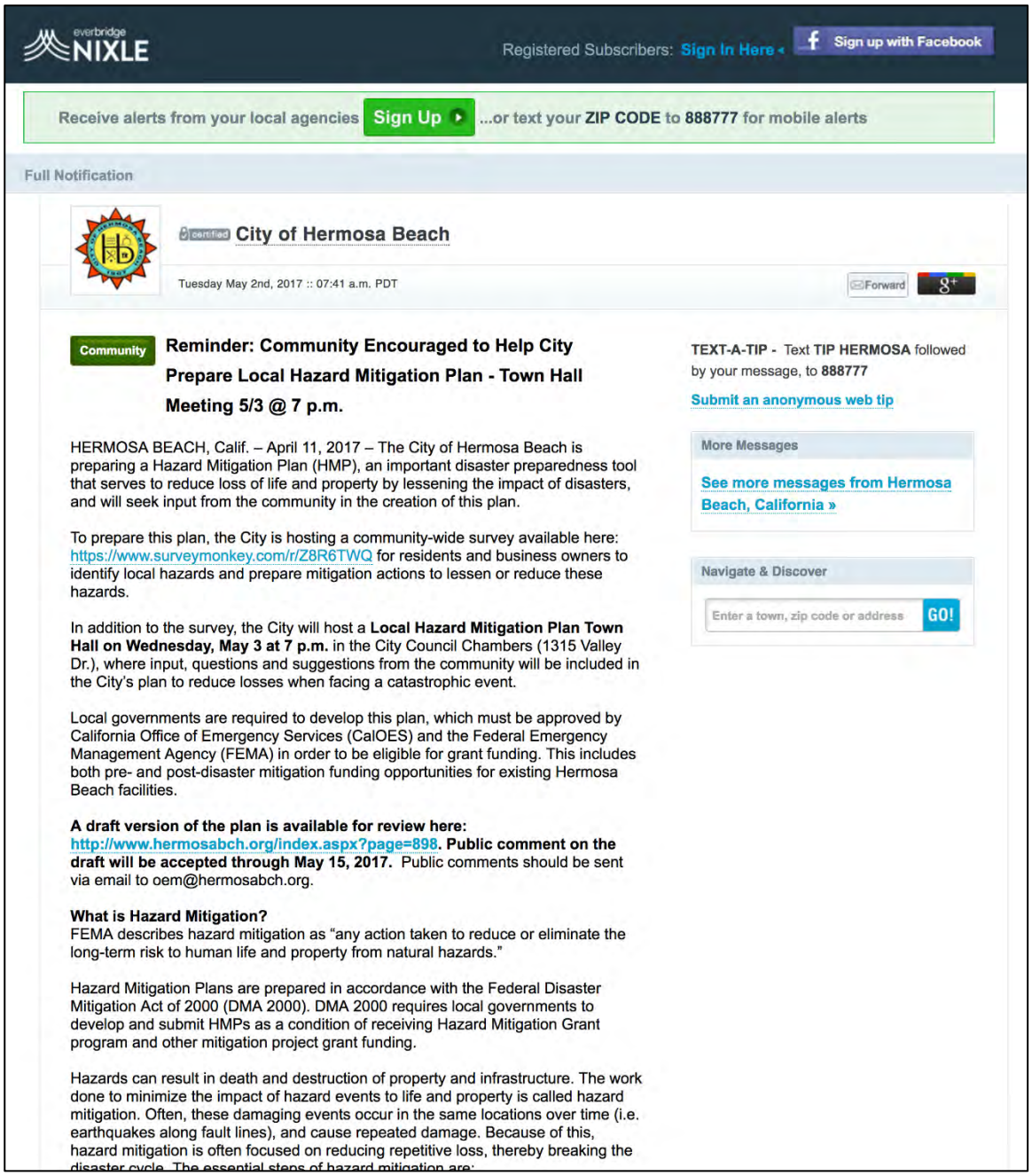
Hazard Mitigation Plans are prepared in accordance with the Federal Disaster Mitigation Act of 2000 (DMA 2000). DMA 2000 requires local governments to develop and submit HMPs as a condition of receiving Hazard Mitigation Grant program and other mitigation project grant funding.

Hazards can result in death and destruction of property and infrastructure. The work done to minimize the impact of hazard events to life and property is called hazard mitigation. Often, these damaging events occur in the same locations over time (i.e. earthquakes along fault lines), and cause repeated damage. Because of this, hazard mitigation is often focused on reducing repetitive loss, thereby breaking the disaster cycle. The essential steps of hazard mitigation are:
• Identify and profile hazards that affect the local area
• Analyze the people and facilities at risk from those hazards
• Develop mitigation actions to lessen or reduce the impact of the profiled hazards

**What are the Requirements and Process for the Hermosa Beach Hazard Mitigation Plan?**
FEMA has produced a Local Mitigation Plan Review Tool to demonstrate how the mitigation plan should be created. The plan review tool has a regulation checklist that provides a summary of FEMA's evaluation of whether the plan has addressed all requirements.

Planners can also use the checklist prior to submitting the plan for approval to ensure they have addressed all the requirements. The primary tasks that will take place during the planning process include:
1. Capability analysis
2. Vulnerability assessment
3. Hazard identification
4. Defining a hazard mitigation strategy through actions and projects

*Sample 4: Screenshot of Nixle notification of the upcoming community meeting and online survey*



everbridge NIXLE

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Receive alerts from your local agencies Sign Up ...or text your ZIP CODE to 888777 for mobile alerts

Full Notification

certified City of Hermosa Beach

Tuesday May 2nd, 2017 :: 07:41 a.m. PDT

Forward

Community

**Reminder: Community Encouraged to Help City Prepare Local Hazard Mitigation Plan - Town Hall Meeting 5/3 @ 7 p.m.**

HERMOSA BEACH, Calif. – April 11, 2017 – The City of Hermosa Beach is preparing a Hazard Mitigation Plan (HMP), an important disaster preparedness tool that serves to reduce loss of life and property by lessening the impact of disasters, and will seek input from the community in the creation of this plan.

To prepare this plan, the City is hosting a community-wide survey available here: https://www.surveymonkey.com/r/Z8R6TWQ for residents and business owners to identify local hazards and prepare mitigation actions to lessen or reduce these hazards.

In addition to the survey, the City will host a **Local Hazard Mitigation Plan Town Hall on Wednesday, May 3 at 7 p.m.** in the City Council Chambers (1315 Valley Dr.), where input, questions and suggestions from the community will be included in the City's plan to reduce losses when facing a catastrophic event.

Local governments are required to develop this plan, which must be approved by California Office of Emergency Services (CalOES) and the Federal Emergency Management Agency (FEMA) in order to be eligible for grant funding. This includes both pre- and post-disaster mitigation funding opportunities for existing Hermosa Beach facilities.

**A draft version of the plan is available for review here: http://www.hermosabch.org/index.aspx?page=898. Public comment on the draft will be accepted through May 15, 2017.** Public comments should be sent via email to oem@hermosabch.org.

**What is Hazard Mitigation?**
FEMA describes hazard mitigation as "any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards."

Hazard Mitigation Plans are prepared in accordance with the Federal Disaster Mitigation Act of 2000 (DMA 2000). DMA 2000 requires local governments to develop and submit HMPs as a condition of receiving Hazard Mitigation Grant program and other mitigation project grant funding.

Hazards can result in death and destruction of property and infrastructure. The work done to minimize the impact of hazard events to life and property is called hazard mitigation. Often, these damaging events occur in the same locations over time (i.e. earthquakes along fault lines), and cause repeated damage. Because of this, hazard mitigation is often focused on reducing repetitive loss, thereby breaking the disaster cycle. The essential steps of hazard mitigation are:

TEXT-A-TIP - Text TIP HERMOSA followed by your message, to 888777

Submit an anonymous web tip

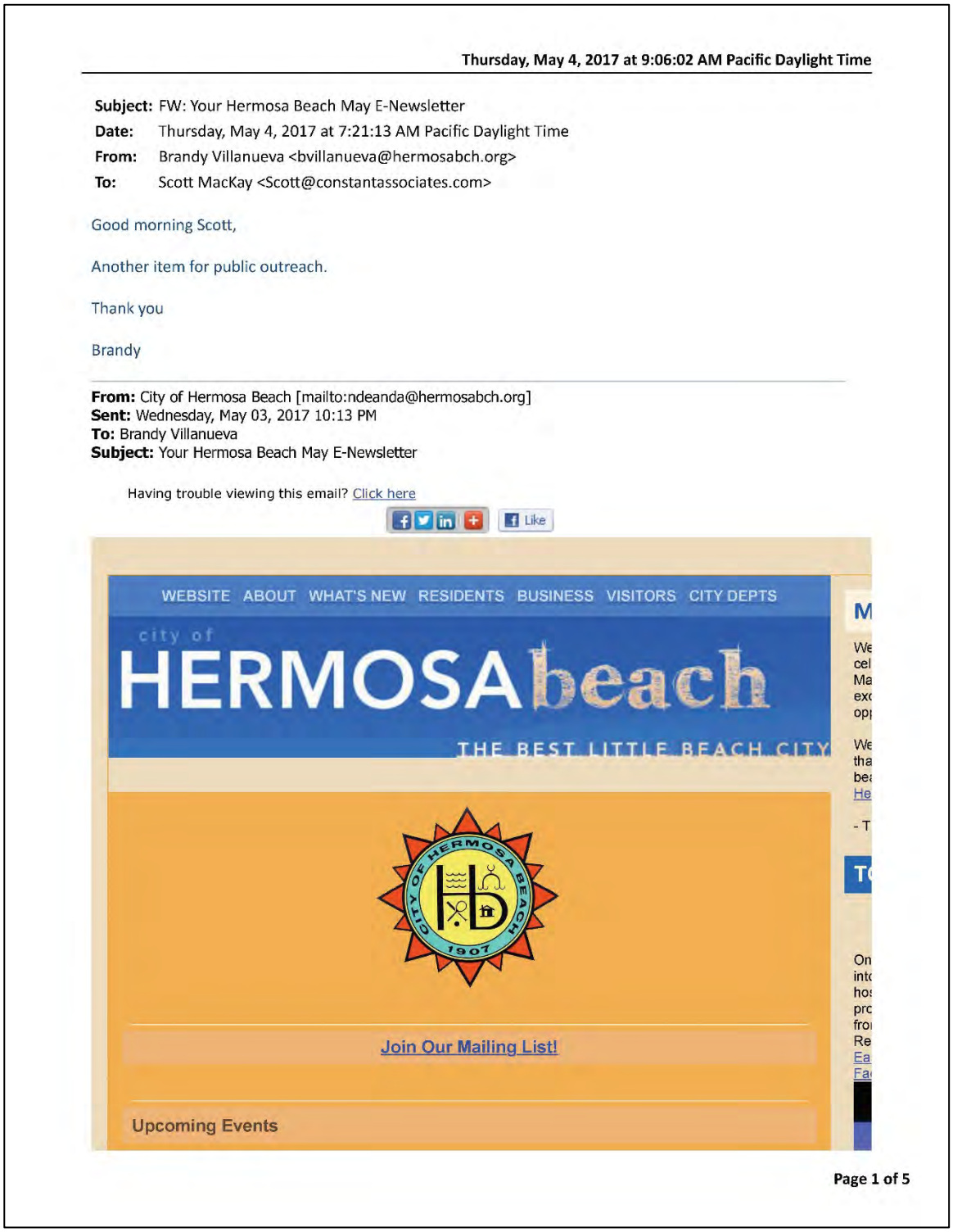
More Messages

See more messages from Hermosa Beach, California »

Navigate & Discover

Enter a town, zip code or address GO!

*Sample 5: Screenshot of Hermosa Beach E Newsletter promoting the upcoming community meeting*



**Thursday, May 4, 2017 at 9:06:02 AM Pacific Daylight Time**

**Subject:** FW: Your Hermosa Beach May E-Newsletter
**Date:** Thursday, May 4, 2017 at 7:21:13 AM Pacific Daylight Time
**From:** Brandy Villanueva <bvillanueva@hermosabch.org>
**To:** Scott MacKay <Scott@constantassociates.com>

Good morning Scott,

Another item for public outreach.

Thank you

Brandy

**From:** City of Hermosa Beach [mailto:ndeanda@hermosabch.org]
**Sent:** Wednesday, May 03, 2017 10:13 PM
**To:** Brandy Villanueva
**Subject:** Your Hermosa Beach May E-Newsletter

Having trouble viewing this email? Click here

Like

WEBSITE ABOUT WHAT'S NEW RESIDENTS BUSINESS VISITORS CITY DEPTS

city of HERMOSA beach

THE BEST LITTLE BEACH CITY

Join Our Mailing List!

Upcoming Events

**Page 1 of 5**

**5/2**
Parks and Recreation Commission Mtg- Council Chambers: *7pm*

**5/3**
Local Hazard Mitigation Plan Townhall- Council Chambers: *7pm*

**5/10**
Hermosa Beach School Board Mtg- Council Chambers: *7pm (Closed Session begins at 6pm)*

**5/16**
Planning Commission Mtg- Council Chambers: *7pm*

**5/17**
Public Works Commission Mtg- Council Chambers: *7pm*

**5/23**
City Council Mtg: PLAN Hermosa Study Session- Council Chambers: *7pm*
*(Closed Session begins at 6pm)*

**5/24**
Adjourned Regular City Council Mtg: Budget Workshop- Council Chambers: *6pm*

**5/29**
City Offices Closed- Memorial Day

**5/31**
City Council Mtg: PLAN Hermosa Study Session- Council Chambers: *7pm*
*(Closed Session begins at 6pm)*

Online City Calendar

## Community Corner

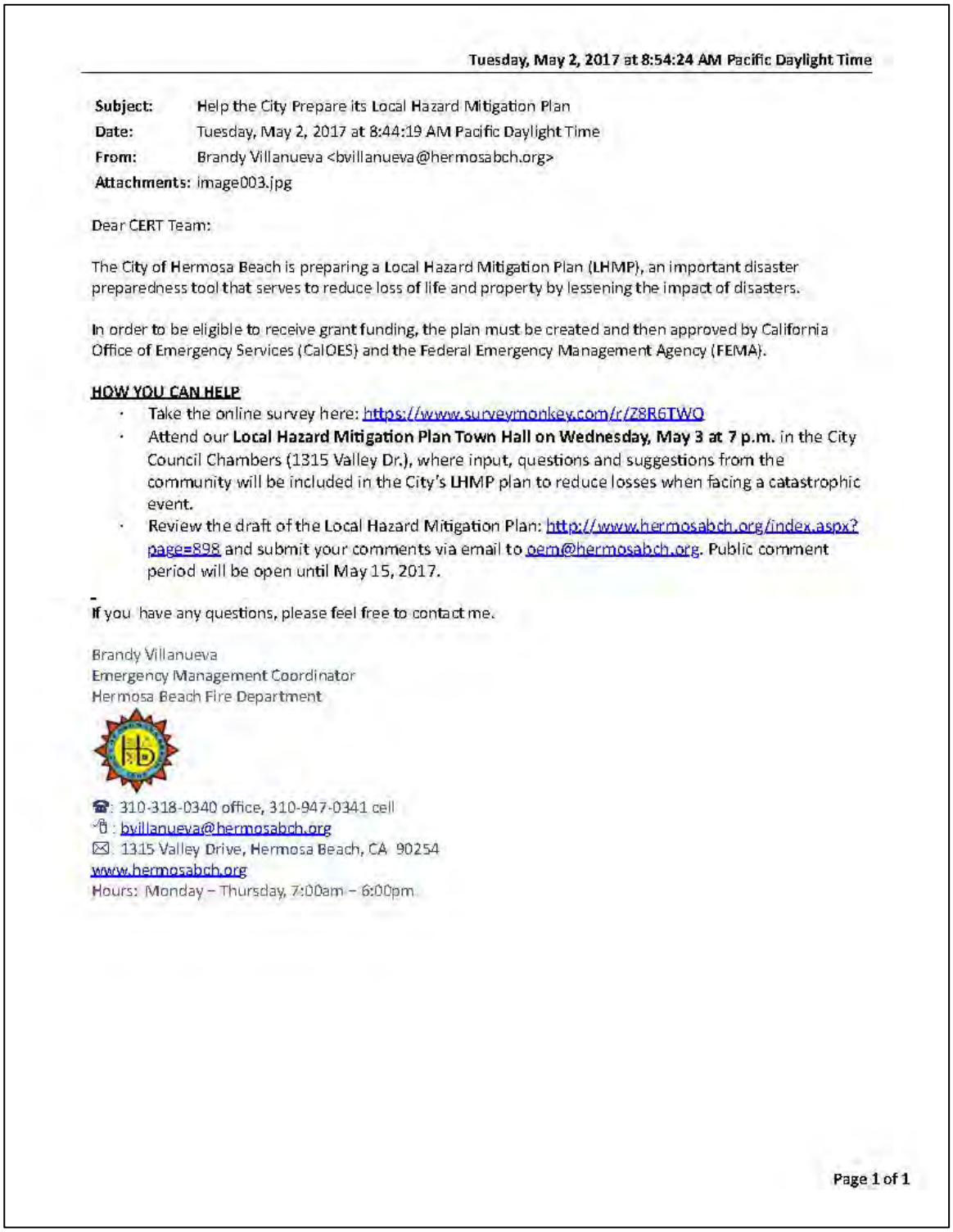
### Mayor's Corner

Hello and welcome to the Mayor's Community Updates! Each month, we'll summarize recent decisions made by Council and update you on important issues impacting our community. Read Here!

### City Community Portal

Check out Hermosa's Online Community Engagement Portal - SpeakupHermosa! Share and vote on community ideas and learn about ongoing projects.

*Sample 6: Screenshot of email sent to CERT members promoting the upcoming community meeting and survey*



Tuesday, May 2, 2017 at 8:54:24 AM Pacific Daylight Time

**Subject:** Help the City Prepare its Local Hazard Mitigation Plan
**Date:** Tuesday, May 2, 2017 at 8:44:19 AM Pacific Daylight Time
**From:** Brandy Villanueva <bvillanueva@hermosabch.org>
**Attachments:** image003.jpg

Dear CERT Team:

The City of Hermosa Beach is preparing a Local Hazard Mitigation Plan (LHMP), an important disaster preparedness tool that serves to reduce loss of life and property by lessening the impact of disasters.

In order to be eligible to receive grant funding, the plan must be created and then approved by California Office of Emergency Services (CalOES) and the Federal Emergency Management Agency (FEMA).

**HOW YOU CAN HELP**

- Take the online survey here: https://www.surveymonkey.com/r/Z8R6TWQ
- Attend our **Local Hazard Mitigation Plan Town Hall on Wednesday, May 3 at 7 p.m.** in the City Council Chambers (1315 Valley Dr.), where input, questions and suggestions from the community will be included in the City's LHMP plan to reduce losses when facing a catastrophic event.
- Review the draft of the Local Hazard Mitigation Plan: http://www.hermosabch.org/index.aspx?page=898 and submit your comments via email to oem@hermosabch.org. Public comment period will be open until May 15, 2017.

If you have any questions, please feel free to contact me.

Brandy Villanueva
Emergency Management Coordinator
Hermosa Beach Fire Department

☎: 310-318-0340 office, 310-947-0341 cell
: bvillanueva@hermosabch.org
✉: 1315 Valley Drive, Hermosa Beach, CA 90254
www.hermosabch.org
Hours: Monday – Thursday, 7:00am – 6:00pm

Page 1 of 1

*Sample 7: Screenshot of email sent to EPAC Commissioners promoting the upcoming community meeting and survey*

**Tuesday, May 2, 2017 at 8:53:27 AM Pacific Daylight Time**

**Subject:** Help Our City Secure Grant Funding For Disaster Preparation!
**Date:** Tuesday, May 2, 2017 at 8:41:10 AM Pacific Daylight Time
**From:** Brandy Villanueva <bvillanueva@hermosabch.org>
**To:** Alan Benson (Albenson2@verizon.net) <Albenson2@verizon.net>, ccrossmph@yahoo.com <ccrossmph@yahoo.com>, Dave Buckland <dbuckland@hermosapolice.org>, David Munoz Jr. (davemunozhb@gmail.com) <davemunozhb@gmail.com>, Gila Katz (Gilak1@verizon.net) <Gilak1@verizon.net>, Matthew McCool (mccool.matt@gmail.com) <mccool.matt@gmail.com>, William Hallett (14fb90@roadrunner.com) <14fb90@roadrunner.com>
**Attachments:** image002.jpg

Dear EPAC Commissioners:

The City of Hermosa Beach is preparing a Local Hazard Mitigation Plan (LHMP), an important disaster preparedness tool that serves to reduce loss of life and property by lessening the impact of disasters.

In order to be eligible to receive grant funding, the plan must be created and then approved by California Office of Emergency Services (CalOES) and the Federal Emergency Management Agency (FEMA).

**HOW YOU CAN HELP**

- Take the online survey here: https://www.surveymonkey.com/r/Z8R6TWQ
- Attend our **Local Hazard Mitigation Plan Town Hall on Wednesday, May 3 at 7 p.m.** in the City Council Chambers (1315 Valley Dr.), where input, questions and suggestions from the community will be included in the City's LHMP plan to reduce losses when facing a catastrophic event.
- Review the draft of the Local Hazard Mitigation Plan: http://www.hermosabch.org/index.aspx?page=898 and submit your comments via email to oem@hermosabch.org. Public comment period will be open until May 15, 2017.

If you have any questions, please feel free to contact me.

Brandy Villanueva
Emergency Management Coordinator
Hermosa Beach Fire Department

☎: 310-318-0340 office, 310-947-0341 cell
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Hours: Monday – Thursday, 7:00am – 6:00pm

Page 1 of 1

City of Hermosa Beach
**Local Hazards Mitigation Plan Revisions**
Sign-In Sheet

# Local Hazards Mitigation Plan Town Hall

## SIGN-IN SHEET

Wednesday, May 3, 2017
7:00 PM - 8:00 PM
City Council Chambers
1315 Valley Drive, Hermosa Beach, CA 90254

| # | Name | Email | Telephone | Signature |
|---|---|---|---|---|
| 1. | Brandy Villanueva | bvillanueva@hermosabchcity.org | 310-318-0540 | Brandy Villanueva |
| 2. | Nancy Ta | nancy@constantassociates.com | 424-320-2588 | Nancy Ta |
| 3. | MARCELLE HERRERA | CELLEC@MMM.COM | 310 346 8551 | M. Herrera |
| 4. | Scott MacKay | Scott@constantassociates.com | 424-320-2587 | |
| 5. | JEFF Robinson | jrobinson@angeles-nfco.org | 310-316-0055 | Jeff Robinson |
| 6. | Bob Rollins | BROLLINS@hermosabch.org | 310-318-0219 | Bob Rollins |
| 7. | RAY RIBAR | ribar7@msn.com | 310-318-2734 | R/R |
| 8. | Katie Casey | Katie@katiecaseypr.com | 310-308-7071 | Katie Casey |

1

Constant & Associates, Inc.

*Sample 8: Sign in sheet from community meeting*

City of Hermosa Beach
**Local Hazards Mitigation Plan Revisions**
Sign-In Sheet

| # | Name | Email | Telephone | Signature |
|---|---|---|---|---|
| 9. | ALAN BERGSTEIN | ALBERGSTEIN2@VERIZON.NET | 310-376-6043 | |
| 10. | Bob Jones | rjones526@gmail.com | | |
| 11. | Kathy Jones | Kmjones526@gmail.com | | Kathleen M Jones |
| 12. | Mary Ewa | maryena@hotmail.com | | |
| 13. | Jenni Buttram | jrbrittain@gmail.com | | |
| 14. | NICO DE ANDA | NDEANDA@HERMOSABCH.ORG | | |
| 15. | Nick Skrzedacz | ~~NSkrzedacz@~~ gmail.com | 310 871 5543 | |
| 16. | | | | |
| 17. | | | | |
| 18. | | | | |
| 19. | | | | |
| 20. | | | | |



Constant & Associates, Inc.

*Sample 9: Presentation slides from community meeting*

# City of Hermosa Beach
# Local Hazard Mitigation Plan

Public Outreach Meeting

May 3, 2017

## Introductions

- City Staff
- Participating Departments
- Technical Assistance

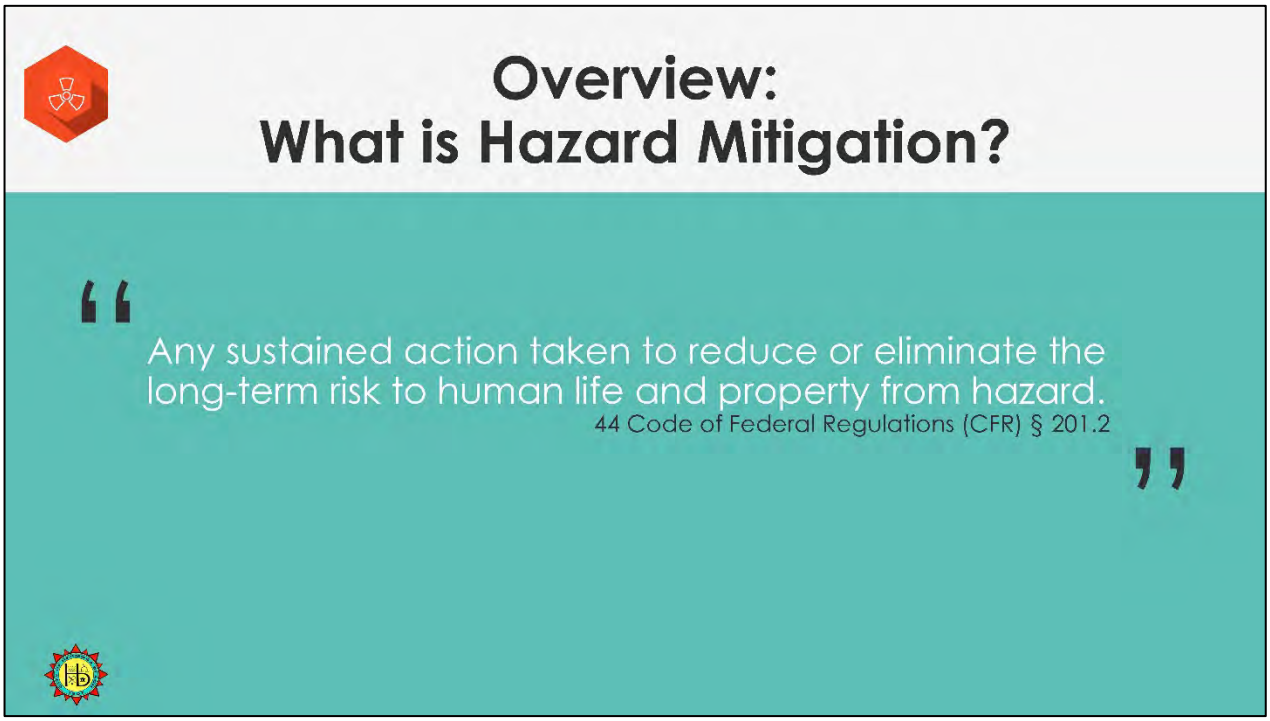
# Agenda – Today's Roadmap

- Overview of Hazard Mitigation Planning
- Hazard Mitigation Plan (HMP) Requirements
- Hazards Review
- Planning Team and Planning Process
- Mitigation Priorities and Actions
- Questions
- Next Steps

# Today's Objectives

- Convey purpose and necessity of LHMP
  - FEMA expectations for LHMP
  - Importance of team member input for successful completion
- Ensure community understands project & agrees with direction of the draft LHMP
- Solicit feedback on draft LHMP from the public


Hazard Mitigation Purpose


Overview:
What is Hazard Mitigation?
“
Any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazard.
44 Code of Federal Regulations (CFR) § 201.2
”

# Reason for Review

- Federal Disaster Mitigation Act 2000 (DMA 2000)
- The Code of Federal Regulations requires local governments to prepare/adopt HMPs in order to receive mitigation grant funding 44 CFR § 201.3(d)(1)
- Plans are required to be updated every 5 years

# LHMP Necessity

- Current LHMP expired (extension requested)
- Completion of LHMP and approval by FEMA will allow City to apply for Hazard Mitigation Planning Grants
  - Pre-/post-disaster hazard mitigation grants available
  - Post-disaster funding may be used to enhance resiliency of facilities

# Examples of Program Funding Opportunities

- Retrofitting a publicly owned facility to protect it from earthquake damage
- Elevating a structure to reduce the likelihood of flood damage
- Developing a water conservation program to reduce the impacts of drought


*Water Conservation Diagram, Eartheasy.com*

# HMP Planning Process

# LHMP Planning Team

01 Update the LHMP including hazards, capabilities, goals and mitigation actions

02 Document how plan was prepared and who was involved in process

03 Provide opportunities for all entities that regulate development to be involved in planning process

04 Include public during drafting stage, and continue to involve in plan maintenance (whole community concept)

05 Incorporate existing plans, studies, reports, and technical information

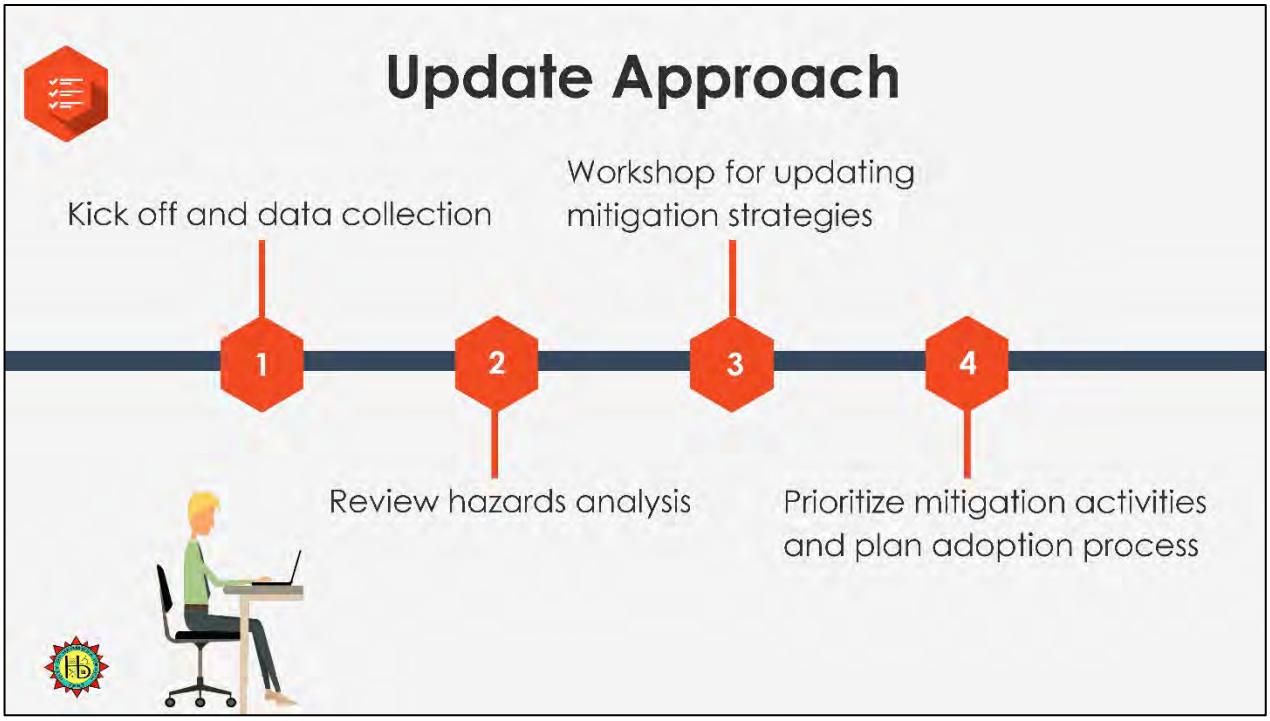
06 Develop a method and schedule for keeping the plan current

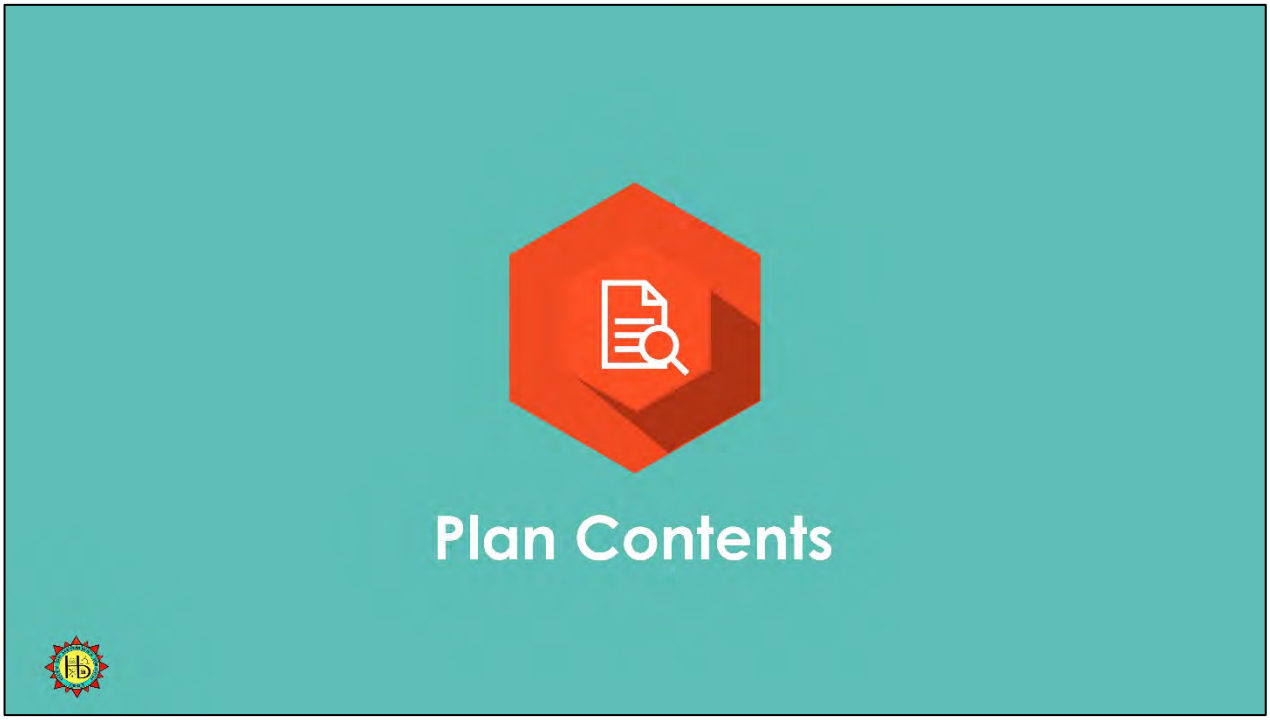
# Project Timeline

Month

| Task | Jan | Feb | Mar | Apr | May | Jun | TBD* |
|---|---|---|---|---|---|---|---|
| 1. Review Documents and Data | | | | | | | |
| 2. Update risk assessments | | | | | | | |
| 3. Design and Facilitate Planning Team Meetings | Planning Team Meeting 1: Project Overview | Planning Team Meeting 2: Hazards | Planning Team Meeting 3: Mitigation Strategies | | | | |
| 4. Design and Facilitate Public Outreach Events | | | | Provide draft HMP for public review and comment | | | |
| 5. Develop Updated HMP | | | Distribute **First Draft** to Planning Team | Distribute **Second Draft** to Planning Team, External Agencies | Distribute **Third Draft** for Public Comments | Incorporate input from Public, Submit **Final Draft** for approval with Cal OES, FEMA. | Incorporate feedback from Cal OES, and FEMA into the Final plan for adoption by City Council. |
| 6. Incorporate review comments | | | | | | | |

* City Council review and adoption will occur after approval by Cal OES/FEMA which can take 6-12 months.


Update Approach
Kick off and data collection
Workshop for updating mitigation strategies
1
2
3
4
Review hazards analysis
Prioritize mitigation activities and plan adoption process


Plan Contents

# Hazard Identification

- Vulnerability assessment
  - Identify unique vulnerabilities to community
  - Analyze climate change and future land-use
- Hazard identification
  - Describe hazards unique to community
  - Rate hazards on likelihood and effects
  - Analyze hazards to understand values at risk

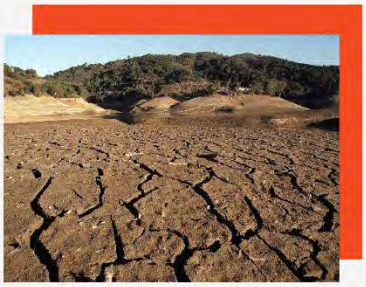
# Hazard Identification

- Describe type, location, and extent of all natural hazards that can affect Hermosa Beach (or region)
- Include information on previous hazard events/probability of future hazard events
- Describe potential impact of each hazard identified, and overall summary of vulnerability (individual hazards as appropriate)

# Hazard Profiles

- Climate Change
- Earthquakes
- Severe storms/winds
- Flooding/Sea Level Rise
- Hazardous Materials
- Drought
- Extreme Heat
- Terrorism
- Tsunami

*Post Katrina Flooding, Climate.gov*



*California Drought 2000, Mercurynews.com*

*California Earthquake 2014, Nasa.com*

# Asset Inventory + Hazard Vulnerability

- Inventory critical public facilities and infrastructure for emergency response and/or essential to City function
- Identify replacement value
- Evaluate vulnerability to each hazard

## Conduct Capability Analysis

- Identify what tools and processes exist to support mitigation activities


## Develop Mitigation Strategy

1. Mitigation goals
2. Mitigation actions
3. Action plan for implementation
   - List existing authorities, policies, programs, and resources and ability to expand/improve them
   - Continue to monitor and evaluate need for inclusion in the National Flood Insurance Program
   - List goals to reduce/avoid long-term vulnerabilities

# Implement Mitigation Strategy

- Define a hazard mitigation strategy through actions and projects
  - Integrate strategy with local agency plans
  - Recognize and integrate with State plan
- Implement hazard mitigation actions and projects
  - Identify funding
  - Integrate multi-jurisdictional hazards and capabilities

# Mitigation Goals

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


Top 10 Mitigation Activities
1)Develop a public outreach and awareness campaign about drought, water conservation measures and the use of recycled water.


Top 10 Mitigation Activities
2) Develop a retrofitting action plan for city owned structures.

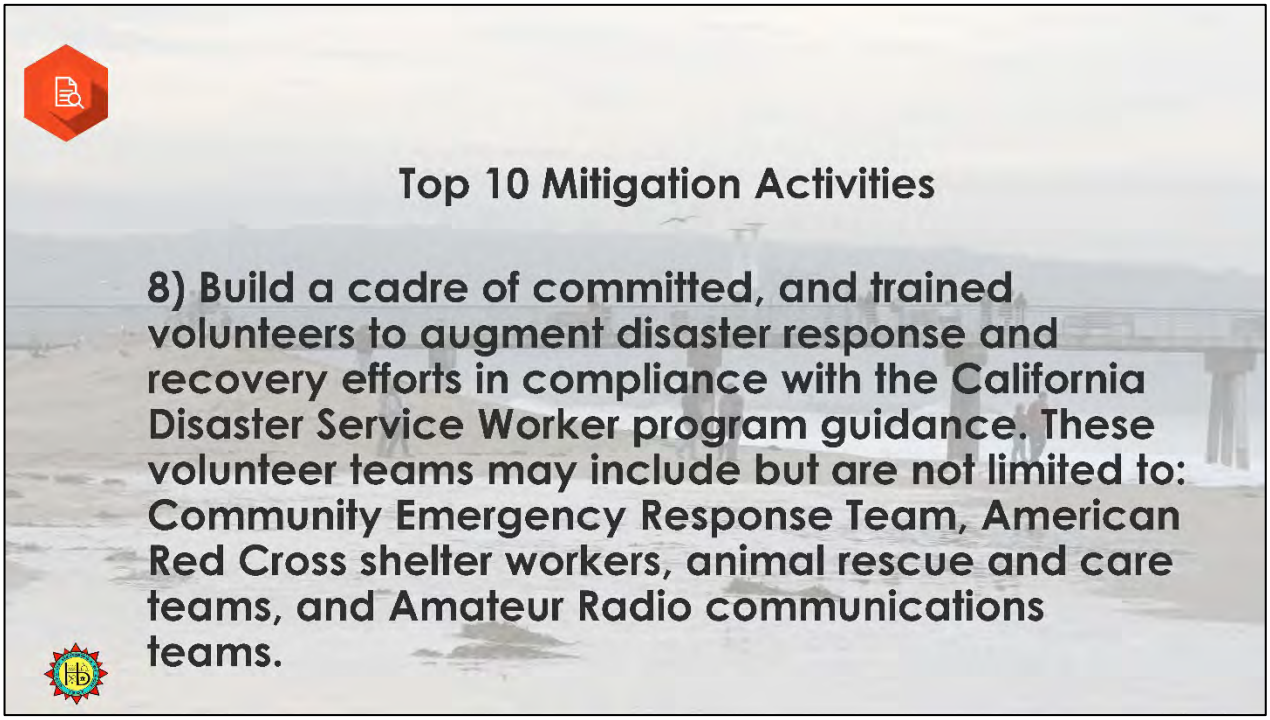

Top 10 Mitigation Activities
3) Continue to adopt, implement, and enforce the latest editions of the California Building and Fire Codes, with appropriate local amendments based on risk (e.g., seismic hazards, flooding), type of occupancy, and location (e.g., floodplain, fault).


Top 10 Mitigation Activities
4) Periodically update the Public Safety Element and concurrently amend the Local Hazard Mitigation Plan (LHMP) to maintain eligibility for maximum grant funding.


Top 10 Mitigation Activities
5) Develop a long-term adaptive shoreline management program with a strong preference for beach replenishment over shoreline protective structures.


Top 10 Mitigation Activities
6) Develop a post disaster recovery policy that establishes the procedures and permit requirements surrounding abandoned structures, condemned buildings, and reconstruction. The policy will need to address debris removal, hazardous materials management, utility reconnection, and designated historical landmarks.


Top 10 Mitigation Activities
7) Partner with Hermosa Beach City School District to review, update, and maintain a multi-hazard emergency operation plan.


Top 10 Mitigation Activities
8) Build a cadre of committed, and trained volunteers to augment disaster response and recovery efforts in compliance with the California Disaster Service Worker program guidance. These volunteer teams may include but are not limited to: Community Emergency Response Team, American Red Cross shelter workers, animal rescue and care teams, and Amateur Radio communications teams.


Top 10 Mitigation Activities
9) Utilize current communication tools and technology to educate the community regarding emergency preparedness, crime prevention, and disaster response (shelter-in place/evacuate) needs.


Top 10 Mitigation Activities
10) Develop a public outreach and awareness campaign that informs the community regarding the hazards that can impact the city and how to implement mitigation actions at their homes to prepare themselves and their families including their animals.

# Outreach Strategy

- Meetings held with non-governmental organizations, interested public
- Distributed information on City websites, social media, local newspaper
- Survey distributed to citizens via website and monthly newsletter

# Plan Implementation

# Plan Documentation and Adoption

- Document how the plan reflects changes in development, progress in local mitigation efforts, and changes in priorities
- Document that the plan was formally adopted by the governing entity

## Questions?

*Sample 10 : Notes from community meeting*

City of Hermosa Beach

LHMP Community Meeting

Wednesday, May 3, 2017

Location: City Council Chambers

Edits/Comments

- #2: Develop a retrofitting action plan for city owned structures.
    - Q: What kind of retrofitting? Is it specifically for earthquakes?
        - Yes, for earthquakes
        - city-owned structures need to be retrofitted
- #5: Develop a long-term adaptive shoreline management program with a strong preference for beach replenishment over shoreline protective structures.
    - beach grows about 4 inches a year
    - Q: what is shoreline protective structures? Talking about physical concrete walls, jetties, etc. …. Called "armories"
    - Q:What is difference? Beach replenishment is more cost-effective in long-run (compared to physical structures)
    - Places like Redondo Beach have had issues with sand gouging
    - Hermosa Beach is very wide by comparison
- Q: Are any of the mitigation activities directly aimed at impacting climate change?
    - No, mitigation activities are linked with reducing greenhouse gases
- Q: Is powerpoint available online?
    - Yes. LHMP is also available.
- Q: Hazardous materials: are these tracked? Are we prepared for truck accident?
    - We have mitigation activity to monitor hazardous activity and transport
    - Torrance Refinery: it's not in our city, that's why we can't put refinery in our plan
- Q: Are there more than 10 mitigation activities?
    - We have listed top 10 mitigation activities in the PowerPoint, and additional ones can be found in the LHMP
- Some mitigation activities will be done by the city, some by the state, and some by another entity (multi-tiered approach)
- Edison and SoCal Gas each have their own LHMP in place that they'd be activating in a situation
    - Q: In disaster, where is Hermosa Beach on list of priority should gas or electricity go out?
        - Priority in disasters are things entities like medical/health
        - A mitigation action in this case would be to have a power generator on hand
    - Q: Who will handle downed power lines?
        - Might take time for electricity company to send someone out to deal with downed line. Might need to block off area yourself.
- A major earthquake could cut Hermosa Beach off from County of LA resources, which might mean supplies need to be air dropped into us
- Not many mitigation activities were completed in the 2011 LHMP
- The 2017 LHMP is comprehensive plan that covers many hazards so it keeps open various kinds of hazard mitigation grants

# Appendix E: Mitigation Action Plan Prioritization

The Planning team used the STAPLE/E Criteria (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) to evaluate and prioritize the mitigation actions. Based on the evaluation score of each of STAPLE/E Criteria (Table E-1), mitigation actions received a cumulative score. The cumulative score was then used to prioritize the mitigation actions. The following scale was used to evaluate each STAPLE/E Criteria:

- 0 = Poor (negative impacts)
- 1 = Fair (neutral or no impacts)
- 2 = Good (positive impacts)
- 3 = Excellent (very favorable impacts)

The intent of prioritizing mitigation actions is to help the City focus and concentrate their efforts; however, it should be noted that when and if specialized grants and/or funds are made available that could finance a mitigation action, the City may adjust the ranking to enable them to implement the mitigation action. 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.

Table E-1 STAPLE/E Criteria

| Criteria | Overview |
|---|---|
| **Social** | Is the proposed action socially acceptable to the community?<br>Are there equity issues involved that would mean that one segment of the community is treated unfairly?<br>Will the action cause social disruption? |
| **Technical** | Will the proposed action work?<br>Will it create more problems than it solves?<br>Does it solve a problem or only a symptom?<br>Is it the most useful action in light of other community goals? |
| **Administrative** | Can the community implement the action?<br>Is there someone to coordinate and lead the effort?<br>Is there sufficient funding, staff, and technical support available?<br>Are there ongoing administrative requirements that need to be met? |
| **Political** | Is the action politically acceptable?<br>Is there public support both to implement and to maintain the project? |
| **Legal** | Is the community authorized to implement the proposed action? Is there a clear legal basis or precedent for this activity?<br>Are there legal side effects? Could the activity be construed as a taking?<br>Is the proposed action allowed by the General Plan, or must the General Plan be amended to allow the proposed action?<br>Will the community be liable for action or lack of action?<br>Will the activity be challenged? |
| **Economic** | What are the costs and benefits of this action?<br>Do the benefits exceed the costs?<br>Are initial, maintenance, and administrative costs taken into account?<br>Has funding been secured for the proposed action? If not, what are the potential sources (public, non-profit, and private)?<br>How will this action affect the fiscal capability of the community?<br>What burden will this action place on the tax base or local economy?<br>What are the budget and revenue effects of this activity?<br>Does the action contribute to other community goals, such as capital improvements or economic development? |

| | |
|---|---|
| | What benefits will the action provide? |
| **Environmental** | How will the action affect the environment?<br>Will the action need environmental regulatory approvals?<br>Will it meet local and state regulatory requirements?<br>Are endangered or threatened species likely to be affected? |

| Mitigation Action | S Social | | T Technical | | | A Administrative | | | P Political | | | L Legal | | | E Economic | | | | E Environmental | | | | | Priority Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 Challenges | 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 Community Environmental Goals | Consistent with Federal Environmental Laws | |
| 2-4 Develop a public outreach and awareness campaign about drought, water conservation measures and the use of recycled water. | 3 | 3 | 2 | 2 | 2 | 1 | 2 | 1 | 3 | 3 | 3 | 2 | 3 | 1 | 2 | 1 | 1 | 1 | 3 | 3 | 1 | 3 | 3 | 49 |
| 3-5 Develop a retrofitting action plan for city owned structures. | 3 | 3 | 3 | 3 | 3 | 1 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 2 | 0 | 1 | 1 | 1 | 2 | 2 | 48 |
| 1-11 Continue to adopt, implement, and enforce the latest editions of the California Building and Fire Codes, with appropriate local amendments based on risk (e.g., seismic hazards, flooding), type of occupancy, and location (e.g., floodplain, fault). | 2 | 2 | 2 | 3 | 3 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 1 | 3 | 2 | 2 | 1 | 3 | 1 | 1 | 2 | 2 | 47 |
| 3-2 Periodically update the Public Safety Element and concurrently amend the Local Hazard Mitigation Plan (LHMP) to maintain eligibility for maximum grant funding. | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 46 |
| 4-1 Develop a long-term adaptive shoreline management program with a strong preference for beach replenishment over shoreline protective structures. Replenish beaches after major erosion events. | 3 | 3 | 2 | 3 | 2 | 1 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 1 | 2 | 1 | 3 | 3 | 1 | 3 | 3 | 46 |

| Mitigation Action | S Social | | T Technical | | | A Administrative | | | P Political | | | L Legal | | | E Economic | | | | E Environmental | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 Challenges | 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 Community Environmental Goals | Consistent with Federal Environmental Laws | **Priority Total** |
| 3-6 Develop a post disaster recovery policy that establishes the procedures and permit requirements surrounding abandoned structures, condemned buildings, and reconstruction. The policy will need to address debris removal, hazardous materials management, utility reconnection, and designated historical landmarks. | 3 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 3 | 0 | 3 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 45 |
| 5-4 Partner with Hermosa Beach City School District to review, update, and maintain a multi-hazard emergency operation plan. | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 2 | 2 | 1 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 45 |
| 5-2 Build a cadre of committed, and trained volunteers to augment disaster response and recovery efforts in compliance with the California Disaster Service Worker program guidance. These volunteer teams may include but are not limited to: Community Emergency Response Team, American Red Cross shelter workers, animal rescue and care teams, and Amateur Radio communications teams. | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 3 | 3 | 0 | 1 | 1 | 1 | 1 | 1 | 44 |
| 1-10 Utilize current communication tools and technology to educate the community regarding emergency preparedness, crime prevention, and disaster response (shelter-in place/evacuate) needs. | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 0 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 43 |

| | 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 Challenges | 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 Community Environmental Goals | Consistent with Federal Environmental Laws | **Priority Total** |
| 2-1 Develop a public outreach and awareness campaign that informs the community regarding the hazards that can impact the city and how to implement mitigation actions at their homes to prepare themselves and their families including their animals. | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 0 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 43 |
| 3-3 Encourage all new development (including rehabilitation, renovation, and redevelopment) to incorporate features into the design and construction that minimize exposure to hazards and mitigate the potential adverse effects of climate change - including sea level rise, flooding, extreme heat, and severe weather. Such practices may include the use of low impact development standards, energy efficient features, or active and passive solar heating and water pumping systems. | 2 | 2 | 2 | 3 | 3 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 0 | 3 | 1 | 2 | 1 | 2 | 1 | 1 | 3 | 3 | 43 |
| 1-7 Identify hazardous materials that are stored and transported (ground, air, and sea) throughout the city to ensure response capabilities of the City. | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 2 | 42 |
| 1-8 Require businesses that use, store, or transport hazardous materials to ensure that adequate measures are taken to protect public health and safety. | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 2 | 42 |
| 2-3 Enhance community understanding of sea level rise and the potential impacts it will have on the City. | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 0 | 2 | 0 | 2 | 1 | 3 | 3 | 1 | 3 | 3 | 42 |

| Mitigation Action | S Social | | T Technical | | | A Administrative | | | P Political | | | L Legal | | | E Economic | | | | E Environmental | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 Challenges | 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 Community Environmental Goals | Consistent with Federal Environmental Laws | **Priority Total** |
| 5-3 Develop a volunteer management plan (including spontaneous unaffiliated volunteers) to support City disaster response and recovery efforts. | 3 | 3 | 3 | 2 | 3 | 0 | 0 | 0 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 2 | 3 | 0 | 1 | 1 | 1 | 1 | 1 | 42 |
| 4-2 Coordinate with the utility companies and vendors to strengthen, safeguard, improve the resiliency of their infrastructure and facilities to address the impact of disasters on their vital lifeline services provided to the community. | 3 | 3 | 2 | 2 | 2 | 0 | 1 | 0 | 3 | 2 | 3 | 2 | 2 | 1 | 3 | 1 | 3 | 0 | 2 | 1 | 1 | 2 | 2 | 41 |
| 1-1 Establish an internal Hazard Mitigation Planning Team to develop a sustainable process for implementing, monitoring, and evaluating citywide mitigation activities. | 1 | 1 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 38 |
| 1-17 Investigate, design and implement engineering improvements to the City's storm water outfall system's operation and resiliency. | 1 | 1 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 38 |
| 1-6 Fund and deploy a community warning system that includes sirens and loudspeakers. | 1 | 0 | 2 | 2 | 2 | 1 | 0 | 1 | 3 | 2 | 2 | 3 | 3 | 0 | 2 | 0 | 2 | 0 | 3 | 3 | 1 | 3 | 2 | 38 |
| 1-9 Maintain City's website and other outlets with information regarding the safe handling and disposal of household hazardous waste materials. | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 38 |

| | 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 Challenges | 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 Community Environmental Goals | Consistent with Federal Environmental Laws | **Priority Total** |
| 1-3 Identify residential structures that are not seismically resilient and implement programs to support retrofitting | 3 | 2 | 2 | 3 | 2 | 2 | 0 | 1 | 3 | 1 | 3 | 1 | 1 | 1 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 37 |
| 1-13 Develop a process and team to prepare for, monitor, and respond to hazardous material releases within the City. | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 37 |
| 2-2 Partner with the Chamber of Commerce and local businesses to develop and implement an emergency preparedness program for businesses and visitors to the City. | 3 | 3 | 2 | 2 | 2 | 1 | 0 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 37 |
| 2-5 Encourage local business to develop a business COOP. | 3 | 3 | 2 | 2 | 2 | 1 | 0 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 37 |
| 3-4 Develop a Citywide retrofit policy to include URMs and second soft story and other seismically vulnerable structures in the City. | 2 | 0 | 2 | 3 | 3 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 3 | 0 | 2 | 1 | 3 | 1 | 1 | 1 | 1 | 37 |
| 5-1 Continue to educate, train, and conduct exercises with City staff in compliance with the California Disaster Services Workers program, SEMS/NIMS Compliance, and all other State and Federal requirements. | 3 | 2 | 2 | 2 | 2 | 0 | 1 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 3 | 0 | 1 | 1 | 1 | 1 | 1 | 37 |

| Mitigation Action | S Social | | T Technical | | | A Administrative | | | P Political | | | L Legal | | | E Economic | | | | E Environmental | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 Challenges | 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 Community Environmental Goals | Consistent with Federal Environmental Laws | **Priority Total** |
| 1-12 Continue to develop, implement, revise, and maintain emergency plans which shall include, but not be limited to: EOP, COOP, Debris Removal Plan, Public Safety Element of the General Plan, and the Disaster Recovery and Resiliency Plan. | 2 | 3 | 2 | 3 | 2 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 0 | 2 | 0 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 36 |
| 3-1 Utilize the internal Hazard Mitigation Planning Team to identify, pursue, and secure funds that support risk reduction measures. | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 36 |
| 1-5 Require new development and redevelopment projects to consider potential for liquefaction or landslide and mitigate by geotechnical studies that include site construction recommendations. | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 3 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 35 |
| 1-15 Conduct a needs assessment and develop a plan for whole community sheltering for all segments of the population including those with access and functional needs. | 3 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 34 |
| 1-2 Assess availability of backup power resources (generators) of critical infrastructure such as fire, police, city hall, public works yard, community center complex and EOC; upgrade resources as necessary. | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 0 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 33 |
| 1-4 Identify residential structures that are not seismically resilient and Implement programs to support retrofitting | 1 | 2 | 2 | 3 | 3 | 0 | 0 | 0 | 2 | 1 | 2 | 1 | 2 | 0 | 3 | 0 | 2 | 0 | 2 | 1 | 2 | 2 | 2 | 33 |

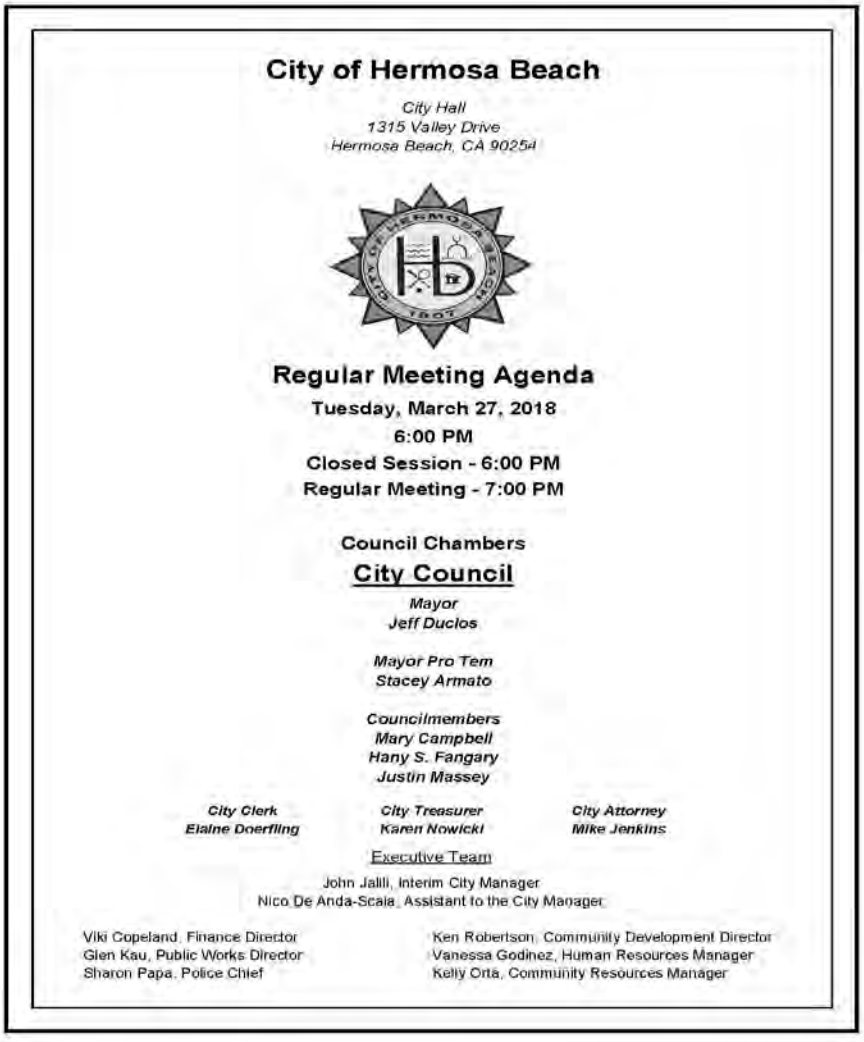
| | S Social | | T Technical | | | A Administrative | | | P Political | | | L Legal | | | E Economic | | | | E Environmental | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mitigation Action** | Community Acceptance | Effect on Segment 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 Challenges | 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 Community Environmental Goals | Consistent with Federal Environmental Laws | **Priority Total** |
| 1-14 Implement a City-wide water wise plan to survey public and private water usage and implement water conservation measures. | 3 | 3 | 1 | 2 | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 29 |
| 1-16 Develop a plan for dispensing medical countermeasures. | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 22 |

# Appendix F: Plan Maintenance Process

| Plan Section | Considerations | Explanation |
|---|---|---|
| **Planning Process** | Should new jurisdictions and/or districts be invited to participate in future plan updates? | |
| | Have any internal or external agencies been invaluable to the mitigation strategy? | |
| | Can any procedures (e.g., meeting announcements, plan updates) be done differently or more efficiently? | |
| | Has the Planning Team undertaken any public outreach activities? | |
| | How can public participation be improved? | |
| | Have there been any changes in public support and/or decision- maker priorities related to hazard mitigation? | |
| **Capability Assessment** | Have jurisdictions adopted new policies, plans, regulations, or reports that could be incorporated into this plan? | |
| | Are there different or additional administrative, human, technical, and financial resources available for mitigation planning? | |
| | Are there different or new education and outreach programs and resources available for mitigation activities? | |
| | Has NFIP participation changed in the participating jurisdictions? | |
| **Risk Assessment** | Has a natural and/or technical or human-caused disaster occurred? | |
| | Should the list of hazards addressed in the plan be modified? | |
| | Are there new data sources and/or additional maps and studies available? If so, what are they and what have they revealed? Should the information be incorporated into future plan updates? | |
| | Do any new critical facilities or infrastructure need to be added to the asset lists? | |
| | Have any changes in development trends occurred that could create additional risks? | |
| | Are there repetitive losses and/or severe repetitive losses to document? | |
| **Mitigation Strategy** | Is the mitigation strategy being implemented as anticipated? Were the cost and timeline estimates accurate? | |
| | Should new mitigation actions be added to the action plan? Should existing mitigation actions be revised or eliminated from the plan? | |
| | Are there new obstacles that were not anticipated in the plan that will need to be considered in the next plan update? | |
| | Are there new funding sources to consider? | |
| | Have elements of the plan been incorporated into other planning mechanisms? | |
| **Plan Maintenance Procedures** | Was the plan monitored and evaluated as anticipated? | |
| | What are needed improvements to the procedures? | |

# Appendix G: Plan Adoption

The plan was presented to the Emergency Preparedness Advisory Commission at their regularly scheduled meeting on March 5, 2018. The EPAC commission recommended that City Council adopt the 2017 City of Hermosa Beach Local Hazard Mitigation Plan. The plan was formally adopted on Tuesday, March 27, 2018 at a regularly scheduled City Council meeting. Below are the EPAC commission staff report, the City Council abbreviated agenda, the City Council staff report and the City of Hermosa Beach Resolution Number 18-7124 formally adopting the 2017 City of Hermosa Beach Local Hazard Mitigation Plan.



**City of Hermosa Beach**

*City Hall*
*1315 Valley Drive*
*Hermosa Beach, CA 90254*

**Regular Meeting Agenda**

**Tuesday, March 27, 2018**
**6:00 PM**
**Closed Session - 6:00 PM**
**Regular Meeting - 7:00 PM**

**Council Chambers**

**City Council**

*Mayor*
*Jeff Duclos*

*Mayor Pro Tem*
*Stacey Armato*

*Councilmembers*
*Mary Campbell*
*Hany S. Fangary*
*Justin Massey*

| *City Clerk* | *City Treasurer* | *City Attorney* |
|---|---|---|
| *Elaine Doerfling* | *Karen Nowicki* | *Mike Jenkins* |

Executive Team

John Jalili, Interim City Manager
Nico De Anda-Scala, Assistant to the City Manager

Viki Copeland, Finance Director
Glen Kau, Public Works Director
Sharon Papa, Police Chief

Ken Robertson, Community Development Director
Vanessa Godinez, Human Resources Manager
Kelly Orta, Community Resources Manager

***Attachments:*** 1. Proposed Resolution
2. LA County Public Opinion Survey
3. SBC3 Public Opinion Survey 2016
4. 2015 National Survey on Drug Use and Health
5. LA County Santitation District "No Drugs Down the Drain"

I) REPORT 18-0219

**REQUEST FOR APPROVAL OF THE CLASSIFICATION SPECIFICATION FOR FINANCE CASHIER SUPERVISOR**

(Human Resources Manager Vanessa Godinez)

***Recommendation:*** It is recommended that City Council approve the class specification for Finance Cashier Supervisor.

***Attachments:*** Finance Cashier Supervisor

## 3. CONSENT ORDINANCES

a) REPORT 18-0214

**ORDINANCE NO. 18-1383 - "AN ORDINANCE OF THE CITY OF HERMOSA BEACH, CALIFORNIA, ADDING CHAPTER 5.76 (PEDICAB OPERATIONS) TO TITLE 5 OF THE HERMOSA BEACH MUNICIPAL CODE TO AUTHORIZE THREE-WHEELED PEDICABS AND AMENDING SECTION 5.72 (AUTOMOBILE FOR HIRE AND TAXICAB OPERATIONS) OF TITLE 5 IN THE HERMOSA BEACH MUNICIPAL CODE TO REMOVE REFERENCE TO AUTOMOBILES FOR HIRE"**

(City Clerk Elaine Doerfling)

***Recommendation:*** It is recommended that the City Council waive full reading and adopt by title Ordinance No. 18-1383.

***Attachments:*** 18-1383 Pedicabs

## 4. ITEMS REMOVED FROM THE CONSENT CALENDAR FOR SEPARATE DISCUSSION

*** Public comments on items removed from the Consent Calendar.**

## 5. PUBLIC HEARINGS - TO COMMENCE AT 7:30 P.M.

NONE

## 6. MUNICIPAL MATTERS

a) REPORT 18-0209

**ADOPTION OF LOCAL HAZARD MITIGATION PLAN**

(Emergency Services Coordinator Brandy Villanueva)

# City of Hermosa Beach

City Hall
1315 Valley Drive
Hermosa Beach, CA 90254

## Staff Report

**File #:** REPORT 18-0209, **Version:** 1

**Honorable Mayor and Members of the Hermosa Beach City Council**
**Regular Meeting of March 27, 2018**

### ADOPTION OF LOCAL HAZARD MITIGATION PLAN

(Emergency Services Coordinator Brandy Villanueva)

**Recommended Action**:
Staff and the Emergency Preparedness Advisory Commission (EPAC) recommends that the Hermosa Beach City Council adopt the 2017 Local Hazard Mitigation Plan Resolution (Attachment I) approving the City of Hermosa Beach Local Hazard Mitigation Plan (LHMP) and incorporating the LHMP into the General Plan Safety Element by reference.

**Background**:
The Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended by the Disaster Mitigation Act of 2000 (DMA 2000), requires local government to reduce risks from natural hazards and other risks through mitigation planning. The National Flood Insurance Act of 1968 reinforced the need and requirement for mitigation plans. FEMA has various hazard mitigation planning provisions throughout its regulations. The plan is a requirement of eligibility to apply for and receive pre-and post-disaster assistance and other FEMA assistance.

As part of the DMA 2000, FEMA is responsible for coordinating the implementation of the Act requiring local government, state, and special jurisdictions to develop hazard mitigation plans. To qualify for any future hazard mitigation grant awards, each jurisdiction must prepare, and have approved by the FEMA a LHMP, and to update and adopt the LHMP at a minimum every five years. Under the terms of the Disaster Mitigation Act of 2000, which seeks to reduce federal expenditures for catastrophic events, a county, city, tribe, or special district affected by a declared disaster (i.e. earthquake, flood or wildfire) will still be able to receive emergency aid without having an approved plan in place. However, it would be ineligible for FEMA funds to support hazard-mitigation projects, such as repairing drainage that poses reoccurring flooding problems or seismic retrofitting vulnerable structures.

In Hermosa Beach, the Local Hazard Mitigation Plan was first developed in 2005, with an update occurring in 2010. The Local Hazard Mitigation Plan is a five-year strategic plan that also seeks to identify and mitigate hazards. The LHMP is related but distinct from the Safety Element, directly responding to the requirements of the Federal Disaster Mitigation Act (DMA) of 2000.

In addition to federal guidance on the development of Local Hazard Mitigation Plans, the State of California has several pieces of recent legislation signed into law that supports the integration of the General Plan and Hazard Mitigation Plans and identifies guidance to evaluate hazards and vulnerabilities associated with climate change.

- The California Disaster Assistance Act of 2006 (AB 2140) - increases the share of disaster recovery costs the city may be eligible for (from 75% to 100%) if the LHMP is incorporated by reference into the Public Safety Element of the General Plan.
- Climate Adaptation and Resiliency Strategies (SB 379) - Effective January 2017, requires all cities and counties to include climate adaptation and resiliency strategies within the Public Safety Element of the General Plan upon the next revision to the general plan or LHMP. Note that Hermosa Beach has complied with the guidance of this legislation through the adoption of PLAN Hermosa.

A full summary of the integration between the two planning documents is provided in Appendix H of the LHMP and is Attachment V.

**Analysis:**

The Federal Emergency Management Agency (FEMA) describes hazard mitigation as "any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards." Although the requirement set by 44 Code of Federal Regulations (CF), Subpart M Section 206.401 requires a planning area to describe only natural hazards that may affect the jurisdiction, most planning areas include technological and human-caused hazards in the HMP to represent the total risk from hazards to the planning area. FEMA has produced a Local Hazard Mitigation Plan Review tool that provides of FEMA's evaluation of whether the plan has addressed all requirements. Attachment III is FEMA's review tool of the 2017 City of Hermosa Beach Local Hazard Mitigation Plan.

In 2016, the City of Hermosa Beach selected Constant Associates to assist with the update the 2011 Local Hazard Mitigation Plan and gain approval of the 2017 Local Hazard Mitigation Plan. The initial planning meeting was held in September of 2016 and the project kick off was conducted in January 2017 after the hiring the new emergency manager. The planning team for the project is listed below.

| Department | Name | Title |
|---|---|---|
| **Fire Department** | Brandy Villanueva | Emergency Manager, Project Manager |
| **City Manager** | KristyMorris | Environmental Analyst |
| **City Manager** | Leeanne Singleton | Environmental Analyst |
| **Community Development** | Kim Chafin | Senior Planner |
| **Community Development** | Bob Rollins | Building Official |
| **Public Works** | Ells Freeman | Public Works Superintendent |
| **Public Works** | Lucho Rodriguez | Senior Engineer |

The planning team focused their attention on a:

- Review of progress since the last HMP update
- Review of existing City plans and programs
- Identification of critical assets
- Hazards identification and risks assessment
- Mitigation strategies development
- Engagement with community in the planning process
- Solicitation and incorporation of feedback from external stakeholders and the public

Federal law and the State of California's requirements for hazard mitigation plans require coverage of only natural hazards; however, the City's 2016 Emergency Operations Plan (EOP) included technological and human-caused hazards as well as natural hazards. The planning team followed the FEMA planning process for natural hazards and decided to include technological and human-caused hazards, including a description and analysis, based upon discussion and review of the City's EOP.

The complete draft of the Local Hazard Mitigation Plan is provided as Attachment II, and below is a brief summary of the key components of the LHMP: the Hazard Assessment and Mitigation Strategies; as well as a description of the Community Engagement Process, and the Review and Approval Process.

**Hazard Assessment**

The planning team spent extensive time researching, identifying and assessing the impacts that various hazards would have on the community. In section four of the Local Hazard Mitigation Plan, the table below represents the identified hazards, the probability, magnitude, duration, and possible warning time of the hazard. The hazard identified as the highest risk is the effects of Climate Change, and the lowest risk hazard in Hermosa Beach was wildfire. Since Hermosa Beach is in the State of California, regulations mandate wildfire is addressed even though Hermosa Beach is not situated in an urban wildland interface area. Hazardous materials release was identified as the city will be impacted by not only an incident at the local refineries but also oil spills in the ocean, a chemical release as a result of a traffic collision involving a chemical tanker, a chemical release due to terrorism and a variety of other possible releases. Earthquakes and tsunamis are typical hazards for jurisdictions located within California due to the fault line system and the potential impacts from earthquakes overseas. The Terrorism category includes active shooter, chemical/biological releases amongst a variety of others.

| Hazard | Probability (45%) | Magnitude/ Severity (30%) | Warning Time (15%) | Duration (10%) | Weighted Score | Risk Level |
|---|---|---|---|---|---|---|
| **Climate Change** | 4 | 3 | 3 | 4 | 3.55 | High |
| **Earthquake** | 3 | 4 | 4 | 4 | 3.55 | High |
| **Severe Weather** | 4 | 3 | 2 | 3 | 3.30 | High |
| **Flooding + Sea Level Rise** | 4 | 3 | 2 | 2 | 3.20 | High |
| **Hazardous Material Release** | 4 | 2 | 4 | 1 | 3.10 | High |
| **Drought** | 4 | 2 | 1 | 4 | 2.95 | Moderate |
| **Extreme Heat** | 3 | 2 | 2 | 3 | 2.55 | Moderate |
| **Tsunami** | 2 | 3 | 4 | 1 | 2.50 | Moderate |
| **Terrorism** | 2 | 3 | 4 | 1 | 2.50 | Moderate |
| **Wildfire** | 1 | 1 | 3 | 1 | 1.30 | Low |

**Mitigation Strategy**

The mitigation strategy of the LHMP is to maintain and enhance a disaster-resilient City by reducing the potential for loss of life, property damage, and environmental degradation from natural disasters, while supporting economic recovery from such disasters. During the planning discussion, the committee developed mitigation goals and actions to lessen the impact of the identified hazards on the community. Mitigation goals

are guidelines that represent what the community wants to accomplish through the local hazard mitigation plan.

Table 7-2: City-Specific Actions and Hazards Mitigated

| Strategy Number | Mitigation Strategy | Hazard | Mitigation Type | Responsibility | Funding Source | Priority |
|---|---|---|---|---|---|---|
| Goal 1: Protect life, property, and reduce potential injuries from natural, technological, and human -caused hazards. | | | | | | |
| 1-1 | Establish an internal Hazard Mitigation Planning Team to develop a sustainable process for implementing, monitoring, and evaluating citywide mitigation activities. | All | Mit. | EM | GF | Med. |
| 1-2 | Conduct a backup power resources assessment(generators) of critical infrastructure such as fire, police, city hall, public works yard, community center complex and EOC and upgrade resources as necessary. | EQ, FL, SW | Mit. | Lead: EM Support: PW | GF | Med |
| 1-3 | Identify residential structures that are not seismically resilient and implement programs to support retrofitting | EQ | Mit. | CD | GF | Med |
| 1-4 | Require geotechnical reports (tool used to communicate site conditions and design and construction recommendations) to be prepared for Require new development and redevelopment projects include potential for liquefaction or landslide and mitigate by geotechnical studies that include site construction recommendations. | EQ | Mit. | CD | PA | Med. |
| 1-5 | Require new development and redevelopment projects to analyze and mitigate relevant sea level rise impacts. | FL | Mit. | L: CD S: PW | GF, PA | Med. |
| 1-6 | Fund and deploy a community warning system that includes sirens and loudspeakers. | TS, EQ, FL, FR | Mit. | OES | GF, Grant | High |
| 1-7 | Identify hazardous materials that are stored and transported (ground, air, and sea) throughout the city and maintain a data base to support response capabilities of the City. | HZ | Mit. | LA County CUPA, CD | GF | High |
| 1-8 | Maintain City's website and other outlets with information regarding the safe handling and disposal of household hazardous waste materials. | HZ | Mit. | CUPA | BLF | High |

| Strategy Number | Mitigation Strategy | Hazard | Mitigation Type | Responsibility | Funding Source | Priority |
|---|---|---|---|---|---|---|
| 1-9 | Provide incentives to the community for the proper disposal of Toxic Materials (Maintain City's website and other outlets with information regarding the safe handling and disposal of household chemicals.) | HZ | Mit. | EA | BG | Med. |
| 1-10 | Continue to adopt, implement, and enforce the latest editions of the California Building and Fire Codes, with appropriate local amendments based on risk (e.g., seismic hazards, flooding), type of occupancy, and location (e.g., floodplain, fault). | EQ, FL, TR, WS | Mit. | EM | GF | High |
| 1-11 | Continue to develop, implement, revise, and maintain emergency plans which shall include, but not be limited to: EOP, COOP, Debris Removal Plan, Public Safety Element of the General Plan, and the Disaster Recovery and Resiliency Plan. | CC, EQ, FL, EH | Mit. | CD | GF | High |
| 1-13 | Develop a process and team to prepare for, monitor, and respond to hazardous material releases within the City. | HZ | Mit. | L: EM S: EA | GF | Med. |
| 1-14 | Implement a City-wide water wise plan to survey public and private water usage and implement water conservation measures. | DR | Mit. | CD | GF | Med. |
| 1-15 | Conduct a needs assessment and develop a plan for community sheltering to include populations with disabilities and other AFN, and animals. | All | Prep. | EM | GF | Med. |
| 1-16 | Develop a plan for dispensing medical countermeasures. | TR | Prep. | EM | GF | Low |
| 1-17 | Investigate, design and implement engineering improvements to the City's storm water outfall system's operation and resiliency. | FL | Mit. | LA County, CD | GF, Grant | High |
| | **Goal 2: Improve public understanding, support and need for hazard mitigation measures.** | | | | | |
| 2-1 | Develop a public outreach and awareness campaign that informs the community regarding the hazards that can impact the city and how to implement mitigation actions at their homes to prepare themselves and their families. | All | Mit. | EM | GF | Med. |
| 2-2 | Partner with the Chamber of Commerce and local businesses to develop and implement an emergency preparedness program for businesses and visitors to the City. | All | Mit. | EM | GF | Med. |
| 2-3 | Enhance community understanding of sea level rise and the potential impacts it will have on the City. | FL | Mit. | L: CD S: EA | GF | High |
| 2-4 | Develop a public outreach and awareness campaign about drought, water conservation measures and the use of recycled water. | DR | Mit | EM, EA | GF/BG | High |
| 2-5 | Encourage local business to develop a business COOP. | All | Resp. | EM | GF | Med. |

**File #:** REPORT 18-0209, **Version:** 1

| Strategy Number | Mitigation Strategy | Hazard | Mitigation Type | Responsibility | Funding Source | Priority |
|---|---|---|---|---|---|---|
| | **Goal 3: Promote disaster resistance for City's existing and future built environment.** | | | | | |
| 3-1 | Utilize the internal Hazard Mitigation Planning Team to identify, pursue and secure funds that support risk reduction measures. | All | Mit. | EM | GF | Med. |
| 3-2 | Periodically update the Public Safety Element and concurrently amend the Local Hazard Mitigation Plan to maintain eligibility for maximum grant funding. | All | Mit. | CD | GPMF | High |
| 3-3 | Encourage all new development (including rehabilitation, renovation, and redevelopment) to incorporate "Green" building activities, increase tree plantings, use fire-resistant materials, and include projects to mitigate sea level rise and flooding. Activities may include the use of low impact development standards, energy efficient features, or active and passive solar heating and water pumping systems. | CC EH SW | Mit. | CD | PA | High |
| 3-4 | Develop and implement a Citywide building retrofit policy to include URMs and second soft story and other seismically vulnerable structures in the City. | EQ | Mit. | L: CD S: PW, EM | GF | Med. |
| 3-5 | Develop a retrofitting action plant improve the structural integrity of city owned structures. | EQ | Mit. | L: CD S: PW, EM | GF | High |
| 3-6 | Develop a post disaster recovery policy that establishes the procedures and permit requirements surrounding abandoned structures, condemned buildings, and reconstruction. The policy will need to address debris removal, hazardous materials management, utility reconnection, and designated historical landmarks. | All | Prep. Resp. | CD | GF/BG | High |
| | **Goal 4: Strengthen partnerships and collaboration to implement hazard mitigation activities.** | | | | | |
| 4-1 | Develop a long-term adaptive shoreline management program with a strong preference for beach replenishment over shoreline protective structures. Replenish beaches after major erosion events. | SW | Prep. Resp. | EM | GF | High |
| 4-2 | Coordinate with the utility companies and vendors to strengthen, safeguard, improve the resiliency of their infrastructure and facilities to address the impact of disasters on their vital lifeline services provided to the community. | EQ, FL, TS | Mit. | EM | GF | High |

| Strategy Number | Mitigation Strategy | Hazard | Mitigation Type | Responsibility | Funding Source | Priority |
|---|---|---|---|---|---|---|
| Goal 5: Enhance City's ability to effectively and immediately respond to disasters and rapidly initiate disaster recovery actions. | | | | | | |
| 5-1 | Continue to educate, train, and exercise City staff in compliance with California Disaster Services Workers program, SEMS/NIMS Compliance, and all other State and Federal requirements. | All | Mit. | EM | GF | Med. |
| 5-2 | Build a cadre of committed, and trained volunteers to augment disaster response and recovery efforts in compliance with the California Disaster Service Worker program guidance. These volunteer teams may include but are not limited to: Community Emergency Response Team, American Red Cross shelter workers, animal rescue and care teams, and Amateur Radio communications teams. | All | Mit. | EM | GF | High |
| 5-3 | Develop a volunteer management plan (including spontaneous unaffiliated volunteers) to support City disaster response and recovery efforts. | All | Prep. | EM | GF | High |
| 5-4 | Partner with Hermosa Beach City School District to review, update, and maintain a multi -hazard emergency operation plan. | All | Prep. | EM | GF | High |

**Community Engagement**

A key component of Local Hazard Mitigation planning is to engage the community in the planning process. At the start of the process, a survey was conducted to identify the needs of the community regarding awareness of hazards and emergency preparedness. The results from the 38 participants were incorporated in the planning process. Following the draft plan completion in April of 2017, the draft plan was placed onto the City's website available for public comment, and was emailed to stakeholders such as HbCERT, EPAC and Area G disaster managers requesting feedback. In addition, a town hall meeting was held on May 1, 2017 in council chambers, which can be viewed in Attachment IV. Feedback from the town hall, stakeholders and the public was incorporated into the planning following the close of public comment on May 15, 2017. The completed draft document was submitted to California Office of Emergency Services (CalOES) on May 24, 2017.

**Review and Approval Process**

Cal OES received the City of Hermosa Beach 2017 Local Hazard Mitigation Plan draft on May 25, 2017. Cal OES reviewed the plan, and worked with the City Emergency Manager and the Consultants to make adjustments. Cal OES approved the plan in November of 2017 and submitted the plan to Federal Emergency Management Agency (FEMA) for approval on December 12, 2017. FEMA reviewed the plan, requested minor adjustments and on February 8, 2018 provided tentative final approval following City Council adoption. The 2017 City of Hermosa Beach Local Hazard Mitigation Plan adoption has been placed onto the March 27, 2018 City Council agenda. After adoption by City Council, the plan will be resubmitted to FEMA for final approval. The plan will need to be updated in FY 2021-2022.

*Note that significant changes to the content of the LHMP will require the City to re-submit the LHMP for a complete review by Cal OES and FEMA, a process that may take upwards of 6-9 additional months.*

**Fiscal Implications:**

Approval of this Resolution will have no direct fiscal impact to the City's General Fund. However, approval of the Resolution allows the City to be eligible for pre and/or post disaster Federal Emergency Management Agency (FEMA) mitigation grant funding. The City has submitted multiple California Office of Emergency Services (Cal OES) post disaster Notice of Intent grants in which an approved Hazard Mitigation Plan is required to move to the application phase. The City may also be eligible for enhanced state reimbursement of qualified disaster recovery expenses if it adopts the LHMP as part of the City's General Plan Safety Element, which the 2017 Local Hazard Mitigation Plan is included in the current General Plan Safety Element.

Approval of the LHMP directly impacts the City of Hermosa Beach's eligibility for FEMA funding from grants including post-disaster Public Assistance Program and mitigation grant programs. An eligibility requirement for mitigation project grants is that the local applicant must have a FEMA approved local hazard mitigation plan. City of Hermosa Beach will be eligible to apply for FEMA mitigation grants because FEMA has approved the 2017 City of Hermosa Beach Local Hazard Mitigation Plan pending formal adoption by the City Council.

The Stafford Act public assistance program funding covers no less than 75% of eligible emergency response and restoration (repair) costs for public entities whose facilities suffer damages in a presidentially declared disaster. The program may also fund mitigation projects for facilities damaged in a declared event. The Mitigation grant program provides five potential grant opportunities four of which are annual programs and reviewed by California Emergency Management Agency before FEMA approval. The fifth program is initiated within a given state after a Presidential Declaration of Disaster. These grants typically provide 75% of funding requiring a local match of 25%. For Hermosa Beach, the most likely FEMA funding sources for mitigation projects are the Hazard Mitigation Grant Program, the Pre-Disaster Mitigation Program and the Flood Mitigation Assistance Program, as well as the Public Assistance Program if Hermosa Beach suffers damage in a future presidentially declared disaster event.

**Attachments:**

1. 2017 Local Hazard Mitigation Plan Adoption Resolution
2. 2017 City of Hermosa Beach Local Hazard Mitigation Plan
3. FEMA Region IX Local Mitigation Plan Review Tool
4. May 1, 2017 Local Hazard Mitigation Plan Town Hall Video
5. LHMP Appendix H: Public Safety Element and LHMP Integration

**Respectfully Submitted by**: Brandy Villanueva, Emergency Services Coordinator
**Concur**: Leeanne Singleton, Environmental Analyst
**Noted for Fiscal Impact**: Viki Copeland, Finance Director
**Approved**: John Jalili, Interim City Manager

# RESOLUTION NO. 18-7124

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HERMOSA BEACH, CALIFORNIA, ADOPTING THE 2017 CITY OF HERMOSA BEACH LOCAL HAZARD MITIGATION PLAN FOR THE CITY OF HERMOSA BEACH**

**THE CITY COUNCIL OF THE CITY OF HERMOSA BEACH, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:**

**SECTION 1**. The Disaster Mitigation and Cost Reduction Act of 2000 (DMA 2000) was adopted by the Federal government and among other things, requires authorities to prepare a local Natural Hazards Mitigation Plan, which will be utilized to protect citizens, critical facilities, infrastructure, private property, and the environment from natural hazards through varying means, including increasing public awareness and identifying resources available for risk reduction and loss prevention.

**SECTION 2**. The Federal Emergency Management Agency ("FEMA") requires all State and local governments to prepare local hazard mitigation plan (LHMP) every five years as a condition to pre- and post-disaster assistance.

**SECTION 3**. The California Assembly Bill 2140 (AB2140) requires a City or County adopt its local hazard mitigation plan as part of the safety element of its general plan in order to qualify for disaster reimbursement costs beyond 75 percent.

**SECTION 4**. The City is concerned about mitigating damage to buildings and infrastructure, and minimizing economic losses from disasters before they occur.

**SECTION 5**. Federal law and State of California's requirements for hazard mitigation plans require coverage of only natural hazards, however the Planning Tram included technological and human-caused hazards as well as identified in the City's Emergency Operations Plan

**SECTION 6**. The City of Hermosa Beach developed its original Local Hazard Mitigation Plan in 2005. The LHMP was updated in 2010 and approved by FEMA in 2011. The adoption of 2017 LHMP would bring the City into compliance with Federal and State regulations.

**SECTION 7**. This LHMP was prepared through a process, which included a Planning Team consisting of representatives from City departments, as well as public participation review and comments.

**SECTION 8**. A survey was made available to the public during the month of April 2017 to solicit feedback about the hazards that would impact the City. The Public Review Draft of the Local Hazard Mitigation Plan was made available to the public on May 1, 2017 as follows: digital copies were posted on the City's website, The draft was emailed to Area G Emergency Managers, the Disaster Management Area Coordinator, the Emergency Preparedness Advisory Commission, and Hermosa Beach Community Emergency Response Team. A town hall meeting was conducted on May 3, 2017 in City Council Chambers in which verbal public comment was received. The town hall was highlighted in the City monthly newsletter, posted on the city's website and distributed via social media.

**SECTION 9**. A copy of the Draft of the 2017 City of Hermosa Beach Local Hazard Mitigation Plan was submitted to California Office of Emergency Services on May 24, 2017 for review and approval. Cal OES approved the LHMP on December 11, 2017. Cal OES formally submitted the 2017 City of Hermosa Beach Local Hazard Mitigation Plan to FEMA Region IX on December 12, 2017 with a recommendation to review and approve the plan. FEMA Region IX reviewed the plan and determined the plan is eligible for final approval pending the adoption of the plan by the City of Hermosa Beach City Council.

**SECTION 10**. The California State Office of Emergency Services and FEMA Region IX have reviewed the plan and found it meets the requirements of DMA 2000.

**SECTION 11**. Formal Adoption of the Local Hazard Mitigation Plan by the City Council is required before final approval of the plan can be obtained from the Federal Emergency Management Agency.

**SECTION 12**. Formal adoption of the Local Hazard Mitigation Plan by the City and final approval of the LHMP is needed for the City's grant application to the California Office of Emergency Services for pre-disaster mitigation funding.

**SECTION 13**. The City Council hereby finds and determines that the above recitals are true and correct and have served as the basis, in part, for the findings and actions of the City set forth below.

A. The City Council of the City of Hermosa Beach hereby approves and adopts the City of Hermosa Beach 2017 Local Hazard Mitigation Plan that identifies and assess potential natural hazards to meet the requirements of the Disaster Mitigation and Cost Reduction Act of 20000 and as it related to lessening the impact of future disasters.

B. The City Council hereby approves and adopts the City of Hermosa Beach 2017 Local Hazard Mitigation Plan as part of the City's General Plan Safety Element in order to qualify for additional State disaster recovery funding.

C. The City of Hermosa Beach will utilize the City of Hermosa Beach 2017 Local Hazard Mitigation Plan to implement goals and strategies outlined to avert and mitigate damage to property and infrastructure, and engage in assistance from California State Office of Emergency Services and Federal Emergency Management Agency.

D. The City Council authorizes the City Manager or his designees to oversee plan implementation, updates, and make minor, non-substance modifications to the plan.

**SECTION 14**. The City Council hereby finds that adoption of this Resolution is not a "project" under the California Environmental Quality Act, because the Resolution does not involve any commitment to a specific project which may result in a potentially significant physical impact

on the environment, as contemplated by Title 14, California Code of Regulations, Section 15378 (b)(4).

**SECTION 15**. This Resolution shall take effect immediately. The City Clerk shall certify to the passage and adoption of this Resolution, shall cause the original of the same to be entered among the original resolutions of the City Council and shall make a minute of the passage and adoption thereof in the minutes of the City Council meeting at which the same is passed and adopted.

**PASSED**, **APPROVED** and **ADOPTED** this 27th day of March, 2018.

**PRESIDENT** of the City Council and **MAYOR** of the City of Hermosa Beach, California

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

STATE OF CALIFORNIA
COUNTY OF LOS ANGELES
CITY OF HERMOSA BEACH

I, Elaine Doerfling, City Clerk of the City of Hermosa Beach, California, do hereby certify that the foregoing Resolution No. 18-7124 was duly and regularly passed, approved and adopted by the City Council of the City of Hermosa Beach at a Regular Meeting of said Council at the regular place thereof on March 27, 2018.

The vote was as follows:

| | |
|---|---|
| AYES: | Armato, Fangary, Massey, Mayor Duclos |
| NOES: | None |
| ABSENT: | Campbell |
| ABSTAIN: | None |

Dated: March 28, 2018

Elaine Doerfling, City Clerk

U.S. Department of Homeland Security
1111 Broadway, Suite 1200
Oakland, CA. 94607-4052

FEMA

April 17, 2018

Brandy Villanueva
City Emergency Manager
City of Hermosa Beach Office of Emergency Services
1315 Valley Drive
Hermosa Beach, CA 90254

Dear Ms. Villanueva:

We have completed our final review of the *City of Hermosa Beach Local Hazard Mitigation Plan*, officially adopted by the City of Hermosa Beach on March 27, 2018, and found the plan to be in conformance with Title 44 Code of Federal Regulations (CFR) Part 201.6 *Local Mitigation Plans*.

The approval of this plan ensures the City of Hermosa Beach's continued eligibility for project grants under FEMA's Hazard Mitigation Assistance programs, including the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program. All requests for funding, however, will be evaluated individually according to the specific eligibility, and other requirements of the particular program under which applications are submitted.

Also, approved hazard mitigation plans may be eligible for points under the National Flood Insurance Program's Community Rating System (CRS). Additional information regarding the CRS can be found at https://www.fema.gov/national-flood-insurance-program-community-rating-system or through your local floodplain manager.

FEMA's approval of the *City of Hermosa Beach Local Hazard Mitigation Plan* is for a period of five years, effective starting the date of this letter. Prior to April 17, 2023, the City of Hermosa Beach is required to review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval in order to continue to be eligible for mitigation project grant funding. The enclosed plan review tool provides additional recommendations to incorporate into the plan when the City of Hermosa Beach undertakes its identified plan maintenance process.

www.fema.gov

If you have any questions regarding the planning or review processes, please contact Alison Kearns, Senior Community Planner, at (510) 627-7125 or by email at alison.kearns@fema.dhs.gov.

Sincerely,

Juliette Hayes
Division Director
Mitigation Division
FEMA Region IX

Enclosure

cc: Julie Norris, Mitigation and Dam Safety Branch Chief, California Governor's Office of Emergency Services
Jennifer Hogan, State Hazard Mitigation Officer, California Governor's Office of Emergency Services

# Appendix H: Public Safety Element and LHMP Integration

This memo provides a summary of the relationship between the Public Safety Element of the General Plan (PLAN Hermosa) and the Local Hazard Mitigation Plan (LHMP), both of which are in the process of being updated and are anticipated for adoption in 2017. This memo also summarizes the relevant Federal and State legislation governing the adoption, update, and integration of the LHMP and Public Safety Element. Finally, this memo demonstrates the components of each plan that have been included to comply with the relevant legislation.

## Background

### *PLAN Hermosa Public Safety Element*

California Planning and Zoning Law requires that a city or county general plan contain specified elements, including a safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides, subsidence, liquefaction, and other seismic, geologic, and fire hazards.

In Hermosa Beach, the requirements of the safety element are contained within the Public Safety Element of PLAN Hermosa – the City's integrated General Plan and Coastal Land Use Plan. The Public Safety Element establishes goals, policies, and actions that protect the community from risk associated with natural hazards. The element places specific focus on hazards that could be made more severe with anticipated impacts of climate change.

### *Local Hazard Mitigation Plan*

The Local Hazard Mitigation Plan is a five-year strategic plan that also seeks to identify and mitigate natural hazards. The LHMP is related but distinct from the Safety Element, directly responding to the requirements of the Federal Disaster Mitigation Act (DMA) of 2000. The DMA establishes requirements to identify hazards, evaluate mitigations, and prioritize strategies to mitigate hazard risks. To maintain eligibility for FEMA funding, the City must update the LHMP every five years at a minimum.

In Hermosa Beach, the Local Hazard Mitigation Plan was first developed in 2005, with updates occurring in 2010. An update to the Local Hazard Mitigation Plan is also underway, with adoption anticipated in 2017. Consistent with FEMA's Local Mitigation Planning Guidance, the LHMP under development for Hermosa Beach includes evaluations of risk, vulnerability, capability, and mitigation strategies as well as a summary of the planning process and plan maintenance procedures.

## Relevant Legislation

### *The Disaster Mitigation Act of 2000 (DMA 2000)*

The Disaster Mitigation Act of 2000, also commonly known as "The 2000 Stafford Act Amendments", constitutes an effort by the Federal government to reduce the rising cost of disasters by stressing the importance of mitigation planning and disaster preparedness prior to an event.

Mitigation Planning Section 322 of the Act requires local governments to develop, submit, and update hazard mitigation plans every five years in order to qualify for Hazard Mitigation Assistance (HMA) grant program funds. The City must have a Local Hazard Mitigation Plan (LHMP)

approved pursuant to §201.6 in order to receive FEMA Pre-Disaster Mitigation (PDM) project grants or to receive HMA funding.

### *The California Disaster Assistance Act of 2006 (AB 2140)*

In October 2006, the California State Legislature passed AB 2140 – the California Disaster Assistance Act - which went into effect January 1, 2007. AB 2140 limits the state's share of funding for disaster recovery projects to 75% of the recovery costs unless a local jurisdiction has complied with the legislation by incorporating the Local Hazard Mitigation Plan as part of the safety element of the general plan, at which point up to 100% of the recovery costs may be covered by the State.

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

### *Climate Adaptation and Resiliency Strategies (SB 379)*

Senate Bill 379, signed into law in October 2015, requires all cities and counties to include climate adaptation and resiliency strategies in the safety elements of the general plan, upon the next revision on or after January 1, 2017. Specifically, the bill requires that upon the next revision of a general plan or local hazard mitigation plan, the safety element be updated to address climate adaptation and resiliency strategies applicable to the city or county. This review and update is to include all of the following:

A. A vulnerability assessment that identifies the risks that climate change poses to the local jurisdiction and the geographic areas at risk from climate change impacts.
B. A set of adaptation and resilience goals, policies, and objectives based on the information specified in the climate vulnerability assessment for the protection of the community.
C. A set of feasible implementation measures designed to carry out the goals, policies, and objectives identified pursuant to the adaptation objectives, including but not limited to the following:
    i. Feasible methods to avoid or minimize climate change impacts associated with new uses of land.
    ii. The location, when feasible, of new essential public facilities outside of at-risk areas, including, but not limited to, hospitals and health care facilities, emergency shelters, emergency command centers, and emergency communications facilities, or identifying construction methods or other methods to minimize damage if these facilities are located in at-risk areas.
    iii. The designation of adequate and feasible infrastructure located in an at-risk area.
    iv. Guidelines for working cooperatively with relevant local, regional, state, and federal agencies.
    v. The identification of natural infrastructure that may be used in adaptation projects, where feasible. This may include, but is not limited to, floodplain and wetlands restoration or preservation, combining levees with restored natural systems to reduce flood risk, and urban tree planting to mitigate high heat days.

## Compliance + Coordination

*Incorporation of LHMP into Public Safety Element (AB 2140 compliance)*

The adoption of the LHMP by reference into the Public Safety Element of the General Plan, would 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 PLAN Hermosa document, implementation plans, background studies, and is referenced in the Planning Commission Resolution as follows:

On page 176, there is a paragraph that describes the connection and identifies that the LHMP is incorporated by reference into the safety element:

- Additional information on hazards in Hermosa Beach can be found in the Local Hazard Mitigation Plan, which presents a comprehensive risk assessment of natural hazards that have the potential to affect the city. The Local Hazard Mitigation Plan is required to be developed in accordance with the Federal Disaster Mitigation Act of 2000. The Local Hazard Mitigation Plan suggests mitigation actions for reducing the effects of potential hazards. It is incorporated by reference into the Public Safety Element and should be consulted when addressing known hazards to ensure the general health and safety of people within the City of Hermosa Beach. The goals and policies of this Public Safety Element support and are consistent with the recommended mitigation strategy within the Local Hazard Mitigation Plan.

On page 196, there is a policy about regularly updating disaster preparedness and emergency response plans:

- 6.1 Regularly update plans. Regularly update disaster preparedness and emergency response plans, in a manner that is compliant with state and federal standards.

On page 227 of the Referenced Plans section, the Local Hazard Mitigation Plan has been referenced as follows:

- The City's Local Hazard Mitigation Plan (LHMP) fulfills Hermosa Beach's obligation to prepare plans that identify community hazards and risks and create appropriate mitigation actions and projects pursuant to the Federal Disaster Mitigation Act of 2000 (DMA). With a Federal Emergency Management Agency (FEMA) certified mitigation plan in place, the City is eligible for federal and state hazard mitigation funds. Additional funds are available for jurisdictions whose hazard mitigation plans and general plan safety elements are integrated. Hazard mitigation plans must be updated every five years to remain eligible for funding. The LHMP fulfills requirements of Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 United States Code (USC) 5165, as amended by the DMA. The LHMP is incorporated into the City's General Plan Public Safety Element by reference and should be consulted when addressing known hazards to ensure the public's general health, safety, and welfare within the planning area. The City's Public Safety Element goals, policies, and actions support and are consistent with the LHMP.

Within the implementation actions we have the following action:

- SAFETY-25. Periodically update the Local Hazard Mitigation Plan and concurrently amend the Public Safety Element to maintain eligibility for maximum grant funding.

The Resolution adopted by the Hermosa Beach Planning Commission also includes a section on incorporation of the LHMP into the Public Safety Element as follows:

- The Public Safety Element also incorporates by reference the City of Hermosa Beach Local Hazard Mitigation Plan, which contains additional information on the assets, resources, and populations that may be at risk to various hazards.

### *Climate Change Vulnerability Assessment (SB 379 compliance)*

Pursuant to Senate Bill 379 and California Government Code Section 65302(g)(4), the Public Safety Element has been developed to address climate adaptation and resiliency strategies applicable to the City of Hermosa Beach and is consistent with the Governor's Office of Planning and Research advice to:

- conduct a vulnerability assessment identifying climate change risks
- include a set of adaptation and resilience goals, policies, and objectives based on the identified climate change vulnerabilities
- identify a set of feasible implementation measures designed to carry out the goals, policies, and objectives
- incorporate a reference to the local hazard mitigation plan that fulfills goals and objectives and contains information related to climate change vulnerability and adaptation policies

In the preparation of the Public Safety Element, the City of Hermosa Beach utilized the Cal Adapt Tool and California Adaptation Planning Guide to identify climate change risks and determined that sea level rise and extreme heat are the primary risk to Hermosa Beach. The impacts of sea level rise were further evaluated in two studies: a social vulnerability assessment and infrastructure vulnerability assessment to sea level rise. The findings in these studies were summarized in the Public Safety Element, and a set of goals, policies, and implementation actions to address sea level rise have been identified.

The potential impacts of climate change (or hazards that may become more frequent/severe with climate change) to the City of Hermosa Beach are documented in the context section of the Public Safety Element and include sea level rise, extreme heat, and severe weather, which could exacerbate the frequency or severity of coastal flooding, tsunamis, and shoreline erosion. Draft goals and policies within PLAN Hermosa, as of April 2017, specifically addressing climate change adaptation are identified as follows:

### Goal 1. Injuries and loss of life are prevented, and property loss and damage are minimized.

To protect the community from avoidable risk and harm by factoring natural hazards such as seismic hazards, flooding, landslides, severe weather events, and fires into community planning and outreach, maintenance and upgrades, and municipal operations.

**Policies**

1.1 Evaluate risks. Buildings and infrastructure will be periodically evaluated for seismic, fire, flood, and coastal storm hazard risks and identified risks will be minimized by complying with California Building Code standards and other applicable regulations.

1.2 Prepare geotechnical reports. Geotechnical reports will be prepared for new development projects in areas with the potential for liquefaction or landslide.

1.3 Tsunami Playbook. Work with Los Angeles County and utilize resources such as the Tsunami Playbook in the evaluation and response of tsunami risk.

1.4 Reduce fire hazards. Reduce fire hazards associated with older buildings, multi-story structures, and industrial facilities.

1.5 Minimize coastal flooding. Natural interventions, green infrastructure, and infiltration systems will be utilized to minimize damage from coastal flooding.

1.6 Minimize coastal hazards. Injuries and loss of life are prevented, and property loss and damage from coastal hazards are minimized.

1.7 Reduce flood vulnerability. Encourage existing structures, critical facilities, and infrastructure to reduce flood vulnerability.

1.8 Reduce stormwater runoff. Reduce stormwater runoff consistent with local stormwater permits.

1.9 Facilitate retrofits. Encourage and facilitate retrofits of seismically high-risk buildings.

1.10 Consider site-specific soil conditions. Require new structures to consider site-specific soil conditions.

1.11 Secure funds. Establish centralized internal procedures to coordinate efforts for securing funds that support risk reduction measures.

1.12 Evacuation routes. Identify and regularly evaluate or update evacuation and response procedures through the Emergency Operations Plan.

### Goal 2. The anticipated effects of sea level rise are understood, prepared for, and successfully mitigated.

With the sandy beach considered one of Hermosa's greatest natural assets for aesthetic, safety, and recreational tourism purposes, the loss or erosion of the beach due to sea level rise would be catastrophic to the vitality of Hermosa Beach. By monitoring, evaluating, and enacting interventions to address changes in sea levels, and greater effects of storm events, Hermosa Beach will be well positioned to minimize infrastructure and private property vulnerabilities.

**Policies**

2.1 Integrate resilience. Integrate resilience to anticipated sea level rise impacts into project designs when repairing and replacing aging infrastructure within the coastal zone.

2.2 Sea level rise impacts. Require new development and redevelopment projects to consider and address relevant sea level rise impacts.

2.3 Enhance awareness. Enhance local understanding of sea level rise and keep decision makers and the community aware of potential impacts based on best available science.

2.4 Provide public information. Provide public information describing new flooding risks under a 55-inch sea level rise scenario in areas previously not affected by flooding.

2.5 Maintain beach widths. Maintain or expand current beach widths under changing sea level conditions.

2.6 Consider combined effects of hazards. Consider the combined effects of sea level rise when evaluating potential tsunami and storm surge impacts.

2.7 Support regional approaches. Support regional approaches to sediment management, beach replenishment, and adaptive shoreline protection to allow Hermosa Beach to voice its needs, allow for coordination with neighboring jurisdictions, and identify creative finance mechanisms to continue the replenishment program.

2.8 Identify erosion problems. Continue to monitor beach width and elevations to identify potential erosion problems.

2.9 Beach nourishment and replenishment. Consider allowing construction projects with sand excavation to add sand for beach replenishment or nourishment purposes.

The Public Safety Element also incorporates by reference the City of Hermosa Beach Local Hazard Mitigation Plan, which contains additional information on the assets, resources, and populations that may be at risk to various hazards.

# Appendix I: Glossary of Terms

| Acronym | Meaning |
|---|---|
| **AB** | Assembly Bill |
| **APG** | Adaptation Planning Guide |
| **BCHD** | Beach Cities Health District |
| **BMPs** | Best Management Practices |
| **C&A** | Constant & Associates |
| **Cal/EPA** | California Environmental Protection Agency |
| **CARB** | California Air Resource Board |
| **CBSC** | California Building Standards Commission |
| **CEQA** | California Environmental Quality Act |
| **CERT** | Community Emergency Response Teams |
| **CII Act** | Critical Infrastructure Information Act of 2002 |
| **CO2** | Carbon Dioxide |
| **CoSMoS** | Coastal Storm Modeling System |
| **CPRI** | Calculated Priority Risk Index |
| **CUPA** | Certified Unified Program Agency |
| **DMA 2000** | Federal Disaster Mitigation Act |
| **DTSC** | California Department of Toxic Substances Control |
| **DWR** | California Department of Water Resources |
| **ENSO** | El Niño-Southern Oscillation |
| **EO** | Executive Order |
| **EPA** | Environmental Protection Agency |
| **EPAC** | Emergency Preparedness Advisory commission |
| **ER** | Emergency Room |
| **EWMP** | Enhanced Watershed Management Program |
| **FBI** | Federal Bureau of Investigation |
| **FEMA** | Federal Emergency Management Agency |
| **FIRM** | Flood Insurance Rate Map |
| **FMA** | Flood Mitigation Assistance |
| **FRP** | Facility Response Plans |
| **GHGs** | Greenhouse Gas Emissions |
| **HMGP** | Hazard Mitigation Grant Program |
| **HMP** | Hazard Mitigation Plan |
| **HMTA** | Hazardous Materials Transportation Act |
| **HMTUSA** | Hazardous Materials Transportation Uniform Safety Act |
| **IPCC** | Intergovernmental Panel on Climate Change |
| **ISO** | International Organization for Standardization |
| **LADOT** | Los Angeles Department of Transportation |
| **LEHD** | Longitudinal Employer-Household Dynamics |
| **LHMP** | Local Hazard Mitigation Plan |
| **LUST** | Leaking Underground Storage Tank |
| **M** | Magnitude |
| **MMI** | Modified Mercalli Intensity |
| **NFIP** | National Flood Insurance Program |
| **NFIRA** | National Flood Insurance Reform Act |
| **NIMS** | National Incident Management System |
| **NWS** | National Weather Service |
| **OPA** | Oil Pollution Act |

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| **PCB** | Polychlorinated Biphenyls |
| **PCH** | Pacific Coast Highway |
| **PDM** | Pre-Disaster Mitigation |
| **PIO** | Public Information Officer |
| **PLAN Hermosa** | Public Safety Element of the General Plan |
| **RCRA** | Resource Conservation and Recovery Act |
| **RFC** | Repetitive Flood Claims |
| **RL** | Repetitive Loss |
| **SAFRR** | Science Application for Risk Reduction |
| **SB** | Senate Bill |
| **SCAG** | Southern California Association of Governments |
| **SCEC** | Southern California Earthquake Center |
| **SPCC** | Spill Prevention, Control, and Countermeasure |
| **SRL** | Severe Repetitive Loss |
| **STAPLE/E** | Social, Technical, Administrative, Political, Legal, Economic, and Environmental |
| **SWRCB** | State Water Resources Control Board |
| **TPH** | Total Petroleum Hydrocarbon |
| **USC** | United States Code |
| **USDOT** | United States Department of Transportation |
| **USGS** | United States Geological Survey |
| **WMD** | Weapons of Mass Destruction |
| **WPFPA** | Watershed Protection and Flood Prevention Act of 1954 |

[i] ENSO and California Precipitation" California Department of Water Resources. Retrieved 29 April 2016

[ii] *http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/*

[iii] *SCAG 2017 Local Profiles*

[iv] *http://assessor.lacounty.gov/wp-content/uploads/2016/10/2016-Annual-Report.pdf*

[v] *http://www.southbaybusiness.org/cities/hermosa-beach/*

[vi] *Planning for Natural Hazards: The California Technical Resource Guide, Department of Land Conservation and Development (July 2000)*

[vii] *http://scedc.caltech.edu/significant/he*

[viii] *http://scedc.caltech.edu/significant/longbeach1933.html*

[ix] *http://www.latimes.com/local/lanow/la-me-ln-earthquake-newport-inglewood-rose-canyon-20170309-story.html*

[x] *NOAA*

[xi] *Enhanced Fujita Scale http://www.spc.noaa.gov/faq/tornado/ef-scale.html*

[xii] *http://nws.weather.gov/nthmp/ushazard.html#west*

[xiii] *DHS Active Shooter Threat Handbook*

[xiv] *http://assessor.lacounty.gov/wp-content/uploads/2016/10/2016-Annual-Report.pdf*