

CITY OF MANHATTAN BEACH

2024 LOCAL HAZARD MITIGATION PLAN (LHMP)

APRIL 2024



TABLE OF CONTENTS

Table of Contents	2
Acknowledgement	14
Manhattan Beach 2024	15
Local Hazard Mitigation Plan	15
Acronyms	16
Executive Summary	18
Section 1: Introduction	19
1.1 Plan Purpose	19
1.2 Goal of Hazard Mitigation.....	19
1.3 Hazard Mitigation Plan Description.....	20
1.4 Authority	20
1.4.1 Federal Authority	20
1.4.2 General Safety Plan Element	21
1.5 Hazard Mitigation Grant Assistance Programs	22
1.5.1 Stafford Grant Programs	22
1.5.2 National Flood Insurance Grant Programs	23
1.6 Plan Adoption.....	24
Section 2: Planning Process	25
2.1 Planning Methodology	25
2.2 Government and Other Stakeholder Participation	25
2.2.1 Planning Participation Guidelines.....	26
2.3 Planning Team Formation and Engagement	26
2.4 Hazard Mitigation Planning Process.....	34
2.4.1 Phase I – Planning Process.....	34
2.4.2 Phase II – Risk Assessment	44
2.4.3 Phase III – Mitigation Strategy	45
2.4.4 Phase IV – Plan Maintenance	45
2.5 What's New in the 2024 Plan	46

2.5.1 Climate Change Overview	47
2.5.2 Progress on Local Mitigation Efforts	50
Section 3: Community Profile	51
3.1 History and Location	51
3.2 Coastal Features	53
3.3 Climate.....	54
3.4 Local Government.....	55
3.5 Demographics.....	55
3.6 Socially Vulnerable Populations	59
3.6.1 Social Vulnerability Factors.....	60
3.6.2 Social Vulnerability Determination	63
3.7 Land Use and Existing Development	65
3.8 Land Use Designations	66
3.9. Completed and Current Development	69
3.10 Development Trends and Future Development.....	70
3.11 Infrastructure Systems	71
3.11.1 Critical Facilities/Infrastructure	72
Section 4: Risk Assessment	84
4.1 Risk Assessment Overview	84
4.1.1 Risk Assessment Sources.....	85
4.1.2 Limitations.....	85
4.2 Emergency and Disaster Declaration History	86
4.3 Hazard Identification	87
4.4 Hazard Scoring and Prioritization.....	89
4.5 Hazard of Prime Concern Profiles.....	93
4.5.1 Hazard Risk Profiles	93
4.5.2 Hazard Risk Ranking	95
4.6 Coastal Hazards	96
4.6.1 Hazard Description	96
4.6.2 Location and Extent	100
4.6.3 Previous Events.....	109
4.6.4 Probability of Future Events	111
4.6.5 Hazard Risk Ranking	112

4.6.6 Vulnerability and Impact Assessment	112
4.6.7 Climate Change Impacts.....	115
4.6.8 Critical Facilities & Infrastructure	118
4.6.9 Land Use and Development	119
4.7 Drought	120
4.7.1 Hazard Description	120
4.7.2 Location and Extent	121
4.7.3 Previous Events.....	125
4.7.4 Probability of Future Events	127
4.7.5 Hazard Risk Ranking	128
4.7.6 Vulnerability & Impact Assessment.....	128
4.7.7 Climate Change Impacts.....	131
4.7.8 Critical Facilities & Infrastructure	132
4.7.9 Land Use and Development Trends	133
4.8 Fire/Wildland Urban Interface (Wildfire)	134
4.8.1 Hazard Description	134
4.8.2 Location and Extent	136
4.8.3 Previous Events.....	140
4.8.4 Probability of Future Events	141
4.8.5 Hazard Risk Ranking	142
4.8.6 Vulnerability and Impact Assessment	143
4.8.7 Climate Change Impacts.....	149
4.8.8 Critical Facilities & Infrastructure	150
4.8.9 Land Use and Development Trends	151
4.9 Flooding/Inland Flooding	153
4.9.1 Hazard Description	153
4.9.2 Location and Extent	154
4.9.3 Previous Events.....	159
4.9.4 Probability of Future Events	161
4.9.5 Hazard Risk Ranking	162
4.9.6 Vulnerability and Impact Assessment	162
4.9.7 Climate Change Impacts.....	167
4.9.8 Critical Facilities & Infrastructure	169

4.9.9 Land Use and Development	169
4.9.10 Repetitive Loss Structures	169
4.10 Geological Hazards (Earthquake and Landslide)	170
4.10.1 Hazard Description	170
4.10.2 Location and Extent	173
4.10.3 Previous Events.....	178
4.10.4 Probability of Future Events	178
4.10.5 Hazard Risk Ranking	180
4.10.6 Vulnerability and Impact Assessment	181
4.10.7 Climate Change Impacts.....	183
4.10.8 Critical Facilities & Infrastructure	183
4.10.9 Land Use and Development	185
4.11 Severe Weather (Extreme Heat and High Wind)	186
4.11.1 Hazard Description	186
4.11.2 Location and Extent	187
4.11.3 Previous Events.....	191
4.11.4 Probability of Future Events	192
4.11.5 Hazard Risk Ranking	193
4.11.6 Vulnerability and Impact Assessment	193
4.11.7 Climate Change Impacts.....	197
4.11.8 Critical Facilities & Infrastructure	197
4.11.9 Land Use and Development	199
4.12 Excluded Hazards	200
Section 5: Vulnerability Assessment	201
5.1 Vulnerability and Impact Assessment.....	201
5.1.1 HMPC Engagement	202
5.2 Climate Change Vulnerability	204
5.2.1 Climate Change Vulnerability	204
5.3 NFIP Structures Damaged by Floods.....	207
5.4 Planning Area Overall Vulnerability	207
Section 6: Mitigation Strategy	208
6.1 Hazard Mitigation Strategy	208
6.2 Mitigation Goals and Actions	208

6.3 Capabilities Assessment	209
6.3.1 Planning and Regulatory Capabilities	211
6.3.2 Administrative and Technical Capabilities	213
6.3.3 Financial Capabilities	215
6.3.4 Education and Outreach Capabilities	216
6.3.5 Opportunities for Enhancement	218
6.4 National Flood Insurance Program (NFIP)	221
6.5 Hazard Mitigation Projects/Actions.....	224
6.6 Prioritization Process	225
6.6.1 Cost Estimates	227
6.7 Mitigation Action Plan	228
6.7.1 Previous 2019 Mitigation Actions	228
6.7.2 New Actions/Mitigation Projects.....	233
Section 7: Plan Maintenance	252
7.1 Plan Monitoring and Situational Change.....	253
7.2 Plan Evaluation.....	254
7.3 Updating the Plan.....	254
7.3.1 Annual Review Progress Worksheet.....	254
7.3.2 Mitigation Progress Project Reports	254
7.3.3 LHMP Planning Team Roundtable	255
7.3.4 Update Process Tasks	256
7.4 Continued Public Involvement in Plan Maintenance.....	256
7.5 Integration into Other Local Planning Mechanisms.....	258
Appendix A: Hazard Mitigation Planning Committee	260
A.1 HMPC Outreach and Participation	260
A1.1 Email Invitations.....	260
A1.2 HMPC Comprehensive Attendance Roster.....	264
A.2 Hazard Mitigation Planning Committee Meeting #1 Materials	270
A.2.1 Meeting #1 Announcement (English)	270
A.2.2 Meeting #1 Announcement (Spanish).....	271
A.2.3 Meeting #1 Agenda.....	272
A.2.4 Meeting #1 Cover Slide	276
A.2.5 Meeting #1 Minutes with Attendance	277

A.3 Hazard Mitigation Planning Committee Meeting #2 Materials	285
A.3.1 Meeting #2 Announcement (English)	285
A.3.2 Meeting #2 Announcement (Spanish).....	286
A.3.3 Meeting #2 Agenda.....	287
A.3.4 Meeting #2 Cover Slide	291
A.3.5 Meeting #2 Minutes with Attendance	292
A.4 Hazard Mitigation Planning Committee Meeting #3 Materials	300
A.4.1 Meeting #3 Announcement (English)	300
A.4.2 Meeting #3 Announcement (Spanish).....	301
A.4.3 Meeting #3 Agenda.....	302
A.4.4 Meeting #3 Cover Slide	306
A.4.5 Meeting #3 Minutes with Attendance	307
A.5 Hazard Mitigation Planning Committee Meeting #4 Materials	312
A.5.1 Meeting #4 Announcement (English)	312
A.5.2 Meeting #4 Announcement (Spanish).....	313
A.5.3 Meeting #4 Agenda.....	314
A.5.4 Meeting #4 Cover Slide	318
A.5.5 Meeting #4 Minutes with Attendance	319
Appendix B: LHMP Survey Results	322
B.1 HMPC Member Surveys	322
B.1.1 HMPC Personal and Professional Experience Survey	322
B.1.2 LHMP Vulnerability and Impacts Assessment Worksheet	324
B.2 Public Survey Results	326
B.2.1 English Survey	326
B.2.2 Spanish Survey	356
Appendix C: Community Outreach	357
C.1 Community Awareness Flyers	362
C.1.1 City of Manhattan Beach LHMP Project Flyer (English)	362
C.1.2 City of Manhattan Beach LHMP Project Flyer (Spanish)	363
C.2 Manhattan Beach LHMP Dedicated Website	364
C.3 Social Media Outreach	370
C.3.1 Manhattan Beach Facebook Post	370
C.3.2 Manhattan Beach Facebook Story.....	371

C.3.3 Manhattan Beach Nextdoor Post.....	372
C.3.4 Manhattan Beach Twitter Post.....	373
C.4 Outreach to Local Organizations.....	374
C.4 Vulnerable Community Outreach	377
C.4.1 Vulnerable Tract Outreach (6208.01)	377
C.4.2 Joslyn Center Senior Older Adult Lunch Bunch.....	380
C.4.3 Joslyn Center Senior Older Adult Discussion Group.....	381
C.5 Community Meetings/Events.....	384
C.5.1 Community Meeting: Manhattan Beach Library	384
C.5.2 North Manhattan Beach Business Briefing	388
C.5.3 Farmers Market Event.....	389
C.5.4 City Council Briefing	391
C.5.5 Manhattan Heights Park Community Center.....	394
C.6 Public Comment Period	397
C.6.1 Pre-Announcement of Public Comment Period (English).....	397
C.6.2 Pre-Announcement of Public Comment Period (Spanish)	398
C.6.3 Announcement of Public Comment Period	399
C.6.4 Public Comment Feedback Form (English)	399
C.6.5 Public Comment Feedback Form (Spanish)	400
Appendix D: FIRM Panels	401
Appendix E: Critical Facilities List.....	403
Appendix F: Mitigation Progress Report Worksheet	408
Appendix G: FEMA local Hazard Mitigation Review tool	410
G.1 Review Tool Elements	410
Appendix H: Adoption and Resolution.....	421
H.1 Plan Adoption Resolutions	421
H.1.1 Resolution, City of Manhattan Beach	421
H.1.2 State of California Approval Letter	421
H.1.3 FEMA Approval Letter.....	421

Tables

Table 1: Federal Laws, Regulation and Guidance	21
Table 2: FEMA Hazard Mitigation Assistance Grant Programs.....	23
Table 3: Hazard Mitigation Planning Committee Members.....	29
Table 4: HMPC Meetings.....	35
Table 5: Outreach Activities	36
Table 6: Existing State/Federal Planning Mechanisms	41
Table 7: City of Manhattan Beach Planning Documents	42
Table 8: Climate Change Initiatives.....	48
Table 9: Climate Change Awards/Recognition.....	49
Table 10: Demographics, City of Manhattan Beach	56
Table 11: Manhattan Beach Social Vulnerability Factors	61
Table 12: Land Use Designations – General Plan (2003)	66
Table 13: Completed Development	69
Table 14: Current Development.....	69
Table 15: City of Manhattan Beach Critical Facilities/Infrastructure	74
Table 16: State and Federal Disaster Declarations for Los Angeles County (2019-Present)	86
Table 17: Summary of Hazards from 2019 to 2024, Manhattan Beach LHMP	88
Table 18: Human Impacts.....	89
Table 19: Property Impacts.....	89
Table 20: Business Impacts.....	89
Table 21: Probability of Hazard Occurring	90
Table 22: Hazard Risk Scale/Values	91
Table 23: Hazard Prioritization Ranking.....	92
Table 24: Annual Hazard Probability	94
Table 25: Hazard Probability Categories.....	94
Table 26: Hazard Risk Summary	95
Table 27: Beach Width Evolution (2020-2100).....	107
Table 28: Probability of Future Events, Coastal Hazards.....	111
Table 29: Risk Ranking for Coastal Hazards.....	112
Table 30: Summary of Change in Vulnerability, Coastal Hazards.....	113
Table 31: Critical Facilities & Infrastructure Potential Loss, Coastal Hazards	118
Table 32: Standard Precipitation Index (SPI).....	122
Table 33: Palmer Drought Severity Index (PDSI)	122
Table 34: Potential Drought Impacts to Manhattan Beach	124
Table 35: Previous Occurrences, Drought.....	125
Table 36: Los Angeles Country Drought Monitor Days	126

Table 37: Probability of Future Events, Drought	127
Table 38: Risk Ranking for Drought	128
Table 39: Summary of Change in Vulnerability, Drought	129
Table 40: Critical Facilities & Infrastructure Potential Loss, Drought	132
Table 41: Fire Rating System	139
Table 42: Disaster Declarations - Fire, Los Angeles County	141
Table 43: Probability of Future Events, Fire/Wildland Urban Interface (Wildfire)	142
Table 44: Risk Ranking for Fire, Wildland Urban Interface (Wildfire)	142
Table 45: Summary of Change to Vulnerability, Fire/Wildland Urban Interface (Wildfire)	143
Table 46: Critical Facilities & Infrastructure Potential Loss, Fire, Wildland Urban Interface (Wildfire)	150
Table 47: Flood Risk Report Community Profile, Manhattan Beach	155
Table 48: Coastal Transect Parameters.....	156
Table 49: FEMA Coastal Flood Zones.....	158
Table 50: NOAA/NCEI Events, Flood Events, Los Angeles County.....	160
Table 51: Los Angeles County - Disaster Declaration - Flood	160
Table 52: Probability of Future Events, Flood	161
Table 53: Risk Ranking for Flooding/Inland Flooding.....	162
Table 54: Summary of Change to Vulnerability, Flooding/Inland Flooding	163
Table 55: Modified Mercalli Intensity Scale	175
Table 56: Probability of Future Events, Geological Hazards.....	179
Table 57: Maximum Likelihood of Earthquake Events by Size and Fault in the Next 30 Years	179
Table 58: Risk Ranking for Geological Hazards.....	180
Table 59: Summary of Change to Vulnerability, Geological Hazards	181
Table 60: Critical Facilities and Infrastructure, Geological Hazards	183
Table 61: ASCE Average Hazard Winds Scores	189
Table 62: Beaufort Wind Scale	190
Table 63: Los Angeles County - Disaster Declaration - Severe Weather	192
Table 64: Probability of Future Events, Severe Weather	192
Table 65: Risk Ranking for Severe Weather	193
Table 66: Summary of Change to Vulnerability, Severe Weather, (Extreme Heat and Wind)	194
Table 67: Critical Facilities & Infrastructure Potential Loss, Severe Weather.....	198
Table 68: Steps Taken Towards the Vulnerability and Impact Assessment	203
Table 69: Planning and Regulatory Capability Assessment	211
Table 70: Administrative and Technical Capabilities.....	214
Table 71: Financial Capability Assessment	215

Table 72: Education and Outreach Capability Assessment	217
Table 73: Floodplain Management	222
Table 74: STAPLE+E Criteria	226
Table 75: Mitigation Action Progress, Manhattan Beach LHMP 2019	229
Table 76: Hazard Mitigation Actions	236
Table 77: Mitigation Project AH.1	239
Table 78: Mitigation Project AH.2	240
Table 79: Mitigation Project C.1	241
Table 80: Mitigation Project C.2	241
Table 81: Mitigation Project C.3	242
Table 82: Mitigation Project D.1	243
Table 83: Mitigation Project D.2	244
Table 84: Mitigation Project W.1	244
Table 85: Mitigation Project F.1	245
Table 86: Mitigation Project F.2	246
Table 87: Mitigation Project G.1	246
Table 88: Mitigation Project G.2	247
Table 89: Mitigation Project G.3	248
Table 90: Mitigation Project G.4	249
Table 91: Mitigation Project S.1	249
Table 92: Mitigation Project S.2	250
Table 93: Plan Maintenance Schedule	252
Table 94: Email Invitations	260
Table 95: Hazard Mitigation Planning Committee Attendance Roster	264
Table 96: Community Outreach Products	357
Table 97: 2024 LHMP Outreach Promotion Tracker.....	374

Figures

Figure 1: General Location of Manhattan Beach within the state of California and the County of Los Angeles	52
Figure 2: General boundaries of Manhattan Beach	53
Figure 3: Overall Vulnerability	60
Figure 4: Social Vulnerability Index Map	64
Figure 5: Neighborhood Map – Manhattan Beach General Plan	67
Figure 6: Land Use Types	68
Figure 7: Critical Facilities Map	77
Figure 8: City Facilities and Emergency Shelters	78
Figure 9: Police and Fire Stations.....	79

Figure 10: Edison Substations	80
Figure 11: Manhattan Beach Schools	81
Figure 12: Manhattan Beach Parks.....	82
Figure 13: Telecommunication Sites	83
Figure 14: Risk Assessment.....	84
Figure 15: Ocean Tidal Range.....	97
Figure 16: The El Nino Phenomenon	98
Figure 17: Tidal Inundation with Sea Level Rise, N. Manhattan Beach.....	101
Figure 18: Tidal Inundation with Sea Level Rise, S. Manhattan Beach.....	102
Figure 19: Coastal Flooding with Sea Level Rise, N. Manhattan Beach.....	103
Figure 20: Coastal Storm Flooding with Sea Level Rise, S. Manhattan Beach.....	104
Figure 21: Shoreline Erosion with Sea Level Rise, N. Manhattan Beach.....	105
Figure 22: Shoreline Erosion with Sea Level Rise, S. Manhattan Beach.....	106
Figure 23: City of Manhattan Beach, Potential Tsunami Inundation Area.....	108
Figure 24: January 2019 King Tides.....	109
Figure 25: January 2019 King Tides, Beach Erosion	109
Figure 26: 1982/83 El Niño, Manhattan Beach Pier	110
Figure 27: Sea Level Rise	116
Figure 28: Projected Sea-Level Rise (in feet) for Los Angeles.....	117
Figure 29: U.S. Drought Monitor, Drought Classifications.....	123
Figure 30: US Drought Monitor, California	124
Figure 31: US Drought Monitor, Los Angeles.....	126
Figure 32: Cal FIRE State Responsibility Area Fire Hazard Severity Zone, Los Angeles County	137
Figure 33: California Fire Season, Western Fire Chiefs Association	138
Figure 34: Wildfire Likelihood in Manhattan Beach.....	144
Figure 35: Wildfire Exposure in Manhattan Beach	144
Figure 36: Fire/Wildfire Vulnerable Populations, Over 65 Years Old	147
Figure 37: Fire/Wildfire Vulnerable Populations, Limited English	147
Figure 38: Fire/Wildfire Vulnerable Populations, Poverty	148
Figure 39: Fire/Wildfire Vulnerable Populations, Disabilities.....	148
Figure 40: Wildfire Risk to Homes in Manhattan Beach	152
Figure 41: FEMA Flood Insurance Study, Los Angeles County	157
Figure 42: Hydrologic Region Map of California, South Coast	159
Figure 43: FEMA National Risk Index, Flooding (Coastal)	165
Figure 44: Stormwater Drainage System and reported flooding (2004)	166
Figure 45: Annual Rain Percentages	168
Figure 46: Manhattan Beach Fault Map.....	174
Figure 47: Earthquake Energy and Frequency.....	175

Figure 48: Geologic and Seismic Hazards.....	177
Figure 49: Earthquake >2.5 Intensity, 2019-2023	178
Figure 50: NWS Heat Index.....	188
Figure 51: Extreme Heat on Socially Vulnerable Population.....	195
Figure 52: Vulnerable Assets Definitions	202
Figure 53: The U.S Climate Vulnerability Index Indicators.....	205
Figure 54: CVI, Tract 06037620305.....	206
Figure 55: Review of 2019 Goals vs 2024 LHMP Goals.....	209

ACKNOWLEDGEMENT

Preservation of life and property is an inherent responsibility of government entities. The City of Manhattan Beach developed this 2024 Local Hazard Mitigation Plan (LHMP) to address actions that can be taken to mitigate the impact of disasters on the city. Development of this plan was made possible by the commitment of the Manhattan Beach Hazard Mitigation Planning Committee.

The commitment of committee members and representatives throughout the city, who devoted their time to contribute to the LHMP, assures its inclusivity for the greater Manhattan Beach community. These efforts of the committee and the commitment of ongoing mitigation activities will pave the way for successful implementation of this plan during the next performance period. The participating representatives of the LHMP update included the City of Manhattan Beach Planning Committee, local residents, businesses, partners, non-profits and faith-based organizations.

MANHATTAN BEACH 2024

LOCAL HAZARD MITIGATION PLAN

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ACRONYMS

Acronym	Definition
AFN	Access and Functional Needs
ASOS	Automated Surface Observing System
BRIC	Building Resilient Infrastructure and Communities
CCC	California Coastal Commission
CDC	Center for Disease Control
CDPH	California Department of Public Health
CERT	Community Emergency Response Team
CFR	Code of Federal Regulations
CIP	Capital Improvement Plan
CVI	Climate Vulnerability Index
DMA	Disaster Mitigation Act
EHP	Environmental and Historic Preservation
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zones
FIRM	Flood Insurance Rate Map
FMA	Flood Mitigation Assistance
FPA	Flood Plain Administrator
HMA	Hazard Mitigation Assistance
HMGF	Hazard Mitigation Grant Program
HMPC	Hazard Mitigation Planning Committee
LHMP	Local Hazard Mitigation Plan
LOMC	Letters of Map Change
LRA	Local Responsibility Areas
MB	Manhattan Beach
MMI	Modified Mercalli Intensity
MYN	Map Your Neighborhood
NCDC	National Center for Environmental Information
NDMC	National Drought Mitigation Center
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent

Acronym	Definition
NWS	National Weather Service
OES	Office of Emergency Services
PCH	Pacific Coast Highway
PDSI	Palmer Drought Severity Index
PSPS	Public Safety Power Shutoff
RAWS	Remote Automatic Weather Station
SCE	Southern California Edison
SFHA	Special Flood Hazard Area
SPI	Standard Participation Index
SRA	State Responsibility Areas
SVI	Social Vulnerability Index
WUI	Wild Urban Interface

EXECUTIVE SUMMARY

Across the United States, natural hazards have led to increased levels of injury, property damage, interruption of business and government services, and even death. The impact of disasters on families and individuals can be immense, and damages to businesses can result in economic consequences. The time, money, and effort to respond to and recover from these disasters divert public resources and attention from other important programs and priorities.

In 2000, Congress passed the Disaster Mitigation Act (Public Law 106-390) to reinforce the importance of mitigation planning and emphasize planning for disasters before they occur. As such, local communities must have an approved mitigation plan in place prior to receiving Hazard Mitigation Assistance grant funding. These plans must demonstrate that proposed mitigation measures are based on a sound planning process that accounts for the risks to and the capabilities of the individual communities.

Applying this knowledge, the City of Manhattan Beach (City), California has prepared a Local Hazard Mitigation Plan (LHMP) that will guide the City towards greater disaster resistance in full accord with the character and needs of the community and federal requirements. The potential hazards identified and assessed in this version of the Local Hazard Mitigation Plan include Coastal Hazards, Drought, Geological Hazards, Inland Flooding, Severe Weather, and Fire/Urban Wildland Interface (Wildfire). These hazards may expose the City to the financial and emotional costs of recovering from natural disasters. This plan update allows the City of Manhattan Beach to develop strategies, coordinate resources, and increase public awareness to reduce risk and prevent loss from future hazard events. Identifying the risks posed by hazards, and developing strategies to reduce the impact of a hazard event can assist in protecting the life and property of citizens and communities.

This LHMP has been prepared to meet Federal Emergency Management Agency's (FEMA) requirements of the Disaster Mitigation Act 2000 and the Local Mitigation Planning Policy Guide (FP-206-21-0002 Released April 19, 2022, Effective April 19, 2023), thus making it eligible for grant funding from State and Federal hazard mitigation programs. Following each major disaster declaration, the City is required to review and update the mitigation strategy. Additionally, in compliance with FEMA regulations, this LHMP must be reviewed, revised, and resubmitted for approval within the next five years so that the City continues to be eligible for funding under the FEMA Hazard Mitigation Assistance grant program.

The 2024 LHMP is intended to be used by the City to assist in outlining actions (projects) and setting priorities. This allows the City to meet the goal of the Hazard Mitigation Program to eliminate or reduce the long-term impacts of disasters. The LHMP includes a community profile, hazards profile, risk assessment incorporating vulnerabilities and impacts, and a hazard mitigation strategy to outline the importance of hazard mitigation and ways in which the City can increase resiliency in the face of a variety of hazards.

The LHMP is to be used to promote sound public policy designed to protect community assets from hazards. This can be achieved by increasing public awareness, documenting the resources for risk reduction and loss-prevention, and identifying activities to guide the City in creating a more sustainable community.

SECTION 1: INTRODUCTION

1.1 Plan Purpose

The purpose of this Local Hazard Mitigation Plan (LHMP) is to identify, assess, and mitigate risks to enhance protection against natural hazards for the assets of Manhattan Beach. This plan outlines the steps taken to reduce or eliminate long-term risks to human life and property as defined by FEMA, including the identification of hazards, assessment of impacts and vulnerabilities, setting of mitigation goals, and the selection and prioritization of mitigation strategies for implementation. It documents the hazard mitigation planning process, details the hazards and vulnerabilities faced by the city, and outlines the strategies to reduce these vulnerabilities and increase resilience and sustainability. The plan also reflects the commitment of participating communities to lower risk exposure from identified hazards and acts as a guide for decision-makers in directing mitigation efforts and resources efficiently. This effort is the result of a collaborative process involving city representatives and community stakeholders.

1.2 Goal of Hazard Mitigation

This Local Hazard Mitigation Plan (LHMP) focuses on developing long-term strategies to enhance community resilience against natural hazards in Manhattan Beach, aiming to minimize economic impacts and human suffering. It acknowledges the different phases of emergency management—preparedness, response, and recovery—but emphasizes mitigation as its core objective. This plan is designed to reduce or eliminate the long-term impacts of natural hazards, rather than detailing preparedness activities like planning and education, response actions such as firefighting and rescue operations, or recovery efforts including debris removal and restoring utilities.

Annually, natural disasters in the United States result in the loss of hundreds of lives and injure thousands, imposing significant financial burdens on taxpayers, communities, organizations, businesses, and individuals. The cost to government budgets for disaster recovery is substantial. However, as many natural disasters are predictable, implementing effective mitigation measures can significantly reduce or even prevent much of the damage these events cause. There is a financial benefit in completing this plan and addressing natural hazards within the community. Natural hazard mitigation saves \$6 on average for every \$1 spent on federal mitigation grants, according to an analysis by the National Institute of Building Sciences.

1.3 Hazard Mitigation Plan Description

The 2024 Manhattan Beach LHMP consists of the sections described below:

Section 1- Introduction: Describes an overview of hazard mitigation planning, including the purpose, goal, authority, and grants available.

Section 2- Planning Process: Documents: the planning process and the participating key stakeholders and community engagement.

Section 3- Community Profile: Shares the history of Manhattan Beach, location, demographics, climate and land use development trends.

Section 4- Risk Assessment: Describes the process in which relevant data was identified and compiled regarding potential hazards that threaten the City of Manhattan Beach as well as discussing the historical occurrences of each hazard and the probability for future events.

Section 5- Vulnerability Assessment: Identifies the threat of hazards within the City of Manhattan Beach potentially impacting community members including vulnerable populations, housing, and critical facilities.

Section 6- Mitigation Strategy: Describes the list of mitigation goals, objectives, and actions to reduce the vulnerability of the City of Manhattan Beach to hazard events and provides an overview of the community's existing capabilities to improve hazard resilience.

Section 7- Plan Maintenance: Describes the formal plan maintenance process to ensure the LHMP remains an active and applicable document that is monitored, evaluated and updated with continued public involvement.

1.4 Authority

This Plan was updated per federal rules and other pertinent state and municipal codes that may require mitigation planning integration. Although the City of Manhattan Beach is not required to prepare an LHMP, state and federal regulations encourage it. To remain eligible for hazard mitigation grants the Plan shall be reviewed annually and go through a complete update process every five years. The following regulations and guidelines apply to this plan.

1.4.1 Federal Authority

The DMA 2000 provides the legal basis for the FEMA mitigation planning requirements for local, State, 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 most similar efforts, the actual process of planning is as important as the resultant plan. Hence, the City of Manhattan Beach regards this LHMP as the official written record and documentation representing the planning process and development of elements such as mitigation goals or hazard identification.

Table 1: Federal Laws, Regulation and Guidance

Federal Laws, Regulations and Guidance	
Law/Regulation/Guidance	Description
The Disaster Mitigation Act of 2000	This Act creates the framework for state, local, tribal and territorial governments to engage in hazard mitigation planning to receive certain types of non-emergency disaster assistance.
44 Code of Federal Regulations (CFR) Part 201 Mitigation Planning	The purpose of this code is to provide information on the policies and procedures for mitigation planning as required by the provisions of section 322 of the Stafford Act, 42 U.S.C. 5165 , and section 1366 of the National Flood Insurance Act of 1968, 42 U.S.C. 4104c .
Local Mitigation Planning Policy Guide (Effective April 19, 2023)	This guide is FEMA's official policy on and interpretation of the applicable statutes and mitigation planning regulations in 44 Code of Federal Regulations (CFR) Part 201.
Local Mitigation Planning Handbook (2023)	This Local Mitigation Planning Handbook (Handbook) guides local governments, including special districts, as they develop or update a hazard mitigation plan.
Robert T. Stafford Disaster Relief and Emergency Assistance Act , PL 100-707, signed into law November 23, 1988; amended the Disaster Relief Act of 1974, PL 93-288.	This Act constitutes the statutory authority for most Federal disaster response activities especially as they pertain to FEMA and FEMA programs.

1.4.2 General Safety Plan Element

Under California Government Code Section 8685.9, also known as Assembly Bill 2140, the state's contribution to disaster relief for local governments is capped at 75% of expenses not covered by federal aid, unless the local jurisdiction has an approved hazard mitigation plan aligned with the Disaster Management Act of 2000 and integrated into its general plan. If these conditions are met, the state may exceed the 75% funding threshold.

All cities and counties in California must develop a general plan that includes a safety element addressing various hazards and safety issues. This safety element may stand alone or be part of another section, per the community's choice. As per California Government Code Section 65302.6, communities have the option to incorporate their Local Hazard Mitigation Plan (LHMP) into the safety element, provided it meets state standards, enabling them to meet state safety requirements through their LHMP. Integrating the LHMP into the general plan, which guides community development, and enhances the plan's effectiveness.

Furthermore, according to Senate Bill (SB) 379, outlined in California Government Code Section 65302 (g)(4), the safety element of a general plan must address climate change-related hazards, detailing anticipated impacts and adaptation strategies for resilience. This requirement applies to LHMP updates after January 1, 2017, for communities with an existing LHMP, or by January 1, 2022, for those without, ensuring climate change

considerations are incorporated into safety planning.

This LHMP aligns with current standards and regulations set forth by the California Office of Emergency Services (Cal OES) and FEMA. The previous City of Manhattan Beach LHMP was approved by FEMA on May 12, 2019. This plan will be re-evaluated and updated every five years to ensure local governments are continuing to assess the hazards and their impacts, risks, and vulnerabilities to assets. The federal hazard mitigation regulation only supports natural hazards and not man-made hazards. The State and Federal governments only evaluate and approve based on natural hazards as per federal code title 44 CFR 201.

1.5 Hazard Mitigation Grant Assistance Programs

FEMA's Hazard Mitigation Assistance Grant Program provides funding for eligible mitigation measures that reduce disaster losses. It is necessary to have a FEMA approved plan to qualify for these grants. Project eligibility is based on criteria that reduce long-term risk. Response, Recovery and Preparedness measures are not covered by these grants.

1.5.1 Stafford Grant Programs

Funding is provided to local, state and tribal governments that have an approved hazard mitigation plan through the following programs.

Hazard Mitigation Grant Program

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

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

The Building Resilient Infrastructure and Communities (BRIC) Program

The new BRIC grant program is for pre-disaster mitigation activities and replaces FEMA's existing Pre-Disaster Mitigation Program. The BRIC priorities are to incentivize the following:

- Public infrastructure projects
- Projects that mitigate risk to one or more lifelines
- Projects that incorporate nature-based solutions
- Adoptions and enforcement of modern building codes

BRIC will support states, local communities, and tribes as they undertake hazard mitigation

projects, reducing the risks they face from disasters and natural hazards. The BRIC programs guiding principles are supporting communities through capability and capacity building, encouraging innovation, promoting partnerships, enabling large projects, maintaining flexibility, and providing consistency. The federal government provides up to 75% of the cost of projects approved under this program.

1.5.2 National Flood Insurance Grant Programs

Flood Mitigation Assistance (FMA) Program

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 National Flood Insurance Program (NFIP). The FMA program is focused on mitigating repetitive loss (RL) properties and severe repetitive loss (SLR) properties. Grant funding is available for flood hazard mitigation projects as well as plan development and is appropriated by Congress.

Project grants are awarded to local entities to apply mitigation measures to reduce flood losses to properties insured under the NFIP. The cost-share for this grant is 75% federal and 25% nonfederal. However, a cost-share of 90% federal and 10% nonfederal is available in certain situations to mitigate SLR properties. For more information on the FMA program please visit [FEMA's Resources for the Flood Mitigation Assistance Grant Program](#).

The grants noted above are available through FEMA as outlined in the table below. Please note the required local government and use of in-kind match conditions to meet these requirements.

Table 2: FEMA Hazard Mitigation Assistance Grant Programs

FEMA Hazard Mitigation Assistance Grant Programs			
Grant	Projects Eligible for:	Timeframe	Grant Match Requirements (see note)
Hazard Mitigation Grant Program (HMGP) – Section 404	All Natural Hazards	After a Presidential Disaster Declaration	75% Federal 25% non-federal
Building Resilient Infrastructure and Communities (BRIC)	All Natural Hazards	Annual through congressional appropriations; competed nationwide.	75% Federal 25% non-federal
Flood Mitigation Assistance (FMA)	Flooding	Annual through congressional appropriations; competed nationwide.	75% Federal 25% non-federal
Severe Repetitive Loss (part of FMA)	Flooding	Annual through congressional appropriations; competed nationwide.	100% Federal
Notes: For grant match requirements, please check with your state to see if they will do a grant match.			

FEMA Hazard Mitigation Assistance Grant Programs

*Matches may be accomplished through in-kind.
BRIC replaced the Pre-Disaster Mitigation grant in FY 2020.*

Please see the Governor's Office of Emergency Services (Cal OES) for additional information on available Hazard Mitigation Assistance Grants (<https://www.caloes.ca.gov/office-of-the-director/operations/recovery-directorate/hazard-mitigation/>).

Other grants may be available to fund mitigation projects or increase resilience due to climate change. The California Coastal Commission and the California Coastal Commission Conservancy – Local Coastal Program, Local Assistant Grant Program and Climate Ready Grants provides funds to support local governments in completing or updating their local coastal programs consistent with the California Coastal Act, with special emphasis on planning for sea level rise and climate change. The Climate Ready Grant Program generally funds planning and implementation of managed retreat, natural shoreline infrastructure, living shorelines, and habitat enhancement projects.

1.6 Plan Adoption

This Hazard Mitigation Plan will be adopted by the City of Manhattan Beach in accordance with the authority granted to local communities by the State of California and the Federal Emergency Management Agency after Approval Pending Adoption is obtained by FEMA. The formal adoption will be in Appendix H.

SECTION 2: PLANNING PROCESS

2.1 Planning Methodology

This section describes each stage of the planning process used to develop the LHMP. This LHMP follows a prescribed series of planning steps which includes organizing resources, assessing risk, developing the mitigation strategy, drafting the plan, reviewing/revising the plan, and adopting and submitting the plan for approval. Each step is further described in this section including the comprehensive outreach strategy used throughout the planning process. The goal of the comprehensive outreach strategy was to ensure the general population and the socially vulnerable were actively engaged to ensure inclusivity.

FEMA Regulation Checklist: Planning Process	
44 CFR § 201.6(c)(1)	Documentation of the Plan Update Requirements: A1. Does the plan 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-a.	Does the plan document how the plan was prepared, including the schedule or timeframe and activities that made up the plan's development, as well as who was involved?
A1-b	Does the plan document how the plan was prepared, including the schedule or time frame and activities that made up the plan's development, as well as who was involved?

Source: FEMA, *Local Mitigation Planning Policy Guide*, Released April 19, 2022, Effective April 19, 2023

Proactive mitigation and whole community planning conducted by the City of Manhattan Beach during this planning process will help reduce the cost of disaster response and recovery to the community and their residents by protecting critical community facilities, reducing liability exposure, and minimizing overall community impacts and disruptions.

The initial stage of the planning process entailed resource organization, which encompassed tasks such as establishing the LHMP Project Management Team, identifying the supporting LHMP Consultant Team, assembling the Hazard Mitigation Planning Committee (HMPC) and conducting document reviews.

2.2 Government and Other Stakeholder Participation

FEMA Regulation Checklist: Planning Process	
44 CFR § 201.6(b)(2)	Documentation of the Plan Update Requirements: 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?

FEMA Regulation Checklist: Planning Process	
A2-a	Does the plan identify all stakeholders involved or given an opportunity to be involved in the planning process, and how each stakeholder was presented with this opportunity?

Source: FEMA, *Local Mitigation Planning Policy Guide*, Released April 19, 2022, Effective April 19, 2023

2.2.1 Planning Participation Guidelines

The planning regulations and guidance stress that each local government seeking FEMA approval of their mitigation plan must participate in the planning effort in the following ways:

- Participate in the process as part of the HMPC.
- Detail risks and vulnerabilities to assets.
- Identify potential mitigation actions.
- Formally adopt the plan.

This Hazard Mitigation Plan was developed under the guidance of a Hazard Mitigation Planning Committee (HMPC) listed in **Table 3**. For the City of Manhattan Beach HMPC, “participation” included the following:

- Attending and participating in the HMPC meetings.
- Collecting and providing other requested data (if/as available).
- Identifying mitigation actions (projects) for the plan.
- Reviewing and providing comments on plan drafts.
- Informing the public (including identified socially vulnerable populations), local officials, and other interested parties about the planning process and providing opportunities for them to participate in the process and comment on the plan.
- Coordinating, and participating in the public input process; and
- Coordinating the formal adoption of the plan by the appropriate governing body.

The HMPC met all the above-stated participation requirements with the support of the LHMP Consultant Team throughout the development of the LHMP. The Consultant Team, from Constant Associates provided guidance and support to the City in the facilitation of the LHMP planning process, data collection, community engagement, development of meeting materials, and the Plan update.

2.3 Planning Team Formation and Engagement

The City Project Management Team worked with the LHMP Consultant Team, Constant Associates, to identify regional and local agencies and stakeholders to participate in the LHMP that have authority in regulating city development, individuals that represented vulnerable populations, as well as those that are responsible for responding to the identified hazards of prime concern. Participants that represented a specific community lifeline were

also invited. These partners included jurisdictional police, fire, public works, and healthcare agencies, community based, nonprofit, and faith-based organizations, the business community, local floodplain management administration, schools/academia, elected officials, utility companies, other interested parties, along with several external entities including neighboring jurisdictions of the City of Manhattan Beach and Los Angeles County Disaster Management Area G Coordinator. A listing of invited participants is located in **Appendix A 1.2.**

Stakeholders were notified via phone and/or email, advising of the City's efforts to prepare a LHMP and requesting their involvement in preparation of the Plan, including an invitation to attend the HMPC meetings either virtually or in person at the City Council Chambers.

HMPC members provided key information to recognize and mitigate hazards of prime community concern. All other committee participation was via email or phone to gather the needed details. Meeting attendance and the list of individuals invited is included in **Appendix A.**

The Manhattan Beach Project Management team carefully identified the below listed stakeholders in **Table 3** to represent a cross section of the relevant community lifelines to participate in the HMPC. FEMA defines community lifelines as the following:

- The most fundamental services in the community that, when stabilized, enable all other aspects of society to function.
- The integrated network of assets, services, and capabilities that provide lifeline services are used day-to-day to support the recurring needs of the community and enable all other aspects of society to function.
- When disrupted, decisive intervention (e.g., rapid re-establishment or employment of contingency response solutions) is required to stabilize the incident.

The specific Community Lifelines reviewed with the HMPC were as follows:



Safety and Security - Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety



Food, Hydration, Shelter - Food, Hydration, Shelter, Agriculture



Health and Medical - Medical Care, Public Health, Patient Movement, Medical Supply Chain, Fatality Management



Energy - Power Grid, Fuel



Communications - Infrastructure, Responder Communications, Alerts Warnings and Messages, Finance, 911 and Dispatch



Transportation - Highway/Roadway/Motor Vehicle, Mass Transit, Railway, Aviation, Maritime



Hazardous Materials - Facilities, HAZMAT, Pollutants, Contaminants



Water Systems - Potable Water Infrastructure, Wastewater Management

In addition to external stakeholders, the HMPC included City of Manhattan Beach staff members, representing a diverse cross-section of departments and responsibilities. Members of the HMPC represented the following City departments and divisions:

- City Council
- City Manager
- Emergency Services
- Engineering
- Finance
- Human Resources
- Parks & Recreation
- Public Works
- Public Information
- Management Services
- Community Development
- Fire Department
- Information Technology
- Police Department

Table 3 HMPC Planning Team Members, identifies both the Project Management Team and HMPC members, along with their roles in plan development.

Table 3: Hazard Mitigation Planning Committee Members

Name	Title/Role	Organization	Community Lifeline	HMPC Role
Project Management Team				
Amanda MacLennan	Emergency Preparedness Administrator	City of Manhattan Beach, Fire Department	Safety and Security, Communications	Primary Point of Contact for HMPC. Organization of HMPC and planning meetings, development of and participation in community outreach and engagement, hazard identification, capabilities assessment, mitigation actions and prioritization, and plan coordination/review.
Alexandria Latragna	Communications and Civic Engagement Manager	City of Manhattan Beach, Management Services	Communications	Organization of HMPC and planning meetings, development of and participation in community outreach and engagement, hazard identification, capabilities assessment, mitigation actions and prioritization, and plan coordination/review.
HMPC Planning Team				
Bonnie Shrewsbury	GIS Analyst	City of Manhattan Beach, Information Technology	Communications	Project goals and objectives identification, hazard identification and prioritization, capabilities assessment, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Brandy Villanueva	Disaster Management	Disaster Management	Safety and Security	Project goals and objectives

Name	Title/Role	Organization	Community Lifeline	HMPC Role
	Area Coordinator	Area G		identification, hazard identification and prioritization, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Briza Morales	Risk Manager	City of Manhattan Beach, Human Resources	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, capabilities assessment, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Carol Patterson*	Community Volunteer, Art Experience	Cultural Arts Commission	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Charlotte Lesser*	Director	Neighborhood Watch	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Daniel Pankau	Environmental Programs Administrator	City of Manhattan Beach, Community Development	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, capabilities assessment, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
David Archer	President/CEO	Manhattan Beach Chamber of Commerce	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, capabilities assessment,

Name	Title/Role	Organization	Community Lifeline	HMPC Role
				vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Douglas Barclay*	Pastor	Trinity Lutheran	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Erik Zandvliet	Traffic Engineer	City of Manhattan Beach, Community Development	Transportation	Project goals and objectives identification, hazard identification and prioritization, capabilities assessment, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Frank Chiella*	MBCERTA President + Map Your Neighborhood	MBCERTA + Map Your Neighborhood	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Gilbert Gamboa	Principal Civil Engineer	City of Manhattan Beach, Engineering	Energy	Project goals and objectives identification, hazard identification and prioritization, capabilities assessment, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Jason Sandoval	Code Enforcement Officer	City of Manhattan Beach, Community Development	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, capabilities assessment, vulnerability summary, mitigation strategy discussion,

Name	Title/Role	Organization	Community Lifeline	HMPC Role
Jeffrey Jacobs*	External Relations Coordinator	American Red Cross	Safety and Security	draft LHMP review/comment. Project goals and objectives identification, hazard identification and prioritization, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Jesus Sandoval*	Senior Recreation Supervisor	City of Manhattan Beach, Parks and Recreation	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, capabilities assessment, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Kevin Bass	Fire Marshal	City of Manhattan Beach, Fire Department	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, capabilities assessment, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Leobardo Barrera*	Director of Workplace Safety and Risk Management	El Camino College	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Mirna Puma	Police Office Assistant	City of Manhattan Beach, Police Department	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, capabilities assessment, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.

Name	Title/Role	Organization	Community Lifeline	HMPC Role
Robert (Bob) Hodges	Business Manager	American Martrys Catholic Church	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Ryan Heise	Building Official	City of Manhattan Beach Community Development Department	Food, Water, Shelter	Project goals and objectives identification, hazard identification and prioritization, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Tammy Hierlihy	Water Policy & Resources Analyst II	West Basin Municipal Water District	Food, Water, Shelter	Project goals and objectives identification, hazard identification and prioritization, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Vincente Miles*	Emergency Services Manager	Harbor Regional Center	Food, Water, Shelter	Project goals and objectives identification, hazard identification and prioritization, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.
Wayne Powell	Member at Large	Los Angeles County West Vector Control	Safety and Security	Project goals and objectives identification, hazard identification and prioritization, vulnerability summary, mitigation strategy discussion, draft LHMP review/comment.

Note: *Indicates an HMPC member that provides services to socially vulnerable populations or other “high-risk” populations within the planning area.

2.4 Hazard Mitigation Planning Process

The 2024 City of Manhattan Beach Local Hazard Mitigation Plan was updated following guidance put forth by FEMA in the Local Mitigation Planning Policy Guide which became effective on April 19, 2023. This guidance emphasized the need for a whole community planning approach to include representatives from all sectors of the community with an emphasis on the increased need for vulnerable and underserved population representation. The guidance also highlighted increased emphasis on risk, vulnerability, and resilience assessments, and climate change.

FEMA guidance requires a structured four-phase approach to completing a Hazard Mitigation Plan as follows:

- Planning Process
- Risk Assessment
- Vulnerability and impact assessments for hazards and projects.
- Mitigation Strategy
- Plan Maintenance

Community lifelines serve as the foundation of a community's resilience and ability to withstand and recover from various hazards.

2.4.1 Phase I – Planning Process

FEMA Regulation Checklist: Planning Process	
44 CFR § 201.6(b)(1)	Documentation of the Plan Update Requirements: A3. Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval?
Element	
A3-a	Does the plan document how the public was given the opportunity to be involved in the planning process and how their feedback was included in the plan?

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

Organize to Prepare the Plan

The initiation of the planning process commenced with a meeting held on September 1, 2023, between Constant Associates, the consulting firm engaged for plan development, and the Emergency Preparedness Administrator for the City of Manhattan Beach. The primary objectives of this meeting were to collaboratively formulate the HMPC and conduct targeted outreach to neighborhoods identified as socially vulnerable. Prior to the initial HMPC meeting and throughout the planning process, the City of Manhattan Beach ensured comprehensive stakeholder inclusion, which extended to neighboring jurisdictions. Details of the committee outreach efforts can be found in **Appendix C**.

Constant Associates, the consulting firm hired for this plan update, completed a thorough research effort to gain information for previous occurrences, climate change, plan integrations, local laws and regulatory requirements, and notable areas of potential future impact and probability for committee consideration.

The City of Manhattan Beach recognized the importance of having the highest of participation and access to planning meetings as possible and therefore meetings were held in a hybrid format thereby accessible via Zoom or in person at the City Council Chambers. Accessibility accommodations were also announced to the community to be available as needed. Four meetings were held throughout the planning period on November 28, 2023; December 12, 2023; January 9, 2024; and January 30, 2024. **Appendix C** provides the presentations for each committee meeting which includes the agenda. Outlined below are the discussions and feedback provided by the HMPC during each meeting.

Hazard Mitigation Planning Committee (HMPC) Meetings

Table 4: HMPC Meetings

HMPC Meeting	Discussion Topics
Meeting #1: November 28, 2023	<ul style="list-style-type: none"> • Introduction of members and project team. • Overview of the plan's development process. • Hazard Mitigation education including definitions, regulatory requirements, and grants. • Identification of hazards of prime concern, emphasizing climate change impacts and natural hazards. • Presentation of socially vulnerable neighborhoods and their integration into decision-making. • Review and update of mitigation goals from the 2019 plan. • Preview of next steps including the Vulnerability and Impact Assessments. • Open Public Comment
Meeting #2: December 12, 2023	<ul style="list-style-type: none"> • Presentation of hazards of prime concern as voted by the committee. • Sharing of personal/professional experience survey results. • Definition of community lifelines and assets. • Vulnerability and impact assessment on each hazard of prime concern. • Review and update of projects from the 2019 plan, distinguishing between preparedness and mitigation projects. • Open Public Comment
Meeting #3: January 9, 2024	<ul style="list-style-type: none"> • Briefing on Hazard Mitigation Assistance grant program eligibility. • Revisiting the definition of vulnerable assets. • Completion of vulnerability and impact assessments for hazards of prime concern and identifying mitigation actions. • Open Public Comment
Meeting #4: January 30, 2024	<ul style="list-style-type: none"> • Completion of project prioritization and risk analysis. • Discussion on next steps including public review period, plan adoption and submission to Cal OES and FEMA for review.

HMPC Meeting	Discussion Topics
	<ul style="list-style-type: none"> Open Public Comment

Community Outreach Activities

The City of Manhattan Beach conducted an extensive public outreach campaign to engage the community throughout the planning process. The diverse outreach strategy included the use of print and digital media, in person engagement via community presentations, door-to-door information sharing and flyer distribution in the vulnerable census tract areas, meetings and events, a public survey and an LHMP Public Comment Period. A summary of the comprehensive outreach activities are noted in **Table 5** with specific details located in **Appendix C**.

Table 5: Outreach Activities

Outreach Type	Outreach Activities
Print Media	<ul style="list-style-type: none"> On November 9, 2023, <i>Easy Reader</i>, a local newspaper, announced the update of the local hazard mitigation plan along with how to RSVP to each committee meeting. “What’s Open, What’s Closed” in celebration of Veterans Day included future events which had the first HMPC meeting on November 28, 2023. Beach Reporter, a local newspaper, Manhattan Beach invited residents into the planning update process by inviting them to meetings and the encouragement of participating in the public survey on November 9, 2023. Links and contact information were also provided. LHMP Outreach Flyers with QR codes to access the public survey and inform the public about HMPC meeting were provided in English and Spanish and posted to several businesses in areas with elevated socially vulnerability. LHMP Outreach Flyers provided to Manhattan Beach Unified School District (MBUSD), Beach Cities Health District (BCHD), and The Joslyn Community Center Older Adults Program for dissemination to their constituents which included vulnerable populations. LHMP flyers including the links to QR codes and information on HMPC meetings were disseminated to seniors at The Joslyn Community Center Older Adults Program, and Manhattan Heights Park Community Center in November 2023. The City’s monthly Older Adult Newsletter included an announcement of the LHMP update and HMPC meeting dates in November 2023.

Outreach Type	Outreach Activities
	<ul style="list-style-type: none"> On Monday, March 3, 2024, from 10:00 AM – 12:00 PM: LHMP slide decks were handed out during Amanda's presentation to attendees at the Senior Discussion group at the Older Adult Program in the Joslyn Community Center. On Tuesday, March 19, 2024, MB Farmers' Market, from 11:00 AM – 3:00 PM. LHMP outreach flyers were handed out which included info. on the update as well as how to participate in the LHMP draft review. On Tuesday, March 26, 2024, from 6:30 PM – 7:30 PM at the LA County-MB Library, LHMP update slide decks were presented and handed out, as well as outreach flyers about how to participate in the review of the LHMP draft.
<p>Digital Media</p>	<ul style="list-style-type: none"> On Friday, November 10, 2023 the communications department of Manhattan Beach sent an email blast titled, "What's Manhappenin." This email encouraged residents to participate in meetings, complete surveys, and to stay informed about the process. The City developed a dedicated LHMP website to host all meeting materials, calendar events, announcements and links/QR codes for the public survey and LHMP public review. The Communications Department posted frequently on the City's social media sites with reminders to the community of the four HMPC meetings, the public survey, and the LHMP public review period. The City added all HMPC meeting and engagement opportunities to the City's Website Calendar. The City of Manhattan Beach sent briefing emails to City Council and City Staff to provide information on the LHMP planning process and dedicated website. The City created Facebook Events for the HMPC meetings on the Fire Department & City pages. The four Committee/Community meetings were made available in-person or via Zoom and were recorded and made available after the meetings. A digital Power Point was presented at the Library on March 26, 2023, at 6:30 pm. Other LHMP partners also forwarded LHMP emails to get the community involved. These partners included: MB CERT Association, MBUSD, BCHD. A specific request to send out the LHMP public involvement request to their vulnerable population

Outreach Type	Outreach Activities
<p>In-Person Engagement</p>	<p>was sent to Disability Voices United and Friendship Foundation in November 2023.</p> <ul style="list-style-type: none"> • A presentation was delivered during the Manhattan Beach City Council Meeting on November 7, 2023, to announce the beginning of the LHMP planning process and to promote the public survey and HMPC meetings. • On November 14, 2023, a presentation was delivered at The Joslyn Community Center Older Adults Program to announce the beginning of the LHMP planning process and to promote the public survey and HMPC meetings. • On March 4, 2023, a combined 2-hour presentation and discussion took place at the Manhattan Beach Older Adult Program lunch and learn at the Joslyn Center to promote the LHMP public review period and gather feedback from the older adult population. • The City promoted the LHMP public review while hosting a booth at the Manhattan Beach farmers market. • The City's Emergency Preparedness Administrator walked the most vulnerable census tracts on two occasions to announce the LHMP planning process to local businesses and provided flyers in English and Spanish to disseminate to their customers. • Additional LHMP Update announcements about the meetings, survey, and draft review were presented by the Emergency Preparedness Administrator during the Public Comment portion of a few Council meetings. • The LHMP update status, needs, and next steps was shared at a few of the City of Manhattan Beach Department Heads meetings. • A presentation of the LHMP and information about the public review took place in the evening at the LA County Library-Manhattan Beach Branch on March 26, 2024.
<p>Community Survey</p>	<ul style="list-style-type: none"> • An online public survey was made available for the City of Manhattan Beach residents to complete. The survey was open from November 30, 2023, to January 30, 2024, and had 124 participants. The intent of the survey was to gather information and insights from residents and individuals associated with the City of Manhattan Beach regarding their awareness, concerns, and preparedness related to various natural hazard events. <ul style="list-style-type: none"> ○ The survey was translated into Spanish and promoted through digital and print media translated into Spanish.

Outreach Type	Outreach Activities
LHMP Public Review Period	<ul style="list-style-type: none"> • The LHMP was posted on the City’s website for the public review from March 25 - April 5, 2024. • A survey link was disseminated to the HMPC and the public to capture feedback on the draft LHMP. • The survey information and QR codes were promoted through various outreach events including social media, print flyers, in-person events and presentations, and the e-newsletter.

Equity and Whole Community Approach

The City of Manhattan Beach and the HMPC prioritized equity and engagement of the whole community in the development of the 2024 LHMP update. The City of Manhattan Beach’s approach to integrating socially vulnerable populations into the LHMP planning process demonstrates a commitment to inclusive and comprehensive community engagement. By utilizing a multi-faceted outreach strategy, the city ensured that diverse community voices, especially those from vulnerable sectors, were heard and considered in the hazard mitigation planning. As a means to reach as many members of the community as possible, the City implemented a diverse and comprehensive approach to engage socially vulnerable populations during the LHMP planning process.

Key elements of the equity approach included:

- Providing multiple means for public engagement via hybrid meetings (in-person meetings with a virtual attendance and comment option).
- The availability of all presentations on-line and recorded for persons who may not have been able to attend the live presentations.
- A comprehensive outreach strategy.

The comprehensive outreach strategy also encompassed a wide variety of community engagement methods, including print media, digital media, in-person engagement, community surveys, and a dedicated public review period for the LHMP.

The extensive use of print and digital media ensured that the message reached a broad audience, while the translation of materials into Spanish addressed language barriers. In-person engagements and targeted presentations at venues like The Joslyn Community Center, and Public Library underscored the city’s commitment to accessibility and direct interaction with community members. In addition, outreach was also conducted in partnership with key community institutions like the Manhattan Beach Unified School District, Beach Cities Health District (BCHD), and The Joslyn Community Center, Older Adults Program.

The Older Adult Newsletter provided information about the LHMP updates and meeting schedules specifically targeting the senior community. The LHMP City website and social media accounts posted LHMP flyer announcements in both English and Spanish. Direct emails to stakeholders were sent to those representing vulnerable populations as well as in-person communication and flyers to businesses in vulnerable areas.

Presentations and discussion panels were conducted at City Council meetings, focusing on promoting the LHMP process and gathering input, especially from vulnerable populations and older adults. Participation at local events was conducted to promote the LHMP and engage diverse community members. Outreach events included a booth at the Manhattan Beach Farmers Market frequently attended by seniors and families with young children.

As well, an online survey was made available in both English and Spanish, to gather feedback from residents on their awareness and concerns regarding natural hazards, with 124 participants providing valuable insight.

- ✓ Of the survey respondents, 37% of them were of age 65 and older thereby representing a vulnerable population.

The community survey played a pivotal role in understanding the specific needs and concerns of Manhattan Beach residents regarding hazard mitigation. By providing a platform for feedback and participation, the city fostered a sense of ownership and involvement among residents, ensuring that the LHMP reflects the community's diverse perspectives and needs. These efforts aimed to consider a wide range of perspectives in decision-making. More specific outreach to vulnerable communities can be found in **Appendix C**.

Integrating Existing Information, Policies, Plans and Municipal Code

FEMA Regulation Checklist: Planning Process	
44 CFR § 201.6(b)(3)	Documentation of the Plan Update Requirements: A4. Does the Plan document the review and incorporation of existing plans, studies, reports, and technical information?
Elements	
A4-a	Does the plan document what existing plans, studies, reports and technical information were reviewed for the development of the plan, as well as how they were incorporated into the document?

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

Coordination with other community planning efforts, policies and ordinances was paramount to the success of this plan update. Mitigation planning involves identifying existing policies, tools, and actions that will reduce a community's risk and vulnerability to hazards. The City uses a variety of planning mechanisms such as land development regulations and ordinances to guide growth and development. Integrating existing planning efforts and mitigation policies and action strategies into this plan establishes a credible and comprehensive plan that ties into and supports other community programs.

The table below identifies the existing planning mechanisms, including ordinances, that were referenced by the HMPC and incorporated into the 2024 Hazard Mitigation Plan Update.

Table 6: Existing State/Federal Planning Mechanisms

Existing State/Federal Planning Mechanisms		
Type of Plan	Description	Planning Process/Area of Document Inclusion
California's Fourth Climate Change Assessment	Provides a summary of relevant climate impacts and adaptation solutions	Multiple Plan Sections
CDC Social Vulnerability Index	Analyzes vulnerable populations.	Community Profile
County of Los Angeles Local Coastal Programs	Requires coastal cities and counties to establish coastal resource conservation and development programs.	Hazard profile
FEMA Flood Insurance Rate Maps	Analyzes flood prone areas within the community.	Appendix D
FEMA's National Risk Index	Analyzes natural hazard risk.	Vulnerability Assessment
Global Historical Tsunami Database	Provides information on tsunami hazards and previous events.	Hazard Profiles
Los Angeles County Hazard Mitigation Plan, 2021	Identifies hazards.	Hazard Profiles
NOAA Archives, Storm Events Database	Analyzes weather data and trends.	Hazard Profiles
State Hazard Mitigation Plan	Identifies hazards, assesses vulnerabilities and mitigation strategies.	Hazard Profiles
U.S Census Bureau	Analyzes community demographic data and trends.	Multiple Plan Sections
US Climate Change and Vulnerability Index	Visualizes how drivers of cumulative vulnerability disadvantage communities across the United States. Better understanding of the intersections between growing climate risks and pre-existing, long-term health, social, environmental, and economic conditions is critical to effectively building climate resilience for everyone and deploying targeted adaptation efforts.	Multiple Plan Sections
US Drought Monitor	Defines drought levels and current or previous events.	Multiple Plan Sections

Table 7: City of Manhattan Beach Planning Documents

City of Manhattan Beach Planning Documents		
Type of Plan	Description	Planning Process/Area of Document Inclusion
2017 Local Emergency Operations Plan	Identifies hazard concerns to develop mitigation strategies.	Multiple Plan Sections
Capital Improvement Plan	Maintains and improves vital infrastructure to include the Public Works Department efforts surrounding storm drainage improvement projects.	Mitigation Strategy Section
Climate Ready Manhattan Beach	Under the City's adopted Environmental Work Plan priorities, adopted Strategic Plan goals, and in compliance with state and General Plan mandates, the City is creating a Climate Resiliency Program, called Climate Ready Manhattan Beach (Climate Ready MB).	Multiple Plan Sections
Encroachment Permit	Chapter 7.36: City's certified local coastal program implementation plan.	Community Profile
Environmental Regulations	Chapter 5.80: Protects the health of the Manhattan Beach community and promote environmentally sustainable practices in the City.	Community Profile
Flood Plain Management Regulations	Chapter 9.76 and 9.78: It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by legally enforceable regulations applied uniformly throughout the community to all publicly and privately owned land within special flood hazard areas.	Multiple Plan Sections
General Plan	Land use development.	Community Profile
General Plan	Establishes policies,	Community Profile

City of Manhattan Beach Planning Documents		
Safety Element	programs, goals and objectives to protect the community from risks associated with seismic, geologic, flood, and fire hazards.	
Land Use Maps	Assesses vulnerabilities, development trends, and mitigation strategies.	Community Profile
Local Coastal Program Chapter	Addresses climate change and coastal hazards.	Hazard Profiles
Manhattan Beach Local Hazard Mitigation Plan (2019)	Analyzes previous plan for updates.	Multiple Plan Sections
Repair criteria for unreinforced masonry buildings and structures.	Chapter 9.92.080: Following an event, all damaged buildings determined to be bearing wall buildings constructed of unreinforced masonry shall be repaired and strengthened to fully comply with the requirements of Ordinance No. 1805, Chapter 20 of Title 9 of the Manhattan Beach Municipal Code relating to Earthquake Hazard Reduction in Existing Buildings. Informs which structural assets may benefit from seismic retrofitting.	Hazard Profiles
Sea Level Rise Adaptation Plan	Identifies a variety of adaptation strategies to help Manhattan Beach plan for and address sea level rise, coastal storm flooding, and beach erosion.	Hazard Profiles
Sea Level Rise Risk, Hazards, and Vulnerability Assessment, City of Manhattan Beach, May 2021	Highlights existing conditions and future vulnerability of the City of Manhattan Beach to projected sea level rise, coastal flooding, and erosion. The findings of this Vulnerability Assessment will be used to develop a range of potential adaptation strategies that address the potential future impacts from sea level rise	Hazard Profiles

City of Manhattan Beach Planning Documents		
	and storms with integration in this plan update.	
Wastewater, Water, and Storm Drain Master Plans	Wastewater collection and pumping system, incorporates recent improvements and changes to the City's water infrastructure, Develops a hydrology and hydraulic model to determine the capacity and identify deficiencies of the existing storm drain system for the 10-year, 25-year (i.e. Urban Flood), and Capital Flood (i.e. 50-year) storm events.	Hazard Profiles
Water Conservation	Chapter 7.44: Water conservation measures. Drought restrictions.	Hazard Profiles

These and other documents were reviewed and considered, as appropriate, during the collection of hazard identification, vulnerability assessment, and capability assessment. Data from these plans and ordinances were incorporated into the risk assessment and hazard vulnerability sections of the plan as appropriate. The data was also used in determining the capability of the community in being able to implement certain mitigation strategies.

2.4.2 Phase II – Risk Assessment

Identify the Hazard, Assess the Risk and Vulnerabilities

The committee completed a comprehensive effort to identify/update, document, and profile all hazards that have, or could have, an impact on the community. A more detailed description of the risk assessment process and the results are included in Section 4 Risk and Vulnerability Assessment. Based on the review, this plan addresses the following hazards of concern (presented in alphabetical order; the order of listing does not indicate the hazards relative severity):

The following hazards were chosen by the HMPC:

- Coastal Hazards
- Drought
- Geological Hazards
- Inland Flooding
- Severe Weather

- Fire, Wildland Urban Interface (Wildfire)

Although Hailstorms, Fog, and Thunderstorms were profiles in the previous 2019 LHMP, they were not profiled for the 2024 update due to the lack of previous events and committee discussion of priority. The goal in the discussion was to target hazards that had a higher risk and probability of impacting all assets. The HMPC reviewed the previous occurrence data to lend to future evaluation on probability and risk. Each hazard was discussed to identify which assets were of concern. The result was an HMPC completed risk analysis and vulnerability and impact assessment for all hazards of prime concern.

2.4.3 Phase III – Mitigation Strategy

Set Goals, Assess Capabilities and Review Actions

The HMPC met during meeting #1 to discuss the mitigation goals outlined in the 2019 plan to determine if they are still applicable and if they needed to be updated. The goals can be found in **Section 6**.

A capabilities assessment is a comprehensive review of all the various mitigation capabilities and tools currently available to the City for the mitigation action implementation prescribed in the LHMP. The HMPC identified the technical, financial, and administrative capabilities to implement mitigation actions, as detailed in **Section 6** Capabilities Assessment. The HMPC then reviewed during meeting #2, the mitigation actions in the 2019 plan to determine what actions needed to be removed due to other priorities, what actions were completed and what actions should be moved forward into the 2024 update.

Plan Draft

A complete first draft of the plan was prepared based on information and input collected during the HMPC meetings and surveys. All committee members, agencies, stakeholders, and the public were invited to comment on this draft. Comments received were integrated into the final draft for Cal OES and FEMA Region IX to review and approve.

2.4.4 Phase IV – Plan Maintenance

Plan Adoption and Submittal

This Plan was submitted to Cal OES and FEMA for review. Upon receiving an “Approvable Pending Adoption” notification from FEMA, the Plan was presented to the Manhattan Beach City Council for consideration and approval. Upon approval, a copy of the resolution was placed in Appendix H, City of Manhattan Beach Adoption Resolution.

Plan Maintenance: Implement, Evaluate, and Revise the Plan

Implementation and maintenance of the plan is critical to the overall success of hazard mitigation planning and actions to ensure the LHMP remains a meaningful and actionable document for the community. Plan maintenance procedures, found in **Section 7**, Plan Maintenance, includes the measures the City will take to ensure the continuous long-term implementation of the LHMP. The procedures also include the manner in which the LHMP will be regularly monitored, reported upon, evaluated, and updated to remain a current

planning document.

2.5 What's New in the 2024 Plan

FEMA Regulation Checklist: Plan Update	
44 CFR § 201.6(d)(3)	Documentation of the Plan Update Requirements: E1 & E2. Was the plan revised to reflect changes in development and was the plan revised to reflect changes in priorities and progress in local mitigation efforts?
Elements	
E1-a	Does the plan describe the changes in development that have occurred in hazard-prone areas that have increased or decreased each community's vulnerability since the previous plan was approved? 44 CFR § 201.6(d)(3)
E2-a	Does the Plan describe how it was revised due to changes in community priorities? 44 CFR 201.6(d)(3)
E2-c	Does the Plan describe how jurisdiction integrated the mitigation plan, where appropriate, into other planning mechanisms? 44 CFR 201.6(d)(3)

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

The updated 2024 plan involved a comprehensive review and revision of each section of the 2019 plan including the status of the City in evaluating, monitoring, and implementing the mitigation actions outlined in the 2019 plan. Throughout this process, the following requirements were addressed, and data incorporated into this 2024 plan update process taking into consideration the following:

- Changes in vulnerability due to mitigation action implementation.
- Documentation of new hazards that may arise or were previously overlooked.
- Documentation of NFIP as it pertains to the City of Manhattan Beach.
- Incorporation of new data and studies on hazards and risks.
- Incorporation of new data related to climate change.
- Integration of social vulnerability data and vulnerable population information.
- Integration of changes related to growth and development.
- Integration of new mitigation action recommendations or changes in (project) prioritization.
- Enhancement of public outreach and multi-agency coordination efforts.

These requirements and others, as detailed throughout this LHMP update, were addressed. As part of its 2024 Mitigation Strategy, the City of Manhattan Beach recognized that certain data, if available, would enhance the analyses presented in the risk assessment and utilized in the development of the mitigation strategy. New information and analyses contained throughout this plan update includes the following:

- A new assessment of hazards affecting the OA was completed resulting in the inclusion of additional coastal hazards and the consolidation of geological hazards to include earthquake and landslide.

- The exclusion of non-natural hazards from the previous LHMP (i.e., terrorism and hazardous materials).
- An entire rework of the risk assessment for each identified hazard, including reworking the hazard profile and adding new hazard event occurrences.
- The incorporation of climate change impacts within each hazard area of concern.
- An update of the flood hazard analysis utilizing the 2021 FIRMs.
- Development of an updated critical facility list and a GIS mapping effort of critical facilities for the planning area.
- An enhanced vulnerability assessment which incorporated updated HMPC feedback on community vulnerabilities impacting populations and infrastructure systems.
- Incorporation and analysis of the new 2020 Census data was utilized for this LHMP update.
- An analysis of the incorporation of the 2024 LHMP into other City planning mechanisms.
- An expansion of community and stakeholder engagement efforts that will be conducted during the plan evaluation and maintenance period of the five-year planning cycle.

2.5.1 Climate Change Overview

The objective of this climate change overview section in this plan is to highlight climate change issues that the HMPC considered to ensure mitigation actions that enhance community resilience. Given the recent release of the federal government's National Climate Resilience Framework and the various grant options available through this program, a comprehensive overview of the climate change impacts for the City of Manhattan Beach was developed. This was intended to ensure that, over the next 5-year period covered by this plan, increased attention and awareness are seamlessly integrated into the overall mitigation program. Within the Risk Assessment section, specific risks associated with climate change within the City of Manhattan Beach are outlined. Each hazard listed in this Risk Assessment will include additional summaries detailing climate change impacts, where applicable.

The City of Manhattan Beach has initiated Climate Ready Manhattan Beach (MB) encompassing a Climate Action Plan, Coastal Hazards Chapter, a Sea Level Rise Vulnerability Assessment, and a Sea Level Rise Adaptation Plan. All of these components will be incorporated into the Coastal Hazards section of this Risk Assessment.

Climate change is a long-term alteration in the average weather patterns that define Earth's local, regional, and global climates. These changes manifest a broad range of observed effects synonymous with the term.

The observed changes in the Earth's climate since the mid-20th century are primarily driven by human activities, notably the burning of fossil fuels. This activity increases the levels of

heat-trapping greenhouse in Earth's atmosphere, consequently elevating the Earth's average surface temperature. While natural processes also contribute to climate change, human activities have overwhelmingly surpassed their impact. These natural processes include internal variability such as cyclical ocean patterns like El Niño, La Niña and the Pacific Decadal Oscillation, as well as external forcings like volcanic activity, changes in the Sun's energy output, and variations in Earth's orbit.

Scientists use observations from various sources including the ground, air, and space, coupled with computer models, to monitor and study past, present, and future climate change. Climate data records provide evidence of key indicators of climate change, such as increases in global land and ocean temperature; rising sea levels; ice loss at Earth's poles and in mountain glaciers; changes in frequency and severity of extreme weather events such as hurricanes, heatwaves, wildfires, droughts, floods, and precipitation; as well as alterations in cloud and vegetation cover.

The impacts of climate change on different sectors of society are interrelated. For instance, droughts can adversely affect food production and human health while flooding can lead to disease spread and damage to ecosystems and infrastructure. Additionally, human health issues resulting from climate change can increase mortality, affect food availability, and diminish worker productivity.

California's Fourth Climate Change Assessment, specifically the Los Angeles report (2018), provides detailed insights into future climate change impacts relevant to the City of Manhattan Beach. This comprehensive report, which can be accessed via the provided link <https://www.climateassessment.ca.gov/regions/>, outlines potential climate change impacts and trends, with particular relevance to the region.

Climate Change Initiatives

The City has demonstrated a strong commitment to addressing the impacts of climate and has implemented various initiatives to mitigate climate change and reduce the community's carbon footprint. The initiatives completed within the past five years since the last LHMP was approved in 2019 and are listed in Table 9.

Table 8: Climate Change Initiatives

Climate Change Initiative	Description	Year Completed
Green House Gas Emissions Inventory	An updated greenhouse gas emissions inventory is completed for both city-wide and government emissions.	2019
100% Clean Energy	City Council committed to moving city facilities to 100% clean energy, resulting in a ~40% reduction of City GHG emissions.	2019
Climate Action Adaptation Plan	The City created a Climate Action and Adaptation Plan, highlighting climate action and resiliency strategies.	2020-2022
100% Renewable Energy	In November 2020, City Council voted to power MB with 100% renewable energy for all power customers through Clean Power Alliance, going	2020-2021

Climate Change Initiative	Description	Year Completed
	into effect in October 2021.	
Community Engagement	From February through June of 2021, the City held workshops and focus groups to gain valuable feedback from a diverse array of stakeholder contacts. Stakeholder input was then used to inform City documents and plans.	2021

In addition to the above climate change initiatives the City of Manhattan Beach has been recognized for several awards for excellence in climate change preparedness and mitigation activities. These awards include the following:

Table 9: Climate Change Awards/Recognition

Climate Change Awards/Recognition	Year Awarded
The City of Manhattan Beach received SolSmart Special Recognition for Demonstrating Solar Excellence in March 2019. This award recognized communities that had taken key steps to address local barriers to solar energy and foster the growth of mature local solar markets. In addition to achieving GOLD Designation, Manhattan Beach was presented with a Special Recognition Award in the Inspection category.	2019
In December of 2020, Manhattan Beach won a Climate Protection Award for small cities from the U.S. Conference of Mayors. The award recognized the recent commitment to 100% renewable energy through CPA and the launch of the Climate Ready MB program.	2020
Manhattan Beach became the first city to receive certification as a "Blue City" through the non-profit organization Project O. Cities became eligible for demonstrating excellence in waste minimization; climate protection and community resilience; water quality and efficiency; and healthy ecosystems.	2021
The City of Manhattan Beach received an award from the Institute of Local Governments (ILG) for Leadership in Climate Resilience and Adaptation. The City was recognized for the implementation of cutting-edge climate vulnerability studies and plans, while additionally taking action to reduce greenhouse gas (GHG) emissions.	2021
The City of Manhattan Beach was awarded the Mitigation Badge and Adaptation Badge by the Global Covenant of Mayors, which recognized the City's efforts to address greenhouse gas emissions and climate change.	2022

Manhattan Beach is also a member of the Los Angeles Regional Collaborative for Climate Action and Sustainability (LARC). LARC coordinates climate resiliency efforts with land use, transportation, infrastructure, energy, water, public health, emergency response, and resource management partners. Multiple strategies have been outlined to reduce the

impacts from climate change and documented into a framework that can be found here <https://www.laregionalcollaborative.com/framework>.

2.5.2 Progress on Local Mitigation Efforts

There was success in the implementation of the mitigation actions as defined in the 2019 planning process, hence the HMPC reassessed the need for those actions, looked at new actions and provided an explanation as to the methodology. Details of 2019 projects are included in **Section 6**, Mitigation Strategy. Some of the successes noted from the previous plan update of planning practices that worked well included:

- **Completion of the Sea Level Rise Vulnerability Assessment:** This comprehensive evaluation is a crucial step forward in understanding the specific risks posed by rising sea levels to the city's coastal communities and infrastructure. By meticulously analyzing the potential impacts, the city gained invaluable insights that are vital for strategic planning and implementing effective mitigation strategies. This assessment not only highlighted the areas at greatest risk but also serves as a foundational document for engaging with community stakeholders, securing funding, and prioritizing future mitigation projects. It reflects the city's proactive approach to climate adaptation and its commitment to safeguarding its residents and assets against the growing threat of sea-level rise.
- **Progress in the Dune Restoration Project in Manhattan Beach:** The initiation and completion of the first phase of the Dune Restoration project underscores the city's dedication to enhancing coastal resilience. Dunes are natural barriers that play a critical role in protecting coastal areas from erosion and storm surges. By restoring these vital ecosystems, the city is not only enhancing the ecological integrity of the coastal dune systems but also bolstering the natural defense mechanisms against the impacts of climate change. This project demonstrates the city's holistic approach to hazard mitigation, integrating environmental conservation with disaster risk reduction. The restoration efforts contribute to biodiversity, provide valuable habitats for local wildlife, and offer educational and recreational opportunities for the community, all while building a more resilient coastline.

SECTION 3: COMMUNITY PROFILE

3.1 History and Location

The City of Manhattan Beach, located in southwestern Los Angeles County along the Pacific coast, covers an area of 3.88 square miles with elevations ranging from sea level to 245 feet. The geography includes both hills and flat lands, bordered by Hermosa Beach, Redondo Beach, Hawthorne, and El Segundo. The city's location within California and Los Angeles County, along with its boundaries, are detailed in the plan's figures.

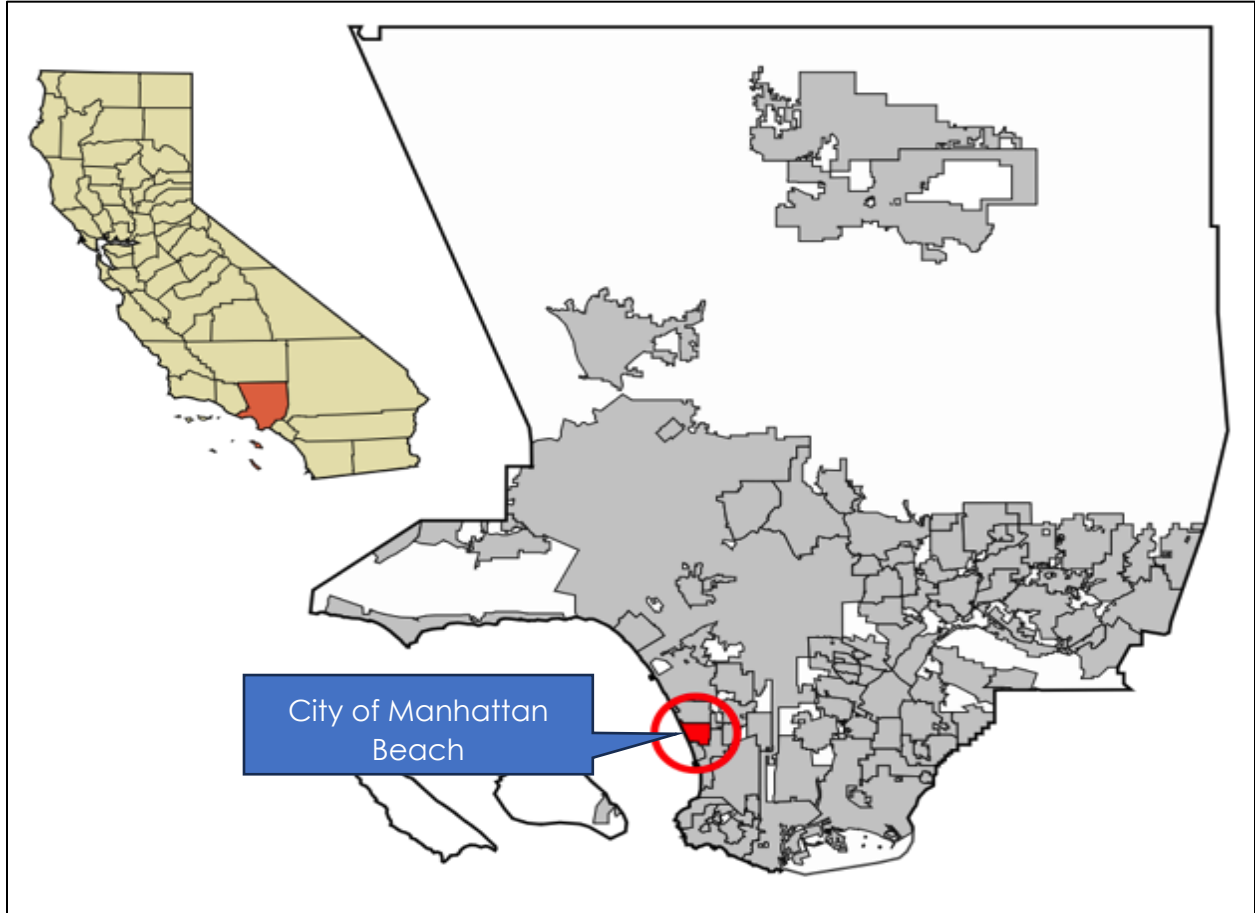
Historically, the land that would become Manhattan Beach was part of Rancho Sausal Redondo and Rancho Aguaje de la Centinela, acquired in 1863 by Scottish immigrant Sir Robert Burnett for \$33,000. By 1885, Daniel Freeman, a Canadian who had been leasing the land, purchased it for \$140,000, marking the start of agricultural development in the area.

Manhattan Beach is known as the "Pearl of the South Bay", founded in 1912.

Manhattan Beach's northern section was significantly influenced by landowner George H. Peck. The city's name, selected through a coin flip, originated from Stewart Merrill's suggestion, inspired by New York City's borough of Manhattan, with "Beach" added in 1927 to reflect its coastal character.

The transformation of Manhattan Beach from a landscape of sand dunes to a developed city occurred during the 1920s and 1930s. Builders flattened the dunes for construction, and the excess sand contributed to significant projects, including the enhancement of Waikiki Beach in Hawaii, the construction of the Los Angeles Coliseum, and parts of the Pacific Coast Highway. This historical evolution underpins the city's current hazard mitigation considerations by illustrating the significant alterations to its natural landscape and the foundation of its urban development.

Figure 1: General Location of Manhattan Beach within the state of California and the County of Los Angeles



Source: City of Los Angeles General Plan

Figure 2: General boundaries of Manhattan Beach



Source: City of Manhattan Beach General Plan

3.2 Coastal Features

Manhattan Beach's 2.1-mile shoreline extends from 45th Street to 1st Street. The beach is 300 to over 400 feet wide in places; however, it has not always been so wide. In 1938, Dockweiler Beach was nourished with approximately 1.8 million cubic yards of sand from the construction of the Hyperion Sewage Treatment Plant on sand dunes. Multiple beach nourishments followed, adding over 30 million cubic yards of sand to upcoast beaches, including Dockweiler Beach, Venice Beach, and El Segundo. Sand nourishment of upcoast beaches combined with a net southward sediment transport caused by waves and currents towards Manhattan Beach deposited enough sand to widen the beach by

approximately 250 feet from the 1940s to the 1970s.

The construction of numerous breakwaters, groins, and jetties in Santa Monica Bay has reduced sediment transport. Specifically, the groin at El Segundo Marine Terminal reduces sediment transport southward towards Manhattan Beach, limiting deposition on the beach. But King Harbor at Redondo Beach, south of Manhattan Beach, limits sediment transport from leaving the city's shoreline, where it would otherwise be lost to the Redondo Submarine Canyon. This allows Manhattan Beach to retain sand on the beach. Today, Manhattan Beach's coastline is largely urbanized, developed by residential and commercial properties. Much of this development is located on what were once large sand dunes.

There are some sand dunes remaining, including at Sand Dune Park at the northern end of Manhattan Beach, and planning for the restoration of dunes north and south of Bruce's Beach with Los Angeles County Beaches and Harbors and The Bay Foundation will help improve this habitat. Other habitats include sandy beaches, which support unique ecological communities, including invertebrate communities, shorebirds, and pinnipeds, and provides essential ecosystem functions like food webs prey for birds and fish. Two species of concern use the sandy beach: The California Grunion uses the beach for spawning and the Western Snowy Plover overwinters at the beach (Ryan et al. 2014).

Other important coastal features include the 928-foot-long Manhattan Beach Pier (Pier). The Pier was built in 1920 and is a state historic landmark, as it is the oldest concrete pier on the West Coast (Manhattan Beach Historical Society). Manhattan Beach coastal amenities also include the Marvin Braude Bike Trail, The Strand pedestrian walkway, parking, restrooms, lifeguard towers, beach volleyball courts, stormwater outfalls, and concession stands.

3.3 Climate

Temperatures in the City of Manhattan Beach vary from around 49 degrees in the winter months to 75 degrees in the summer months. However, the temperatures can vary over a wide range, particularly when the Santa Ana winds blow, bringing higher temperatures, very low humidity, and strong winds. (Source: CityTownInfo.com). Rainfall in the region averages 13.1 inches per year. But the term "average" means very little in Los Angeles County as the annual rainfall during this time has ranged from only 4.35 inches in 2001-2002 to 38.2 inches in 1883-1884. (Los Angeles County).

Furthermore, actual rainfall in the Southern California region tends to fall in large amounts during sporadic and often heavy storms rather than consistently over storms at somewhat regular intervals. As the metropolitan basin is largely built out, water originating in higher elevation communities can have a sudden impact on adjoining communities that have a lower elevation.

The City of Manhattan Beach is already addressing climate change issues especially when it comes to coastal hazards. This plan is written to ensure consistency with these efforts especially as it pertains to sea level rise. Additional information, where applicable, is added as it refers to the Climate Ready Manhattan Beach initiative.

3.4 Local Government

The City of Manhattan Beach is governed by a five-member City Council. City Council members are elected every four years. The office of the Mayor of Manhattan Beach rotates every nine and a half months among the members of the City Council, so that each City Council member serves one term as Mayor. The City Manager is appointed by the City Council. An elected City Treasurer serves a four-year term.

The Beach Cities Health District provides health and wellness services to the residents of Hermosa Beach, Manhattan Beach, and Redondo Beach. The voters of the three beach cities elect the five-member Board of Directors to 4-year terms. One of 76 California Health Districts, it was created in 1955 as South Bay Hospital and took on its current name in 1993.

3.5 Demographics

The City of Manhattan Beach Census Report (2022) reflects a community actively adapting and growing. As of July 1, 2022, the estimated population stands at 34,137, showing a slight decrease of 3.8% from the 2020 Census count of 35,506. This change underscores the dynamic nature of the city's demographics over recent years.

Age and gender demographics reveal a diverse population with 4.9% under 5 years, 27.6% under 18 years, and 15.7% aged 65 and over, highlighting a broad age range. Women represent 50.7% of the population, indicating a slightly higher female presence in the community.

Racial composition is predominantly White at 74.8%, followed by Asian residents at 14.7%, showcasing the city's multicultural fabric. Hispanic or Latino residents make up 7.6% of the population, with those identifying as White alone, not Hispanic or Latino, at 71.3%.

Veterans are an integral part of the community, numbering 1,338, and foreign-born residents constitute 13.5% of the population, reflecting the city's appeal to people from diverse backgrounds.

Housing data points to a strong property market with a high owner-occupied housing unit rate of 67.8% and median housing values exceeding \$2,000,000. The average household size is 2.65, with 90.0% of residents living in the same house as the previous year, indicating stability in residential patterns.

Educationally, Manhattan Beach residents are highly qualified, with 98.5% having graduated high school and 77.9% holding a bachelor's degree or higher. This educational attainment supports a skilled workforce and a vibrant local economy, evidenced by significant sales in accommodation, food services, health care, social assistance, and retail.

Manhattan Beach has a local economy that is diversified and tends to be more resilient allowing the community to respond quickly to fiscal and structural changes in the regional economy. Manhattan Beach has several core commercial areas: Downtown, North End/El Porto, Manhattan Village, Rosecrans Avenue, and Sepulveda Boulevard. Each area serves specific functions within the community and contributes to the diversity of services city residents and visitors enjoy. Economic development efforts must focus on maintaining and enhancing the diversity and vitality of city commercial areas. The economy is robust, with a median household income of \$169,586 and a per capita income of \$99,805. Despite this

wealth, 3.1% of the population lives in poverty, underscoring the ongoing challenges some community members face.

Geographically, the city is densely populated, with 9,025.4 people per square mile, a slight increase from the 2010 density. The land area has remained nearly constant at approximately 3.93 square miles.¹ Table 3 includes the latest 2022 Census data for the City of Manhattan Beach.

Table 10: Demographics, City of Manhattan Beach

Population		Total
Population Estimates, July 1, 2022, (V2022)		34,137
Population estimates base, April 1, 2020, (V2022)		35,503
Population, percent change - April 1, 2020 (estimates base) to July 1, 2022, (V2022)		-3.8%
Population, Census, April 1, 2020		35,506
Population, Census, April 1, 2010		35,135
Age and Sex		
Persons under 5 years, percent		4.9%
Persons under 18 years, percent		27.6%
Persons 65 years and over, percent		15.7%
Female persons, percent		50.7%
Race and Hispanic Origin		
White alone, percent		74.8%
Black or African American alone, percent		0.5%
American Indian and Alaska Native alone, percent		0.3%
Asian alone, percent		14.7%
Native Hawaiian and Other Pacific Islander alone, percent		0.1%
Two or More Races, percent		8.0%
Hispanic or Latino, percent		7.6%
White alone, not Hispanic or Latino, percent		71.3%
Population Characteristics		

¹ <https://www.census.gov/>

Veterans, 2017-2021	1,338
Foreign born persons, percent, 2017-2021	13.5%
Housing	
Housing units, July 1, 2022, (V2022)	Not provided.
Owner-occupied housing unit rate, 2017-2021	67.8%
Median value of owner-occupied housing units, 2017-2021	\$2,000,000+
Median selected monthly owner costs -with a mortgage, 2017-2021	\$4,000+
Median selected monthly owner costs -without a mortgage, 2017-2021	\$982
Median gross rent, 2017-2021	\$2,893
Building permits, 2022	Not provided.
Families & Living Arrangements	
Households, 2017-2021	13,422
Persons per household, 2017-2021	2.65
Living in same house 1 year ago, percent of persons age 1 year+, 2017-2021	90.0%
Language other than English spoken at home, percent of persons age 5 years+, 2017-2021	14.8%
Computer and Internet Use	
Households with a computer, percent, 2017-2021	98.2%
Education	
High school graduate or higher, percent of persons age 25 years+, 2017-2021	98.5%
Bachelor's degree or higher, percent of persons age 25 years+, 2017-2021	77.9%
Health	
With a disability, under age 65 years, percent, 2017-2021	3.1%
Persons without health insurance, under age 65 years, percent	2.1%

Economy	
In civilian labor force, total, percent of population age 16 years+, 2017-2021	62.5%
In civilian labor force, female, percent of population age 16 years+, 2017-2021	52.3%
Total accommodation and food services sales, 2017 (\$1,000)	319,256
Total health care and social assistance receipts/revenue, 2017 (\$1,000)	221,688
Total transportation and warehousing receipts/revenue, 2017 (\$1,000)	5,636
Total retail sales, 2017 (\$1,000)	777,351
Total retail sales per capita, 2017	\$21,916
Transportation	
Mean travel time to work (minutes), workers age 16 years+, 2017-2021	31.6
Income & Poverty	
Median household income (in 2021 dollars), 2017-2021	\$169,586
Per capita income in past 12 months (in 2021 dollars), 2017-2021	\$99,805
Persons in poverty, percent	3.1%
Businesses	
Total employer establishments, 2021	Not provided.
Total employment, 2021	Not provided
Total annual payroll, 2021 (\$1,000)	Not provided
Total employment, percent change, 2020-2021	Not provided
Total non-employer establishments, 2020	Not provided
All employer firms, Reference year 2017	1,630
Men-owned employer firms, Reference year 2017	970
Women-owned employer firms, Reference year 2017	365

Minority-owned employer firms, Reference year 2017	295
Nonminority-owned employer firms, Reference year 2017	1,140
Veteran-owned employer firms, Reference year 2017	115
Nonveteran-owned employer firms, Reference year 2017	1,339
Geography	
Population per square mile, 2020	9,025.4
Population per square mile, 2010	8,923.8
Land area in square miles, 2020	3.93
Land area in square miles, 2010	3.94

3.6 Socially Vulnerable Populations

The inclusion and incorporation of Socially Vulnerable Populations (SVP) into the hazard mitigation planning process represents a recent addition mandated by the updated Local Mitigation Planning Policy, effective as of April 2023, by FEMA. This new section of LHMP aims to identify vulnerable populations within the planning area, along with identifying traits that render individuals more susceptible to both natural and human-caused hazards.

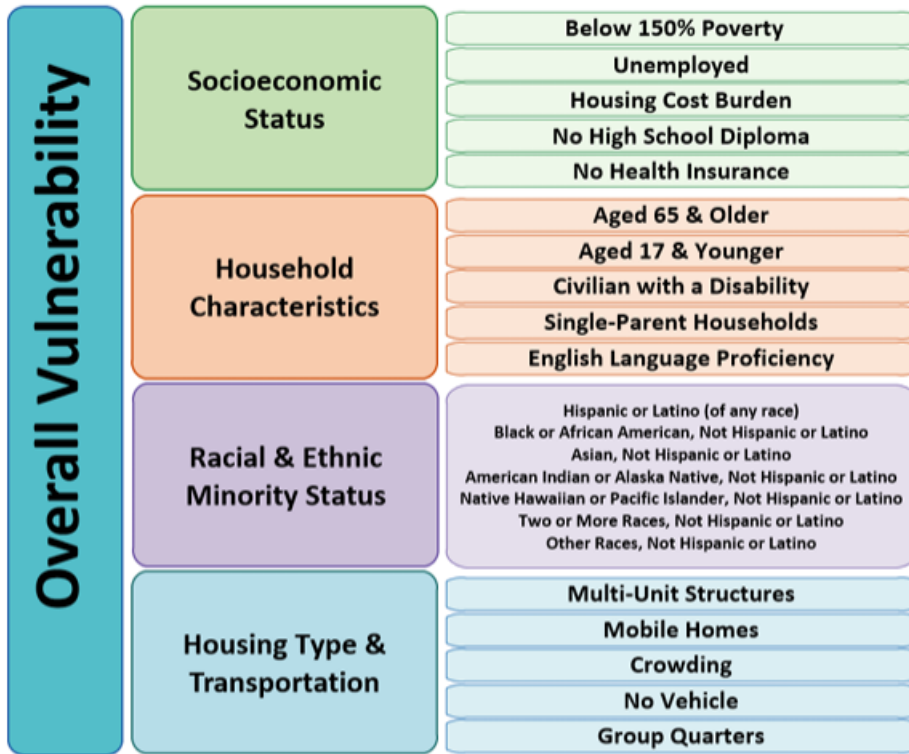
Social vulnerability, as defined by the Center for Disease Control and Prevention, pertains to the characteristics of a person or group that impact their ability and capacity to prepare for, respond to, cope with, resist, and recover from the effects of a distinct and identifiable disaster, whether in the realm of nature or society. Numerous socioeconomic factors and other attributes influence social vulnerability, as delineated in **Figure 3** provided below.

Per FEMA, social vulnerability is the susceptibility of social groups to the adverse impacts of natural hazards, including disproportionate death, injury, loss, or disruption of livelihood.

Social vulnerability considerations were included in this plan update to identify areas across the planning area that might be more vulnerable to hazard impacts. The City EOP will also incorporate this information to improve preparedness and response efforts in socially vulnerable neighborhoods.

The Center for Disease Control and Prevention (CDC) has developed a Social Vulnerability Index (SVI) to measure the resilience of communities when confronted by external stresses such as natural or human-caused disasters or disease outbreaks. The SVI is broken down to the census tract levels and provides insight into vulnerable populations to assist emergency planners and public health officials in identifying communities more likely to require additional support before, during, and after a hazardous event. The SVI index combines four main themes of vulnerability, which are, in turn, broken down into subcategories for 16 vulnerability factors. The themes are outlined in the below **Figure 3**.

Figure 3: Overall Vulnerability



Source: CDC Social Vulnerability Index

3.6.1 Social Vulnerability Factors

Individual vulnerability factors refer to characteristics or circumstances of individuals that make them more susceptible to negative outcomes or impacts from various hazards or stressors. These factors can vary widely depending on the specific context and the type of hazard being considered. Some common types of individual vulnerability factors include:

- Age
- Access to housing
- Socio-economic status
- Health status and access to healthcare
- Employment status
- Language and communication barriers
- Cultural background
- Mobility and transportation

The specific social vulnerability factors for Manhattan Beach are listed in **Table 11** below.

Table 11: Manhattan Beach Social Vulnerability Factors

Manhattan Beach Social Vulnerability Factors	CENSUS TRACTS									
	6202.01	6203.01	6203.03	6303.05	6204	6208.01	6208.02	6209.01	6209.04	Total
Total Square Miles	.09	0.40	.45	.49	.99	.46	.50	.34	.22	3.93
Total Population (as of 2020)	1643	4403	4819	5848	5309	4167	3198	2921	2756	35064
Housing Units Estimated	976	1620	1936	3081	2073	1452	1415	1131	1268	14952
Households	903	1542	1790	2362	1936	1396	1275	1081	1028	13313
Persons below 150% Poverty	159	51	293	188	84	384	156	197	160	1672
Age 16+ unemployed	33	51	133	185	204	167	0	7	63	843
Age 25+ w/ no HS Diploma	5	19	40	40	52	200	31	27	0	414
Housing cost-burdened occupied housing units with annual income less than \$75,000 (30%+ of income spent on housing costs)	182	215	248	312	296	240	148	95	89	1825
Uninsured in the total civilian noninstitutionalized population estimate	6	84	14	89	148	119	30	41	12	543
Unemployment rate	2.9	2.7	6.1	6.2	8.5	8.7	0	0.5	5.2	4.27
Percentage of Persons below 150% poverty	9.7	1.2	6.1	3.2	1.6	9.3	4.9	6.7	5.9	5.4
Percentage of housing cost-burdened occupied housing units with annual income less than \$75,000 (30%+ of income spent on housing costs)	20.2	13.9	13.9	13.2	15.3	17.2	11.6	8.8	8.7	13.64
Percentage uninsured in the total civilian noninstitutionalized population	0.4	1.9	0.3	1.5	2.8	2.9	0.9	1.4	0.4	1.39
Percentage of persons w/ no HS diploma 25 yo+	0.4	0.7	1.2	1	1.4	7.5	1.2	1.3	0	1.63
Aged 65+ & older	160	748	819	787	962	596	389	623	491	5515
Age 17 & younger	259	1433	1437	1571	1445	1203	615	796	779	9540
Civilian noninstitutionalized population with a disability	54	195	233	356	337	324	100	231	154	1984
Single Parent HH w/ children under 18	23	111	127	38	124	102	10	29	46	610
Percentage of person aged 65+	9.7	17	17	13.5	18.1	14.3	12.2	21.3	15.6	15.41

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

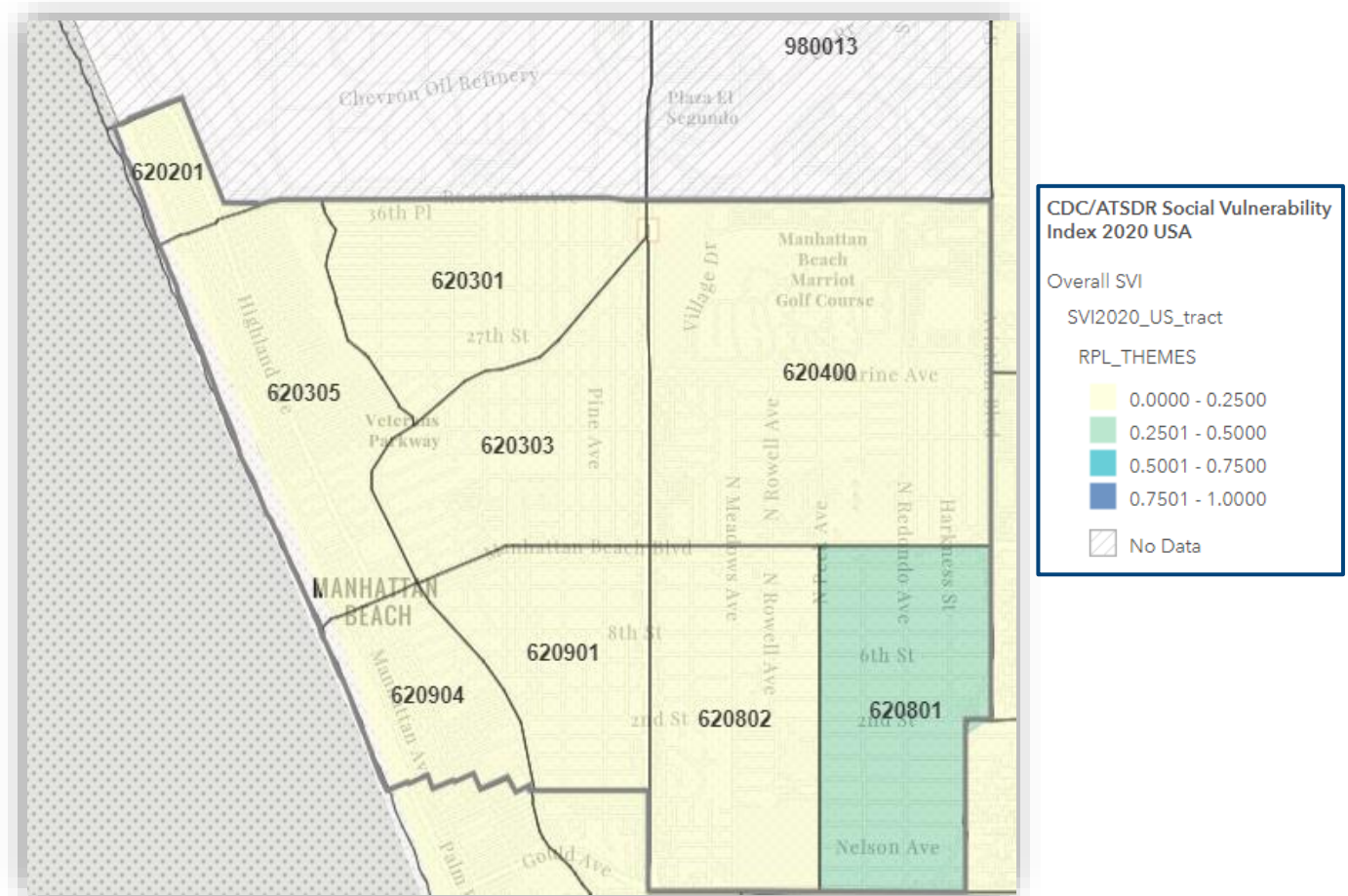
Manhattan Beach Social Vulnerability Factors	CENSUS TRACTS									
	6202.01	6203.01	6203.03	6303.05	6204	6208.01	6208.02	6209.01	6209.04	Total
Percentage of persons 17 or younger	15.8	32.5	29.8	26.9	27.2	28.9	19.2	27.3	28.3	26.21
Percentage of civilian noninstitutionalized population with a disability	3.3	4.4	4.8	6.1	6.3	7.8	3.1	7.9	5.6	5.48
Percentage of single parent households with children under 18	2.5	7.2	7.1	1.6	6.4	7.3	0.8	2.7	4.5	4.46
Minority (all persons except white, non-Hispanic)	220	896	1014	1535	2502	1667	846	970	429	10079
Persons (age 5+) who speak English "less than well"	3	8	8	29	22	43	0	19	0	132
Percentage minority (all persons except white, non-Hispanic)	13.4	20.3	21	26.2	47.1	40	26.5	33.2	15.6	27.03
Percentage of persons (age 5+) who speak English "less than well"	0.2	0.2	0.2	0.5	0.4	1.1	0	0.7	0	.37
Housing in structures with 10 or more units	74	75	117	74	116	84	149	5	39	733
Mobile Homes	0	38	28	0	0	0	0	0	0	66
At Household level (occupied housing units) more people than rooms	0	10	16	0	39	21	22	0	14	122
Households w/ no vehicle	9	39	29	66	43	0	48	24	6	264
Persons in Group Quarters	0	0	7	0	0	8	11	0	0	26
Percentage of housing in structures with 10 or more units	7.5	4.6	6	2.4	5.6	5.8	10.5	0.4	3.1	5.11
Percentage of mobile homes	0	2.3	1.4	0	0	0	0	0	0	0.41
Percentage of occupied housing units with more people than rooms	0	0.6	0.9	0	2	1.5	1.7	0	1.4	0.90
Percentage of households with no vehicle available	1	2.5	1.6	2.8	2.2	0	3.8	2.2	0.6	1.86
Percentage of persons in group quarters	0	0	0.1	0	0	0.2	0.3	0	0	0.07

3.6.2 Social Vulnerability Determination

The HMPC utilized the CDCs Social Vulnerability Index to evaluate the presence of socially vulnerable populations. This index is commonly utilized in federal grant evaluations and decision-making, including FEMA hazard mitigation grants. The City of Manhattan Beach does not contain any disadvantaged communities as defined by SB 535 and CalEnviroScreen, nor any low-income communities as defined by AB1550. However, the map noted below in **Figure 4**, as well as local feedback and knowledge from the City HMPC, further identified vulnerable populations within the planning area. Highlighted in light green below, Census Tract 620801, was identified as having the highest level of potential social vulnerability within the City of Manhattan Beach and therefore targeted for outreach by the City.

Within this Census Tract 384 households were reported to be living below poverty with an 8.7% unemployment rate and 17.2% of households identified as cost-burdened with annual income less than \$75,000 (30% of income spent on housing costs). The population identified with a disability was 7.8% and 40% minority households with 200 identified as 25+ with no high school diploma.

Figure 4: Social Vulnerability Index Map



Source: City of Manhattan Beach LHMP: GIS Project Map, CDC/ATSDR Social Vulnerability Index 2020 USA

The HMPC relied on CDC SVI data, reporting the following categories and groups as influencing the higher vulnerability determination in Census Tract 620801:

- Persons living in poverty
- Cost-burdened households (households with annual income below \$75,000 spending 30 percent or more of income toward housing costs).
- Persons with a disability
- Minority households
- Age 25+ with no high school diploma

After understanding the data behind the high vulnerability determination for Census Tract 620801, the HMPC worked to incorporate stakeholders into the planning process that represent or serve socially vulnerable groups, including:

- Two separate occasions of Door-to-Door distribution of LHMP Informational Flyers and Committee Meeting Invitations (both in English and Spanish) were conducted at the following locations within the vulnerable Census Tract 620801 area:
 - Manhattan Smoke Shop
 - The Hanger Inn
 - Valentino's Pizza
 - Suds & Duds Coin Laundry, Inc.
 - Aviation Liquor & Convenience Store
 - Manhattan Beach Community Church
 - Montessori School Manhattan Beach
 - Bloom Preschool
 - Cookie Cutters – Haircuts for Kids
 - Arunluck Thai Massage
 - MB Nails & Spa
 - Verizon
 - Ameci Pizza Pasta Kitchen

More information can be found in [Appendix C: Community Outreach](#) on the completed Vulnerable Community Outreach.

Collective feedback from these stakeholders and the HMPC regarding socially vulnerable populations was included in each hazard profile which supported the development of focused mitigation actions related to vulnerable communities and individuals.

3.7 Land Use and Existing Development

The General Plan of the City of Manhattan Beach provides a framework for the growth and development of the City. This Plan is one of the City's most important tools in addressing environmental challenges including air quality, growth management, conservation of natural resources, clean water and open spaces. Since its beginnings as a city in 1912, Manhattan Beach has attracted many to the sandy shoreline, the temperate climate and small-town character is a jewel of Southern California. Maintaining the features that define the city requires forward thinking and planning, with particular emphasis on the City's neighborhoods, business districts, parks, schools, and streets. The Manhattan Beach General Plan identifies the community's vision for the collective future of the community.

State of California statutes establish requirements and minimum content of a General Plan

(Government Code Section 65350 to 65590). With the incorporation of Manhattan Beach in 1912, the city's first planning commission was formed in 1923. Since that time a Local Planning Commission has developed and adopted the City's General Plan. The City Council adopted the City's General Plan on December 2, 2003 (Resolution No. 5872) and subsequently, in 2007, a new zoning ordinance. The last major section adopted was the Housing Element of the General plan, adopted by the City Council on January 16, 2014, and certified and implemented on February 4, 2014. The City's land distribution is highlighted in **Table 12**.

The City's General Plan outlines the land use strategy and targets for use well into the future. There are chapters in this plan identifying elements within the community which include: 1) Land Use Element, 2) Infrastructure Element, 3) Housing Element, 4) Community Safety Element, and 5) Noise Element.

3.8 Land Use Designations

Land uses within the planning area have not changed significantly since the last LHMP update of 2019. According to the Manhattan Beach General Plan, the city encompasses land use designations for 1) Residential, 2) Commercial, 3) Industrial, 4) Public, and Open Space uses. Additionally, the plan introduces mixed commercial/residential uses at selected locations within the city, continuing the city's current land use patterns without proposing substantial changes.

The City is highly urbanized with limited vacant land available for future new development. Manhattan Beach is predominantly a residential community with single-family homes comprising the majority of the housing stock. Commercial use represents the second most common use and are concentrated on the City's main arterials -Sepulveda Boulevard, Manhattan Beach Boulevard, Rosecrans Avenue, Aviation Boulevard, and Artesia Boulevard and in the Downtown and North End areas. Parks and open space are the third most common use, followed by public facilities. The following information on land use designations referenced from the General Plan 2003 data was confirmed with the City's Community Development Department as accurate for the update of this LHMP.

Table 12: Land Use Designations – General Plan (2003)

Use	Net Acres	% of Total
Residential	1,419	70.4%
Commercial	230	11.4%
Industrial	81	4.0%
Parks and Open Space ^a	145	7.2%
Public Facilities	142	7.0%
Other Uses ^b	0	0%

Use	Net Acres	% of Total
Total	2,017	100%

Notes:
^a Parks and Open Space do not include parking areas, such as the parking lots adjacent to the Manhattan Beach Pier.
^b Other Uses include parking lots, faith-based organizations, and vacant lots identified during the 2002 land use survey.

Manhattan Beach is a city of distinct and unique neighborhoods. The community recognizes: the Sand Section, Downtown, North End/El Porto, the Tree Section, the Hill Section, Manhattan Village and Mall, and Eastside (**Figure 5**). Approximately 70% of the land area within the City was developed for residential use.

Figure 5: Neighborhood Map – Manhattan Beach General Plan



Source: City of Manhattan Beach General Plan

The following map below provides the Land Use types within the City of Manhattan Beach.
 Figure 6: Land Use Types

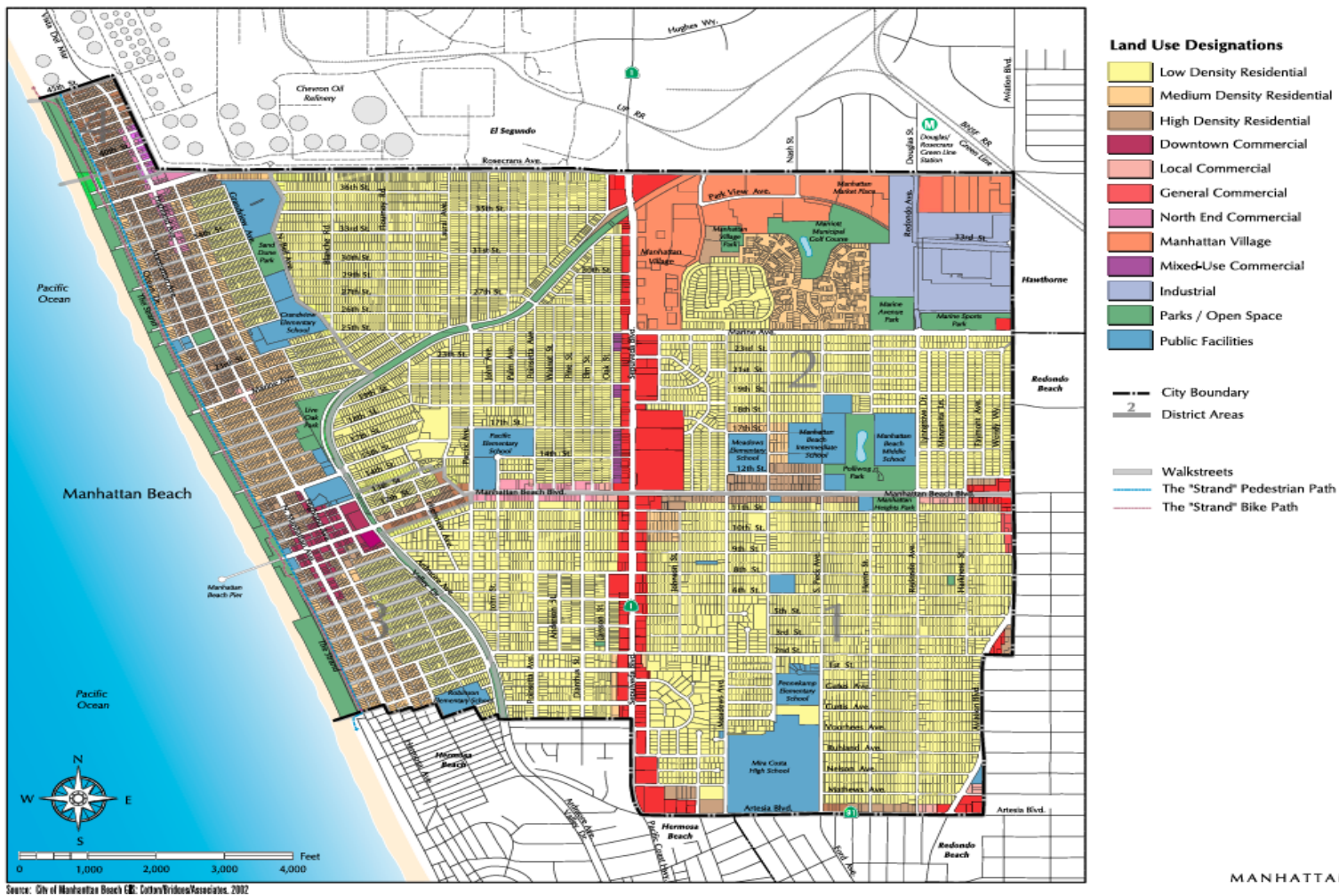


Figure LU-3
Land Use Policy Map
 MANHATTAN • BEACH • GENERAL • PLAN

Source: City of Manhattan Beach General Plan, Updated Land Use Element

3.9. Completed and Current Development

The City of Manhattan Beach has completed many projects to improve land use and development into the future as well as addressing hazard risk reduction. The following list provides an update on these efforts since the last plan update.

Table 13: Completed Development

Completed Development	
Location	Development
Storm Drain Masterplan	Completed September 2021
Local Roadway Safety Plan	Completed April 2022
Underground Utility Assessment District 4	Completed September 2022
Battery Backup System (BBS)	Completed February 2021
Storm Drain Improvements	Cycle 2, Completed October 2021
Sewer Infrastructure Improvements	Cycle 2 Completed: October 2021
Cycle 1 Sewer Main Replacement	Completed: May 2019
CDBG Access Ramp Construction Project	Completed: June 2019
Rehab Gravity Sewer Mains including spot repairs FY 14/15	Completed: October 2019

Table 14: Current Development

Current Development	
Location	Development
Fire Station 2	Seismic Upgrades
City Wide	Water Infrastructure Improvements- Replace pipes with deficient fire flow capacity.
Larsson Street and 2nd Street	Pump Station Improvements - Install new pumps to handle peak domestic service.
Pacific Lift Station	Emergency Storage, and Force Main Replacement Upgrade - Modify pumps and controls to provide two force mains and safety redundancy.
Poinsettia Wastewater Pump Station	Pump Station Improvements - Reconstruct and modify lift station and install a second force main.
Voorhees Wastewater Pump Station	Pump Station Improvements - Improve station and install second force main.

Current Development	
28th Street	Stormwater Infiltration - Install infiltration system to improve water quality.
Peck Ave & 21st St	Storm Drain Improvements - Alleviate flooding issues for residents of Peck Ave, 21st Street, and 23rd Street.
El Porto	Infrastructure Improvements - Improve long-standing water quality issues and fire flow capacity in the El Porto Area.
City Wide	Beach Dune Restoration Project
Sepulveda Bridge Widening	Provide consistent roadway width to allow for increased traffic flow. Completed: October 2022
Peck Reservoir Replacement Project	Replace existing reservoir as it has exceeded its useful life.

3.10 Development Trends and Future Development

The Land use element of the City of Manhattan Beach establishes land use classifications and Intensities of development for both private and public lands throughout the City, providing a rational and ordered approach to future development while preserving and enhancing important community features. The Element emphasizes maintenance of low-profile development, protection of unique features of individual neighborhoods, and retention and enhancement of landscaped open spaces throughout the City.

To encourage pedestrian-oriented development, the land use plan provides for mixed-use residential/commercial development at appropriate locations within Downtown, the North End, and other commercial areas. The Element addresses the community's desire to maintain the viability of commercial areas by supporting and encouraging the upgrading and growth of businesses. Sepulveda Boulevard will remain as a focal point for regional-serving commercial uses. Downtown will provide businesses and services for local residents and visitors, and the North End will continue its local-serving character.

This Element also focuses on achieving a positive community aesthetic by enhancing and unifying design quality and standards for new development. Specifically, policies address new commercial development, open and public spaces, and public and commercial signage. The General Plan provides for the construction of 842 new dwelling units and 205,000 square feet of new non-residential development, including commercial, industrial, and public facilities.

The Regional Housing Needs Assessment (RHNA) is mandated by State Housing Law as part of the periodic update of General Plan housing elements. Through the RHNA process a community decides how to address existing and future housing needs resulting from population, employment, and household growth. The City's Housing Element was updated in 2022 and revisions incorporated into the General Plan in May 2023 and addresses the comprehensive housing needs in Manhattan Beach for the 8-year planning period (2021–2029). It provides an analysis of the local housing needs for all income levels, details barriers

to providing needed housing, and identifies a set of strategies for meeting the housing need within the planning period.²

Within the Community Safety Element, the city has goals to minimize physical hazards, including earthquake, flood, and fire emergencies, through emergency preparedness planning and disaster response programs. In addition, the City of Manhattan Beach will continue to support existing federal and State safety regulations and laws, educating the local public to plan and prepare for emergencies, monitoring environmental and physical risks to the community, ensuring appropriate law enforcement services, and reducing crime.

Residential development will primarily occur on properties that have previously been developed. As such, existing infrastructure, including water, sewer, and dry utilities, including electricity, natural gas, cable, and telephone, will receive necessary upgrades and improvements based on future growth and development anticipated by the General Plan.

3.11 Infrastructure Systems

Infrastructure systems within the City, such as roadways, water and wastewater facilities, storm drain facilities, electricity, and natural gas, provide vital community and individual functions. These facilities and distribution systems are primarily owned, operated, and maintained by other agencies. The ability for infrastructure systems to remain operational during hazard events and emergencies will contribute to the City's ability to withstand or recover sooner from hazard events.

Water Supply/Service

The City obtains water from three sources: (1) Metropolitan Water District treated surface water from Northern California and the Colorado River, which is provided to the City by the West Basin Municipal Water District and represents over 80 percent of the local water supply; (2) groundwater extracted by City-owned and operated wells; and (3) reclaimed water supplied for landscape irrigation from the West Basin Municipal Water District. The City owns the right to pump 64,468 acre-feet per year of groundwater from the West Coast Basin. Imported water flows to the City via a 45-inch Metropolitan Water District line in Manhattan Beach Boulevard.

The City's water system consists of pump stations, storage reservoirs, an elevated storage tank, water supply wells, a settling basin, and approximately 112 miles of distribution pipelines. In addition to these facilities, the City provides access to reclaimed water supplies via a major pipeline in Marine Avenue. Reclaimed water can be used for landscape irrigation and some industrial uses and can reduce demand on potable water supplies. Given that Land Use Policy in the City's General Plan Land Use Element accommodates a very modest level of growth in the City, these facilities were not expected to require any substantial expansion to meet long-term needs. The City plans to focus efforts on maintenance and replacement as needed.

² What is RHNA? <https://scag.ca.gov/rhna>

Storm Drain Facilities

With regard to storm drain facilities, the goals and policies of the Infrastructure Element of the General Plan aim to ensure adequate capacity to collect and carry stormwater and thereby avoid flooding and reduce pollutant loads in stormwater as part of regional efforts to improve water quality in surface waters. Stormwater runoff flows directly into the City's storm drain system via street gutters and other inlets, and this flow in turn discharges into the County of Los Angeles flood control network, which ultimately drains into the Pacific Ocean. The Los Angeles County Department of Public Works maintains the regional storm drain system, including two major pump plants (Polliwog Pond and Johnson Street) in the City.

With regard to capacity, the established system is adequate to handle most runoff. However, during unusually heavy storm events, the system can become overwhelmed, with flooding. The City has assessed the cost to correct isolated deficiencies, with the determination that significant investment will be required to address the issue. The main deficiency occurs in the County of Los Angeles–owned trunk line that collects flow from more than 50 percent of the City and empties at the beach at 28th Street. Rough estimates indicate that at least \$20 million would be needed to add necessary capacity to eliminate flooding in certain areas.

Electric Power and Natural Gas

Southern California Edison provides electric service to residents and businesses in the City. The City's Capital Improvement Program outlines funding to remove the high-voltage power poles on Rosecrans Avenue to improve the corridor visually. The City is pursuing implementation, with Southern California Edison, on a number of undergrounding projects in residential areas. The projects will be financed through assessment districts.

3.11.1 Critical Facilities/Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA uses the following three categories of critical assets (Essential Facilities, High Potential Loss Facilities, and Infrastructure Systems). Essential facilities are those that if damaged would have devastating impacts on disaster response and/or recovery. High potential loss facilities are those that would have a high loss or impact on the community. Infrastructure systems are a third category of critical assets.

The HMPC identified **89 critical facilities** for incorporation into the hazard vulnerability/risk assessment as noted in **Table 15** below. Critical facilities and facilities of concern are owned, operated, and maintained by various agencies, not just the City. Critical facilities serve an important function in the operations of the municipal government and in serving the community.

Critical facilities include, without limitation, public safety, emergency response, emergency medical, designated emergency shelters, communications, public utility plant facilities and equipment, and government operations. The following are general categories of critical facilities in the City of Manhattan Beach:

- **Public Safety** - Police stations, fire and rescue stations, emergency operations centers.
- **Emergency Response** - Emergency vehicle and equipment storage and essential governmental work centers for continuity of government operations.
- **Emergency Medical** - Hospitals, emergency care, urgent care, ambulance services.
- **Designated Emergency Shelters** - Facilities specifically established to provide temporary housing, safety, and support services to individuals and families during emergencies or crises to include schools, community centers, churches or specially designated facilities.
- **Communications** - Main hubs for telephone, main broadcasting equipment for television systems, radio and other emergency warning systems.
- **Public Utility Plant Facilities** - including equipment for treatment, generation, storage, pumping and distribution (hubs for water, wastewater, power and gas).
- **Essential Government Operations** - Public records, courts, short-term jail, building permitting and inspection services, government administration and management, maintenance and equipment centers, and public health.
- **Transportation Lifeline Systems** - Critical highways, roads, bridges, and other transportation infrastructure.

Lifelines above include facilities related to electrical power, liquid fuel, natural gas, and transportation routes. At risk population facilities include, without limitation, pre-schools, public and private primary and secondary schools, before and after school care centers with 12 or more students, daycare centers with 12 or more children, group homes, and assisted living residential or congregate care facilities with 12 or more residents.

Damage to these facilities caused by a hazard event has the potential to impair response and recovery and may lead to disruption of services. Critical facilities may also assist in evacuations, serve as assembly points or temporary shelters, or provide a supportive role in preparing for and recovering from hazard events.

Where available, the HMPC identified a facility's potential loss value, comprised of replacement and contents for each facility. If a facility is completely destroyed in a hazard event, the replacement and contents values indicate the cost to replace the entire facility and all of its contents. Typically, the cost to repair a damaged facility would be less than the replacement value. While the replacement and contents values are used throughout this plan to estimate potential losses, it is noted that the actual cost to recover from a hazard event will depend on the type and magnitude of the event. Since the data comes from the City's Finance Department, any facility not owned by the City might not have a value listed. Where this occurs, "N/A" has been used within the table.

Based on the available data provided by the City, there is a minimum of **\$194,300,872** worth of City-owned assets that were analyzed. The total potential loss value of all City-

owned and non-City owned assets is much higher but is unknown due to data limitations. To better understand the magnitude of impacts, this plan identifies representative percentages of potential impact based on the total valuation of City assets. For planning purposes, we identified different tiers of impact that could occur. It is reasonable to assume that impacts would not exceed 50% of the total asset value city-wide during a single event. The following are parameters to help understand how much a proposed investment/improvement compares to the existing assets within the City:

- 1% Impact - \$1,943,009
- 5% Impact – \$9,715,044
- 10% Impact – \$19,430,087
- 20% Impact - \$38,860,174
- 50% Impact - \$97,150,436

The possibility that all facilities will be completely damaged simultaneously is extremely rare. Based on the hazard, most impacts are anticipated to be isolated to certain locations. This estimate does not include the value of underground infrastructure and surface drainage facilities owned and operated by the City.

For the City of Manhattan Beach, the table below are the consolidated figures of the identified critical facilities and infrastructure. Similar to critical facilities, critical infrastructure includes infrastructure that is essential to preserving the quality of life and safety in the City. Potential hazard vulnerability to critical facilities and Infrastructure identified within the City are shown in **Table 15** below.

Table 15: City of Manhattan Beach Critical Facilities/Infrastructure

Category	Number of Facilities	Examples	Asset Value	Community Lifeline Category
City Hall	2	City Hall	\$ 14,383,548	Safety and Security, Communications
Communications	32	Transmitter/Towers, Radio Equipment Rooms, Receivers	Not Available	Communications
Community Centers	10	Parks, Sports Centers, Civic Centers, Churches	\$ 22,152,477	Safety and Security, Food and Shelter
Energy	4	Utilities	Not Available	Energy
Fire/Law Enforcement	2	Fire Stations	\$ 40,459,180	Safety and Security, Communications, Hazardous Materials
Government Offices	6	Libraries, Court Rooms, Post Offices	Not Available	Safety and Security, Communications

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

Category	Number of Facilities	Examples	Asset Value	Community Lifeline Category
Medical Facilities	1	Care Centers, Urgent Care	Not Available	Health and Medical
Schools	9	Schools (Elementary, Middle, and High), Childcare Center	Not Available	Safety and Security, Food and Shelter
Transportation	5	Roads, Bridges/Overpasses	\$ 88,493,906	Transportation
Water/Sewer	18	Pump Stations, Wells, Reservoirs, Connectors	\$ 28,811,761	Water Systems
Total	89	---	\$ 194,300,872	
Note: Potential loss data are estimates only, as replacement values for all facilities were not available. Actual losses may be greater than the estimate presented on this table.				

Vulnerability and Risk Reduction

All new development occurring in the planning area identified in **Figure 7** below will incorporate hazard vulnerability and risk reduction for the City. This reduction will occur due to the anticipated improvements and investments implemented in various parts of the City as a result of the 2003 General Plan. Additionally, the City has a strategy for adoption of any ordinances, guidelines, programs, or other mechanisms that implement General Plan policy. The City has a goal of balancing the demands on hydrology, utilities and other service systems, as new infrastructure is built within Manhattan Beach, which could play a role in any future hazards the City faces.

Additionally, the following maps were developed to inform the planning team and identify potential critical infrastructure vulnerabilities:

- **Figure 8:** City Facilities and Emergency Shelters
- **Figure 9:** Police and Fire Stations
- **Figure 10:** Edison Substations
- **Figure 11:** Manhattan Beach Schools
- **Figure 12:** Manhattan Beach Parks
- **Figure 13:** Telecommunication Sites

Figure 7: Critical Facilities Map

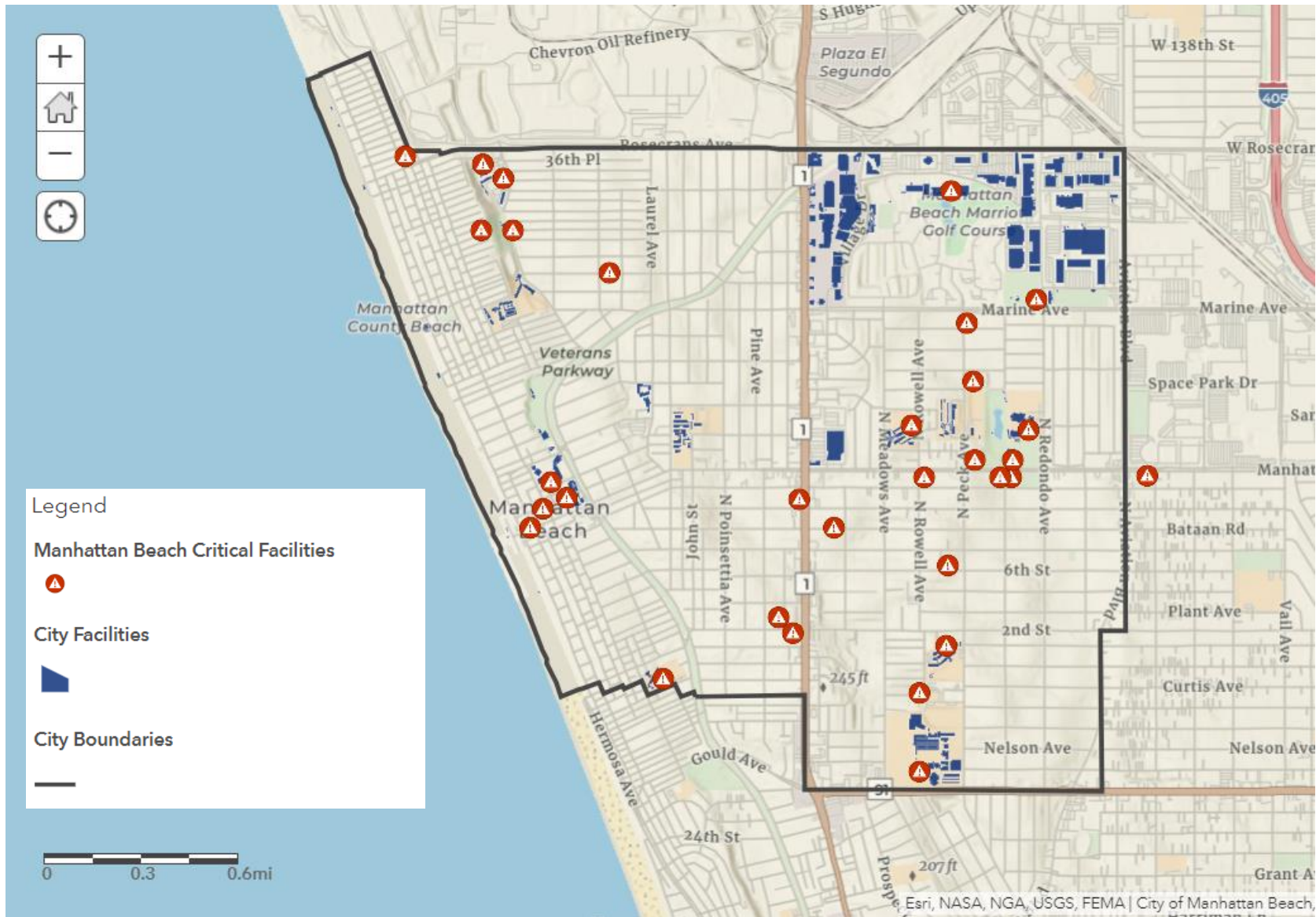


Figure 8: City Facilities and Emergency Shelters

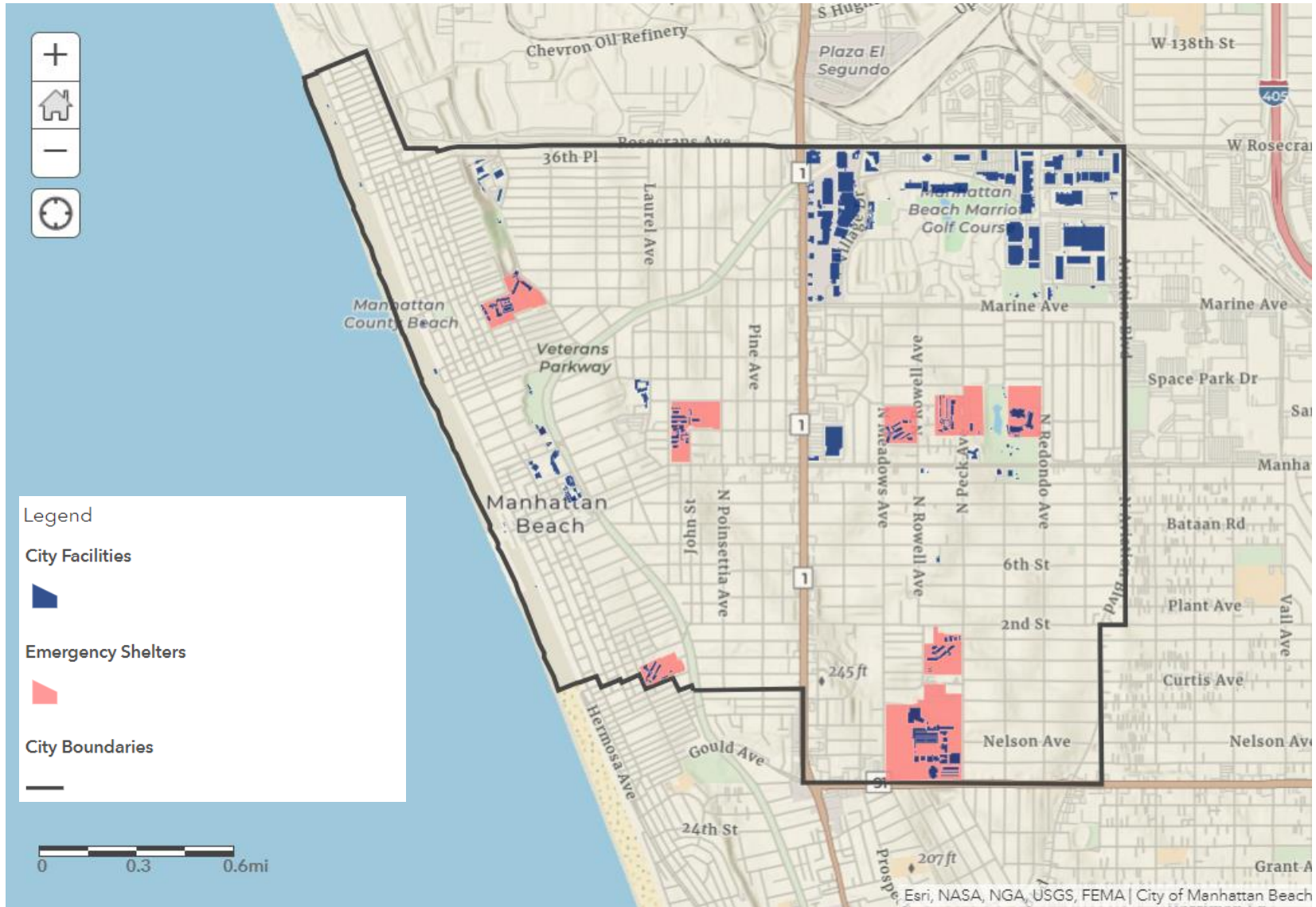


Figure 9: Police and Fire Stations

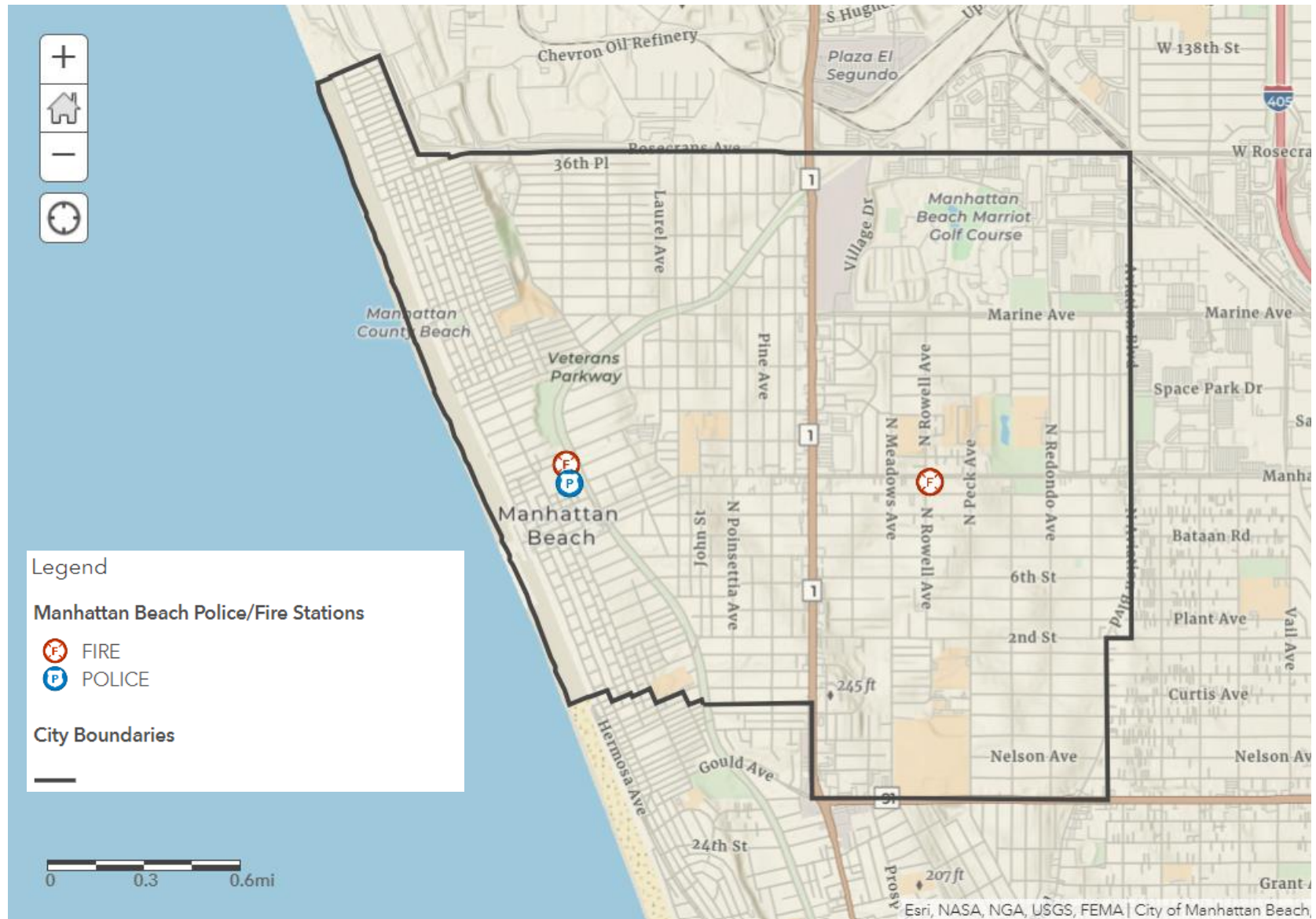


Figure 10: Edison Substations



Figure 11: Manhattan Beach Schools



Figure 12: Manhattan Beach Parks

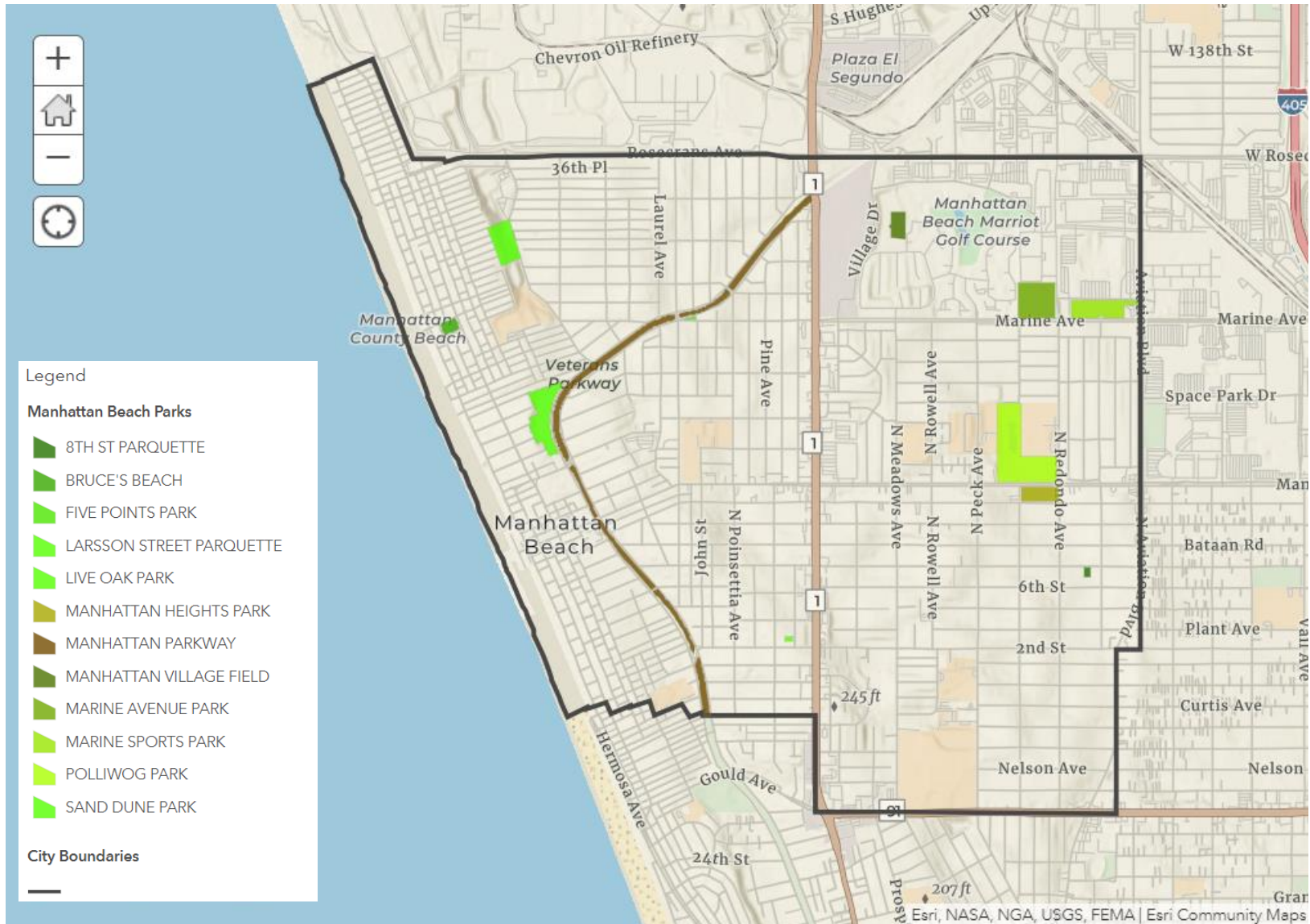


Figure 13: Telecommunication Sites



SECTION 4: RISK ASSESSMENT

4.1 Risk Assessment Overview

A risk assessment involves evaluating vulnerable assets, describing potential impacts, and estimating losses for each hazard. In mitigation planning, “risk” is the potential for damage or loss when a hazard interacts with an asset. Assets can be people, buildings, infrastructure, the economy, or natural and cultural resources. The risk assessment therefore defines and quantifies vulnerable populations, buildings, critical facilities, and other assets at risk from hazards based upon the best available data and the significance of the hazard.

A risk assessment helps communicate vulnerabilities, develop priorities, and inform decision making.

A risk assessment helps communicate vulnerabilities, develop priorities, and inform decision making. It lends information for a successful mitigation strategy. If, for example, the risk assessment shows that the City will have earthquake damage in a specific area, the mitigation strategy should include actions to protect critical assets including underserved communities, and socially vulnerable populations. The risk assessment thus further examines the impacts of the identified hazard to the city, determines which areas of the city are most vulnerable to each

hazard and estimates potential losses to City facilities for each hazard.

Figure 14: Risk Assessment



Source: FEMA, State Mitigation Planning Key Topics Bulletin: Risk Assessment

This plan update includes numerous changes compared to the Manhattan Beach plan of 2019. The HPMC engaged in discussions regarding which hazards to prioritize based on past occurrences, social vulnerability, and climate change to assist with developing priorities. This process is also known as identifying the City's Hazards of Prime Concern, which then enables the development of targeted strategies to mitigated risks within the City. Consequently, the actions outlined in the mitigation strategy are tailored to reflect these priorities. Through these discussions, the Hazards of Prime Concern were determined to include *Coastal Hazards, Drought, Fire, Flooding, Geological Hazards, and Severe Weather*.

4.1.1 Risk Assessment Sources

Existing hazard data from FEMA, the National Oceanic and Atmospheric Administration (NOAA), and other sources were examined to assess the significance of these hazards to the planning area. Climate Change information was obtained from the Center for Climate Resilience and Decision Science by the Argonne National Laboratory, the Climate Vulnerability Index, and City of Manhattan Beach's information on climate change which included previous planning efforts. Significance was measured in general terms and focused on key criteria, such as frequency and resulting damage, which includes deaths and injuries, as well as property and economic damage.

Hazard data obtained from the NOAA National Center for Environmental Information (NCEI), Storm Events Database, started in the year 1950. However, it is possible that data is not available going back to 1950. The assessment of each hazard provides data available from the NCEI, if applicable, since the last approved LHMP. In many cases, the HPMC relied on the City of Manhattan Beach's historical records or other planning efforts to obtain data. Additional risk information included in this plan includes hazard extent and impact descriptions that include socially vulnerable groups and land use impacts, as well as a HPMC driven risk analysis.

4.1.2 Limitations

Vulnerability assessments and hazard-specific impact evaluations rely on the best available data and methodologies. Uncertainties are inherent in any loss estimation methodology and arise in part from incomplete scientific knowledge concerning natural hazards and their effects on the built environment. Uncertainties also result from the following:

- Approximations and simplifications necessary to conduct a study.
- Incomplete or outdated inventory, demographic or economic parameter data.
- The unique nature, geographic extent, and severity of each hazard.
- Mitigation measures already employed.
- The amount of advance notice residents have to prepare for a specific hazard event.

These factors can affect loss estimates. Therefore, potential vulnerability and loss estimates are approximate and should be used only to understand relative risk.

4.2 Emergency and Disaster Declaration History

One method to identify hazards is to look at the events that have triggered federal and/or state disaster declarations. The HMPC was able to identify the chronology of past hazard events. **Table 16** contains a history of State and Federal Disaster Declarations in Los Angeles County (2019-Present), since the last LHMP update.

Table 16: State and Federal Disaster Declarations for Los Angeles County (2019-Present)

Disaster Declaration	Hazard	Date	Details
California Severe Storm and Flooding DR-4758-CA	Flooding/ Landslide/ Mudslides	January 2024	Incident Period: Jan. 21, 2024 – Jan. 23, 2024 Declaration Date: Feb. 19, 2024
California Severe Winter Storms, Flooding, Landslides, and Mudslides EM-3592-CA	Snowstorm/ Flooding/ Landslides/ Mudslides	March 2023	Incident Period: Mar. 9, 2023 – Jul. 10, 2023 Declaration Date: Mar. 10, 2023
California Severe Winter Storms, Straight-line Winds, Flooding, Landslides, and Mudslides DR-4699-CA	Snowstorm/ Straight-line Winds/ Flooding/ Landslides/ Mudslides	February 2023	Incident Period: Feb. 21, 2023 – Jul. 10, 2023 Declaration Date: Apr. 3, 2023
California Severe Winter Storms, Flooding, Landslides, and Mudslides DR-4683-CA	Snowstorm/ Flooding/ Landslides/ Mudslides	December 2022	The state declared an emergency during a severe winter storm lasting from December 27, 2022 – January 31, 2023. Disaster was declared on January 14, 2023.
California Severe Winter Storms, Flooding, and Mudslides EM-3591-CA	Snowstorm/ Flooding/ Mudslide	January 2023	Incident Period: Jan. 8, 2023 – Jan. 31, 2023 Declaration Date: Jan. 9, 2023
California Wildfires DR-4569-CA	Fire	September 2020	Incident Period: Sept. 4, 2020-Nov. 17, 2020 Declaration Date: Oct. 16, 2020
California Bobcat Fire FM-5374-CA	Fire	September 2020	Incident Period: Sept. 13, 2020 Declaration Date: Sept. 13, 2020

Disaster Declaration	Hazard	Date	Details
California Covid-19 Pandemic DR-4482-CA	Pandemic	January 2020	Incident Period: Jan. 20, 2020, and continuing Declaration Date: Mar. 22, 2020
California Covid-19 EM-3428-CA	Pandemic	January 2020	Incident Period: Jan. 20, 2020, and continuing Declaration Date: Mar. 13, 2020
California Tick Fire FM-5296-CA	Fire	October 2019	Incident Period: Oct. 24, 2019 Declaration Date: Oct. 24, 2019
California Saddleridge Fire FM-5293-CA	Fire	October 2019	Incident Period: Oct. 10, 2019 Declaration Date: Oct. 11, 2019
Records of Disaster Declarations found at FEMA Disaster Information			

4.3 Hazard Identification

The City of Manhattan Beach is susceptible to a number of hazards. This LHMP profiles the most significant of these hazards. The list of hazards identified in the 2024 LHMP was reviewed by the HMPC to refine the list to reflect only the natural hazards that pose the greatest risk. The planning process incorporated a review of state, county, and local hazard planning documents. This update provides an all-hazards approach. Hazard identification included an initial Planning Team screening process to evaluate potential hazards based on the following considerations:

- Knowledge on behalf of the HMPC about risks associated with each hazard.
- Past events (especially events that have occurred during the last plan cycle).
- The ability/desire of HMPC to develop effective mitigation actions for an identified hazard.

Upon existing natural hazards data and input gained through planning meetings during both the 2019 LHMP and 2024 update, the HMPC agreed upon a list of hazards that could affect the City of Manhattan Beach.

Based on the review, this plan addresses the following hazards of concern:

- Coastal Hazards (Daily Tides, King Tides, El Niño, Storm Surge, Coastal Erosion, and Tsunami)
- Drought
- Fire/Wildland Urban Interface (Wildfire)
- Flooding/Inland Flooding
- Geological Hazards (Earthquake and Landslide)

- Severe Weather (Wind and Extreme Heat)

Climate change influences the occurrences of many natural hazards, including coastal hazards, drought, flooding, landslides, wildfires, and severe weather. This plan includes a discussion of climate change within each respective hazard.

Table 17 depicts the changes in the profiled hazards from the 2019 LHMP and the 2024 LHMP update.

Table 17: Summary of Hazards from 2019 to 2024, Manhattan Beach LHMP

Hazards	Manhattan Beach Local Hazard Mitigation Plan 2019	Manhattan Beach Local Hazard Mitigation Plan Update 2024
Coastal Hazards	Excluded	Included
Drought	Included	Included
Earthquake	Included	Included as Geological Hazards
Extreme Weather (Extreme Heat and High Wind)	Excluded	Included
Fire, Wildland Urban Interface (Wildfire)	Included	Included
Flooding/Inland Flooding	Included	Included
Geological Hazards (Earthquake and Landslide)	Included individually	Included
Hazardous Materials	Included	Excluded
Landslide	Included	Included as part of Geological Hazards
Tsunami	Included	Included as part of Coastal Hazards
Terrorism	Included	Excluded
Windstorm	Included	Included as part of Extreme Weather

Many hazards identified by the LHMP Planning Team are recognized to be interconnected or interrelated. Where appropriate, the hazard profiles within this plan update may include references to other hazard profiles. Additionally, as part of the hazard identification and prioritization process, the LHMP Planning Team determined that some hazards could be combined for clarity purposes within a larger hazard category. Some hazards were expanded or renamed to reflect conditions more accurately for the City of Manhattan Beach. The HMPC reviewed hazards from the 2019 LHMP and several potential new hazards including, Coastal Hazards, Geological Hazards, and Extreme Weather. Coastal Hazards combines Daily Tides, King Tides, El Niño, Storm Surge, Coastal Erosion, and Tsunami into one single hazard. Geological Hazards combines Earthquake and Landslide into one single hazard, and Extreme Weather combines Wind (previously Windstorm) and Extreme

Heat into one single hazard.

4.4 Hazard Scoring and Prioritization

For the 2024 LHMP, to determine an identified hazard's priority ranking, the HMPC reviewed the hazard's historical occurrences, climate change impacts, and vulnerability and impacts on assets. A quantitative risk assessment was conducted for each hazard which included the following:

- **Human Impacts** - Risk of injuries and deaths from the hazard.
- **Property Impacts** - Amount of residential property damage associated from the hazard.
- **Business Impacts** - Amount of business damage associated from the hazard.
- **Probability** - Likelihood of the hazard occurring within a given span of years.
- **Social Vulnerability** – Utilizing the CDC's Social Vulnerability Index, which provides a rating based on the potential negative effects a hazard can have on communities caused by external stresses on human health.

The HMPC used the rating criteria outlined in **Tables 18-21**, below, to determine their rating values.

Table 18: Human Impacts

HUMAN	
Risk of injuries and death from the hazard.	
1	Death very unlikely, injuries are unlikely.
2	Death unlikely, injuries are minimal.
3	Death unlikely, injuries may be substantial.
4	Death possible, injuries may be substantial.
5	Deaths probably, injuries will likely be substantial.

Table 19: Property Impacts

PROPERTY - RESIDENTIAL	
Amount of residential property damage associated with the hazard.	
1	Less than \$500 in damages.
2	\$500 - \$10,000 in damages.
3	\$10,000 - \$500,000 in damages.
4	\$500,000 - \$2,000,000 in damages.
5	More than \$2,000,000 in damages.

Table 20: Business Impacts

PROPERTY - BUSINESS	
Amount of business damage associated with the hazard.	
1	Less than 3 businesses closed for only a day.
2	More than 3 businesses closed for a week.
3	More than 3 businesses closed for a few months.
4	More than 3 businesses closed indefinitely or relocated.
5	A top-10 local employer closed indefinitely.

Table 21: Probability of Hazard Occurring

PROBABILITY	
Likelihood of the hazard occurring within a given span of years.	
1	Less than once every 10 years.
2	About once every 5-10 years.
3	About once every 2-5 years.
4	About once a year.
5	More than once a year.

Subsequently for each hazard, an index value was assigned for each category from 0 to 5, with 0 being the least hazardous and 5 being the most hazardous situation. This value was then assigned a weighting factor, and the result was the hazard risk ranking score.

A hazard's overall vulnerability value was determined by taking the sum of the Impacts to Assets (Human Impact, Property Impact and Business Impact) values and dividing it by 3.

$$\frac{\text{Human Impact} + \text{Property Impact} + \text{Business Impact}}{3} = \text{Vulnerability}$$

A hazard's risk values were then determined by the sum of the vulnerability value, probability of occurrence value, and the social vulnerability value.

$$\text{Vulnerability} + \text{Probability} + \text{Social Vulnerability} = \text{Risk Value}$$

The hazard's Risk Value was further categorized based on the determined final score. Hazards with a Risk Value between 1-3 was low risk and thus a low threat hazard, 4-6 a moderate risk value, 7-9 a medium risk value, 10-12 a high-risk value, and 13-15 a severe risk value as noted in the table below.

Table 22: Hazard Risk Scale/Values

Risk Scale	Risk Value
Low	1 - 3
Moderate	4 - 6
Medium	7 - 9
High	10 - 12
Severe	13 - 15

The results from the HMPC Meeting #3 survey were compiled and presented during HMPC Meeting #4 for further evaluation and discussion. **Table 22**, Hazard Risk Scales/Values, identifies the final scores and the hazard planning consideration (threat level) for each hazard based on discussions with the LHMP Planning Team and the prioritization process described above. **Table 23**, Hazard Prioritization Ranking, identifies the final scores and overall hazard prioritization utilizing the scoring and ranking method described above.

Table 23: Hazard Prioritization Ranking

Hazard	Impact to Assets			Vulnerability (H+P+B=#) (V=#/3)	Probability (Pb)	Social Vulnerability (SV)	Risk Value (R=V+Pb+SV)	Risk Level
	Human Impact (H)	Property Impact (P)	Business Impact (B)					
Coastal Hazards	2.75	3.5	4.2	2.89	3.25	1	7.14	Medium
Drought	1.95	2.25	1.5	1.9	3.1	1	6	Medium
Fire/Wildland Urban Interface (Wildfire)	1.95	2.8	1.8	2.18	1.95	1	5.13	Low
Flooding/Inland Flooding	1.45	3.3	1.8	2.18	2.7	1	5.95	Low
Geological Hazards (Earthquake and Landslide)	3.85	4.45	3.9	4.07	2.8	1	7.87	Medium
Severe Weather (Extreme Heat and High Wind)	2	3.25	1.5	2.25	3.5	1	6.75	Medium

4.5 Hazard of Prime Concern Profiles

4.5.1 Hazard Risk 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 2024 LHMP have been profiled using federal, state, regional, and local resources that have mapped, documented, or reported on hazards. The hazard profiles consist of describing the nature of each hazard and include the following.

FEMA Regulation Checklist: Risk Assessment	
44 CFR § 201.6(c)(2)(i):	Documentation of the Plan Update Requirements: B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan shall also include information on previous occurrences of hazard events and on the probability of future hazard events?
Elements	
B1-a	Does the plan describe all natural hazards that can affect the jurisdiction(s) in the planning area, and does it provide the rationale if omitting any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area?
B1-b	Does the plan include information on the location of each identified hazard?
B1-c	Does the plan describe the extent for each identified hazard?
B1-d	Does the plan include the history of previous hazard events for each identified hazard?
B1-e	Does the plan include the probability of future events for each identified hazard? Does the plan describe the effects of future conditions, including climate change (e.g., long-term weather patterns, average temperature and sea levels), on the type, location and range of anticipated intensities of identified hazards?

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

Hazard Description

This section describes the general characteristics of the specified hazard.

Location & Extent

This section contains information about the location, i.e., the geographic area(s) within the planning area that are affected by the hazard, along with the extent (strength and magnitude) of the specific hazard.

Previous Events

This section contains a history of previous hazard events for the potential hazard.

Probability of Future Events

Probability of Future Events can be defined in a variety of plans to account for the long-term changes in weather patterns of an identified hazard during the hazard mitigation planning process.

Calculating future probability is one of many predictors of future occurrence: This section will utilize hazard prioritization and previous occurrence calculations to define the probability of future events for the City.

Calculating Future Probability using Qualitative Data: This method describes the likelihood, or probability, of the identified hazard occurring within the planning area. The probability of future events occurrence, within the next planning cycle, will be derived utilizing data from multiple sources including the U.S. Drought Monitor, the NCEI/NOAA Storm Events Database, and the equation below. See the table below for additional information on the probability of future events.

Mathematical Equation for calculating Annual Probability Percentage:
$\frac{\text{Number of Events}}{\text{Time Frame (5 years)}} \times 100 = \frac{\text{Hazard Percentage over given Time Frame}}{\text{HMP Planning Time Frame (5 Years)}} = \text{Annual Probability}$

Table 24: Annual Hazard Probability

Hazard	Annual Probability of Occurrence Percentage	Hazard Probability
Coastal Hazards	0%	Unlikely
Drought	11.4%	Likely
Fire/Wildland Fire Urban Interface (Wildfire)	31.4%	Likely
Flooding/Inland Flooding	31.4%	Likely
Geological Hazards	50%	Likely
Severe Weather	50%	Likely

Table 25: Hazard Probability Categories

Probability Categories	Unlikely	Occasional	Likely	Highly Likely
Range (Per Year)	>1%	1-10%	11-50%	51-100%

Vulnerability & Impact Assessment

This section describes the potential impacts of the hazard and provides an overall summary of the vulnerability to the hazard through structures, systems, populations, and community assets that are susceptible to damage/loss from the hazard.

FEMA Regulation Checklist: Risk Assessment	
44 CFR § 201.6(c)(2)(ii)	Documentation of the Plan Update Requirements B2. Does the plan include a summary of the jurisdiction’s vulnerability and the impacts on the community from the identified hazards?
Element	
B2-b	For each participating jurisdiction, does the plan describe the potential impacts of each of the identified hazards on each participating jurisdiction?

Source: FEMA, *Local Mitigation Planning Policy Guide*, Released April 19, 2022, Effective April 19, 2023

Critical Facilities & Infrastructure

This section identifies the critical facilities and infrastructure vulnerable to the impacts of the hazard within the planning area based on hazard characteristics, previous occurrences, and mapped vulnerability areas. This section will also list the asset value to provide an estimate for replacement.

Climate Change Impacts

This section provides a general description of the impacts of climate change on that hazard within the planning area.

Land Use & Development Trends

This section provides a general description of land use and development trends within the City in reference to the hazard.

4.5.2 Hazard Risk Ranking

Table 26 outlines the general risk to this plan’s profiled hazards. The rankings are based on a composite evaluation of this plan’s risk assessment, namely a hazard’s probability of occurring in the future, the vulnerability of the City of Manhattan Beach to a specific hazard, the intensity of past hazard impacts, and a joint evaluation from the participating members and stakeholders within the HMPC.

Table 26: Hazard Risk Summary

Hazard	Hazard Risk Ranking Level	Probability of Future Occurrence	Climate Change Influence	Vulnerability Change
Coastal Hazards	Medium	Unlikely	High	Increase
Drought	Medium	Likely	High	No Change
Fire, Wildland Urban Interface (Wildfire)	Low	Likely	High	No Change
Flooding/Inland Flooding	Low	Likely	High	No Change
Geological Hazards	Medium	Likely	Low	No Change

Hazard	Hazard Risk Ranking Level	Probability of Future Occurrence	Climate Change Influence	Vulnerability Change
Severe Weather	Medium	Likely	Medium	Increase
Note: Climate Change Influence Categories <i>Low: Minimal potential impact</i> <i>Medium: Moderate potential impact</i> <i>High: Widespread potential impact</i>				

4.6 Coastal Hazards

4.6.1 Hazard Description

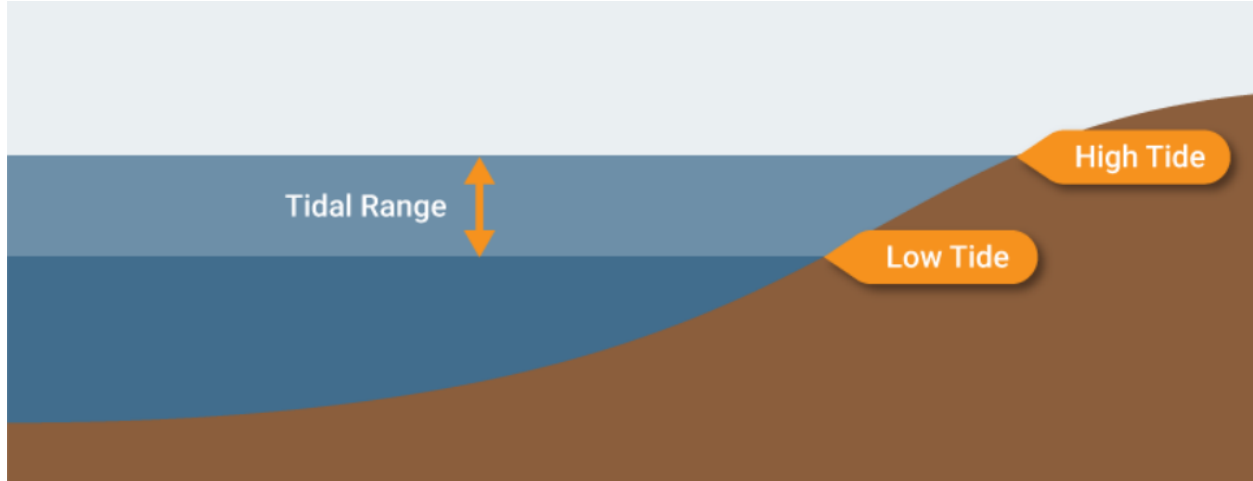
According to NOAA, National Ocean Service, Coastal Flooding is a complex issue with many facets that lean into the intensity of the overall coastal flooding hazard. Daily tides, King Tides, El Niño, Storm Surge, Beach/Coastal Erosion, and Climate Change are all contributors to community risk. This hazard profile description includes all the pre-mentioned issues along with Tsunami.

Daily Tides

The gravitational pull of the Moon and the Sun have an effect on the oceans, raising the water level on one side of the Earth and causing a high tide. Because of the rotation of the Earth, centrifugal force causes the water level to rise on the opposite side of the Earth at the same time. This means that high tide is experienced at two places in the ocean simultaneously. The rotation of the Earth also means that the high tide moves around the earth from east to west. Daily high tide (when the water level is higher) occurs every 12 hours 25 mins, and low tide (when the water level is lower) follows 6 hours and 13 minutes after each high tide.³ Changes in the level of the ocean are obviously more noticeable on the beaches along the coast. **Figure 15** shows that high tide will reach a particular level on a beach, while the water level at a low tide will be further down the beach.

³Maritime Studies, South Africa. Tides and their formation. <https://maritimesa.org/grade-10/tides-and-their-formation/>

Figure 15: Ocean Tidal Range



Source: [Maritime Studies, South Africa](#)

Daily tides, by themselves, are not the issue, but when combined with another scenario, such as El Niño or a tsunami, daily tidal rise could add additional impact. Climate Change and Atmospheric Rivers will be a future consideration of whether daily tides start to contribute to vulnerabilities of coastal assets.

King Tides

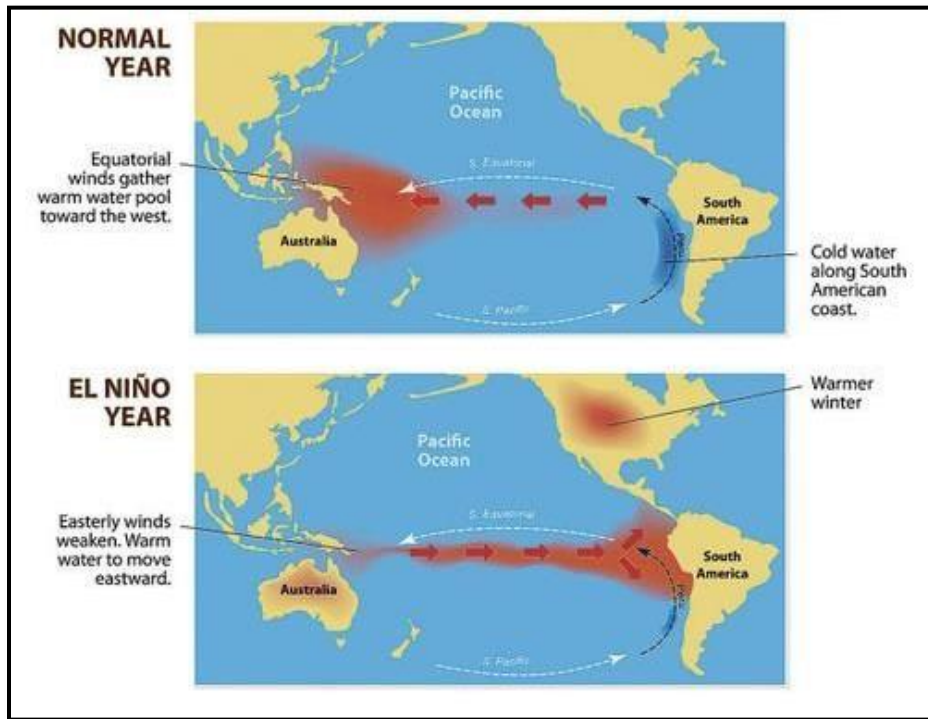
King tides are defined as the highest predicted high tide of the year at a coastal location. It is the highest water level reached at high tide on an average day. King tides are a normal occurrence once or twice every year. King Tides are predictable as they occur when the orbits and alignment of the Earth, Moon, and Sun combine to produce the greatest tidal effects of the year. King tides can provide a preview on how sea level rise will affect coastal locations. Taking into consideration climate change, the water levels reached now during a king tide could be the water level reached at high tide on an average day.

El Niño

The term El Niño refers to the warming of the ocean surface, or above-average seas surface temperatures, in the central and eastern tropical Pacific Ocean. The low-level surface winds, which normally blow from east to west along the equator, weaken, or in some cases, start blowing in the other direction. El Niño recurs irregularly, and no two events are exactly alike.⁴

⁴ [What is "El Niño" and what are its effects? | U.S. Geological Survey \(usgs.gov\)](#)

Figure 16: The El Niño Phenomenon



Source: [Euroclima](#)

El Niño events can cause changes in weather patterns, which can lead to increases in sea level. As wind patterns change, warm water is pushed back east, toward the west coast of the Americas. El Niño also has a strong effect on marine life off the Pacific coast. El Niño is a natural climate phenomenon marked by warmer-than-average sea surface temperatures in the central and eastern Pacific Ocean near the equator. Depending on its strength, El Niño can cause a range of impacts, such as increasing the risk of heavy rainfall or droughts in certain locations around the world. Climate change can exacerbate or mitigate certain impacts related to El Niño. For example, El Niño could lead to new records for temperatures, particularly in areas that already experience above-average temperatures.

El Niño typically favors strong hurricane activity in the central and eastern Pacific Basins. As per the California Coastal Commission, from critical infrastructure to private residences, public access, land and marine resources, and local economies, El Niño events have historically affected coastal resources across California. Because the nature of each El Niño is shaped by an array of ever-changing climatological forces, the impacts also vary from one event to another. In many cases, the extent of impacts will depend on the coincidence of waves, winds, tides, precipitation, and other factors as well as their intensities. Coastal hazards associated with extreme El Niño events include waves (as sources of flooding and erosion), landslides, debris flows, road closures, oil and sewage spills, and structural damage.

Storm Surge

Storm Surge is the abnormal rise in water level caused by a storm, over and above the predicted tide. This rise in water level can cause extreme flooding in coastal areas particularly when storm surge coincides with high tide.

Coastal Erosion

Coastal erosion is the process by which local sea level rise, strong wave action, and coastal flooding wear down or carry away rocks, soils, and/or sands along the coast. All coastlines are affected by storms and other natural events that cause erosion; the combination of storm surge at high tide with additional effects from strong waves creates the most damaging conditions. The extent and severity of the problem is worsening with global sea level rise.

Beaches are considered a coastal asset due to their protection from coastal hazards. Beach sculpting or the creation of winter beach berms is an adaptation strategy that provides protection against coastal storm flooding and waves during the winter coastal storm season. Beach nourishment initially reduces the risk of flooding and erosion along the beach. Beach width is expected to diminish with time, requiring an ongoing cycle of “re-nourishment” to maintain the beach. Additional mitigating protection measures are identified in the City’s [Sea Level Rise Adaptation Plan](#).

Tsunami

The U.S. Geological Survey describes Tsunamis as large, potentially deadly, and destructive sea waves, most of which are formed as a result of submarine earthquakes. They can also result from the eruption or collapse of island or coastal volcanoes and from giant landslides on marine margins. These landslides, in turn, are often triggered by earthquakes. Tsunamis can be generated on impact as a rapidly moving landslide mass enters the water or as water displaces behind and ahead of rapidly moving underwater landslide.

In the open ocean, tsunami waves travel at speeds of up to 600 miles per hour, but their wave height is generally too small to be observed. As waves enter shallow water, they slow down and may rise to several feet, or in rare cases, tens of feet. There are two types of tsunamis defined:

- **Local tsunami (also called near-source):** If a large earthquake or undersea landslide occurs at or near the California coast, the first waves may reach coastal communities within minutes. There may be little or no time for authorities to issue a warning. An offshore earthquake or landslide with a magnitude of 6.8 has the potential to create a near-source.
- **Distant tsunami (also called distant source):** Very large earthquakes in other areas of the Pacific Rim may also cause tsunamis, which could impact California's coast. The first waves would reach Los Angeles County's coastline many hours after the earthquake occurred.

The City of Manhattan Beach does have a Response Plan for Tsunamis. Due to the extensive earthquake risk in and away from Manhattan Beach, HMPC feels this is an important hazard to address.

4.6.2 Location and Extent

Coastal storm flooding refers to potential impacts from a coastal storm that happens infrequently, whereas tidal inundation refers to the extents of regular tides that occur day-to-day. As sea levels rise, the extent of tidal inundation will gradually increase with infrequent, extreme events causing more dramatic flooding. These events include higher water levels due to storm surge and ocean waves and are commonly associated with low-pressure weather systems. For example, the probability of an extreme El Niño event occurring could increase from roughly once every 20 years to once every 10 years by 2100 (Cai et al. 2014, South Bay Cities Council of Governments 2019).

Coastal inundation, storm surge flooding, and coastal erosion results from the U.S. Geological Survey (USGS) Coastal Storm Modeling System (CoSMoS) model were used to determine potential impacts of sea level rise in Manhattan Beach for typical tides and extreme storm conditions. The USGS modeled and mapped future daily inundation and episodic coastal storm flooding extents for four storm scenarios:

1. No flood (regular inundation from the average daily high tide)
2. 1-year coastal storm flood event (on average occurs every year)
3. 20-year coastal storm flood event (5% chance of occurring each year)
4. 100-year coastal storm flood event (1% chance of occurring each year)

Five sea level rise scenarios, in addition to existing conditions, were mapped for Manhattan Beach (0, 0.75, 1.25, 1.75, 2.0, and 3.0 meters) for the “let it go” scenario where no management actions would be taken, and erosion can progress beyond existing structures. These sea level scenarios were evaluated considering the “no flood” (i.e., typical tidal inundation) and “1% annual chance coastal storm flood” scenarios (100-year event).

Note that the 3.0-meter sea level rise scenario was only modeled in CoSMoS for tidal inundation and not for any of the coastal storm events, so the 1% annual chance coastal storm flood event is not mapped for 3.0 meters of sea level rise. The tidal inundation scenario was used to map areas where inundation is a regular event to depict how daily inundation could potentially change in the future with sea level rise (**Figures 17 and 18**).

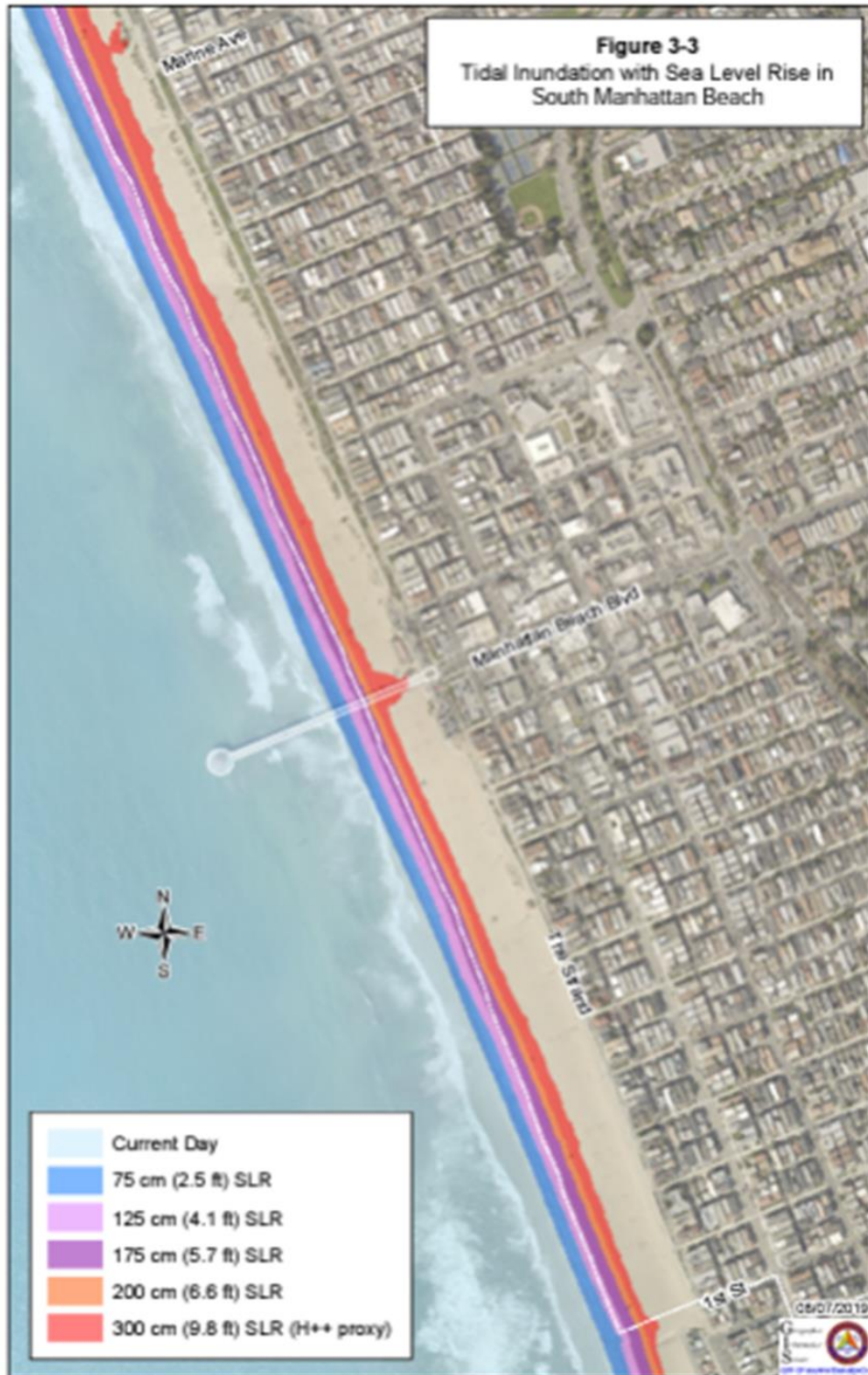
The 1% annual coastal flood event was chosen to represent the potential impacts from an extreme coastal storm. **Figures 19 and 20** show the maximum modeled flood extent (i.e., the upper range of the CoSMoS uncertainty bounds, which includes uncertainty due to vertical land motion changes, model performance, and elevation measurements) to understand the full range of potential exposure. For context, FEMA flood mapping through the National Flood Insurance Program (NFIP) also provides coastal flooding extent and floodwater elevations for a 1% annual chance coastal storm event under current conditions without future sea level rise. FEMA does not model or map coastal storm events with sea level rise, so this Coastal Vulnerability Assessment does not use FEMA flood hazard data. **Figures 21 and 22** depict potential beach erosion. **Table 27** provides context to the potential loss percentage of the beach due to erosion through the year 2100.

Figure 17: Tidal Inundation with Sea Level Rise, N. Manhattan Beach



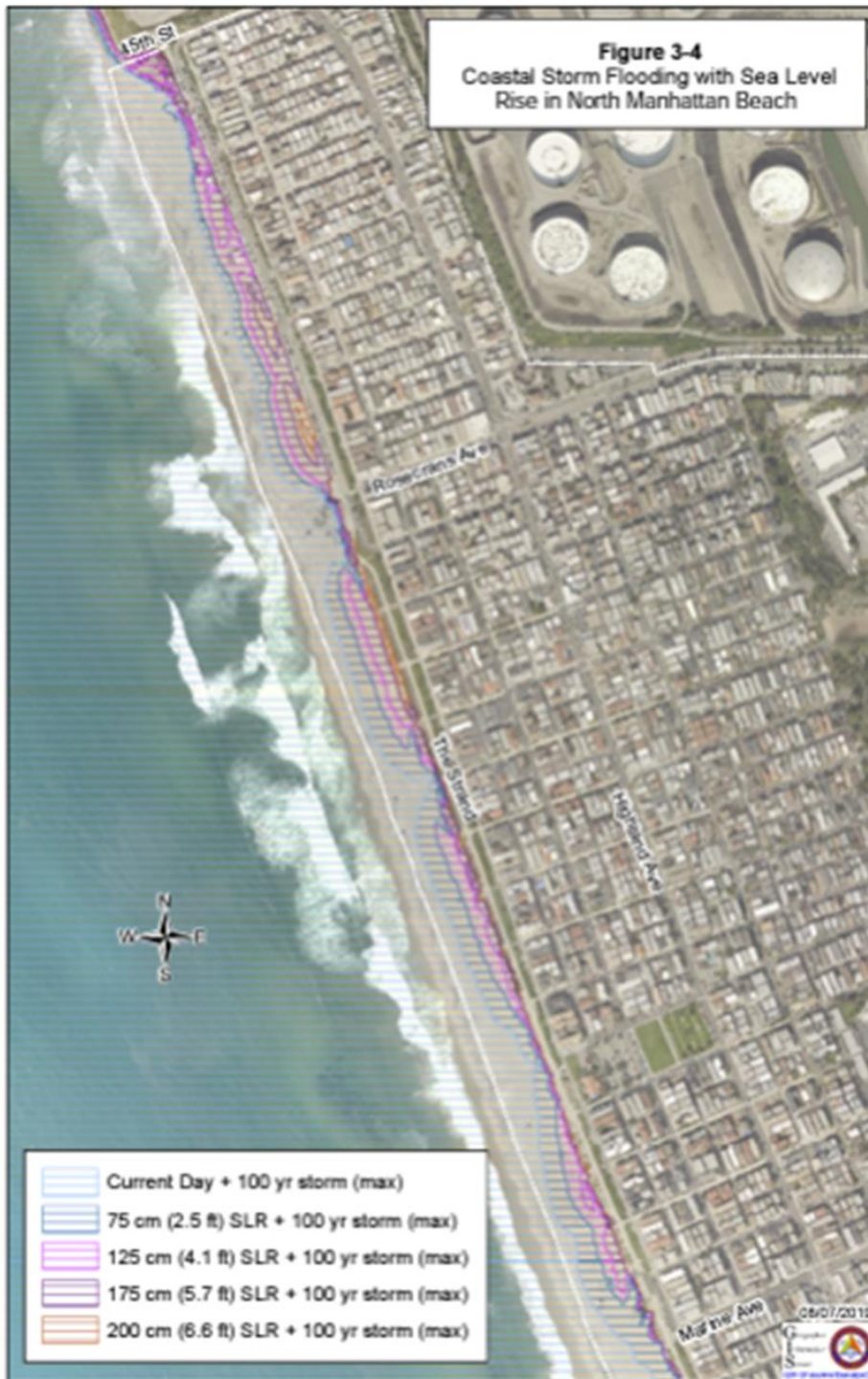
Source: USGS CoSMoS modeling

Figure 18: Tidal Inundation with Sea Level Rise, S. Manhattan Beach



Source: USGS CoSMoS modeling

Figure 19: Coastal Flooding with Sea Level Rise, N. Manhattan Beach



Source: USGS CoSMoS modeling

Figure 20: Coastal Storm Flooding with Sea Level Rise, S. Manhattan Beach



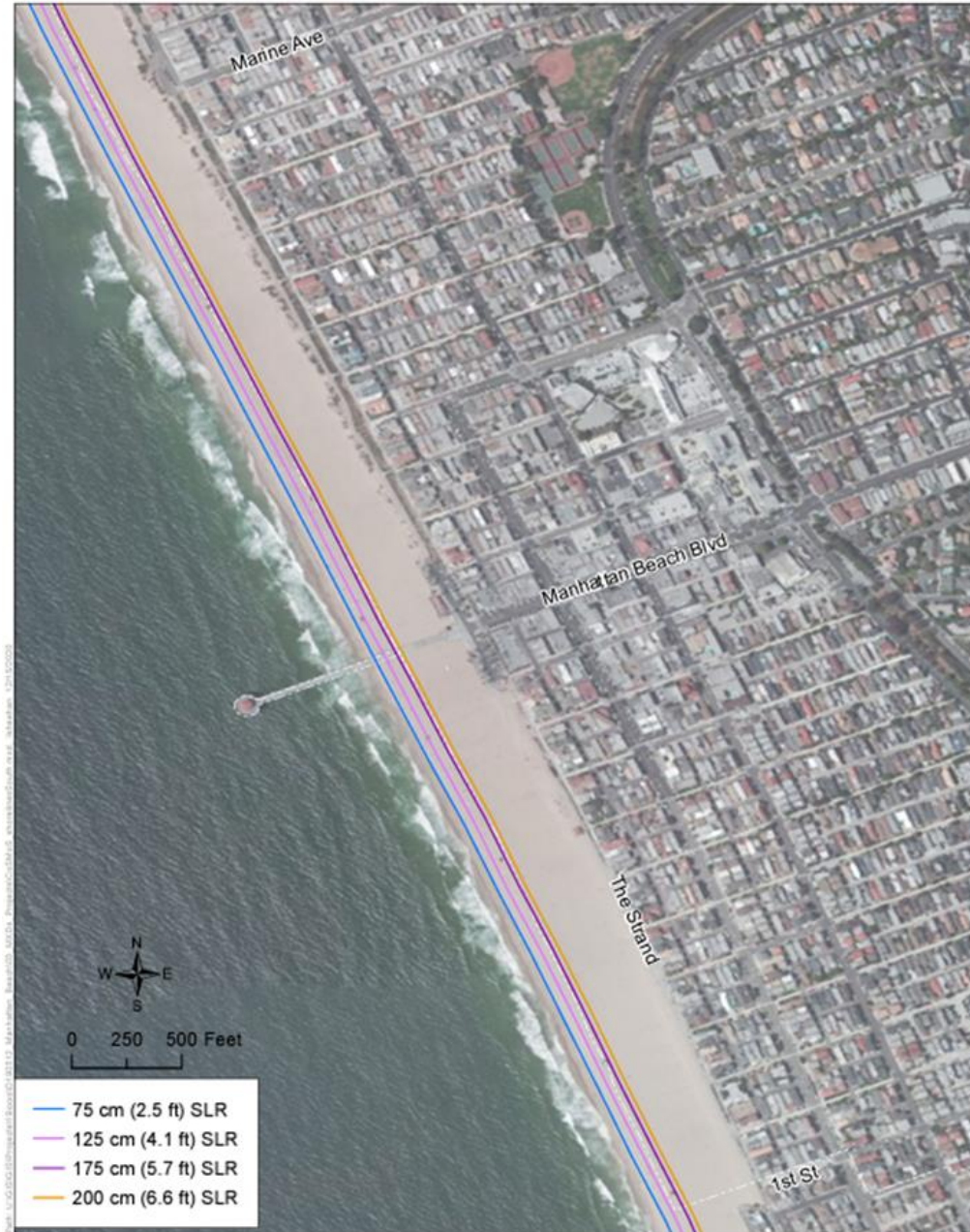
Source: USGS CoSMoS modeling

Figure 21: Shoreline Erosion with Sea Level Rise, N. Manhattan Beach



Source: USGS CoSMoS modeling

Figure 22: Shoreline Erosion with Sea Level Rise, S. Manhattan Beach



Source: USGS CoSMoS modeling

Table 27: Beach Width Evolution (2020-2100)

Year	Total Beach Width (ft)	% Loss
2020	370	0%
2030	360	2%
2040	350	5%
2050	330	11%
2060	310	16%
2070	290	22%
2080	260	29%
2090	230	37%
2100	200	47%

Source: USGS CoSMoS modeling

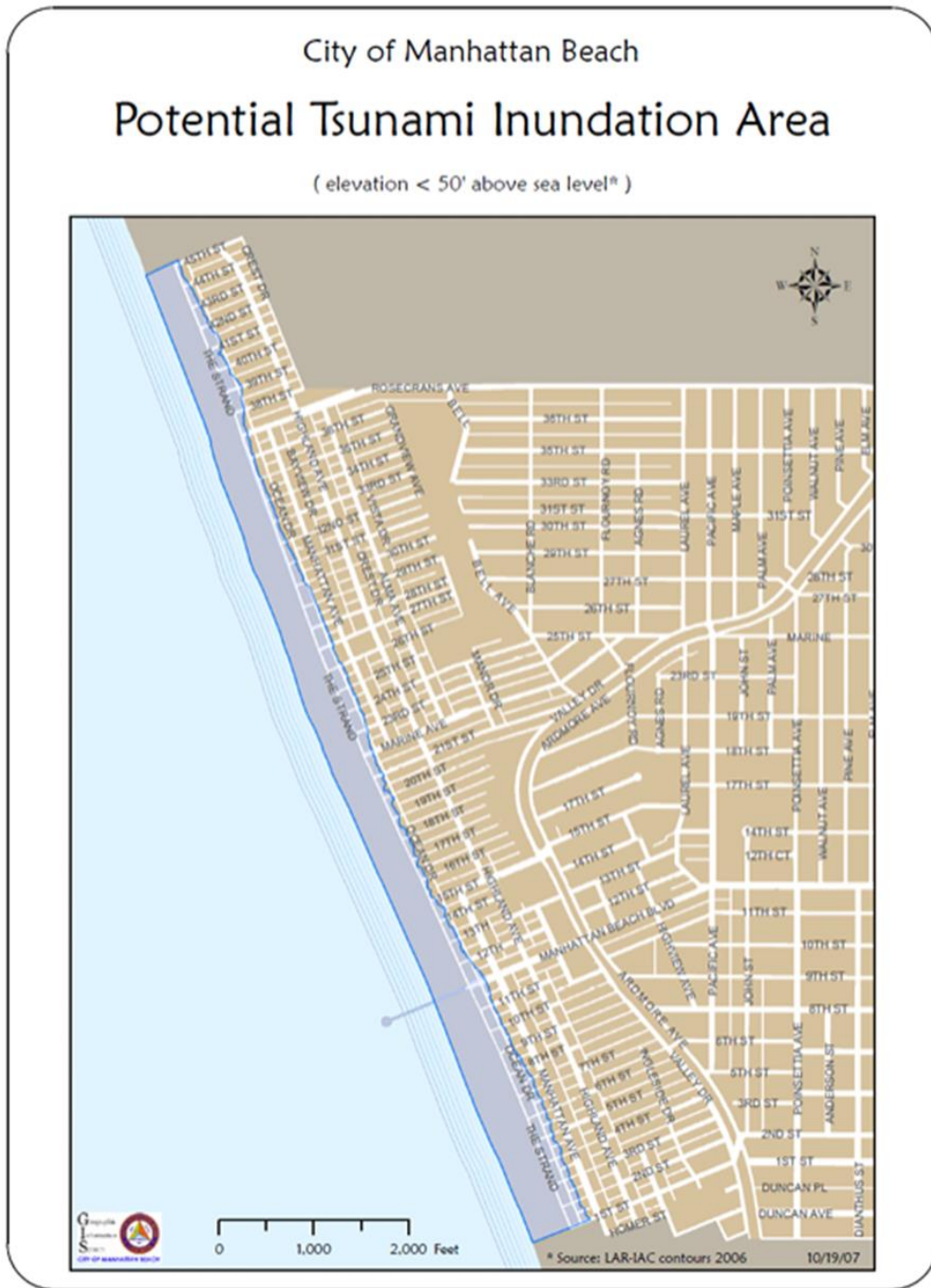
Tsunami

A local tsunami is possible at many points along the Southern California coast and provides little time for warning the population and even less time for evacuation. Studies have identified the Palos Verdes, Santa Cruz Island, and Santa Rosa Island faults as active and could potentially generate a tsunami. A University of Southern California study concludes that the Southland would experience "grave economic consequences," with losses reaching \$43 billion, from a tsunami-caused landslide off the Palos Verdes Peninsula. The USC study estimates that a submarine landslide off the Peninsula could generate a wave ranging from about 15 feet to 60 feet in height that would reach land in less than a minute. The study examines four different scenarios of increasing severity.⁵ Depending on the scenario, economic losses could range from \$7 billion to \$43.5 billion. In the worst case, both the ports of Los Angeles and Long Beach would be out of commission for a year. Losses in the Harbor Area, Carson, Rancho Palos Verdes, and Palos Verdes Estates alone could exceed \$450 million. Due to the potential impacts, Manhattan Beach has an extensive public awareness campaign.

A worst-case scenario has been generated by Manhattan Beach based on the California Tsunami Safety Committee's reporting that a Southern California tsunami generated by a landslide off Palos Verdes could be as big as 42 feet tall and 25 miles wide. Assuming a worst-case scenario of a tsunami run-up of 42 feet, the inundation area would include all beach-front property west of Highland Ave. from the northern city border to the southern city border. Critical facilities located in this inundation zone include the Manhattan Beach pier, sewage pump station 27th St. / Strand, and beach parking lots. **Figure 23** below provides a graphical representation of this scenario, identifying the expected inundation from the tsunami.

⁵ Sawyer.T. 2005. [A TSUNAMI HIT ON CALIFORNIA COULD BE QUICK AND COSTLY \(trb.org\)](http://trb.org)

Figure 23: City of Manhattan Beach, Potential Tsunami Inundation Area



Source: City of Manhattan Beach GIS

4.6.3 Previous Events

King Tides

King Tide combined with stormwater outflow flood under the Manhattan Beach Municipal Pier on January 17, 2019. It's important to place emphasis on the erosion existing in the left picture.

Figure 24: January 2019 King Tides



Image Source: [Daily Breeze](#)

King Tide combined with stormwater outflow flood under the Manhattan Beach Municipal Pier on January 17, 2019, resulting in beach erosion.

Figure 25: January 2019 King Tides, Beach Erosion



Image Source: [ResearchGate](#)

El Niño

The 1982/83 and 1997/98 El Niño's have been among the most damaging and well-documented events in the modern record (both are classified as 'extreme' events) and illustrate the magnitude of impacts El Niño can have in California.

In the wake of the 1982/83 El Niño, the US Army Corps of Engineers reported 33 ocean front homes had been destroyed and that another 3000 homes along with 900 coastal businesses were damaged by associated storm surge, waves, erosion, and other forces. (1984 Task Force Report: Coastal Storm Damage, Winter 1983).

During the 1997/98 El Niño event, there were 17 storm-related deaths in California and at least 27 homes were red-tagged within the coastal zone.

While the 2015/16 El Niño winter did not bring extraordinary rainfall, it did cause record coastal erosion along many California beaches, including an average of around 150 feet of erosion for Central California (Smith & Barnard, 2020), and triggered over 67 El Niño-related permit actions by the Commission.

The known occurrences of El Niño impacting Manhattan Beach is in 1982/1983 damaged coastal structures and eroded beaches. Waves reached the Pier deck and damaged the iconic Pier, Roundhouse Aquarium, and lifeguard station. **(Figure 26).**

Figure 26: 1982/83 El Niño, Manhattan Beach Pier



Source: [ResearchGate](#)

Storm Surge

Although tropical storms and hurricanes are not common hazards that impact in City of Manhattan Beach, it's important to note impacts that the City reported on August 21, 2023. The City and its emergency operation center reported some road closures, flooding, and downed trees due to the rain. Significant beach erosion was also reported as a result of the storm. On August 16, 2023, torrential rains hit Manhattan Beach due to the landfall of Hurricane Hillary. Water run-off during the hurricane resulted in the closure of local beaches due to the increased risk of bacteria. The last time a hurricane impacted this area was 83 years prior. However, the HMPC is aware that future tropical storm/hurricane possibilities could change given the risks of climate change.

Tsunami

According to the FEMA Multi-Hazard Risk Assessment, Since 1770, more than 46 remote-source generated, and 18 local tsunamis have been observed along the west coast.

Additionally, as noted in the Los Angeles County All Hazards Mitigation Plan (2020), the county where Manhattan Beach resides, between 1923 and 2011, 11 major tsunami events have occurred in Los Angeles County.

Most recently, the following tsunami affected the planning area:

- March 11, 2011, a M 9.0 earthquake in Japan caused tsunamis with run-up amplitudes ranging from 2 to 3 feet in Cataline Island, Los Angeles, Long Beach, Redondo Beach, and Santa Monica, damaging docks and boats.

There have been no additional documented tsunami events impacting the Manhattan Beach area since the last LHMP update.

4.6.4 Probability of Future Events

Calculating future probability is one of many predictors of future occurrences. **Table 28** provides a summary of the events for coastal hazards, as categorized and recorded by NOAA/NCI for Los Angeles County between January 1, 2019, and December 31, 2023:

Table 28: Probability of Future Events, Coastal Hazards

Probability of Future Events, Coastal Hazards, Los Angeles County, CA	
Event Year	Event Count
2019	0
2020	0
2021	0
2022	0
2023	0
Total Recorded Events =	0
Total Years =	5
Annual Probability =	0%

Source: NOAA/NCEI

<p>Annual Probability</p> $\frac{0}{5} \times 100 = \frac{0\%}{5} = 0\%$

Using the NOAA/NCEI database, and calculating probability based on the past events since the last HMP update, the likelihood of a single Coastal Hazard event occurring in the Operational Area on an annual basis over the next HMP planning cycle is 0%. This categorizes the hazard's future probability of occurrence as **Unlikely**.

Previous occurrences are not the only factor which determines the probability of future coastal hazard events for the City of Manhattan Beach. Climate change predictive modeling as well as the City's own Sea Level Rise Vulnerability Assessment indicates a growing frequency and intensity of these coastal hazards as a result of climate change.

Specific locations, such as the southern strand and areas west of Highland Avenue, are notably at risk, affecting residential zones, vital infrastructure, and cultural landmarks within the planning area. Climate change impacts must be taken into consideration when determining the probability of future coastal hazard impacts and their associated vulnerabilities.

4.6.5 Hazard Risk Ranking

The HMPC's hazard prioritization process, which assessed Coastal Hazards, resulted in an overall risk level being classified as Medium with a rank score of 7.14. It is important to note that the HMPC's feedback and risk determination, as outlined in **Table 29**, are reflective of the committee's perspectives and judgments.

Table 29: Risk Ranking for Coastal Hazards

Hazard	Impact to Assets			Vulnerability (H+P+B=#) (V=#/3)	Probability (Pb)	Social Vulnerability (SV)	Risk Value (R=V+Pb+SV)	Risk Ranking
	Human Impact (H)	Property Impact (P)	Business Impact (B)					
Coastal Hazards	2.75	3.5	4.2	2.89	3.25	1	7.14	Medium

4.6.6 Vulnerability and Impact Assessment

Change in Coastal Hazards Vulnerability

*As indicated in **Table 30**, since the last LHMP update the City has experienced an overall **increase in vulnerability** to Coastal Hazards.*

This decision was led by HMPC member discussion and feedback. The exacerbating effects of climate change prompted the HMPC to categorize coastal hazards such as tsunamis, tidal variations, El Niño events, storm surges, and coastal erosion under a unified focus to streamline and prioritize mitigation efforts. The incorporation of data from the City's Sea Level Rise Vulnerability Assessment into the LHMP highlights an increased frequency and severity of these hazards. Specific areas like the southern strand and regions west of Highland Avenue in Manhattan Beach, along with Redondo Harbor, have been identified as being particularly susceptible to these risks, with implications for residential areas, critical infrastructure, and cultural sites. Additionally, the HMPC noted in their discussion of vulnerability and impacts that socially vulnerable groups and essential services like communication and utilities are at heightened risk, potentially impacting the local economy and daily life. To combat these challenges, the HMPC proposed a range of mitigation strategies, including infrastructure enhancements and community education initiatives, underscoring Manhattan Beach's proactive stance in safeguarding its community and assets against the escalating threats posed by coastal hazards.

Table 30: Summary of Change in Vulnerability, Coastal Hazards

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Coastal Hazard			X

HMPC Vulnerability and Impact Assessment Feedback

Coastal hazards were not addressed as a separate hazard in the 2019 LHMP. However, given the compounding effects of climate change, the HMPC decided to group coastal hazards together to prioritize all mitigation actions addressing coastal hazards including Tsunami, Daily Tides, King Tides, El Niño, Storm Surge, and Beach/Coastal Erosion. The effects of climate change are leading to an increase in frequency and severity of all coastal hazards. The HMPC has incorporated all vulnerability and impact information from the City’s Sea Level Rise Vulnerability Assessment into the LHMP.⁶

The vulnerability and impact assessment feedback from the HMPC highlighted several key areas of concern regarding coastal hazards, particularly focusing on tsunami and flood risks in the Manhattan Beach and Redondo Harbor areas. The identified at-risk neighborhoods included the southern strand area and regions west of Highland Avenue. These areas face threats from storm surge, water run-up, erosion, and potential tsunami impacts. These hazards pose significant risks to homes, critical infrastructure, and natural, historic, and cultural resources.

Socially vulnerable populations, including homeless individuals, the elderly, children, and low-income families, were also described by the HMPC as at risk. Critical systems such as communication networks and utilities could also be impacted, and day-to-day activities like tourism and sporting events might be threatened, affecting the local economy.

Potential mitigation actions suggested by the HMPC include dune restoration, providing backup generators for water injection wells, retrofitting buildings for tsunami shelters, public education on tsunami warnings and evacuation routes, and designing stormwater projects to minimize flooding. These measures aim to protect both the physical infrastructure and the community’s well-being against the impacts of natural hazards.

The City of Manhattan Beach continues to lean forward as an organization to reduce the impacts of coastal hazards within the organization and community.

Vulnerability in Population

Within the City, census tracts 6202.01 (El Porto), 6203.05 (north of Manhattan Beach Boulevard), and 6209.04 (south of Manhattan Beach Boulevard) are all located in the coastal zone. While the identified coastal hazards are not expected to directly impact any City residences, roads, or major infrastructure, It will be important that these populations consider and prioritize potential future impacts as sea level rise and beach erosion are predicted to increase.

Within the City of Manhattan Beach, 15% of people are 65 years old or older. South of

⁶ <https://www.manhattanbeach.gov/home/showpublisheddocument/48276/637708394401200000>

Manhattan Beach Boulevard, 18% of people are 65 years old or older. Older adults may have mobility issues preventing them from being able to properly evacuate in the event of coastal flooding or another coastal hazard event.

Seasonal residents and visitors may also be less prepared and knowledgeable of the area and coastal hazard vulnerabilities. Visitors from surrounding areas may increase in the future as other beaches are lost. Los Angeles County estimates that Redondo Beach and Torrance Beach may be completely eroded by 2100. This will likely increase the demand for beach access at Dockweiler State Beach, Manhattan Beach, and Hermosa Beach, which are expected to lose about half their width, but maintain around 200-foot-wide beaches by the end of the century. (LA County 2016).

Data from the South Bay Cities Council of Government Vulnerability Assessment for Manhattan Beach suggests that between 20% and 30% of the adult population between 17th Street and Manhattan Beach Boulevard (Block Group 6 within Census Tract 6203.05) have a physical or mental disability, which is significantly higher than the percentage of adults with a disability in other portions of the city. Individuals with disabilities may experience the effects of hazards more intensely than other groups due to discrimination, marginalization, and other social and economic factors. Additionally, certain disabilities may prevent individuals from being mobile, which may impact their ability to evacuate in the event of flooding (SBCCOG, 2019)

The City of Manhattan Beach does not contain any disadvantaged communities, nor any low-income communities as noted earlier in the Plan. However, there are both disadvantaged and low-income communities north and east of the city, who may rely on the coastal resources and amenities within Manhattan Beach. This may increase the consequences of coastal hazard impacts to certain assets, like parking lots and restrooms, since these assets allow visitors access to the coastal resources.

Vulnerability of Systems

The beach is a major recreational asset of Manhattan Beach and the region, including hosting large beach events such as beach volleyball tournaments. Access to sandy beaches will become more limited with rising sea levels, affecting not only beach activities, but also beach access, safety logistics (lifeguards, fire, etc.), recreational and mobility infrastructure such as the bike trail, and management practices (trash removal, grooming, etc.).

Two studies were completed to develop an understanding surrounding economic loss due to coastal hazard impacts. They were a case study before the California Coastal Commission (CCC) in Solana Beach (CCC, 2017) as well as a study commissioned by the CCC and funded by NOAA (CCC 2015). The studies derived an average use value of \$42 per day from numerous past studies of beachgoer's willingness to pay (Pendleton and Kildow, 2006), adjusted for inflation. To estimate the total value of beach recreation, the day use value (\$42) is multiplied by the number of people attending the beach. For example, if 100,000 people attend a beach in 2025, the value of beach recreation would be \$42 x100,000, or \$4.2 million.

This would also affect activities that have value to the community. The beach area also provides protection from threats originating from the ocean.

Additional impacts that Coastal Hazards might have on the City include:

- **Storm drain system:** Under existing conditions without sea level rise, the current 25-year rainfall event causes inland flooding in the system. Extreme rainfall combined with high ocean water levels in the future is expected to increase the flooding in the City from the storm drain system.
- **Food stand and beach rental building at El Porto Beach:** This building has already experienced flooding under a 100-year coastal storm event, and the frequency and intensity of flooding is expected to increase in the future.
- **South Bay Cities' main sewer trunk line:** The South Bay Cities' main sewer trunk line runs along the beach from the north end of Manhattan Beach to just north of the Pier. The 100-year coastal storm event is expected to reach the pipeline with 6.6 feet of sea level rise, placing buoyancy forces on the line, which could lead to leaks and/or pipe failure.

The Marvin Braude Bike Trail is expected to be vulnerable to wave runup during a 100-year storm event with 4.9 feet of sea level rise.

The City of Manhattan Beach developed a Sea Level Rise Adaptation Plan and incorporated several mitigation actions within the document to help address long-term risk.

The City of Manhattan Beach identified specific mitigation strategies to combat coastal hazards, focusing on enhancing natural defenses and infrastructure resilience. These strategies include managing shoreline vegetation to stabilize the beach, expanding the native dune restoration project to further protect the coast, and constructing a tidal wall to shield the southern strand from oceanic threats. These measures were determined to effectively reduce the risk and impact of coastal hazards on the city's essential systems and its residents. This is completed through the following carry over and/or new Mitigation Action items in this LHMP update:

- **C.1** – Support vegetation management for Manhattan Beach shoreline stabilization.
- **C.2** - Expand the native coastal dune restoration project that is already in place.
- **C.3** - Build a tidal wall to protect the southern section of the strand from coastal hazard impacts.

See [Section 6.7.2 New Actions/Mitigation Projects](#) for more information on these actions.

4.6.7 Climate Change Impacts

As sea levels and temperatures rise due to Climate Change, so does the potential for greater impacts of Coastal Hazards. Increases in sea levels and higher tides may be contributing factors to more frequent and intense coastal flooding and beach erosion. Those who live, recreate, and work on the coast may be impacted when minor flooding covers roads, parking lots and sidewalks, or if other infrastructure is compromised.

Prior to this plan update, the City of Manhattan Beach was already addressing the realities of climate change. In 2018, the City initiated an update to the Local Coastal Program (LCP) to address climate change, specifically sea level rise. Pursuant to the City's adopted

Environmental Work Plan priorities, adopted Strategic Plan goals, and in compliance with State and General Plan mandates, the City has created a Climate Resiliency Program called Climate Ready Manhattan Beach.⁷ In 2017, the California State Lands Commission sent notices to the City highlighting their responsibility to complete a sea level rise assessment.

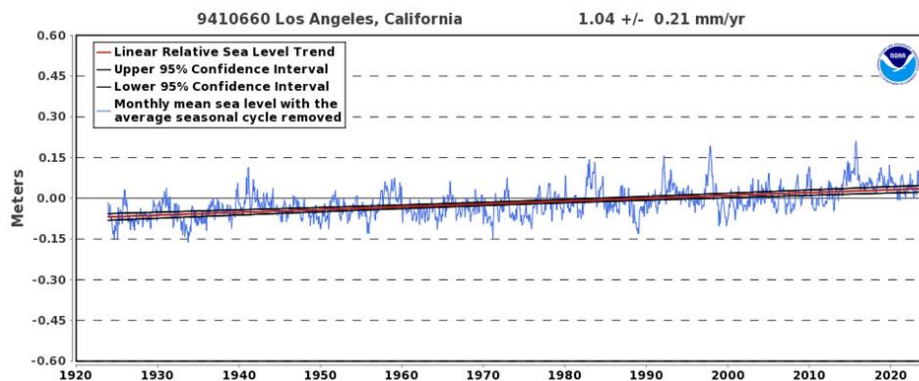
In Assembly Bill 2140, the general plan safety element is incentivized to contain hazard and risk reduction strategies that are complementary with the LHMP. The City's LCP update will be integrated with an update to the City's General Plan Safety Element and LHMP to ensure consistency and City compliance. This effort produced a Sea Level Rise Vulnerability Assessment, Sea Level Rise Adaptation Plan, and Coastal Hazards Local Coastal Program Chapter.

According to a study completed in May 2021, the City's Sea Level Rise Risk, Hazards, and Vulnerability Assessment, the City's beach area consists of a 2.1-mile shoreline, extending from 45th Street to 1st Street, and is a coastline that is largely urbanized, developed by residential and commercial properties. Some adaptation strategies have already been implemented to reduce vulnerabilities to coastal hazards along the City's shoreline. There are also other adaptation strategies used by adjacent jurisdictions, such as building seasonal sand berms, beach nourishment, and wetlands restoration.

The 2021 study also noted historic previous occurrences of coastal hazards impacting Manhattan Beach resulting flooding and erosion damage. In the late fall and winter of 1982/1983, California experienced an El Niño that produced significant precipitation, strong winds, and high surf along southern California. The storms damaged coastal structures and eroded beaches. Waves reached the Pier deck and damaged the iconic Pier. The Pier deck, Roundhouse Aquarium, and lifeguard station at the beginning of the Pier were completely replaced. Other notable El Niño seasons occurred in 1998 and 2010. In 2017, surf reached 15 feet at El Porto Beach in North Manhattan Beach. At the time of this update, Manhattan Beach is experiencing another El Niño event anticipated to be over in 2024 according to NOAA.

It's important to note the increase in sea level over time. **Figure 27** depicts the upward trend in sea level, based on NOAA data, for Los Angeles over the last 100 years.

Figure 27: Sea Level Rise



⁷ [Climate Ready Manhattan Beach](#)

Source: [NOAA Tides & Currents - Sea Level Rise](#)

Sea Level Rise Projections

The two major climate change processes that result in sea level rise are melting of land-based ice (e.g., glaciers and ice sheets) and thermal expansion caused by warming of the ocean (i.e., warmer water molecules take up more space than cooler water molecules).

Sea levels at the Santa Monica Pier tide gage, which is the closest NOAA tide gauge to Manhattan Beach, have increased by 0.51 feet in the last 100 years (NOAA Tides and Currents Station #9410840). However, the rate of sea level rise is expected to increase over time because of climate change and global warming. Sea level rise not only increases typical tidal water levels, but it also raises storm water levels. The flood extent due to storm surge and waves are made worse by sea level rise and flooding can occur further inland. Additionally, higher sea levels combined with riverine flooding or water coming from a stormwater outfall can increase flooding by backing up water into the channel or pipe. California's Ocean Protection Council released a probabilistic projection for sea level rise based on emissions, is depicted in **Figure 28** below. Additional information can be found in the Sea Level Rise Risk, Hazards, and Vulnerability Assessment, City of Manhattan Beach, May 2021.

Figure 28: Projected Sea-Level Rise (in feet) for Los Angeles

		Probabilistic Projections (in feet) (based on Kopp et al. 2014)				H++ scenario (Sweet et al. 2017) *Single scenario
		MEDIAN 50% probability sea-level rise meets or exceeds...	LIKELY RANGE 66% probability sea-level rise is between...	1-IN-20 CHANCE 5% probability sea-level rise meets or exceeds...	1-IN-200 CHANCE 0.5% probability sea-level rise meets or exceeds...	
			Low Risk Aversion		Medium - High Risk Aversion	Extreme Risk Aversion
High emissions	2030	0.3	0.2 - 0.5	0.6	0.7	1.0
	2040	0.5	0.4 - 0.7	0.9	1.2	1.7
	2050	0.7	0.5 - 1.0	1.2	1.8	2.6
Low emissions	2060	0.8	0.5 - 1.1	1.4	2.2	
High emissions	2060	1.0	0.7 - 1.3	1.7	2.5	3.7
Low emissions	2070	0.9	0.6 - 1.3	1.8	2.9	
High emissions	2070	1.2	0.8 - 1.7	2.2	3.3	5.0
Low emissions	2080	1.0	0.6 - 1.6	2.1	3.6	
High emissions	2080	1.5	1.0 - 2.2	2.8	4.3	6.4
Low emissions	2090	1.2	0.7 - 1.8	2.5	4.5	
High emissions	2090	1.8	1.2 - 2.7	3.4	5.3	8.0
Low emissions	2100	1.3	0.7 - 2.1	3.0	5.4	
High emissions	2100	2.2	1.3 - 3.2	4.1	6.7	9.9
Low emissions	2110*	1.4	0.9 - 2.2	3.1	6.0	
High emissions	2110*	2.3	1.6 - 3.3	4.3	7.1	11.5
Low emissions	2120	1.5	0.9 - 2.5	3.6	7.1	
High emissions	2120	2.7	1.8 - 3.8	5.0	8.3	13.8
Low emissions	2130	1.7	0.9 - 2.8	4.0	8.1	
High emissions	2130	3.0	2.0 - 4.3	5.7	9.7	16.1
Low emissions	2140	1.8	0.9 - 3.0	4.5	9.2	
High emissions	2140	3.3	2.2 - 4.9	6.5	11.1	18.7
Low emissions	2150	1.9	0.9 - 3.3	5.1	10.6	
High emissions	2150	3.7	2.4 - 5.4	7.3	12.7	21.5

Source: California Ocean Protection Council. [State of California Sea-level Rise Guidance. \(2018\)](#)

4.6.8 Critical Facilities & Infrastructure

Critical facilities that are located closest to the beach and coastal areas are the locations most vulnerable to Coastal Hazards. Some facilities and infrastructure away from the coast could be negatively impacted by secondary impacts including road closures and utility outages. All roadways adjacent to beaches and coastal areas within the planning area could be impacted by Coastal Hazards. Future development projects along the coast should consider Coastal Hazards at the planning, engineering, and architectural design stage to reduce vulnerability. Per the City Planning Team and HMPC, the following are the Critical Facilities and Infrastructure most vulnerable to potential losses as a result of Coastal Hazards.

Table 31: Critical Facilities & Infrastructure Potential Loss, Coastal Hazards

Category	Number of Facilities	Examples	Asset Value/Potential Loss	Community Lifeline Category
City Hall	2	City Hall	\$ 14,383,548	Safety and Security, Communications
Communications	32	Transmitter/Towers, Radio Equipment Rooms, Receivers	Not Available	Communications
Community Centers	10	Parks, Sports Centers, Civic Centers, Churches	\$ 22,152,477	Safety and Security, Food and Shelter
Energy	4	Utilities	Not Available	Energy
Fire/Law Enforcement	2	Fire Stations	\$ 40,459,180	Safety and Security, Communications, Hazardous Materials
Government Offices	6	Libraries, Court Rooms, Post Offices	Not Available	Safety and Security, Communications
Medical Facilities	1	Care Centers, Urgent Care	Not Available	Health and Medical
Schools	9	Schools (Elementary, Middle, and High), Childcare Center	Not Available	Safety and Security, Food and Shelter
Transportation	5	Roads, Bridges/Overpasses	\$ 88,493,906	Transportation
Water/Sewer	18	Pump Stations, Wells, Reservoirs, Connectors	\$ 28,811,761	Water Systems

Total	89	---	\$ 194,300,872
Note: Potential loss data are estimates only, as replacement values for all facilities were not available. Actual losses may be greater than the estimate presented on this table.			

4.6.9 Land Use and Development

Using the data from Befus et al. 2020⁸, the depth to groundwater was evaluated across Manhattan Beach. While there is not expected to be any emergence of groundwater leading to backshore ponding in Manhattan Beach, it is possible that groundwater could impact underground infrastructure, such as sewers and electrical lines. Under existing conditions, the model results showed that the groundwater table is 5-20 feet below the beach, except at the edge of the water, where the groundwater table is closer than five feet to the surface. With 3.3 feet (1 meter) of sea level rise, the model showed groundwater levels under the beach would increase 3.2 feet. With 6.6 feet (2 meters) of sea level rise, the groundwater would increase 6.4 feet and with 9.8 feet (3 meters) of sea level rise, it would increase 9.6 feet. The model showed that the groundwater in Manhattan Beach would increase slightly less than the amount of sea level rise (e.g., 9.8 feet of sea level rise translates to 9.6 feet of rise in the groundwater). Because the land slopes up quickly from the beach, the groundwater under most of the city is deep and there is limited risk of inland flooding.

Storm drain system: Under existing conditions without sea level rise, the current 25-year rainfall event causes inland flooding in the system. Extreme rainfall combined with high ocean water levels in the future is expected to increase the flooding in the city from the storm drain system.

South Bay Cities' main sewer trunk line: The South Bay Cities' main sewer trunk line runs along the beach from the north end of Manhattan Beach to just north of the Pier. The 100-year coastal storm event is expected to reach the pipeline with 6.6 feet of sea level rise, placing buoyancy forces on the line, which could lead to leaks and/or pipe failure.

The City of Manhattan Beach has completed extensive planning, preparedness, and mitigation surrounding the issues of coastal flooding. These efforts include a Local Coastal Hazards Program, a Sea Level Rise Vulnerability Assessment, and a Sea Level Rise Adaptation Plan. The City also has an extensive Municipal Code to address these ongoing hazards.

Flood Mapping

FEMA's Flood Insurance Rate Maps (FIRM) are in **Appendix D** and can provide more detailed information about the risk associated with coastal flooding in Manhattan Beach. It's important to note the only special flood hazard area (SFHA) noted for Manhattan Beach by FEMA is the coast. There are no inland risks.

⁸ <https://www.nature.com/articles/s41558-020-0874-1>

4.7 Drought

4.7.1 Hazard Description

Drought is a normal, recurrent feature of virtually all climatic zones, including areas of both high and low rainfall, although characteristically will vary significantly from one region to another. Drought is a gradual phenomenon. Drought differs from normal aridity, which is a permanent feature of climate in areas of low rainfall. Drought is the result of a natural decline in the expected precipitation over an extended period of time, typically one or more seasons in length. Other climatic characteristics, such as high temperature, high wind, and low relative humidity, impact the severity of drought conditions. Normally, one dry year does not constitute a drought in California, but rather serves as a reminder of the need to plan for droughts. California's extensive system of water supply infrastructure (reservoirs, groundwater basins, and interregional conveyance facilities) generally mitigates the effects of short-term dry periods for most water users. Four common definitions commonly used to describe drought include:

- **Agricultural** – drought is defined principally in terms of naturally occurring soil moisture deficiencies relative to water demands on plant life, usually arid crops.
- **Hydrological** – drought is related to the effects of precipitation shortfalls on stream flows, reservoir, lake, and ground water levels.
- **Meteorological** – drought is defined solely on the degree of dryness, expressed as a departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales.
- **Socioeconomic** – drought associates the supply and demand of economic goods or services with elements of meteorological, hydrologic, and agricultural drought. Socioeconomic drought occurs when the demand of water exceeds the supply as a result of weather-related supply shortfalls. It may also be referred to as a water management drought

A drought's severity depends on numerous factors, including duration, intensity, and geographic extent, as well as regional water supply demands by humans and vegetation. Due to its multi-dimensional nature, drought is difficult to define in exact terms and poses difficulties in terms of comprehensive risk assessments.

Drought differs from other natural hazards in three ways:

1. The onset and end of a drought are difficult to determine due to the slow accumulation and lingering effects of an event after its apparent end.
2. The lack of an exact and universally accepted definition adds to the confusion of its existence and severity.
3. In contrast with other natural hazards, the impact of drought is less obvious and may spread over a larger geographic area. These characteristics have hindered the preparation of drought contingency or mitigation plans by many governments.

Droughts are regularly monitored by multiple federal agencies using several different indices and classifications. Among them are the U.S. Drought Monitor, the Palmer Drought Index, and the Standardized Precipitation Index. The U.S. Drought Monitor summarizes drought conditions across the U.S. and Puerto Rico and is developed and maintained by

the National Drought Mitigation Center (www.drought.unl.edu). Often described as a mix of science and art, the map is updated weekly by combining a variety of drought databases and indicators and local expert input into a single composite drought indicator.

4.7.2 Location and Extent

Extended periods without adequate rainfall can and frequently do occur across all of Southern California. The occurrence of drought is regional in nature and scope, which holds true for the City of Manhattan Beach and all of Los Angeles County. As such, when drought occurs it affects the entire planning area and every resident of Manhattan Beach.

The West Basin Municipal Water District provides over 80 percent of the local water supply. As noted earlier in the document, the City owns the right to pump 64,468 acre-feet per year of groundwater from the West Coast Basin. Imported water flows to the City via a 45-inch Metropolitan Water District line in Manhattan Beach Boulevard.

Droughts typically occur on a massive geographic scale often affecting multiple counties, regions, and states. Severe drought can cause enormous economic consequences, not only in the county but in the region and nation as well. There is no set speed for the onset or warning periods. A drought may begin in as short as a period of a week or it may take months to reach an official declared drought status.

When a drought begins, and ends, is difficult to determine. Rainfall data alone won't be a singular factor indicating if an area is in a drought, how severe the drought may be, or how long the area has been in drought. However, one can identify various indicators of drought, such as rainfall, snowpack, stream flow, etc., and track these indicators to monitor drought. Researchers have developed several tools to help define the onset, severity, and end of droughts. Drought indices take thousands of pieces of data into a comprehensible big picture. A drought index value is typically a single number, which is interpreted on a scale of abnormally wet, average, and abnormally dry. There are three primary drought indices that are all used to determine the onset and the severity of drought: The Standard Precipitation Index, the Palmer Drought Severity Index, and the Crop Moisture Index. During a drought event, the City of Manhattan Beach can expect to see a range anywhere from 0.0 to -4.0 on the Palmer Drought Severity Index (PDSI) or a -1.0 to -2.0 on the Standard Precipitation Index. Below are the descriptions and tables of these primary drought indices.

The **Standard Participation Index (SPI)** is also used by The National Drought Mitigation Center (NDMC) to identify emerging drought months sooner than the PDSI. SPI shows the actual precipitation compared to the probability of precipitation for various time frames. The SPI is an index based on precipitation only. It can be used on a variety of time scales, which allows it to be useful for both short-term agricultural and long-term hydrological applications. A drought event occurs any time the SPI is continuously negative and reaches an intensity of -1.0" or less. The event ends when the SPI becomes positive. Each drought event, therefore, has a duration defined by its beginning and end, and intensity for each month the event continues. The positive sum of the SPI for all the months within a drought event can be termed the drought's magnitude.

Table 32: Standard Precipitation Index (SPI)

Standard Precipitation Index	
Extremely Wet	2.0+"
Very Wet	1.5" to 1.99"
Moderately Wet	1.0" to 1.49"
Near Normal	-0.99' to 0.99"
Moderately Dry	-1.0" to -1.49"
Severely Dry	-1.5" to -1.99"
Extremely Dry	-2" and less

The **Palmer Drought Severity Index (PDSI)** is the primary indicator of drought for the U.S. Drought Monitor and has been the longest for monitoring drought. The PDSI allows for categorization of various levels of wetness and dryness that are prominent over an area. The PDSI is calculated based on precipitation and temperature data as well as the local Available Water Content (AWC) of the soil. Palmer values may lag emerging droughts by several months and are less well suited for mountainous land or areas of frequent climatic extremes.

Table 33: Palmer Drought Severity Index (PDSI)

Palmer Drought Severity Index	
Extremely Wet	4.0" or more
Very Wet	3.0" to 3.99"
Moderately Wet	2.0" to 2.99"
Slightly Wet	1.0" to 1.99"
Incipient Wet Spell	0.5" to 0.99"
Near Normal	0.49" to -0.49"
Incipient Dry Spell	-0.5" to -0.99"
Mild Drought	-1.0" to -1.99"
Moderate Drought	-2.0" to -2.99"
Severe Drought	-3.0" to -3.99"
Extreme Drought	-4.0" or less

Crop Moisture Index (CMI), a derivative of the PDSI is the CMI. It looks at moisture supply in the short term for crop producing regions. The CMI monitors week-to-week crop conditions, whereas the PDSI monitors long-term meteorological wet and dry spells. The CMI was designed to evaluate short-term moisture conditions across major crop producing regions. Because it is designed to monitor short-term moisture conditions affecting a developing crop, the CMI is not a good long-term drought monitoring tool. The CMI's rapid response to changing short-term conditions may provide misleading information about long-term conditions. The CMI uses the same index as the PDSI, but in its own redefined context.

Figure 29 depicts the severity classifications for the [U.S. Drought Monitor \(USDM\)](#). The USDM identifies areas in drought and labels them by intensity. The drought map uses four categories of drought, from D1 – the least intense – to D4, the most intense. It also highlights areas with no drought and uses the D0 category to indicate abnormally dry areas that could be entering or recovering from drought.

Figure 29: U.S. Drought Monitor, Drought Classifications

[Home](#) > [About](#) > [About the Data](#) > Drought Classification

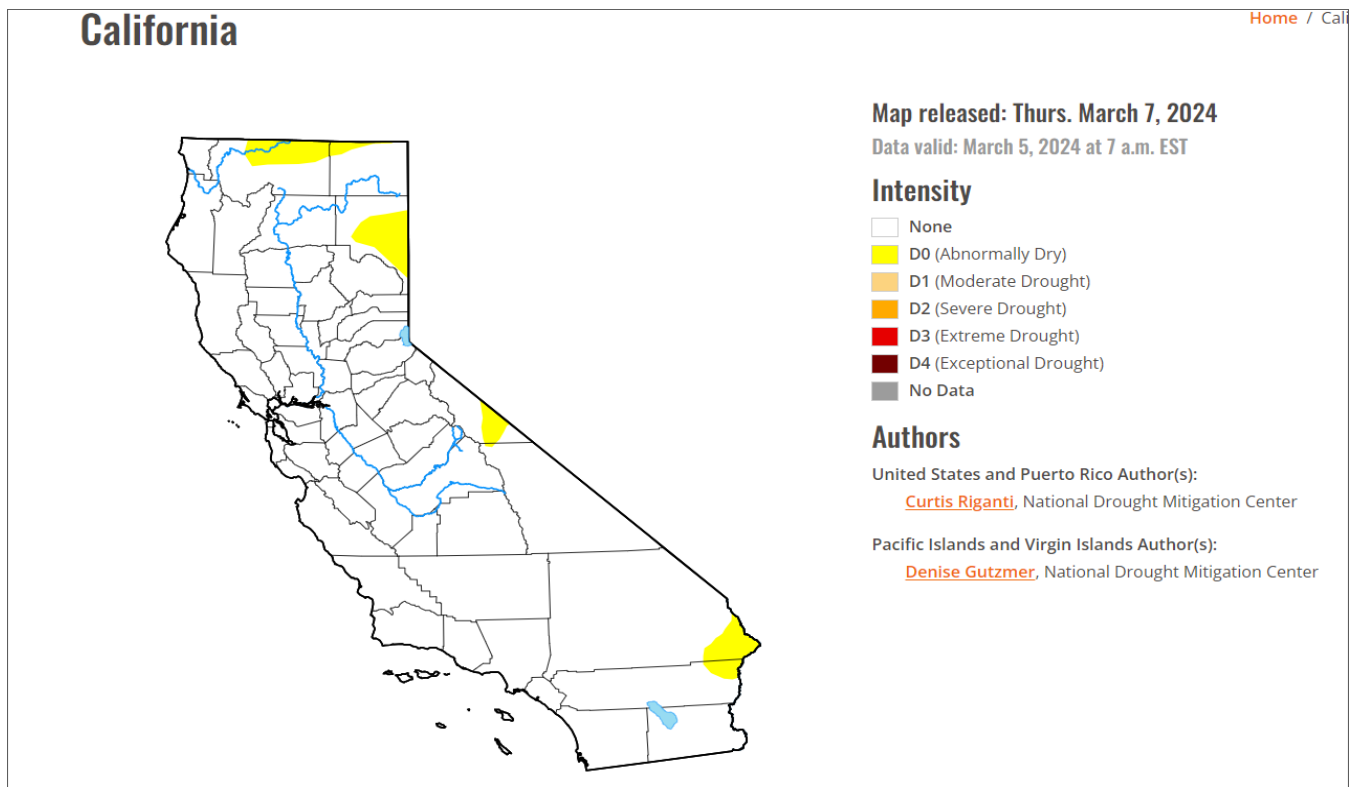
Drought Classification

Category	Description	Possible Impacts	Ranges				
			Palmer Drought Severity Index (PDSI)	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	Objective Drought Indicator Blends (Percentiles)
D0	Abnormally Dry	Going into drought: <ul style="list-style-type: none"> short-term dryness slowing planting, growth of crops or pastures Coming out of drought: <ul style="list-style-type: none"> some lingering water deficits pastures or crops not fully recovered 	-1.0 to -1.9	21 to 30	21 to 30	-0.5 to -0.7	21 to 30
D1	Moderate Drought	<ul style="list-style-type: none"> Some damage to crops, pastures Streams, reservoirs, or wells low, some water shortages developing or imminent Voluntary water-use restrictions requested 	-2.0 to -2.9	11 to 20	11 to 20	-0.8 to -1.2	11 to 20
D2	Severe Drought	<ul style="list-style-type: none"> Crop or pasture losses likely Water shortages common Water restrictions imposed 	-3.0 to -3.9	6 to 10	6 to 10	-1.3 to -1.5	6 to 10
D3	Extreme Drought	<ul style="list-style-type: none"> Major crop/pasture losses Widespread water shortages or restrictions 	-4.0 to -4.9	3 to 5	3 to 5	-1.6 to -1.9	3 to 5
D4	Exceptional Drought	<ul style="list-style-type: none"> Exceptional and widespread crop/pasture losses Shortages of water in reservoirs, streams, and wells creating water emergencies 	-5.0 or less	0 to 2	0 to 2	-2.0 or less	0 to 2

Source: U.S. Drought Monitor

While writing this LHMP update, as of March 2024, the planning area is not experiencing drought according to the United States Drought Monitor. The Drought Monitor is not a forecast but looks backward; providing a weekly assessment of drought conditions based on how much precipitation did or did not fall. A series of ten storms during December 2022 to January 2023 brought record breaking levels of precipitation to California, breaking the dry spell experienced between 2019 – 2022. California received record levels of snowpack in the northern Sierra Nevada and many major reservoirs show signs of recovery. Drought conditions in the City of Manhattan Beach are currently categorized as “none”, showing no developing or imminent water shortages.

Figure 30: US Drought Monitor, California



Source: Source: U.S. Drought Monitor, California,
<https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?CA>, accessed March 10, 2024

As per NOAA (<https://www.drought.gov/what-is-drought/drought-basics>), the following table provides examples of additional impacts that can potentially occur within Manhattan Beach as a result of Drought conditions.

Table 34: Potential Drought Impacts to Manhattan Beach

Drought Impacts	
Transportation	Drought impacts port and waterway transportation and supply chains, resulting in increased transportation costs. Higher temperatures that coexist with drought can impact roads, airport runways, and rail lines.
Wildfire	Drought can be a contributing factor to wildfire. Dry, hot, and windy weather combined with dried out (and more flammable) vegetation can increase the probability of large-scale wildfires.
Public Health	Drought can cause significant human health outcomes, including decreased water quantity and quality, increased incidence of illness and disease (e.g., Valley Fever), adverse mental health outcomes as livelihoods are challenged, and overall, increased mortality rates.
Ecosystems	Drought can alter or degrade critical functions of healthy ecosystems, including reduced plant growth, reduction or extinction of local species, and landscape-level transitions (e.g., a forest being replaced by a grassland).
Water Quality	During drought, decreased water levels, warmer temperatures, and soil runoff can lead to algal growth, lower dissolved oxygen levels, and increased turbidity, posing health risks for human and aquatic life.

4.7.3 Previous Events

Per the National Drought Mitigation Center, California, including Los Angeles County, was in some form of drought for 376 consecutive weeks from December 20, 2011, to March 14, 2019. Within the Los Angeles County All-Hazards Mitigation Plan it lists droughts experienced in California over the past 100 years:

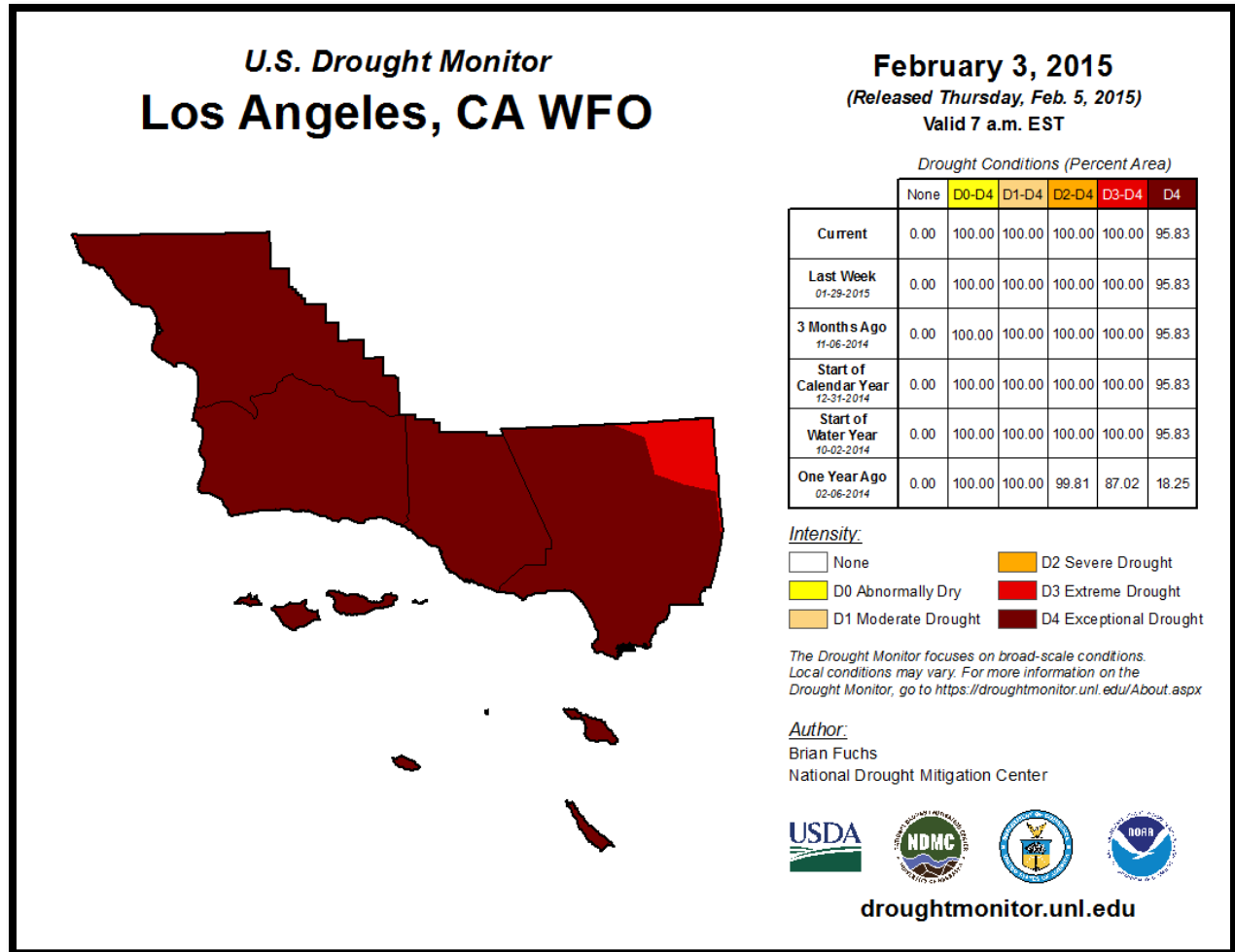
Table 35: Previous Occurrences, Drought

Drought Duration	Drought Location
1917-1921	Statewide, except for central Sierra Nevada and North Coast
1922-1926	Statewide, except for central Sierra Nevada
1928-1937	Statewide
1943-1951	Statewide
1959-1962	Statewide
1976-1977	Statewide, except for Southwest Deserts
1987-1922	Statewide
2007-2009	Statewide, particularly Central Coast
2011-2015	Statewide

Between the years of 2014, to January 23, 2017, Los Angeles County, which includes Manhattan Beach, experienced a D4 Drought with the highest Drought percentage coverage of 87.92% from July 15, 2014, to February 1, 2016. **Figure 31** below provides details

about this drought during the height of this disaster.

Figure 31: US Drought Monitor, Los Angeles



Source: www.Droughtmonitor.unl.edu

The US Drought Monitor provides weekly updates on the status of Drought throughout the United States. Data can be pulled for a specific County only. City/Town/Tribal data is not able to be calculated. Typically, impacts from a Drought are across the entire County, not a particular jurisdiction. The data provides percentages to indicate how severe the Drought is for that locale which is often documented in partial percentage based on land impacts. **Table 36** provides the number of days in a Drought level for all of Los Angeles County since the previous LHMP update.

Table 36: Los Angeles Country Drought Monitor Days

Year	None	DO	D1	D2	D3	D4
2019	42	17	5	3	2	0
2020	48	25	6	3	0	0
2021	0	51	51	51	36	29
2022	0	53	53	53	43	29

Year	None	DO	D1	D2	D3	D4
2023	28	16	12	8	1	0
Total Days:	118	192	127	118	82	58

According to the Manhattan Beach Urban Water Management Plan, the City experienced a five consecutive year drought within its service area from CY 2011- 2015. The City was able to provide sufficient water supplies to meet the projected water demands of its customers, including during a five consecutive year drought period. Within this document, a drought risk assessment was completed. The City considered impacts to water supplies and demands based on climate change conditions.

On the City's departmental website, the Environmental Sustainability Department has information on "How Can You Go Green", within page the section on "Water Conservation" states that, "On May 19, 2015, the City established permanent water conservation by adopting Ordinance No. 15-0008; in January 2022, the City declared a Stage 1 Water Shortage; and in June 2022, the City declared a Stage 2 Water Shortage, in accordance with the emergency water conservation regulations enacted by the State Water Resources Control Board. Although the State of California has experienced a record-setting snowpack in 2023, fluctuations between wet and dry conditions are anticipated to continue. Therefore, the City chooses to remain in Stage 2 of its established drought restrictions."

The regulations issued by the State Water Resources Control Board also ban the irrigation of non-functional turf with potable water in commercial, industrial, and institutional sites (residential properties are not included). However, the use of water is not prohibited by this section to the extent necessary to ensure the health of trees and other perennial non-turf plantings or to the extent necessary to address an immediate health and safety need. As part of the City's conservation efforts, recycled water is used in a vast majority of its public spaces. The City has also developed an Urban Water Management Plan and a Water Shortage Contingency Plan. Components of each have been incorporated into this plan.

4.7.4 Probability of Future Events

Calculating future probability is one of many predictors of future occurrences. **Table 37** provides a summary of drought events recorded by NOAA Integrated Drought Information System for Los Angeles County, where the City of Manhattan Beach resides, between January 2019 and 2023:

Table 37: Probability of Future Events, Drought

Probability of Future Events, Drought, Los Angeles County, CA	
Event Year	Event Count
2019	0
2020	0
2021	1
2022	1
2023	1
Total Recorded Events =	3

Probability of Future Events, Drought, Los Angeles County, CA	
Total Years =	5
Annual Probability =	12%

Using the NOAA NIDIS database, and calculating probability based on the past events since the last HMP update, the likelihood of a single drought event occurring in the Operational Area on an annual basis during the next HMP planning cycle is 12%. This categorizes the hazard's probability as **Likely**.

<p>Annual Probability:</p> $\frac{3}{5} \times 100 = \frac{60\%}{5} = 12\%$
--

4.7.5 Hazard Risk Ranking

The HMPC's hazard prioritization process, which assessed Drought, resulted in an overall risk level being classified as Medium with a rank score of 6. It is important to note that the HMPC's feedback and risk determination, as outlined in **Table 38**, are reflective of the committee's perspectives and judgments.

Table 38: Risk Ranking for Drought

Hazard	Impact to Assets			Vulnerability (H+P+B=#) (V=#/3)	Probability (Pb)	Social Vulnerability (SV)	Risk Value (R=V+Pb+SV)	Risk Ranking
	Human Impact (H)	Property Impact (P)	Business Impact (B)					
Drought	1.95	2.25	1.5	1.9	3.1	1	6	Medium

4.7.6 Vulnerability & Impact Assessment

The 2024 LHMP addresses the community's ongoing concerns and strategies regarding drought, a hazard of prime concern since the 2019 LHMP. Despite the record snowpack in California in 2023, the City anticipates continued fluctuations in weather conditions and currently maintains Stage 2 drought restrictions. The Urban Water Management Plan and Water Shortage Contingency Plan are key components of the City's proactive approach to managing water resources and drought impacts.

According to the California Department of Water Resources, Droughts cause public health and safety impacts, as well as economic and environmental impacts. Public health and safety impacts are primarily associated with catastrophic wildfire risks and drinking water shortage risks for small water systems in rural areas and private residential wells. Examples of other impacts include costs to homeowners due to loss of residential landscaping, degradation of urban environments due to loss of landscaping, agricultural land fallowing and associated job loss, degradation of fishery habitat, and tree mortality with damage to forest ecosystems. Not all of these impacts are as prevalent or relevant to the City of Manhattan Beach with more specifics to the City noted below.

Change in Drought Vulnerability

*As indicated in Table 39, since the last LHMP update there have been **no changes** in the City's overall vulnerability to Drought.*

The vulnerability to drought in Manhattan Beach remains unchanged despite the broader impacts of climate change, largely because the City's infrastructure and community resilience strategies are specifically designed to manage and mitigate the effects of drought. The HMPC's analysis underscores that while green areas and critical infrastructure like the water tower are at risk, the city has existing and proactive measures in place to address these concerns. Schools, sewage pump stations, and community activities, particularly in athletic fields, are acknowledged as vulnerable, yet there are established strategies to reduce their exposure to drought-related disruptions. Although climate predictions suggest a drier future for the region, Manhattan Beach's ongoing efforts to develop and maintain a robust Drought Emergency Plan, alongside its commitment to supporting all residents, particularly the most vulnerable, demonstrate a focused and effective approach to managing drought risks. The city's strategies illustrate why the overall vulnerability to drought remains consistent, highlighting the effectiveness of targeted mitigation and preparedness efforts.

Table 39: Summary of Change in Vulnerability, Drought

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Drought		X	

HMPC Vulnerability and Impact Assessment Feedback

Feedback from the HMPC during the vulnerability and impact assessment discussions highlighted the following:

- Green Belt and park areas are high-risk zones due to their vegetation, which could pose a fire hazard during severe drought conditions. The HMPC suggested the maintenance of these areas as being crucial to minimize the risk of urban fires.
- Critical infrastructure like the water tower on the north side of Manhattan Beach was identified as essential for emergency water supply.
- Schools and key sewage pump stations were noted as vulnerable assets that could be impacted by the drought, especially concerning power capacity for essential services.
- Daily community activities, such as the use of athletic fields, could face disruptions due to water restrictions, increasing injury risks for athletes. This feedback underscores the interconnectedness of drought impacts, ranging

from fire risks and public health to critical infrastructure and community activities, emphasizing the need for comprehensive and proactive mitigation strategies to reduce these potential impacts.

Vulnerability in Population

According to the Centers for Disease Control and Prevention, severe drought conditions can negatively affect air quality. During drought, there is an increased risk for wildfires and dust storms. Particulate matter suspended in the air from these events can irritate the bronchial passages and lungs. This can make chronic respiratory illnesses worse and increase the risk for respiratory infections like bronchitis and pneumonia.

The health implications of drought are numerous and far reaching. Some drought-related health effects are experienced in the short-term and can be directly observed and measured. However, the slow rise or chronic nature of drought can result in longer term, indirect health implications that are not always easy to anticipate or monitor. Drought conditions can impact individuals throughout the City with greater impacts to the most vulnerable populations including older adults, children, low-income families, and those with medical conditions. These risks could include limited access to water, heightened health risks due to poor air quality and increased heat, and economic strain due to the rising costs of water.

As noted by the HMPC,

“Drought exacerbates heat-related vulnerabilities, particularly affecting older individuals, children, and those without cooling amenities. The need for cooling centers supports socially vulnerable populations during extreme heat events, which are increased by drought conditions.”

The possible public health implications, that would increase within the socially vulnerable within the City of Manhattan Beach, of drought include:

- Compromised quantity and quality of drinking water.
- Increased recreational risks.
- Effects on air quality.
- Diminished living conditions related to energy, air quality, sanitation, and hygiene.
- Mental health effects related to economic and job losses.
- Compromised food and nutrition; and
- Increased incidence of illness and disease.

The City of Manhattan Beach continues to lean forward as an organization to reduce the impacts of drought within the organization and community. This includes Mitigation Action D.2 to Assess and Develop a Drought Emergency Plan; implement recommendations. See **Table 82:** Mitigation project D.2 for more details on this action which will include support to

underserved and vulnerable populations that would be most impacted by drought conditions that may cause an increase to surcharges and other drought related water utility fee increases. Census Tract 620801 contains a higher concentration of cost burdened households that could therefore potentially be more impacted by drought conditions.

Vulnerability of Systems

Drought conditions would affect the entirety of the City, and therefore all critical facilities, infrastructure systems, structures, residents, and businesses are considered vulnerable to drought hazards. Droughts do not typically result in physical damage to buildings and infrastructure, thus critical facilities are not at risk of destruction or structural failure. Instead, drought could potentially limit the availability of water supplies to City residents and businesses. One concern with limited water supplies is circumstances where water is needed for operations and/or fire suppression. Furthermore, drought often coincides with the wildfire season and contributes to conditions conducive to wildfire.

Drought and decreased water in aqueducts may slow the flow of water or cause it to become stagnant, resulting in a decrease in water quality and increase the potential for mosquitos and other vectors. Additionally underground pipelines which transport water throughout the City are more prone to damage during drought as soils crack and lose plasticity, resulting in water leaks.

The primary water source for Manhattan Beach is a combination of imported surface water and local groundwater. The city gets 55% of its water from imported sources through the Metropolitan Water District of Southern California and 45% from local groundwater. The imported water primarily comes from the Colorado River and Northern California streams.⁹ To address the potential impacts of drought conditions in Manhattan Beach, the city has decided to implement water conservation ordinances. This mitigation action involves enforcing specific regulations during drought periods to ensure the sustainable use of water resources, thereby mitigating the adverse effects of prolonged dry spells on the community and its essential services. This is completed through the following carry over and/or new Mitigation Action items in this LHMP update:

- **D.1** - Enforce water conservation ordinances during drought conditions
- **D.2** - Assess and Develop a Drought Emergency Plan; implement recommendations.

See [Section 6.7.2 New Actions/Mitigation Projects](#) for more information on these actions.

4.7.7 Climate Change Impacts

Warming temperatures and periods of low precipitation, both attributable to climate change, have increased the likelihood of extreme droughts in the state. Geography and local climate patterns determine regional variations in the extent and severity of droughts. According to the Los Angeles County Hazard Mitigation Plan (2020), climate scientists

⁹<https://www.manhattanbeach.gov/departments/public-works/utilities-division/water-systems/treatment/hard-facts-about-hard-water>

predict that Los Angeles County and the rest of southern California will get drier and northern California will get hotter. The resulting loss of snowpack in the Sierra Nevada will mean less water for all Californians—farmers, residents, utilities, and even hatchery fish. However, while drought cannot be controlled, according to the USGS, drought can be managed in two ways: through drought planning and in helping communities make the best day-to-day management decisions while the drought is taking place.

Within the Urban Water Management Plan, drought conditions which may result in decreased precipitation, decreased runoff, and increased temperature may adversely affect an urban water supplier's ability to meet demands by potentially impacting supplies. Consequently, the focus of impacts of climate change is on these adverse consequences.

4.7.8 Critical Facilities & Infrastructure

Drought and secondary related hazards could pose a risk to critical facilities and infrastructure within the City of Manhattan Beach, especially in circumstances where water is needed for operations and/or fire suppression. Since the impact areas in relation to drought are region-wide, all identified critical facilities and infrastructure are at risk for potential losses.

Table 40: Critical Facilities & Infrastructure Potential Loss, Drought

Category	Number of Facilities	Examples	Asset Value/Potential Loss	Community Lifeline Category
City Hall	2	City Hall	\$ 14,383,548	Safety and Security, Communications
Communications	32	Transmitter/Towers, Radio Equipment Rooms, Receivers	Not Available	Communications
Community Centers	10	Parks, Sports Centers, Civic Centers, Churches	\$ 22,152,477	Safety and Security, Food and Shelter
Energy	4	Utilities	Not Available	Energy
Fire/Law Enforcement	2	Fire Stations	\$ 40,459,180	Safety and Security, Communications, Hazardous Materials
Government Offices	6	Libraries, Court Rooms, Post Offices	Not Available	Safety and Security, Communications
Medical Facilities	1	Care Centers, Urgent Care	Not Available	Health and Medical
Schools	9	Schools (Elementary, Middle, and High), Childcare Center	Not Available	Safety and Security, Food and Shelter

Category	Number of Facilities	Examples	Asset Value/Potential Loss	Community Lifeline Category
Transportation	5	Roads, Bridges/Overpasses	\$ 88,493,906	Transportation
Water/Sewer	18	Pump Stations, Wells, Reservoirs, Connectors	\$ 28,811,761	Water Systems
Total	89	---	\$ 194,300,872	
Note: Potential loss data are estimates only, as replacement values for all facilities were not available. Actual losses may be greater than the estimate presented on this table.				

4.7.9 Land Use and Development Trends

Two areas that affect Land Use and Development Trends concerning drought events are the impact of agriculture and water conservation. Droughts impact individuals, the agricultural industry, and other industries such as tourism and recreation. There is increased danger of forest and wildland fires. Loss of forests and trees increased erosion, causing serious damage to aquatic life, irrigation, and power development.

Specific to Manhattan Beach land use and development, droughts may cause increased costs to homeowners due to loss of residential landscaping and degradation of urban environments due to loss of landscaping. Drought conditions can also result in damage to older infrastructure that is located within dry soils with potential to break or crack. Dead or dying vegetation poses a risk to falling and damaging structures and infrastructure systems.

Combinations of low precipitation and unusually high temperatures could occur over several consecutive years. Intensified by such conditions, extreme wildland fires could break out across the County and State, thereby impacting the City of Manhattan Beach and increasing the need for water. Surrounding jurisdictions, also experiencing drought, could increase their demand for water supplies, causing social and political conflicts. If such conditions persisted for several years, the City's economy could experience declines, especially in water-intensive industries. As well, Drought and decreased water in aqueducts may slow the flow of water or cause it to become stagnant, resulting in a decrease in water quality and increase the potential for mosquitos and other vectors. Additionally underground pipelines which transport water throughout the City are more prone to damage during drought as soils crack and loose plasticity, resulting in water leaks.

4.8 Fire/Wildland Urban Interface (Wildfire)

4.8.1 Hazard Description

The National Weather Service (NWS) defines a wildfire as “any free-burning, uncontrollable wildland fire not prescribed for the area which consumes the natural fuels and spreads in response to its environment.” The Los Angeles County All-Hazards Mitigation Plan mentions that wildfires can be caused by human activities (e.g., unattended burns, campfires, or off-road vehicles without spark arresting muffles) or by natural events such as lightning. The predominant dangers of wildfire are the injury or loss of life to people in the affected area and the destruction of vegetation, property, and wildlife. Wildfires can be categorized into four types:

1. **Wildland fires** occur mainly in areas under federal control, such as national forests and parks, and are fueled primarily by natural vegetation. Generally, development in these areas is nonexistent, except for roads, railroads, power lines, and similar features.
2. **Interface or intermix fires** occur in areas where both vegetation and structures provide fuel. These are also referred to as Wildland/Urban Interface (WUI) fires.
3. **Firestorms** occur during extreme weather (e.g., high temperatures, low humidity, and high winds) with such intensity that fire suppression is virtually impossible. These events typically burn until the conditions change, or the fuel is exhausted.
4. **Prescribed fires and prescribed natural fires** are intentionally set or natural fires that are allowed to burn for beneficial purposes.

The following factors contribute significantly to wildfire behavior and can be used to identify wildfire hazard areas:

- **Topography:** As slope increases, the rate of wildfire spread increases. South-facing slopes are also subject to more solar radiation, making them drier and thereby intensifying wildfire behavior. However, ridgetops may mark the end of wildfire spread because fire spreads more slowly or may even be unable to spread downhill.
- **Fuel:** is the type and condition of vegetation that plays a significant role in wildfire spread and occurrence. Certain plant types are more susceptible to burning or will burn with greater intensity. Dense or overgrown vegetation increases the amount of combustible material available as fire fuel (referred to as “fuel load”). The living-to-dead plant matter ratio is also important. Certain climate changes may increase wildfire risk significantly during prolonged drought periods, as both living and dead plant matter moisture content decreases. Both the horizontal and vertical fuel load continuity is also an important factor.
- **Weather:** is the most variable factor affecting wildfire behavior. Important weather variables are temperature, humidity, wind, and lightning. Weather events ranging in scale from localized thunderstorms to large fronts can have major effects on wildfire occurrence and behavior. Extreme weather, such as high temperatures

and low humidity, can lead to extreme wildfire activity. By contrast, cooling and higher humidity often signals reduced wildfire occurrence and easier containment. Wind has probably the largest impact on a wildfire's behavior and is also the most unpredictable. Winds supply the fire with additional oxygen, further dry potential fuel, and push fire across the land at a quicker pace. The threat of wildfire increases in areas prone to intermittent drought, or that are generally arid and dry. Also, since the mid-1980s, earlier snowmelt and associated warming due to global climate change has been associated with longer and more severe wildfire seasons in the western United States.

Other hazards addressed in this risk assessment, drought, and wind, can have an impact on wildfire potential or severity. According to the Western Fire Chief's Association, the following play into wildfire.

- **Drought:** Since wildfire thrives in hot and dry climates, drought elevates fire risk significantly. Drought leaves trees, grasses, shrubs, and soil with very little moisture, making the landscape extremely flammable. Ongoing droughts in California pose a serious threat for fire season. A recent report by the US Drought Monitor found more than 97% of the state is in severe or extreme drought, causing concern for the year ahead.
- **Wind:** When winds are paired with hot, dry weather, they pose a major fire hazard. For example, the Santa Ana winds in Southern California (also known as Diablo winds in Northern California) are strong, dry, downslope winds that blow from the mountains towards the coast and can cause wildfires to ignite and spread rapidly. Consequently, these winds reach up to 40 miles per hour and in some cases can reach hurricane strength, exponentially increasing in the speed of fire spread and triggering extreme destruction in short amounts of time.
- **Human Activity:** As much as 90% of wildfires are started by humans. Three common reasons for wildfire ignition include unattended campfires, fallen power lines, discarded cigarettes, vehicle crashes or the use of equipment that creates sparks, like metal grinders.

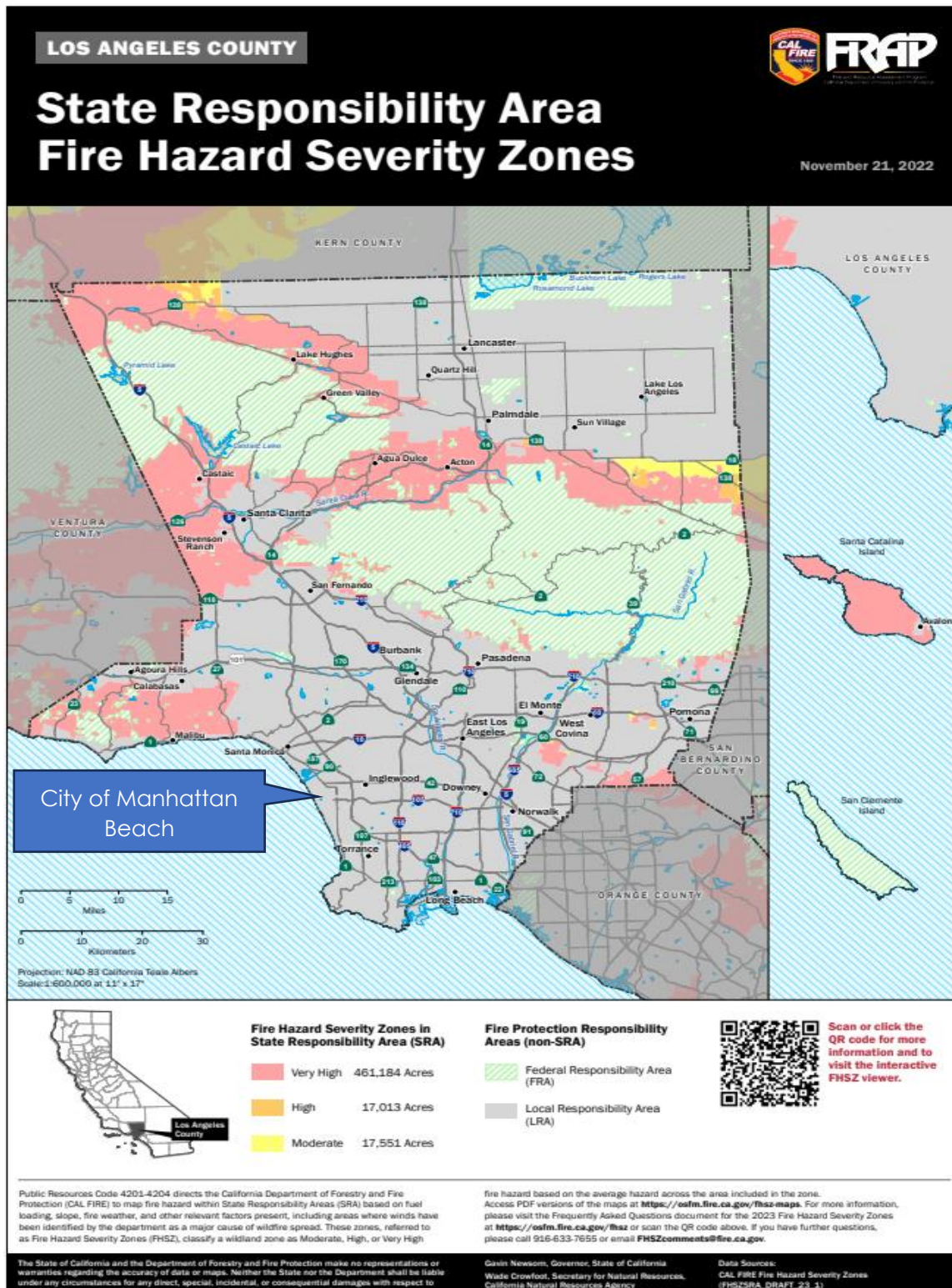
If not promptly controlled, wildfires may grow into an emergency or disaster. Even small fires can threaten lives and resources and destroy improved properties. Communities throughout California and Los Angeles County are increasingly concerned about wildfire safety as increased development in the foothills and mountain areas have affected the natural cycle of the ecosystem. Wildfire risk is predominately associated within WUI areas however, significant wildfires can also occur in heavily populated areas, although urbanized and developed areas such as the City of Manhattan Beach are not bordering vast areas of wildlands, the City is typically considered safer from wildfires. However, this does not take away the other secondary effects of wildfires, including erosion, landslides, introduction of invasive species, and changes in water quality, are often more disastrous than the fire itself. Wildfires increase the potential for flooding, debris flows, and landslides.

Smoke and other emissions contain pollutants that can cause significant health problems. Short-term effects: destruction of timber, forage, wildlife habitats, scenic vistas, and watersheds. Long-term effects are reduced access to recreational areas, destruction of community infrastructure and cultural and economic resources.

4.8.2 Location and Extent

The City of Manhattan Beach is exposed to a variety of wildfire hazard conditions that vary based on fuels, topography, weather, and human behavior. Cal FIRE, as required by Government Code Section 51181, has undertaken a statewide program to map areas of potential wildfire severity, and to describe the potential for wildfires to occur in each area. The resulting Fire Hazard Severity Zones (FHSZs) adopted in November 2007 for the State Responsibility Areas (SRA) and adopted in September 2007 for the Local Responsibility Areas (LRA). These zones were updated in 2022 and **Figure 32** below depicts the SRA FHSZs for Los Angeles County.

Figure 32: Cal FIRE State Responsibility Area Fire Hazard Severity Zone, Los Angeles County



Source: Fire Hazard Severity Zones Maps 2022 (ca.gov)

As indicated by the blue arrow above, the City resides in an local responsibility area and is not located within a high hazard severity zone.

The City of Manhattan Beach has dry summers where little to no rain falls from early June through late October. Since the last LHMP the City experienced an average of 9 inches of annual rainfall depending on location and weather patterns. The fire season is a time of increased risk to damage to residential property and other development within the City.

According to the Western Fire Chief's Association, Southern California's fire season begins in late spring (May-June) and runs until October. However, climate change has caused the wildfire season to get longer each year.

Figure 33: California Fire Season, Western Fire Chiefs Association



Source: Western Fire Chiefs Association

The fire rating system, as shown in **Table 41**, describes the characteristics and potential intensity of fires, including the effect on the ability to manage and suppress fires. Fire conditions up through Class 1 are possible in the City of Manhattan Beach.

Table 41: Fire Rating System

Rating	Basic Description	Detailed Description
Class 1: Low Danger (L) Color Code: Green	Fires not easily started	Fuels do not ignite readily from small firebrands. Fires in open or cured grassland may burn freely a few hours after rain, but wood fires spread slowly by creeping or smoldering and burn in irregular fingers. There is little danger of spotting
Class 2: Moderate Danger (M) COLOR CODE: Blue	Fires start easily and spread at a moderate rate	Fires can start from most accidental causes. Fires in open cured grassland will burn briskly and spread rapidly on windy days. Wood fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel—especially draped fuel may burn hot. Short distances spotting may occur but is not persistent. Fires are not likely to become serious and control is relatively easy.
Class 3: High Danger (H) COLOR CODE: Yellow	Fires start easily and spread at a rapid rate	All fine dead fuels ignite readily, and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly, and short-distance spotting is common. High intensity burning may develop on slopes or in concentrations of fine fuel. Fires may become serious and their control difficult, unless they are hit hard and fast while small.
Class 4: Very High Danger COLOR CODE: Orange	Fires start very easily and spread at a very fast rate	Fires start easily from all causes and immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may

Rating	Basic Description	Detailed Description
		quickly develop high-intensity characteristics such as long-distance spotting and fire whirlwinds when they burn into heavier fuels. Direct attack at the head of such fires is rarely possible after they have been burning for more than a few minutes.
Class 5: Extreme (E) COLOR CODE: Red	Fire situation is explosive and can result in extensive property damage	Fires under extreme conditions start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high intensity burning will usually be faster and occur from smaller fires than in the Very High Danger Class (4). Direct attack is rarely possible and may be dangerous, except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions, the only effective and safe control action is on the flanks, until the weather changes or the fuel supply lessens.

Source: <http://www.wfas.net>

4.8.3 Previous Events

No recent documented wildfires have occurred within the City of Manhattan Beach since the last LHMP update in 2019. There have been, however, multiple Federal declarations in the County of Los Angeles since 2019 for fires impacting jurisdictions near the City of Manhattan Beach. Since 2019, according to the NOAA/NCEI database 8 wildfire events have occurred within Los Angeles County, resulting in 3 deaths and 24 injured:

- In October 2019, The Saddleridge Fire burned 8799 acres across the foothills of the San Fernando Valley as well as the Santa Clarita Valley and the Los Angeles County mountains. The combination of warm and dry Santa Ana winds and critically dry vegetation allowed for significant fire growth. The fire destroyed 19 residences and damaged 88 additional residences. One civilian death was reported (due to

cardiac arrest) and eight firefighters were injured.

- Also in October 2019, the Tick Fire burned 4615 acres in the Canyon County area of Los Angeles county. The combination of warm and dry Santa Ana winds and critically dry vegetation allowed for significant fire growth. The fire destroyed 23 homes and damaged 40 other residences. During the incident, four firefighter injuries were reported.
- In August 2020, the Lake Fire burned 31,089 acres in the Angeles National Forest, northeast of the community of Azusa. In total, twelve structures were destroyed and another three were damaged. Four firefighter injuries were reported.
- Also in August 2020, The Ranch 2 Fire burned 4,237 acres in the Angeles National Forest. No structures were destroyed, but eight firefighter injuries were reported.

Disaster Declaration History

Since the last HMP update, four (4) disaster declarations for fire have been declared that included Los Angeles County. The events for fire that resulted in a state or federal disaster declaration are shown in **Table 42**.

Table 42: Disaster Declarations - Fire, Los Angeles County

Disaster Declaration	Hazard	Date	Details
California Wildfires DR-4569-CA	Fire	September 2020	Incident Period: Sept. 4, 2020-Nov. 17, 2020 Declaration Date: Oct. 16, 2020
California Bobcat Fire FM-5374-CA	Fire	September 2020	Incident Period: Sept. 13, 2020 Declaration Date: Sept. 13, 2020
California Tick Fire FM-5296-CA	Fire	October 2019	Incident Period: Oct. 24, 2019 Declaration Date: Oct. 24, 2019
California Saddleridge Fire FM-5293-CA	Fire	October 2019	Incident Period: Oct. 10, 2019 Declaration Date: Oct. 11, 2019

4.8.4 Probability of Future Events

Calculating future probability is one of many predictors of future occurrences. **Table 43** provides a summary of the probability of future events for Fire/Wildland Urban Interface (Wildfire), as categorized, and recorded by NOAA/NCI for Los Angeles County between January 1, 2019, and December 31, 2023:

Table 43: Probability of Future Events, Fire/Wildland Urban Interface (Wildfire)

Probability of Future Events, Wildfire, Los Angeles County, CA	
Event Year	Event Count
2019	3
2020	5
2021	0
2022	0
2023	0
Total Recorded Events =	8
Total Years =	5
Annual Probability =	32%

Source: NOAA/NCEI

Annual Probability:

$$\frac{8}{5} \times 100 = \frac{160\%}{5} = 32\%$$

Using the NOAA/NCEI database, and calculating probability based on the past events since the last HMP update, the likelihood of a single Wildfire event occurring in Los Angeles County, where the City of Manhattan Beach resides, on an annual basis over the next HMP planning cycle is 32%. This categorizes the hazard's future

probability of occurrence as **Likely**.

Based on HMPC feedback, Manhattan Beach exhibits a lower wildfire risk compared to the greater Los Angeles County, primarily due to its urbanized setting and unique geographical features. The city's extensive urban sprawl significantly reduces the presence of large, continuous areas of flammable brushland, which are a common feature in more wildfire-prone regions of the county. Additionally, Manhattan Beach's coastal location includes natural sand dunes, which not only lack substantial vegetation but also serve as natural barriers against the spread of fires. The absence of significant brushland, combined with these sand dune characteristics, plays a crucial role in mitigating the city's wildfire susceptibility, making it an area of comparatively lower risk within the broader, more fire-prone Los Angeles County landscape.

4.8.5 Hazard Risk Ranking

The HMPC's hazard prioritization process, which assessed Fire/Wildland Urban Interface (Wildfire), resulted in an overall risk level being classified as Low with a rank score of 5.13. It is important to note that the HMPC's feedback and risk determination, as outlined in **Table 44**, are reflective of the committee's perspectives and judgments.

Table 44: Risk Ranking for Fire, Wildland Urban Interface (Wildfire)

Hazard	Impact to Assets			Vulnerability (H+P+B=#) (V=#/3)	Probability (Pb)	Social Vulnerability (SV)	Risk Value (R=V+Pb+SV)	Risk Ranking
	Human Impact (H)	Property Impact (P)	Business Impact (B)					
Fire/Wildfire	1.95	2.8	1.8	2.18	1.95	1	5.13	Low

4.8.6 Vulnerability and Impact Assessment

According to the City of Manhattan Beach's 6th cycle housing element in reference to the City's fire risk it states that,

“Urban fires represent the sole fire threat in the City. The City's narrow streets and alleys, steep topography, densely developed housing, and extensive on-street parking can limit the access of fire trucks and other emergency vehicles, particularly longer vehicles. Several roadways in downtown and North End/El Porto cannot accommodate longer wheelbase fire engines. The Fire Department has identified all impassible roadways and uses designated alternative routes to quickly gain access to all properties within the City. The Fire Department also regularly practices maneuvering on narrow streets with large vehicles to analyze access limitations and develop routing alternatives in the event of responding to an emergency within an identified issue area.”

Change in Fire/Wildland Urban Interface (Wildfire) Vulnerability

*As indicated in **Table 45**, since the last LHMP update there have been **no changes** in the City's overall vulnerability to Fire/Wildland Urban Interface (Wildfire).*

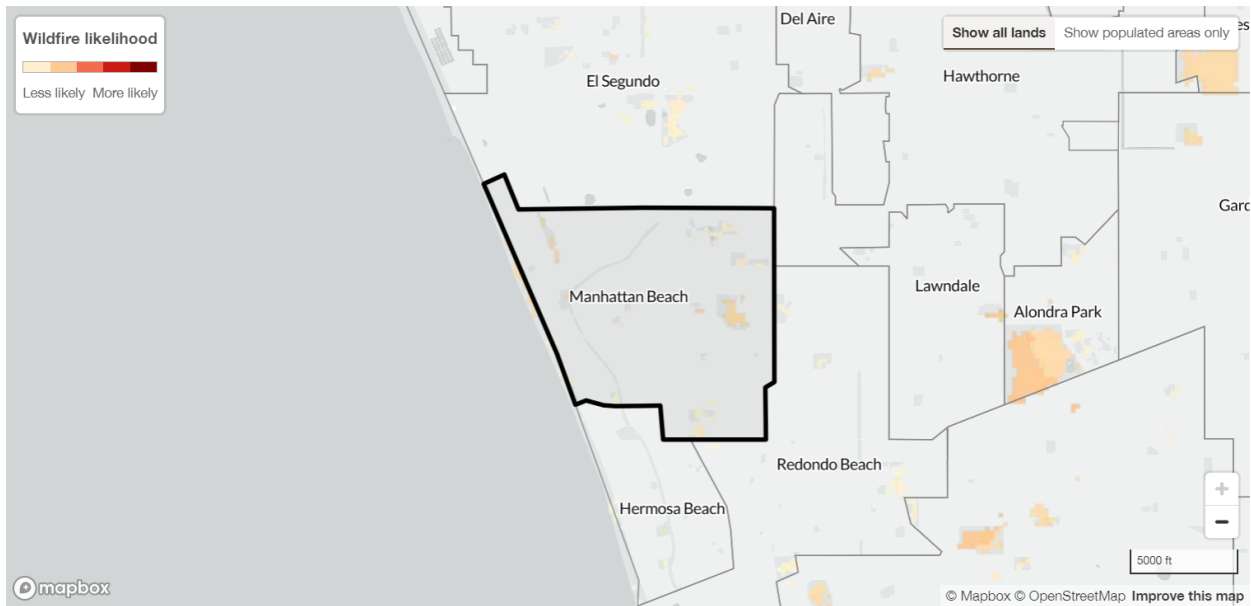
Despite the increased frequency and intensity of wildfires in California due to climate change, Manhattan Beach's vulnerability to wildfires has not fundamentally changed. This stability is primarily due to the city's geographical features and urban planning, which inherently lower the risk of wildfires within its limits. However, the HMPC acknowledges that wildfires in surrounding areas of the greater Los Angeles region could have indirect impacts, such as air quality degradation, particularly during Santa Ana wind conditions, which necessitates vigilant monitoring and preparedness. While the direct threat to buildings and critical infrastructure from wildfires remains low, the HMPC emphasized the importance of enhancing communication systems, public health advisories, and support for vulnerable populations to address the indirect impacts of regional wildfires.

Table 45: Summary of Change to Vulnerability, Fire/Wildland Urban Interface (Wildfire)

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Fire, Wildland Urban Interface (Wildfire)		X	

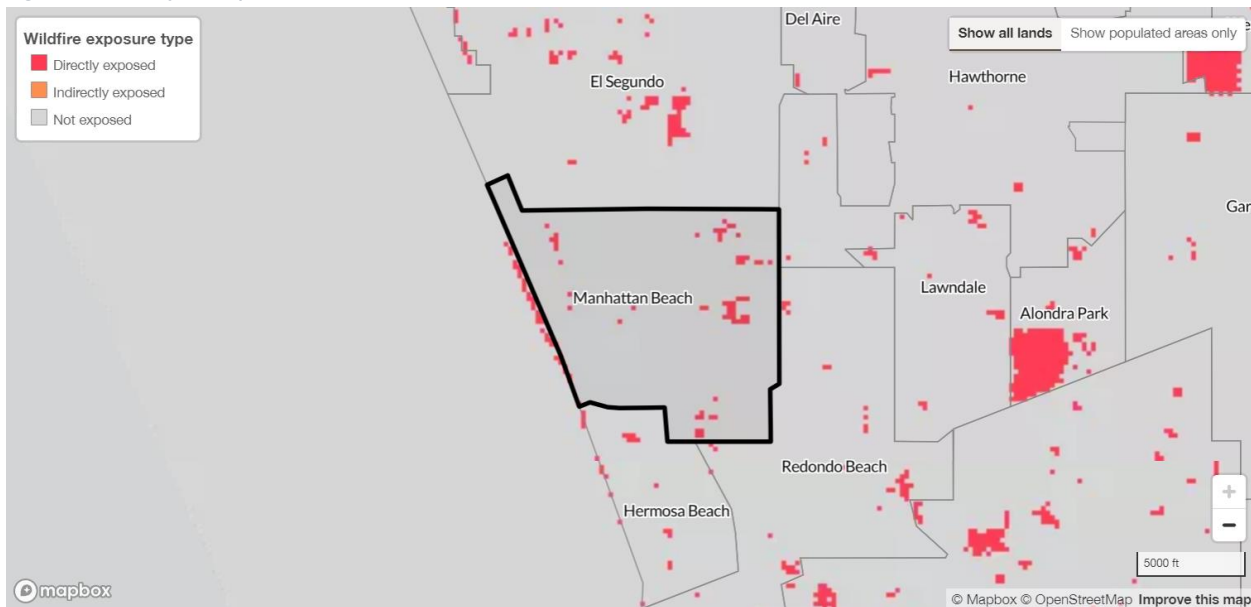
The likelihood of a wildfire occurring within the City limits is low. However, this does not mean minimal impact from wildfires occurring outside city limits. The USDA Forest Service's Wildfire Risk to Communities database illustrates the likelihood of a wildfire event occurring within the planning area. **Figure 34** provides graphical depictions of wildfire likelihood and **Figure 35** shows the overall exposure that the City of Manhattan Beach is to the hazard.

Figure 34: Wildfire Likelihood in Manhattan Beach



Source: [USDA USFS Wildfire Risk to Communities](#)

Figure 35: Wildfire Exposure in Manhattan Beach



Source: [USDA USFS Wildfire Risk to Communities](#)

HMPC Vulnerability and Impact Assessment Feedback

During the vulnerability and impact assessment discussion, the HMPC revisited the topic of fire and its impact on the wildland-urban interface, noting significant updates since the 2019 LHMP. The increased intensity and year-round occurrence of wildfires in California, driven by climate change, have produced a heightened wildfire hazard. Despite Manhattan Beach not being directly at high risk due to its geographical features, the potential for air quality degradation from regional wildfires pose a significant concern, exacerbated by conditions such as the Santa Ana winds.

The HMPC also identified that while Manhattan Beach does not fall within a state-designated high fire hazard area, the presence of dense vegetation in residential areas could facilitate the spread of fires, especially in the densely populated sand section where homes are closely packed. This scenario could lead to rapid fire spreading from house to house, underscoring the importance of vegetation management and fire prevention measures in these neighborhoods.

Vulnerable populations, particularly the elderly and those with respiratory issues, were identified as being at greater risk due to the deteriorating air quality associated with nearby wildfires. This highlights the need for targeted support and preparedness measures for these groups during wildfire incidents.

Critical communication systems were identified as a key concern that could be impacted by wildfires, emphasizing the necessity for robust backup systems to ensure continuity of critical communications during emergencies. However, specific buildings or community lifelines directly threatened by wildfires were not detailed, likely due to the city's lower direct risk of wildfire damage.

Given the indirect but significant impacts of wildfires on Manhattan Beach, the HMPC discussions focused on enhancing preparedness, improving air quality monitoring and public health advisories, vegetation management, and ensuring the resilience of critical infrastructure. Mitigation strategies suggested by the HMPC also included public education on air quality management, emergency preparedness for vulnerable populations, and participation in regional wildfire response and mitigation efforts.

Vulnerability of Populations

Potentially vulnerable populations may have trouble preparing for and responding to wildfire. Social and economic factors can make it more difficult for some people to prepare for, respond to, and recover from wildfire. Vulnerable populations may lack access to resources, experience cultural and institutional barriers, have limited mobility, or have medical conditions exacerbated by stress or smoke. The USDA Forest Service's Wildfire Risk to Communities database illustrates the likelihood of a wildfire event occurring within the planning area as well as the vulnerabilities a wildfire's impact can have on vulnerable populations. According to the database the Vulnerable populations within Manhattan Beach are at a high risk to wildfire as people may be disproportionately impacted because of social and economic factors. **Figures 36-39** depict the utilized census tract data to show the locations of vulnerable populations in relation to wildfire

likelihood within the planning area.

Pollutants from wildfire smoke are associated with premature deaths in the general population, and can cause and exacerbate diseases of the lungs, heart, brain/nervous system, skin, gut, kidney, eyes, nose, and liver. Those with disabilities or pre-existing conditions have an increased level of vulnerability. Additional vulnerable populations impacts includes resources to reduce the likelihood of home loss (e.g., by reducing flammable materials around structures and home hardening), ability to respond during a fire (e.g., by evacuating elderly and disabled people and by providing effective, accessible emergency messages), and ability to recover after a fire (e.g., insurance coverage and resources to rebuild a home).

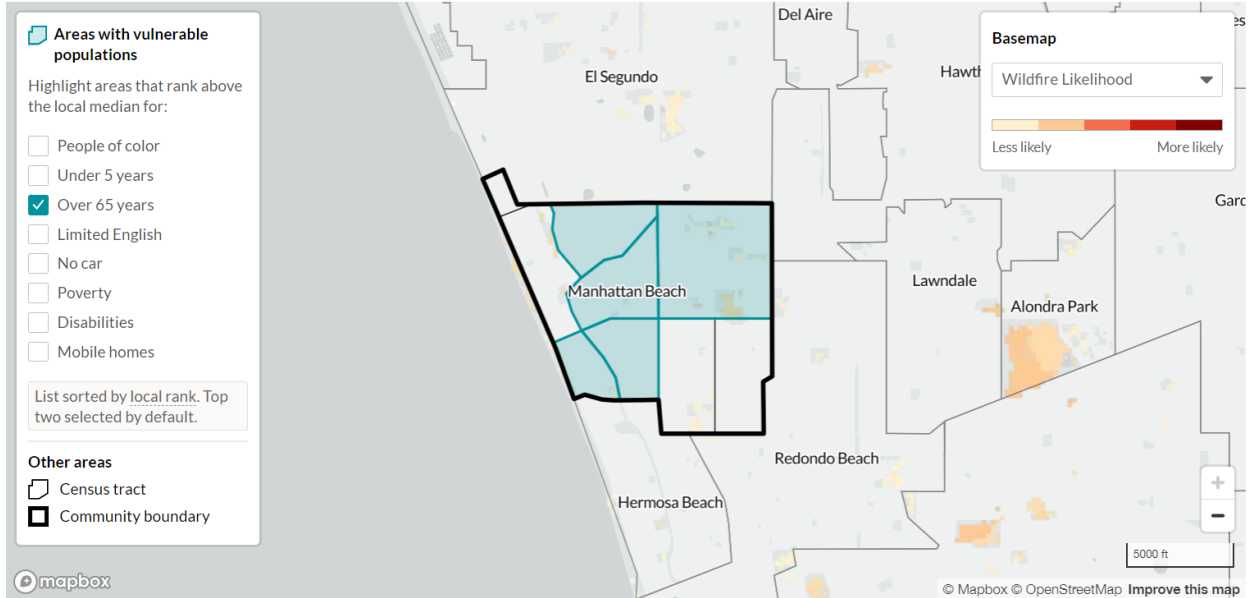
Families in poverty, those over 65 years of age, people with access and functional needs, and those without transportation are more likely to experience the negative impacts of wildfire. People who lack access to resources, experience cultural and institutional barriers, have limited mobility, or have compromised physical health are more vulnerable to wildfire and other disasters.

In response to the potential threat of wildfires and the indirect impacts of regional wildfires, the City of Manhattan Beach developed a mitigation project aimed at enhancing the resilience of residential properties against fires. Recognizing the critical link between wildfires and power infrastructure, the city will initiate a comprehensive campaign to educate its residents on effective fire-prevention strategies. This initiative includes providing guidance on the proper maintenance of power lines, ensuring safe distances from trees and potential hazards, and promoting other preventive measures to safeguard homes from fire risks. Through these efforts, Manhattan Beach seeks to empower its community with knowledge and tools to reduce wildfire impacts effectively. This is completed through the following carry new Mitigation Action items in this LHMP update:

- **W.1** - Provide information to residents citywide on ways to improve resilience to home fires, including the education and promotion of proper maintenance and separation of power lines from trees and other hazards.

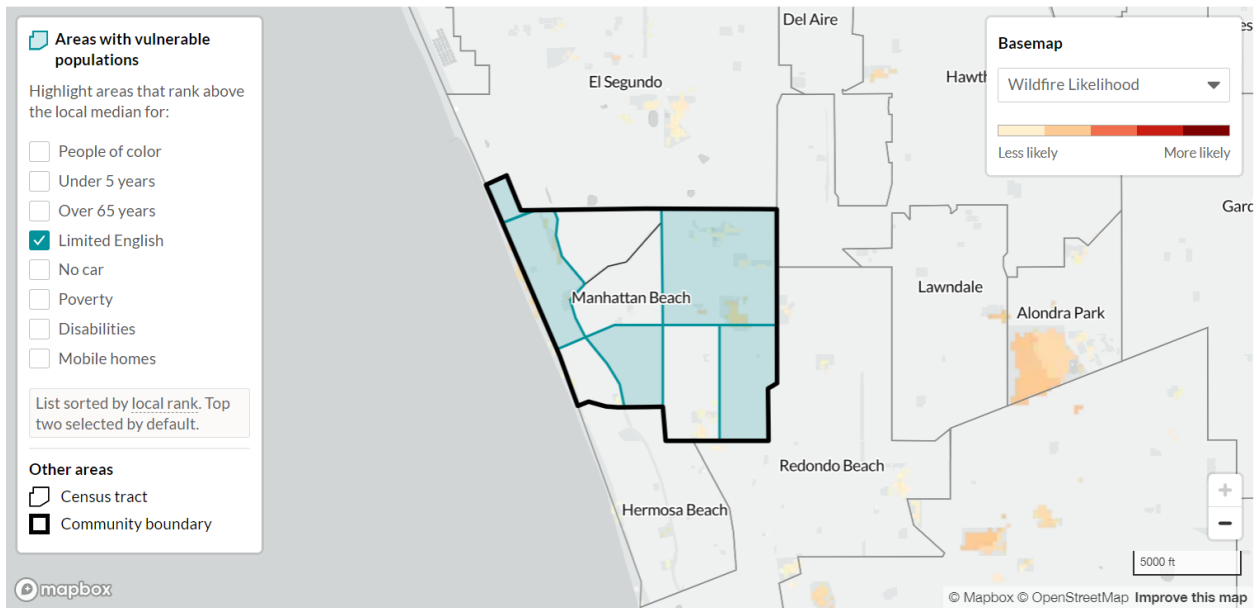
See [Section 6.7.2 New Actions/Mitigation Projects](#) for more information on these actions.

Figure 36: Fire/Wildfire Vulnerable Populations, Over 65 Years Old



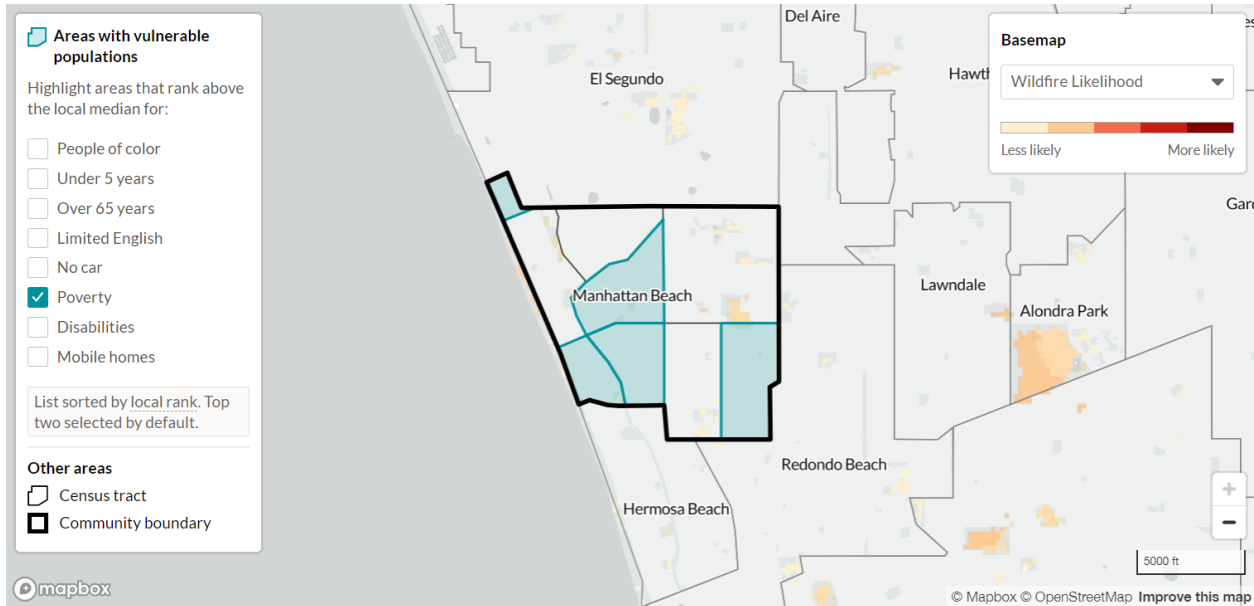
Source: [USDA USFS Wildfire Risk to Communities](#)

Figure 37: Fire/Wildfire Vulnerable Populations, Limited English



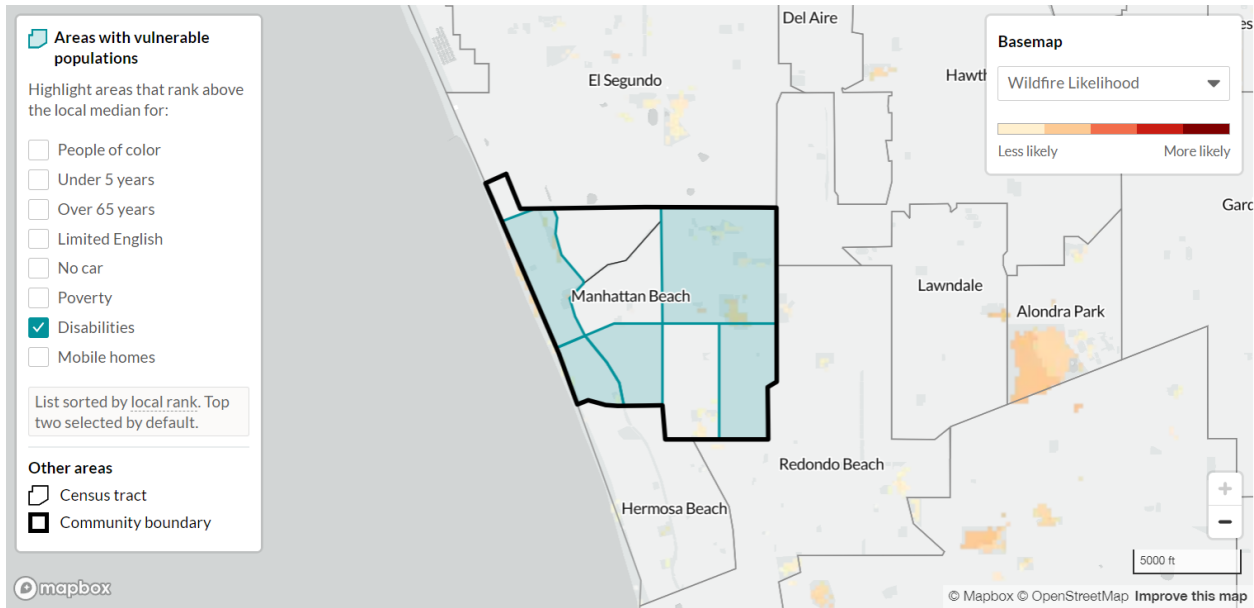
Source: [USDA USFS Wildfire Risk to Communities](#)

Figure 38: Fire/Wildfire Vulnerable Populations, Poverty



Source: [USDA USFS Wildfire Risk to Communities](#)

Figure 39: Fire/Wildfire Vulnerable Populations, Disabilities



Source: [USDA USFS Wildfire Risk to Communities](#)

Vulnerability of Systems

Electricity for the City of Manhattan Beach is provided by Southern California Edison (SCE). SCE does have programs and processes in place to address risk in high hazard areas, however, the severity of a wildfire may require a Public Safety Power Shutoff (PSPS). This

can help prevent the electrical system from becoming a source of ignition during dangerous wildfire conditions. PSPS outages are a last resort. Considering the risk for wildfire in California, it is reasonable to believe that this scenario may occur. SCE does have resources in place to address the socially vulnerable such as alerting and assistance during an outage.

The City is the direct provider of water, sewer, and storm drain maintenance. Water is necessary to fight fires. Water is supplied to the City of El Segundo and areas within Los Angeles County (source: City of Manhattan Beach, Amendment to Chapter 8 Water Shortage Contingency Plan). If the demand of water consumers cannot be satisfied without depleting a substantial amount of water supply needed for human consumption, sanitation, and fire protection, the City shall declare a water shortage emergency. The City shall coordinate with any city or county within its service area for possible declaration of a local emergency.

A wildfire burning near Manhattan Beach may cover infrastructure in soot, causing secondary fires from traveling coals, or directly engulf facilities, potentially burning them to the ground. Facilities within the planning area can be protected by creating defensible spaces or buffer zones, maintaining a fuel-free environment, and modifying structures to prevent wildfire growth. These efforts are conducted through the following carry over and/or new Mitigation Action items in this LHMP update:

- **W.2** - Create defensible space around city structures and critical infrastructure locations.

See [Section 6.7.2 New Actions/Mitigation Projects](#) for more information on these actions.

4.8.7 Climate Change Impacts

Climate change is having a serious impact on the prevalence of wildfires in California. The changes in climate are creating warmer, drier seasons, which are the ideal conditions for fires to burn. Not only does this increase the frequency of fires, but also increases the severity and amount of damage done.

According to the Los Angeles County Hazard Mitigation Plan (2020), the climate in Los Angeles County is characterized as Mediterranean dry summer featuring cool, wet winters and warm, dry summers. High moisture levels during the winter rainy season significantly increase the growth of plants. However, the vegetation dried during the long, hot summers, decreasing plant moisture content, and increasing the ratio of dead fuel to living fuel. As a result, fire susceptibility increases dramatically, particularly in late summer and early autumn. In addition, the presence of chaparral, a drought-resistant variety of vegetation that is dependent on occasional wildfires, is expected in Mediterranean dry-summer climates. The history of plant succession in Los Angeles County is important in predicting fire susceptibility. For several years after a fire has occurred, easily flammable herbaceous species thrive and increase the likelihood of new fires. When woody species become re-established, they contribute to a lower overall level of fire susceptibility for approximately 10 years. However, after this period, the slow aging plant community becomes ever more likely to burn because of increased levels of dead plant material and lowered plant moisture levels.

Additionally, a local meteorological phenomenon, known as the Santa Ana winds,

contributes to the high incidence of wildfires in Los Angeles County. These winds originate during the autumn months in the hot, dry interior deserts to the north and east of Los Angeles County. They often sweep west into the County, bringing extremely dry air and high wind speeds that further desiccate plant communities during the period of the year when the constituent species have very low moisture content. The effect of these winds on existing fires is particularly dangerous; the winds can greatly increase the rate at which fires spread. Based on the conditions described above and the history of occurrence in Los Angeles County (1,000-acre plus fires every 1-3 years), future events are very likely to occur. The extent of future events will depend on specific conditions at the time of the fire.

Decreased rainfall means that vegetation remains dryer and more flammable into the late fall and winter months, increasing the likelihood of extreme, late-season wildfires. According to wildfirerisk.org, Manhattan Beach has a medium risk of wildfire—higher than 51% of communities in the US.

Continuing to examine the history of California wildfires, a key trend that emerges is the lengthening of the season. With fires happening throughout the winter months, a year-round fire season is swiftly becoming the norm. A drier and hotter climate isn't just increasing the frequency of wildfires in California, it makes them harder to fight due to their increased size and intensity. Eight of the state's ten largest fires on record—and twelve of the top twenty—have happened within the past five years. In 2020 alone, five of California's top 20 biggest wildfires occurred.

4.8.8 Critical Facilities & Infrastructure

Wildfire impacts to critical facilities can include structural damage or destruction, risk to persons located within facilities, disruption of transportation, shipping, and evacuation operations, and interruption of facility and critical functions. Critical facilities and infrastructure also create an increased risk for the occurrences of wildfires. Overhead electrical transmission lines have been known to spark wildfires. All critical facilities and infrastructure within the planning area are equally at risk of severe damage or complete destruction. Comparing the areas of wildfire likelihood depicted in **Table 46** and the map of Critical Facilities in **Section 3.11.1**, the following Critical Facilities and infrastructure are at risk of potential loss in Manhattan Beach.

Table 46: Critical Facilities & Infrastructure Potential Loss, Fire, Wildland Urban Interface (Wildfire)

Category	Number of Facilities	Examples	Asset Value/Potential Loss	Community Lifeline Category
City Hall	2	City Hall	\$ 14,383,548	Safety and Security, Communications
Communications	32	Transmitter/Towers, Radio Equipment Rooms, Receivers	Not Available	Communications
Community Centers	10	Parks, Sports Centers, Civic	\$ 22,152,477	Safety and Security, Food and Shelter

Category	Number of Facilities	Examples	Asset Value/Potential Loss	Community Lifeline Category
		Centers, Churches		
Energy	4	Utilities	Not Available	Energy
Fire/Law Enforcement	2	Fire Stations	\$ 40,459,180	Safety and Security, Communications, Hazardous Materials
Government Offices	6	Libraries, Court Rooms, Post Offices	Not Available	Safety and Security, Communications
Medical Facilities	1	Care Centers, Urgent Care	Not Available	Health and Medical
Schools	9	Schools (Elementary, Middle, and High), Childcare Center	Not Available	Safety and Security, Food and Shelter
Transportation	5	Roads, Bridges/Overpasses	\$ 88,493,906	Transportation
Water/Sewer	18	Pump Stations, Wells, Reservoirs, Connectors	\$ 28,811,761	Water Systems
Total	89	---	\$ 194,300,872	
Note: Potential loss data are estimates only, as replacement values for all facilities were not available. Actual losses may be greater than the estimate presented on this table.				

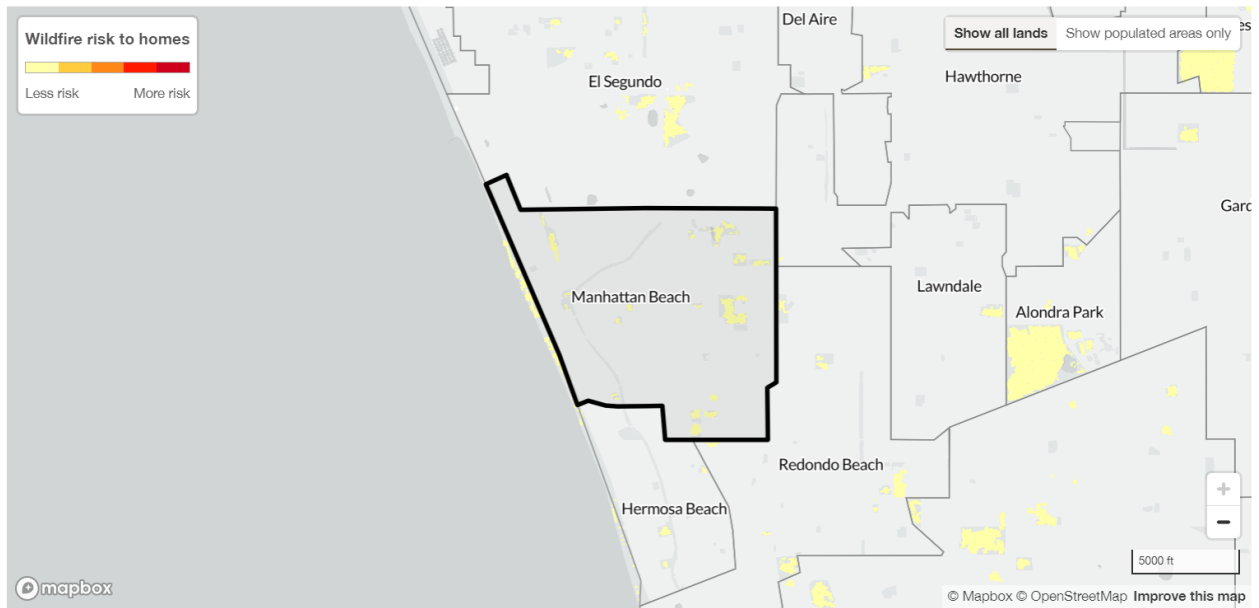
4.8.9 Land Use and Development Trends

Wildland fires throughout the western United States have become larger, hotter, and more deadly over the past years. This is due to record droughts which have resulted in 100's of millions of dead trees, hotter temperatures and forest management programs that left very high fuel loads in place. The potential for wildland fire has increased throughout the entire planning and surrounding areas.

Any population increase in the City of Manhattan Beach will continue to make wildfire vulnerability a growing issue, especially as future development expands increasing the fire risk areas. These risks, however, can be managed with strong land use regulations and building code requirements. For example, policies requiring fire-resistant vegetation, clustered development, and vegetation clear zones in areas with higher extreme fire hazard.

Figure 40 from the USDA US Forestry Service Wildfire Risk to Communities shows "Risk to Homes" within populated areas in Manhattan Beach.

Figure 40: Wildfire Risk to Homes in Manhattan Beach



Source: [USDA USFS Wildfire Risk to Communities](#)

4.9 Flooding/Inland Flooding

4.9.1 Hazard Description

According to the National Weather Service, a flood is an overflow of water onto normally dry land. The inundation of a normally dry area caused by rising water in an existing waterway, such as a river, stream, or drainage ditch. Ponding of water at or near the point where the rain fell. Flooding is a longer-term event than flash flooding. Flash flood is a flood caused by heavy or excessive rainfall in a short period of time, generally less than 6 hours. Flash floods are usually characterized by raging torrents after heavy rains that rip through riverbeds, urban streets, or mountain canyons sweeping everything before them. They can occur within minutes or a few hours of excessive rainfall. They can also occur even if no rain has fallen, for instance after a levee or dam has failed, or after a sudden release of water by a debris or ice jam.

The National Flood Insurance program (NFIP) defines Flooding as a general and temporary condition of partial or complete inundation of two (2) or more acres of normally dry land area or of two (2) or more properties (at least one (1) of which is the policyholder's property) from:

- Overflow of inland or tidal waters; or
- Unusual and rapid accumulation or runoff of surface waters from any source; or
- Mudslides (i.e., mudflows) which are proximately caused by flooding and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.; or
- Collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood as defined above.

Floods can rise slowly or quickly but generally develop over hours or days. Inland flooding, also known as "urban flooding" or "flash flooding," can be caused by intense, short-term rain or moderate rainfall over several days, which can overwhelm existing drainage infrastructure. Other factors that affect the dynamics of this type of flood include slope, width, and vegetation in place along the watercourse banks. The slope that a flash flood traverse has a definite relationship to the overall speed at which the water will travel. The incline on which the water moves affects the width of the flooding area. Generally, the faster the water moves, the narrower that channel will be created since the water digs the channel deeper as it flows. When water flows over the shallower slope, it spreads out more, decreasing its potential to cause mass damage but still considered dangerous. Finally, the type of vegetation located along the flood's path can prevent further erosion of the channel banks. A structure that lies along a flood channel with no surrounding vegetation

is at risk of having its foundation undercut, which can cause structural damage, or in some cases, a building's complete collapse.

Riverine or alluvial flooding occurs when excessive rainfall over an extended period causes a river to exceed its capacity. Typical flooding causes, both inland and riverine, include tropical cyclonic systems, frontal systems, and isolated thunderstorms, combined with other environmental variables such as changes to the physical environment, topography, ground saturation, soil types, basin size, drainage patterns, and vegetative cover. The rate of onset and duration of flooding events depends on the type of flooding (typical flood or flash flood). The spatial extent of a flooding event depends on the amount of overflowing water but can usually be mapped because of existing floodplains.

Mitigation includes any activities that prevent an emergency, reduce the chance of an emergency happening, or lessen the damaging effects of unavoidable emergencies. Investing in mitigation measures now, such as: engaging in floodplain management activities, constructing barriers such as levees, and purchasing flood insurance, will help reduce the amount of structural damage to structures and financial loss from building and crop damage should a flood or flash flood occur. The standard for flooding is the 1% annual chance of flood, commonly called the 100-year flood, and 0.2% annual chance of flood, called a 500-year flood, are used to classify flooding by FEMA. The 100-year flood is the national minimum standard to which communities regulate their floodplains through the FEMA NFIP.

4.9.2 Location and Extent

The State of California Hazard Mitigation Plan (2023) mentions that Floods represent one of California's most destructive sources of hazard, vulnerability, and risk regarding recent state history and the probability of future destruction at greater magnitudes than previously recorded. Flood events can wash away soils, weakening foundations and increasing the risk of structures collapsing. Flood events also risk personal injury or drowning, particularly in flash floods that may occur too fast for people to escape. Flood events are frequent in California and have been the cause of more disaster declarations than any other type of emergency except for fire.

The State plan also mentions these flooding types in California: riverine flooding, alluvial fan, coastal, engineered structure failure, and tsunami. Los Angeles County, where the City of Manhattan Beach resides, can experience the following flooding types, defined by the NOAA National Severe Storms Laboratory:

- **Coastal Flooding:** inundation of locations typically above high tide, often caused by storm surge occurring with high tide and exacerbated over time with climate change-induced sea-level rise. Increased coastal erosion can also result from these conditions.
- **Flash Flooding:** the most dangerous kind of flood because they combine the destructive power of a flood with incredible speed. Flash floods occur when heavy

rainfall exceeds the ability of the ground to absorb it. They also occur when water fills normally dry creeks or streams or enough water accumulates for streams to overtop their banks, causing rapid water rises in a short amount of time. They can happen within minutes of the causative rainfall, limiting the time available to warn and protect the public.

- **Engineered Structure Failure:** flooding resulting from a dam or levee failure. More information related to engineered structure failure/dam failure can be found in the Dam Failure hazard profile of this plan update.
- **Tsunamis:** high-speed seismic ocean waves triggered by earthquakes and underwater landslides. More information about Tsunamis can be found under the Tsunami hazard profile of this plan update.

Related to Coastal Flooding, the Los Angeles County All Hazards Mitigation Plan (2020) mentions that waves generated by winter storms cause coastline/coastal flooding within the County. Such a storm event occurs in the planning area because a combination of high astronomical tides and strong winds can cause a significant wave runup and allow storm waves to reach higher-than-average elevations along the coastline. The entirety of Manhattan Beach's 2.1 miles of beach is vulnerable to Coastal Flooding.

The Los Angeles Flood Risk Report (2016) mentions the Los Angeles County Open Pacific Coast Study. The study's flood risk area project summary indicated that the study used detailed coastal modeling and analysis to determine coastal hazards and this product would help community officials and the public understand their local flood risk and other hazards. The City of Manhattan Beach was listed in this report as a community that lies along the open coast of Los Angeles County.

Table 47: Flood Risk Report Community Profile, Manhattan Beach

Community Name	CID	Total Community Population	Total Community Land Area (sq mi)	NFIP	CRS Rating	Mitigation Plan
City of Manhattan Beach	060138	35,135	3.9	Y	10	Y

Source: [Flood Risk Report, Los Angeles County, California Report 01, 9/30/2016](#)

Additionally, wave heights are computed along transects near coastal areas for FEMA's coastal flooding analyses. The transects are continued inland until the wave dissipates or until flooding from another source with equal or greater elevation is reached. Along each transect, wave heights and elevations are computed considering the combined effects of changes in ground elevation, vegetation, and physical features. With the Pacific Ocean bordering the West of the planning area, the following Coastal Transect Parameters (including coastal transect map) for the Pacific Ocean portion of the City of Manhattan Beach as identified by the FEMA Flood Insurance Study, June 2021, are as follows:

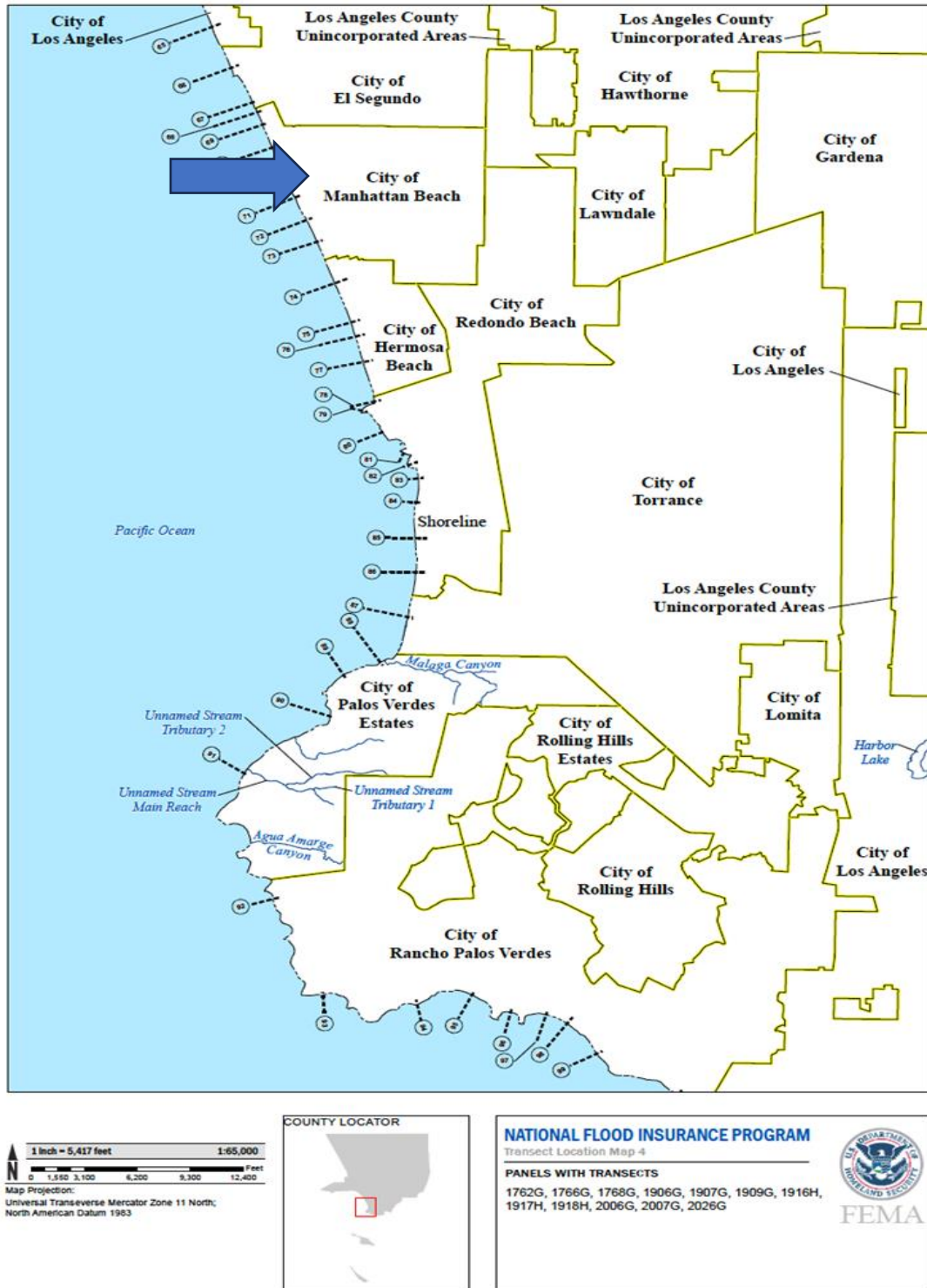
Table 48: Coastal Transect Parameters

Flood Source	Coastal Transect	X, Y Coordinates (Meters, NAD83 UTM Zone 11 N)		Total Water Level (feet NAVD88)				
		X	Y	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Pacific Ocean	68	367676.71	3752149.6 748	14.7	15.3	15.8	16.2	17.3
Pacific Ocean	69	367779.00 22	3751892.9 293	14.6	15.2	15.6	16.0	16.9
Pacific Ocean	70	367989.00 33	3751439.3 17	15.5	16.2	16.7	17.2	18.3
Pacific Ocean	71	368433.40 19	3750380.6 531	15.4	16.1	16.6	17.0	18.1
Pacific Ocean	72	368645.63 18	3749934.7 334	16.9	17.6	18.1	18.7	19.8
Pacific Ocean	73	368856.34 97	3749546.2 682	18.0	18.9	19.5	20.1	21.4
Pacific Ocean	74	369261.43 17	3748704.2 873	16.0	16.9	17.6	18.3	20.1

Source: [FEMA Flood Insurance Study](#)

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

Figure 41: FEMA Flood Insurance Study, Los Angeles County



Source: [FEMA Flood Insurance Study](#)

Table 49 explains each of the flood insurance rate zones related to coastal flooding in detail. Based on the FEMA FIRMs for the Manhattan Beach coastlines, the entire area is classified as VE.

Table 49: FEMA Coastal Flood Zones

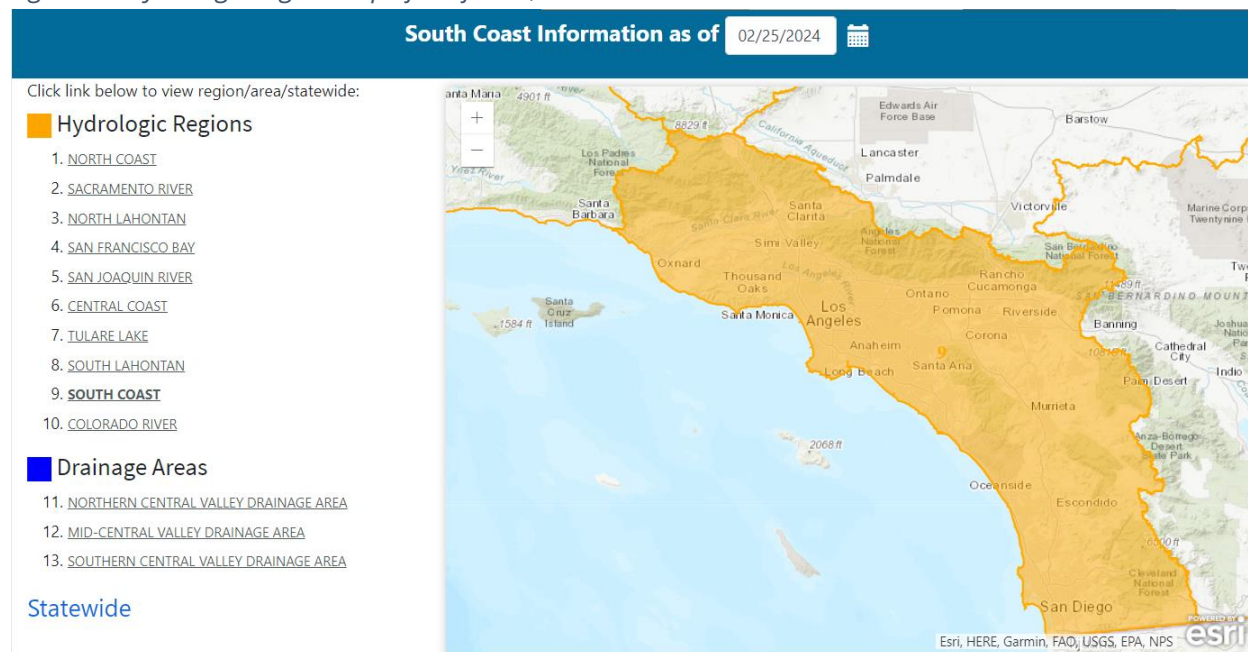
FEMA Coastal Flood Zone Classifications		
High Risk – Coastal Areas	V	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. No base flood elevations are shown within these zones.
High Risk – Coastal Areas	VE, V1-30	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. No base flood elevations are shown within these zones.
Moderate to Low-Risk Areas	X	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.

Source: [FEMA Flood Zone Classifications](#)

The Los Angeles County HMP (2018) mentioned that floods can occur anytime but are most familiar with annual winter storms packed with subtropical moisture. Severe Flooding that is most likely to occur during strong El Niño events, generally ranging from 2 to 7 years and lasting from as little as six months to as long as four years. Although Manhattan Beach does not have a history of significant Flooding, a particularly severe storm or series of intense storms may cause more widespread flooding emergencies. Localized Flooding will likely continue within the planning area, especially during significant storm events. Major storms in California, including the City of Manhattan Beach, frequently result from meteorological phenomena called atmospheric rivers, which are narrow bands of air that act as pathways for heavy precipitation.

According to the California State Hazard Mitigation Plan (2023) in relation to hydrologic/watershed regions, there are ten (10) hydrologic regions within the State of California. As identified in **Figure 42** below, Los Angeles County (where Manhattan Beach resides) lies in the South Coast Hydrologic Region. The South Coast Hydrologic Region extends north from the U.S.-Mexico border to the Tehachapi, San Bernardino, San Gabriel, and San Jacinto mountains. Nearly one-third of the area is a coastal plain. This region contains major urban centers, including Los Angeles, Orange, and San Diego counties.

Figure 42: Hydrologic Region Map of California, South Coast



Source: [California Water Watch](#)

FEMA's FIRM's are in **Appendix D** and can provide more detailed information about the risk associated with flooding in Manhattan Beach. It's important to note that the only Special Flood Hazard Area (SFHA) noted for Manhattan Beach by FEMA is the coast. There are no inland risks.

4.9.3 Previous Events

While flooding has been an occasional hazard in the Los Angeles Basin, it has been mostly limited to the areas near major natural rivers such as the Los Angeles, San Gabriel, and Santa Ana Rivers. A series of major flood events in the first half of the 1900s sparked the beginning of widespread flood control efforts, including the channelization of the area's major rivers. These efforts have reduced the frequency and severity of flood events although they have not removed the risk of flood entirely, as Los Angeles County still has seen declared flood-related disasters.

Manhattan Beach is not located near the major waterways of the Los Angeles Basin and has largely been free of significant flood events. However, to gain a better understanding of previous occurrences and accurately calculate future probability, the following information was taken into consideration. **Table 50** depicts the occurrences of flooding within Los Angeles County, where the City of Manhattan Beach resides, since the previous LHMP update. Overall, NOAA/NCEI recorded 83 flooding (coastal flood, flood/flash flood) events.

Table 50: NOAA/NCEI Events, Flood Events, Los Angeles County

Flood Events (Coastal, Flash Flooding, Flooding), Los Angeles County: 2000-2023					
Location	Date	Event Type	Injuries/Death	Property Damage	Crop Damage
Los Angeles County	08/15/2020	Flash Flood	0/0	0.00K	0.00K
Los Angeles County	08/18/2020	Flash Flood	0/0	0.00K	0.00K
Los Angeles County	09/11/2022	Flash Flood	0/0	0.00K	0.00K
Los Angeles County	01/09/2023	Flash Flood	0/0	0.00K	0.00K
Los Angeles County	02/24/2023-02/25/2023	Flash Flood	0/0	0.00K	0.00K
Total – 5 Flood Events (Coastal/Flash Flooding/Flood)			0/0	\$0.00K	\$0.00K
<p>Note: NOAA NCEI Storm Events Database mentioned Los Angeles County, where the City of Manhattan Beach resides, contains the following zones: Los Angeles County Coast including Downtown Los Angeles, Santa Monica Mountains Recreational Area, Los Angeles County Mountains excluding the Santa Monica Range, Antelope Valley, Catalina Island, Santa Clarita Valley, Los Angeles County San Fernando Valley, Los Angeles County San Gabriel Valley.</p>					

Disaster Declaration History

According to the most recent [Los Angeles County Flood Risk Report \(2016\)](#), the City of Manhattan Beach has had 52 past Federal Disaster Declarations for Flooding. Since the last HMP update, three (3) disaster declarations have been declared that included Los Angeles County, where Manhattan Beach resides, for flood. The events for flood that resulted in a state or federal disaster declaration are shown in **Table 51**.

Table 51: Los Angeles County - Disaster Declaration - Flood

Disaster Declaration	Hazard	Date	Details
California Severe Winter Storms, Flooding, Landslides, and Mudslides DR-4683-CA	Snowstorm/ Flooding/ Landslides/ Mudslides	December 2022	The state declared an emergency during a severe winter storm lasting December 27, 2022 – January 31, 2023. Disaster was declared on January 14, 2023.

Disaster Declaration	Hazard	Date	Details
California Severe Winter Storms, Flooding, and Mudslides EM-3591-CA	Snowstorm/ Flooding/ Mudslide	January 2023	Incident Period: Jan. 8, 2023 – Jan. 31, 2023 Declaration Date: Jan. 9, 2023.
California Severe Winter Storms, Flooding, and Mudslides EM-3592-CA	Snowstorm/ Flooding/ Landslides/ Mudslides	March 2023	Incident Period: Mar. 9, 2023 – Jul. 10, 2023 Declaration Date: Mar. 10, 2023

4.9.4 Probability of Future Events

Calculating future probability is one of many predictors of future occurrences. **Table 52** provides a summary of the events for flooding, as categorized, and recorded by NOAA/NCEI for Los Angeles County between January 1, 2019, and December 31, 2023:

Table 52: Probability of Future Events, Flood

Probability of Future Events, Flooding, Los Angeles County, CA		
Event Year	Coastal Flooding	Flash Flood/Inland Flood
2019	0	0
2020	0	2
2021	0	0
2022	0	1
2023	0	4
Total Recorded Events =	0	7
Total Years =	5	5
Annual Probability =	0%	28%

Source: NOAA/NCEI

<p>Annual Probability:</p> $\frac{7}{5} \times 100 = \frac{140\%}{5} = 28\%$

Using the NOAA/NCEI database, and calculating probability based on the past events since the last HMP update, the likelihood of a single flooding event occurring in Los Angeles County, where the City of Manhattan Beach resides, on an annual basis over the next HMP planning cycle is 28%. This

categorizes the hazard's future probability of occurrence as **Likely**.

4.9.5 Hazard Risk Ranking

The HMPC's hazard prioritization process, which assessed Flooding/Inland Flooding, resulted in an overall risk level being classified as Low with a rank score of 5.95. It is important to note that the HMPC's feedback and risk determination, as outlined in **Table 53**, are reflective of the committee's perspectives and judgments.

Table 53: Risk Ranking for Flooding/Inland Flooding

Hazard	Impact to Assets			Vulnerability (H+P+B=#) (V=#/3)	Probability (Pb)	Social Vulnerability (SV)	Risk Value (R=V+Pb+SV)	Risk Ranking
	Human Impact (H)	Property Impact (P)	Business Impact (B)					
Flooding/Inland Flooding	1.45	3.3	1.8	2.18	2.7	1	5.95	Low

4.9.6 Vulnerability and Impact Assessment

Change in Flooding/Inland Flooding Vulnerability

*As indicated in **Table 54**, since the last LHMP update there have been **No Change** in the City's overall vulnerability to Flooding/Inland Flooding.*

Manhattan Beach's vulnerability to inland flooding remains a general concern, yet the City's proactive and adaptive flood management strategies justify why there has been no change in this vulnerability status. The HMPC's discussions revealed a deep understanding of the City's flood risk, particularly in light of climate change predictions forecasting more frequent and intense storm events. Instances of flooding, such as the inundation of Polliwog Park and the disruption to the Manhattan Beach area, underscore the City's susceptibility to such events.

The emphasis on the maintenance and monitoring of Polliwog Park as a natural retention basin, along with the identification of other critical areas requiring attention, highlights the City's commitment to minimizing flood impacts through regular oversight and targeted interventions. This proactive stance, combined with the City's ongoing vigilance and readiness to adapt its strategies in response to new information and events, underscores the rationale behind the stable assessment of its vulnerability to inland flooding. By prioritizing flood risk mitigation and resilience-building measures, Manhattan Beach has demonstrated its dedication to safeguarding the community against the challenges posed by inland flooding, ensuring preparedness and protection for all residents and infrastructure.

Table 54: Summary of Change to Vulnerability, Flooding/Inland Flooding

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Flooding/Inland Flooding		X	

HMPC Vulnerability and Impact Assessment Feedback

During discussions on the vulnerability and impact of flood hazards for the LHMP, the HMPC emphasized that flooding remains a priority hazard for mitigation, especially in light of climate change predictions indicating more frequent and intense storms. This concern is substantiated by recent events, such as the closure of Manhattan Beach and the flooding of Polliwog Park on January 5, 2023, highlighting the city's susceptibility to flood events.

The Manhattan Village area, identified as a natural retention basin used as a golf course, and other low-lying intersections in the city are considered at high risk for flooding. Flooding not only threatens residential properties but also critical infrastructure like the Cultural Arts Center and Manhattan Beach Middle School, evacuation routes, and the downtown business sector, which could have profound economic impacts.

Vulnerable populations, including individuals with mobility challenges and pets, face heightened risks during flood events. To mitigate these risks, the HMPC suggested the design and construction of stormwater projects, protection of critical facilities, and innovative solutions like capturing inland floodwater for city water supply, permeable pavement, storm drain capture, and green roofing to minimize flooding impacts and enhance community resilience.

Several HMPC members had valued comments associated with hazards faced by the community. Some of those comments do not fit within the vulnerable and impact assessment categories but are important to mention. A key point highlighted was the role of Polliwog Park as a natural retention basin. Members stressed the importance of regular monitoring and maintenance of the park's pumps to ensure effective flood mitigation, thereby reducing potential impacts on the community and nearby infrastructure. This proactive approach is vital for preventing water overflow and minimizing flood damage.

Additionally, attention was drawn to another area in the Manhattan Village area prone to water accumulation, suggesting the need for further assessment and possibly targeted mitigation strategies in this location. These discussions underscore the importance of ongoing vigilance and adaptive measures in managing flood risks to protect community members and infrastructure.

Vulnerability of Populations

Los Angeles County, where the City of Manhattan Beach resides, has two (2) recorded fatalities from coastal flood/flash flood events in the last twenty-three years. Still, of the planning area's total population of 34,173 all are considered vulnerable and at risk of

flooding, coastal or flash. However, flooding could threaten the vulnerable populations within the planning area. The Los Angeles County Climate Vulnerability Assessment Executive Study mentions coastal flooding will affect low-income communities, which will find it particularly difficult to prepare for and recover from flooding events; these events may have an outsized impact on the local economy because of the concentration of key industries, along the coast including tourism—related to inland flooding/extreme precipitation (flash flooding) impacts on physical assets like medical facilities and transportation can affect the people within the community.

To mitigate the impact of flooding in Manhattan Beach, the City plans to enhance resilience through public education, health, preparedness, and awareness. This involves establishing flood warning systems and updating emergency response and crisis communication plans, ensuring that residents are well-informed and prepared for flood events. This is completed through the following new Mitigation Action items in this LHMP update:

- **IF.2** - Establish flood warning systems and update emergency response and crisis communication plans.

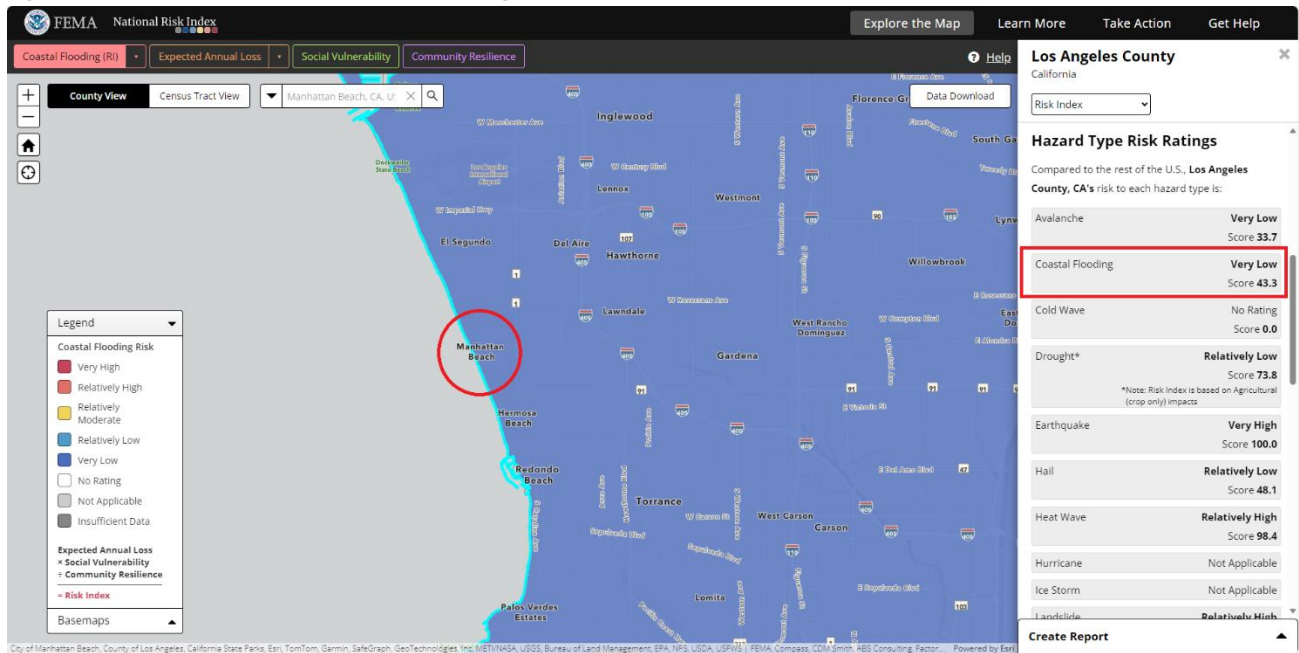
See [Section 6.7.2 New Actions/Mitigation Projects](#) for more information on these actions.

Vulnerability of Systems

Critical facilities and infrastructure can be rendered unusable or permanently destroyed by flood waters, significantly impacting a city's ability to conduct its day-to-day operations. Considerable damage to residential and/or commercial structures can damage a community and its economy by creating economic hardship. If a chemical facility is severely impacted, stored chemicals can potentially wash away with the floodwater and have detrimental effects on the local environment.

The City of Manhattan Beach, within Los Angeles County, is susceptible to flooding (coastal/flash flood). The FEMA National Risk Index for Natural Hazards is an online mapping system that identifies communities most at risk to 18 natural hazards. Related to flooding – coastal flooding/ riverine flooding, in the National Risk Index, a Coastal Flooding and Riverine Flooding Risk Index score and rating represent a community's relative risk for Riverine Flooding compared to the rest of the United States. The City of Manhattan Beach has a riverine flooding risk score of 90.8 (relatively moderate) and coastal flooding risk score of 43.3 (very low) compared to the rest of the Country. The map below illustrates that score visually.

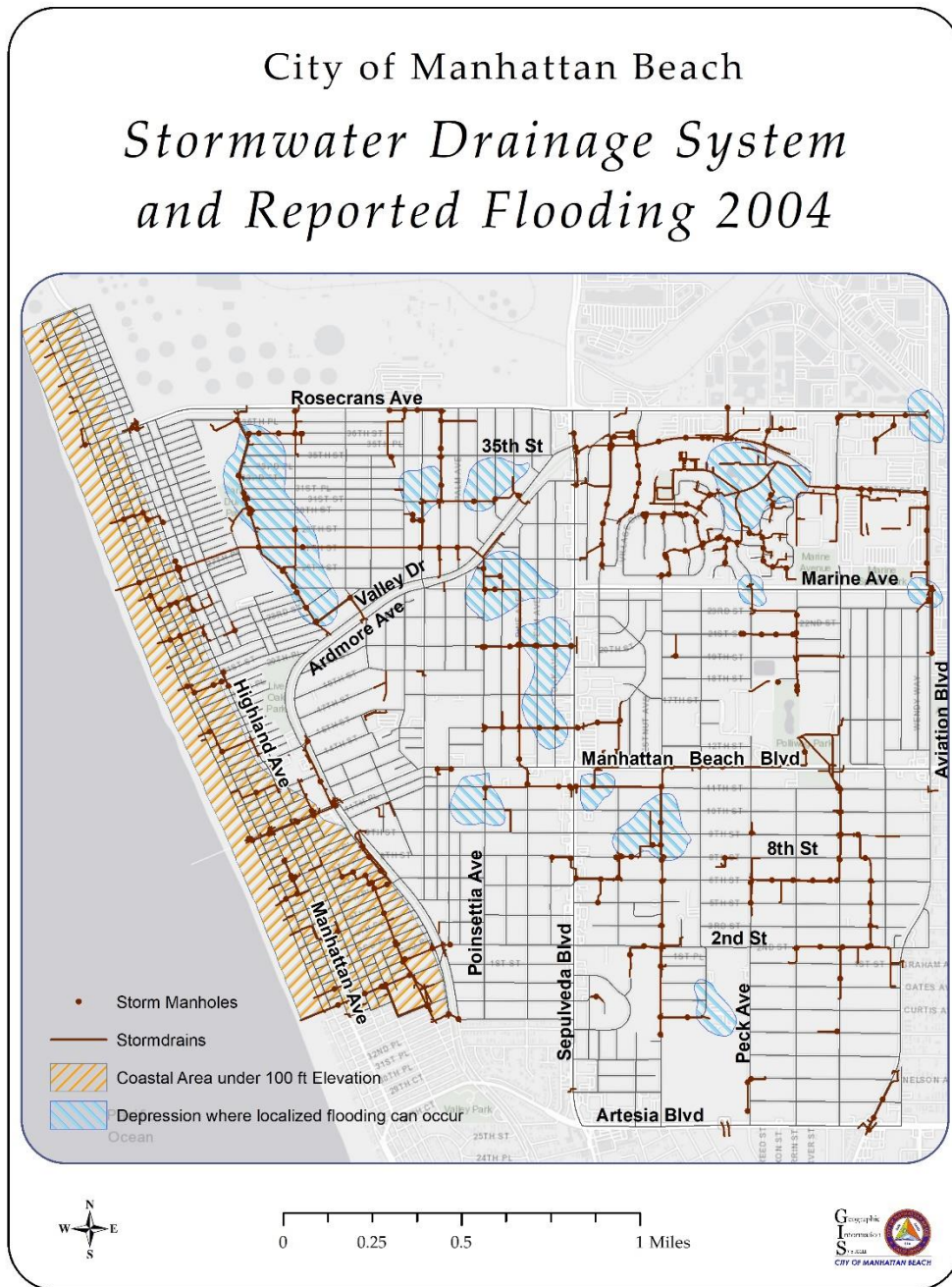
Figure 43: FEMA National Risk Index, Flooding (Coastal)



Source: [FEMA National Risk Index](#)

As per the City of Manhattan Beach Sea Level Rise Adaptation Plan, model results for existing conditions (i.e., current climate conditions) showed that the stormwater system can pass the current 25-year rainfall event with limited flooding, but the 50- and 100-year rainfall events would result in widespread flooding even without a higher coastal water level. **Figure 44** shows an example of the stormwater drainage system and reported flooding during a storm in 2004. During these events, water is expected to back up into the system and flood through maintenance holes because the pipes cannot move the water to the ocean quickly enough.

Figure 44: Stormwater Drainage System and reported flooding (2004)



Source: City of Manhattan Beach Sea Level Rise Adaptation Plan

Without sea level rise, for the extreme coastal storm events, the model showed no flooding through the storm drain system since the city elevations increase rapidly from the coast. The most-likely compound flooding scenario (i.e., the scenario during which a relatively high rainfall event coincides with an above-average coastal water level) showed similar results to the extreme coastal water level event (e.g., no flooding) due to sharp increase in land elevations moving away from the coast.

To minimize flooding impacts, Manhattan Beach enforces building codes and zoning laws, and ensures infrastructure resilience. Key actions include providing sandbags for residents and businesses and reinforcing city-owned water reservoirs to prevent failure. These measures are designed to reduce flood damage and enhance community preparedness. This is completed through the following new Mitigation Action items in this LHMP update:

- **IF.1** - Ensure that an adequate supply of sandbags is available to Manhattan Beach residents and businesses, including prefilled sandbags for individuals who may have difficulty filling their own.
- **IF.2** - Ensure that City-owned water reservoirs and storage tanks are extensively reinforced to minimize the risk of failure.

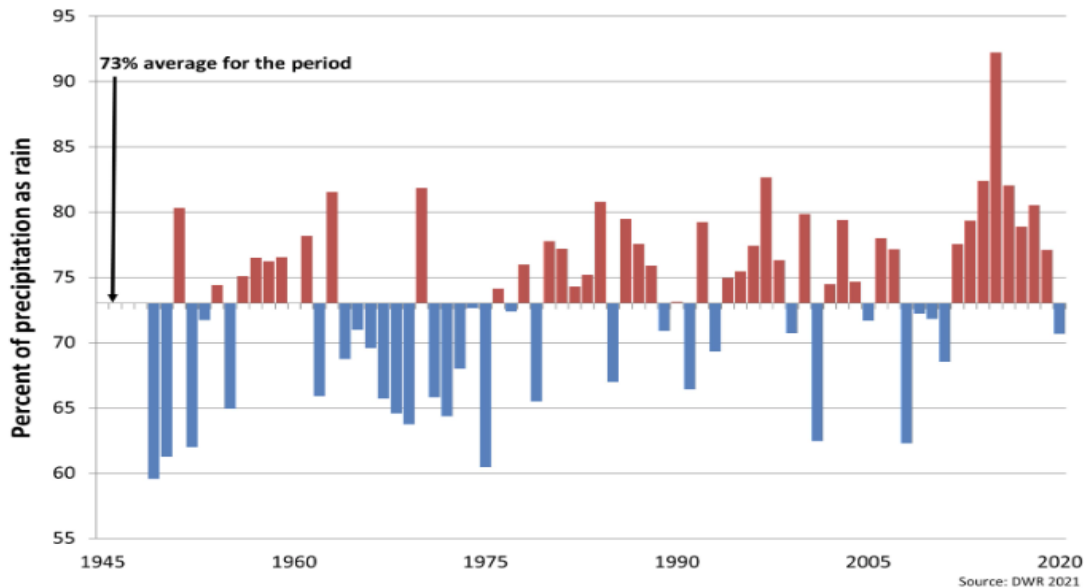
See [Section 6.7.2 New Actions/Mitigation Projects](#) for more information on these actions.

4.9.7 Climate Change Impacts

In the past decade, California has had years with both record-high and record-low precipitation swings consistent with climate change projections. Notably, 2012 to 2015 set a record for the driest consecutive four-year period, while 2017 was one of the wettest years on record.

Figure 45 presents the percentage of yearly precipitation falling as rain over the 33 watersheds that provide most of the state's water supply (shown on map). The bars show values relative to 73 percent, the average percentage of rain for the period 1979-2020: red bars are years with a higher percentage of rain than average (and thus less snow); blue bars are years with less rain and more snow than average.

Figure 45: Annual Rain Percentages



Source: California Department of Water Resources

In the event of a flooding does take place within the planning area, water that is long-lasting and slow to drain will encourage the growth of mold and other bio-hazardous materials, rendering a facility unusable. Extra care, assessment, and sanitization are required before residents can re-inhabit a facility, or they may face serious health concerns.

Climate change increases the likelihood of more severe flooding. With rising sea levels and increased precipitation, there is an increased risk for flooding events to grow. These contributing factors were a significant contributing factor to the HMPC's decision to make flooding a hazard of prime concern. Climate change can also exacerbate flood risks by causing more frequent droughts. Drought conditions cause soil to harden and become less porous, leading to increased flooding when precipitation does occur because the ground cannot absorb water as quickly.

Related to coastal flooding, the California State Hazard Mitigation Plan (2023) mentions that sea-level rise progressively worsens the impact of high tides and wind-driven waves associated with severe storms. Coupled with increased frequency, severity, and duration of high tide and storm events related to climate change, sea-level rise will exacerbate these extreme events along the coast. These events may expose the coast to severe flooding and erosion; damage to coastal structures, real estate, public access, and coastal habitats; and seawater intrusion into delta areas and coastal aquifers. El Niño events exacerbate storms and coastal inundation above that already occurring due to sea-level rise and normal coastal weather and tidal patterns.

Related to California's Fourth Climate Assessment project studies, greater storm intensity with climate change resulted in more direct runoff and flooding (CNRA 2018). As a result, high-frequency flood events in conjunction with heavy precipitation events and extreme storm events will increase with climate change. The Los Angeles County All Hazard Mitigation Plan (2020) mentions the County's vulnerability to climate change related to flooding (coastal and flash flooding) mega storms linked to climate change will cause severe flooding in cities within the County like Manhattan Beach.

4.9.8 Critical Facilities & Infrastructure

As previously mentioned as per the FEMA FRIM's there are no inland flood hazard zones within the City of Manhattan Beach, resulting in little to no potential loss of Critical Facilities and Infrastructure to flooding.

4.9.9 Land Use and Development

During the vulnerability and impact assessment, assets located within or near Polliwog Park were of concern. Due to the frequency of flooding events at Polliwog Park, which is also a storm water basin, the residents surrounding the park are concerned the flooding may get worse and impact their homes. Discussion focused on several assets of concern.

Flood Mapping

FEMA FIRM's are in **Appendix D** and can provide more detailed information about the risk associated with flooding in Manhattan Beach. It's important to note the only Special Flood Hazard Area (SFHA) noted for Manhattan Beach by FEMA is the coast. There are no inland risks.

4.9.10 Repetitive Loss Structures

According to the September 2016 Flood Risk Report, there are no repetitive loss structures in the City of Manhattan Beach. However, while there are ninety-nine (99) identified policy holders within the City of Manhattan Beach, this figure does not indicate that a flood insurance claim has been made. Since the last update (2019) and during the writing of this current plan no information on past or current claims was available, nor were there any updates or reports on repetitive loss structures within the planning area.

4.10 Geological Hazards (Earthquake and Landslide)

4.10.1 Hazard Description

Earthquake

An earthquake is a sudden, rapid shaking of the Earth caused by the breaking and shifting of rock beneath the Earth's surface. For hundreds of millions of years, the forces of plate tectonics have shaped the Earth as the huge plates that form the Earth's surface move slowly over, under, and past each other. Sometimes the movement is gradual. At other times, the plates are locked together, unable to release the accumulating energy. Earthquakes can strike suddenly, without warning. Earthquakes can occur at any time of the year and at any time of the day or night. On an annual basis, 70 to 75 damaging earthquakes occur throughout the world. Ground shaking from earthquakes can collapse buildings and bridges; disrupt gas, electric, and phone service; and sometimes trigger landslides, avalanches, flash floods, fires, and huge destructive ocean waves (tsunamis). Buildings with foundations resting on unconsolidated landfill and other unstable soil, and trailers and homes not tied to their foundations are at risk because they can be shaken off their mountings during an earthquake. When an earthquake occurs in a populated area, it may cause deaths and injuries and extensive property damage.

There are numerous characteristics measured when observing earthquake activity; however, the most influential in determining damage include:

- Force
- Depth
- Peak ground acceleration
- Distance to the epicenter

Two scales are used when referring to earthquake activity: the **Richter Scale**, which estimates the total force of the earthquake; and the **Modified Mercalli Intensity Scale**, which categorizes the observed damage from the earthquake.

Earthquakes can last from a few seconds to over five minutes; they may also occur as a series of tremors over several days. The actual movement of the ground in an earthquake is seldom the direct cause of injury or death. Casualties generally result from falling objects and debris, because the shocks shake, damage, or demolish buildings and other structures. Disruption to communications, electrical power, gas, sewer, and water lines should be expected. In addition, ground shaking, landslides, liquefaction, and amplification are the specific hazards associated with earthquakes. The severity of these hazards depends on several factors, including soil and slope conditions, proximity to the fault, earthquake magnitude and depth, and the type of earthquake:

Ground Shaking – Ground shaking is the motion felt on the Earth's surface caused by seismic waves from an earthquake. It is the primary cause of earthquake damage. The strength of ground shaking depends on the magnitude of the earthquake, the type of fault, and distance from the epicenter. Buildings on poorly consolidated and thick soils will typically see more damage than buildings on consolidated soils and bedrock.

Amplification – Soils and soft sedimentary rocks near the Earth's surface can modify ground

shaking caused by earthquakes. One of these modifications is amplification. Amplification increases the magnitude of the seismic waves generated by the earthquake. The amount of amplification is influenced by the thickness of geologic materials and their physical properties. Buildings and other structures built on soft and unconsolidated soils can face greater risk. Amplification can also occur in areas with deep sediment-filled basins and ridge tops.

Earthquake-Induced Landslides – Earthquake-induced landslides are secondary earthquake hazards that occur from ground shaking. They can destroy roads, buildings, utilities, and other critical facilities necessary to respond to and recover from an earthquake and are common in areas with steep slopes. **Figure 46** depicts where the City of Manhattan Beach has highlighted the areas vulnerable to Earthquake-Induced Landslides.

Liquefaction – Liquefaction, a secondary earthquake hazard, occurs when ground shaking causes wet granular soils to change from solid to liquid. This results in the loss of soil strength and ability to support weight. Buildings and their occupants are at risk when the ground can no longer support these buildings and structures. 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. **Figure 46** depicts where the City of Manhattan Beach has highlighted the areas vulnerable to Liquefaction.

Expansive Soils – are those which contain high levels of materials that can absorb large amounts of water, such as certain types of clay. When the ground is wet, these materials absorb water and swell, and then shrink as they dry out. This process can exert significant force on structures, and over repeated cycles of expansion and contraction this force can be sufficient to crack foundations, floors, and other ground-level or subterranean structures. Cracks may form in expansive soils when they are dry, potentially creating a safety hazard.

Landslide

According to the USGS National Landslide Information Center (NLIC), the term “landslide” is defined as the movement of a mass of rock, debris, or earth down a slope. The force of gravity acting upon a steep (or sometimes, even a moderately steep) slope is the primary cause of a landslide. Slope failure occurs when the force of gravity pulling the slope downward exceeds the strength of the earth materials that comprise the slope to hold it in place. In addition to the force of gravity, other contributing factors to landslides can include rainfall, earthquakes, changes in groundwater, and human-induced modifications to existing slopes. The potential for a landslide to occur exists in every state wherever very weak or fractured materials are resting on a moderate to steep slope.

Landslides can be broken down into two categories: (1) rapidly moving and (2) slow moving. Rapidly moving landslides present the greatest risk to human life, and people living in or traveling through areas prone to rapidly moving landslides are at increased risk of serious injury. Slow moving landslides can cause significant property damage but are less likely to result in serious human injuries.

Saturation of slopes by precipitation (rain or snowmelt) weakens soil and rock by reducing cohesion and increasing the pressure in pore spaces, pushing grains away from each

other. Erosion and undercutting of slopes by streams, rivers, glaciers, or waves increase slope angles and decrease slope stability. Earthquakes create stresses that weaken slopes and physically cause slope movement.

Perhaps most significant, the over weighting, and/or under cutting of slopes for facilities, roads, trails, mines, and other man-made structures change the natural slope equilibrium and cause slopes to fail. According to the U.S. Geological Survey, landslides can, and do, occur in every state and territory of the U.S.; however, the type, severity, and frequency of landslide activity varies from place to place, depending on the terrain, geology, and climate. Major storms have caused widespread landslides in the State of California.

When the environment is favorable for a landslide, an advisory, watch, or warning may be issued.

- An advisory is a general statement about the potential of landslide activity in a given region relative to developing rainfall predictions. An advisory may include general statements about rainfall conditions that can lead to debris-flow activity, and list precautions to be taken in the event of heavy rainfall.
- A watch means that landslide-activity will be possible but is not imminent. People in, or planning to travel through, a watch area should know landslide preparedness and stay informed about developing weather patterns.
- Warnings indicate that landslide activity is presently occurring, and extreme caution should be taken.

Watches and warnings may be issued for discrete areas and include advice about contacting an area's local emergency centers. Watches and warnings for rainfall-induced debris flows are weather dependent and will closely track National Weather Service watches and warnings for flash flooding.

Debris flows are fast-moving landslides that are particularly dangerous to life and property because they move quickly, destroy objects in their paths, and often strike without warning. They occur in a wide variety of environments throughout the world, including all 50 states and U.S. Territories.

Debris flows generally occur during periods of intense rainfall or rapid snowmelt and usually start on hillsides or mountains. Debris flows can travel at speeds up to and exceeding 35 mph and can carry large items such as boulders, trees, and cars. If a debris flow enters a steep stream channel, they can travel for several miles, impacting areas unaware of the hazard. Areas recently burned by a forest fire are especially susceptible to debris flows, including the areas downslope and outside of the burned area. Debris flows are a type of landslide and are sometimes referred to as mudslides, mudflows, lahars, or debris avalanche.

According to the U.S. Geological Survey, **Post-Fire Landslide** hazards include fast-moving, highly destructive debris flows that can occur in the years immediately after wildfires in response to high intensity rainfall events, and those flows that are generated over longer time periods accompanied by root decay and loss of soil strength. Post-fire debris flows are particularly hazardous because they can occur with little warning, can exert great impulsive loads on objects in their paths, can strip vegetation, block drainage ways,

damage structures, and endanger human life. Wildfires could potentially result in the destabilization of pre-existing deep-seated landslides over long time periods.

Similar to landslides, **Subsidence** is the sinking of the ground because of underground materials movement, most often caused by the removal of water, oil, natural gas or mineral resources out the ground by pumping, fracking, or mining activities.

4.10.2 Location and Extent

Earthquake

As per the 2020 County of Los Angeles All-Hazards Mitigation Plan, there are several active faults in or near the City of Manhattan Beach and Los Angeles County.

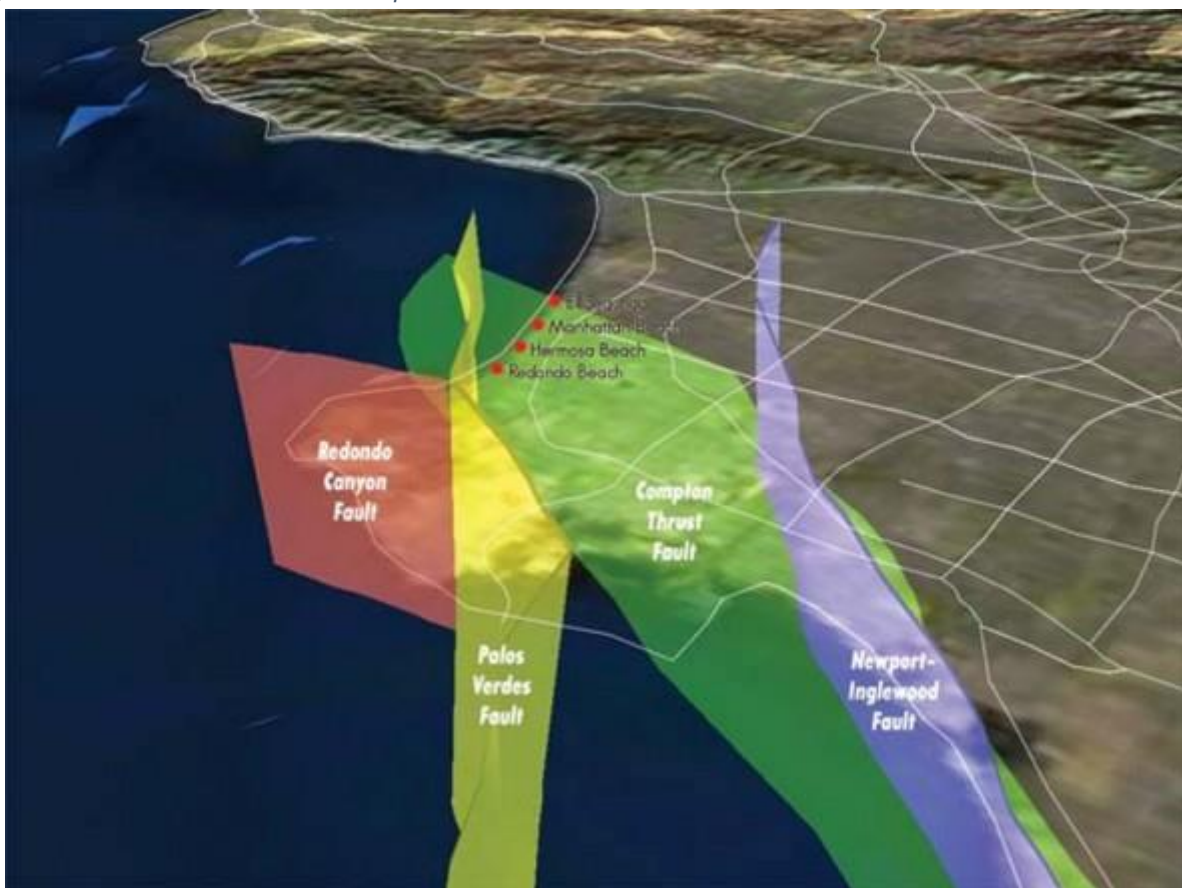
- **Malibu Coast Fault System:** The Malibu Coast fault system includes the Malibu Coast, Santa Monica, and Hollywood faults. The system begins in the Hollywood area, extends along the southern base of the Santa Monica Mountains, and passes offshore a few miles west of Point Dume. The 1973 Point Mugu earthquake is believed to have originated on this fault system.
- **Oak Ridge Fault System:** The Oak Ridge fault system is a steep (65 degrees) southerly dipping reverse fault that extends from the Santa Susana Mountains westward along the southerly side of the Santa Clara River Valley and into the Oxnard Plain. The system is more than 50 miles long on the mainland and may extend an equal or greater distance offshore. Several recorded earthquake epicenters on land and offshore may have been associated with the Oak Ridge fault system. Portions of the system are zoned by the state as active.
- **Pine Mountain Thrust Fault and Big Pine Fault:** These two large faults occur in the mountainous portion of Ventura County north of the Santa Ynez fault; the faults are located 9 and 16 miles north of the city of Ojai, respectively. The Pine Mountain thrust fault is reported to have ruptured the ground surface for 30 miles along its length during the northern Ventura County earthquakes of November 1852.
- **San Andreas Fault:** San Andreas is the longest and most significant fault in California. Because of clearly established historical earthquake activity, this fault has been designated as active by the State of California. The last major earthquake on this fault near Ventura County was the Fort Tejon earthquake of 1857, which was estimated at magnitude (M) 8.0 and would have caused considerable damage if there had been structures in the southern part of the County. There is a 59 % chance that a M 6.7 quake or larger will occur on this fault in the next 30 years.
- **San Cayetano–Red Mountain–Santa Susana Fault System:** This fault system consists of a major series of north-dipping reverse faults that extend over 150 miles from Santa Barbara County into Los Angeles County. In this system, the San Cayetano fault is the greatest hazard to Ventura County; it is a major, north-dipping reverse fault that extends for 25 miles along the northern portion of the Ventura Basin. The San Fernando earthquake of 1971, described in the previous section, was caused by activity along this fault.
- **Simi–Santa Rosa Fault System:** This fault system extends from the Santa Susana Mountains westward along the northern margin of the Simi and Tierra Rejada valleys

and along the southern slope and crest of the Las Posas Hills to their westerly termination.

- **Ventura-Pitas Point Fault:** The western half of this fault is known as the Pitas Point fault, and the eastern half is known as the Ventura fault. The Pitas Point fault extends offshore into the Pacific Ocean and is roughly 14 miles long. The Ventura fault extends into the communities of Ventura and Sea Cliff and runs roughly parallel to portions of U.S. 101 and State Route 126. The fault is roughly 12 miles long and is a left-reverse fault.

Figure 46 provides a depiction of the locations of the faults that can influence the Geological Hazards for the City of Manhattan Beach.

Figure 46: Manhattan Beach Fault Map

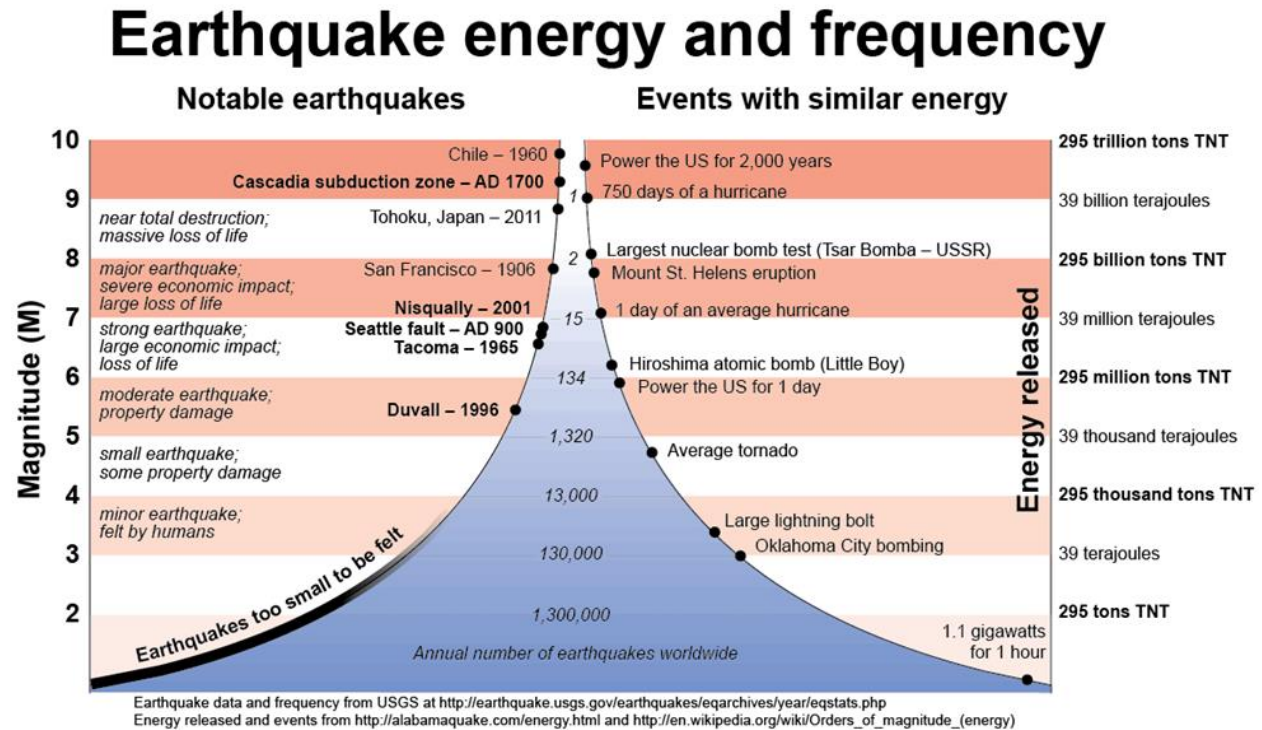


Source: Southern California Earthquake Center, USC

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 on the Richter scale corresponding 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 M5.0 earthquake and releases 1,024 times (32×32) the energy. The

measurements of the Richter Scale using the USGS illustration of earthquake energy and frequency illustration below:

Figure 47: Earthquake Energy and Frequency



Source: [Trinidad and Tobago Weather Center](#)

The Modified Mercalli Intensity (MMI) scale, as shown in **Table 55**, 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 earthquake severity by the amount of damage and perceived shaking.

Table 55: Modified Mercalli Intensity Scale

MMI Value	Shaking Severity	Summary Damage	Description
I	Not Felt	Little to none	Not felt except by few under especially favorable conditions.
II	Weak	Little to none	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Weak	Hanging objects move	Felt quite noticeably by people indoors. Many people do not recognize it as an earthquake. Standing cars may rock slightly, vibrations are similar to a passing truck. Duration estimated.
IV	Light	Hanging objects move	Felt indoors by many, outdoors by few. At night, some are awakened. Dishes, windows, and doors are disturbed. Sensation like heavy truck striking building. Standing cars rocked noticeably.

MMI Value	Shaking Severity	Summary Damage	Description
V	Moderate	Pictures move	Felt by nearly everyone; many awakened. Dishes and windows are broken. Unstable objects are overturned. Pendulum clocks may stop.
VI	Strong	Objects fall	Felt by all; many frightened. Some heavy furniture moved. A few instances of fallen plaster. Damage slight.
VII	Very Strong	Nonstructural damage	Negligible damage to buildings of good design/construction. Slight to moderate damage in well-built/ordinary structures. Considerable damage to poorly built/designed structures. Some chimneys broken.
VIII	Severe	Moderate damage	Slight damage to specially designed structures. Considerable damage to ordinary construction, including partial collapse. Damage is great in poorly built structures. Fall of chimneys, columns, monuments and walls. Heavy furniture overturned.
IX	Violent	Extreme damage	Considerable damage to specially designed structures; well-designed frame structures are thrown out of plumb. Damage is great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X+	Extreme	Extreme damage	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails are bent.

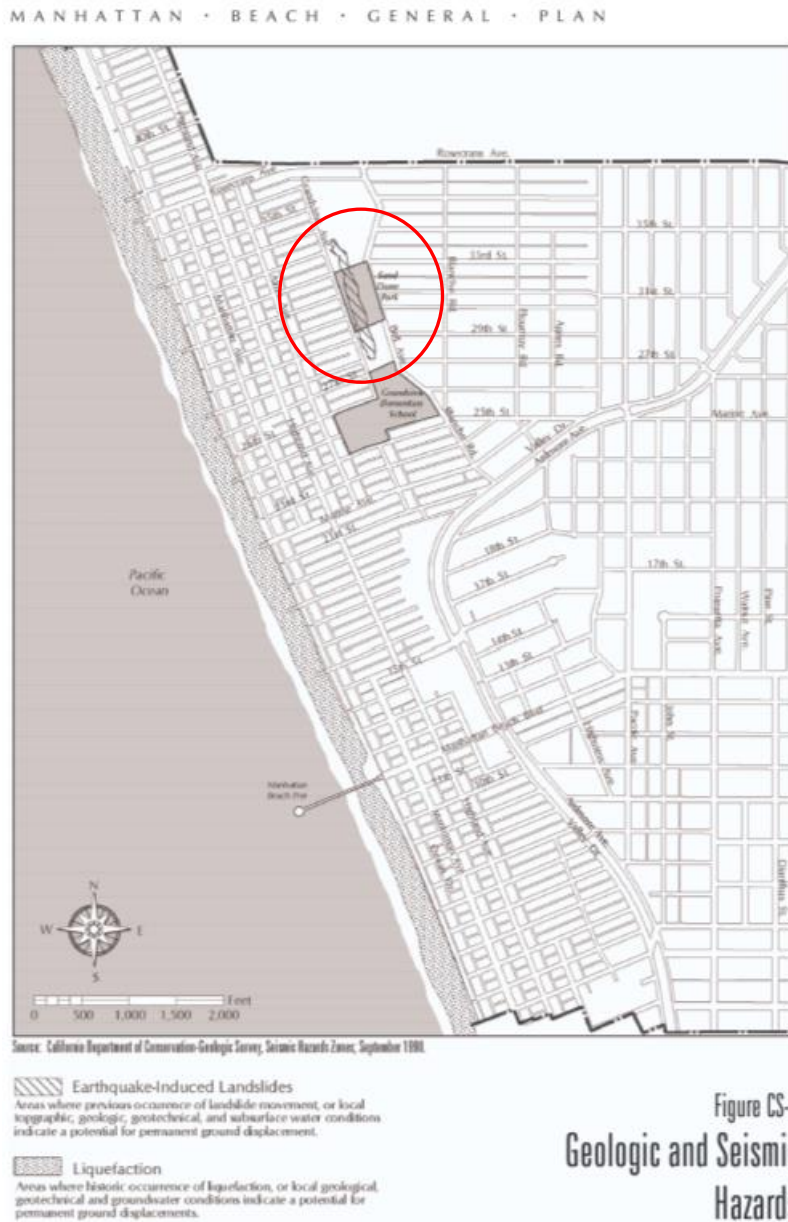
Source: [United States Geological Survey](#)

Landslide

The severity of a landslide depends in large part on the degree of development in the area in which it occurs and the geographic area of slide itself. Generally speaking, landslides often result in devastating consequences, but in very localized areas. A landslide occurring in an undeveloped area would be less severe because lives and property would not be affected; the only impacts would be to land, vegetation, and possibly some wildlife. On the contrary, a landslide occurring in a developed area could have devastating effects, ranging from structure and infrastructure damage to injury and/or loss of life. Structures or infrastructure built on susceptible land would likely collapse as their footings slide downhill, while those below the land failure would likely be crushed. Landslides around roadways could have the potential to fall and damage or destroy vehicles and force other drivers to have accidents.

As per the City of Manhattan Beach's General Plan, the north end is the only area of the City where landslides hazards and unstable soil have been recognized. These locations of concern are depicted **Figure 48** below.

Figure 48: Geologic and Seismic Hazards



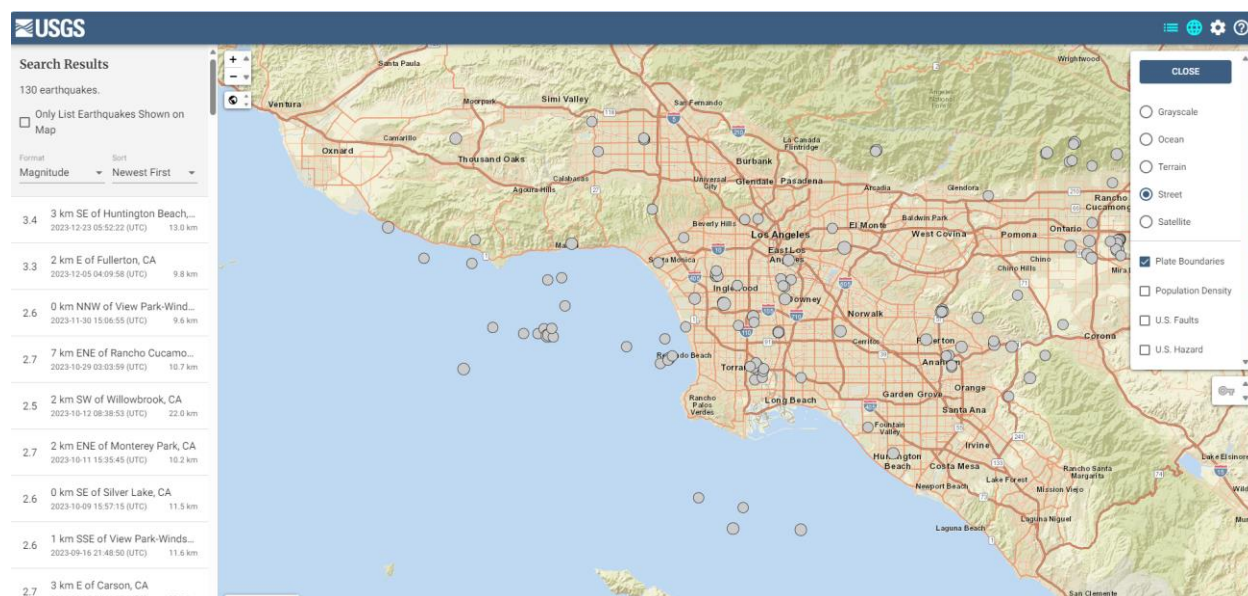
Source: Manhattan Beach General Plan

The area noted for Landslide risk is Sand Dune Park. The 100-foot-high sand dune is where a landslide could occur. Located next to the landslide risk area is a school complex housing Grandview Elementary.

4.10.3 Previous Events

As shown in **Figure 49**, there have been 130 earthquakes of a magnitude greater than 2.5 between January 1, 2019, and December 31, 2023, in and around Los Angeles County, where the City of Manhattan Beach resides. Data from the California Department of Conservation indicates there have been no earthquakes in the City of Manhattan Beach or on a neighboring jurisdiction with a magnitude greater than or equal to 6.5, that caused loss of life or more than \$200,000 in damage since the 1933 Long Beach Earthquake which was a 6.4 magnitude and occurred 15 miles from the City of Manhattan Beach.

Figure 49: Earthquake >2.5 Intensity, 2019-2023



Source: USGS Earthquake Database

According to the [USGS Landslide Inventory](#) and the California Department of Conservation's [Landslide Inventory](#), there have not been any recorded recent landslides within the City of Manhattan Beach.

Disaster Declaration History

Since the last HMP update there have been no FEMA or Cal OES disaster declaration for Los Angeles County related to Geological Hazards, as shown in [Section 4.1 Emergency and Disaster Declaration History](#).

4.10.4 Probability of Future Events

Calculating future probability is one of many predictors of future occurrences. **Table 56** provides a summary of the events for Geological Hazards (Earthquakes and Landslides),

as categorized, and recorded by NOAA/NCI for Los Angeles County between January 1, 2019, and December 31, 2023:

Table 56: Probability of Future Events, Geological Hazards

Probability of Future Events, Flooding, Los Angeles County, CA		
Event Year	Earthquake	Landslide
2019	12	0
2020	8	0
2021	17	0
2022	11	0
2023	6	0
Total Recorded Events =	54	0
Total Years =	5	5
Annual Probability =	100%	0%

Source: NOAA/NCEI

<p>Earthquake Annual Probability: $\frac{54}{5} \times 100 = \frac{1080\%}{5} = 216\%$</p> <p>Landslide Annual Probability: $\frac{0}{5} \times 100 = \frac{0\%}{5} = 0\%$</p>
--

Using the NOAA/NCEI database, and calculating probability based on the past events since the last HMP update, the likelihood of a single earthquake event occurring in Los Angeles County, where the City of Manhattan Beach resides, on an annual basis over the next HMP planning cycle is 100%. the likelihood of a single landslide event occurring in Los Angeles County, where the City of Manhattan

Beach resides, on an annual basis over the next HMP planning cycle is 0%. The average of these probabilities, 50%, is utilized to determine the hazard's overall future probability categorizing it occurrence as **Likely**.

To provide additional context on the probability of future events for Earthquakes, **Table 57** provides the maximum likelihood of earthquake events by size and fault over the next 30 years. Ongoing field and laboratory studies suggest the likely maximum magnitudes and recurrence intervals for the major local faults are as follows:

Table 57: Maximum Likelihood of Earthquake Events by Size and Fault in the Next 30 Years

Fault	6.7 Mw	7.0 Mw	7.5 Mw	8.0 Mw
Palos Verdes	3.17%	2.84%	.01%	-
Puente Hills	0.78%	0.58%	0.19%	-
Puente Hills (Coyote Hills segment)	0.95%	0.65%	0.19%	-
Puente Hills (Los Angeles segment)	1.01%	0.51%	0.15%	-
Puente Hills (Santa Fe Springs segment)	0.96%	0.76%	0.29%	<0.01%

Fault	6.7 Mw	7.0 Mw	7.5 Mw	8.0 Mw
Newport-Inglewood (onshore only)	0.99%	0.88%	0.43%	-
Elysian Park	0.06%	0.05%	0.02%	-
Santa Monica	1.19%	1.02%	0.29%	<0.01%
Malibu Coast	0.75%	0.65%	0.37%	<0.01%
Hollywood	1.59%	1.18%	0.29%	<0.01%
Upper Elysian Park	1.26%	0.78%	0.07%	-
Anacapa-Dume	0.90%	0.66%	0.25%	<0.01%
Whittier	1.58%	1.43%	0.80%	<0.01%
Raymond	1.70%	1.18%	0.35%	<0.01%
Verdugo	0.51%	0.45%	0.32%	<0.01%
San Andreas *	22.34%	19.68%	18.74%	6.91%

* Only fault sections in the greater Los Angeles region are included. This does not represent the risk of future events on the entire San Andreas fault.

Note: The magnitude of the events shown in this table are for the site of the earthquake. Depending on the location of the earthquake, the magnitude may be less severe within Manhattan Beach itself.

Source: [Open-Source Seismic Hazard Analysis \(OpenSHA\)](#)

4.10.5 Hazard Risk Ranking

The HMPC's hazard prioritization process, which assessed Geological Hazards, resulted in an overall risk level being classified as Medium with a rank score of 7.87. It is important to note that the HMPC's feedback and risk determination, as outlined in **Table 58**, are reflective of the committee's perspectives and judgments.

Table 58: Risk Ranking for Geological Hazards

Hazard	Impact to Assets			Vulnerability (H+P+B=#) (V=#/3)	Probability (Pb)	Social Vulnerability (SV)	Risk Value (R=V+Pb+SV)	Risk Ranking
	Human Impact (H)	Property Impact (P)	Business Impact (B)					
Geological Hazards	3.85	4.45	3.9	4.07	2.8	1	7.87	Medium

4.10.6 Vulnerability and Impact Assessment

Change in Geological Hazards Vulnerability

*As indicated in **Table 59**, since the last LHMP update there have been **No Change** in the City's overall vulnerability to Geological Hazards.*

The HMPC's discussions on geological hazards in Manhattan Beach underscore the City's consistent vulnerability to seismic events, given its location in a seismically active region. Despite ongoing development and the importance for infrastructure and building retrofitting to align with California's stringent earthquake resilience codes, the fundamental geological risk remains unchanged.

Table 59: Summary of Change to Vulnerability, Geological Hazards

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Geological Hazards		X	

HMPC Vulnerability and Impact Assessment Feedback

During the discussions on geological hazards for the LHMP, the HMPC underscored the significant priority of mitigating geologic hazards, with a particular focus on seismic hazards, as Manhattan Beach is situated in a seismically active area. The City's vulnerability to geologic hazards, including the potential for large earthquakes, is heightened by additional development and the need for infrastructure and building retrofitting to meet current California building codes for earthquake resilience.

The downtown area's density and the business community were identified as particularly at risk due to economic implications and the potential for widespread structural damage in the event of an earthquake. Socially vulnerable populations, such as those who are bedridden, young children, disabled members, and residents of multi-unit apartment complexes, were noted as having increased risk during such events.

Critical infrastructure, including schools, the emergency water supply water tower, and evacuation routes, may be threatened. Concerns were also raised about the impact of seismic activity on older recreational buildings, the potential hazards posed by the refinery and underground petroleum and gas storage facilities, and the vulnerability of communication systems and servers essential for emergency response.

Mitigation suggestions included the seismic retrofit of the Sepulveda Bridge and other critical structures, identification of a secondary backup Emergency Operations Center (EOC), landslide hazard assessment near senior housing, and the enactment of city ordinances to encourage the installation of solar panels on new constructions to minimize utility disruptions.

Additional concerns highlighted by HMPC members outside the typical vulnerability and impact assessment categories included the possibility of sinkholes and potholes affecting

response capabilities, and the risk of underground parking areas collapsing during earthquakes. These insights underscore the comprehensive approach required to address and mitigate the impacts of geologic hazards on the Manhattan Beach community.

Vulnerability of Populations

The entire population of the City of Manhattan is vulnerable to the hazard of earthquakes. According to 2020 Decennial Census data, the City of Manhattan Beach has a population of 35,506 with a total of 14,994 housing units, all of which are highly vulnerable and at risk of earthquakes.

Seismic hazards are challenging for socially vulnerable populations and other high-risk individuals because this hazard occurs with little notice or warning. Thus, response and evacuation efforts for the elderly or disabled are challenging. Cost burdened households or persons living in poverty may not hold earthquake insurance and may not have the economic means to recover if property is damaged during an earthquake.

To reduce vulnerability and impacts from geological hazards, Manhattan Beach emphasizes public outreach, preparedness, and awareness, incorporating a new action in the 2024 LHMP: the Shake Alert Earthquake Early Warning System. This system aims to provide residents with crucial advance warnings during earthquakes, enhancing their ability to respond effectively and mitigate potential impacts. This effort is conducted through the following new Mitigation Action items in this LHMP update:

- **G.4** - Shake Alert Earthquake Early Warning System.

Other communication enhancements and improvements in the “All Hazards” mitigation actions would reduce the vulnerability to socially vulnerable populations. See [Section 6.7.2 New Actions/Mitigation Projects](#) for more information on these actions.

Vulnerability of Systems

The City of Manhattan Beach understands the vulnerability and impacts of geological hazards. Mitigating against the impacts requires hardening of infrastructure and communication capabilities, and retrofitting of existing buildings internal to the City, as well as privately owned residential and commercial properties. In an effort to lessen the overall vulnerability and impact to geological hazards the City of Manhattan Beach enforces building codes, zoning laws, and land use regulations aid in hardening infrastructure and reduce/prevent leveling of buildings. This is completed through the following new Mitigation Action items in this LHMP update:

- **G.1** - Install landslide detection and potential protection measures at Sand Dune Park.
- **G.2** - Adopt building codes and design standards to reduce earthquake vulnerability.
- **G.3** - Installation of erosion control at Sand Dune Park.

See [Section 6.7.2 New Actions/Mitigation Projects](#) for more information on these actions.

4.10.7 Climate Change Impacts

Earthquakes

Earthquake likelihood, size, and severity of ground shaking during geological events are not expected to be directly impacted by climate change, as the geologic processes that lead to the release of seismic energy and earthquakes are not impacted by atmospheric conditions.

Landslides

Landslides are generally caused by one of two factors, seismic activity, and soil saturation. Earthquakes and ground shaking are not linked to climate change, heavy rains are affected by climate change and understood to contribute to saturated soils and landslides. Climate change is linked to increased precipitation and more frequent and/or severe storms. California is already experiencing climate changing impacts with increasing variable precipitations and becoming the highest variability of year-to-year precipitation in the contiguous United States. Increased rainfall due to climate change will lead to saturated slopes, erosion, and likely will exacerbate the effects of landslide and mudslides within the planning area.

4.10.8 Critical Facilities & Infrastructure

All critical facilities in the planning area are equally vulnerable to the effects of an earthquake. The level of damage will vary based on the condition of the building. Infrastructure has the potential for catastrophic failure in high MMI events. The intensity of an earthquake will vary based on distance from the epicenter. **Table 60** identifies the potential losses of all the critical facilities in the planning area.

Table 60: Critical Facilities and Infrastructure, Geological Hazards

Category	Number of Facilities	Examples	Asset Value/Potential Loss	Community Lifeline Category
City Hall	2	City Hall	\$ 14,383,548	Safety and Security, Communications
Communications	32	Transmitter/Towers, Radio Equipment Rooms, Receivers	Not Available	Communications
Community Centers	10	Parks, Sports Centers, Civic Centers, Churches	\$ 22,152,477	Safety and Security, Food and Shelter
Energy	4	Utilities	Not Available	Energy
Fire/Law Enforcement	2	Fire Stations	\$ 40,459,180	Safety and Security, Communications, Hazardous Materials

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

Category	Number of Facilities	Examples	Asset Value/Potential Loss	Community Lifeline Category
Government Offices	6	Libraries, Court Rooms, Post Offices	Not Available	Safety and Security, Communications
Medical Facilities	1	Care Centers, Urgent Care	Not Available	Health and Medical
Schools	9	Schools (Elementary, Middle, and High), Childcare Center	Not Available	Safety and Security, Food and Shelter
Transportation	5	Roads, Bridges/Overpasses	\$ 88,493,906	Transportation
Water/Sewer	18	Pump Stations, Wells, Reservoirs, Connectors	\$ 28,811,761	Water Systems
Total	89	---	\$ 194,300,872	
Note: Potential loss data are estimates only, as replacement values for all facilities were not available. Actual losses may be greater than the estimate presented on this table.				

4.10.9 Land Use and Development

Future development in the City is not anticipated to significantly affect the overall impact and vulnerability to geological hazards as new development is designed according to modern building codes. However, the impacts and losses that are likely to result from geological hazards include:

- Utility outages.
- Economic losses for repair and replacement of critical facilities, roads, buildings, etc.
- Indirect economic losses, such as income lost during infrastructure downtime; and
- Roads that are blocked or damaged, preventing access throughout the area and isolating residents and emergency service providers that need to reach vulnerable populations or make repairs.

Development in the City will be regulated through building standards and performance measures so that the degree of risk will be reduced. Future construction and retrofitting of buildings within the City will adhere to the California's Building Code, which has some of the most stringent seismic building standards in the nation.

4.11 Severe Weather (Extreme Heat and High Wind)

4.11.1 Hazard Description

Severe Weather is any dangerous meteorological phenomenon with the potential to cause damage, serious social disruption, or loss of human life. Severe weather can happen at any time, and in any part of the country, and may present itself in a variety of ways. Severe weather phenomena include high winds, hail, excessive precipitation, thunderstorms, downbursts, tornadoes, waterspouts, tropical cyclones, blizzards, ice storms, dust storms, firestorms, extreme heat/cold, and extreme wetness, or drought. Types of severe weather phenomena can be influenced and vary depending on the latitude, altitude, topography, and atmospheric conditions of a certain location. For this LHMP the Severe Weather hazard will focus on two specific severe weather hazards that have the potential to impact the City Manhattan Beach: Extreme Heat and High Wind.

Extreme Heat

The definition of extreme heat varies based on many different factors, such as location, weather conditions (e.g., temperature, humidity, and cloud cover), and the time of year. Extreme heat conditions are defined as weather that is much hotter than average for a particular time and place. Humidity contributes to the effects of heat. Tropical air and Santa Ana winds can contribute to extreme heat events.

The threat of extreme heat can be higher in urban areas, where dark-colored roofs and paving materials cause the air temperature to be hotter. The dense concentrations of pavement, buildings and other surfaces that absorb and retain heat is known as the urban heat island effect.¹⁰

High Wind

Wind is simply moving air that is caused by differences in air pressure within the Earth's atmosphere. Air under high pressure moves toward areas of low pressure. The greater the difference in pressure, the faster the air flows. The [NOAA/NCEI Storm Database](#) indicates there are three types of wind events:

- **High Wind:** Sustained non-convective winds of 40 mph or greater lasting for one hour or longer or winds (sustained or gusts) of 58 mph for any duration on a widespread or localized basis.
- **Strong Wind:** Non-convective winds gusting less than 58 mph or sustained winds less than 40 mph, resulting in a fatality, injury, or damage.
- **Thunderstorm Wind:** Winds arising from convection (occurring within 30 minutes of lightning being observed or detected), with speeds of at least 58 mph, or winds of

¹⁰<https://www.epa.gov/green-infrastructure/reduce-urban-heat-island-effect#:~:text=%22Urban%20heat%20islands%22%20occur%20when,heat%2Drelated%20illness%20and%20mortality>

any speed (non-severe thunderstorm winds below 58 mph) producing a fatality, injury, or damage.

Additionally, Manhattan Beach can be impacted by the Santa Ana Winds. The Santa Ana Winds occur when air from a region of high pressure over the dry, desert region of the southwestern U.S. flows westward towards low pressure located off the California coast. This creates dry winds that flow east to west through the mountain passages in Southern California. These winds are most common during the cooler months of the year, occurring from September through May. Santa Ana winds typically feel warm (or even hot) because as the cool desert air moves down the side of the mountain, it is compressed, which causes the temperature of the air to rise. These strong winds can cause major property damage. They also increase wildfire risk because of the dryness of the winds and the speed at which they can spread a flame across the landscape.

4.11.2 Location and Extent

Severe Weather is common across the U.S., including the State of California. Severe weather is not spatially confined to any single location. Therefore, the entire State of California, including Los Angeles County and the City of Manhattan Beach, are equally at risk of events like extreme heat and high wind.

Extreme Heat

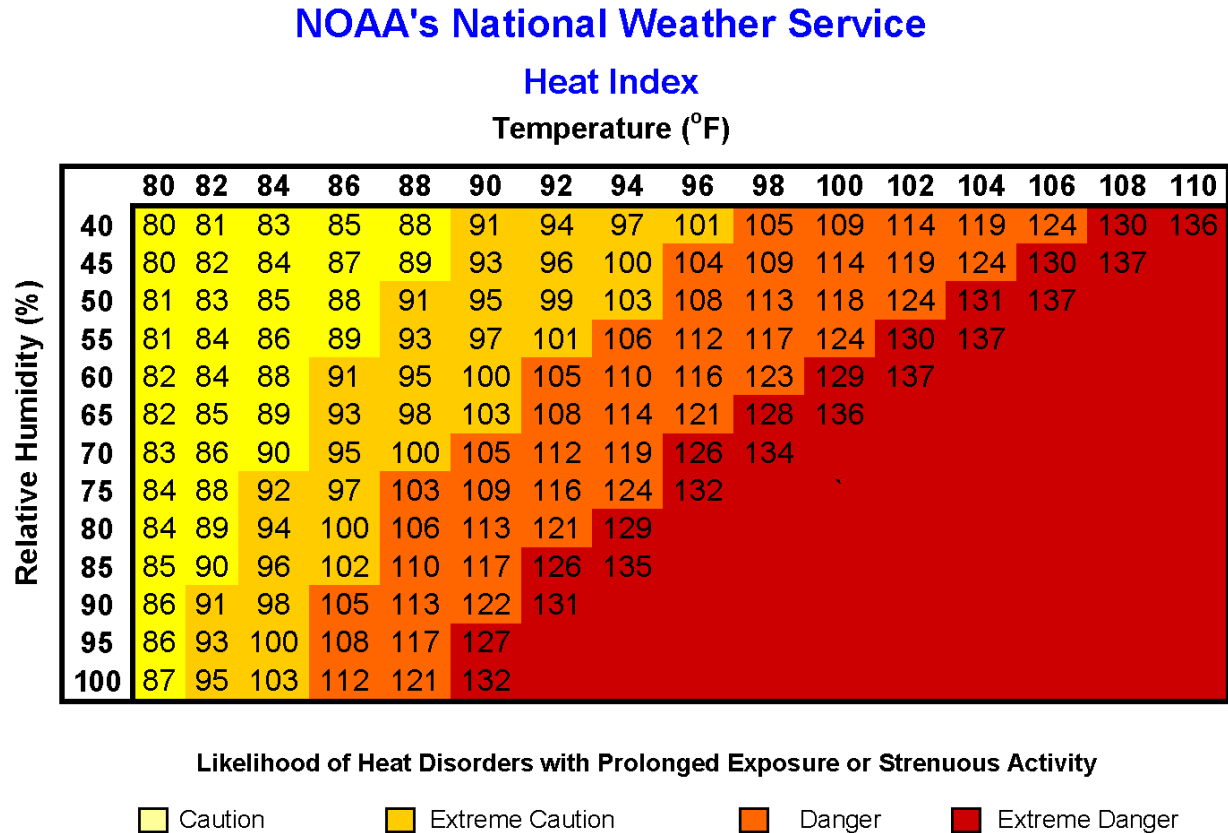
Extreme heat events are widespread regional occurrences that would affect the entire City, and likely the larger southern California region. The geographic extent of extreme heat conditions would extend to every resident in Manhattan Beach. Extreme heat events typically last for a few days. Extreme heat would not likely result in physical damage to structures; however, residents may experience the effects of heat exhaustion or heat stroke. Additionally, the increased use of air conditioning may put stress on the power grid and lead to power outages.

To measure Extreme Heat temperatures, the NWS has a system to initiate alert procedures (advisories, watches, and warnings) when high temperatures are expected to impact public safety significantly. The heat index is a measure of how hot it feels when relative humidity is factored in with the actual air temperature. Relative humidity is the percentage of moisture in the air compared with the maximum amount of moisture the air can hold. Humidity is an important factor in how hot it feels because when humidity is high, water doesn't evaporate as easily, so it's harder for your body to cool off by sweating, making this a hazard that can cause serious impacts on a person's health.

National Weather Center Heat Index

According to the National Weather Service, the Heat Index (**Figure 50**), also known as the Apparent Temperature, is a subjective measure of what it feels like to the human body when relative humidity is factored into the actual air temperature. Relative humidity is a measure of the amount of water in the air compared with the amount of water that air can hold at the current temperature.

Figure 50: NWS Heat Index



Source: [NOAA - National Weather Service](#)

As the heat index rises, so do health risks. Specifically:

- When the heat index is 90°F, heat exhaustion is possible with prolonged exposure and/or physical activity.
- When it is 90° to 105°F, heat exhaustion is probable with the possibility of sunstroke or heat cramps with prolonged exposure and/or physical activity.
- When it is 105° to 129°F, sunstroke, heat cramps or heat exhaustion is likely, and heatstroke is possible with prolonged exposure and/or physical activity.
- When it is 130°F and higher, heatstroke and sunstroke are extremely likely with continued exposure. Physical activity and prolonged exposure to the heat increase the risks.

The variables associated with impacts from extreme heat are health, utility outages, and climate change. The electric grid for Manhattan Beach is provided and managed by Southern California Edison (SCE). Since it is up to SCE to mitigate electric grid risk, Manhattan Beach will need to focus on the critical infrastructure and community lifelines

that may be impacted by electricity outages along with health-related risk. When weather forecasts indicate extreme fire conditions, SCE begins predictive modeling to assess potential impacts while monitoring weather watch alerts from the National Weather Service. Three days prior to the forecasted PSPS, SCE will initiate communication and coordination with local governments, the emergency management community, first responders, and other critical infrastructure/service providers. Two days prior to the forecasted PSPS, notices are sent to registered SCE customers with a follow-up one day before a notice of power shut off. It is noted that actual or sudden onset of severe weather conditions could impact the intended coordination and notification efforts.

Outside of the PSPS events, there is the potential for unplanned power outages to occur within the City of Manhattan Beach. SCE defines a major outage as a large, unexpected outage caused by either accidents or natural disasters. While uncommon, loss of electrical power is a potential secondary effect of heavy rains or strong winds. Other types of events that could occur are mechanical power failure due to aging equipment.

High Wind

Wind observations or measurements are required to determine the probability of wind damage and the estimation of wind energy. To help with the planning, design, and construction of buildings for residential and commercial purposes, as well as mitigation efforts, the American Society of Civil Engineers (ASCE) calculates Average Hazard Wind Scores. The wind speeds correspond with the assigned hazard score with values ranging from one to five, as shown in **Table 61**.

Table 61: ASCE Average Hazard Winds Scores

ASCE Average Hazard Wind Scores	
Wind Score (s)	Wind Speeds (mph)
1	<90
2	91-100
3	101-110
4	111-120
5	>120

Source: ASCE

One of the first scales to estimate wind speeds and the effects was created by Britain's Admiral Sir Francis Beaufort. He developed the scale in 1806 to help sailors estimate the winds via visual observations. The Beaufort Scale, as shown in **Table 62**, is still used today to estimate wind strengths.

Table 62: Beaufort Wind Scale

BEAUFORT WIND SCALE

Beaufort Number	Description	Wind speed	Wave height	Sea conditions	Land conditions	
0	Calm	< 1 knot < 1 mph < 2 km/h	0 ft 0 m	Sea like a mirror	Smoke rises vertically	
1	Light air	1–3 knots 1–3 mph 2–5 km/h	0–1 ft 0–0.3 m	Ripples	Direction shown by smoke drift	
2	Light breeze	4–6 knots 4–7 mph 6–11 km/h	1–2 ft 0.3–0.6 m	Small wavelets	Wind felt on face	
3	Gentle breeze	7–10 knots 8–12 mph 12–19 km/h	2–4 ft 0.6–1.2 m	Large wavelets	Leaves and small twigs in constant motion	
4	Moderate breeze	11–16 knots 13–18 mph 20–28 km/h	3.5–6 ft 1–2 m	Small waves	Raises dust and loose paper	
5	Fresh breeze	17–21 knots 19–24 mph 29–38 km/h	6–10 ft 2–3 m	Moderate waves	Small trees and leaves begin to sway	
6	Strong breeze	22–27 knots 25–31 mph 39–49 km/h	9–13 ft 3–4 m	Large waves	Large branches in motion	
7	High wind, moderate gale, near gale	28–33 knots 32–38 mph 50–61 km/h	13–19 ft 4–5.5 m	Sea heaps up	Whole trees in motion	
8	Gale, fresh gale	34–40 knots 39–46 mph 62–74 km/h	18–25 ft 5.5–7.5 m	Moderately high waves	Twigs break off trees	
9	Strong/severe gale	41–47 knots 47–54 mph 75–88 km/h	23–32 ft 7–10 m	High waves	Slight structural damage	
10	Storm, whole gale	48–55 knots 55–63 mph 89–102 km/h	29–41 ft 9–12.5 m	Very high waves	Trees uprooted, considerable structural damage	
11	Violent storm	56–63 knots 64–72 mph 103–117 km/h	37–52 ft 11.5–16 m	Exceptionally high waves	Widespread damage	
12	Hurricane force	≥ 64 knots ≥ 73 mph ≥ 118 km/h	≥ 46 ft ≥ 14 m	Exceptionally high waves, sea is completely white	Devastation	

Image Source: Science Sparks

Severe storm winds most commonly occur as straight-line winds; a downburst of wind created by an area of significantly rain-cooled air that spreads out in all directions after hitting the ground. All jurisdictions are vulnerable to receiving damage from these severe storm winds.

High wind events often lead to other damaging impacts to including, but not limited to:

- **Wildfire Spread:** When strong winds meet dry vegetation, they can carry embers for miles, igniting new fires in their path and rapidly expanding existing ones. This wind-driven wildfire phenomenon has been responsible for some of California's most destructive blazes.
- **Power Outages:** Windstorms can damage power lines and utility infrastructure, leading to widespread power outages. These outages can disrupt communication, healthcare, transportation, and daily life, especially when they coincide with other emergencies.
- **Structural Damage:** High winds can wreak havoc on buildings and structures, causing roof damage, shattering windows, and even toppling trees onto homes and vehicles. The structural damage can lead to injuries and property loss.
- **Transportation Disruptions:** Wind gusts can create hazardous conditions on the road, making it difficult for vehicles to maintain control. This can lead to accidents and road closures, further complicating evacuation efforts during emergencies.
- **Debris Propagation:** High winds can turn everyday objects, such as outdoor furniture, debris, and vegetation, into projectiles. These flying objects pose a significant threat to both people and property.

4.11.3 Previous Events

The City of Manhattan Beach resides within Los Angeles County. Based on information obtained from NOAA/NCEI, the following incidents of Severe Weather (Extreme Heat and Wind) occurred in Los Angeles County between January 1, 2019, and December 31, 2023:

Extreme Heat

Since the previous LHMP there have been no reported events of Excessive Heat or Heat events within Los Angeles County resulting in death, injury, or property damage. The last event recorded in the NOAA/NCEI database resulting in 8 deaths occurred in September 2007.

High Wind

Since the previous LHMP there have been 137 reported events of High Wind or Thunderstorm Wind events have occurred within Los Angeles County according to the NOAA/NCEI Storms Events Database. 1 death was reported from a Thunderstorm Wind event in March 2023.

Disaster Declaration History

Since the last HMP update, one (1) disaster declaration was declared that included Los Angeles County for a Severe Weather event that included Straight-line Winds.

Table 63: Los Angeles County - Disaster Declaration - Severe Weather

Disaster Declaration	Hazard	Date	Details
California Severe Winter Storms, Straight-line Winds, Flooding, Landslides, and Mudslides DR-4699-CA	Snowstorm/ Straight-line Winds/ Flooding/ Landslides/ Mudslides	February 2023	Incident Period: Feb. 21, 2023 – Jul. 10, 20213 Declaration Date: Apr. 3, 2023

4.11.4 Probability of Future Events

Calculating future probability is one of many predictors of future occurrences. **Table 64** provides a summary of the events for Severe Weather (Extreme Heat and Wind), as categorized, and recorded by NOAA/NCEI for Los Angeles County between January 1, 2019, and December 31, 2023:

Table 64: Probability of Future Events, Severe Weather

Probability of Future Events, Severe Weather, Los Angeles County, CA		
Event Year	Extreme Heat	High Wind/Strong Wind
2019	0	11
2020	0	21
2021	0	27
2022	0	32
2023	0	46
Total Recorded Events =	0	137
Total Years =	5	5
Annual Probability =	0%	100%

Source: NOAA/NCEI

Extreme Heat Annual Probability:
 $\frac{0}{5} \times 100 = \frac{0\%}{5} = 0\%$

High Wind Annual Probability:
 $\frac{137}{5} \times 100 = \frac{2,740\%}{5} = 548\%$

Using the NOAA/NCEI database, and calculating probability based on the past events since the last HMP update, the likelihood of a single Extreme Heat event occurring in Los Angeles County, where the City of Manhattan Beach resides, on an annual basis over the next HMP planning cycle is 0%. Statistically, there is a 548% chance of a single high wind event

occurring on an annual basis, or furthermore the City can expect at least 5 wind events to occur in a single year. Therefore, the overall probability of a high wind event occurring in Los Angeles County, where the City of Manhattan Beach resides, on an annual basis over the next HMP planning cycle is 100%. The average of the Extreme Heat and High Wind probabilities, 50%, is utilized to determine the hazard's overall future probability categorizing its occurrence as **Likely**.

4.11.5 Hazard Risk Ranking

The HMPC's hazard prioritization process, which assessed Geological Hazards, resulted in an overall risk level being classified as Medium with a rank score of 6.75. It is important to note that the HMPC's feedback and risk determination, as outlined in **Table 65**, are reflective of the committee's perspectives and judgments.

Table 65: Risk Ranking for Severe Weather

Hazard	Impact to Assets			Vulnerability (H+P+B=#) (V=#/3)	Probability (Pb)	Social Vulnerability (SV)	Risk Value (R=V+Pb+SV)	Risk Ranking
	Human Impact (H)	Property Impact (P)	Business Impact (B)					
Severe Weather (Extreme Heat and Wind)	2	3.25	1.5	2.25	3.5	1	6.75	Medium

4.11.6 Vulnerability and Impact Assessment

Severe weather includes extreme heat and wind. These natural hazards typically occur as regional events and would impact the entire of the City; therefore, all critical facilities and the entirety of the City is considered vulnerable to severe weather.

*As indicated in **Table 66**, since the last LHMP update it has been determined that there has been an **increase** in the City's overall vulnerability to Severe Weather.*

The HMPC's discussions illuminated a growing vulnerability to severe weather in Manhattan Beach, particularly due to climate change's influence on extreme heat and wind conditions. The increase in extreme heat days poses heightened risks, especially to the city's most vulnerable populations, including the homeless and low-income residents, exacerbating health risks and potential economic strain. Notably, areas such as the pier, beaches, and schools have been identified as particularly susceptible to these severe weather impacts, including electrical storms and heatwaves, which threatens the city's economic stability and public safety.

Table 66: Summary of Change to Vulnerability, Severe Weather, (Extreme Heat and Wind)

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather			X

HMPC Vulnerability and Impact Assessment Feedback

The HMPC discussions on the vulnerability and impact of severe weather, including extreme heat and wind, highlighted significant concerns and priorities for the City of Manhattan Beach LHMP. The inclusion of extreme heat in the severe weather hazard category underlines its growing importance as climate change modeling predicts more frequent and severe extreme heat days.

The HMPC commented that specific areas at risk include the pier and beaches, which have experienced closures due to electrical storms. Schools lacking adequate shade for students during heatwaves were identified as areas needing attention to protect youth populations. The downtown business infrastructure was also recognized as at risk, with potential economic impacts from severe weather events.

Critical systems vulnerable to extreme weather included communication networks and electrical systems, with high winds posing risks of downing wires, creating safety hazards, and potentially igniting urban fires. The Aquarium at the end of the pier and various parks and cultural and sporting events are also susceptible to extreme weather impacts as determined by the HMPC.

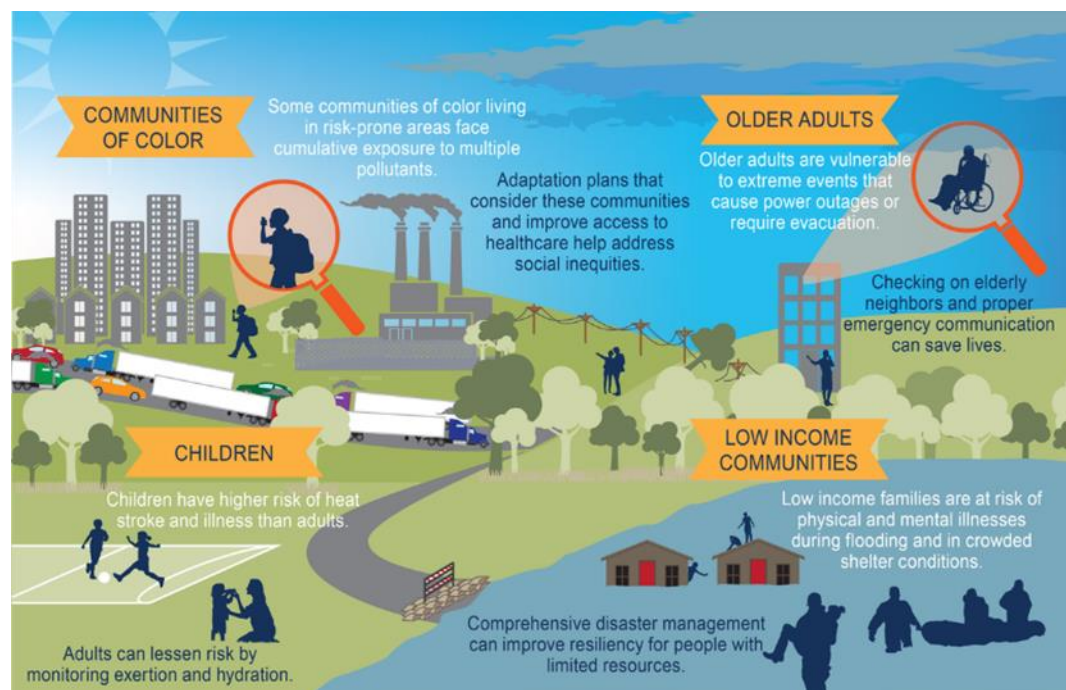
Mitigation suggestions from the HMPC include addressing disruptions and erosion, promoting solar panel installation to minimize utility disruptions, and improving community preparedness through initiatives like CERT and Map Your Neighborhood. Additional considerations included enhancing resilience to power outages, assessing the stability of old growth trees, and establishing "cooling zones" for older adults during heatwaves. These discussions emphasize the need for comprehensive planning and action to mitigate the impacts of severe weather, ensuring the safety and well-being of the Manhattan Beach community.

Vulnerability of Populations

When combined with populations with inequities, such as poverty, housing, and language limitations, these populations are at a higher risk of heat-related illness and death. 12% of low-income homeowners south of Manhattan Beach Boulevard pay more than 50% of their income on housing costs. High housing costs and housing instability reduce a household's

access to financial resources and may make a household more likely to be uninsured, all of which makes adaptation and recovery from severe weather hazards more difficult. Individuals experiencing homelessness are more exposed to extreme heat and air pollution and are at an increased risk for dehydration, sunburn, respiratory and cardiovascular diseases as well as displacement. On February 23, 2022, approximately 30 volunteers gathered at the Joslyn Community Center to conduct the 2022 Greater Los Angeles Homeless Count in Manhattan Beach. Based on the latest count at the time of publication of this plan, the city's known homeless population is approximately 9 Individuals.¹¹

Figure 51: Extreme Heat on Socially Vulnerable Population



Source: National Integrated Heat Health Information System

In September 2022, California experienced a 10-day heat wave causing the increase of deaths with impact to the southern coast region, and people aged 25-64 along with the Hispanic population, according to the California Department of Public Health (CDPH). In the CDPH report, *Excess Mortality During the September 2022 Heat Wave in California*, there was a 5% increase (395 people) of deaths.

The impact to the entire spectrum of socially vulnerable populations was apparent during the 2022 heat wave to include older adults, children, outside workers, those with respiratory or chronic conditions, and those who do not have access to air conditioning. Although response measures taken by the City of Manhattan Beach, such as opening cooling centers, are beneficial, transportation and the inability to get to locations to seek help may hinder the socially vulnerable. The risk of heat stroke and hyperthermia increases during extreme heat events so taking into consideration travel may even be a risk to those who

¹¹ <https://www.manhattanbeach.gov/government/city-manager/homelessness>

are most vulnerable.

The health effects of extreme heat include heat exhaustion, heat stroke, and death along with other illnesses such as weakness, headache, nausea or vomiting, muscle cramps and dizziness. Mental health can also be affected with the increase of mood and anxiety disorders, schizophrenia, vascular dementia, increased use of emergency mental health services, suicidality, interpersonal aggression, and violence.

With regards to a wind event and impacts to vulnerable populations, if a structure maintains its integrity during high-speed winds, it will protect people from wind injury or death. However, older, or poorly constructed facilities are not good shelters, as flying debris can easily break windows or cause structural damage. Either of these instances has the potential for severe injuries or to death to anyone taking shelter in an older, less well-constructed building.

To mitigate the impacts of severe weather on vulnerable populations, the City of Manhattan Beach has implemented a targeted strategy focused on enhancing protection against extreme temperatures. This initiative emphasizes comprehensive outreach and the development of strategic partnerships with local organizations. These efforts aim to ensure regular communication and support for at-risk individuals, offering essential resources and assistance during extreme weather conditions. Through this integrated approach, the city endeavors to strengthen community resilience, prioritizing the safety and well-being of its most vulnerable residents.

- S.2 - Assist vulnerable populations from the impacts of extreme temperatures (heat/cold) through increased outreach and partnerships with community organizations to support check-ins with vulnerable individuals.

See [Section 6.7.2 New Actions/Mitigation Projects](#) for more information on these actions.

Vulnerability of Systems

Structural vulnerability to severe weather, specifically extreme heat, and wind, is the same throughout the planning area. Extreme heat conditions can drive individuals with inadequate means of staying cool to seek refuge in facilities to keep cool. These facilities, known as cooling centers, may be pre-identified critical facilities or become vital to protect individuals, especially within the community's vulnerable population, from extreme heat. Wind events create flying debris that can significantly damage infrastructure and buildings. High Winds can cause structural damage to older, less well-constructed buildings, even toppling or leveling them.

Power outages are more likely to occur during a severe weather event. Proactive power outages are becoming more common from utility providers during predicted strong wind conditions due to the risk of wildfires. The associated power outages impact the City's ability to provide services and respond to emergencies. To maintain operational continuity, the City plans to use generators when SCE power is not available.

This plan is encapsulated in two new Mitigation Action Items: S.1, which involves providing backup generators for City facilities, and AH.2, which focuses on equipping the EOC with backup generators, ensuring that essential services and emergency response mechanisms remain functional even during power disruptions. These efforts are conducted through the following new Mitigation Action Item:

- **S.1** – Provide backup generators for City facilities
- **AH.2** - Install backup generators for the EOC

See [Section 6.7.2 New Actions/Mitigation Projects](#) for more information on these actions.

4.11.7 Climate Change Impacts

Extreme Heat

As the temperature increases due to climate change, extreme heat events are likely to become much more frequent, although the forecasts vary significantly depending on how substantially climate conditions change. Manhattan Beach could see 20 to 40 extreme heat days annually by the end of the century, or in some scenarios well over 50 each year. A resulting effect of heat is the increase in energy usage that occurs as homes and businesses make an effort to keep cool indoors. The impact of heat in the City of Manhattan Beach would increase energy consumption due to an increased need for indoor cooling.

High Wind

The effect of climate change on wind conditions is not yet fully understood, although there is some evidence that climate change will increase the intensity of coastal winds in California. Climate change's impact on the Santa Ana winds remains unknown. It is possible that strong winds associated with storms may occur more frequently, as climate change is expected to cause already intense storms to become more intense in the Southern California area.

4.11.8 Critical Facilities & Infrastructure

Extreme Heat: While extreme heat does not pose a direct risk to critical facilities, it does pose a risk to mechanical and electrical infrastructure. The increase in heat can cause failure of components which are heat intolerant.

High Wind: Critical facilities and infrastructure exposed to high winds are vulnerable to damage. The amount of damage sustained can differ based on the structural components of facilities making them more damage resistant than others. The electrical infrastructure has the potential to face failures as transmission lines become damaged due to high winds.

Given the fact that the hazards associated with Severe Weather are regional in nature, no one area within the City of Manhattan Beach is more susceptible to the occurrence of or vulnerability to an Extreme Weather incident. As a result, the overall potential for loss to Critical Facilities and Infrastructure encompasses all locations identified.

Table 67: Critical Facilities & Infrastructure Potential Loss, Severe Weather

Category	Number of Facilities	Examples	Asset Value/Potential Loss	Community Lifeline Category
City Hall	2	City Hall	\$ 14,383,548	Safety and Security, Communications
Communications	32	Transmitter/Towers, Radio Equipment Rooms, Receivers	Not Available	Communications
Community Centers	10	Parks, Sports Centers, Civic Centers, Churches	\$ 22,152,477	Safety and Security, Food and Shelter
Energy	4	Utilities	Not Available	Energy
Fire/Law Enforcement	2	Fire Stations	\$ 40,459,180	Safety and Security, Communications, Hazardous Materials
Government Offices	6	Libraries, Court Rooms, Post Offices	Not Available	Safety and Security, Communications
Medical Facilities	1	Care Centers, Urgent Care	Not Available	Health and Medical
Schools	9	Schools (Elementary, Middle, and High), Childcare Center	Not Available	Safety and Security, Food and Shelter
Transportation	5	Roads, Bridges/Overpasses	\$ 88,493,906	Transportation
Water/Sewer	18	Pump Stations, Wells, Reservoirs, Connectors	\$ 28,811,761	Water Systems
Total	89	---	\$ 194,300,872	
Note: Potential loss data are estimates only, as replacement values for all facilities were not available. Actual losses may be greater than the estimate presented on this table.				

4.11.9 Land Use and Development

All future development will be affected by severe weather patterns. Sound land use practices and consistent enforcement of codes and regulations for new construction will be important to withstand the impacts of future disasters. The City of Manhattan Beach abides by the Title 24, California Building Code, known as the California Building Standards Code, which meets the State of California mandates that govern structural safety and sustainability. This code is equipped to deal with the impacts of severe weather events, including extreme heat, and high winds.

Since the iteration of the 2019 City of Manhattan Beach LHMP, the City has not experienced major changes in population patterns as related to migration or density, nor has the City experienced major changes in land use or development. At the time of this writing, no major land uses or development are proposed that would affect vulnerability or risk associated with severe weather.

4.12 Excluded Hazards

During the HMPC discussion surrounding the identification of hazards, consideration was given to a wide variety of potential hazards that could impact the planning area. The following hazards were discussed by the HMPC but ultimately determined to be excluded from the 2024 LHMP due to the sole focus being the identification, assessment, and mitigation of risks to enhance protection against natural hazards.

- **Terrorism:** Terrorism was identified as a hazard in the 2019 LHMP and discussed among the HMPC however, was excluded from this update due to its man-made nature.
- **Hazardous Materials:** Hazardous materials were deemed ineligible for mitigation assistance grants since they are manmade threats. However, The LHMP did incorporate discussions on the location and potential impacts of hazardous materials infrastructure in relation to natural hazard impacts within its vulnerability and impact sections.
- **Infectious Diseases:** Infectious diseases, specifically those transmitted by mosquitoes, were recognized as a vulnerability by the HMPC members, particularly following inland flooding events. However, they were not considered eligible for identifying potential mitigation actions, despite their importance in understanding secondary impacts of natural hazard events.

SECTION 5: VULNERABILITY ASSESSMENT

5.1 Vulnerability and Impact Assessment

A risk assessment determines the vulnerability of assets within the City by evaluating the inventory of existing property and the population exposed to the hazard. A quantitative vulnerability assessment is limited to the exposure of buildings and infrastructures to the identified hazards. The vulnerabilities addressed are based upon a risk assessment that includes only natural hazards.

Vulnerability refers to the description of assets within hazard prone areas, including structures, systems, populations (inclusive of socially vulnerable individuals), and other community- defined assets, which are susceptible to the effects of identified hazards. This encompasses future assets, considering Capital Improvement Projects, new commercial/residential constructions, or anticipated changes in land use development.

- **Impacts** represent the consequences or effects of each hazard on the assets identified in the vulnerability assessment.
- **Risk**, within the context of hazard mitigation planning, is the potential for damage or loss resulting from the interaction of natural hazards with assets, such as buildings, infrastructure, or natural and cultural resources.

Each Hazard of Prime Concern undergoes has a vulnerability and impact assessment utilizing the asset list mentioned below. Structures Under the NFIP that have not been impacted are excluded from the inland flooding and coastal hazards profile. Furthermore, there are no properties in Manhattan Beach categorized as repetitive of severe repetitive loss properties.

By referring to FEMA's Local Mitigation Planning Policy Guide, 2022, the HMPC identified a systematic approach to addressing vulnerabilities and their resulting impacts in the event of a disaster affecting the assets. In certain instances, the impact can only be translated into cost if that particular asset needs to be replaced.

According to FEMA, assets are:

- People (including underserved communities and socially vulnerable populations).
- Structures (including facilities, *community lifelines and critical infrastructure).
- Systems (including networks and capabilities).
- Natural, historic, and cultural resources.
- Activities that have value to the community.

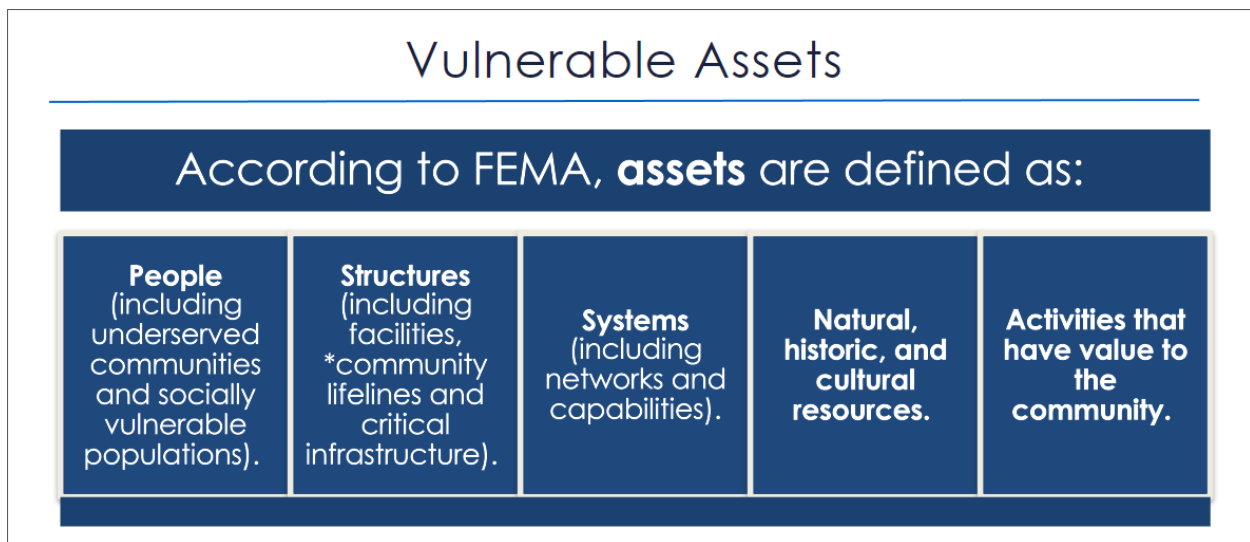
*Please see **Section 3** for community lifeline description and definitions.

5.1.1 HMPC Engagement

Prior to HMPC Meeting 2, a Vulnerability and Impact Assessment was provided to the committee to guide the discussion.

During HMPC Meeting 2 on Tuesday, December 12, 2023, the HMPC was asked to identify the most vulnerable assets in their communities, describe the impacts of natural hazards on those assets, and identify up to three mitigation project suggestions to reduce the impacts of natural hazards on those vulnerable assets. The definition of assets was discussed with the HMPC and can be found in Figure 11. The HMPC reviewed the regulation B2-a pertaining to the Vulnerability and Impact Assessment and discussed the purpose of the worksheet.

Figure 52: Vulnerable Assets Definitions



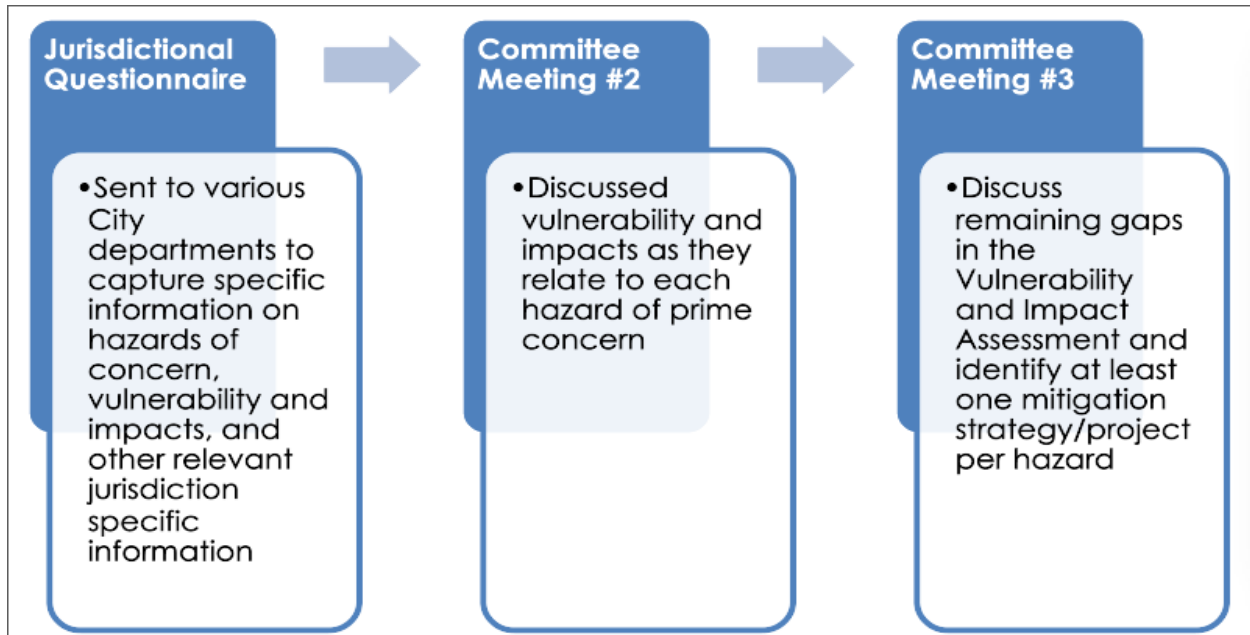
Source: HMPC Meeting #2 Presentation

At the HMPC Meeting 2 and 3, a series of questions were discussed to determine the vulnerability and impacts of natural hazards on Manhattan Beach assets. The questions included the following:

1. Identify the most vulnerable assets to each hazard of prime concern
2. Describe the impacts of natural hazards on those assets
3. Identify up to three mitigation projects that could reduce the impacts of natural hazards on the assets you have identified.

Between HMPC Meeting 2 and 3, a vulnerability and impact assessment table was provided to the HMPC with their feedback organized by specific questions relating to vulnerable populations, structures, systems, historical and cultural resources, and activities that have value to the community. During HMPC Meeting 3, the committee reviewed their progress towards completing the Vulnerability and Impact Assessment Worksheet and continued the discussion. Figure 12 shows the progress made towards completing the Vulnerability and Impacts Assessment displayed during HMPC Meeting 3.

Table 68: Steps Taken Towards the Vulnerability and Impact Assessment



Source: HMPC Meeting #3 Presentation

During HMPC Meeting 3, members provided valuable input associated with hazards encountered by the community and overall preparedness efforts. Some of the comments shared did not fit within the vulnerable and impact assessment categories but were important to mention.

This discussion within the HMPC had multiple benefits. Primarily, it provided a clear picture of assets that are at risk and the potential mitigation actions that could permanently or significantly reduce long-term impacts. After HMPC Meeting 3, the members had the opportunity to provide additional feedback to the worksheet via email and additional feedback was collected.

During HMPC Meeting 4, the members completed the milestone of assessing the vulnerabilities and impacts of natural hazards facing their community. Next steps were discussed pertaining to how this information would be integrated into the plan which included the following:

- Determine the most vulnerable assets in Manhattan beach, including people, systems, structures, activities, and natural, historic, and cultural resources.
- Assess the potential impact of natural hazards on these assets and
- Use the information to identify potential mitigation projects/actions to reduce the risk of natural hazards on the most vulnerable populations.

Additional preparedness discussions held by the HMPC included:

- Implementing extra transportation services.
- Establishing clear protocols for parent releases.

- Enhancing communication with educational jurisdictions
- Developing methods for residents and visitors to access cash during emergencies.
- Ensuring fuel availability for emergency vehicles during crises.
- Conducting educational campaigns on emergency preparedness, including what residents and businesses should have ready.
- Assessing fuel capacity for emergency generators and planning for fuel replenishment.
- Planning for visitor evacuation and support systems.
- Engaging in discussions with Chevron and the City of El Segundo regarding hazards associated with the nearby refinery and its proximity to Manhattan Beach.
- Implementing additional transportation measures, managing parent releases, and enhancing communication with educational institutions.

5.2 Climate Change Vulnerability

5.2.1 Climate Change Vulnerability

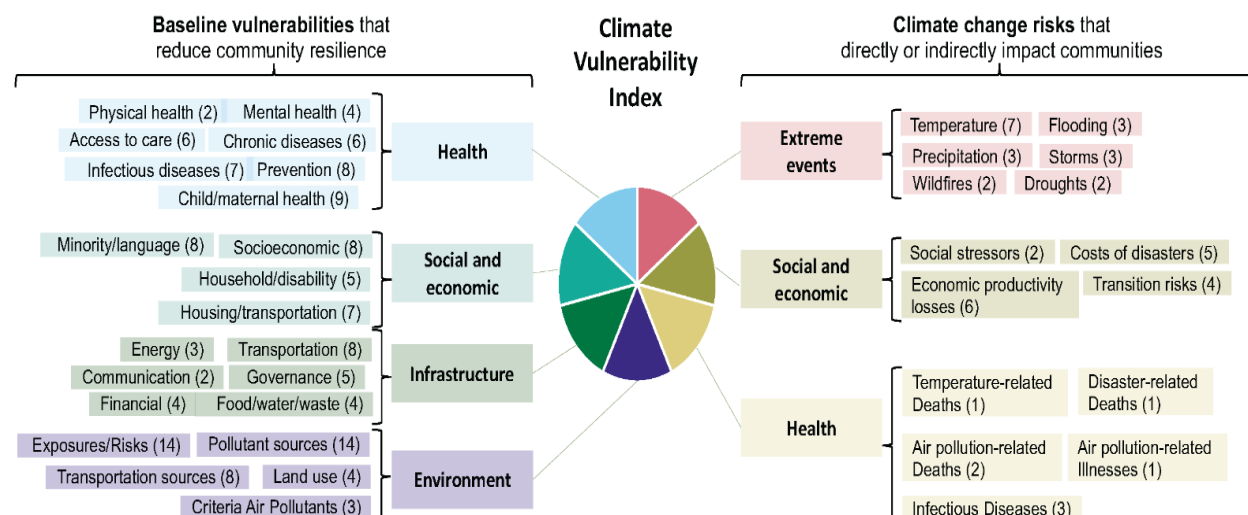
Utilizing the Climate Vulnerability Index (CVI), the HMPC reviewed the vulnerability associated with Climate Change. The CVI uses the following criteria:

1. Baseline vulnerability indicators reflect factors that may reduce resilience or are potential sources of long-standing community inequity or injustice. These were divided into four categories: Health, Social & Economic, Infrastructure, and Environment.
 - The Baseline Health domain addresses differences in prevalence of chronic and infectious diseases, access to care, maternal and child health, mental health, life expectancy, and preventive care.
 - The Baseline Social & Economic domain leverages the U.S. Centers for Disease Control and Prevention and Agency for Toxic Substances and Disease Registry Social Vulnerability Index but is augmented by indicators such as redlining designations in urban areas, additional vulnerable populations (e.g., homeless, veterans), crime and prison statistics, housing characteristics, and presence/lack of non-governmental organizations.
 - The Baseline Infrastructure domain incorporates transportation, energy, food, water and waste management, governance, access to physical, digital, and financial resources factors.
 - The Baseline Environmental domain includes indicators that characterize long-standing disparities of environmental exposure stressors and pollution, such as

- transportation, area and point sources generating air, soil, and water pollution, land use, and environmental health risk metrics.
- Climate Change risks reflect both direct and indirect impacts, and were divided into three risk categories: Health, Social & Economic, and Extreme Events. Indicators included both historical data and projections.
 - Health risks domain associated with climate change included health projections of climate-related infectious disease and morbidity and mortality related to temperature, disasters, and pollution.
 - Social & Economic risk domain of climate change include indicators reflecting exacerbation of social stressors, property impacts, economic and productivity losses, energy transition, and greenhouse gas emissions.
 - The Extreme Events domain encompasses increased frequency and/or severity of natural disasters and weather extremes.

Each category was further divided into subcategories reflecting more detailed aggregations of indicators, as depicted in **Figure 53**.

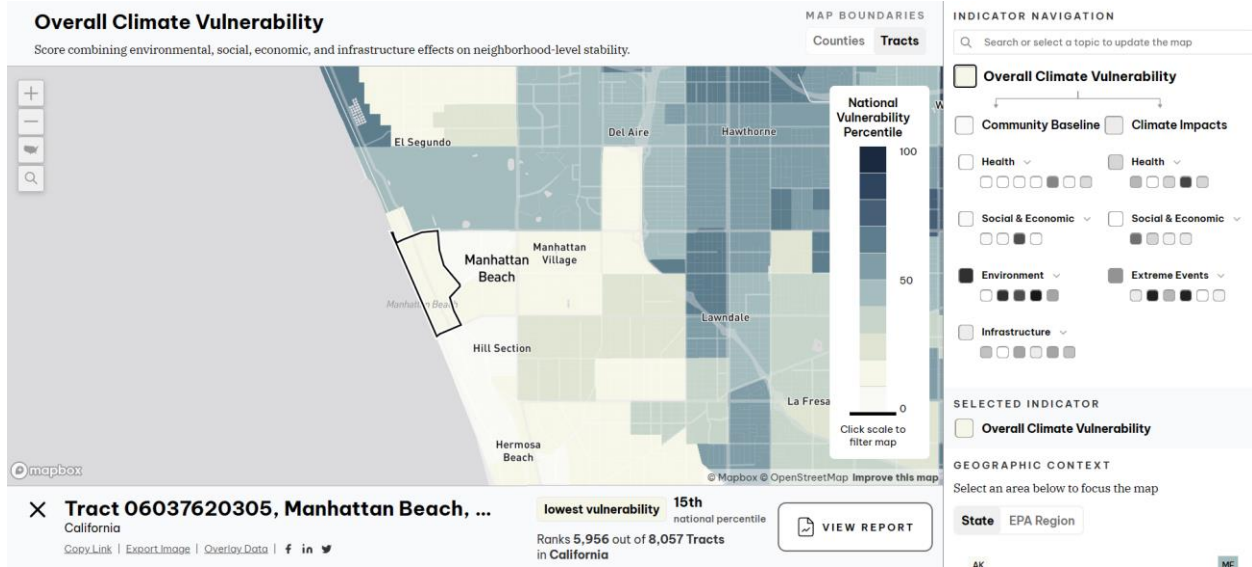
Figure 53: The U.S. Climate Vulnerability Index Indicators



Source: [Home - The U.S. Climate Vulnerability Index](#)

Based on the CVI indicators the Census Tracts within Manhattan Beach range between the 9th and 15th on the National Vulnerability Percentile, these rankings place Manhattan Beach on the lowest vulnerability nationally. The coastal regions of the City ranked highest compared to the inland areas. **Figure 54** below provides visual representation of the Overall Climate Vulnerability.

Figure 54: CVI, Tract 06037620305



Source: [Overall Climate Vulnerability in Manhattan Beach, CA | The U.S. Climate Vulnerability Index](#)

5.3 NFIP Structures Damaged by Floods

FEMA Regulation Checklist: Risk Assessment	
44 CFR § 201.6(c)(2)(ii)	Documentation of the Plan Update Requirements: B2. Does the plan include a summary of the jurisdiction's vulnerability and the impacts on the community from the identified hazards?
Element	
B2-c.	Does the plan address NFIP-insured structures within each jurisdiction that have been repetitively damaged by floods?

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

As expanded upon later in [Section 6: Mitigation Strategy](#), in discussion of the NFIP, to date, there have been no NFIP claims and therefore no NFIP insured structures that exist in the City of Manhattan Beach that have been repetitively damaged by floods.

5.4 Planning Area Overall Vulnerability

FEMA Regulation Checklist: Risk Assessment	
44 CFR § 201.6(c)(2)(ii)	Documentation of the Plan Update Requirements: B2. Does the plan include a summary of the jurisdiction's vulnerability and the impacts on the community from the identified hazards?
Element	
B2-a.	Does the plan provide an overall summary of each jurisdiction's vulnerability to the identified hazards?

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

Based upon the analysis of the information presented above and taking into consideration all mitigation action items and projects that have been completed since the last approved LHMP, the City of Manhattan Beach LHMP has determined that the **overall** vulnerability of planning area has **not changed** from the previous 2019 LHMP.

Understanding that changes in population, development, and climate may increase a hazard's overall vulnerability the City's plans, building codes, zoning laws, land use regulations and hardening of infrastructure have proven that the overall impacts to the City have not changed.

Implementation of the new mitigation action items presented in this LHMP update will support reduction of the overall vulnerability and impacts to the City of Manhattan Beach into the next planning cycle.

SECTION 6: MITIGATION STRATEGY

6.1 Hazard Mitigation Strategy

The 2024 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 mitigation Strategy comprises various measures aimed at collectively reducing the impacts of hazard events on individuals, public and private property, critical facilities, natural ecosystems, and essential services within the community. It serves as a comprehensive long-term plan designed to minimize potential vulnerabilities identified in the Vulnerability Assessment section of each hazard profile. Some of the mitigation measures outlined in the strategy draw from the City's previous 2019 LHMP, updated as necessary to incorporate additional information or respond to changing conditions. Other measures are entirely new, intended to address gaps identified in the previous plan or address new concerns since its adoption. These mitigation actions should align with existing planning mechanisms and clearly define specific roles and resources necessary for successful implementation.

6.2 Mitigation Goals and Actions

The purpose for establishing a set of goals is to articulate the community's overarching vision for hazard mitigation and to pave the way for building a safer, more resilient community. Mitigation goals serve as guiding principles that represent what the community aims to achieve through the mitigation plan. These goals are broad statements representing a long-term vision shared across the community. The HMPC assessed the goals and objectives outlined in the previous LHMP, determining which goals and strategies best met their jurisdiction's mitigation needs.

The outcome was a refined, cohesive set of hazard mitigation goals listed in **Figure 55**. These goals align with addressing hazards identified in the City of Manhattan Beach's General Plan and incorporate feedback from stakeholders and the public. Collaborating with the Planning Department, the City ensured that these goals and their corresponding mitigation strategies aligned to aligned with the Safety Elements of their General Plan. All actions/projects recommended as mitigation efforts for the Hazard Mitigation Plan must first align or advance at least one of these goals. The goals are provided in a prioritized order, with the first goal being of upmost importance.

FEMA Regulation Checklist: Mitigation Strategy	
44 CFR § 201.6(c)(3)(i)	Documentation of the Plan Update Requirement: C3. Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards?
Element	
C3-a	Does the plan include goals to reduce the risk from the hazards identified in the plan?

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

Figure 55: Review of 2019 Goals vs 2024 LHMP Goals

Review of 2019 vs 2024 Plan Goals		
Hazard Mitigation Goals 2024		
Goals from the 2019 Plan	Goal 1	Protect life, property, and reduce injuries from natural hazards.
	Goal 2	Improve public understanding, support, and need for hazard mitigation measures.
	Goal 3	Balance natural resource management and land use planning with natural hazard mitigation to protect life, property, and environment.
	Goal 4	Strengthen partnerships and collaboration to implement hazard mitigation activities.
	Goal 5	Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operations plans and procedures.
2024 Added Goal	Goal 6	Highlight the importance of mitigation planning to reduce the susceptibility of assets (people, structures, systems, natural, historic, and cultural resources, and activities that have value to the community).

Source: HMPC Meeting #1 Presentation

6.3 Capabilities Assessment

Federal regulations require local hazard mitigation plan to identify goals for reducing long-term vulnerabilities to the identified hazards in the planning area. (Section 201.6 © (3) (i). Elements of this requirement include a description of capabilities that support mitigation activities.

The City will incorporate mitigation planning as an integral component of daily operations. This will be accomplished by the HMPC with their respective departments to integrate mitigation strategies into their planning documents and operational guidelines. FEMA identifies four types of capabilities: Planning and Regulatory, Administrative and Technical, Financial, and Education and Outreach summarized below:

Planning and regulatory capabilities are based on the implementation of ordinances, policies, local laws, and State statutes, and plans and programs that relate to guiding and managing growth and development.

Administrative and technical capabilities refer to the staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. It also refers to the ability to access and coordinate these resources effectively.

Financial capabilities are the resources that a jurisdiction has access to or is eligible to use to fund mitigation actions.

Education and outreach capabilities are programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

The table below includes a broad range of capabilities within the City of Manhattan Beach to successfully accomplish mitigation.

FEMA Regulation Checklist: Mitigation Strategy	
44 CFR § 201.6(c)(2)(ii)	Documentation of the Plan Update Requirements: C1. Does the plan document each participant's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs?
Elements	
C1-a.	Does the plan describe how the existing capabilities of each participant are available to support the mitigation strategy? Does this include a discussion of the existing building codes and land use and development ordinances or regulations?
C1-b.	Does the plan describe each participant's ability to expand and improve the identified capabilities to achieve mitigation?

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

6.3.1 Planning and Regulatory Capabilities

Table 69: Planning and Regulatory Capability Assessment

PLANS	Yes/No	Does the plan address hazards? Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	Yes	The City has established Evacuation Routes and Emergency Shelters for All Hazards. Wildfire Plans are also followed through Master Mutual Aid partners.
Comprehensive/Master Plan	Yes	GP Community Safety Element – Adopted 2003; LCP Coastal hazards Chapter – Adopted 2023
Continuity of Operations (COOP) Plan	Yes	The City has a plan that includes back up storage of vital records, such as plans and back up procedures to continue to operate essential functions.
Capital Improvement Plan (CIP)	Yes	The plan addresses hazards and can be used to implement mitigation actions. A copy of the current plan is available here: https://city-manhattan-beach-ca-budget-book.cleargov.com/9514/introduction/transmittal-letter
Economic Development Plan	Yes	General Plan, Capital Improvement Plan, Operating Budgets, and Emergency Expenditure plan.
Emergency Operations Plan (EOP)	Yes	
Stormwater Management Plan	Yes	2010 Wastewater Master Plan, 2021 Water Master Plan, 2021 Storm Drain Master Plan, 2020 Urban Water Management Plan
Transportation Plan	Yes	GP Mobility Plan - Limited to strategies aimed at reducing climate change; flooding – Adopted 2018
How can these capabilities be expanded and improved to reduce risk?		Outdated documents could benefit from updates to include broader list of hazards and mitigation policies.
BUILDING CODES, PERMITTING, INSPECTIONS	Yes/No	What type of codes? Are codes adequately enforced?
Building Codes	Yes	2022 CA Code of Regulations Title 24 and local amendments
Site plan review requirements	Yes	Reviewed for each project at Plan Check stage; inspected during construction
How can capabilities be expanded and improved to reduce risk?		We are governed by CA Building Code and we adopt local amendments (seismic amendments) and apply accordingly.
LAND USE PLANNING & ORDINANCES	Yes/No	Is the ordinance effective for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Floodplain ordinance	Yes	Manhattan Beach Municipal Code, Chapters 9.76 and 9.78 Flood Plain Management Regulations – Areas of Special Flood Hazards
Subdivision ordinance	Yes	Ordinance is adequately administered and enforced but hazard reducing standards are mainly limited to setback requirements
Zoning ordinance	Yes	Ordinance is adequately administered and enforced but hazard reducing standards are mainly limited to setback

PLANS	Yes/No	Does the plan address hazards? Can the plan be used to implement mitigation actions? Include date of the most recent plan.
		requirements
How can capabilities be expanded and improved to reduce risk? I		<p>Emergency Operations Plan (EOP): Regular updates and exercises can ensure this plan remains effective. Incorporating lessons learned from recent emergencies and adopting best practices from other regions can improve the plan's efficacy.</p> <p>Continuity of Operations (COOP) Plan: This plan could incorporate more robust digital infrastructure for data backup and more comprehensive training for staff to ensure that essential functions can be maintained without interruption during and after a disaster.</p> <p>For building codes, permitting, and inspections, staying abreast of the latest building science and incorporating resilience-focused amendments can enhance the effectiveness of these codes in reducing hazard impacts.</p> <p>In land use planning and ordinances, a more holistic approach to hazard mitigation can be adopted, such as incorporating green infrastructure in zoning practices and updating ordinances to reflect current best practices in hazard reduction.</p>

6.3.2 Administrative and Technical Capabilities

These capabilities include community (public and private) staff and their skills and tools which can be used for mitigation planning and implementation. This capability includes engineers, planners, emergency managers, GIS analysts, building inspectors, grant writers, and floodplain managers. Small communities may rely on other government entities such as counties or special districts for resources. Based upon the specific expertise contained in each of these administrative and technical capabilities, they may be used to support mitigation activities. See **Table 70** below for details.

Table 70: Administrative and Technical Capabilities

ADMINISTRATION	Yes/No	Describe capability. Is coordination effective?
Mutual aid agreements	Yes	We are in the process of developing an agreement with surrounding cities. All South bay cities /county with all capabilities.
Planning Commission	Yes	Advisory body to City Council on policy documents that include hazard mitigation policies; and are able to serve on any subcommittees on related matters.
TECHNICAL STAFF	Yes/No and include if Full Time (FT) or Part Time (PT) position	Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective? Have skills/expertise been used to assess/mitigate risk in the past?
Building Official	Yes	Yes, engaged in hazard mitigation planning and efforts with internal and external partners.
Community Planner	Yes	Yes, engaged in hazard mitigation planning and efforts with internal and external partners.
Emergency Manager	Yes	Yes, leads the hazard mitigation planning, engages internal and external partners for training and education, partners with all L.A. County Disaster Area G hazard mitigation efforts.
Engineer	Yes	City Engineer is a Permanent Employee and works full-time.
Fire Chief	Yes	Fully trained on the City's hazards and mitigation and leads the Fire Department in working with all departments, partner agencies, refinery, etc. to educate and train.
Floodplain Manager/Administrator	Yes	Under MBMC 9.78.050 (Administration), The Public Works Director is the floodplain manager.
GIS/HAZUS Coordinator	Yes	GIS – fulltime Trained in hazard and mitigation. Coordination between agencies and staff is effective. Skills/expertise used in past training exercises but not in an actual event. IT - fulltime Trained in hazard and mitigation. IT functions do not include coordination between agencies and staff. Skills/expertise used in the past training exercises but not in an actual event.
Sheriff/Police	Yes	Coordination between agencies and staff is highly effective. Relationships have been established through monthly/quarterly meetings at the Investigative, Supervisor, Manager and Executive levels.
Procurement Services Manager	Yes	Yes, engaged in hazard mitigation planning and efforts specific to disaster funding, as well as partnering with internal and external partners.

6.3.3 Financial Capabilities

The table below contains a list of financial capabilities available to the City of Manhattan Beach. Based upon procedures for each resource, these financial capabilities may be used to support mitigation activities.

Table 71: Financial Capability Assessment

FINANCIAL	Yes/No	Has the funding resource been used in the past and for what type of activities? Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities (BRIC)	No	
Hazard Mitigation Grant Program (HMPG)	No	
Pre-Disaster Mitigation grant program (PDM)	No	
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	No	
Flood Mitigation Assistance grant program (FMA)	No	
Water Preservation Funds (SWNA)	No	
Capital improvements project funding	Yes	This is funded by the City's general fund any potential grants. The City would have to defund existing projects and reallocation funding (with Council approval) to be used for mitigation actions.
Community Development Block Grant	No	
Authority to levy taxes for specific purposes	Yes	It requires a vote of the people for the City to be able to levy taxes.
Impact fees for new development	No	
Incur debt through special tax bond	Yes	This may require a vote depending on what is funded.
Incur debt through general obligation bonds	Yes	May require a special election to issue general obligation debt depending on what is funded.

6.3.4 Education and Outreach Capabilities

Table 72 below lists education and outreach capabilities. These capabilities include programs such as fire safety programs, hazard awareness campaigns, public information, or communications offices. Education and outreach capabilities can be used to inform the public on current and potential mitigation activities.

Table 72: Education and Outreach Capability Assessment

PROGRAM / ORGANIZATION	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and social media (PIO/PAO) Programming	Yes	<p>Within the Police Department, we have several sworn and professional staff members who are able to access and post to our social media platforms. The platforms are managed overall through the Community Affairs Section, but the responsibility and ability to post is spread throughout several sections and divisions in the Police Department.</p> <p>Media inquiries and interviews with press are primarily handled through the Community Affairs Section; however, for time sensitive or case specific incidents, an on-duty Watch Commander may interact with the press and provide a statement. Sometimes statements are released from the handling Detective or the Detective Sergeant or Lieutenant.</p> <p>The City utilizes a regional alert and warning system called Alert SB through Everbridge. Additionally, we utilize X (formerly Twitter), Facebook, Instagram, and NextDoor social media platforms to post about mitigation and emergency preparedness issues related to our community. Finally, the city utilizes our website and e-notification system to send out information to our email subscribers.</p>
Firewise Communities certification	No	
Storm Ready certification	No	
Citizen groups focused on emergency preparedness, environmental protection, etc.	Yes	<p>The City's Emergency Preparedness Administrator works with the Manhattan Beach Community Emergency Response Team Association, the HAM Radio Volunteers, and Map Your Neighborhood Program with the Manhattan Beach Neighborhood Watch Program. The City has also partnered with many other groups including The County of Los Angeles Beaches & Harbors, Coastal Conservancy, and the City has a Green Business Certification Program. The Manhattan Beach Police Department has a robust Volunteers in Policing Program.</p>
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)	Yes	<p>The City conducted a public education campaign via our City Council meetings, website, social media platforms, and e-notification system that focused on responsible water use during our drought which required residents to limit outdoor water usage.</p>
Public-private partnership initiatives addressing disaster-related issues	No	
How can capabilities be expanded and improved to reduce risk?		<p>More outreach and education to the community and businesses for partnerships and volunteers. Expand the community partner programs to assist with increasing the number of preparedness volunteers.</p>

6.3.5 Opportunities for Enhancement

Based on the capability assessment, the City has existing regulatory, administrative/technical, fiscal mechanisms in place to help mitigate hazards. In addition, to these existing capabilities, there are opportunities for the City to expand or improve upon these policies and programs to further protect the community. The following opportunities for enhancement of this LHMP are organized below by the planning and policy, administrative/technical, fiscal and outreach opportunities.

Planning and Policy Opportunities

Safety Plan Update

Future opportunities for regulatory enhancement could focus on compliance with Assembly Bill 2140, including amending the Community Safety Element Chapter of the City's General Plan to incorporate the information from the 2024 LHMP by referencing data in reference to the plan's Risk Assessment and Mitigation Strategies.

Other Plan Updates

The City has the capability to update other plans, such as their Capital Improvement Plan (CIP) and Economic Development Strategy, to integrate planning procedures, risk assessments, hazard data, and incorporate strategies for hazard mitigation and climate adaptation, particularly concerning the resilience of infrastructure systems associated with water and wastewater systems.

Project Prioritization

The City will continue throughout the planning cycle to identify shovel ready projects to implement as soon as funding becomes available. In the process, the city will define scopes of work, objectives and desired outcomes of the mitigation projects prioritized. In addition, this effort will help identify specific risks or hazards the project aims to address and determine the project area for community implementation. In the process of preparing shovel ready projects the city will also assess the level of stakeholder engagement needed, regulatory compliance needs, budgeting and funding options, procurement resources and foreseeable risk management issues. By doing so, the city will continue to be proactive in effectively managing project preparation to ultimately reduce city risks from emergency and disaster events to enhance local and regional community resilience.

Administrative/Technical Opportunities

Training

Other future enhancements may include providing hazard mitigation training to City staff to ensure awareness of the benefits of the LHMP and resources available through partnerships with Los Angeles County and Cal OES. Such resources available include training offered by the Cal OES Hazard Mitigation Assistance (HMA) team related to

HMGP opportunities, HMGP Sub application Development support and other funding programs, such as Prepare California Jumpstart. Prepare California JumpStart is a competitive grant program that provides State funding to eligible socially vulnerable and high hazard risk communities.¹²

Revision of Job Descriptions

The City can also work with department leads to revise job descriptions of City staff to include mitigation related duties, including designating a “mitigation lead” with additional mitigation training provided to the assigned lead within a department. This can further institutionalize hazard mitigation with little financial expenditure or programmatic overhaul.

Employing Technology

The City will consider the use of technology and innovation, such as the use of ESRI Story Maps, to expand the City’s reach to varying community tracts and stakeholders during implementation. This expanded will enhance the efficiency in communicating risk that this LHMP identifies. As well, the city will explore the use of other mapping technology through active engagement with City GIS staff in the use of applications such as the [Climate Mapping for Resilience and Adaptation](#) and [Climate Risk and Resilience Portal](#). Both of these platforms support the capture of future probability of hazard occurrence. In addition, the City will continue to use the latest [CDC Social Vulnerability Index](#) information to identify the location of vulnerable populations.

Fiscal Opportunities

Chamber Outreach

The City has the opportunity to collaborate with the Manhattan Beach Chamber of Commerce to garner support for advancing their mission of fostering a robust economy through mitigation projects aimed at addressing hazards that adversely affect the city’s economic well-being.

Grant Applications

The City should also apply for HMGP grants to fund implementation costs associated with key CIP projects and related mitigation projects in the City’s mitigation strategy. The City can also appoint or assign someone to oversee hazard mitigation grand opportunities. This person would be the specialist that notifies City departments/agencies of upcoming grant cycles, supports tracking and completing the Notice of Intent (NOI) applications, grant applications and final grant management reporting requirements. Related financial opportunities for enhancement should include HMA grants, such as BRIC and HMGP funding as it becomes available.

¹² [2022 Prepare California Jumpstart Notice of Funding Opportunity](#)

HMGP Technical Assistance

The City can explore HMGP funding opportunities that provide support for communities to implement mitigation activities to reduce risk to life and property from natural hazards. In California, natural hazards include wildfire, earthquakes, drought, extreme weather, flooding, and other impacts of climate change. Cal OES technical subject-matter experts are available to discuss project eligibility, benefit cost analysis, technical feasibility and Environmental and Historic Preservation (EHP) requirements.

General Outreach Opportunities

Community engagement and public engagement can continue to be enhanced in the future. The City will continue to expand their outreach and public engagement by publishing the approved and adopted Plan on the City website, placing a copy at local libraries, sharing the Plan with local community-based organizations, and providing Plan status and progress on social media and community meetings as appropriate. The City will ensure copies of the Plan are distributed to the HMPC and that they are engaged in future public outreach strategies. The City can expand their outreach to local Faith-Based organizations and non-profit organizations like Beach Cities CAER. The city will also continue to outreach to neighboring cities and jurisdictions to ensure a comprehensive mitigation maintenance and outreach plan.

The city recognizes the importance of a dynamic and ongoing planning process, emphasizing that community engagement is essential before any disaster or emergency occurs. To this end, the city is dedicated to ensuring that After Action Reports are promptly completed following any disaster event. This approach is aimed at identifying and addressing opportunities for hazard mitigation, thereby supporting comprehensive community planning and enhancing overall resilience.

Outreach to Vulnerable Populations

The City will continue to actively engage and outreach to vulnerable populations, especially during the mitigation process. The City will continue to do so through engagement with various assistance groups and individuals that support vulnerable populations. These populations include, but are not limited to, individuals with developmental or intellectual disabilities, physical disabilities, chronic conditions, injuries, limited English proficiency/non-English, seniors, children, people living in institutionalized settings, low income, homeless, transportation disadvantaged, those dependent on public transportation, and those who are pregnant. In doing so, the City will continue to ensure the considerations of vulnerable populations are integrated before, during and after disasters to ensure effective communication, evacuation, transportation services and programs are addressed throughout each phase of the emergency management process.

As well, the City will continue outreach to Community Based Organizations serving vulnerable and access and functional needs populations through participation with groups and organizations like the City of Manhattan Beach Joselyn Center, Culture Club

South Bay, The California Foundation for Independent Living Centers, Family Resource Centers, paratransit providers, local regional centers, local senior centers, State Council on Developmental Disability, and local school districts. This outreach will be continuous throughout the planning cycle and in partnership with neighboring jurisdictions and cities.

Diverse Communication Methods/Tools

The city will enhance the use of various mechanisms and tools for community outreach and stakeholder engagement. Both hybrid and in-person sessions will be held to allow for the highest amount of participation and accessibility to various meetings such as hearings, community meetings, one-on-one meetings with group leadership, open houses, etc. As well written and video methods of outreach will include the City website, press releases, fact sheets, brochures, social media, etc.. Outreach publications will be made available in other languages as needed, such as Spanish, as well as other languages deemed of significance in the community.

Examples of such methods and tools to communicate with diverse community members along with specific points of contact for respective organizations are listed in [Section 2: Planning Process](#).

6.4 National Flood Insurance Program (NFIP)

Floodplain management is the operation of a community program of measures for reducing flood damage. These measures take a variety of forms; and generally, include zoning, subdivision, or building requirements, and special-purpose floodplain ordinances. The National Flood Insurance Program's aim is to reduce the impact of flooding to residential and nonresidential buildings. It does so by providing insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures. Overall, the program reduces the socio-economic impact of disasters by promoting the purchase and retention of Risk Insurance in general, and National Flood Insurance in particular.

Joining the NFIP requires the adoption of a floodplain management ordinance by jurisdictions and following established minimum standards set forth by FEMA and the State of California when developing in the floodplain. These standards require that all new buildings and substantial improvements to existing buildings will be protected from damage by the 100-year flood, and that new flood plain development will no aggravate existing flood problems or increase damage to other properties. As a participant in the NFIP, communities also benefit from having Flood Insurance Rate Maps (FIRM) that map identified flood hazard areas and can be used to access flood hazard risk, regulate construction practices and set flood insurance rates.

If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the Federal Government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide insurance alternatives to disaster assistance to reduce the escalating cost of repairing damage to buildings and their contents caused by a flood.

Participation in the NFIP by a community is voluntary; however, in order to receive funding from FEMA, a community is required to participate in the program. The City of Manhattan Beach participates in the NFIP. The City of Manhattan Beach is a participant in the NFIP. The City Council adopted Ordinance No. 2087 on August 1, 2006. The City's continued participation in the NFIP will ensure that residents have access to federally backed flood insurance coverage at generally lower rates than those available from private insurance agents.

Table 73: Floodplain Management

Jurisdiction	Comm ID	NFIP Entry Date	Map Date (DFIRM)	# of Policies	Total Coverage	Floodplain Manager
Manhattan Beach	060138	5/8/1978	4/21/2021	99	\$34,577,000	Katherine Doherty, City Engineer
<p>Notes: *Indicates CRS participating jurisdiction. Data Dictionary as mentioned in the NFIP Policy Information by State and Community document: Community ID: The 6-character community ID in which the policy resides. # of Policies: The number of policies in force for a given state and combination of attributes. Total Coverage: The total building and contents coverage for the policies in force. Total Written Premium + FPF: This represents the sum of the premium and the FPF (federal policy fee) for the policies in force.</p> <p>Source: Participation – FEMA's Community Status Book Report, California, Policy statistics (current as of 03/06/2023) https://www.fema.gov/cis/CA.html NFIP Policy Information by State (Policy Statistics as of 2/28/2023) nfip_policy-information-by-state_20230228.xlsx</p>						

FEMA updated the Flood Insurance Rate Maps (FIRMs) on April 21, 2021, and were utilized by the HPMC to review flood risks. The City does not have any Special Flood Hazard Areas (SFHA). Adoption of the latest effective Flood Insurance Rate Map (FIRM) occurred on March 16, 2021. **Updated FEMA FIRMs can be found in Appendix D.**

The City has a detailed ordinance to address flooding in Chapter 9.78 – *Flood Plain Management Regulations* effective August 15, 2006. The City's Flood Plain Manager is responsible for enforcing this ordinance.

These regulations, as per the ordinance, are designed to:

-
- ✓ **PROTECT HUMAN LIFE AND HEALTH.**
 - ✓ **MINIMIZE EXPENDITURE OF PUBLIC MONEY FOR COSTLY FLOOD CONTROL PROJECTS.**

- ✓ **MINIMIZE THE NEED FOR RESCUE AND RELIEF EFFORTS ASSOCIATED WITH FLOODING AND GENERALLY UNDERTAKEN AT THE EXPENSE OF THE PUBLIC.**
 - ✓ **MINIMIZE PROLONGED BUSINESS INTERRUPTIONS.**
 - ✓ **MINIMIZE DAMAGE TO PUBLIC FACILITIES AND UTILITIES SUCH AS WATER AND GAS MAINS; ELECTRIC, TELEPHONE AND SEWER LINES; AND STREETS AND BRIDGES LOCATED IN AREAS OF SPECIAL FLOOD HAZARD.**
 - ✓ **HELP MAINTAIN A STABLE TAX BASE BY PROVIDING FOR THE SOUND USE AND DEVELOPMENT OF AREAS OF SPECIAL FLOOD HAZARD SO AS TO MINIMIZE FUTURE BLIGHTED AREAS CAUSED BY FLOOD DAMAGE.**
 - ✓ **ENSURE THAT POTENTIAL BUYERS ARE NOTIFIED THAT PROPERTY IS IN AN AREA OF SPECIAL FLOOD HAZARD; AND**
 - ✓ **ENSURE THAT THOSE WHO OCCUPY THE AREAS OF SPECIAL FLOOD HAZARD ASSUME RESPONSIBILITY FOR THEIR ACTIONS.**
-

The City completed a Flood Plain Management questionnaire with a focus on identifying the responsible entity for floodplain management within the City and their functions. The questionnaire also covered topics related but not limited to the following:

- What are the barriers to running an effective NFIP program in the community, if any?
- How many NFIP policies are in the community? What is the total premium and coverage?
- How many claims have been paid out in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?
- How many structures (residential and non-residential) are exposed to flood risk within the community?
- Are there any repetitive or severe repetitive loss structures in the community?
- A description of any areas of flood risk with limited NFIP policy coverage.
- How the community teaches property owners or other stakeholders about the importance of flood insurance?

According to the NFIP, repetitive flood loss is a facility or structure that has experienced two or more insurance claims of at least \$1,000 in any given 10-year period since 1978. Severe repetitive loss is defined as a facility or structure that has experienced four or more insurance claims exceeding \$5,000 or two claims exceeding the value of the building. Within the NFIP, flood loss properties are usually considered the most vital structures to mitigate.

Use of flood insurance claim and disaster assistance information is subject to The Privacy

Act of 1974, as amended, which prohibits public release of the names of policyholders or recipients of financial assistance and the amount of the claim payment or assistance. Please see the City's Floodplain Manager for more information.

6.5 Hazard Mitigation Projects/Actions

FEMA Regulation Checklist: Mitigation Strategy	
44 CFR § 201.6(c)(3)(ii)	Documentation of the Plan Update Requirement: 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?
Elements	
C4-a	C4-a. Does the plan include an analysis of a comprehensive range of actions/projects that each jurisdiction considered to reduce the impacts of hazards identified in the risk assessment?
C4-b	C4-b. Does the plan include one or more action(s) per jurisdiction for each of the hazards as identified within the plan's risk assessment?

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

During the project identification process for the 2024 plan update, the HMPC completed a vulnerability and impact assessment on each project. This vulnerability and impact assessment. Provided is a summary of the key elements addressed for the assessment of each project proposed:

- Description of the project
- Natural hazard associated with the project
- Critical infrastructure addressed
- Impacts of the project due to a natural hazards
- Community lifelines aligned with the project
- Essential systems aligned and impacted
- Impacts to natural, historical and cultural resources
- Associated activities of value to the community
- Project alignment with a building or structure
- Project completion time
- Responsible party
- Potential funding sources

6.6 Prioritization Process

FEMA Regulation Checklist: Mitigation Strategy	
44 CFR § 201.6(c)(3)(iv)	Documentation of the Plan Update Requirement: C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including a cost-benefit review), implemented, and administered by each jurisdiction?
Element	
C5-a	Does the plan describe the criteria used for prioritizing actions?

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

The prioritization process was necessary as most mitigation projects represent a significant investment of financial and personal resources. By evaluating each project's degree of feasibility and the level of costs versus benefits, the City could determine which projects should be included based on the available resources. The HMPC used the STAPLE-E method to prioritize these projects. This rating system uses seven variables to evaluate each project's overall feasibility and appropriateness. These variables assisted in prioritizing the actions by weighing the cost of the action versus the benefits the action will produce, in addition to other prioritization factors. **Table 74** describes the Project Prioritization Criteria: STAPLE-E in detail.

The identification and analysis process of mitigation actions allowed the HMPC to reach consensus as to where the collective priorities exist. The priority of the HMPC was to focus on saving lives and property first with consideration to the benefit-cost aspect of a project. This was not a quantitative analysis. HMPC members were asked to identify their priority actions through a rating exercise. A rating value was collected from each HMPC member for each mitigation strategy based on the STAPLE-E evaluation criteria (Social, Technical, Administrative, Political, Legal, Economic, and Environmental). A three-point scale was used to determine the priority level for each criterion. An average of these values was calculated to provide the STAPLE-E value or prioritization value for that mitigation action. A calculation was used to combine the overall Risk Value and STAPLE-E Value to determine the project prioritization value.

The prioritization of the actions helps guide future efforts in determining where funds should be spent. A formalized benefit cost analysis will be completed when/if the City chooses to apply for mitigation grant funding.

Table 74: STAPLE+E Criteria

STAPLE+E Criteria	
Evaluation Category	Source of Information
Social: 1 - Low community acceptance/priority 2 - Moderate community acceptance/priority 3 - High community acceptance/priority	Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and if they are compatible with the communities' social and cultural values.
Technical: 1 - Short-term fix 2 - Medium-term fix 3 - Long-term fix	Mitigation actions are technically most effective if they provide long-term reduction of losses and have minimal secondary adverse impacts.
Administrative: 1 - High staffing, outside help needed 2 - Some staffing, no outside help needed 3 - Low staffing, no outside help needed	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
Political: 1 - Low political support/acceptance 2 - Moderate political support/acceptance 3 - High political support/acceptance	Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process and if there is public support for the action.
Legal: 1 - Many legal barriers 2 - Some legal barriers 3 - Minimal legal barriers	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.
Economic: 1 – High Cost (\$\$\$): Greater than \$250,000 2 – Medium Cost (\$\$): \$100,001 to \$250,000 3 – Low Cost (\$) : \$100,000 or less	Budget constraints can significantly deter the implementation of mitigation actions. Hence, it is important to evaluate whether an action is cost-effective, as determined by a cost-benefit review, and possible to fund.

STAPLE+E Criteria	
<p>Environmental:</p> <p>1 - Many environmental impacts</p> <p>2 - Some environmental impacts</p> <p>3 - Few environmental impacts</p>	<p>Sustainable mitigation actions that do not have an adverse effect on the environment, that comply with Federal, State, and local environmental regulations, and that are consistent with the community's environmental goals, have mitigation benefits while being environmentally sound.</p>

6.6.1 Cost Estimates

To meet the cost estimation requirements of the hazard mitigation planning process, the HMPC identified relative cost estimates based on their understanding of the mitigation action intent and their experience developing identical or similar programs/implementing projects. Three cost categories based on the City's typical cost criteria were used for budgeting purposes:

- High cost (\$\$\$): Greater than \$250,000
- Medium cost (\$\$): \$100,001 to \$250,000
- High cost (\$): \$100,000 or less

Based on the criteria and evaluation processes used during Plan development, the HMPC prepared a prioritized list of mitigation actions to improve the City's resilience to hazard events. **Table 76** lists the mitigation actions, the prioritization of each action, and other details related to implementation.

6.7 Mitigation Action Plan

6.7.1 Previous 2019 Mitigation Actions

Prior to discussing new actions to be included in this plan update, the HMPC reviewed the 2019 plan actions to determine status, and if not completed, determined if the action was still applicable or no longer relevant. Financial capability also played into the committee's decision as to whether a project remained and moved forward to the 2024 plan update. The projects were reviewed to ensure they met the current Mitigation Goals.

The HMPC decisions and any work completed on the 2019 project/action list is outlined in the below **Table 75**. Once this was completed, a comprehensive action list was created and the HMPC determined priority based on a cost benefit analysis, responsible agency, if it was new or existing infrastructure, funding possibilities, if it helped socially vulnerable neighborhoods, applicable community lifeline, and how long it may take to complete. The 2024 Mitigation Actions can be located below in **Table 76**.

FEMA Regulation Checklist: Plan Update	
44 CFR § 201.6(d)(3)	Documentation of the Plan Update Requirement: E2. Was the plan revised to reflect changes in development and was the plan revised to reflect changes in priorities and progress in local mitigation efforts?
Element	
E2-b	Does the Plan include a status update for all mitigation actions identified in the previous mitigation plan? 44 CFR 201.6(d)(3)

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

Table 75: Mitigation Action Progress, Manhattan Beach LHMP 2019

Project Name	Project Description	Responsible Party	Status
All Hazards			
MH.1	Identify and pursue funding opportunities to develop and implement local hazard mitigation activities.	Fire, Public Works	Project is currently in progress. The City is pursuing El Nino/storm funds and U.S. Clean Water Act TMDL opportunities.
MH.2	Assess the vulnerability of critical facilities subject to damage during a natural disaster.	Fire, Public Works	This project has not been initiated and was not carried over to the 2024 LHMP.
MH.3	Continue monthly meetings with the City Emergency Preparedness Committee.	Essential Departments	This project is currently ongoing but not carried over to the 2024 LHMP because it was determined to be not an eligible mitigation project.
MH.4	Strengthen emergency services preparedness and response by coordinating emergency services with natural hazard mitigation programs and enhancing public education on a regional scale.	Fire, Police	This project has been combined with the next project MH-5.
MH.5	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.	Fire, Police, Public Works	This project has moved to the 2024 plan with the addition of socially vulnerable populations.
MH.6	Evaluate current hazard warning systems to ensure effectiveness, and efficiently increase coordination between local	Fire, Police	The City now uses Alert SouthBay which is a regional alert and warning system. The city did decide to move forward in 2024 with the G.4 project "Shake Alert Earthquake Early Warning System. The city also decided to move forward

Project Name	Project Description	Responsible Party	Status
	jurisdictions and emergency service providers.		project IF.2 "Establish flood warning systems and updated emergency response and crisis communications plans".
MH.7	Monitor regional and state sources on the subject of rising sea levels and global warming. Develop action items as needed to mitigate this hazard.	Public Works, Fire	The City of Manhattan Beach has decided to not carry this project into the 2024 LHMP.
MH.8	Develop a continuity of operations plan that includes back up storage of vital records, such as plans and back up procedures to continue to operate essential functions.	Fire	The City of Manhattan Beach has decided to not carry this project into the 2024 LHMP.
Earthquake			
EQ.1	Identify and require analysis and modification, as needed, of structures that may fall into categories that are vulnerable to damage from earthquakes, such as pre-cast concrete, soft-story structures, and non-ductile concrete frame buildings.	Building & Safety	The HMPC discussed identifying specific assets at risk to include in the 2024 update. This will allow for specific information about that asset to be identified. Therefore, this specific action has been removed.
EQ.2	Continue to adopt new building codes and design standards that reflect new seismic requirements.	Building & Safety	The HMPC agreed to discuss specific building codes and design standards that require adoption. If any were identified during committee discussion for 2024 projects, it would appear in the 2024 project with it being more specific.
EQ.3	Continually maintain, monitor, and update all relevant geologic and seismic related ordinances, regulations, and codes, to	Building & Safety	The City of Manhattan Beach has decided to not carry this project into the 2024 LHMP.

Project Name	Project Description	Responsible Party	Status
	maximize awareness and planning for emergency response efforts.		
Flood			
FLD.1	Continue working with Los Angeles County to increase storm drain capacity and efficiency.	Public Works	This project is currently in progress but not included in the 2024 LHMP.
FLD.2	Continue to pursue all capital improvement projects related to improvement, maintenance for water related infrastructure.	Public Works	The City of Manhattan Beach has decided to not carry this project into the 2024 LHMP.
Landslide			
LND.1	Consider installation of signs warning the public of landslide danger in the vicinity of Sand Dune Park.	Public Works	This project has not been initiated and will not be carried over to the 2024 LHMP.
LND.2	Erosion control maintenance at Sand Dune Park.	Public Works	This project was changed to installation of erosion control at Sand Dune Park in 2024 update.
Tsunami			
TSU.1	Initiate a tsunami awareness program. Provide education to those specifically living or working within the areas of Manhattan Beach at risk of tsunami inundation. Publish tsunami information and post on the City's website for general dissemination.	Fire, Police	This project remains but with the focus now being all-hazards.

Project Name	Project Description	Responsible Party	Status
TSU.2	Consider Installation of signs along the coast directing people away from the ocean to flee a tsunami.	Public Works	This project has not been initiated since the last LHMP update. The City of Manhattan Beach has decided to not carry this project into the 2024 LHMP.
TSU.3	Continue evaluating and updating the Tsunami Warning Plan to establish improved communications with local agencies and universities.	Fire, Police	The City of Manhattan Beach is continuing this work with the County and State.

6.7.2 New Actions/Mitigation Projects

FEMA Regulation Checklist: Mitigation Strategy	
44 CFR § 201.6(c)(3)(ii)	Documentation of the Plan Update Requirement: 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?
Elements	
C4-a	Does the plan include an analysis of a comprehensive range of actions/projects that each jurisdiction considered to reduce the impacts of hazards identified in the risk assessment?
C4-b	Does the plan include one or more action(s) per jurisdiction for each of the hazards as identified within the plan's risk assessment?

FEMA Regulation Checklist: Mitigation Strategy	
44 CFR §201.6(c)(3)(iii)	Documentation of the Plan Update Requirement: C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including a cost-benefit review), implemented, and administered by each jurisdiction?
Element	
C5-b	Does the plan provide the position, office, department or agency responsible for implementing/administrating the identified mitigation actions, as well as potential funding sources and expected time frame?

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

The following section provides an overview of the Mitigation Goals and Objectives for profiled hazards of Coastal Hazards (Daily Tides, King Tides, El Nino, Coastal Erosion, and Tsunami), Drought, Geological Hazards (Earthquake and Landslide), Inland Flooding, Severe Weather (Extreme Heat and High Winds), Fire/Wildland Urban Interface (Wildfire).

The Mitigation Action Plan was developed to present the recommendations given by the HMPC for how the community can reduce the risk and vulnerability of people, property, infrastructure, and natural and cultural resources from future disaster losses. Emphasis was placed on both future and existing development.

Goals and objectives discussed in this section help describe what actions should occur. To achieve the stated objectives "mitigation actions" provide specific measurable descriptors on how to accomplish the objective. The goals, objectives, and actions form the basis for the development of a Mitigation Action Strategy and specific mitigation projects to be considered for implementation.

The action plan summarizes who is responsible for implementing each of the prioritized actions and when and how the actions will be implemented. Due to funding availability and other criteria, it should be clarified that the actions included in this mitigation strategy are subject to further review and refinement, alternatives analyses, and reprioritization. This

document does not oblige the City to implement any or all of these projects. Rather this mitigation strategy represents the desires of the community to mitigate the risks and vulnerabilities from identified hazards including changes to climate risk. As each year passes and with disasters that may occur over the next 5-year period, additional actions may be added by the HMPC if found beneficial.

The process consists of 1) setting goals and objectives, 2) considering mitigation alternatives, 3) identifying strategies or “actions”, and 4) developing a prioritized action plan resulting in a mitigation strategy.

New actions were determined by the HMPC while considering a multitude of factors.

- Areas that flood often including roadways, and repetitive loss properties.
- Critical infrastructure identified as key assets and/or located in socially vulnerable areas and attached to Community Lifelines.
- Residential areas, including socially vulnerable neighborhoods, and Critical Infrastructure located near hazard risk areas.

Manhattan Beach OES will review funding sources and serve as the point of contact for mitigation projects and actions. OES will review timelines and ensure mitigation projects are completed on time. Mitigation actions below may be funded through the City budget, particularly mitigation actions identified as “ongoing”. However, the City will also explore funding for specific Mitigation Actions through local, State, or federal grant programs. Potential grant programs or funding mechanisms are identified for specific mitigation actions as applicable, below.

The City maintains and annually updates a Capital Improvement Project (CIP) budget that identifies priority City projects and major equipment purchases for all City departments. Identified capital improvement projects were integrated into the LHMP mitigation actions where appropriate for projects with a nexus to resilience or natural hazards. In addition, as part of the annual review and update of the CIP budget, mitigation actions will be reviewed and integrated.

Manhattan Beach has completed or initiated three (3) of mitigation projects and deferred ten (10) since the last plan was approved in 2019. For more information, see above **Table 75: Mitigation Action Progress, Manhattan Beach LHMP 2019.**

Table 76, Hazard Mitigation Actions, identifies the mitigation action, hazard(s) addressed, agency and/or department responsible for implementation, potential funding source(s), timeline for implementation, and priority. The timeline for implementation is defined as follows:

- **Ongoing:** Currently in process; and ongoing thereafter;
- **Short-Term:** 1 to 2 years;
- **Medium-Term:** 3 to 4 years; and
- **Long-Term:** 5+ years.

Note: All mitigation projects and actions will be reviewed and enhanced as a part of the LHMP plan maintenance cycle to ensure vulnerable populations are included in the LHMP update.

Note: Some projects and actions mitigation risk and vulnerability to multiple hazards. These projects address all hazards including Inland Flooding, Coastal Hazards, Drought, Geological Hazards (Earthquake and Landslide), Wildfire, and Severe Weather (Wind and Extreme Heat).

Table 76: Hazard Mitigation Actions

#	Project Description	Potential Funding Source	Responsible Party (ies)	Cost Estimate	Time Frame	Priority (STAPLE-E)
All Hazards						
AH.1	Create tailored educational materials for populations that are particularly vulnerable to natural hazards, such as individuals with access and functional needs.	General Fund BRIC HMGP	EM Preparedness Administrator, working with Fire Prevention.	Medium Cost (\$\$): \$100,001 to \$250,000	3 Years	Medium (24)
AH.2	Install backup generators for the Emergency Operations Center (EOC).	General Fund BRIC HMGP	EM Preparedness Administrator, working with Public Works.	Low Cost (\$): \$100,000 or less	3 Years	Medium (13)
Coastal Hazards						
C.1	Support vegetation management for Manhattan Beach shoreline stabilization.	General Fund BRIC HMGP	Public Works and Community Development.	High Cost (\$\$\$): Greater than \$250,000	5 Years	Medium (23)
C.2	Expand the Native Coastal Dune restoration project.	General Fund BRIC HMGP	Public Works and Community Development.	High Cost (\$\$\$): Greater than \$250,000	5 Years	Medium (24)
C.3	Build a tidal wall to protect the southern section of the strand from coastal hazard impacts.	General Fund BRIC HMGP	Public Works and Community Development.	High Cost (\$\$\$): Greater than \$250,000	5 Years	Low (8)
Drought						

#	Project Description	Potential Funding Source	Responsible Party (ies)	Cost Estimate	Time Frame	Priority (STAPLE-E)
D.1	Enforce water conservation ordinances during drought conditions	General Fund BRIC HMGP	Public Works and Community Development.	Medium Cost (\$\$): \$100,001 to \$250,000	5 Years	Low (8)
D.2	Assess and Develop a Drought Emergency Plan; implement recommendations	General Fund BRIC HMGP	EM Preparedness Administrator working with Public Works.	Low Cost (\$): \$100,000 or less	5 Years	Medium (14)
Fire/Wildland Urban Interface (Wildfire)						
W.1	Provide information to residents citywide on ways to improve resilience to home fires, including the education and promotion of proper maintenance and separation of power lines from trees and other hazards.	General Fund BRIC HMGP	MB EM Preparedness Administrator and Fire Department.	Low Cost (\$): \$100,000 or less	5 Years	Medium (16)
Flooding/Inland Flooding						
F.1	Ensure that an adequate supply of sandbags are available to City residents and businesses, including prefilled sandbags for individuals who may have difficulty filling their own.	General Fund BRIC HMGP	Public Works	Low Cost (\$): \$100,000 or less	2 Years	Medium (16)
F.2	Establish flood warning systems and update emergency response and crisis communication plans.	General Fund BRIC HMGP	EM Preparedness Administrator, Public Works, and Communications.	Medium Cost (\$\$): \$100,001 to \$250,000	5 Years	Medium (15)
Geological Hazards (Earthquake and Landslide)						

#	Project Description	Potential Funding Source	Responsible Party (ies)	Cost Estimate	Time Frame	Priority (STAPLE-E)
G.1	Install landslide detection and potential protection measures at Sand Dune Park	General Fund BRIC HMGP	Public Works and Community Development.	Medium Cost (\$\$): \$100,001 to \$250,000	5 Years	Medium (22)
G.2	Adopt building codes and design standards to reduce earthquake vulnerability.	General Fund BRIC HMGP	Public Works, Community Development, and City Leadership.	Medium Cost (\$\$): \$100,001 to \$250,000	5 Years	Medium (23)
G.3	Install erosion control at Sand Dune Park	General Fund BRIC HMGP	Public Works and Community Development.	Low Cost (\$): \$100,000 or less	5 Years	Medium (22)
G.4	Implement a Shake Alert Early Warning System	General Fund BRIC HMGP	EM Preparedness Administrator working with Communications.	High Cost (\$\$\$): Greater than \$250,000	5 Years	High (25)
Severe Weather (Extreme Heat and High Winds)						
S.1	Provide backup generators for City facilities.	General Fund BRIC HMGP	Public Works and Community Development.	Medium Cost (\$\$): \$100,001 to \$250,000	5 Years	Low (11)
S.2	Assist vulnerable populations from the impacts of extreme temperatures (heat/cold) through increased outreach and partnerships with community organizations to support check-ins with vulnerable individuals.	General Fund BRIC HMGP	EM Preparedness Administrator	Medium Cost (\$\$): \$100,001 to \$250,000	5 Years	Medium (15)

Mitigation Action Goals

FEMA Regulation Checklist: Risk Assessment	
44 CFR § 201.6 (c)(3)(i)	Documentation of the Plan Update Requirements: C.3 Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards?
Element	
C3-a	Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards?

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

Table 77: Mitigation Project AH.1

Project Number	AH.1
Goal/Objective Being Met	<p>Goal 1: Protect life, property, and reduce injuries from natural hazards.</p> <p>Goal 2: Improve public understanding, support, and need for hazard mitigation measures.</p> <p>Goal 6: Highlight the importance of mitigation planning to reduce the susceptibility of assets (people, structures, systems, natural, historic, and cultural resources, and activities that have value to the community)</p>
Hazards to be Mitigated	All hazards
Community Lifeline	Safety and Security - Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
Vulnerability and Impact Statement	The implementation of a hazard mitigation educational program leads to building stronger, safer and smarter communities that are better able to reduce future injuries and structural damages to communities.
Project Description	Create tailored educational materials for populations that are particularly vulnerable to natural hazards, such as individuals with access and functional needs. Additionally, conduct outreach to Manhattan Beach residents and local businesses on the hazards of prime concern and protentional personal mitigation actions they can take. Consider incorporating map your neighborhood program.

Responsible Party	MBFD EM Preparedness Administrator, working with Fire Prevention.
Estimated Cost	Low Cost (\$): \$100,000 or less
Estimated Timeline	3 Years
Potential Funding Source	General Fund, BRIC, HMGP
Priority Level (STAPLE-E)	Medium Priority (24)

Table 78: Mitigation Project AH.2

Project Number	AH.2
Goal/Objective Being Met	<p>Goal 1: Protect life, property, and reduce injuries from natural hazards.</p> <p>Goal 5: Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operations plans and procedures.</p>
Hazards to be Mitigated	All hazards
Community Lifeline	<p>Safety and Security - Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety</p> <p>Communications - Infrastructure, Responder Communications, Alerts Warnings and Messages, Finance, 911 and Dispatch</p>
Vulnerability and Impact Statement	Back-up power sources for the City's EOC will ensure the continuation of critical electronic emergency management tools to provide a reliable centralized effort to support the community during and after a disaster, as well as support indoor environmental quality for Disaster Service Workers in the EOC.
Project Description	Provide generators for the Emergency Operations Center (EOC).
Responsible Party	MBFD EM Preparedness Administrator, working with Public Works.
Estimated Cost	Low Cost (\$): \$100,000 or less
Estimated Timeline	3 Years
Potential Funding Source	General Fund, BRIC, HMGP

Priority Level (STAPLE-E)	Medium Priority (13)
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Table 79: Mitigation Project C.1

Project Number	C.1
Goal/Objective Being Met	Goal 3: Balance natural resource management and land use planning with natural hazard mitigation to protect life, property, and environment.
Hazards to be Mitigated	Coastal Hazards (Tsunami, Daily Tides, King Tides, El Nino, Beach and Coastal Erosion)
Community Lifeline	Safety and Security - Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
Vulnerability and Impact Statement	Mitigation to sea level rise will reduce land erosion and flooding from storm surge and tides, which will in turn reduce economic losses. These mitigation efforts will also reduce the impact from Tsunamis on the community water supplies and gas lines.
Project Description	Support vegetation management for Manhattan Beach shoreline stabilization.
Responsible Party	Public Works and Community Development.
Estimated Cost	High Cost (\$\$\$): Greater than \$250,000
Estimated Timeline	5 Years
Potential Funding Source	General Fund, BRIC, HMGP
Priority Level (STAPLE-E)	Medium Priority (23)

Table 80: Mitigation Project C.2

Project Number	C.2
Goal/Objective Being Met	<p>Goal 3: Balance natural resource management and land use planning with natural hazard mitigation to protect life, property, and environment.</p> <p>Goal 6: Highlight the importance of mitigation planning to reduce the susceptibility of assets (people, structures, systems, natural, historic, and cultural resources, and activities that have value to the community)</p>

Hazards to be Mitigated	Coastal Hazards (Tsunami, Daily Tides, King Tides, El Nino, Beach and Coastal Erosion)
Community Lifeline	Safety and Security - Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
Vulnerability and Impact Statement	Mitigation to sea level rise will reduce land erosion and flooding from storm surge and tides, which will in turn reduce economic losses. These mitigation efforts will also reduce the impact from Tsunamis on the community water supplies and gas lines.
Project Description	Expand the native coastal dune restoration project that is already in place.
Responsible Party	Public Works and Community Development.
Estimated Cost	High Cost (\$\$\$): Greater than \$250,000
Estimated Timeline	5 Years
Potential Funding Source	General Fund, BRIC, HMGP
Priority Level (STAPLE-E)	Medium Priority (24)

Table 81: Mitigation Project C.3

Project Number	C.3
Goal/Objective Being Met	Goal 3: Balance natural resource management and land use planning with natural hazard mitigation to protect life, property, and environment. Goal 6: Highlight the importance of mitigation planning to reduce the susceptibility of assets (people, structures, systems, natural, historic, and cultural resources, and activities that have value to the community)
Hazards to be Mitigated	Coastal Hazards (Tsunami, Daily Tides, King Tides, El Nino, Beach and Coastal Erosion)
Community Lifeline	Safety and Security - Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
Vulnerability and Impact Statement	Mitigation to sea level rise will reduce land erosion and flooding from storm surge and tides, which will in turn reduce economic losses. These mitigation efforts will also reduce

	the impact from Tsunamis on the community water supplies and gas lines.
Project Description	Build a tidal wall to protect the southern section of the strand from coastal hazard impacts.
Responsible Party	Public Works and Community Development.
Estimated Cost	High Cost (\$\$\$): Greater than \$250,000
Estimated Timeline	5 Years
Potential Funding Source	General Fund, BRIC, HMGP
Priority Level (STAPLE-E)	Low Priority (8)

Table 82: Mitigation Project D.1

Project Number	D.1
Goal/Objective Being Met	Goal 1: Protect life, property, and reduce injuries from natural hazards. Goal 5: Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operations plans and procedures.
Hazards to be Mitigated	Drought
Community Lifeline	Safety and Security - Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
Vulnerability and Impact Statement	Enforcing water conservation will reduce the drought's negative impacts on the City's municipal water supply, recreational resources, as well as the local economy.
Project Description	Enforce water conservation ordinances during drought conditions.
Responsible Party	Public Works and Community Development.
Estimated Cost	Medium Cost (\$\$): \$100,001 to \$250,000
Estimated Timeline	5 Years
Potential Funding Source	General Fund, BRIC, HMGP
Priority Level (STAPLE-E)	Low Priority (8)

Table 83: Mitigation Project D.2

Project Number	D.2
Goal/Objective Being Met	Goal 1: Protect life, property, and reduce injuries from natural hazards. Goal 5: Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operations plans and procedures.
Hazards to be Mitigated	Drought
Community Lifeline	Safety and Security - Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
Vulnerability and Impact Statement	An emergency plan for drought will reduce negative impacts to life sustaining water supplies, as well as reduce the economic impact of drought allowing for City and community continuity of operations resulting in a stronger recover and more resilient community.
Project Description	Assess, and Develop a Drought Emergency Plan; implement recommendations.
Responsible Party	MBFD EM Preparedness Administrator working with Public Works.
Estimated Cost	Low Cost (\$): \$100,000 or less
Estimated Timeline	5 Years
Potential Funding Source	General Fund, BRIC, HMGP
Priority Level (STAPLE-E)	Medium Priority (14)

Table 84: Mitigation Project W.1

Project Number	W.1
Goal/Objective Being Met	Goal 1: Protect life, property, and reduce injuries from natural hazards. Goal 2: Improve public understanding, support, and need for hazard mitigation measures.
Hazards to be Mitigated	Fire/Wildland Urban Interface (Wildfire)
Community Lifeline	Communications - Infrastructure, Responder Communications, Alerts Warnings and

	Messages, Finance, 911 and Dispatch
Vulnerability and Impact Statement	The implementation of a Fire/Wildland Urban Interface educational program specific to power lines will equip the whole community with the knowledge to build stronger, safer and more resilient communities that are better able to reduce future injuries and structural damages to communities.
Project Description	Provide information to residents citywide on ways to improve resilience to home fires, including the education and promotion of proper maintenance and separation of power lines from trees and other hazards.

Table 85: Mitigation Project F.1

Project Number	F.1
Goal/Objective Being Met	Goal 1: Protect life, property, and reduce injuries from natural hazards. Goal 5: Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operations plans and procedures.
Hazards to be Mitigated	Inland Flooding
Community Lifeline	Safety and Security - Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
Vulnerability and Impact Statement	Mitigation for inland flooding will lead toward a more resilient community by reducing the damage to personal property and buildings. The Community will be in a better position to limit road closures and even service disruptions resulting greater community resiliency.
Project Description	Ensure that an adequate supply of sandbags is available to Manhattan Beach residents and businesses, including prefilled sandbags for individuals who may have difficulty filling their own.
Responsible Party	Public Works.
Estimated Cost	Low Cost (\$): \$100,000 or less
Estimated Timeline	2 Years
Potential Funding Source	General Fund, BRIC, HMGP

Priority Level (STAPLE-E)	Medium Priority (16)
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Table 86: Mitigation Project F.2

Project Number	F.2
Goal/Objective Being Met	<p>Goal 1: Protect life, property, and reduce injuries from natural hazards.</p> <p>Goal 5: Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operations plans and procedures.</p>
Hazards to be Mitigated	Inland Flooding
Community Lifeline	Communications - Infrastructure, Responder Communications, Alerts Warnings and Messages, Finance, 911 and Dispatch
Vulnerability and Impact Statement	Flood warning systems and relative communications planning with reduce the potential of injuries and loss of life.
Project Description	Establish flood warning systems and update emergency response and crisis communication plans.
Responsible Party	MBFD EM Preparedness Administrator, Public Works, and Communications.
Estimated Cost	Medium Cost (\$\$): \$100,001 to \$250,000
Estimated Timeline	5 Years
Potential Funding Source	General Fund, BRIC, HMGP
Priority Level (STAPLE-E)	Medium Priority (15)

Table 87: Mitigation Project G.1

Project Number	G.1
Goal/Objective Being Met	<p>Goal 1: Protect life, property, and reduce injuries from natural hazards.</p> <p>Goal 3: Balance natural resource management and land use planning with natural hazard mitigation to protect life, property, and environment.</p> <p>Goal 6: Highlight the importance of mitigation planning to reduce the susceptibility of assets (people, structures, systems, natural, historic, and cultural resources, and activities that have</p>

	value to the community)
Hazards to be Mitigated	Geological Hazards (Earthquake, Landslide)
Community Lifeline	Safety and Security - Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
Vulnerability and Impact Statement	The detection of land movement can reduce injuries, fatalities, environmental disturbances, as well property damage.
Project Description	Install landslide detection and potential protection measures at Sand Dune Park.
Responsible Party	Public Works and Community Development
Estimated Cost	Medium Cost (\$\$): \$100,001 to \$250,000
Estimated Timeline	5 Years
Potential Funding Source	General Fund, BRIC, HMGP
Priority Level (STAPLE-E)	Medium Priority (22)

Table 88: Mitigation Project G.2

Project Number	G.2
Goal/Objective Being Met	Goal 1: Protect life, property, and reduce injuries from natural hazards.
Hazards to be Mitigated	Geological Hazards (Earthquake, Landslide)
Community Lifeline	<p>Safety and Security - Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety</p> <p>Food, Hydration, Shelter - Food, Hydration, Shelter, Agriculture</p> <p>Health and Medical - Medical Care, Public Health, Patient Movement, Medical Supply Chain, Fatality Management</p> <p>Energy - Power Grid, Fuel</p> <p>Communications - Infrastructure, Responder Communications, Alerts Warnings and Messages, Finance, 911 and Dispatch</p> <p>Transportation - Highway/Roadway/Motor Vehicle, Mass Transit, Railway, Aviation, Maritime</p>

Vulnerability and Impact Statement	The reduction in the risk of injury, loss of life, and damage to structures resulting in a higher number of buildings that can maintain occupancy.
Project Description	Adopt building codes and design standards to reduce earthquake vulnerability.
Responsible Party	Public Works, Community Development, and City Leadership.
Estimated Cost	Medium Cost (\$\$): \$100,001 to \$250,000
Estimated Timeline	5 Years
Potential Funding Source	General Fund, BRIC, HMGP
Priority Level (STAPLE-E)	Medium Priority (23)

Table 89: Mitigation Project G.3

Project Number	G.3
Goal/Objective Being Met	Goal 1: Protect life, property, and reduce injuries from natural hazards. Goal 3: Balance natural resource management and land use planning with natural hazard mitigation to protect life, property, and environment.
Hazards to be Mitigated	Geological Hazards (Earthquake, Landslide)
Community Lifeline	Safety and Security - Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
Vulnerability and Impact Statement	The reduction of erosion will positively impact life safety, as well as reduce the destruction of buildings and infrastructure.
Project Description	Installation of erosion control at Sand Dune Park.
Responsible Party	Public Works and Community Development.
Estimated Cost	Low Cost (\$): \$100,000 or less
Estimated Timeline	5 Years
Potential Funding Source	General Fund, BRIC, HMGP
Priority Level (STAPLE-E)	Medium Priority (22)

Table 90: Mitigation Project G.4

Project Number	G.4
Goal/Objective Being Met	Goal 1: Protect life, property, and reduce injuries from natural hazards. Goal 2: Improve public understanding, support, and need for hazard mitigation measures.
Hazards to be Mitigated	Geological Hazards (Earthquake, Landslide)
Community Lifeline	Communications - Infrastructure, Responder Communications, Alerts Warnings and Messages, Finance, 911 and Dispatch
Vulnerability and Impact Statement	The ShakeAlert Earthquake Early Warning System is a project designed to reduce the loss of life and injuries by providing real-time alerts before seismic waves from an earthquake reach a user's location. This innovative system detects the initial, less harmful waves of an earthquake and rapidly calculates the expected intensity and arrival time of the more damaging waves, giving people and systems crucial seconds to take protective actions.
Project Description	Shake Alert Earthquake Early Warning System.
Responsible Party	MBFD EM Preparedness Administrator working with Public Works, Environmental Sustainability, Community Development, Building and Safety
Estimated Cost	High Cost (\$\$\$): Greater than \$250,000
Estimated Timeline	5 Years
Potential Funding Source	General Fund, BRIC, HMGP
Priority Level (STAPLE-E)	High Priority (25)

Table 91: Mitigation Project S.1

Project Number	S.1
Goal/Objective Being Met	Goal 1: Protect life, property, and reduce injuries from natural hazards.
Hazards to be Mitigated	Severe Weather (High Winds, Extreme Heat)
Community Lifeline	Safety and Security – Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community

	Safety
Vulnerability and Impact Statement	Backup power will ensure the continuity of operations for the City to serve the community with life and safety services.
Project Description	Provide backup generators for City facilities.
Responsible Party	Public Works and Community Development.
Estimated Cost	Low Cost (\$): \$100,000 or less
Estimated Timeline	5 Years
Potential Funding Source	General Fund, BRIC, HMGP
Priority Level (STAPLE-E)	Low Priority (11)

Table 92: Mitigation Project S.2

Project Number	S.2
Goal/Objective Being Met	Goal 1: Protect life, property, and reduce injuries from natural hazards. Goal 2: Improve public understanding, support, and need for hazard mitigation measures.
Hazards to be Mitigated	Severe Weather (High Winds, Extreme Heat)
Community Lifeline	Safety and Security – Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
Vulnerability and Impact Statement	The vulnerable population outreach and check-in project will reduce the threat to lives through education, collaboration, and whole community connectivity.
Project Description	Assist vulnerable populations from the impacts of extreme temperatures (heat/cold) through increased outreach and partnerships with community organizations to support check-ins with vulnerable individuals.
Responsible Party	Emergency Preparedness Administrator
Estimated Cost	Medium Cost (\$\$): \$100,001 to \$250,000
Estimated Timeline	5 Years
Potential Funding Source	General Fund, BRIC, HMGP

Priority Level (STAPLE-E)	Medium Priority (15)
Responsible Party	MB EM Preparedness Administrator and Fire Department.
Estimated Cost	Low Cost (\$): \$100,000 or less
Estimated Timeline	5 Years
Potential Funding Source	General Fund, BRIC, HMGP
Priority Level (STAPLE-E)	Medium Priority (16)

SECTION 7: PLAN MAINTENANCE

This mitigation plan is a living document that guides actions. As conditions change, new details become available, or actions progress over time, this plan will need to change to stay current. Key components of this process are monitoring, evaluating, and updating. The Emergency Preparedness Administrator will lead the plan maintenance process in coordination with the HMPC, community stakeholders and community members, including representatives of individuals with Access and Functional Needs (AFN).

It was important to the City that each member of the HMPC was given the opportunity to provide input during the LHMP development. This philosophy was essential to the previous 2019 effort and will be continued for future LHMP revisions through evaluations, maintenance, and updates of data, processes, and programs. The HMPC will convene annually to perform annual reviews of the LHMP and its implementation. The LHMP will include representation from city departments, local agencies, citizen groups, and stakeholders within the planning area. If planning team members can no longer serve on the HMPC, another representative should be assigned to the planning team so that every department or agency is represented inclusive of those serving the AFN community.

FEMA Regulation Checklist Plan Maintenance	
44 CFR § 201.6(c)(4)(i)	Documentation of the Plan Update Requirements: D2. 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?
Elements	
D2-a	Does the plan describe the process that will be followed to track the progress/status of the mitigation actions identified within the Mitigation Strategy, along with when this process will occur and who will be responsible for the process?
D2-b	Does the plan describe the process that will be followed to evaluate the plan for effectiveness? This process must identify the criteria that will be used to evaluate the information in the plan, along with when this process will occur and who will be responsible.
D2-c	Does the plan describe the process that will be followed to update the plan, along with when this process will occur and who will be responsible for the process?

Source: FEMA, *Local Mitigation Planning Policy Guide*, Released April 19, 2022, Effective April 19, 2023

Table 93: Plan Maintenance Schedule

Plan Component	When	How	Who
Monitoring	Twice per year	Obtain status updates on mitigation actions. Compile progress reports. Identify mid-course corrections.	Emergency Preparedness Administrator

Plan Component	When	How	Who
Evaluating	Once per year or after a disaster event	Use the Manhattan Beach Progress Report to evaluate if the plans goals were achieved. Record lessons learned.	Emergency Preparedness Administrator, HMPC
Updating	Every 5 years, or after a disaster event	Review the plan using FEMA's Plan Review Tool (PRT) and update as necessary	Emergency Preparedness Administrator, HMPC, Members of the Public

7.1 Plan Monitoring and Situational Change

Plan monitoring means tracking how the plan is carried out over time, including goals, actions, integration, and public involvement. The HMPC will remain responsible for monitoring and updating the Plan, including evaluating the effectiveness of the Plan as needed. The City Emergency Preparedness Administrator in coordination with the HMPC will develop a monitoring report quarterly, or when triggered by situational change. This report will be used to ensure stakeholders and community members obtain regular feedback.

Mitigation plan monitoring is the ongoing process of assessing and tracking the effectiveness of mitigation measures outlined in a hazard mitigation plan.

The report will address the following questions:

- Is the mitigation project under, over, or on budget?
- Is the mitigation project behind, ahead of, or on schedule?
- Are there any changes in Manhattan Beach's capabilities which impact the LHMP?
- Are there any changes in Manhattan Beach's hazard risk?
- Has the mitigation project/action been initiated, or its initiation planned?
- Is the current process of prioritizing mitigation projects/actions appropriate and accurate?
- Has the current method of incorporating mitigation project/actions yielded a comprehensive action and project strategy to address seen and unforeseen hazards?
- If applicable, has participation in a mitigation action's collaboration been regular?

- Was a negative result caused directly or indirectly by insufficient levels of public outreach?
- If any, what plan updates occurred, why they occurred, and what is their impact?

7.2 Plan Evaluation

Plan evaluation goes a step beyond monitoring, assessing if the plan is fulfilling its intended purpose. This process enables the HMPC to discern if any necessary changes need to be made.

The following situations will necessitate an evaluation.

- Hazard occurrence
- Training event
- Exercise
- Significant change or completion of a mitigation project

7.3 Updating the Plan

Updating the Plan includes reviewing and revising the document at least once every 5 years. As factors change, including technologies, community demographics/characteristics, best practices and hazard conditions, it will be necessary to update this LHMP to remain relevant.

7.3.1 Annual Review Progress Worksheet

Every 12 months from plan adoption, the City Emergency Preparedness Administrator will email each member of the HMPC an Annual Review Worksheet to complete. Each member of the HMPC will email completed worksheets back to the City Emergency Preparedness Administrator to review. The findings will then be summarized and emailed to the committee. If the City Emergency Preparedness Administrator believes that the 2024 LHMP needs to be updated based on the findings, then an invitation will be sent to HMPC members to attend a formal update meeting. See Appendix K.

7.3.2 Mitigation Progress Project Reports

Mitigation actions will be evaluated and updated using the Mitigation Project Progress Report as noted above to determine the effectiveness of achieving plan goals, evaluating new hazards, and determining if the strategies and goals of the plan are still accurate and relevant. During each annual review, each department or agency currently administering a mitigation project will submit a progress report to the City

Emergency Preparedness Administrator. For projects that are being funded by a FEMA mitigation grant, FEMA quarterly reports may be used as the preferred reporting tool. OES will evaluate mitigation actions and progress to determine their effectiveness. Changes in the community, new hazards and legislation will be examined for relevancy.

7.3.3 LHMP Planning Team Roundtable

On the third year of the update, prior to the expiration, the City Emergency Preparedness Administrator will reconvene the HMPC (updating membership, if necessary) and lead a tabletop exercise with the HMPC. The objective is to gather the Annual Review Worksheet, any Mitigation Project Progress Reports and FEMA quarterly reports. This data will be used to identify hazards to be incorporated into the 2029 LHMP, inclusive of a new vulnerability assessment, hazard profile and mitigation actions. Additionally, a new work plan will be developed, thus beginning the plan update.

Tips to an Efficient Update:

- Maintain the Plan on an annual basis
- Allocate ample time to complete the update before Plan expiration
- Anticipate the involvement of additional stakeholders or members of the public in advance
- Review any new and/or updated regulations

7.3.4 Update Process Tasks

During update process for the 2029 LHMP, the following tasks will be conducted:

- ✓ Convening of the HMPC Planning team and continuation of stakeholder and public outreach.
- ✓ Identification of new plans, studies, reports and technical information that pertain to the community vulnerabilities.
- ✓ Validation or updating of the hazard list.
- ✓ Updating of hazard profiles to include events that occurred since the last plan.
- ✓ Validation and or updating community capabilities.
- ✓ Validation or updating community assets as applicable.
- ✓ Updating the risk assessment based on the above.
- ✓ Updating the mitigation strategy based on the new risk assessment as applicable
- ✓ Addressing changes in development and priorities.
- ✓ Documenting and describing the plan update process.

7.4 Continued Public Involvement in Plan Maintenance

FEMA Regulation Checklist Plan Maintenance	
44 CFR § 201.6(c)(4)(iii)	Documentation of the Plan Update Requirement: D1. Is there discussion of how each community will continue public participation in the plan maintenance process?
Element	
D1-a	Does the plan describe how communities will continue to seek future public participation after the plan has been approved?

Source: FEMA, *Local Mitigation Planning Policy Guide*, Released April 19, 2022, Effective April 19, 2023

The City is committed to keeping this LHMP current and continuing to provide ways for the public to be involved in the plan and its implementation. Maintaining public involvement throughout the plan's lifecycle is important to ensure ongoing community and stakeholder input into the mitigation and planning process to spread awareness, gather input and disseminate information. This continued public involvement will provide an opportunity for the City to reach out to those who may have missed the opportunity to participate in the 2024 LHMP planning and provide community members with ongoing opportunities to contribute their vision and recommendations for the next plan update.

Ongoing Community outreach and engagement is considered a primary goal of the City, specifically when addressing community related health and safety risks.

Several examples of this commitment include:

- Hosting public meetings at a minimum annually to engage residents, ensuring to include AFN members.
- Regularly posting on social media and/or conducting polls to gather perspectives on risks.
- Setting up information booths annually at large public events such as a farmers' markets, holiday parades and/or festivals.
- Conducting ongoing outreach to include vulnerable populations and Access and Functional Needs (AFN) members.
- Coordinating with the Fire Department's Community Risk Reduction efforts.
- Utilizing various methods of outreach to the public such City website announcements, press releases, mailers, cable TV, social media networks, postings at the Manhattan Beach Main library, public hearing, council and commission meetings and City e-news blast to subscribers.
- Ensuring communication notifications to the public are translated into different languages such as Spanish.

As well, projects that are hazard mitigative in nature are included in the City and participating jurisdictions' annual budget planning process. City workshops may be held, and meetings are convened, and the public made aware of the planning through council meetings, open workshop sessions, and press releases during this time. The budget planning process will serve as an annual opportunity to conduct outreach to the public on updates to the hazard mitigation planning process. A survey can be developed to gather input on how the community knows about the progress being made on LHMP activities.. The City will be responsible to ensure the public is included and involved in the annual public plan update and outreach. Throughout this process as public outreach is conducted; it will be vital to ensure documentation is saved and feedback incorporated into future plan maintenance and update discussions.

7.5 Integration into Other Local Planning Mechanisms

FEMA Regulation Checklist Plan Maintenance	
44 CFR § 201.6(c)(4)(ii)	Documentation of the Plan Update Requirements: D3. Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate?
Elements	
D3-a	Does the plan describe the process the community will follow to integrate the ideas, information and strategy of the mitigation plan into other planning mechanisms?
D3-b	Does the plan identify the planning mechanisms for each plan participant into which the ideas, information and strategy from the mitigation plan may be integrated?

Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

The City of Manhattan Beach has another goal of integrating hazard mitigation in **other** planning efforts. This involves the incorporation of hazard mitigation principles and actions into community plans and community planning mechanisms into hazard mitigation plans. Where able, the City, will Integrate natural hazard information and mitigation policies and principles into local planning mechanisms and vice versa.

As time progresses, the Emergency Preparedness Administrator, will engage community officials with the authority to execute policies and programs to reduce risk, and collaborate across departments and agencies with key staff to help share knowledge and build relationships that are important to the successful implementation of mitigation activities.

Incorporation of City Plans and Ordinances

The City of Manhattan Beach has the following plans, ordinances and other applicable efforts, that when updated, can incorporate the updated information in this hazard mitigation plan.

- Emergency Operations Plan
- Tsunami Plan
- Evacuation Routes
- Building Codes
- Flood Ordinance
- Sea Level Rise Risk, Hazards, and Vulnerability Assessment, City of Manhattan Beach

Through the City of Manhattan Beach's Fire Department, a community risk reduction effort is ongoing with tasks associated with hazard mitigation and community awareness. Utilizing the findings and strategies outlined in this hazard mitigation plan, integrating into the already existing efforts of community education and preparedness, emergency

planning, fire prevention, code enforcement, fire inspections, vegetation management, and plan check services of new and tenant improvement construction projects will prove beneficial.

The successful implementation of this mitigation strategy is also done through vigilant review of existing plans and programs for coordination and multi-objective opportunities that promote a safe, sustainable community. Efforts are continuously made to monitor the progress of mitigation actions implemented through other planning mechanisms. The City of Manhattan Beach's General Plan calls for and is supportive of the coordination of regional efforts in land use development and tending to environmental impacts.

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

Per California Assembly Bill 2140, the City intends on adopting the LHMP as part of the Safety Element of the General Plan, adopted pursuant to Section 65302 (g) of the California Government Code. The City will incorporate LHMP analysis of hazards and risks, mitigation goals and mitigation actions into other planning mechanisms and processes such as the City Safety Element of the General Plan, the City Emergency Operations Plan and other planning documents as determined.

Incorporation of action items and processes from the 2024 LHMP into various other planning documents will be completed as other plans are updated and when new plans are developed. Additional action items may be implemented through the creation of new public education programs, continued city departmental coordination and ongoing public engagement and input.

Regional Partnerships

The city understands the importance of coordination and collaboration with neighboring cities such as El Segundo, Hermosa Beach, Redondo Beach and Torrance to identify respective city risks and cascading impacts. Hence, the city is committed to continuing coordination and engagement with neighboring city jurisdictions and the County of Los Angeles to ensure discussions are held regarding hazard risks to continue to strengthen both Manhattan Beach's mitigation strategy as well as those of neighboring cities and the County. The city also engaged the Disaster Management Area Coordinator for Area G which includes the following areas: El Segundo, Gardena, Hawthorne, Hermosa Beach, Inglewood, Lawndale, Lomita, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, and Torrance.

APPENDIX A: HAZARD MITIGATION PLANNING COMMITTEE

A.1 HMPC Outreach and Participation

A1.1 Email Invitations

The Manhattan Beach Planning Committee invited community members and stakeholders to four committee meetings. All invitations were sent, at a minimum, via email. The following table was used to document correspondence.

Table 94: Email Invitations

Organization	Contact	Date
American Martyrs	Mr. Hodges	11/12/2023
BC CAER	Steve Faichney	11/12/2023
BCHD	Megan Vixie	11/12/2023
CERT	Frank and Mindy	11/12/2023
Chevron	Ryan and Ashley	11/12/2023
California Coastal Commission	Commissioner Roberto Uranga	11/12/2023
Congregation Tivat Jacob	Ruth	11/12/2023
Cornerstone	Pastor White	11/12/2023
Culture Club	Contact at Culture Club South Bay	11/12/2023
Downtown Manhattan Beach	Jill	11/12/2023
DV United	Judy Mark	11/12/2023
El Camino University Risk Management	Leobardo Barrera	11/12/2023
Friendship Foundation	Kelly Stroman	11/12/2023
Harbor Inter Faith	Ramon Rendon	11/12/2023
Health District	Megan Vixie	11/12/2023
Jewish Community Center	Rabbi Yossi Mintz	11/12/2023
Journey of Faith	Mr. Farley	11/12/2023

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

Organization	Contact	Date
LA County	Brandy Villanueva	11/12/2023
Leadership Manhattan Beach	Kathleen	11/12/2023
MB CERTA	Frank and Mindy	11/12/2023
MB Chamber of Commerce & North Manhattan Beach Business Improvement District	David Archer	11/12/2023
MB Community Church	Nancy	11/12/2023
MB Dial-a-Ride	Michelle Ami	11/12/2023
MB Rotary Club	Lisa	11/12/2023
MyChals	Mr. Lynch	11/12/2023
PFLAG Manhattan Beach	Cindy Byrne	11/12/2023
Red Cross	Luka Lezhansky	11/12/2023
American Youth Soccer Organization	Krista Skinner	11/13/2023
Beside the Sea	Pastor Douglas	11/13/2023
Board of Building Appeals	Board Members	11/13/2023
Board of Supervisors LA County	Supervisor Mitchell	11/13/2023
CA Senate	Senator Allen	11/13/2023
CSULB MS in ESA faculty	Dr. Shirley Feldmann-Jensen	11/13/2023
DMAC Disaster Management Area G Coordinator	Bandy Villanueva	11/13/2023
El Camino University Risk Management	Leobardo Barrera	11/13/2023
Elks Lodge at Redondo Beach	RB Elks Lodge Leadership (Nashana Steele & Linda Lee)	11/13/2023
EM Safety Partners	Soraya Sutherlin	11/13/2023
Government Relations Manager Southern CA Edison	Diane Forte, Alexandria Chwierut	11/13/2023
Harbor RC	Patrick Ruppe	11/13/2023
Manhattan Beach Unified School District	Kerry Agüero	11/13/2023

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

Organization	Contact	Date
Manhattan Hermosa AYSO18 Regional Commissioner	Krista Skinner	11/13/2023
MB Cultural Arts Commission	Eilen R. Stewart, Linda Robb	11/13/2023
MB Farmers Market	Farmers Market Leadership	11/13/2023
MB LHMP	Al Muratsuchi	11/13/2023
MB Library Commission	Kari Bell	11/13/2023
MB Little League	MB little League Executive Board	11/13/2023
MB Neighborhood Watch	Frank Chiella, Mindy Balgrosky	11/13/2023
MB Parking and Public Improvements Commission	Erik Zandvliet, PPIC	11/13/2023
MB Parks and Recreation Commission	Mark Leyman	11/13/2023
MB Planning Commission	Talyn Mirzakhanian	11/13/2023
MB Unified School District	Kerry Riccio Aguero	11/13/2023
Neighborhood Watch	Mindy, Frank, Christopher	11/13/2023
Neptunian Womens Club	Neptunian Womens Club Leadership	11/13/2023
Noahs Bark	Noahs Bark Leadership	11/13/2023
RB Elks Lodge	Elks Lodge Leadership	11/13/2023
Senator Allen CA Senate	Senator Allen	11/13/2023
Southern Edison	Diane Forte, Alex Chewieurt, Donna Boston, Bob Stiens	11/13/2023
Torrance Memorial	Anita Chun	11/13/2023
Unknown	Soraya Sutherlin	11/13/2023
LA West Vector Control Board	Wayne Powell	11/13/2023
City of Hawthorne	Sam English	11/14/2023
Division Chief	Isaac Yang	11/14/2023
Disability Voices United	Judy Mark	11/14/2023
Friendship Foundation	Kelly Stroman	11/14/2023

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

Organization	Contact	Date
HAM Radio	Paul Curry	11/14/2023
LHMP Council Liaison	Alexandria Latragna	11/14/2023
City of Manhattan Beach	Joe Franklin	11/14/2023
MB CERT Association	Mindy Balgrosky	11/14/2023
MB HMPC Planning Team	HMPC Planning Team	11/14/2023
Neighborhood Watch	Charlotte Lessor	11/14/2023
Roundhouse Aquarium	Eric Martin	11/14/2023
West Basin Water District	Mr. Caldwell	11/14/2023
City of Torrance Emergency Management Department	Eunique Day	11/14/2023
LA County Beaches and Harbors	Chief O'Connell	11/20/2023
City of Hermosa Beach, EM Coordinator	Israel Estrada, Angela Crespi, Sara Russo	11/20/2023
MB Lunch Brunch	Kari Bell, Mary McCabe	11/20/2023
Beach Cities Health District	Charlotte Lessor	11/20/2023
Coastal areas of 2nd District of LA County	Jessalyn Waldron	11/21/2023
Manhattan Beach City Council	Council Member David Lesser	11/21/2023
El Camino University Risk Management	Valerie Wagner	11/21/2023
LA County Board of Supervisors	Supervisor Holly Mitchell	12/13/2023

A1.2 HMPC Comprehensive Attendance Roster

Table 95: Hazard Mitigation Planning Committee Attendance Roster

Name	Job Title	Agency/Company Name	Community Lifeline
AJ Lester	Battalion Chief	LACoFD Marine Lifeguard Division	Safety and Security
Al Muratsuchi	Assembly Member, District 66	Assembly Member Al Muratsuchi	Safety and Security
Alexandria Latragna	Communications Manager	MB Management Services	Communications
Allison Hales	Founder	Culture Club South Bay	Safety and Security
Amanda MacLennan	Emergency Preparedness Administrator	MB Fire Department	Safety and Security
Amy Thomas Howorth	Mayor Pro Tem	MB City Councilmember	Safety and Security
Angela Crespi	Deputy City Manager	City of Hermosa Beach	Safety and Security
Anthony Gomes	Division Chief "A"	MB Fire Department	Safety and Security
Ben Allen	Senator, Senate District 24	Senator Ben Allen	Safety and Security
Blair Farley	Executive Director of Experience	Journey of Faith Church	Safety and Security
Bonnie Shrewsbury	GIS Analyst	MB Information Technology - GIS	Communications
Brandy Villanueva	Disaster Management Area Coordinator	Disaster Management Area G Coordinator	Safety and Security
Briza Morales	Risk Manager	MB Human Resources	Safety and Security
Bruce Moe	City Manager	MB Management Services	Safety and Security
Casey Snow	Battalion Chief	El Segundo Fire Department	Safety and Security

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

Name	Job Title	Agency/Company Name	Community Lifeline
Catherine Hargrove	Community Services Coordinator	Torrance Memorial Medical Center	Safety and Security
Charlotte Lesser	Director	Neighborhood Watch	Safety and Security
Cindy Byrne	Co-Founder and Board Member	Parents, Families, and Friends of Lesbians and Gays (PFLAG)	Safety and Security
Daniel Pankau	Environmental Programs Administrator	MB Community Development	Safety and Security
Danielle McMillon	Battalion Chief	LACoFD Marine Lifeguard Division	Health and Medical
David Archer	President/CEO	North Manhattan Beach Business Improvement District/Chamber of Commerce	Safety and Security
David Lesser	Councilmember	MB City Councilmember	Safety and Security
Douglas Barclay	Pastor	Trinity Lutheran Church	Safety and Security
Dr. Shirley Feldmann-Jensen	Professor MS in ESA	CSULB Emergency Management Services Administration.	Safety and Security
Ed Lynch	Executive Director/Founder	Mychal's Learning	Safety and Security
Edwin	Risk Management	Providence Little Company of Mary Medical Center	Health and Medical
EJ Caldwell	GM of WBMWD	West Basin Municipal Water District	Food, Water, Shelter
Eric Martin	Roundhouse Director	Roundhouse Aquarium on the Pier	Safety and Security
Erik Zandvliet	Traffic Engineer	MB Community Development	Transportation
Eunique Day	OES Coordinator	City of Torrance	Safety and Security
Frank Chiella	MBCERTA President	Map Your Neighborhood	Safety and Security
Frank Chiella	President	MB CERT Association	Safety and Security

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

Name	Job Title	Agency/Company Name	Community Lifeline
Gilbert Gamboa	Principal Civil Engineer	MB Engineering	Energy
Issac Yang	Division Chief	Redondo Beach Fire Department	Safety and Security
Jamie Cappetta	Executive Board Member	Manhattan Beach Little League	Safety and Security
Jason Sandoval	Code Enforcement Officer	MB Community Development	Safety and Security
Jeffrey Jacobs	External Relations Coordinator	American Red Cross	Safety and Security
Jessalyn Waldron	Deputy of Constituent Engagement	County Supervisor's Office (2nd District) - Holly Mitchell	Safety and Security
Jesus Sandoval	Senior Recreation Supervisor	MB Parks & Recreation	Safety and Security
Jill Lamkin	Executive Director	Downtown Manhattan Beach Business and Professional Association	Safety and Security
Joseph Franklin	Mayor	MB City Council	Safety and Security
Judy Mark	President	Disability Voices United - MB	Safety and Security
Kari Bell	Senior Recreation Supervisor	MB Parks & Recreation	Safety and Security
Kathleen Terry	Program Facilitator	Leadership Manhattan Beach	Safety and Security
Kelly Stroman	Managing Director	Friendship Foundation Redondo Beach	Safety and Security
Kerry Riccio Agüero	Director, Student Services	Manhattan Beach Unified School District	Safety and Security
Kevin Bass	Fire Marshal	MB Fire Department	Safety and Security
Kevin Tiscareno	Division Chief "B"	MB Fire Department	Safety and Security
Krista Skinner	Regional Commissioner	Manhattan Hermosa AYSO18	Safety and Security

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

Name	Job Title	Agency/Company Name	Community Lifeline
Leobardo Barrera	Director of Workplace Safety and Risk Management	El Camino College	Safety and Security
Lisa Hemmat-Lubercio	President	Manhattan Beach Rotary + VetFest	Safety and Security
Liza Tamura	City Clerk	MB Management Services	Safety and Security
Logan White	Head Pastor	Cornerstone Christian Fellowship	Safety and Security
Luka Lezhansky	Disaster Program Manager, Territory 4	American Red Cross	Safety and Security
Marcelo Serrano	Budget & Financial Analyst	Finance Department	Safety and Security
Margaret Vinci	Manager, Office of Earthquake Programs; ShakeAlert Earthquake Early Warning SoCal Technical Engagement Coordinator	US Geological Survey (USGS) – ShakeAlert	Safety and Security
Mario Hernandez	Purchasing Supervisor	MB Purchasing / Warehouse	Food, Water, Shelter
Martha Alvarez	Assistant City Clerk	MB Management Services	Safety and Security
Matt Sabosky	Lieutenant	MB Police Department	Safety and Security
Matthew Veeh	Manager of Water Policy and Resources	West Basin Municipal Water District	Food, Water, Shelter
Megan Vixie	Chief Engagement Officer	Beach City Health District	Health and Medical
Michelle Ami-Cortez	MB-DAR Recreation Supervisor	MB Dial-a-ride	Transportation
Miguel Gutierrez	Fire Inspector	MB Fire Department	Safety and Security

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

Name	Job Title	Agency/Company Name	Community Lifeline
Mike Guerrero	Principal Civil Engineer	MB Public Works	Energy
Mindy Balgrosky	Secretary/Treasurer	MB CERT Association	Safety and Security
Mirna Puma	Police Office Assistant	MB Police Department	Safety and Security
Nancy Drinker	Business Manager	MB Community Church	Safety and Security
Nashana Steele & Linda Lee	Exalted Ruler & Secretary	Elks Lodge	Food, Water, Shelter
Nhung Huynh	Senior Management Analyst	MB Community Development Dept.	Food, Water, Shelter
Olivier O'Connell	LACoFD, Marine, Administrative Chief - Southern Section	LA County Beaches and Harbors	Safety and Security
Patrick Ruppe	Executive Director	Harbor Regional Center	Health and Medical
Paul Curry	HAM Radio Operator	MBPD Volunteer HAM Radio Operations	Communication
Rabbi Yossi Mintz	Executive Director	Jewish Community Center	Safety and Security
Ramon Rendon	Director of Homeless/Unhoused	Harbor Interfaith Services	Food, Water, Shelter
Richard Montgomery	Councilmember	MB City Councilmember	Safety and Security
Robert (Bob) Hodges	Business Manager	American Martyrs Catholic Church	Safety and Security
Roberto Uranga	Commissioner	California Coastal Commission	Safety and Security
Ruth Irving	Executive Director	Congregation Tkvah Jacob Beth Torah	Safety and Security
Ryan Glennan	Emergency Services Manager	Chevron El Segundo Refinery	Energy
Ryan Heise	Building Official	MB Community Development Dept.	Food, Water, Shelter

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

Name	Job Title	Agency/Company Name	Community Lifeline
Samuel English	Legal Risk Specialist	City of Hawthorne	Safety and Security
Scott Combs	Traffic Sergeant	MB Police Department	Safety and Security
Soraya Sutherlin	Regional Emergency Communications Manager	Alert SouthBay	Communications
Steve Faichney	Executive Director	Beach Cities Community Awareness and Emergency Response (CAER)	Communications
Steve Napolitano	Councilmember	MB City Councilmember	Safety and Security
Suzy Contreras	Fire Inspector	MB Fire Department	Safety and Security
Talyn Mirzakhanian	Director	MB Community Development	Food, Water, Shelter
Tammy Hierlihy	Water Policy & Resources Analyst II	West Basin Municipal Water District	Food, Water, Shelter
Tatyana Roujenova-Peltekova	Senior Management Analyst	MB Information Technology	Communications
Todd DeVoe	Emergency Services Coordinator	El Segundo Fire Department	Safety and Security
Tyler Wade	Division Chief "C"	MB Fire Department	Safety and Security
Valerie Lee	Administrative Services Manager	Beach Cities Health District	Health and Medical
Valerie Wagner	Office of Workplace Safety & Risk Management	El Camino College	Safety and Security
Vincente Miles	Emergency Services Manager	Harbor Regional Center	Health and Medical
Wayne Powell	Member at large	Los Angeles County West Vector Control Board Trustee	Safety and Security

A.2 Hazard Mitigation Planning Committee Meeting #1 Materials

A.2.1 Meeting #1 Announcement (English)

3/21/24, 8:48 AM

Committee Meeting 1: Local Hazard Mitigation Plan (LHMP) Update | Fire Calendar | City of Manhattan Beach

Fire Calendar

Committee Meeting 1: Local Hazard Mitigation Plan (LHMP) Update

Date: 11/28/2023 9:30 AM - 11:30 AM
Location: City Council Chambers and Zoom Meeting ID: 933 7620 0363
[1400 Highland Avenue](#)
[Manhattan Beach, California 90266](#)

Local Hazard Mitigation Plan (LHMP) Update

The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach. Please note that The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. The City of Manhattan Beach adopted the current LHMP in May of 2019; therefore, the LHMP Update is due to FEMA by May 13, 2024.

A LHMP committee is currently being formed which will include: Emergency Management, City Departments, Elected Officials, MBUSD, Business community, nonprofit and faith-based organizations, MBCERTA, neighboring cities, representatives of vulnerable communities, and many more internal and external stakeholders. The schedule for the planning committee meetings is below, and will include all committee members, as well as any interested community members and stakeholders (locations and video links TBD).

UPCOMING MEETINGS

- **Meeting # 1: Tuesday, November 28, from 9:30 AM to 11:30 AM (AGENDA) (LIVESTREAM)**
- Meeting # 2: Tuesday, December 12, from 9:30 AM to 11:30 AM
- Meeting # 3: Tuesday, January 9, from 9:30 AM to 11:30 AM
- Meeting # 4: Tuesday, January 30, from 9:30 AM to 11:30 AM

RSVP TODAY

CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

ABOUT THE PLAN
WHAT IS IT?
The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's Hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach.

WHY NOW?
The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. This is an update to the previous 2017 Hazard Mitigation Plan. The City of Manhattan Beach Fire Department is the lead agency for this plan effort.

OUR MISSION
Our mission is to ensure that the most vulnerable among us are at the forefront of our hazard mitigation efforts. We are committed to protecting lives, promoting equity, and building resilience by tailoring our strategies to address the unique needs and challenges faced by our vulnerable community members. Together, we are creating a stronger, more inclusive, and safer future for all.

PLANNING COMMITTEE MEETINGS
Committee Meeting #1: Tuesday, November 28th
9:30 AM - 11:30 AM
Committee Meeting #2: Tuesday, December 12th
9:30 AM - 11:30 AM
Committee Meeting #3: Tuesday, January 9th
9:30 AM - 11:30 AM
Committee Meeting #4: Tuesday, January 30th
9:30 AM - 11:30 AM

HOW YOU CAN HELP
ATTEND COMMITTEE MEETINGS
Join us virtually at the four committee meetings to share your experiences, concerns, and ideas about hazard mitigation in our community. Your input will shape the strategies we develop.

COMPLETE SURVEYS
Look out for surveys and questionnaires related to hazard mitigation. Your responses will help us understand community needs and preferences.

STAY INFORMED AND SPREAD THE WORD
Keep yourself informed about the progress of the project by visiting our website and following our social media accounts. Share information about the project with your neighbors, friends, and family. The more people involved, the stronger our community's resilience.

(310) 802-5000
@c2mb
www.manhattanbeach.gov

A.2.2 Meeting #1 Announcement (Spanish)

[Departamentos](#) » [Departamento de Bomberos](#) »

Calendario de incendios

Tamaño de fuente: [+](#) [-](#) [Comentario](#) [Imprimir](#)

Reunión del Comité 1: Actualización del Plan Local de Mitigación de Riesgos (LHMP)

Fecha: 28/11/2023 9:30 a. m. - 11:30 a. m.
Ubicación: Cámaras del Concejo Municipal y reunión Zoom ID: 933 7620 0363
[1400 Highland Avenue](#)
[Manhattan Beach ,California 90266](#)

 [Agregar a mi calendario](#)

Actualización del Plan Local de Mitigación de Peligros (LHMP)

El proceso de Mitigación de Peligros tiene como objetivo hacer que las comunidades y la infraestructura sean más resilientes y menos susceptibles a daños, pérdidas o interrupciones cuando se enfrentan a peligros naturales o provocados por el hombre. Esto se logra evaluando y actualizando el Plan de mitigación de peligros de la ciudad para abordar las vulnerabilidades y desarrollar estrategias de mitigación a corto y largo plazo para proteger la comunidad de Manhattan Beach. Tenga en cuenta que la Agencia Federal para el Manejo de Emergencias (FEMA) exige que los planes de mitigación de riesgos se actualicen cada cinco años. La ciudad de Manhattan Beach adoptó el LHMP actual en mayo de 2019; por lo tanto, la actualización del LHMP debe presentarse a FEMA antes del 13 de mayo de 2024.

Actualmente se está formando un comité LHMP que incluirá: Manejo de Emergencias, Departamentos de la Ciudad, Funcionarios Electos, MBUSD, comunidad empresarial, organizaciones religiosas y sin fines de lucro, MBCERTA, ciudades vecinas, representantes de comunidades vulnerables y muchas más partes interesadas internas y externas. El cronograma de las reuniones del comité de planificación se encuentra a continuación e incluirá a todos los miembros del comité, así como a cualquier miembro de la comunidad y partes interesadas interesadas (ubicaciones y enlaces de video por determinar).

PRÓXIMAS REUNIONES

- Reunión #1: **Martes 28 de noviembre de 9:30 a 11:30** ([AGENDA](#)). ([LIVESTREAM](#))
- Reunión #2: martes 12 de diciembre de 9:30 a 11:30
- Reunión #3: martes 9 de enero de 9:30 a 11:30
- Reunión #4: martes 30 de enero de 9:30 a 11:30

[Confirme su asistencia hoy](#)



CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

ABOUT THE PLAN
WHAT IS IT?
The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's Hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach.

WHY NOW?
The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. This is an update to the previous 2017 Hazard Mitigation Plan. The City of Manhattan Beach Fire Department is the lead agency for this plan effort.

OUR MISSION
Our mission is to ensure that the most vulnerable among us are at the forefront of our hazard mitigation efforts. We are committed to protecting lives, promoting equity, and building resilience by tailoring our strategies to address the unique needs and challenges faced by our vulnerable community members. Together, we are creating a stronger, more inclusive, and safer future for all.

PLANNING COMMITTEE MEETINGS
Committee Meeting #1: Tuesday, November 28th
9:30 AM - 11:30 AM
Committee Meeting #2: Tuesday, December 12th
9:30 AM - 11:30 AM
Committee Meeting #3: Tuesday, January 9th
9:30 AM - 11:30 AM
Committee Meeting #4: Tuesday, January 30th
9:30 AM - 11:30 AM

HOW YOU CAN HELP
ATTEND COMMITTEE MEETINGS
Join us virtually at the four committee meetings to share your experiences, concerns, and ideas about hazard mitigation in your community. Your input will shape the strategies we develop.

COMPLETE SURVEYS
Look out for surveys and questionnaires related to hazard mitigation. Your responses will help us understand community needs and preferences.

STAY INFORMED AND SPREAD THE WORD
Keep yourself informed about the progress of the project by visiting our website and following our social media accounts. Share information about the project with your neighbors, friends, and family. The more people involved, the stronger our community's resilience.

CONTACT
310.862.3000
@mbfire
[www.manhattanbeach.ca.gov](#)

A.2.3 Meeting #1 Agenda

LOCAL HAZARD MITIGATION PLAN COMMITTEE



Agenda

November 28, 9:30 AM – 11:30 AM
Location: Virtual – Instructions within Agenda

OR

City Council Chambers

CITY OF
MANHATTAN BEACH

1400 Highland Avenue
Manhattan Beach, CA
90266

www.manhattanbeach.gov

(310) 802-5000

MEMBERS

City Council

Mayor Richard Montgomery
Mayor Pro Tem Joe Franklin
Councilmember Amy Howorth
Councilmember David Lesser
Councilmember Steve Napolitano

City Treasurer Tim Lillgren

Planning Commission

Chair Robert Tokashiki
Vice Chair Kristin Sistos
Commissioner Joseph Unogoco
Commissioner Rachel Hackett
Commissioner Jim Dillavou

Parking and Public Improvements Commission

Chair Allen Kirshenbaum
Vice Chair Bob DaGiau
Commissioner Kit Becker
Commissioner Joe Marcy

Board of Building Appeals

Boardmember Mike Kling
Boardmember Curpis Adami
Boardmember Robert Tokashiki
Boardmember Thomas Freitag
Boardmember Jim Yang

Parks and Recreation Commission

Chair Stephen Doran
Vice Chair Russ Allen
Commissioner Karen Komantisky
Commissioner Tracey Windes
Commissioner Karen Zimbalist
Commissioner Laurie McCarthy
Commissioner Daniel Greenberg

Cultural Arts Commission

Chair Rod Spackman
Vice Chair Karen Tokashiki
Commissioner Suzanne Karger
Commissioner Carol Patterson
Commissioner Jen Dohner
Commissioner Samantha Ehrlich-Fein

Library Commission

Chair Diane Levitt
Vice Chair Dina Doll
Commissioner Janet Jones
Commissioner Mike Millea
Commissioner Stefanie Bond
Commissioner Katherine Jester

Meeting Agenda:

- I. Welcome and Administration
- II. Public Comment
- III. Education
 - a. What is Hazard Mitigation?
 - b. Regulatory Requirements
 - c. Mitigation Projects and Actions
 - d. Hazard Mitigation Assistance Grants
 - e. Vulnerability and Impacts
 - f. Review of 2019 Plan Goals
- IV. Hazards of Prime Concern
 - a. Climate Change Impacts
 - b. Previous Occurrences
 - c. Hazards of Prime Concern Discussion
- V. Next Steps and Action Items
 - a. City of Manhattan Beach:
 - i. Provide meeting minutes and materials.
 - ii. Prepare for Committee Meeting # 2 on December 12, 2023.
 - b. Committee Members:
 - i. Complete Personal and Professional Experiences Survey. Due December 10, 2023.
 - ii. Attend Committee Meeting # 2 on December 12, 2023.
 - c. Members of the Public:
 - i. Complete Public Survey. Due January 30, 2024.
 - ii. Attend Committee Meeting # 2 on December 12, 2023.

The Local Hazard Mitigation Plan Committee encourages the public to participate by submitting comments on agenda items or other subject matter within the jurisdiction of the Local Hazard Mitigation Plan Committee via email to cityclerk@manhattanbeach.gov, no later than 8:00 AM, the day of the meeting, if you are unable to attend the meeting in person at City Council Chambers or join the meeting via Zoom.

Participants have the option of attending the meeting in person in City Council Chambers or via Zoom.

Zoom Meeting Instructions: There are multiple ways to join the meeting.

1. Join Zoom Meeting via the internet (download app if needed): Direct URL:

<https://citymb-info.zoom.us/j/93376200363>

Meeting ID: 933 7620 0363

During the meeting you will need to use the "raise hand" button through Zoom at the time the host invites the public to provide comments.

2. *Join Zoom Meeting via Phone Application (download app if needed): Download Mobile Apps:*

<https://zoom.us/download>, Enter Meeting ID: 933 7620 0363

3. *Join Zoom Meeting via Phone Conference (Voice Only):*

Phone Numbers: +1 669-900-6833 or +1 346-248-7799. Meeting ID: 933 7620 0363.

*During the meeting you will need to enter *9 on the phone's dial pad at the time the host invites the public to provide comments.*

Please Note – All microphones for non-Committee Members or Staff will be muted during the meeting, except during Public Comment periods for which you have requested to speak.

In compliance with the Americans With Disabilities Act, if you need special assistance to participate in this meeting, you should contact the City Clerk's Office at (310) 802-5056 (voice) or (310) 546-3501 (TDD). In addition, if translation services are needed please contact the City Clerk's Office. Notification 36 hours prior to the meeting will enable the City to make reasonable arrangements to assure accessibility to this meeting. The City will also be providing closed captioning for this meeting for the hearing impaired.

A.2.4 Meeting #1 Cover Slide



Committee Meeting #1

CITY OF MANHATTAN BEACH

LOCAL HAZARD MITIGATION PLAN (LHMP)

Tuesday, November 28, 2023

9:30 AM – 11:30 AM

City of Manhattan Beach City Council Chambers &
Virtual (Zoom)

A.2.5 Meeting #1 Minutes with Attendance



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
 Committee Meeting #1 Meeting Minutes

Committee Meeting #1 - Meeting Minutes

Date: Tuesday, November 28, 2023
 Time PST: 9:30 AM – 11:13 AM
 Location: Zoom, City Hall Council Chambers

Table 1: Action Items

#	Action Item	Responsible	Due Date
City of Manhattan Beach			
1	Provide meeting minutes and materials.	MB	12/11/23
2	Provide agenda for Meeting # 2 on December 12, 2023.	MB	12/5/23
Committee Members			
3	Complete Personal and Professional Experiences Survey.	Committee Members	12/10/23
4	Attend Committee Meeting # 2.	Committee Members	12/12/23
Members of the Public			
5	Complete Public Survey.	Members of the public	1/30/24
6	Attend Committee Meeting # 2.	Members of the Public	12/12/23

I. Welcome & Administration

- a. Amanda MacLennan introduced the group and welcomed everyone to the first hazard mitigation planning committee meeting.
- b. Amanda stated that the plan is being developed under Chief Lang-Fire department.
- c. She then passed the control to Constant Associates and Dylan Yates started the introduction.

II. Public Comment

- a. Frank Chiella a retired Battalion Chief for Manhattan Fire, stated they are looking forward to working with this and looking forward to more residents joining.
- b. Krista Skinner stated they are interested in youth sports locations and how best to protect youth and sports/activities.

III. Education

- a. What is Hazard Mitigation?
 - i. Discussion focused on definitions.



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
Committee Meeting #1 Meeting Minutes

- b. Regulatory Requirements
 - i. Discussion focused on requirements established by FEMA.
 - c. Mitigation Projects and Actions
 - i. Discussion focused on what projects have been completed in the past and the need to develop new mitigation strategies through this planning process.
 - d. Hazard Mitigation Assistance Grants
 - i. Cal OES Grant application can be found at:
<https://www.caloes.ca.gov/office-of-the-director/operations/recovery-directorate/hazard-mitigation/>
 - e. Vulnerability and Impacts
 - i. Provided a description of assets and discussed the impacts of natural hazards on a large scale.
 - f. Review of 2019 Plan Goals
 - i. Reviewed the four 2019 Plan Goals to establish a baseline and a path forward for the 2024 LHMP.
- IV. Hazards of Prime Concern**
- a. Climate Change Impacts
 - i. Discussed the impacts of climate change and how it is important to keep in mind that it is integrated into several hazards of prime concern.
 - b. Previous Occurrences
 - i. CONSTANT team reviewed previous occurrences and discussed sources of historical information.
 - c. Hazards of Prime Concern Discussion
 - i. Wayne Powell stated he noticed one concern not addressed: mosquitoes that carry diseases such as the West Nile virus and Zika virus. Los Angeles County experienced mosquitoes with heavy rain and standing water. A second concern in the same vein is ticks, Lyme disease and bees.
 - a. Dylan mentioned that this may be a realm of mitigation or public health awareness. He made the determination that infections disease/tick/mosquito illness might not fit within scope of hazard mitigation. It aligns more with disease management and/or preparedness. Wayne asked if can be mentioned in flooding. Dylan agreed that standing water as a result of flooding could increase the impacts of mosquito borne illnesses and will be described in the plan under the inland flooding hazard profile.
 - ii. Vincente Miles informed the committee that he did not see toxins from refineries identified as a hazard.
 - a. Dylan responded that critical infrastructure and the local refineries (regionally and surrounding city) are being looked at as



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
Committee Meeting #1 Meeting Minutes

vulnerabilities to natural hazards and will be mentioned in the plan.

- iii. Councilmember Lesser asked what extent does the CONSTANT template provide for after a hazard? Does the CONSTANT template cover preparedness/response?
 - a. Michelle spoke to the different phases of Emergency Management. Actions after a hazard would align under a recovery or response plan within the community. Mona Bontty mentioned CONSTANT can look at more mitigation methods to prevent such a need for recovery and to try to limit the damage associated with natural hazards.
- iv. Carol Patterson stated that she would like if the Hazard plan would address concerns with protecting cultural treasures. To ensure all the collections, art center, archives, art buildings, and outdoor art need to be protected.
 - a. Dylan mentions FEMA's role in identifying vulnerable assets. Mitigation projects should address protecting these as well. Dylan asked Carol and the community to bring ideas to protect those and mitigate impact on these critical assets within the community.
- v. Todd Devoe shared that he didn't believe wildfire to be a major concern, but that air quality could be, however it would be difficult to mitigate. He continued to state, "The real threats seem to be flooding and tsunami in low-lying areas and should be a priority."
- vi. Kevin Bass informed the committee that the Beach community does have a fire problem due to high winds. Wildfire should be expanded in its definition. Dylan mentioned he wants to focus on natural hazards vs manmade.
- vii. Eunike Day expressed to the committee that she has concerns for severe weather such as wind and rain, but not necessarily for flooding. She also brought up concerns with extreme heat and for some of those communities that may need cooling centers. Additionally, she brought up a concern with individuals with access and functional needs (AFN) having the ability to find shelter during the day due to extreme heat.
- viii. Todd Devoe reminded the Committee members to focus on natural disasters and reminded everyone that this is not an all-hazards situation. Eunike responded with a focus on natural disasters such as earthquakes making a facility insecure, and provided an example such as refinery damage.
- ix. Wayne Powell mentioned that Manhattan Beach is in proximity to a refinery. Shall there be more focus on foreign domestic terrorism?
- x. Dylan mentioned climate change could result in more severe tropical storms-more high winds, which could potentially result in more substantial flooding.



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
Committee Meeting #1 Meeting Minutes

- d. Dylan asked the Committee Members if they have additional information and/or background on vulnerable communities and mitigation measures to protect them.
 - i. Commissioner Carol Patterson stated she has a strong connection with the elderly population. She informed the committee of her concern for those individuals that live alone. She asked "Is there support for them or a plan to help direct what they should do? Older people need more specifics about what they do to plan to prepare."
 - a. Dylan said they will investigate to see if there is anything that can be added in the mitigation plan, but focused also on the other plans that may cover it more thoroughly, such as the evacuation plan. CONSTANT will be describing/outlining these vulnerable populations and asked for more specific information about vulnerable communities, if available. Mona highlighted the importance of a community information campaign as well as notification systems. CONSTANT is looking at projects that align with community preparedness to help mitigate disasters in the future.
 - ii. Todd Devoe re-focused back to what Eunique said and asked, "Will the plan be focusing on severe weather or is wind separate?"
 - a. Dylan responded that we could combine wind with other hazards associated with severe weather for the plan.
 - iii. Mirna Puma asked if there are mitigation efforts that include safety once a hazard event happened? For example, if residents had to evacuate, what would happen to the properties? Are there mitigation efforts to address those safety issues?
 - a. Michelle Klein highlighted the federal government provides other grants to assist with security. Further, Michelle elaborated that CONSTANT is focused with the mitigation plan, on improving resiliency vs law enforcement protection measures.
 - iv. Pastor Douglas Barclay commented on keeping an eye on the surrounding populations with schools, daycares, etc.
 - a. Dylan mentioned the mitigation plan is focusing on the critical infrastructure and their vulnerabilities, perhaps the populations of concern can be identified along with the critical infrastructures.
 - v. Talyn Mirzakhanian mentioned her organization has research available on vulnerable communities and demographics and would like to provide it to eliminate the recreation of work.
 - a. Amanda MacLennan has access to the available information via weblink. Dylan mentioned the Hazard Mitigation Plan must align the mitigation plan with other plans and will ensure her data is reviewed and incorporated.
 - vi. Daniel Pankau inquired if the coastal hazards plan is being evaluated?



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
Committee Meeting #1 Meeting Minutes

- a. Dylan mentioned that per FEMA's regulations, the plan will be in alignment with other City plans.

V. Next Steps and Action Items

- a. City of Manhattan Beach:
 - i. Provide meeting minutes and materials.
 - ii. Next Meeting: Meeting # 2 on December 12, 2023 from 9:30 AM – 11:30 AM. Topic: Risk Analysis and Assessment Discussion
 - a. Agenda will be available next week.
- b. Committee Members:
 - i. Complete Personal and Professional Experiences Survey. Due December 10, 2023.
 - a. Survey available from November 29 – December 10, 2023.
 - ii. Attend Committee Meeting # 2 on December 12, 2023.
- c. Members of the Public:
 - i. Complete Public Survey. Due January 30, 2024.
 - a. Survey is available from November 30, 2023 – January 30, 2024.
 - ii. Attend Committee Meeting # 2 on December 12, 2023.

VI. Questions

- a. Councilmember Lesser inquired about what expertise is being looked for in the future. As a policy maker, he doesn't know if he will be available for future meetings.
 - i. Dylan responded that we are eager to hear about the needs of elected officials and the constituents they represent.
 - ii. Councilmember Lesser asked for some examples of Hazard Mitigation plans. Dylan and Mona mentioned they can provide examples, but the new FEMA guidelines changed how they are conducted. Mona mentioned CalOES is still trying to meet the new guidelines. Amanda mentioned it is important to hear all the community lifelines and that they are present to ensure that plan is encompassing and has positive impact.
- b. Mirna Puma asked for copies of the presentation slides.
 - i. Dylan stated before the end of the following week slides will go out with meeting minutes and links for the surveys. Amanda followed-up with information that the video from the meeting will be available on website as well.
- c. Amanda MacLennan provided a final thank you to participants and reminded members they can contact her with additional questions/concerns.

VII. Adjourn

- a. Meeting ended at 11:13 AM PST.



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
 Committee Meeting #1 Meeting Minutes
 Table 2: Participants

Name	Role	Organization
Alexandria Latragna	Committee Member	City of Manhattan Beach
Allison Hales	Committee Member	Culture Club South Bay
Amanda MacLennan	Committee Member	City of Manhattan Beach
Bonnie Shrewsbury	Committee Member	City of Manhattan Beach
Bruce Moe	Committee Member	City of Manhattan Beach
Carol Patterson	Committee Member	City of Manhattan Beach
Chief Oli O'Connell	Committee Member	LA County Beaches and Harbors
City Clerk's Office	Committee Member	
Community Development	Committee Member	
David Lesser	Committee Member	Manhattan Beach Councilmember
Daniel Pankau	Committee Member	Manhattan Beach Environmental Programs Administrator
David Archer	Committee Member	Chamber of Commerce
Dylan Yates	Consultant	CONSTANT
Ed Knizewski	General Public	
Erik Zandvliet	Committee Member	Manhattan Beach City Liaison
Eunique Day	Committee Member	Torrance OES
Frank Chiella	Committee Member	MBCERT
Gilbert Gamboa	Committee Member	Manhattan Beach Principal Civil Engineer
Director Guardado	Committee Member	Manhattan Beach Information Technology Director



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
 Committee Meeting #1 Meeting Minutes

Name	Role	Organization
Jason Sandoval	Committee Member	Manhattan Beach Code Enforcement Officer
Jennifer Love	Consultant	CONSTANT
Jill Lamkin	Committee Member	Local Organization/Farmers Market
Kevin Bass	Committee Member	Manhattan Beach Fire Marshal
Kevin Tiscareno	Committee Member	Manhattan Beach Fire Division Chief
Kirsta Skinner	Committee Member	Manhattan Hermosa AYSO18
Lectern	Committee Member	
Liza Tamura	Committee Member	Manhattan Beach City Clerk
Marcelo Serrano	Committee Member	MB Budget & Financial Analyst
Mario Hernandez	Committee Member	MB Purchasing Supervisor
Mayor Pro Tem Franklin	Committee Member	City of Manhattan Beach
MBTV	Committee Member	City of Manhattan Beach
Michelle Klein	Consultant	CONSTANT
Miguel G	General Public	
Mirna Puma	Committee Member	, MB Police Office Assistant
Mona Bontty	Consultant	CONSTANT
Monica Machacek-Chiapello	Consultant	CONSTANT
Pastor Douglas Barclay	Committee Member	Trinity Lutheran
Paul Curry	General Public	
Samuel English	Committee Member	Legal Risk Specialist, Hawthorne
Steve	General Public	
Suzy Contreras	Committee Member	MB Fire Inspector



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
 Committee Meeting #1 Meeting Minutes

Name	Role	Organization
Talyn Mirzakhanian,	Committee Member	MB Community Development Director
Tammy Hierlihy	Committee Member	West Basin MWD
Tatyana R-Peltekova	Committee Member	City of Manhattan Beach
Tony Gomes	Committee Member	MB Fire Division Chief
Valerie Lee	General Public	
VCD	Committee Support	City of Manhattan Beach
Vincente Miles	Committee Member	Harbor Regional Center
Wayne Powell	Committee Member	LA County West Vector Control Trustee

A.3 Hazard Mitigation Planning Committee Meeting #2 Materials

A.3.1 Meeting #2 Announcement (English)

Fire Calendar

Committee Meeting 2: Local Hazard Mitigation Plan (LHMP) Update

Date: 12/12/2023 9:30 AM - 11:30 AM
Location: Zoom and In-Person in City Council Chambers
1400 Highland Avenue
Manhattan Beach, California 90266

Local Hazard Mitigation Plan (LHMP) Update

The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach. Please note that The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. The City of Manhattan Beach adopted the current LHMP in May of 2019; therefore, the LHMP Update is due to FEMA by May 13, 2024.

A LHMP committee is currently being formed which will include: Emergency Management, City Departments, Elected Officials, MBUSD, Business community, nonprofit and faith-based organizations, MBCERTA, neighboring cities, representatives of vulnerable communities, and many more internal and external stakeholders. The schedule for the planning committee meetings is below, and will include all committee members, as well as any interested community members and stakeholders (locations and video links TBD).

UPCOMING MEETINGS

- Meeting # 2: Tuesday, December 12, from 9:30 AM to 11:30 AM ([AGENDA](#)) ([LIVESTREAM](#))
- Meeting # 3: Tuesday, January 9, from 9:30 AM to 11:30 AM
- Meeting # 4: Tuesday, January 30, from 9:30 AM to 11:30 AM

RSVP TODAY



CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

ABOUT THE PLAN
WHAT IS IT?
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WHY NOW?
The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. This is an update to the previous 2017 Hazard Mitigation Plan. The City of Manhattan Beach Fire Department is the lead agency for this plan effort.

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Our mission is to ensure that the most vulnerable among us are at the forefront of our hazard mitigation efforts. We are committed to protecting lives, promoting equity, and building resilience by tailoring our strategies to address the unique needs and challenges faced by our vulnerable community members. Together, we are creating a stronger, more inclusive, and safer future for all.

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Join us virtually at the four committee meetings to share your experiences, concerns, and ideas about hazard mitigation in our community. Your input will shape the strategies we develop.

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Link out for surveys and questionnaires related to hazard mitigation. Your responses will help us understand community needs and preferences.

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310.852.3000
@cityofmb
www.manhattanbeach.gov

A.3.2 Meeting #2 Announcement (Spanish)

[Departamentos](#) » [Departamento de Bomberos](#) »

Calendario de incendios

Tamaño de fuente: [+](#) [-](#) [Comentario](#) [Imprimir](#)

Reunión del Comité 2: Actualización del Plan Local de Mitigación de Riesgos (LHMP)

Fecha: 12/12/2023 9:30 - 11:30
Ubicación: Zoom y en persona en las Cámaras del Concejo Municipal
[1400 Highland Avenue](#)
[Manhattan Beach, California 90266](#)

 [Agregar a mi calendario](#)

Actualización del Plan Local de Mitigación de Peligros (LHMP)

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Actualmente se está formando un comité LHMP que incluirá: Manejo de Emergencias, Departamentos de la Ciudad, Funcionarios Electos, MBUSD, comunidad empresarial, organizaciones religiosas y sin fines de lucro, MBCERTA, ciudades vecinas, representantes de comunidades vulnerables y muchas más partes interesadas internas y externas. El cronograma de las reuniones del comité de planificación se encuentra a continuación e incluirá a todos los miembros del comité, así como a cualquier miembro de la comunidad y partes interesadas interesadas (ubicaciones y enlaces de video por determinar).

PRÓXIMAS REUNIONES

- Reunión #2: Martes 12 de diciembre de 9:30 a 11:30 ([AGENDA](#)) (LIVESTREAM)
- Reunión #3: martes 9 de enero de 9:30 a 11:30
- Reunión #4: martes 30 de enero de 9:30 a 11:30

[Confirme su asistencia hoy](#)



CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

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 9:30 AM - 11:30 AM

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 Join us virtually at the four committee meetings to share your experiences, concerns, and ideas about hazard mitigation in our community. Your input will shape the strategies in the plan.

COMPLETE SURVEYS
 Take our four surveys and questionnaires related to hazard mitigation. Your responses will help us understand community needs and preferences.

STAY INFORMED AND SPREAD THE WORD
 Stay posted! Stay informed about the progress of the project by visiting our website and following our social media accounts. Share information about the project with your neighbors, friends, and family. The more people involved, the stronger our community's resilience.

Contact: (310) 862-3000
 @mbfire
www.manhattanbeach.org

A.3.3 Meeting #2 Agenda

LOCAL HAZARD MITIGATION PLAN COMMITTEE



Agenda

December 12, 9:30 AM – 11:30 AM
Location: Virtual – Instructions within Agenda

OR

City Council Chambers

CITY OF
MANHATTAN BEACH

1400 Highland Avenue
Manhattan Beach, CA
90266

www.manhattanbeach.gov

(310) 802-5000

MEMBERS

City Council

Mayor Richard Montgomery
Mayor Pro Tem Joe Franklin
Councilmember Amy Howorth
Councilmember David Lesser
Councilmember Steve Napolitano

City Treasurer Tim Lillgren

Planning Commission

Chair Robert Tokashiki
Vice Chair Kristin Sistos
Commissioner Joseph Unogoco
Commissioner Rachel Hackett
Commissioner Jim Dillavou

Parking and Public Improvements Commission

Chair Allen Kirshenbaum
Vice Chair Bob DaGiau
Commissioner Kit Becker
Commissioner Joe Marcy

Board of Building Appeals

Boardmember Mike Kling
Boardmember Curpis Adami
Boardmember Robert Tokashiki
Boardmember Thomas Freitag
Boardmember Jim Yang

Parks and Recreation Commission

Chair Stephen Doran
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Commissioner Karen Komantisky
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Commissioner Karen Zimbalist
Commissioner Laurie McCarthy
Commissioner Daniel Greenberg

Cultural Arts Commission

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Vice Chair Karen Tokashiki
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Commissioner Carol Patterson
Commissioner Jen Dohner
Commissioner Samantha Ehrlich-Fein

Library Commission

Chair Diane Levitt
Vice Chair Dina Doll
Commissioner Janet Jones
Commissioner Mike Millea
Commissioner Stefanie Bond
Commissioner Katherine Jester

Meeting Agenda:

- I. Welcome and Administration
- II. Public Comment
- III. Risk Assessment Process
 - a. Purpose and Objectives
 - b. Hazards of Prime Concern for the 2024 Plan
 - c. Understanding Vulnerability and Impacts
 - d. Community Lifelines
 - e. Data Sources and Collection Methods
- IV. Understanding Manhattan Beach Hazards
 - a. Review Previous Occurrences, Climate Change Data, and Social Vulnerability
- V. Identifying Community Assets
 - a. Committee Discussion: Who/What are the most vulnerable assets of Manhattan Beach? What hazards pose a risk to these assets?
 - b. Vulnerability and Impacts Survey
- VI. Review Mitigation Projects from 2019 plan
 - a. Education on Eligible Projects
 - b. Review 2019 Mitigation Projects
 - c. Committee Discussion: Which projects should be rolled into the 2024 plan?
 - d. Committee Discussion: Future Projects
- VII. Next Steps and Action Items
 - a. City of Manhattan Beach:
 - i. Post meeting minutes and materials.
 - ii. Prepare for Committee Meeting # 3 on January 9, 2024.
 - b. Committee Members:
 - i. Complete Vulnerability and Impacts Survey. Due January 5, 2024.
 - ii. Attend Committee Meeting # 3 on January 9, 2024.
 - c. Members of the Public:
 - i. Complete Public Survey. Due January 30, 2024.
 - ii. Attend Committee Meeting # 3 on January 9, 2024.

The Local Hazard Mitigation Plan Committee encourages the public to participate by submitting comments on agenda items or other subject matter within the jurisdiction of the Local Hazard Mitigation Plan Committee via email to cityclerk@manhattanbeach.gov, no later than 8:00 AM, the day of the meeting, if you are unable to attend the meeting in person at City Council Chambers or join the meeting via Zoom.

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Please Note – All microphones for non-Committee Members or Staff will be muted during the meeting, except during Public Comment periods for which you have requested to speak.

In compliance with the Americans With Disabilities Act, if you need special assistance to participate in this meeting, you should contact the City Clerk's Office at (310) 802-5056 (voice) or (310) 546-3501 (TDD). In addition, if translation services are needed please contact the City Clerk's Office. Notification 36 hours prior to the meeting will enable the City to make reasonable arrangements to assure accessibility to this meeting. The City will also be providing closed captioning for this meeting for the hearing impaired.

A.3.4 Meeting #2 Cover Slide



Committee Meeting #2

CITY OF MANHATTAN BEACH

LOCAL HAZARD MITIGATION PLAN (LHMP)

Tuesday, December 12, 2023
9:30 AM – 11:30 AM
City of Manhattan Beach City Council Chambers &
Virtual (Zoom)

A.3.5 Meeting #2 Minutes with Attendance



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
 Committee Meeting #2 Meeting Minutes

Committee Meeting #2- Meeting Minutes

Date: Tuesday, December 12, 2023
 Time PST: 9:30 AM – 11:25 AM
 Location: Zoom and City Hall Council Chambers

Table 1: Action Items

#	Action Item	Responsible	Due Date
City of Manhattan Beach			
1	Post meeting minutes and materials.	MB	12/22/23
2	Post agenda for Meeting # 3, January 9, 2024.	MB	1/2/24
Committee Members			
3	Review Vulnerability and Impact Assessment and Previous Occurrences Document to prepare for Meeting #3 on January 9, 2024.	Committee Members	1/9/24
4	Attend Committee Meeting # 3.	Committee Members	1/9/24
Members of the Public			
5	Complete Public Survey.	Members of the public	1/30/24
6	Attend Committee Meeting # 3.	Committee Members	1/9/24

I. Welcome and Administration

- a. Manhattan Beach opened the LHMP committee meeting #2 and thanked participants for joining.
- b. Dylan Yates, Constant Associates, presented the meeting slide deck and introduced CONSTANT and their role in the Manhattan Beach LHMP.
 - i. Dylan discussed the timeline for meeting minutes, stating that they would be available one week after the meeting.

II. Introductions

- a. Attendance: Dylan asked participants to input names, organization, into the chat for attendance.

III. Ground rules

- a. Dylan asked participants to raise their hands if they would like to speak- comment will be captured, and meeting is being recorded and broadcasted live on MBtv.

IV. Agenda

- a. Dylan reviewed the agenda with the committee.
 - i. Hazard Mitigation Planning committee: Dylan reviewed the importance and relevancy of the committee members.
 - ii. The purpose of the committee was stated as providing broad representation of the community and industry to ensure all needs are adequately addressed.

V. Public Comment

- a. Dylan opened the floor for public comments in the chambers, with no comments requested.
- b. Dylan opened Zoom for comment-
 - i. On Zoom, Jessalyn from the Office of Supervisor Holly Mitchell mentioned her concurrent handling of an emergency but her willingness to participate. Margret Vinci, the Shake Alert Early Warning System Technical Engagement Coordinator from CalTech, suggested including earthquake early warning in the mitigation strategy.

VI. Risk Assessment Process

- a. Dylan acknowledged the receipt of survey responses and highlighted the objectives of the meeting: understanding hazards, identifying community assets, and reviewing and discussing new and previous projects.
- b. Survey data revealed key events within each hazard, noting FEMA's focus on natural rather than man-made hazards and the consideration of secondary and tertiary consequences.
- c. The 2024 Hazards of Prime Concern (HPC) were listed, including Coastal Hazards, Drought, Geological Hazards, Inland Flooding, Severe Weather, and Wildfire.

VII. Vulnerable Assets

- a. Dylan explained the concept of vulnerable assets as defined by FEMA (People, Systems, Structures, Natural, Cultural, Historical resources, and Activities that have value to the community)

VIII. Community Lifelines

- a. Dylan discussed their significance and representation within the community.

IX. Understanding Vulnerability and Impacts

- a. Michelle presented the Vulnerability and Impact Assessment questions, discussed the associated FEMA regulations, and outlined the goal to identify 3 mitigation projects.

X. Identifying Community Assets (Committee Discussion)

- a. Cultural Arts Commission's Commissioner, Carol Patterson, emphasized the need for an inventory of cultural and artistic assets as part of a protection plan. Dylan inquired about specific assets, and the representative highlighted valuable items at the cultural arts center, mentioning the commission's role in inventory management. The primary risks identified were major storms, flooding, and proximity to Polliwog Park.
- b. Charlotte Lessor, Neighborhood Watch, highlighted the importance of human assets and neighborhood preparedness, particularly for earthquake or flooding situations. Dylan queried about specific at-risk populations in the community.
 - i. Charlotte further pointed out the elderly population's vulnerabilities, especially those who are bedridden or unable to find shelter at home.
- c. Mirna Puma, MBPD, discussed the criticality of communication systems, emphasizing the need for backup systems safe from flooding and earthquakes. Dylan requested contact information for further coordination.
- d. Another member added young children and disabled community members to the list of vulnerable groups, particularly in earthquake and flooding scenarios, noting their additional evacuation needs.
- e. Brandy focused on critical structures like schools and police stations, suggesting partnerships with agencies for comprehensive lists and identification of systems vulnerable to earthquakes. Dylan asked for more specifics, including potential impact on the business community.
- f. Todd, El Segundo Emergency Services Coordinator, queried about including private art collections in the plan. Mirna Puma from MBPD noted the vulnerability of religious institutions.
- g. Wayne Powell, former MB Mayor, MBCERTA Board member, and LA County West Vector Control Board Trustee discussed historic resources, particularly the historic house near Polliwog Park and its vulnerability. Concerns about the water tower serving as an emergency water supply were also raised.
- h. Kerry Riccio Agüero, MBUSD Director Student Services, expressed concern for young students and preschools, mentioning the need for additional transportation and communication strategies for students with mobility or hearing impairments.

- i. Jen Donner raised concerns about the vulnerability of the pier and critical systems like grocery stores, water supply, and banking systems in extreme weather.
- j. Brandy Villanueva, LA County Area G Disaster Management Area Coordinator, discussed the vulnerability of the electrical system, particularly with the increase in electric vehicles, and emphasized the need for an educational campaign on preparedness.
- k. Soraya Sutherlin, Alert SouthBay, inquired about emergency generators, their fuel capacity, and replenishment points.
- l. Erik Zandvliet, MB City Traffic Engineer, stressed the inclusion of historic and landmark buildings in the plan.
- m. Brandy Villanueva mentioned the economic impact of events on the beach, with a focus on managing visitors during emergencies.
- n. Mirna from MBPD highlighted the vulnerabilities of tourists, particularly in situations where evacuation may be challenging.
- o. Brandy Villanueva brought up concerns about the animal community and the need for plans to address their safety.
- p. Wayne Powell discussed hazards related to the Chevron refinery, including equipment malfunctions and potential impacts on the city.
- q. Soraya Sutherlin mentioned the refinery's regulatory compliance and offered to discuss risk management strategies offline.
- r. A fire department representative noted Chevron's own power station.
- s. Brandy Villanueva raised concerns about potential oil spills from underwater machinery in the event of an earthquake or tsunami.
- t. Soraya Sutherlin from Alert South Bay emphasized the importance of partnerships with organizations like the Harbor Regional Center.
- u. Vincente Miles from Harbor Regional Center agreed with the points raised, and Dylan mentioned follow-ups for more details.
- v. Brandy Villanueva discussed the challenges faced by unhoused individuals and the role of healthcare partners.
- w. Mirna Puma noted the vulnerability of the water supply, particularly the renovated water tower.
- x. Brandy Villanueva emphasized the importance of planning for evacuation routes and supply routes, considering the city's road infrastructure.
- y. Vincente Miles pointed out the issue with hospital proximity and the challenge of providing immediate care.
- z. Mirna Puma highlighted the need to identify underground petroleum infrastructure.

- XI.** Review Mitigation Projects from 2019 Plan
 - a. Michelle Klein, Constant Associates, presented the Vulnerability and Impacts Assessment questionnaire and provided examples of mitigation strategies, such as water mitigation, seismic retrofitting, and addressing land movement. She emphasized the importance of considering secondary effects like utility loss and enhancing facility resilience, noting the critical role of water management in mitigating extreme heat and wildfires. An educational program for wildfires was also suggested, recognizing its direct and long-term implications.
 - b. Michelle Klein encouraged participants to bring in their Subject Matter Experts (SMEs) for assistance with project submissions. She delved into mitigation questions to guide and set a precedent for committee members. She stressed the importance of including information such as building replacement value in projects tied to community lifelines, acknowledging the time and effort required for such detailed evaluations.
 - c. Recognizing the complexity of these tasks, Michelle Klein encouraged committee members to think about projects that would be beneficial for their areas. She noted that this collaborative process would continue during the MB LHMP Committee meeting #3 on January, 9, 2024.
 - d. Dylan echoed Michelle's sentiments, acknowledging the extensive nature of the work but reminding everyone that it aligns with FEMA regulations and is essential for effective planning.
- XII.** Adjourn
- XIII.** Next steps and action items were reviewed with the planning team.
- XIV.** The meeting ended at 11:25 AM PST.

Table 2: MB LHMP Committee Members

Name	Organization
AJ Lester	LACoFD Marine Lifeguard Division
Al Muratsuchi	Assembly Member Al Muratsuchi
Alexandria Latragna	Management Services
Allison Hales	Culture Club South Bay - A celebration of diversity and unity in the South Bay Area Through the arts
Amanda MacLennan	Fire Department
Amy Thomas Howorth	MB City CouncilMember
Angela Crespi	Hermosa
Anthony Gomes	Fire Department
Ben Allen	Senator Ben Allen
Blair Farley	Journey of Faith Church
Bonnie Shrewsbury	Information Technology - GIS
Brandy Villanueva	Disaster Management Area G
Briza Morales	Human Resources
Bruce Moe	Management Services
Casey Snow	El Segundo
Catherine Hargrove	Torrance Memorial
Charlotte Lesser	Neighborhood Watch
Cindy Byrne	P-Flag
Daniel Pankau	Community Development
Danielle McMilon	LACoFD Marine Lifeguard Division
David Archer	Chamber of Commerce
David Archer	North Manhattan Beach Business Improvement District
David Lesser	MB City CouncilMember
Douglas Barclay	Trinity Lutheran
Dr. Shirley Feldmann-Jensen	CSULB Emergency Management
Ed Lynch	Mychal's Learning
Edwin	Little Company of Mary
EJ Caldwell	West Basin Municipal Water District
Eric Martin	Roundhouse Aquarium on the Pier
Erik Zandvliet	Community Development
Eunique Day	Torrance
Frank Chiella	Map Your Neighborhood
Frank Chiella	MBCERTA
Gilbert Gamboa	Engineering
Issac Yang	Redondo Beach
Jamie Cappetta	Manhattan Beach Little League
Jason Sandoval	Community Development
Jeffrey Jacobs	American Red Cross

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

Name	Organization
Jessalyn Waldron	County Supervisor's Office (2nd District) - Holly Mitchell
Jesus Sandoval	Parks & Recreation
Jill Lamkin	Downtown Manhattan Beach Business and Professional Association
Joseph Franklin	MB City CouncilMember
Judy Mark	Disability Voices United - MB
Kari Bell	Parks & Recreation
Kathleen Terry	Leadership Manhattan Beach
Kelly Stroman	Friendship Foundation Redondo Beach
Kerry Riccio Aguero	MBUSD
Kevin Bass	Fire Department
Kevin Tiscareno	Fire Department
Krista Skinner	Manhattan Hermosa AYSO18
Leobardo Barrera	El Camino College
Lisa Hemmat-Lubercio	Manhattan Beach Rotary + VetFest
Liza Tamura	Management Services
Logan White	Cornerstorn Christian Fellowship
Luka Lezhanskyy	American Red Cross
Marcelo Serrano	Finance Department
Margaret Vinci	US Geological Survey (USGS) - ShakeAlert
Mario Hernandez	Purchasing / Warehouse
Martha Alvarez	Management Services
Matt Sabosky	Police Department
Matthew Veeh	West Basin Municipal Water District
Megan Vixie	BCHD
Michelle Ami-Cortez	Dial-a-ride
Miguel Gutierrez	Fire Department
Mike Guerrero	Public Works
Mindy Balgrosky	MB CERT Association
Mirna Puma	Police Department
Nancy Drinker	MB Community Church
Nashana Steele & Linda Lee	Elks Lodge
Nhung Huynh	Community Development
Olivier O'Connell	LA County Beaches and Harbors
Patrick Ruppe	Harbor Regional Center
Paul Curry	MBPD Volunteer - HAM Radio for the City
Rabbi Yossi Mintz	Jewish Community Center
Ramon Rendon	Harbor Interfaith
Richard Montgomery	MB City CouncilMember
Robert (Bob) Hodges	American Martyrs
Roberto Uranga	California Coastal Commission

Name	Organization
Ruth Irving	Congregation Tkvah
Ryan Glennan	Chevron
Ryan Heise	Community Development
Samuel English	Hawthorne
Scott Combs	Police Department
Soraya Sutherlin	Alert SouthBay
Steve Faichney	Beach Cities Community Awareness and Emergency Response (CAER)
Steve Napolitano	MB City CouncilMember
Suzy Contreras	Fire Department
Talyn Mirzakhanian	Community Development
Tammy Hierlihy	West Basin Municipal Water District
Tatyana Roujenova-Peltekova	Information Technology
Todd DeVoe	El Segundo
Tyler Wade	Fire Department
Valerie Lee	Beach Cities Health District
Valerie Wagner	El Camino College
Vincente Miles	Harbor Regional Center
Wayne Powell	Los Angeles County West Vector Control Board Trustee
-	Noah's Bark - dog rescue
-	Meals on Wheels - Salvation Army
-	Neptunian Women
-	Farmer's Market
-	Beach Cities Masonic Lodge
-	Board of Building Appeals
-	Cultural Arts Commission
-	Library Commission
-	Parking and Public Improvement Commission
-	Parks and Recreation Commission
-	Planning Commission
-	El Camino College
-	City of Hermosa Beach

A.4 Hazard Mitigation Planning Committee Meeting #3 Materials

A.4.1 Meeting #3 Announcement (English)

Fire Calendar

Committee Meeting 3: Local Hazard Mitigation Plan (LHMP) Update

Date: 01/09/2024 9:30 AM - 11:30 AM
Location: Zoom and In-Person in City Council Chambers
1400 Highland Avenue
Manhattan Beach, California 90266

Local Hazard Mitigation Plan (LHMP) Update

The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach. Please note that The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. The City of Manhattan Beach adopted the current LHMP in May of 2019; therefore, the LHMP Update is due to FEMA by May 13, 2024.

A LHMP committee is currently being formed which will include: Emergency Management, City Departments, Elected Officials, MBUSD, Business community, nonprofit and faith-based organizations, MBCERTA, neighboring cities, representatives of vulnerable communities, and many more internal and external stakeholders. The schedule for the planning committee meetings is below, and will include all committee members, as well as any interested community members and stakeholders (locations and video links TBD).

UPCOMING MEETINGS

- Meeting # 3: Tuesday, January 9, from 9:30 AM to 11:30 AM ([AGENDA](#)) ([LIVESTREAM](#))
- Meeting # 4: Tuesday, January 30, from 9:30 AM to 11:30 AM

RSVP TODAY



CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

ABOUT THE PLAN
WHAT IS IT?
The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's Hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach.

WHY NOW?
The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. This is an update to the previous 2017 Hazard Mitigation Plan. The City of Manhattan Beach Fire Department is the lead agency for this plan effort.

OUR MISSION
Our mission is to ensure that the most vulnerable among us are at the forefront of our hazard mitigation efforts. We are committed to protecting lives, promoting equity, and building resilience by tailoring our strategies to address the unique needs and challenges faced by our vulnerable community members. Together, we are creating a stronger, more inclusive, and safer future for all.

PLANNING COMMITTEE MEETINGS
Committee Meeting #1: Tuesday, November 28th
9:30 AM - 11:30 AM
Committee Meeting #2: Tuesday, December 12th
9:30 AM - 11:30 AM
Committee Meeting #3: Tuesday, January 9th
9:30 AM - 11:30 AM
Committee Meeting #4: Tuesday, January 30th
9:30 AM - 11:30 AM

HOW YOU CAN HELP

- ATTEND COMMITTEE MEETINGS**
Join us virtually at the four committee meetings to share your experiences, concerns, and ideas about hazard mitigation in our community. Your input will shape the strategies we develop.
- COMPLETE SURVEYS**
Look out for surveys and questionnaires related to hazard mitigation. Your responses will help us understand community needs and preferences.
- STAY INFORMED AND SPREAD THE WORD**
Keep yourself informed about the progress of the project by visiting our website and following our social media accounts. Share information about the project with your neighbors, friends, and family. The more people involved, the stronger our community's resilience.

310.802.5000
@cityofmb
www.manhattanbeach.gov

A.4.2 Meeting #3 Announcement (Spanish)

[Departamentos](#) » [Departamento de Bomberos](#) »

Calendario de incendios

Tamaño de fuente: [+](#) [-](#) [Comentario](#) [Imprimir](#)

Reunión del Comité 3: Actualización del Plan Local de Mitigación de Riesgos (LHMP)

Fecha: 09/01/2024 9:30 - 11:30
Ubicación: Zoom y en persona en las Cámaras del Concejo Municipal
[1400 Highland Avenue](#)
[Manhattan Beach ,California 90266](#)

 [Agregar a mi calendario](#)

Actualización del Plan Local de Mitigación de Peligros (LHMP)

El proceso de Mitigación de Peligros tiene como objetivo hacer que las comunidades y la infraestructura sean más resilientes y menos susceptibles a daños, pérdidas o interrupciones cuando se enfrentan a peligros naturales o provocados por el hombre. Esto se logra evaluando y actualizando el Plan de mitigación de peligros de la ciudad para abordar las vulnerabilidades y desarrollar estrategias de mitigación a corto y largo plazo para proteger la comunidad de Manhattan Beach. Tenga en cuenta que la Agencia Federal para el Manejo de Emergencias (FEMA) exige que los planes de mitigación de riesgos se actualicen cada cinco años. La ciudad de Manhattan Beach adoptó el LHMP actual en mayo de 2019; por lo tanto, la actualización del LHMP debe presentarse a FEMA antes del 13 de mayo de 2024.

Actualmente se está formando un comité LHMP que incluirá: Manejo de Emergencias, Departamentos de la Ciudad, Funcionarios Electos, MBUSD, comunidad empresarial, organizaciones religiosas y sin fines de lucro, MBCERTA, ciudades vecinas, representantes de comunidades vulnerables y muchas más partes interesadas internas y externas. El cronograma de las reuniones del comité de planificación se encuentra a continuación e incluirá a todos los miembros del comité, así como a cualquier miembro de la comunidad y partes interesadas interesadas (ubicaciones y enlaces de video por determinar).

PRÓXIMAS REUNIONES

- Reunión #3: Martes 9 de enero de 9:30 a 11:30 ([AGENDA](#)) ([LIVESTREAM](#))
- Reunión #4: martes 30 de enero de 9:30 a 11:30

[Confirme su asistencia hoy](#)



CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

ABOUT THE PLAN
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PLANNING COMMITTEE MEETINGS
Committee Meeting #1: Tuesday, November 26th, 9:30 AM - 11:30 AM
Committee Meeting #2: Tuesday, December 12th, 9:30 AM - 11:30 AM
Committee Meeting #3: Tuesday, January 9th, 9:30 AM - 11:30 AM
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Contact: 310.852.3000
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A.4.3 Meeting #3 Agenda

LOCAL HAZARD MITIGATION PLAN COMMITTEE



Agenda

January 9, 9:30 AM – 11:30 AM

Location: Virtual – Instructions within Agenda

OR

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Commissioner Samantha Ehrlich-Fein

Library Commission

Chair Diane Levitt
Vice Chair Dina Doll
Commissioner Janet Jones
Commissioner Mike Millea
Commissioner Stefanie Bond
Commissioner Katherine Jester

Los Angeles County West Vector Control Board Trustee

Trustee Wayne Powell

Meeting Agenda:

- I. Welcome and Administration
- II. Public Comment
- III. Risk Assessment Process
 - a. Hazards of Prime Concern Previous Occurrence Data
 - b. Vulnerability and Impact Assessment Gaps
- IV. Identifying Community Assets and Mitigation Strategies
 - a. Committee Discussion on Vulnerability and Impact Assessment Gaps
 - b. Mitigation Projects Discussion
- V. Next Steps and Action Items
 - a. City of Manhattan Beach:
 - i. Post meeting minutes and materials.
 - ii. Prepare for Committee Meeting # 4 on January 30, 2024.
 - b. Committee Members:
 - i. Attend Committee Meeting # 4 on January 30, 2024.
 - c. Members of the Public:
 - i. Complete Public Survey. Due January 30, 2024.
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In compliance with the Americans With Disabilities Act, if you need special assistance to participate in this meeting, you should contact the City Clerk's Office at (310) 802-5056 (voice) or (310) 546-3501 (TDD). In addition, if translation services are needed please contact the City Clerk's Office. Notification 36 hours prior to the meeting will enable the City to make reasonable arrangements to assure accessibility to this meeting. The City will also be providing closed captioning for this meeting for the hearing impaired.

A.4.4 Meeting #3 Cover Slide



Committee Meeting #3

CITY OF MANHATTAN BEACH

LOCAL HAZARD MITIGATION PLAN (LHMP)

Tuesday, January 9, 2024
9:30 AM – 11:15 AM
City of Manhattan Beach City Council Chambers &
Virtual (Zoom)

A.4.5 Meeting #3 Minutes with Attendance



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
 Committee Meeting #3 Meeting Minutes

Committee Meeting #3- Meeting Minutes

Date: Tuesday, January 9, 2024
 Time PST: 9:30 AM – 11:15 AM
 Location: Zoom and City Hall Council Chambers

Table 1: Action Items

#	Action Item	Responsible	Due Date
City of Manhattan Beach			
1	Post meeting minutes and materials.	MB	1/19/24
2	Post agenda for Meeting # 4, January 9, 2024.	MB	1/23/24
Committee Members			
3	Attend Committee Meeting # 4.	Committee Members	1/30/24
Members of the Public			
4	Complete Public Survey.	Members of the public	1/30/24
5	Attend Committee Meeting # 3.	Committee Members	1/30/24

- i. Welcome and Administration
 - a. Amanda McLennan of Manhattan Beach Fire Department opened the session introducing herself, and informed the committee they will be receiving a WIAS alert through their phones. Because of that the meeting will be ending at 11:15 am.
 - i. You can register at alertsouthbay.com or text alert SB to 88877
 - b. Amanda passed to CONSTANT where Dylan introduced himself and reiterated the end time of the meeting.
 - c. Dylan reviewed ground rules and discussed the agenda for the meeting.
 - d. Committee Meeting #3 purpose is to complete the vulnerability assessment and identify potential Hazards Mitigation projects.
 - e. Dylan reminded the committee members of the definition of Vulnerable assets.
 - f. CONSTANT Subject matter expert Michelle discussed Mitigation Strategy and project eligibility.
 - i. Eligible projects must be City owned properties only.



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
Committee Meeting #3 Meeting Minutes

- ii. Mitigation project will focus on natural hazards only.
- II. Public Comment
 - a. No comment.
- III. Risk Assessment Process
 - a. Hazards of Prime Concern Previous Occurrence Data
 - b. Vulnerability and Impact Assessment Gaps
- IV. Identifying Community Assets and Mitigation Strategies
 - a. Committee Discussion on Vulnerability and Impact Assessment Gaps
 - i. See attached assessment responses.
 - b. Mitigation Projects Discussion
 - i. See attached assessment responses.
- V. Next Steps and Action Items
 - a. City of Manhattan Beach:
 - i. Post meeting minutes and materials.
 - ii. Prepare for Committee Meeting # 4 on January 30, 2024.
 - b. Committee Members:
 - i. Attend Committee Meeting # 4 on January 30, 2024.
 - c. Members of the Public:
 - i. Complete Public Survey. Due January 30, 2024.
 - ii. Attend Committee Meeting # 4 on January 30, 2024.



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
 Committee Meeting #3 Meeting Minutes

Table 2: MB LHMP Committee Members

Name	Organization
AJ Lester	LACoFD Marine Lifeguard Division
Al Muratsuchi	Assembly Member Al Muratsuchi
Alexandria Latragna	Management Services
Allison Hales	Culture Club South Bay - A celebration of diversity and unity in the South Bay Area Through the arts
Amanda MacLennan	Fire Department
Amy Thomas Howorth	MB City CouncilMember
Angela Crespi	Hermosa
Anthony Gomes	Fire Department
Ben Allen	Senator Ben Allen
Blair Farley	Journey of Faith Church
Bonnie Shrewsbury	Information Technology - GIS
Brandy Villanueva	Disaster Management Area G
Briza Morales	Human Resources
Bruce Moe	Management Services
Casey Snow	El Segundo
Catherine Hargrove	Torrance Memorial
Charlotte Lesser	Neighborhood Watch
Cindy Byrne	P-Flag
Daniel Pankau	Community Development
Danielle McMilon	LACoFD Marine Lifeguard Division
David Archer	Chamber of Commerce
David Archer	North Manhattan Beach Business Improvement District
David Lesser	MB City CouncilMember
Douglas Barclay	Trinity Lutheran
Dr. Shirley Feldmann-Jensen	CSULB Emergency Management
Ed Lynch	Mychal's Learning
Edwin	Little Company of Mary
EJ Caldwell	West Basin Municipal Water District
Eric Martin	Roundhouse Aquarium on the Pier
Erik Zandvliet	Community Development
Eunique Day	Torrance
Frank Chiella	Map Your Neighborhood
Frank Chiella	MBCERTA
Gilbert Gamboa	Engineering
Issac Yang	Redondo Beach



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
 Committee Meeting #3 Meeting Minutes

Name	Organization
Jamie Cappetta	Manhattan Beach Little League
Jason Sandoval	Community Development
Jeffrey Jacobs	American Red Cross
Jessalyn Waldron	County Supervisor's Office (2nd District) - Holly Mitchell
Jesus Sandoval	Parks & Recreation
Jill Lamkin	Downtown Manhattan Beach Business and Professional Association
Joseph Franklin	MB City Council Member
Judy Mark	Disability Voices United - MB
Kari Bell	Parks & Recreation
Kathleen Terry	Leadership Manhattan Beach
Kelly Stroman	Friendship Foundation Redondo Beach
Kerry Riccio Aguero	MBUSD
Kevin Bass	Fire Department
Kevin Tiscareno	Fire Department
Krista Skinner	Manhattan Hermosa AYSO18
Leobardo Barrera	El Camino College
Lisa Hemmat-Lubercio	Manhattan Beach Rotary + VetFest
Liza Tamura	Management Services
Logan White	Cornerston Christian Fellowship
Luka Lezhansky	American Red Cross
Marcelo Serrano	Finance Department
Margaret Vinci	US Geological Survey (USGS) - ShakeAlert
Mario Hernandez	Purchasing / Warehouse
Martha Alvarez	Management Services
Matt Sabosky	Police Department
Matthew Veeh	West Basin Municipal Water District
Megan Vixie	BCHD
Michelle Ami-Cortez	Dial-a-ride
Miguel Gutierrez	Fire Department
Mike Guerrero	Public Works
Mindy Balgrosky	MB CERT Association
Mirna Puma	Police Department
Nancy Drinker	MB Community Church
Nashana Steele & Linda Lee	Elks Lodge
Nhung Huynh	Community Development
Olivier O'Connell	LA County Beaches and Harbors
Patrick Ruppe	Harbor Regional Center
Paul Curry	MBPD Volunteer - HAM Radio for the City
Rabbi Yossi Mintz	Jewish Community Center



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
 Committee Meeting #3 Meeting Minutes

Name	Organization
Ramon Rendon	Harbor Interfaith
Richard Montgomery	MB City CouncilMember
Robert (Bob) Hodges	American Martyrs
Roberto Uranga	California Coastal Commission
Ruth Irving	Congregation Tkvah
Ryan Glennan	Chevron
Ryan Heise	Community Development
Samuel English	Hawthorne
Scott Combs	Police Department
Soraya Sutherland	Alert SouthBay
Steve Faichney	Beach Cities Community Awareness and Emergency Response (CAER)
Steve Napolitano	MB City CouncilMember
Suzy Contreras	Fire Department
Talyn Mirzakhanian	Community Development
Tammy Hierlihy	West Basin Municipal Water District
Tatyana Roujenova-Peltekova	Information Technology
Todd DeVoe	El Segundo
Tyler Wade	Fire Department
Valerie Lee	Beach Cities Health District
Valerie Wagner	El Camino College
Vincente Miles	Harbor Regional Center
Wayne Powell	Los Angeles County West Vector Control Board Trustee
-	Noah's Bark - dog rescue
-	Meals on Wheels - Salvation Army
-	Neptunian Women
-	Farmer's Market
-	Beach Cities Masonic Lodge
-	Board of Building Appeals
-	Cultural Arts Commission
-	Library Commission
-	Parking and Public Improvement Commission
-	Parks and Recreation Commission
-	Planning Commission
-	El Camino College
-	City of Hermosa Beach

A.5 Hazard Mitigation Planning Committee Meeting #4 Materials

A.5.1 Meeting #4 Announcement (English)

Fire Calendar

Committee Meeting 4: Local Hazard Mitigation Plan (LHMP) Update

Date: 01/30/2024 9:30 AM - 11:30 AM
Location: Zoom and In-Person in City Council Chambers
1400 Highland Avenue
Manhattan Beach, California 90266

Local Hazard Mitigation Plan (LHMP) Update

The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach. Please note that The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. The City of Manhattan Beach adopted the current LHMP in May of 2019; therefore, the LHMP Update is due to FEMA by May 13, 2024.

A LHMP committee is currently being formed which will include: Emergency Management, City Departments, Elected Officials, MBUSD, Business community, nonprofit and faith-based organizations, MBCERTA, neighboring cities, representatives of vulnerable communities, and many more internal and external stakeholders. The schedule for the planning committee meetings is below, and will include all committee members, as well as any interested community members and stakeholders (locations and video links TBD).

UPCOMING MEETINGS

- Meeting # 4: Tuesday, January 30, from 9:30 AM to 11:30 AM
 - [Manhattan Beach LHMP Committee Meeting #4 Agenda \(PDF\)](#)
 - [Manhattan Beach LHMP Committee Projects List 012924 \(PDF\)](#)
 - [Manhattan Beach LHMP Committee Meeting #4 Slides 012924 \(PDF\)](#)
 - [Manhattan Beach LHMP Committee Meeting #4 Meeting Minutes 021524 \(PDF\)](#)



CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

ABOUT THE PLAN
WHAT IS IT?
The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's Hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach.

WHY NOW?
The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. This is an update to the previous 2019 Hazard Mitigation Plan. The City of Manhattan Beach Fire Department is the lead agency for this plan effort.

OUR MISSION
Our mission is to ensure that the most vulnerable among us are at the forefront of our hazard mitigation efforts. We are committed to protecting lives, promoting equity, and building resilience by tailoring our strategies to address the unique needs and challenges faced by our vulnerable community members. Together, we are creating a stronger, more inclusive, and safer future for all.

PLANNING COMMITTEE MEETINGS
Committee Meeting #1: Tuesday, November 28th
9:30 AM – 11:30 AM
Committee Meeting #2: Tuesday, December 12th
9:30 AM – 11:30 AM
Committee Meeting #3: Tuesday, January 9th
9:30 AM – 11:30 AM
Committee Meeting #4: Tuesday, January 30th
9:30 AM – 11:30 AM

HOW YOU CAN HELP
ATTEND COMMITTEE MEETINGS
Join us virtually at the four committee meetings to share your experiences, concerns, and ideas about hazard mitigation in our community. Your input will shape the strategies we develop.

COMPLETE SURVEYS
Look out for surveys and questionnaires related to hazard mitigation. Your responses will help us understand community needs and preferences.

STAY INFORMED AND SPREAD THE WORD
Keep yourself informed about the progress of the project by visiting our website and following our social media accounts. Share information about the project with your neighbors, friends, and family. The more people involved, the stronger our community's resilience.

1301.802.3000
@lchmp
www.manhattanbeach.gov

RSVP TODAY

A.5.2 Meeting #4 Announcement (Spanish)

Tamaño de fuente: + - Comentario Imprimir

Reunión del Comité 4: Actualización del Plan Local de Mitigación de Riesgos (LHMP)

Fecha: 30/01/2024 9:30 - 11:30
Ubicación: Zoom y en persona en las Cámaras del Concejo Municipal
[1400 Highland Avenue](#)
[Manhattan Beach, California 90266](#)

 [Agregar a mi calendario](#)

Actualización del Plan Local de Mitigación de Peligros (LHMP)


El proceso de Mitigación de Peligros tiene como objetivo hacer que las comunidades y la infraestructura sean más resilientes y menos susceptibles a daños, pérdidas o interrupciones cuando se enfrentan a peligros naturales o provocados por el hombre. Esto se logra evaluando y actualizando el Plan de mitigación de peligros de la ciudad para abordar las vulnerabilidades y desarrollar estrategias de mitigación a corto y largo plazo para proteger la comunidad de Manhattan Beach. Tenga en cuenta que la Agencia Federal para el Manejo de Emergencias (FEMA) exige que los planes de mitigación de riesgos se actualicen cada cinco años. La ciudad de Manhattan Beach adoptó el LHMP actual en mayo de 2019; por lo tanto, la actualización del LHMP debe presentarse a FEMA antes del 13 de mayo de 2024.

Actualmente se está formando un comité LHMP que incluirá: Manejo de Emergencias, Departamentos de la Ciudad, Funcionarios Electos, MBUSD, comunidad empresarial, organizaciones religiosas y sin fines de lucro, MBCERTA, ciudades vecinas, representantes de comunidades vulnerables y muchas más partes interesadas internas y externas. El cronograma de las reuniones del comité de planificación se encuentra a continuación e incluirá a todos los miembros del comité, así como a cualquier miembro de la comunidad y partes interesadas interesadas (ubicaciones y enlaces de video por determinar).

PRÓXIMAS REUNIONES

- Reunión #4: martes 30 de enero de 9:30 a 11:30
 - [Agenda de la reunión n.º 4 del Comité LHMP de Manhattan Beach](#) (PDF)
 - [Manhattan Beach LHMP Lista de proyectos del comité_012924](#) (PDF)
 - [Manhattan Beach LHMP Reunión del Comité #4 Diapositivas_012924](#) (PDF)
 - [Manhattan Beach LHMP Reunión del Comité n.º 4 Acta de la reunión_021524](#) (PDF)

[Confirme su asistencia hoy](#)



CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

ABOUT THE PLAN
WHAT IS IT?
The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's Hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach.

WHY NOW?
The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. This is an update to the previous 2019 Hazard Mitigation Plan. The City of Manhattan Beach Fire Department is the lead agency for this plan effort.



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Our mission is to ensure that the most vulnerable among us are at the forefront of our hazard mitigation efforts. We are committed to protecting lives, promoting equity, and building resilience by tailoring our strategies to address the unique needs and challenges faced by our vulnerable community members. Together, we are creating a stronger, more inclusive, and safer future for all.

PLANNING COMMITTEE MEETINGS
Committee Meeting #1: Tuesday, November 28th, 9:30 AM - 9:30 AM
Committee Meeting #2: Tuesday, December 12th, 9:30 AM - 9:30 AM
Committee Meeting #3: Tuesday, January 9th, 9:30 AM - 9:30 AM
Committee Meeting #4: Tuesday, January 30th, 9:30 AM - 9:30 AM

HOW YOU CAN HELP
ATTEND COMMITTEE MEETINGS
Join us virtually at the four committee meetings to share your experiences, concerns, and ideas about hazard mitigation in our community. Your input will shape the strategies we develop.

COMPLETE SURVEYS
Look out for surveys and questionnaires related to hazard mitigation. Your responses will help us understand community needs and preferences.

STAY INFORMED AND SPREAD THE WORD
Keep yourself informed about the progress of the project by visiting our website and following our social media accounts. Share information about the project with your neighbors, friends, and family. The more people involved, the stronger our community's resilience.

 310.862.3000
 @cityofmanhattanbeach
 www.manhattanbeach.org

A.5.3 Meeting #4 Agenda

LOCAL HAZARD MITIGATION PLAN COMMITTEE



Agenda

January 30, 9:30 AM – 11:30 AM
Location: Virtual – Instructions within Agenda

OR

City Council Chambers

CITY OF
MANHATTAN BEACH

1400 Highland Avenue
Manhattan Beach, CA
90266

www.manhattanbeach.gov
(310) 802-5000

MEMBERS

City Council

Mayor Richard Montgomery
Mayor Pro Tem Joe Franklin
Councilmember Amy Howorth
Councilmember David Lesser
Councilmember Steve Napolitano

City Treasurer Tim Lilligren

Planning Commission

Chair Robert Tokashiki
Vice Chair Kristin Sistos
Commissioner Joseph Unogoco
Commissioner Rachel Hackett
Commissioner Jim Dillavou

Parking and Public Improvements Commission

Chair Allen Kirshenbaum
Vice Chair Bob DaGiau
Commissioner Kit Becker
Commissioner Joe Marcy

Board of Building Appeals

Boardmember Mike Kling
Boardmember Curpis Adami
Boardmember Robert Tokashiki
Boardmember Thomas Freitag
Boardmember Jim Yang

Parks and Recreation Commission

Chair Stephen Doran
Vice Chair Russ Allen
Commissioner Karen Komantisky
Commissioner Tracey Windes
Commissioner Karen Zimbalist
Commissioner Laurie McCarthy
Commissioner Daniel Greenberg

Cultural Arts Commission

Chair Rod Spackman
Vice Chair Karen Tokashiki
Commissioner Suzanne Karger
Commissioner Carol Patterson
Commissioner Jen Dohner
Commissioner Samantha Ehrlich-Fein

Library Commission

Chair Diane Levitt
Vice Chair Dina Doll
Commissioner Janet Jones
Commissioner Mike Millea
Commissioner Stefanie Bond
Commissioner Katherine Jester

Los Angeles County West Vector Control Board Trustee

Trustee Wayne Powell

Meeting Agenda:

- I. Welcome and Administration
- II. Public Comment
- III. Vulnerability and Impact Assessment Update
- IV. Review Final Project List and SAFE-T Method
 - a. Education on SAFE-T Method
 - b. Conduct SAFE-T Method Project Survey
- V. Review Risk Analysis Process
 - a. Education on Risk Analysis Tool
 - b. Conduct Risk Analysis Survey
- VI. Plan Maintenance and Next Steps
 - a. City Leadership Review of Projects
 - b. Continued Committee/Community Engagement and Partnership
 - c. Public/Committee Review Period
 - d. Cal OES/FEMA Review Process
 - e. Adoption/Resolution of the Plan
 - f. Post-Adoption Outreach and Activities
- VII. Next Steps and Action Items
 - a. City of Manhattan Beach:
 - i. Post meeting minutes and materials.
 - b. Committee Members and Members of the Public:
 - i. Provide feedback on the draft plan when it becomes available for public/committee review.
 - ii. Review the Manhattan Beach LHMP website for plan status and action items.
 - iii. Respond to any requests for information or engagement via email.

The Local Hazard Mitigation Plan Committee encourages the public to participate by submitting comments on agenda items or other subject matter within the jurisdiction of the Local Hazard Mitigation Plan Committee via email to cityclerk@manhattanbeach.gov, no later than 8:00 AM, the day of the meeting, if you are unable to attend the meeting in person at City Council Chambers or join the meeting via Zoom.

Participants have the option of attending the meeting in person in City Council Chambers or via Zoom.

Zoom Meeting Instructions: There are multiple ways to join the meeting.

1. Join Zoom Meeting via the internet (download app if needed): Direct URL:

<https://citymb-info.zoom.us/j/93376200363>

Meeting ID: 933 7620 0363

During the meeting you will need to use the "raise hand" button through Zoom at the time the host invites the public to provide comments.

2. Join Zoom Meeting via Phone Application (download app if needed): Download Mobile Apps:

<https://zoom.us/download>, Enter Meeting ID: 933 7620 0363

3. Join Zoom Meeting via Phone Conference (Voice Only):

Phone Numbers: +1 669-900-6833 or +1 346-248-7799. Meeting ID: 933 7620 0363.

During the meeting you will need to enter *9 on the phone's dial pad at the time the host invites the public to provide comments.

Please Note – All microphones for non-Committee Members or Staff will be muted during the meeting, except during Public Comment periods for which you have requested to speak.

In compliance with the Americans With Disabilities Act, if you need special assistance to participate in this meeting, you should contact the City Clerk's Office at (310) 802-5056 (voice) or (310) 546-3501 (TDD). In addition, if translation services are needed please contact the City Clerk's Office. Notification 36 hours prior to the meeting will enable the City to make reasonable arrangements to assure accessibility to this meeting. The City will also be providing closed captioning for this meeting for the hearing impaired.

A.5.4 Meeting #4 Cover Slide



Committee Meeting #4

CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP)

Tuesday, January 30, 2024
9:30 AM – 11:30 AM
City of Manhattan Beach City Council Chambers &
Virtual (Zoom)

A.5.5 Meeting #4 Minutes with Attendance



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
 Committee Meeting #4 Meeting Minutes

Committee Meeting #4- Meeting Minutes

Date: Tuesday, January 30, 2024
 Time PST: 9:30 AM – 11:15 AM
 Location: Zoom and City Hall Council Chambers

Table 1: Action Items

#	Action Item	Responsible	Due Date
City of Manhattan Beach			
1	Post meeting minutes and materials.	MB	2/6/24
Committee Members			
3	Provide feedback on the first draft when available	Committee Members	March-April
Members of the Public			
4	Provide feedback on the first draft when available	Members of the Public	March-April

- I. Welcome and Administration
- II. Public Comment
 - a. No comment
- III. Project List and Method
 - a. Dylan introduced himself and highlighted projects discussed by the community previously. He informed the member that the committee is still reviewing some projects for feasibility and eligibility and not all that were recommended would be included on the current list.
 - b. Dylan explained the STAPLE-E survey and provided the link: <https://www.surveymonkey.com/r/RHH9FPG>
 - c. Members completed the survey, following along with Dylan.
- IV. Risk Analysis of the Hazards of Prime Concern Overview
 - a. Dylan discussed the purpose of the risk analysis.
 - b. Members were prompted to continue the survey from the link above to accomplish the Risk Analysis Survey
- V. Plan Maintenance and Next Steps
 - a. Dylan discussed Ongoing-continued outreach that will be disseminated to the Committee/Community, and continued engagement throughout this process.



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
Committee Meeting #4 Meeting Minutes

- b. February- City Leadership Review of Projects
 - i. Projects will continued to be reviewed into the month of February for eligibility.
 - c. March- Public/Committee Review Period
 - i. Two weeks in March the plan will be available for members to provide feedback.
 - d. April- Cal OES/FEMA Review Process
 - i. Plan will be sent to Cal OES and then to FEMA pending review.
 - e. Adoption/Resolution of the Plan
 - f. Post-Adoption Outreach and Activities
 - i. Plan is updated every 5 years. There will be additional engagement even beyond the adoption of the plan.
 - ii. As a note from Dylan, this plan is a "living document."
- VI. Action Items
- a. Constant
 - i. Develop the first draft of the 2024 Local Hazard Mitigation Plan (LHMP).
 - b. City of Manhattan Beach
 - i. Post meeting minutes and materials.
 - c. Committee Members and Members of the Public:
 - i. Provide feedback on the draft plan when it becomes available for public/committee review in March.
 - ii. Review the Manhattan Beach LHMP website for plan status and action items.
 - iii. Respond to any requests for information or engagement via email.



City of Manhattan Beach
Local Hazard Mitigation Plan (LHMP)
 Committee Meeting #4 Meeting Minutes

Table 2: MB LHMP Committee Members Attendance

Name	Organization
Amanda MacLennan	Fire Department
Bonnie Shrewsbury	Information Technology - GIS
Brandy Villanueva	Disaster Management Area G
Briza Morales	Human Resources
Charlotte Barnett	BCHD
Daniel Pankau	Community Development
David Archer	Chamber of Commerce
Division Chief Brian Regan	RB Fire Division Chief
Douglas Barclay	Trinity Lutheran
Erik Zandvliet	Community Development
Frank Chiella	Map Your Neighborhood
Gilbert Gamboa	MB Principal Civil Engineer
Issac Yang	Redondo Beach
Jacob Kamsvaag	
Jason Sandoval	Community Development
Jeffrey Jacobs	American Red Cross
Jesus Sandoval	Parks & Recreation
Joseph Franklin	MB City CouncilMember
Kevin Bass	Fire Department
Lectern	
Leobardo Barrera	El Camino College
Lisa Jenkins	
Liza Tamura	Management Services
Marcelo Serrano	Finance Department
Mark Doddy	
Matt Sabosky	Police Department
Mindy Balgrosky	MB CERT Association
Paul Curry	MBPD Volunteer - HAM Radio for the City
Robert (Bob) Hodges	American Martyrs
Samuel English	Hawthorne
Tammy Hierlihy	West Basin Municipal Water District
Tatyana Roujenova-Peltekova	Information Technology
Todd DeVoe	El Segundo
Wayne Powell	Los Angeles County West Vector Control Board Trustee

APPENDIX B: LHMP SURVEY RESULTS

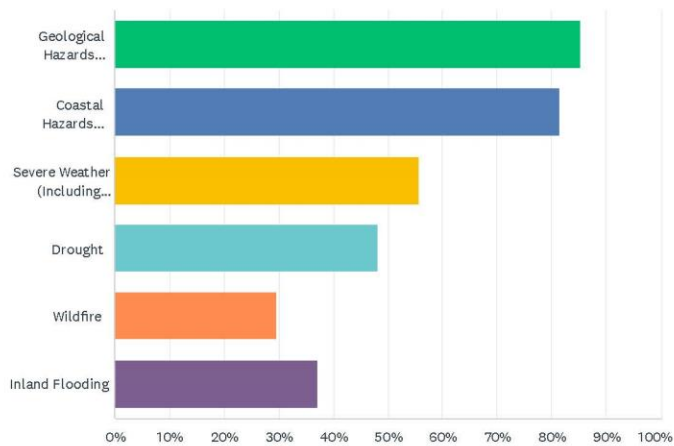
B.1 HMPC Member Surveys

B.1.1 HMPC Personal and Professional Experience Survey

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q1 Please choose the hazards you would like to see profiled in the Manhattan Beach 2024 Local Hazard Mitigation Plan (LHMP)

Answered: 27 Skipped: 0



ANSWER CHOICES	RESPONSES
Geological Hazards (Earthquake, Landslide)	85.19% 23
Coastal Hazards (Tsunami, King Tides, Daily Tides, El Nino, Beach and Coastal Erosion, Tropical Storms)	81.48% 22
Severe Weather (Including Wind, Extreme Heat)	55.56% 15
Drought	48.15% 13
Wildfire	29.63% 8
Inland Flooding	37.04% 10
Total Respondents: 27	

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q2 Please recount your personal and or professional experiences for each of the disasters listed below. *If you are aware of a death or injury as a result of the hazards below, please include that in your response.

Answered: 18 Skipped: 9

ANSWER CHOICES	RESPONSES	
Geological Hazards (Earthquake, Landslide)	94.44%	17
Coastal Hazards (Tsunami, King Tides, Daily Tides, El Nino, Beach and Coastal Erosion, Tropical Storms)	72.22%	13
Severe Weather (Including Wind, Extreme Heat)	72.22%	13
Drought	61.11%	11
Wildfire	66.67%	12
Inland Flooding	50.00%	9
Other (Please Specify)	16.67%	3

B.1.2 LHMP Vulnerability and Impacts Assessment Worksheet

Question 1

Please **highlight** the community lifelines or valued assets that you represent:

- Public Safety and Security
- Communications
- Health and Medical
- Education
- Transportation
- Energy
- Water Systems
- Food, Hydration, Shelter
- Social Services/Socially Vulnerable
- Business Community
- Policy Makers
- Government Agencies
- Other (Please Specify)

Question 2

Do you anticipate any growth or changes to the development in your community (e.g., population, economy, infrastructure)? If so, please describe:

Hazard-Specific Questions

The following questions were asked for each hazard of prime concern during HMPC meetings #2 and #3.

Question		Response
1A	What neighborhood(s) do you feel are most at risk? Describe the potential impacts of this hazard on the neighborhood(s)/population.	
1B	Do you feel there are any socially vulnerable populations in the hazard area? If so, please provide some of the impacts on these populations.	

1C	<p>Do you know any buildings that may be threatened or have experienced loss in the past due to this hazard? Please provide further information below:</p> <ul style="list-style-type: none"> • The building name and address. • Are any of these buildings' critical infrastructure? (FEMA defines critical infrastructure as assets, systems, networks, and functions that are vital to the United States.) • Are any of these buildings a community lifeline? (See list in Question #1) • Are they commercial, industrial, or residential property? 	
1D	<p>Do you know of any critical systems within the hazard area(s) that could be impacted? (e.g. utilities, 911 repeater)</p>	
1E	<p>Do you know of any natural, historic, and/or cultural resources within the hazard area?</p>	
1F	<p>Do you know of any day-to-day community activities that may be threatened by this hazard?</p>	
1G	<p>Mitigation Action Suggestions</p>	

B.2 Public Survey Results

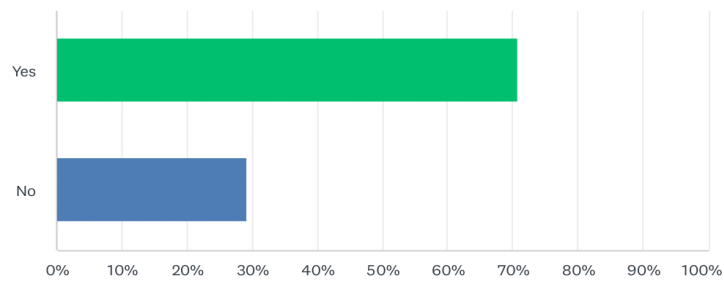
B.2.1 English Survey

The following is the public survey distributed throughout the community.

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q1 Are you a resident of the City of Manhattan Beach?

Answered: 123 Skipped: 1

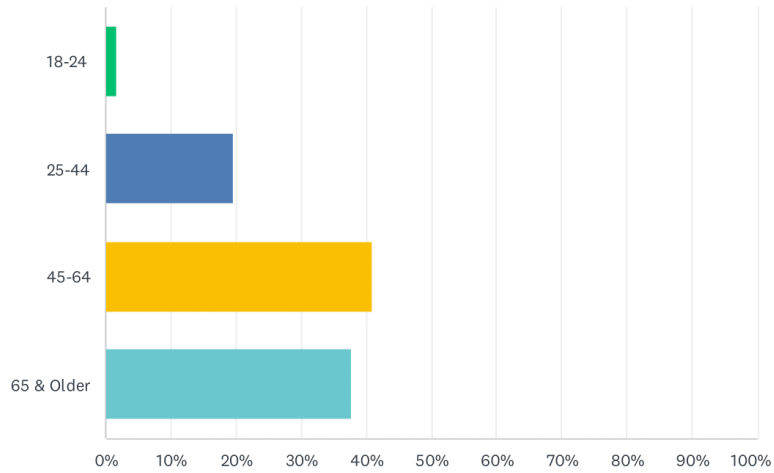


ANSWER CHOICES	RESPONSES	
Yes	70.73%	87
No	29.27%	36
TOTAL		123

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q2 In which age group do you belong?

Answered: 122 Skipped: 2

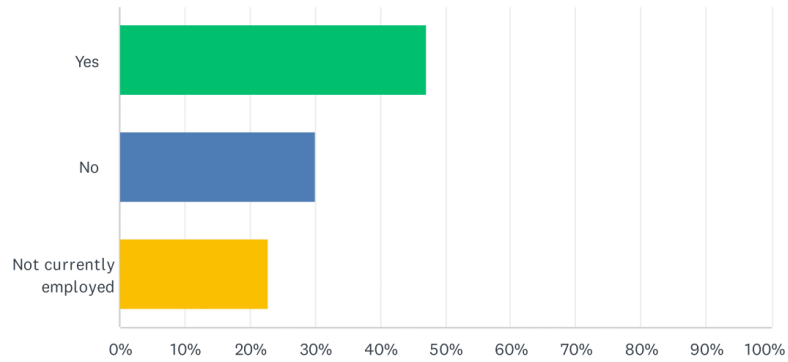


ANSWER CHOICES	RESPONSES	
18-24	1.64%	2
25-44	19.67%	24
45-64	40.98%	50
65 & Older	37.70%	46
TOTAL		122

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q3 Do you work within the City of Manhattan Beach?

Answered: 123 Skipped: 1

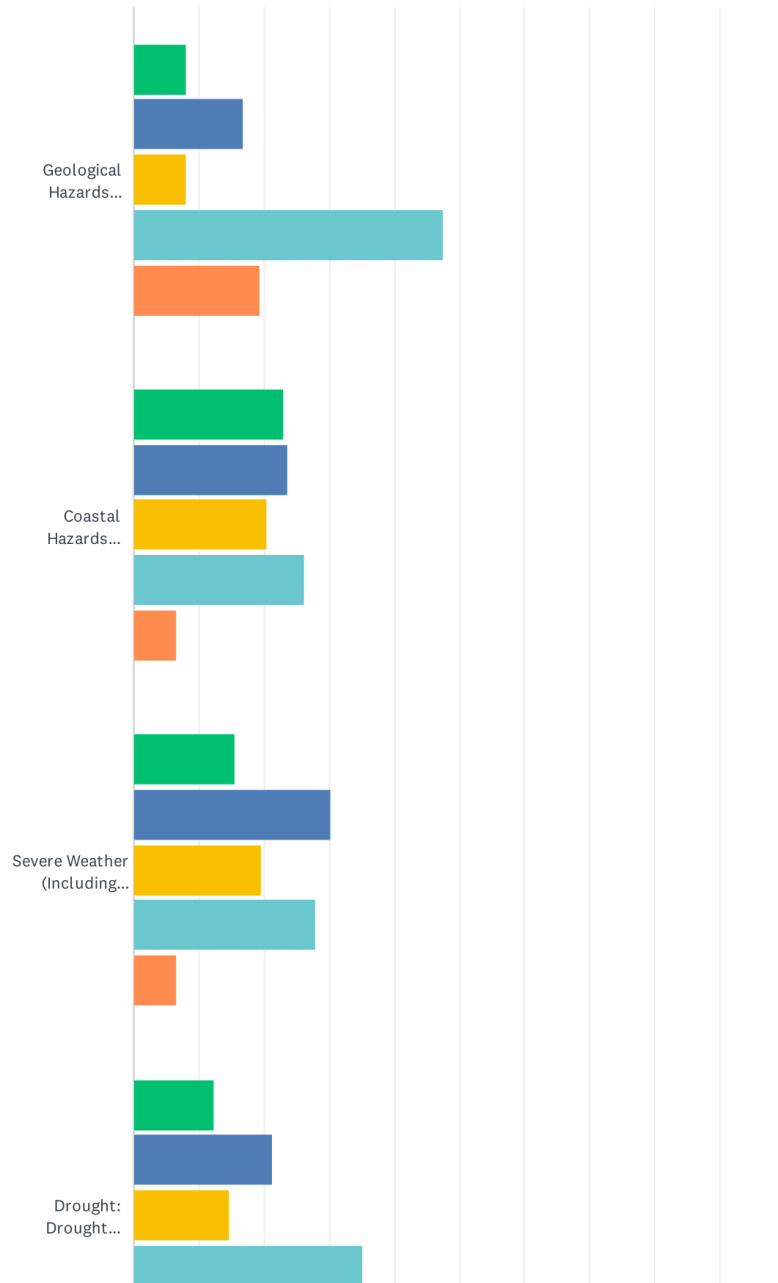


ANSWER CHOICES	RESPONSES	
Yes	47.15%	58
No	30.08%	37
Not currently employed	22.76%	28
TOTAL		123

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

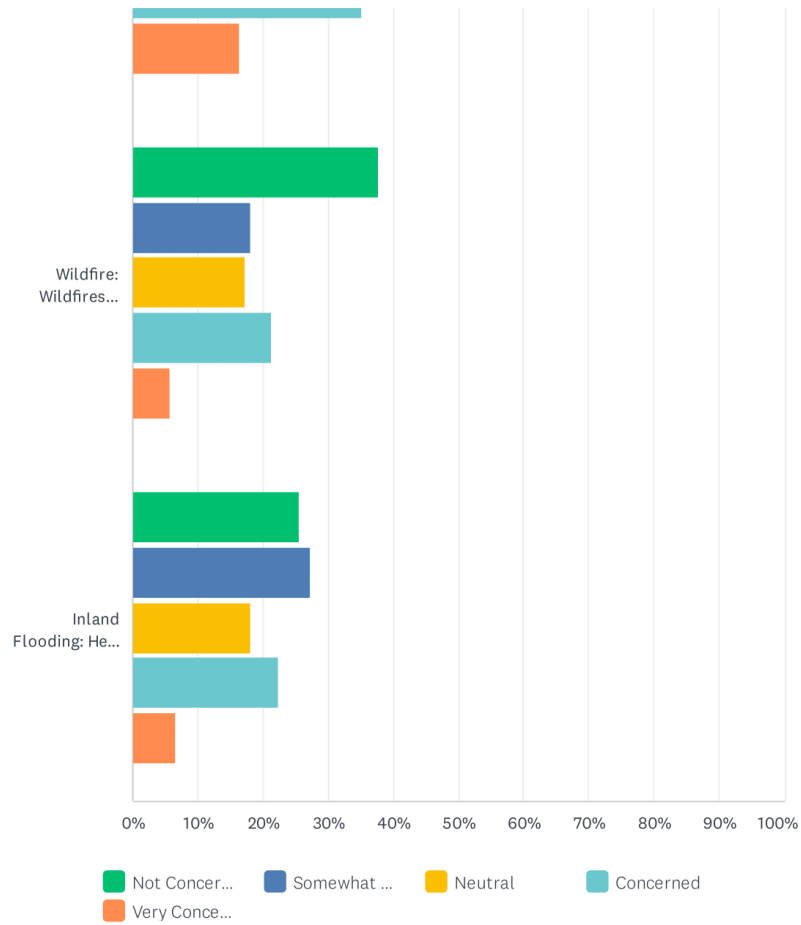
Q4 sPlease indicate your level of concern for each hazard:

Answered: 124 Skipped: 0



4 / 30

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)



City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

	NOT CONCERNED	SOMEWHAT CONCERNED	NEUTRAL	CONCERNED	VERY CONCERNED	TOTAL	WEIGHTED AVERAGE
Geological Hazards (Earthquake, Landslide): Earthquake: Earthquakes pose a significant threat due to the area's proximity to several active fault lines. They can lead to ground shaking, surface rupture, and structural damage, posing risks to life and property. Landslide: Triggered by heavy rains, earthquakes, or human activity, landslides can cause rapid movement of large amounts of earth, threatening homes, infrastructure, and natural areas.	8.06% 10	16.94% 21	8.06% 10	47.58% 59	19.35% 24	124	3.53
Coastal Hazards (Tsunami, Daily tides, King tides, El Nino, Beach and coastal erosion): Tsunami: Rare but potentially devastating, tsunamis can flood coastal areas, causing widespread damage to property and posing a serious risk to life. King Tides: These exceptionally high tides can lead to coastal flooding, beach erosion, and impact low-lying infrastructure. Daily Tides: Regular tidal cycles can contribute to coastal erosion and influence flood risks in low-lying areas. El Niño: This climate pattern can bring heavy rains and high seas, increasing the risk of coastal flooding and erosion. Beach and Coastal Erosion: Ongoing erosion can threaten coastal properties, public beaches, and natural habitats. Tropical Storms: Although rare in this region, tropical storms can bring heavy rains, strong winds, and coastal flooding.	22.95% 28	23.77% 29	20.49% 25	26.23% 32	6.56% 8	122	2.70
Severe Weather (Including Wind, Extreme Heat): Wind: Strong	15.57% 19	30.33% 37	19.67% 24	27.87% 34	6.56% 8	122	2.80

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

winds can cause property damage, down power lines, and create hazardous conditions. Extreme Heat: Heat waves can pose health risks, especially for vulnerable populations, and strain infrastructure.

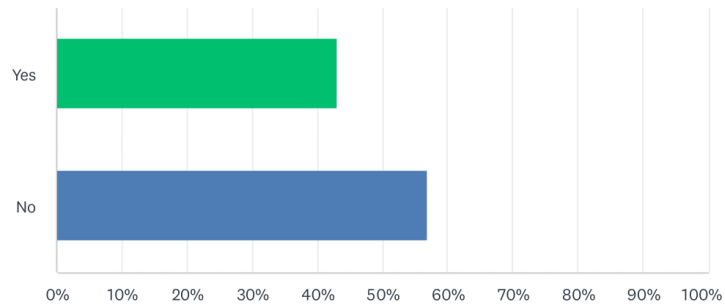
Drought: Drought conditions can lead to water shortages, impact agriculture, increase fire risks, and affect local ecosystems.	12.30% 15	21.31% 26	14.75% 18	35.25% 43	16.39% 20	122	3.22
Wildfire: Wildfires present a significant risk, potentially leading to loss of life, property damage, and destruction of natural areas. Dry conditions and high winds can exacerbate these risks.	37.70% 46	18.03% 22	17.21% 21	21.31% 26	5.74% 7	122	2.39
Inland Flooding: Heavy rains, especially during storm events, can lead to inland flooding, impacting homes, businesses, and critical infrastructure, and increasing the risk of landslides.	25.62% 31	27.27% 33	18.18% 22	22.31% 27	6.61% 8	121	2.57

#	OTHER (PLEASE SPECIFY)	DATE
1	Construction and digging near Chevron and potential toxic and hazardous materials	1/30/2024 9:57 AM
2	There are too many palm trees. They block neighbor's views of the ocean. They are also known as fire catchers.. Sparks can fly from a fire for over a mile. The homes with flat or wood roofs will be burn and many of the neighbor homes will be lost too. Please restrict the planting of the Palm Trees.	1/29/2024 11:00 AM
3	I'm more concerned about the Chevron refinery posing a threat to health via regular polluting and a potential accident. I find it irresponsible the city new earmarked housing development right next to it. That seems irresponsible.	1/26/2024 8:57 AM
4	Natural disaster threats impact critical infrastructure and local built environments as secondary disaster scenarios, complicating the natural threat. Chevron for example after an earthquake.	1/11/2024 2:46 PM
5	Amnistía para los militares que fueron	1/8/2024 11:47 AM

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q5 When you moved into your residence or commercial property, did you consider the impact a natural hazard event could have on your property?

Answered: 121 Skipped: 3

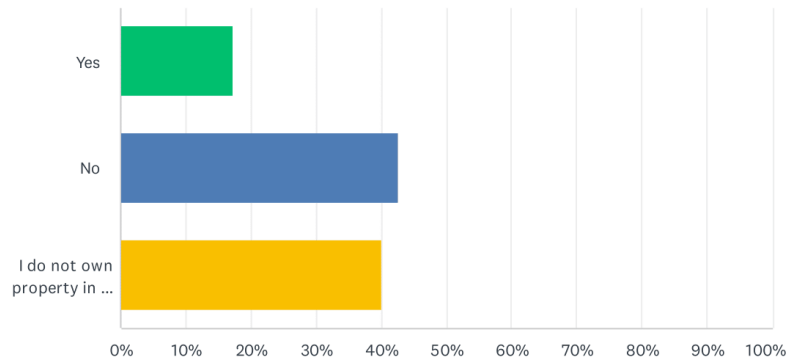


ANSWER CHOICES	RESPONSES	
Yes	42.98%	52
No	57.02%	69
TOTAL		121

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q6 If you own your home or commercial property, do you have flood insurance?

Answered: 122 Skipped: 2

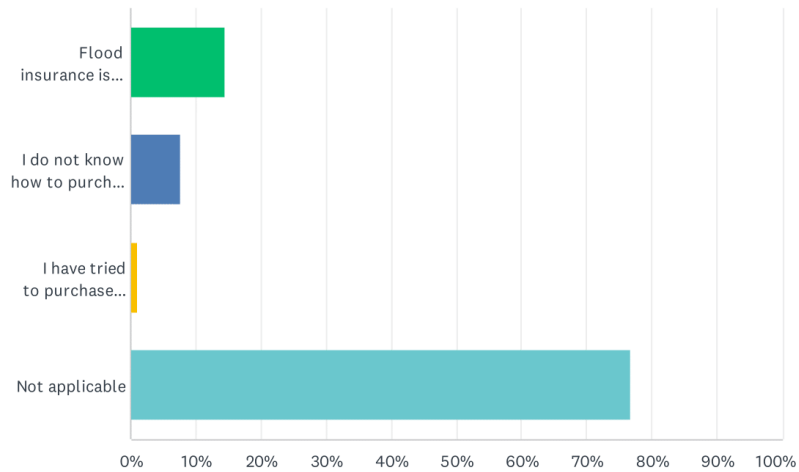


ANSWER CHOICES	RESPONSES	
Yes	17.21%	21
No	42.62%	52
I do not own property in the City of Manhattan Beach	40.16%	49
TOTAL		122

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q7 If “No”, what is the primary reason why you do not carry flood insurance?

Answered: 103 Skipped: 21

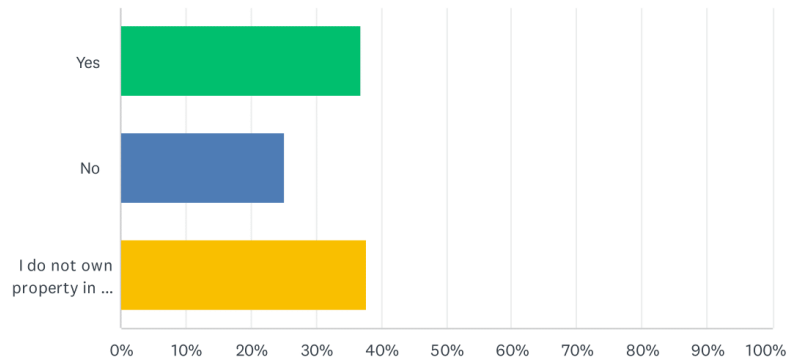


ANSWER CHOICES	RESPONSES	
Flood insurance is too expensive	14.56%	15
I do not know how to purchase flood insurance	7.77%	8
I have tried to purchase flood insurance but have been unsuccessful	0.97%	1
Not applicable	76.70%	79
TOTAL		103

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q8 If you own your home or commercial property, do you have earthquake insurance?

Answered: 119 Skipped: 5

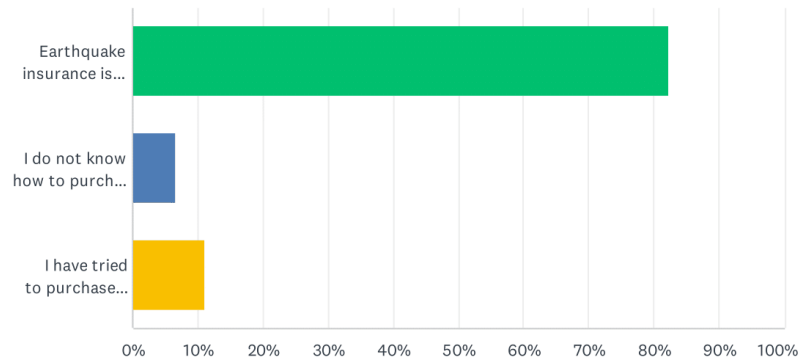


ANSWER CHOICES	RESPONSES	
Yes	36.97%	44
No	25.21%	30
I do not own property in the City of Manhattan Beach	37.82%	45
TOTAL		119

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q9 If “No”, what is the primary reason why you do not carry earthquake insurance?

Answered: 45 Skipped: 79

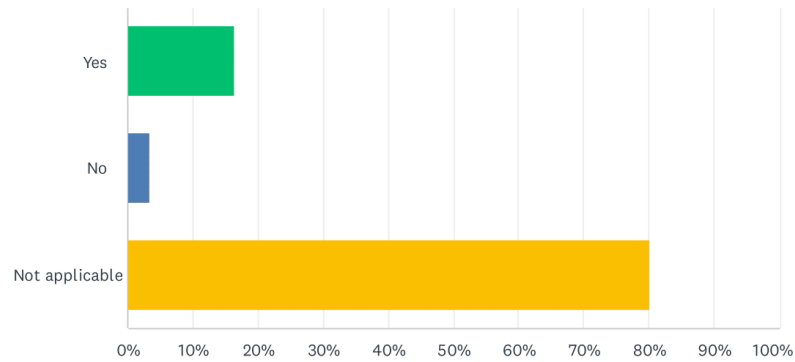


ANSWER CHOICES	RESPONSES	
Earthquake insurance is too expensive.	82.22%	37
I do not know how to purchase earthquake insurance.	6.67%	3
I have tried to purchase earthquake insurance but have been unsuccessful.	11.11%	5
TOTAL		45

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q10 If you rent your place of residence, do you have renter's content insurance?

Answered: 116 Skipped: 8

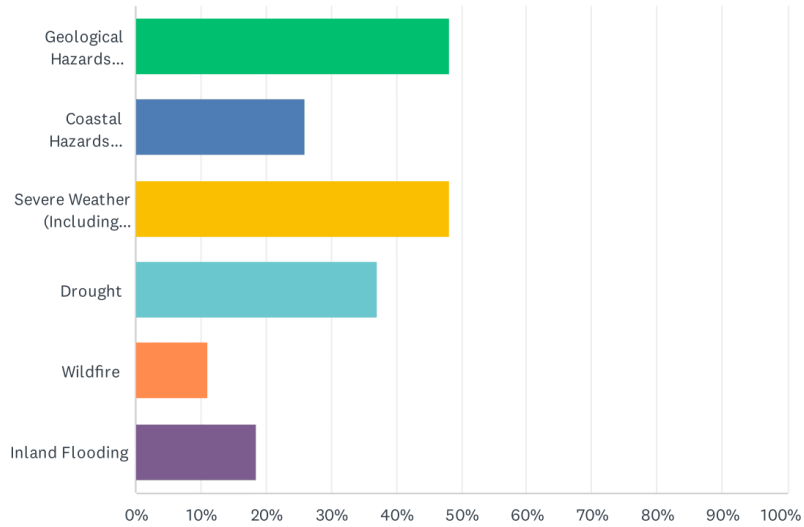


ANSWER CHOICES	RESPONSES	
Yes	16.38%	19
No	3.45%	4
Not applicable	80.17%	93
TOTAL		116

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q11 If your residence or commercial property has experienced damage from a hazard event, which of the following types of events have you experienced at your property? (Select all that apply)

Answered: 27 Skipped: 97

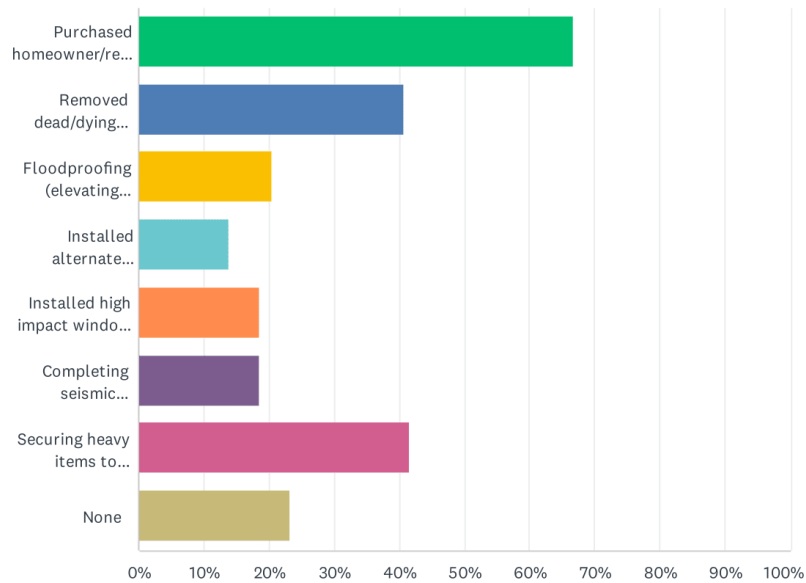


ANSWER CHOICES	RESPONSES
Geological Hazards (Earthquake, Landslide)	48.15% 13
Coastal Hazards (Tsunami, King Tides, Daily Tides, El Nino, Beach and Coastal Erosion, Tropical Storms)	25.93% 7
Severe Weather (Including Wind, Extreme Heat)	48.15% 13
Drought	37.04% 10
Wildfire	11.11% 3
Inland Flooding	18.52% 5
Total Respondents: 27	

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q12 Have you taken any of the following actions to reduce the risk of hazards to your residence or commercial property? (Choose all that apply)

Answered: 108 Skipped: 16



ANSWER CHOICES	RESPONSES
Purchased homeowner/renter's insurance policies	66.67% 72
Removed dead/dying trees and vegetation from around the home	40.74% 44
Floodproofing (elevating furnace, water heaters, electric panels)	20.37% 22
Installed alternate power/water supply	13.89% 15
Installed high impact windows or doors to withstand high winds	18.52% 20
Completing seismic retrofitting to reduce impacts of geological hazards	18.52% 20
Securing heavy items to structurally sound walls to reduce the impacts of falling objects	41.67% 45
None	23.15% 25
Total Respondents: 108	

#	OTHER (PLEASE SPECIFY)	DATE
1	Replaced wood shake roof	1/30/2024 4:26 PM
2	I have trained my kids poinsettia how to shut off gas, installed generators in both our homes and have provisions for six months	1/26/2024 11:13 AM

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

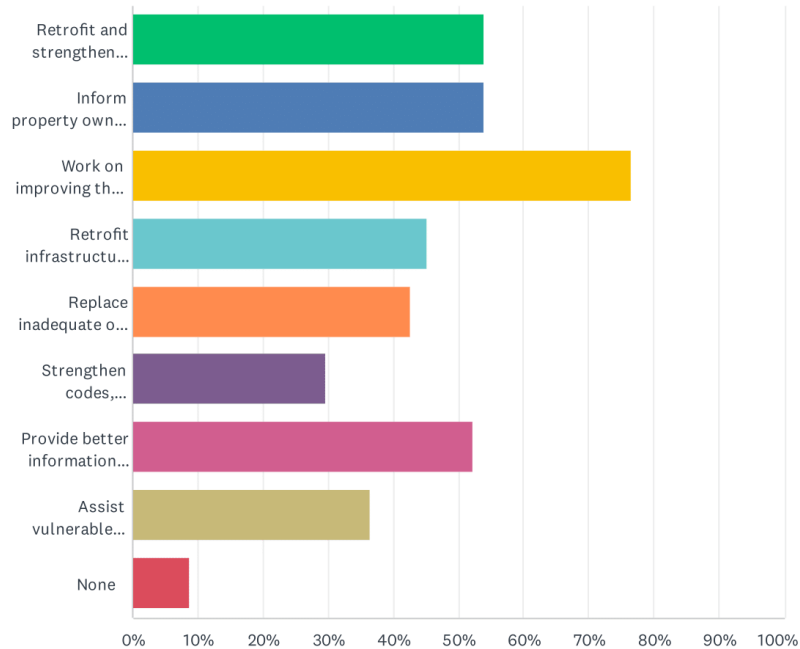
City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

3	Not Applicable	1/26/2024 9:43 AM
4	live in a newer home	1/20/2024 10:14 AM
5	Taken CERT training	1/12/2024 9:37 AM
6	Earthquake insurance	1/12/2024 12:28 AM
7	My kids on poinsettia as well as the wife and I are prepared for up to 90 days	1/11/2024 11:18 PM
8	Propane fueled generator for electricity grid down in an earthquake. Our home (in 2000) was built with earthquake requirements at that time.	1/11/2024 1:34 PM
9	How much are doilies	1/8/2024 11:47 AM
10	unknown	12/28/2023 8:29 AM
11	unknown	12/28/2023 8:13 AM
12	Purchased a portable solar generator	12/21/2023 4:13 PM

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q13 Which of the following mitigation project types do you believe that local government agencies should focus on to reduce disruptions of services and strengthen the community (Choose all that apply)?

Answered: 115 Skipped: 9



ANSWER CHOICES	RESPONSES
Retrofit and strengthen essential facilities such as police, fire, emergency medical services, hospitals, schools, homeless shelters, places of worship, food banks, etc.	53.91% 62
Inform property owners of ways they can mitigate damage to their property	53.91% 62
Work on improving the damage resistance of utilities (electricity, communications, water/sewer, etc.)	76.52% 88
Retrofit infrastructure, such as elevating roadways and improving drainage systems	45.22% 52
Replace inadequate or vulnerable bridges and causeways	42.61% 49
Strengthen codes, ordinances, and plans to require higher hazard risk management standards	29.57% 34
Provide better information about hazard risk and high-hazard areas	52.17% 60
Assist vulnerable property owners with securing funding to mitigate impacts to their property	36.52% 42
None	8.70% 10
Total Respondents: 115	

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

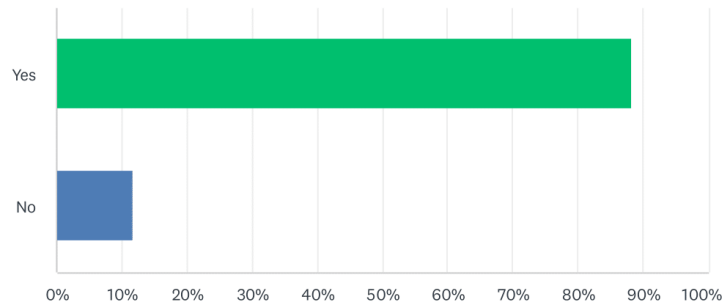
City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

#	OTHER (PLEASE SPECIFY)	DATE
1	Utility companies fix the powerlines and the gas lines	1/29/2024 8:32 PM
2	Keep informing everyone to be ready to hunker down if something goes wrong.	1/26/2024 11:13 AM
3	Strengthen the electrical power grid.	1/26/2024 10:22 AM
4	I would love a list of reliable contractors who specialize in securing an earthquake proving a home	1/12/2024 9:37 AM
5	MHB has excellent history of being prepared	1/11/2024 11:18 PM
6	Invest in community education via the Map Your Neighborhood (MYN) and the Community Emergency Response Team (CERT) programs. Both grassroots programs focus on emergency preparedness and neighborhood resilience.	1/11/2024 3:29 PM
7	I am concerned that high tides will back up storm drains and flood the city	1/9/2024 8:01 PM
8	And you are welcome	1/8/2024 11:47 AM
9	unknown	12/28/2023 8:29 AM
10	unknown	12/28/2023 8:13 AM

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q14 Do you support policies to restrict or prohibit development in designated hazard zones?

Answered: 119 Skipped: 5



ANSWER CHOICES	RESPONSES	
Yes	88.24%	105
No	11.76%	14
TOTAL		119

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q15 In the last 10 years, have you evacuated from your home or business as a result of a disaster in Manhattan Beach (e.g., flooding, power outage, water failure)? If so, how long were you displaced? Did you go to a shelter?

Answered: 67 Skipped: 57

#	RESPONSES	DATE
1	No	1/31/2024 9:07 AM
2	No.	1/30/2024 11:14 AM
3	no	1/30/2024 9:55 AM
4	no	1/30/2024 9:48 AM
5	No.	1/30/2024 9:27 AM
6	No	1/29/2024 8:32 PM
7	N/A	1/29/2024 5:20 PM
8	No	1/29/2024 3:09 PM
9	no	1/29/2024 11:00 AM
10	no	1/29/2024 9:48 AM
11	no	1/29/2024 9:45 AM
12	No	1/29/2024 9:20 AM
13	no	1/29/2024 8:24 AM
14	No	1/29/2024 7:36 AM
15	No	1/29/2024 7:17 AM
16	No	1/29/2024 7:15 AM
17	Never. I have just over one year of experience living in MB.	1/29/2024 7:11 AM
18	No	1/27/2024 5:53 PM
19	no	1/27/2024 9:42 AM
20	No	1/26/2024 10:31 PM
21	No	1/26/2024 3:00 PM
22	No	1/26/2024 2:03 PM
23	No, with 11 or 12 million people here in La. The best thing to do is be ready by having water, food and power. One must realize that nobody is coming to help you if something goes wrong. Be able to stay home and help out others. No 1 is be ready at all times.	1/26/2024 11:13 AM
24	n/a	1/26/2024 10:38 AM
25	n/a	1/26/2024 10:35 AM
26	No	1/26/2024 10:22 AM
27	no	1/26/2024 10:09 AM
28	Not Applicable	1/26/2024 9:43 AM

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

29	n/a	1/26/2024 8:38 AM
30	No	1/25/2024 7:19 PM
31	No	1/25/2024 6:57 PM
32	no	1/22/2024 7:21 AM
33	no	1/20/2024 10:14 AM
34	No	1/15/2024 8:04 PM
35	No	1/12/2024 9:37 AM
36	NA	1/11/2024 11:18 PM
37	N/A	1/11/2024 3:29 PM
38	No	1/11/2024 3:27 PM
39	No	1/11/2024 1:21 PM
40	No	1/11/2024 12:19 PM
41	No	1/11/2024 11:57 AM
42	Overflow from city storm drainage line impacted our and a neighbor's houses flooding homes with sewage and waste water. We evacuated for 3 months while repairs were made.	1/11/2024 11:38 AM
43	No	1/11/2024 10:55 AM
44	No	1/10/2024 8:41 PM
45	No	1/10/2024 10:30 AM
46	N/A	1/10/2024 10:19 AM
47	No	1/10/2024 10:14 AM
48	No	1/9/2024 8:01 PM
49	No	1/9/2024 5:01 PM
50	Not applicable	1/9/2024 2:24 PM
51	No	1/9/2024 5:23 AM
52	No.	1/8/2024 9:45 PM
53	No	1/8/2024 9:28 PM
54	No	1/8/2024 8:53 PM
55	No	1/8/2024 8:30 PM
56	No	1/8/2024 4:31 PM
57	N/A	1/8/2024 2:32 PM
58	She was like I was just trying	1/8/2024 11:47 AM
59	No	12/28/2023 8:17 AM
60	No	12/21/2023 10:54 PM
61	No	12/21/2023 4:49 PM
62	No	12/21/2023 4:13 PM
63	No	12/21/2023 2:50 PM
64	no	12/21/2023 1:37 PM
65	No	12/6/2023 8:34 PM
66	no	12/6/2023 3:16 PM

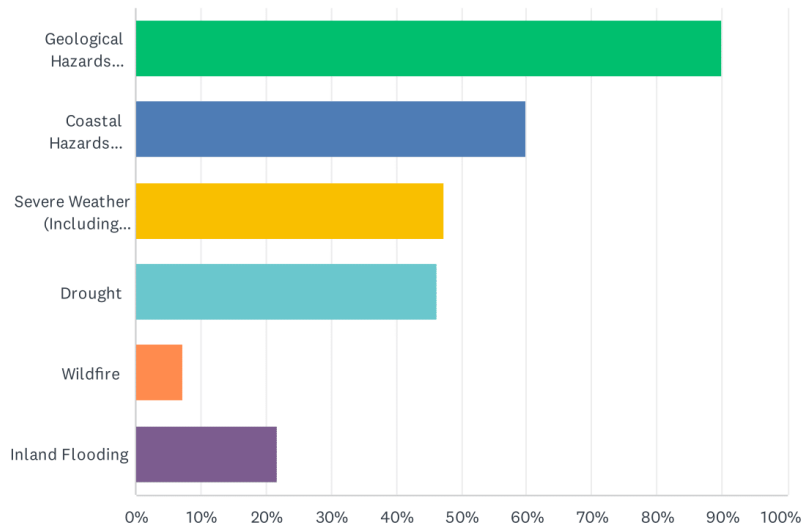
City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

67	No	12/6/2023 10:49 AM
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City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q16 Please indicate which hazard events you feel may particularly affect your community. (Choose all that apply)

Answered: 110 Skipped: 14



ANSWER CHOICES	RESPONSES	
Geological Hazards (Earthquake, Landslide)	90.00%	99
Coastal Hazards (Tsunami, King Tides, Daily Tides, El Nino, Beach and Coastal Erosion, Tropical Storms)	60.00%	66
Severe Weather (Including Wind, Extreme Heat)	47.27%	52
Drought	46.36%	51
Wildfire	7.27%	8
Inland Flooding	21.82%	24
Total Respondents: 110		

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q17 Are you concerned with any other hazards not identified in this survey?

Answered: 43 Skipped: 81

#	RESPONSES	DATE
1	No	1/31/2024 9:07 AM
2	No	1/30/2024 7:06 AM
3	Our streets are disgustingly poor and full of potholes and they're fixing to only last a few months it's disgusting.	1/29/2024 8:32 PM
4	no	1/29/2024 3:09 PM
5	dangerous Palm Trees	1/29/2024 11:00 AM
6	no	1/29/2024 9:48 AM
7	no	1/29/2024 9:45 AM
8	No	1/29/2024 9:20 AM
9	No	1/29/2024 7:17 AM
10	No, I'm not.	1/29/2024 7:11 AM
11	No	1/27/2024 5:53 PM
12	crime-homeless lol	1/27/2024 9:42 AM
13	Ocean contaminants Refinery air contaminants	1/26/2024 10:31 PM
14	Refinery problems, although that is not a natural hazard.	1/26/2024 3:00 PM
15	YES, others invading Manhattan beach during hard times. That is a huge concern of mine, if things really go bad. We are so close to the hood.	1/26/2024 11:13 AM
16	Terrorism	1/26/2024 10:35 AM
17	Refinery concerns about a repeat of 1968 fire, pollution from the burn off. The explosion should the refinery be targeted by a bomb.	1/26/2024 10:22 AM
18	None	1/26/2024 9:43 AM
19	As mentioned I think the refinery poses a bigger disaster than any of the items this survey has listed, yet it goes unmentioned.	1/26/2024 8:57 AM
20	Woke Liberals	1/26/2024 8:18 AM
21	No	1/25/2024 7:19 PM
22	no	1/25/2024 6:57 PM
23	neighborhood spreading fire post earthquake. The city will not be able to repong to area wide fires. Post earthquake concerned with major ingress and egress roads failing and our are being cut off from assistance an needed supplies. Prolonged electricity outages. No internet for communication and access to information of current disaster status.	1/20/2024 10:14 AM
24	Industrial sites within housing areas	1/19/2024 3:27 PM
25	No	1/15/2024 8:04 PM
26	No	1/12/2024 9:37 AM
27	If things go wrong big time, are we able to stop looters from invading us.	1/11/2024 11:18 PM

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

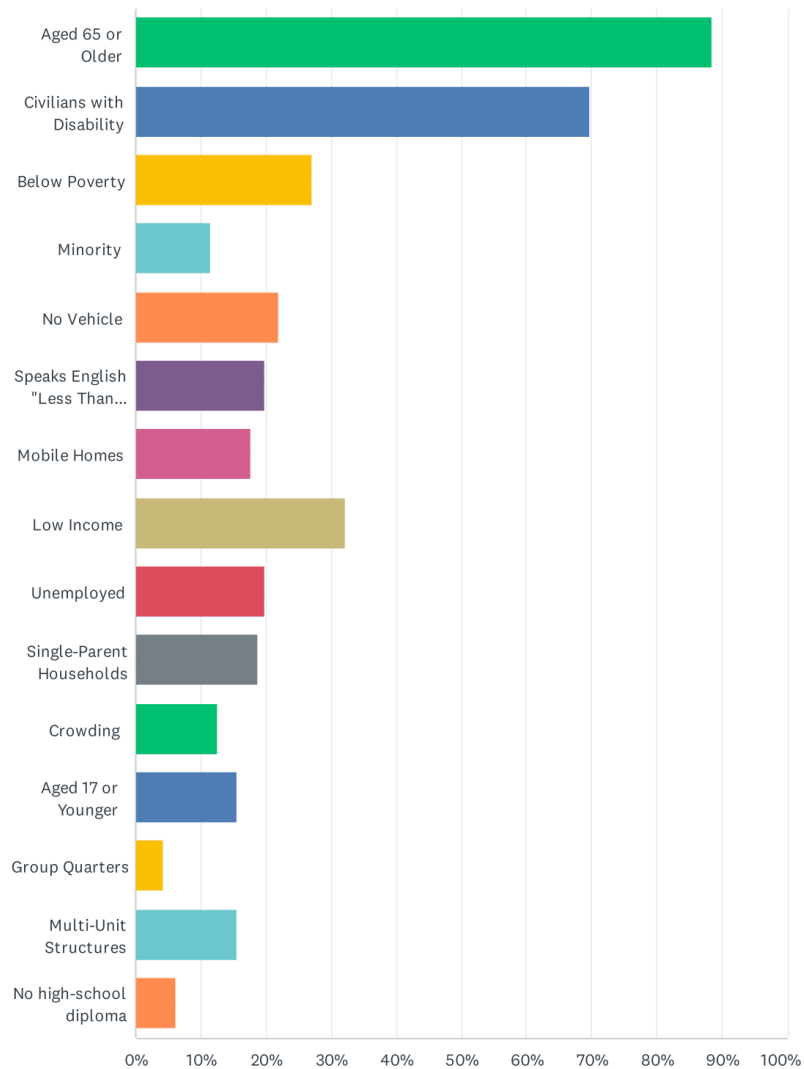
City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

28	Severe Weather - lightening along the water's edge.	1/11/2024 3:29 PM
29	No	1/11/2024 3:27 PM
30	No	1/10/2024 8:41 PM
31	No	1/10/2024 10:19 AM
32	No	1/10/2024 10:14 AM
33	None	1/9/2024 2:24 PM
34	Active Shooter. Chevron Refinery.	1/8/2024 10:42 PM
35	No.	1/8/2024 9:45 PM
36	Air Quality. The air here is filthy from cars and airplanes.	1/8/2024 9:28 PM
37	Crime— all types. Especially retail theft.	1/8/2024 8:53 PM
38	No	1/8/2024 8:30 PM
39	No	1/8/2024 4:31 PM
40	Son de la mejor opción	1/8/2024 11:47 AM
41	No	12/28/2023 8:17 AM
42	Hawthorne Airport flight path over Manhattan Beach and possible aircraft crashes. Long term loss of internet service for home and business.	12/6/2023 8:34 PM
43	no	12/6/2023 3:16 PM

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q18 In terms of social vulnerability do you feel that a specific group, or groups, in Manhattan Beach are more vulnerable to any of the hazards listed in Question 16? Note: Centers for Disease Control (CDC) 15 Social Factors listed below.

Answered: 96 Skipped: 28



City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

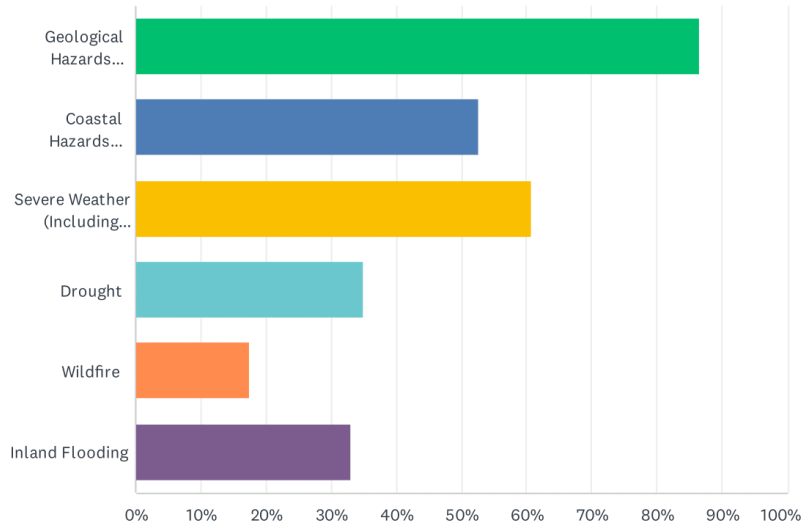
ANSWER CHOICES	RESPONSES	
Aged 65 or Older	88.54%	85
Civilians with Disability	69.79%	67
Below Poverty	27.08%	26
Minority	11.46%	11
No Vehicle	21.88%	21
Speaks English "Less Than Well"	19.79%	19
Mobile Homes	17.71%	17
Low Income	32.29%	31
Unemployed	19.79%	19
Single-Parent Households	18.75%	18
Crowding	12.50%	12
Aged 17 or Younger	15.63%	15
Group Quarters	4.17%	4
Multi-Unit Structures	15.63%	15
No high-school diploma	6.25%	6
Total Respondents: 96		

#	OTHER (PLEASE SPECIFY)	DATE
1	N/A	1/25/2024 7:19 PM
2	Low lying areas regardless of income, race...	1/25/2024 6:57 PM
3	Having taken the CERT Program it is terriblt important that EVERYONE in a neighborhood have essential supplies, water and for to self sustain for at least a week for their entire houshold and pets.	1/20/2024 10:14 AM
4	strand residents	1/18/2024 7:01 PM
5	Residents with mental health illness; the unhoused population; and long-term visitors may be socially vulnerable.	1/11/2024 3:29 PM
6	East MB has less resources.	1/8/2024 10:42 PM
7	No specific group!	1/8/2024 8:53 PM
8	We are all equal in the eyes of Mother Nature	1/8/2024 2:34 PM
9	Sky zone and you are welcome	1/8/2024 11:47 AM
10	unknown	12/28/2023 8:29 AM
11	unknown	12/28/2023 8:13 AM

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q19 Based on the group(s) you have selected in the previous question; please select which hazard events you feel may particularly affect those group(s)? (Choose all that apply)

Answered: 97 Skipped: 27



ANSWER CHOICES	RESPONSES
Geological Hazards (Earthquake, Landslide)	86.60% 84
Coastal Hazards (Tsunami, King Tides, Daily Tides, El Nino, Beach and Coastal Erosion, Tropical Storms)	52.58% 51
Severe Weather (Including Wind, Extreme Heat)	60.82% 59
Drought	35.05% 34
Wildfire	17.53% 17
Inland Flooding	32.99% 32
Total Respondents: 97	

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

Q20 In your opinion, what steps could be undertaken to reduce or eliminate the risk of future hazard damage?

Answered: 45 Skipped: 79

#	RESPONSES	DATE
1	Stressing the importance of knowing geological hazards and having the proper education for them.	1/30/2024 11:14 AM
2	Continue to survey/assess residents as you are doing here on an ongoing basis	1/30/2024 9:57 AM
3	Create a Local Hazard Mitigation Plan!	1/30/2024 9:48 AM
4	Public Awareness Meetings with contacts.	1/30/2024 7:06 AM
5	Fix the streets and the horrible horrible utility poles that have huge lines and wires hanging everywhere ,look up!look down, fix it nowUtility companies fix the powerlines and the gas lines! Fix the obvious stop looking to do more paperwork instead of more boots on the ground getting things done.	1/29/2024 8:32 PM
6	Code Enforcement and Building Inspections	1/29/2024 3:09 PM
7	No more dangerous Palm Trees that can fall on homes and catch fire from a spark. Roofs need to be required to tiles	1/29/2024 11:00 AM
8	power line should be buried underground to avoid fire caused by Edison line.	1/29/2024 8:24 AM
9	Education and information offered to the community in various ways: newspapers, social media, website, flyers, etc.	1/29/2024 7:47 AM
10	Public Information	1/29/2024 7:11 AM
11	Public awareness, tips for prevention or limit damage, help contacts	1/26/2024 10:31 PM
12	Keeping storm drains clear to reduce flooding.	1/26/2024 4:37 PM
13	Keep alert, help others and be kind.	1/26/2024 11:13 AM
14	Stop the move to all electric, let us choose!	1/26/2024 10:22 AM
15	preparedness	1/26/2024 9:43 AM
16	Retrofitting vulnerable buildings. Reaching out to community members who might be vulnerable and assisting them. Helping them prepare for any disaster. Rotary Care might be a good group to reach out to. They are currently helping seniors in the community.	1/26/2024 9:39 AM
17	Public Education and better city planning to ensure evacuation routes don't fall to traffic jams due to overbuilding and overcrowding near the coast.	1/26/2024 8:57 AM
18	I need to make more money :D	1/25/2024 7:19 PM
19	clear path drainage. Clean drains, designate retention ponds, capture runoff, build de-sal, provide mass transit,...it s a long list	1/25/2024 6:57 PM
20	Permit reviews for zoning and regulation compliance.	1/19/2024 3:27 PM
21	move to middle america	1/18/2024 7:01 PM
22	Retrofit of weak/ soft story structures.	1/14/2024 1:51 PM
23	Return the incredibly practical Map Your Neighborhood (MYN) program that CERT used to teach so effectively using the video provided by the people who develop the program. It was easy to teach, easy to integrate into a block, and made it easy to build community.	1/12/2024 9:37 AM
24	There are many very old, very tall trees, that seem to have the potential of losing dangerous branches. I think there should be a plan of rotating those really old big trees and replacing	1/12/2024 12:28 AM

City of Manhattan Beach Local Hazard Mitigation Plan (LHMP)

	them before they fall and damage, property or energy lines.	
25	I assume residents are prepared of an influx of people who let's say are up to no good, and want to come take what they want.	1/11/2024 11:18 PM
26	Enact city ordinances that encourage residents, businesses, and the public sector to install solar panels for new construction to minimize utility disruptions and reduce the risk of future hazard damage.	1/11/2024 3:29 PM
27	Have the government purchase all property in the city and Pay to move everyone to a more secure area	1/11/2024 1:21 PM
28	More public information about best practices and disaster response resources.	1/11/2024 11:57 AM
29	Provide MYN to teach people on blocks in MB how to work together to care for one another in earthquake or other emergency.	1/10/2024 8:41 PM
30	Education	1/10/2024 10:19 AM
31	Community education	1/9/2024 8:01 PM
32	Help households find and restore any weakness in their current property	1/9/2024 2:24 PM
33	Education. Exercises.	1/8/2024 10:42 PM
34	Continue to make info available to residents.	1/8/2024 9:45 PM
35	Start capturing water from inland flooding to recharge city water supply. Permeable asphalt in streets. Storm drain capture. Mandate green roofs and other cooling elements.	1/8/2024 9:28 PM
36	MB needs to concentrate on protecting its citizens from the rampant crime going on in our city and in LA county. That should be the number one priority, far above protection from natural hazards.	1/8/2024 8:53 PM
37	Maintain and continue to build beaches, dunes, etc Inform residents and businesses of hazards and how to mitigate damage. Encourage CERT training for residents within neighborhoods to assist in planning how to help neighbors	1/8/2024 8:30 PM
38	Move out of California...	1/8/2024 2:47 PM
39	Smoke with me too I don't	1/8/2024 11:47 AM
40	Solid electricity grid	12/29/2023 12:14 PM
41	Information from local govt on what steps have been taken and what resources will be available to support residents in the event of haz event.	12/28/2023 4:24 PM
42	Continued education for increased public awareness of likely local hazards and potential avenues to proactively prevent or mitigate personal injury or property damages.	12/21/2023 4:13 PM
43	Periodic offshore dredging for beach sand replenishment to maintain beach width and dunes on Manhattan Beach. Build rock groins, jetties, and offshore breakwaters to preserve beach width.	12/6/2023 8:34 PM
44	Stay one step ahead of warnings and do what is needed to be done now not after the fact	12/6/2023 3:16 PM
45	Emergency Preparedness Training Public Education Neighborhood Disaster Exercises	12/6/2023 10:49 AM

B.2.2 Spanish Survey

No submissions were received for the Spanish Survey



Plan de Mitigación de Riesgos Locales de la Ciudad de Manhattan Beach (LHMP): Revisión Pública

Formulario de Retroalimentación Pública del LHMP

Gracias por tomarse el tiempo de proporcionar su valiosa retroalimentación sobre el Plan de Mitigación de Riesgos Locales (LHMP). Su aporte es crucial para ayudarnos a mejorar nuestras estrategias y acciones para reducir riesgos y asegurar la seguridad y el bienestar de nuestra comunidad. Este formulario está diseñado para recopilar sus perspectivas, sugerencias e impresiones generales sobre el LHMP. Sus respuestas serán fundamentales para guiar las futuras revisiones y mejoras del plan.

Por favor, complete este formulario para el viernes 5 de abril de 2024.

APPENDIX C: COMMUNITY OUTREACH

This appendix contains documentation of stakeholder engagement and outreach to both the public and vulnerable populations.

Table 96: Community Outreach Products

Event Activity	Documentation
Hazard Mitigation Plan Community Awareness Announcements	City of Manhattan Beach Project Flyer QR Codes for Public Survey and HMPC Meeting Links LHMP PowerPoint materials shared during outreach activities Local Business Community Engagement/Flyer Distribution City Council Meeting LHMP Announcement
Email Outreach	Alert SouthBay American Martyrs American Red Cross Assembly Member Al Muratsuchi Beach Cities Health District (BCHD) Beach Cities Community Awareness and Emergency Response (CAER) Beach Cities Masonic Lodge Board of Building Appeals California Coastal Commission Manhattan Beach Chamber of Commerce Chevron El Segundo Congregation Tkvah Jacob Cornerstone Christian Fellowship County Supervisor's Office (2nd District) - Holly Mitchell California State University, Long Beach - Emergency Services Administration Department City of Manhattan Beach Planning Commission City of Manhattan Beach Cultural Arts Commission City of Hawthorne City of Hermosa Beach City of Torrance Office of Emergency Services

Event Activity	Documentation
	Culture Club South Bay - A celebration of diversity and unity in the South Bay Area Through the arts Disability Voices United - Manhattan Beach Los Angeles County, Disaster Management Area G Downtown Manhattan Beach Business and Professional Association El Camino College, Office of Workplace Safety and Risk Management El Segundo Fire Department El Segundo Emergency Services Department Elks Lodge Friendship Foundation Redondo Beach Harbor Interfaith Services Harbor Regional Center Jewish Community Center Journey of Faith Church Los Angeles County Fire Department Lifeguard Division Los Angeles County Department of Beaches & Harbors Leadership Manhattan Beach City of Manhattan Beach Library Commission Providence Little Company of Mary Medical Center Los Angeles County West Vector Control Board Trustee Manhattan Beach Community Emergency Response Team Association Manhattan Beach Little League Manhattan Beach Certified Farmer's Market Manhattan Beach Rotary Club Manhattan Hermosa AYSO18 Map Your Neighborhood MBPD Volunteer - HAM Radio for the City Manhattan Beach Unified School District Meals on Wheels - Salvation Army Mychal's Learning Place MB Neighborhood Watch

Event Activity	Documentation
	Neptunian Women's Club Noah's Bark Dog Rescue North Manhattan Beach Business Improvement District City of Manhattan Beach Parking and Public Improvement Commission PFLAG Manhattan Beach Southbay Redondo Beach Fire Department Roundhouse Aquarium Teach Center Senator Ben Allen, Representing Senate District 24 Torrance Memorial Medical Center Trinity Lutheran Church US Geological Survey (USGS) - Shake Alert West Basin Municipal Water District
City Department Outreach	City Council Community Development Manhattan Beach Dial-a-ride Engineering Finance Department Fire Department Human Resources Information Technology Information Technology – GIS Management Services Parks & Recreation Police Department Public Works Purchasing / Warehouse
Website Outreach	Information Campaign on MB Website
Print Media Outreach	On November 9, 2023, Easy Reader, a local newspaper, announced the update of the local hazard mitigation plan along with how to RSVP to each committee meeting. "What's Open, What's Closed" in celebration of Veterans Day included future events which had the first HMPC meeting on November 28, 2023.

Event Activity	Documentation
	<p>Beach Reporter, a local newspaper, Manhattan Beach invited residents into the planning update process by inviting them to meetings and the encouragement of participating in the public survey on November 9, 2023. Links and contact information were also provided.</p> <p>LHMP Outreach Flyers with QR codes to access the public survey and inform the public about HMPC meeting were provided in English and Spanish and posted to several businesses in areas with elevated socially vulnerability.</p> <p>LHMP Outreach Flyers provided to Manhattan Beach Unified School District (MBUSD), Beach Cities Health District (BCHD), and The Joslyn Community Center Older Adults Program for dissemination to their constituents which included vulnerable populations.</p> <p>LHMP flyers including the links to QR codes and information on HMPC meetings were disseminated to seniors at The Joslyn Community Older Adults Program, and Manhattan Heights Park Community Center in November 2023.</p> <p>The City's monthly Older Adult Newsletter included an announcement of the LHMP update and HMPC meeting dates in November 2023.</p> <p>On Monday, March 3, 2024, from 10:00 AM – 12:00 PM: LHMP slide decks were handed out during Amanda's presentation to attendees at the Senior Discussion group at the Older Adult Program in the Joslyn Community Center.</p> <p>On Tuesday, March 19, 2024, MB Farmers' Market, from 11:00 AM – 3:00 PM. LHMP outreach flyers were handed out which included info. on the update as well as how to participate in the LHMP draft review.</p> <p>On Tuesday, March 26, 2024, from 6:30 PM – 7:30 PM at the LA County-MB Library, LHMP update slide decks were presented and handed out, as well as outreach flyers about how to participate in the review of the LHMP draft.</p>
<p>Vulnerable Community Outreach</p>	<p>Farmers' Market: Set up an informational booth and distributed flyers.</p> <p>Older Adult Programs: Conducted two targeted outreach events with workshops and resources.</p>

Event Activity	Documentation
	<p>Library Presentations: Hosted an evening session on community support for vulnerable groups.</p> <p>Business District Engagement: Emergency Preparedness Administrator presentation and flyer distribution in North Manhattan and Vulnerable Tract 6208.01.</p> <p>Local Organizations Collaboration: MB CERT, MBUSD, and BCHD distribution of flyers; outreach to Disability Voices and Friendship Foundation.</p> <p>Community Engagement: Posted signs and distributed flyers in vulnerable areas, including stores and services and Vulnerable Tract 6208.01.</p>
Social Media Outreach	<p>MB Facebook Post</p> <p>MB Facebook Story Post</p> <p>MB Instagram</p> <p>MB Nextdoor Post</p> <p>MB Twitter Post</p> <p>MB E-News</p>

C.1 Community Awareness Flyers

C.1.1 City of Manhattan Beach LHMP Project Flyer (English)

CITY OF MANHATTAN BEACH

LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE



ABOUT THE PLAN

WHAT IS IT?

The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's Hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach.

WHY NOW?

The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. This is an update to the previous 2019 Hazard Mitigation Plan. The City of Manhattan Beach Fire Department is the lead agency for this plan effort.

OUR MISSION

Our mission is to ensure that the most vulnerable among us are at the forefront of our hazard mitigation efforts. We are committed to protecting lives, promoting equity, and building resilience by tailoring our strategies to address the unique needs and challenges faced by our vulnerable community members. Together, we are creating a stronger, more inclusive, and safer future for all.

PLANNING COMMITTEE MEETINGS

Meeting #1: Tuesday, November 28th
9:30 AM – 11:30 AM

Meeting #2: Tuesday, December 12th
9:30 AM – 11:30 AM

Meeting #3: Tuesday, January 9th
9:30 AM – 11:30 AM

Meeting #4: Tuesday, January 30th
9:30 AM – 11:30 AM

HOW YOU CAN HELP

ATTEND COMMITTEE MEETINGS

Join us at the four committee meetings to share your experiences, concerns, and ideas about hazard mitigation in our community. Your input will shape the strategies we develop.

COMPLETE SURVEYS

Look out for surveys and questionnaires related to hazard mitigation. Your responses will help us understand community needs and preferences.

STAY INFORMED & SPREAD THE WORD

Keep yourself informed about the progress of the project by visiting our website and following our social media accounts. Share information about the project with your neighbors, friends, and family. The more people involved, the stronger our community's resilience.



www.manhattanbeach.gov/LHMP

[@citymb](https://www.facebook.com/citymb)

communications@manhattanbeach.gov

dylan.yates@constantassociates.com

C.1.2 City of Manhattan Beach LHMP Project Flyer (Spanish)

CITY OF MANHATTAN BEACH

PLAN DE MITIGACIÓN DE PELIGROS LOCALES

LOCAL HAZARD MITIGATION PLAN (LHMP)



SOBRE EL PLAN

QUÉ ES?

El proceso del Plan de Mitigación de Peligros Locales tiene como objetivo hacer que las comunidades y la infraestructura sea más resilientes y menos susceptibles a daños, pérdidas, o interrupciones cuando se enfrentan a peligros naturales o provocados por el hombre. Esto se logra evaluando y actualizando el Plan de Mitigación de Peligros Locales de la ciudad para abordar las vulnerabilidades y desarrollar estrategias de mitigación a corto y largo plazo para proteger la comunidad de Manhattan Beach.

PORQUÉ AHORA?

La Agencia Federal para el Manejo de Emergencias (FEMA, por sus siglas en inglés) requiere que los planes de mitigación de riesgos se actualicen cada cinco años. Esta es una actualización para el Plan de Mitigación de Peligros Locales que fue adoptado en el 2019. La agencia principal de este plan es el Departamento de Bomberos de Manhattan Beach.

NUESTRA MISIÓN

Nuestra misión es garantizar que los más vulnerables de nuestra comunidad estén en el primer plano de nuestros esfuerzos de mitigación de peligros. Nos comprometemos a proteger vidas, promover la equidad y desarrollar la resiliencia en adaptando nuestras estrategias para abordar y emitir las necesidades únicas que enfrentan los miembros vulnerables de nuestra comunidad. Juntos, estamos creando un futuro más vigoroso, inclusivo y seguro para todos.



www.manhattanbeach.gov/LHMP

[@citymb](https://www.facebook.com/citymb)

communications@manhattanbeach.gov

dylan.yates@constantassociates.com

REUNIONES DEL COMITÉ DE PLANIFICACIÓN

- Reunión #1:** martes, el 28 de noviembre
9:30 AM – 11:30 AM
- Reunión #2:** martes, el 12 de diciembre
9:30 AM – 11:30 AM
- Reunión #3:** martes, el 9 de enero
9:30 AM – 11:30 AM
- Reunión #4:** martes, el 30 de enero
9:30 AM – 11:30 AM

CÓMO PUEDES AYUDAR

ASISTE A LAS REUNIONES DEL COMITÉ

Únase a nosotros en las cuatro reuniones del comité para compartir sus experiencias, inquietudes e ideas sobre la mitigación de riesgos en nuestra comunidad. Sus comentarios darán forma a las estrategias que desarrollaremos.

COMPLETE LA ENCUESTA Y FORMULARIO

Manténgase alerta a los formularios y encuestas relacionados con el plan de mitigación. Sus respuestas nos ayudarán a comprender las necesidades y preferencias de la comunidad.

MANTENGASE INFORMADO Y CORRA LA VOZ

Visite nuestra página electrónica y siga nuestras cuentas de redes sociales para mantenerse informado de nuestro progreso en el proyecto. Comparta la información con sus vecinos, amigos y familiares. La resiliencia de nuestra comunidad será más fuerte entre más gente se involucre en las discusiones.

C.2 Manhattan Beach LHMP Dedicated Website

[Departments](#) » [Fire Department](#) »

Local Hazard Mitigation Plan (LHMP)

Font Size: [+](#) [-](#) [Feedback](#) [Print](#)



Review of the Local Hazard Mitigation Plan

Monday, March 25 to Friday, April 5

The City of Manhattan Beach is asking for your input on the proposed Local Hazard Mitigation Plan for Manhattan Beach. This plan will develop the infrastructure for our community to help with early identification and mitigation of natural hazards. **The plan will be available for public review and input Monday, March 25 - Friday, April 5.**

[City of Manhattan Beach LHMP: Public Review Draft](#) (PDF)

Do you have feedback for the City of Manhattan Beach LHMP: Public Review Draft? Submit your feedback using the links below:

[English Survey Link](#)

[Spanish Survey Link](#)

The surveys will close at the end of the public review period on **Friday, April 5, 2024.**

LHMP Information Session

[Tuesday, March 26, 2024 \(6:30 PM to 7:30 PM\) - Manhattan Beach Public Library](#)

BACKGROUND

The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach. Please note that The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. The City of Manhattan Beach adopted the current LHMP in May of 2019; therefore, the LHMP Update is due to FEMA by May 13, 2024.

The City is committed to protecting lives, promoting equity, and building resilience by tailoring strategies to address the unique needs and challenges faced by our vulnerable community members. Broad and engaged participation in the LHMP update will ensure the plan is a strong and important tool, resulting in a safer future for all.

DOCUMENTS

MEETING 1

- [Agenda](#) (PDF)
- [Minutes](#) (PDF)
- [Powerpoint Slides](#) (PDF)

MEETING 2

- [Agenda](#) (PDF)
- [Minutes](#) (PDF)
- Follow-up items:
 - [Previous Occurrence Data](#) (PDF)
 - [Vulnerability Impact Assessment](#) (PDF)

MEETING 3

- [Agenda](#) (PDF)
- [Powerpoint Slides](#) (PDF)
- [Vulnerability Worksheet](#) (PDF)

MEETING 4

- [Agenda](#) (PDF)
- [Manhattan Beach LHMP Committee Projects List 012924](#) (PDF)
- [Powerpoint Slides](#) (PDF)
- [Minutes](#) (PDF)

WHAT IS IT?	▼
<p>The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the City’s Hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach.</p>	
WHY NOW?	▼
<p>The Federal Emergency Management Agency(FEMA) requires hazard mitigation plans to be updated every five years. This is an update to the previous 2019 Hazard Mitigation Plan. The City of Manhattan Beach Fire Department is the lead agency for this plan effort.</p>	
OUR MISSION	▼
<p>Our mission is to ensure that the most vulnerable among us are at the forefront of our hazard mitigation efforts. We are committed to protecting lives, promoting equity, and building resilience by tailoring our strategies to address the unique needs and challenges faced by our vulnerable community members. Together, we are creating a stronger, more inclusive, and safer future for all.</p>	
HOW YOU CAN HELP	▼
<p>ATTEND COMMITTEE MEETINGS Join us virtually at the four committee meetings to share your experiences, concerns, and ideas about hazard mitigation in our community. Your input will shape the strategies we develop.</p> <p>COMPLETE SURVEYS Look out for surveys and questionnaires related to hazard mitigation. Your responses will help us understand community needs and preferences.</p> <p>STAY INFORMED AND SPREAD THEWORD Keep yourself informed about the progress of the project by visiting our website and following our social media accounts. Share information about the project with your neighbors, friends, and family. The more people involved, the stronger our community's resilience.</p>	
OUTREACH EFFORTS	▼
<p>Print and virtual ad in the following local newspapers:</p> <ul style="list-style-type: none">• The Beach Reporter: November 9, 2023• The Easy Reader: November 9, 2023	

Online advertisement:

- Calendar events on City website
 - [Meeting # 1: Tuesday, November 28th, from 9:30 AM to 11:30 AM](#)
 - [Meeting # 2: Tuesday, December 12th, from 9:30 AM to 11:30 AM](#)
 - [Meeting # 3: Tuesday, January 9th, from 9:30 AM to 11:30 AM](#)
 - [Meeting # 4: Tuesday, January 30th, from 9:30 AM to 11:30 AM](#)
- [Eventbrite](#)
- Email Blasts
 - [November 8, 2023](#)
 - November 10, 2023
 - [November 21, 2023](#)
 - [November 22, 2023](#)
 - [December 5, 2023](#)
 - [December 5, 2023](#)
 - December 8, 2023

Physical flyers:

- Manhattan Beach Joslyn Senior Center

Digital Display Screens:

- Manhattan Beach Joslyn Community Center
- City Hall Lobby
- Parks and Recreation Department

In-person announcements:

- City Council Meeting during the Community Announcements on November 7, 2023
- Manhattan Beach Parks and Recreation Older Adults Program "Lunch Bunch" on November 14, 2023

Survey

The City circulated a survey in English and Spanish to gather information and insights from residents and individuals associated with the City of Manhattan Beach regarding their awareness, concerns, and preparedness related to various natural hazard events.

The survey aimed to assess the community's level of understanding of these hazards, their impact on properties, and the measures taken to mitigate risks. Additionally, the survey sought input on the types of mitigation projects and policies that local government should focus on to strengthen the community's resilience to natural hazards.

Advertisement for individuals to take this survey was done on the following platforms:

- Advertisements in The Beach Reporter
- City's website
- City's social media

- City's social media
- Community Announcements at City Council meetings
- Flyers posted at community centers, churches, businesses.

This survey closed on January 30, 2024.

PAST MEETINGS

A LHMP committee is currently being formed which will include: Emergency Management, City Departments, Elected Officials, MBUSD, Business community, nonprofit and faith-based organizations, MBCERTA, neighboring cities, representatives of vulnerable communities, and many more internal and external stakeholders. The schedule for the planning committee meetings is below, and will include all committee members, as well as any interested community members and stakeholders (locations and video links TBD).

MEETINGS

- [Meeting # 1: Tuesday, November 28th, from 9:30 AM to 11:30 AM](#)
- [Meeting # 2: Tuesday, December 12th, from 9:30 AM to 11:30 AM](#)
- [Meeting # 3: Tuesday, January 9th, from 9:30 AM to 11:30 AM](#)
- [Meeting # 4: Tuesday, January 30th, from 9:30 AM to 11:30 AM](#)

MEETING INFORMATION

<https://citymb-info.zoom.us/j/93376200363>
 Meeting ID: 933 7620 0363

Zoom Meeting Instructions: There are multiple ways to join the meeting.

If you plan to speak during the meeting, join via Zoom at 3:45 PM in order to request to be on the speakers list.

1. Join Zoom Meeting via the internet (download app if needed - [Download Mobile App](#)), Meeting ID: 933 7620 0363 Please name yourself to include the item(s) you wish to speak on, and your First and Last name. Example: G.1 – Jane Smith.
2. Join Zoom Meeting via Phone Application (download app if needed - [Download Mobile App](#)), Enter Meeting ID: 933 7620 0363 Please name yourself to include the item(s) you wish to speak on, and your First and Last name. Example: G.1 – Jane Smith.

CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

ABOUT THE PLAN
WHAT IS IT?
 The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's Hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach.

WHY NOW?
 The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. This is an update to the previous 2017 Hazard Mitigation Plan. The City of Manhattan Beach Fire Department is the lead agency for this plan effort.

OUR MISSION
 Our mission is to ensure that the most vulnerable among us are at the forefront of our hazard mitigation efforts. We are committed to protecting lives, promoting equity, and building resilience by tailoring our strategies to address the unique needs and challenges faced by our vulnerable community members. Together, we are creating a stronger, more inclusive, and safer future for all.

PLANNING COMMITTEE MEETINGS
 Committee Meeting #1: Tuesday, November 28th
 9:30 AM – 11:30 AM
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 Committee Meeting #3: Tuesday, January 9th
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HOW YOU CAN HELP
ATTEND COMMITTEE MEETINGS
 Join us virtually at the four committee meetings to share your experiences, concerns, and ideas about hazard mitigation in our community. Your input will shape the strategies we develop.

COMPLETE SURVEYS
 Link and QR surveys and questionnaires related to hazard mitigation. Your responses will help us understand community needs and preferences.

STAY INFORMED AND SPREAD THE WORD
 Keep yourself informed about the progress of the project by liking our website and following our social media accounts. Share information about the project with your neighbors, friends, and family. The more people involved, the stronger our community's resilience.

310.852.5000
 @citymb
www.manhattanbeach.org

Please Note - All microphones for non-Committee or Staff will be muted during the meeting, except during Public Comment periods for which you have requested to speak.

The City strongly advises you of the following:

1. [Download the Zoom app](#) to your respective device well ahead of the meeting time. Please make sure you have downloaded the most recent version available.
2. Familiarize yourself with the Zoom application prior to the meeting.
3. Check the condition of all personal electronic equipment, internet and phone connections, and microphone/speaker functionality. The City is unable to support this equipment.
4. Join the meeting prior to the start time. Due to security or technical limitations, admittance to the meeting may not be possible after the meeting begins.
5. Every effort will be made to "rename" participants on Zoom as quickly as possible so that phone numbers are hidden, however, phone numbers may be partially visible for a brief time.

The City is committed to protecting lives, promoting equity, and building resilience by tailoring strategies to address the unique needs and challenges faced by our vulnerable community members. Broad and engaged participation in the LHMP update will ensure the plan is a strong and important tool, resulting in a safer future for all. Additional meeting details and LHMP update information will follow in the days and months ahead. Download the [Local Hazard Mitigation Plan \(LHMP\) flyer](#) (PDF) or visit the [Local Hazard Mitigation Plan \(LHMP\) webpage](#) for more information.

For more information about the Local Hazard Mitigation Project, please contact:

- [Amanda MacLennan](#), Emergency Preparedness Administrator, (310) 802-5246 or [email](#)
- [Dylan Yates](#), Constant Associates, [email](#)

Free viewers are required for some of the attached documents.
They can be downloaded by clicking on the icons below.



C.3 Social Media Outreach

C.3.1 Manhattan Beach Facebook Post

City of Manhattan Beach

Published by City of Manhattan Beach · Just now · 🌐

⋮

The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach. Please note that The Federal Emergency Management Agency (FEMA) requires hazard mitigation ... See more

CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

ABOUT THE PLAN
WHAT IS IT?
 The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's Hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach.

WHY NOW?
 The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. This is an update to the previous 2019 Hazard Mitigation Plan. The City of Manhattan Beach Fire Department is the lead agency for this plan effort.

OUR MISSION
 Our mission is to ensure that the most vulnerable among us are at the forefront of our hazard mitigation efforts. We are committed to protecting lives, promoting equity, and building resilience by tailoring our strategies to address the unique needs and challenges faced by our vulnerable community members. Together, we are creating a stronger, more inclusive, and safer future for all.

[LEARN MORE](#) →

CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

ATTEND COMMITTEE MEETINGS

Join us at the four committee meetings to share your experiences, concerns, and ideas about hazard mitigation in our community. Your input will shape the strategies we develop.

PLANNING COMMITTEE MEETINGS

Meeting #1: Tuesday, November 28th 9:30 AM – 1:30 AM

Meeting #2: Tuesday, December 12th 9:30 AM – 1:30 AM

Meeting #3: Tuesday, January 9th 9:30 AM – 1:30 AM

Meeting #4: Tuesday, January 30th 9:30 AM – 1:30 AM

[LEARN MORE](#) →

CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

COMPLETE SURVEYS

Look out for surveys and questionnaires related to hazard mitigation. Your responses will help us understand our community needs and preferences.

STAY INFORMED & SPREAD THE WORD

Keep yourself informed about the progress of the project by visiting our website and following our social media accounts. Share information about the project with your neighbors, friends, and family. The more people involved, the stronger our community's resilience.

www.manhattanbeach.gov/LHMP
 @cityofmanhattanbeach #cityofmanhattanbeach

CITY OF MANHATTAN BEACH
PLAN DE MITIGACIÓN DE PELIGROS LOCALES
LOCAL HAZARD MITIGATION PLAN (LHMP)

¿QUÉ ES EL PLAN?
 El proceso del Plan de Mitigación de Peligros Locales tiene como objetivo hacer que los ciudadanos y la infraestructura sean más resistentes y menos susceptibles a daños, pérdidas o interrupciones cuando se enfrentan a peligros naturales o provocados por el hombre. Esto se logra evaluando y actualizando el Plan de Mitigación de Peligros Locales de la ciudad para abordar las vulnerabilidades y desarrollar estrategias de mitigación a corto y largo plazo para proteger la comunidad de Manhattan Beach.

¿POR QUÉ AHORA?
 El Agente Federal para el Manejo de Emergencias FEMA, por sus reglas de implementación, requiere que los planes de mitigación de peligros locales se actualicen cada cinco años. Este es una actualización del Plan de Mitigación de Peligros Locales que fue completado en el 2019. La agencia encargada de esta plan es el Departamento de Servicios de Manhattan Beach.

¿NUESTRA MISIÓN?
 Nuestra misión es garantizar que los miembros más vulnerables de nuestra comunidad estén en el primer plano de nuestros esfuerzos de mitigación de peligros. Nos comprometemos a proteger vidas, promover la equidad y desarrollar la resiliencia en colaboración con los miembros de la comunidad y con las organizaciones locales que trabajan con miembros vulnerables de nuestra comunidad. Juntos, estamos creando un futuro más resiliente, inclusivo y seguro para todos.

[See insights and ads](#)

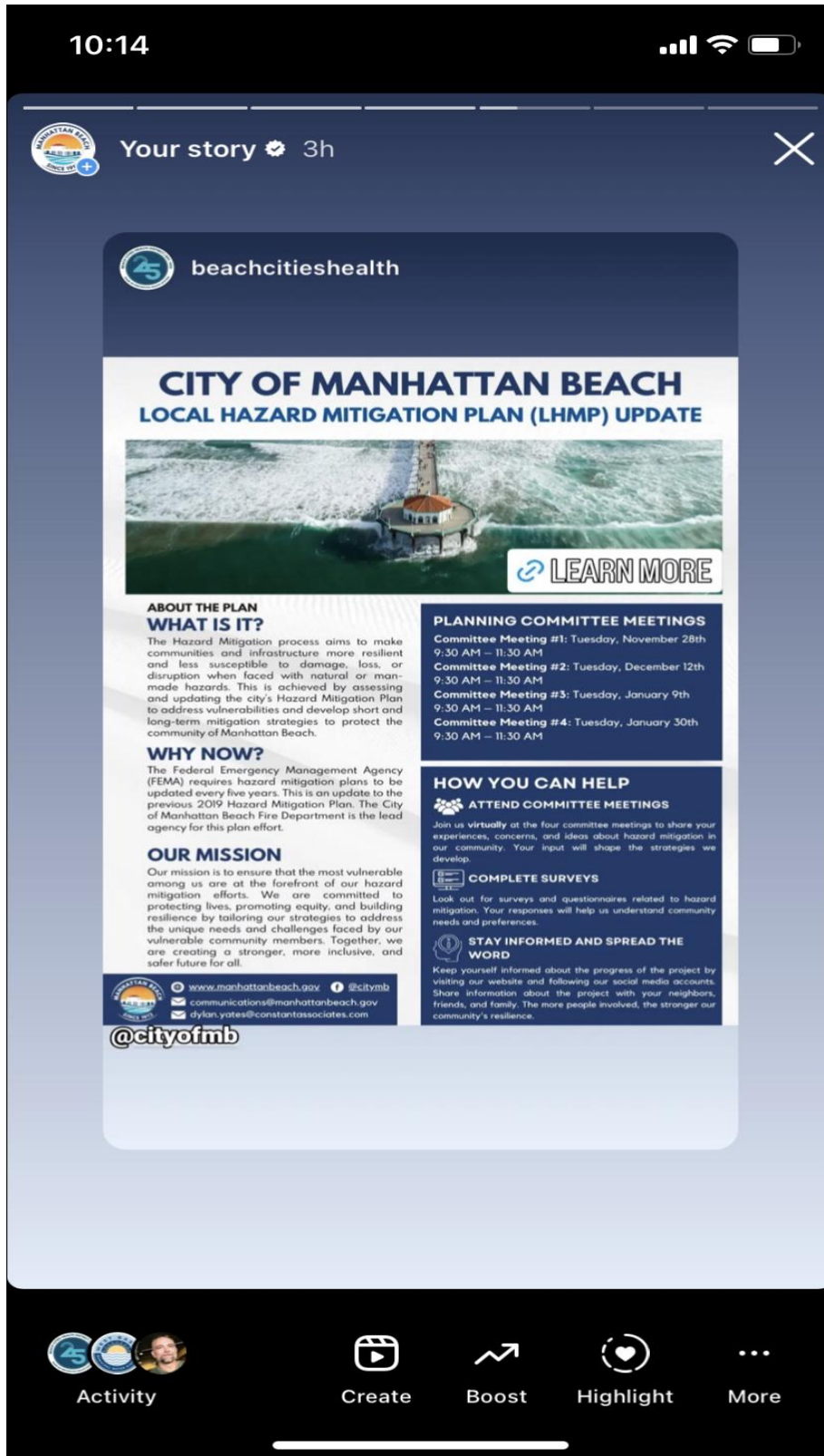
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C.3.2 Manhattan Beach Facebook Story



C.3.3 Manhattan Beach Nextdoor Post

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City of Manhattan Beach

The City of Manhattan Beach's Nextdoor page is to provide general public information about events or activities happening in the City and informational updates helpful to residents. Should you require a response from the City of Manhattan Beach or wish to See more...

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City of Manhattan Beach
 Office of Communications City of Manhattan Beach • Just now

The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or See more...

CITY OF MANHATTAN BEACH
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE

ABOUT THE PLAN
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www.manhattanbeach.gov/LHMP
dylan.yates@camstantosociates.com communications@manhattanbeach.gov

PLANNING COMMITTEE MEETINGS

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Meeting #4:	Tuesday, January 30th	9:30 AM - 9:30 AM

HOW YOU CAN HELP

ATTEND COMMITTEE MEETINGS
 Join us at the four committee meetings to share your expertise, expertise with other hazard mitigation or our community. You report will shape the strategies we develop.

COMPLETE SURVEYS
 Help us by completing and disseminating, critical to hazard mitigation, data and information about our community's vulnerabilities.

STAY INFORMED & SPREAD THE WORD
 Stay informed and help us spread the word by making sure everyone is "in the loop" for updates on the progress of the project. Share the information about our plans, our strategies, and our goals. We want to ensure the most vulnerable are protected and that everyone is in the loop.

Posted to Subscribers of City of Manhattan Beach

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City of Manhattan Beach
 25,640 members
 12,931 claimed households
 15 neighborhoods

Details Edit

City of Manhattan Beach
 1400 Highland Ave
 Manhattan Beach, CA 90266
[Get directions](#)

(310) 802-5000

manhattanbeach.gov

C.3.4 Manhattan Beach Twitter Post

Manhattan Beach City

@citymb

This is the official Twitter page for the City of Manhattan Beach, California.

Manhattan Beach, CA 90266 manhattanbeach.gov
Joined November 2009

626 Following 5,191 Followers

Posts Replies Highlights Media Likes

Manhattan Beach City @citymb · 1s

The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. Get involved and learn more at manhattanbeach.gov/LHMP

manhattanbeach.gov/LHMP
communications@manhattanbeach.gov

C.4 Outreach to Local Organizations

Table 97 lists the organizations and City departments who were contacted via phone and email to participate in the 2024 LHMP HMPC meetings and disseminate the LHMP project flyer to their staff and constituents to promote engagement in the planning effort.

Table 97: 2024 LHMP Outreach Promotion Tracker

Organization/City Department	Date Contacted by Phone/In Person	Date Emailed
Alert SouthBay	Monday 11/13	Monday 11/13
All MB City Department internal LHMP update representatives	Various dates	Tuesday 11/14
American Martyrs	Wednesday 11/8	Sunday 11/12
American Red Cross	Thursday 11/9	Sunday 11/12
Assembly Member Al Muratsuchi		Monday 11/13
BCHD	Tuesday 10/3	Sunday 11/12
Beach Cities Community Awareness and Emergency Response (CAER)	N/A	Sunday 11/12
Beach Cities Masonic Lodge	Tuesday 11/14	
Board of Building Appeals	N/A	Monday 11/13
California Coastal Commission		Monday 11/13
Chamber of Commerce	Wednesday 11/8	Sunday 11/12
Chevron	Wednesday 10/25	Sunday 11/12
Community Development	In person Communications	Tuesday 11/14
Congregation Tkvah	Wednesday 11/8	Sunday 11/12
Cornerstone Christian Fellowship	Thursday 11/9	Sunday 11/12
County Supervisor's Office (2nd District) - Holly Mitchell	N/A	Monday 11/13 & Tuesday 11/21
CSULB Emergency Management	N/A	Monday 11/13
Cultural Arts Commission	N/A	Monday 11/13
Culture Club South Bay - A celebration of diversity and unity in the South Bay Area Through the arts	Wednesday 11/8	Sunday 11/12
Dial-a-ride	Thursday 11/9	Sunday 11/12
Disability Voices United - MB	Thursday 11/9	Sunday 11/12
Disaster Management Area G	Friday 9/15	Sunday 11/12
Downtown Manhattan Beach Business and Professional Association	Wednesday 11/8	Sunday 11/12

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

El Camino College	Tried Monday 11/13 and Tuesday 11/14 at 2:30 p.m. Tues. 11/21 I received a voicemail from Valerie Wagner with email and phone info.	Monday 11/13 To new address on Tuesday 11/21
El Segundo	N/A	Tuesday 11/14
Elks Lodge	N/A	Monday 11/13
Engineering	In person Communications	Tuesday 11/14
Farmer's Market	N/A	Monday 11/13
Finance Department	In person Communications	Tuesday 11/14
Fire Department	In person Communications	Tuesday 11/14
Fire Department	In person Communications	Tuesday 11/14
Fire Department	In person Communications	Tuesday 11/14
Fire Department	In person Communications	Tuesday 11/14
Fire Department	In person Communications	Tuesday 11/14
Fire Department	In person Communications	Tuesday 11/14
Fire Department	In person Communications	Tuesday 11/14
Friendship Foundation Redondo Beach	Thursday 11/9	Sunday 11/12
Harbor Interfaith	Thursday 11/9	Sunday 11/12
Harbor Regional Center	N/A	Monday 11/13
Hawthorne	N/A	Tuesday 11/14
Hermosa	N/A	Tuesday 11/14
Human Resources	In person Communications	Tuesday 11/14
Information Technology	In person Communications	Tuesday 11/14
Information Technology - GIS	In person Communications	Tuesday 11/14
Jewish Community Center	Thursday 11/9	Sunday 11/12
Journey of Faith Church	Thursday 11/9	Sunday 11/12
LA County Beaches and Harbors	N/A	Tuesday 11/14
Leadership Manhattan Beach	Thursday 11/9	Sunday 11/12
Library Commission	N/A	Monday 11/13
Little Company of Mary	Tuesday 11/14	
Los Angeles County West Vector Control Board Trustee	N/A	Monday 11/13
Management Services	In person Communications	Tuesday 11/14
Management Services	In person Communications	Tuesday 11/14
Manhattan Beach Little League	N/A	Monday 11/13
Manhattan Beach Rotary + VetFest	N/A	Sunday 11/12

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

Manhattan Hermosa AYSO18	N/A	Monday 11/13
Map Your Neighborhood	N/A	Monday 11/13
MB City Council Member	N/A	Tuesday 11/14
MB City Council Member	N/A	Tuesday 11/16
MB Community Church	Thursday 11/9	Sunday 11/12
MBCERTA	Monday 10/2	Sunday 11/12
MBPD Volunteer - HAM Radio for the City	N/A	Tuesday 11/14
MBUSD	Thursday 9/28	Sunday 11/12
Meals on Wheels - Salvation Army	Thursday 11/9 & Tuesday 11/14	
Mychal's Learning	Thursday 11/9	Sunday 11/12
Neighborhood Watch	N/A	Tuesday 11/14
Neptunian Women	N/A	Monday 11/13
Noah's Bark - dog rescue	N/A	
North Manhattan Beach Business Improvement District	Wednesday 11/8	Sunday 11/12
Parking and Public Improvement Commission	N/A	Monday 11/13
Parks & Recreation	In person Communications	Tuesday 11/14
Parks & Recreation	In person Communications	Tuesday 11/14
Parks and Recreation Commission	N/A	Monday 11/13
P-Flag	Wednesday 11/8	Sunday 11/12
Planning Commission	N/A	Monday 11/13
Police Department	In person Communications	Tuesday 11/14
Police Department	In person Communications	Tuesday 11/14
Public Works	In person Communications	Tuesday 11/14
Purchasing / Warehouse	In person Communications	Tuesday 11/14
Redondo Beach	N/A	Tuesday 11/14
Roundhouse Aquarium on the Pier	N/A	Tuesday 11/14
SCE	N/A	Monday 11/13
Senator Ben Allen	N/A	Monday 11/13
Torrance	N/A	Tuesday 11/14
Torrance Memorial	Tuesday 11/14	Monday 11/13 and Tuesday 11/14
Trinity Lutheran	Thursday 11/9	Sunday 11/12
US Geological Survey (USGS) - ShakeAlert	Thursday 11/9	Sunday 11/12
West Basin Municipal Water District	N/A	Monday 11/13

C.4 Vulnerable Community Outreach

C.4.1 Vulnerable Tract Outreach (6208.01)

Posted LHMP Notifications

Joe Jordan

From: Michelle Klein
Sent: Tuesday, January 23, 2024 11:08 AM
To: Monica Machacek-Chiapello; Joe Jordan; Dylan Yates
Subject: FW: MB Vulnerable tract 6208.01 - LHMP flyer distribution
Attachments: MB Vulnerable Tract 6208.01 - LHMP Flyer Tracking.docx

You may already have this. Just re-sending just in case.

From: Amanda MacLennan <amaclennan@manhattanbeach.gov>
Sent: Wednesday, November 15, 2023 4:18 PM
To: Dylan Yates <Dylan.Yates@constantassodates.com>; Michelle Klein <michelle.klein@constantassodates.com>;
Mona Bonitty <mona.bonitty@constantassodates.com>; Monica Machacek-Chiapello
<Monica@constantassodates.com>
Cc: Alexandria Latragna <alatragna@manhattanbeach.gov>; Kristin Yamauchi <kyamauchi@manhattanbeach.gov>
Subject: MB Vulnerable tract 6208.01 - LHMP flyer distribution

Hi all,

Yesterday, Tues, 11/14, I went to the MB Vulnerable tract 6208.01 area and went door-to-door to businesses. I have placed the list of 13 vulnerable tract locations where the LHMP flyers (Spanish and English) were received by the businesses and placed for the community to see and be informed. The photos and attached document are found in the Dropbox under:

Public Outreach Strategy → Proof of Public Outreach → Tract 6208.01 Flyer distribution and display → MB Vulnerable Tract 6208.01 – LHMP Flyer Tracking (as well as the folder with the photos titled, "MB Vulnerable Tract 6208.01 – LHMP Flyer Tracking Photos").

Thank you,
Amanda



AMANDA MACLENNAN
EMERGENCY PREPAREDNESS ADMINISTRATOR

(310) 802-5246
amaclennan@manhattanbeach.gov

CITY OF MANHATTAN BEACH 400 15th Street Manhattan Beach, CA 90266
Office Hours: M-Th 7:30 AM-5:30 PM | Fridays 7:30 AM-4:30 PM | Not Applicable to Public Safety

[Reach Manhattan Beach](#)

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**Manhattan Beach – Vulnerable Tract 6208.01 –
LHMP Survey Flyer (Spanish & English) Placement in the Community**

- **Friday, 12/22/23 – between 2:00 p.m. and 2:10 p.m.**
 1. Manhattan Smoke Shop:
 - 1005 N Aviation Blvd.
 - 310-798-9966
 - Photos titled, “M Smoke Shop 1005 N Aviation”
 - Notes:
 - Staff put up in window.
 2. The Hanger Inn:
 - 1001 N Aviation Blvd.
 - 310-379-0836
 - Photos titled, “Hanger Inn 1001 N Aviation”
 - Notes:
 - Staff put the LHMP flyers on the bulletin board while Amanda was there
 3. Valentino's Pizza:
 - 975 Aviation Blvd.
 - 310-318-5959
 - Photo titled, “Valentino's Pizza 975 Aviation”
 - Notes:
 - Staff member took and put up.
 4. Suds & Duds Coin Laundry, Inc.:
 - 975 N Aviation Blvd.
 - 310-372-7553
 - Photo titled, “Suds and Duds 975 N Aviation”
 - Notes:
 - Staff took and put up.
 5. Aviation Liquor & Convenience Store:
 - 975 N Aviation Blvd.
 - 310-504-0484 or 424-398-0180
 - Photo titled, “Aviation Liquor 975 N Aviation”
 - Notes:
 - Staff took to put up.
- **Friday 12/22/23 – 2:15 p.m.**
 6. Manhattan Beach Community Church:
 - 303 S Peck Ave.
 - 310-372-3587
 - Photos titled, “MB Community Church 303 S Peck”
 - Notes:

- Office locked, put in mailbox.

Friday, 12/22/23 – between 2:20 p.m.:

7. Montessori School Manhattan Beach:
 - 315 S Peck Ave.
 - 310-379-9642
 - Photos titled, "Montessori MB 315 S Peck"
 - Notes:
 - Staff was very happy to receive and put up.

Tuesday, 12/2/23 – between 2:30 p.m. and 2:40 p.m.:

8. Cookie Cutters – Haircuts for Kids:
 - 1751 Artesia Blvd., Suite F
 - 424-203-6460
 - Photos titled, "Cookie Cutters 1751 Artesia"
 - Notes:
 - Staff members immediately put the LHMP flyers on the front desk.
9. Arunluck Thai Massage:
 - 1751 Artesia Blvd., Suite E
 - 310-379-8899
 - Photo titled, "Arunluck Thai Massage 1751 Artesia"
 - Notes:
 - Staff put at front desk.
10. MB Nails & Spa:
 - 1751 Artesia Blvd.
 - 310-372-0197
 - Photo titled, "MB Nails and Spa 1751 Artesia"
 - Notes:
 - Staff put at front desk.
11. Verizon:
 - 1751 Artesia Blvd., Suite B
 - 310-372-0044
 - Photo titled, "Verizon 1751 Artesia"
 - Notes:
 - Staff put on center customer service table.
12. Ameci Pizza Pasta Kitchen:
 - 1751 Artesia Blvd., Suite A
 - 310-374-2245
 - Photo titled, "Ameci Pizza 1751 Artesia"
 - Notes:
 - Staff put at front Desk.

C.4.2 Joslyn Center Senior Older Adult Lunch Bunch

Agenda (November 7, 2023)

- Announcement of LHMP Update planning process.
- Invitation to join HMPC meetings.
- Invitation to complete the public survey and ways to stay informed and engaged in the LHMP update planning process.

Photo



C.4.3 Joslyn Center Senior Older Adult Discussion Group

Agenda (March 4, 2024)

Agenda

- What is Hazard Mitigation?
- Why a Local Hazard Mitigation Plan (LHMP)?
- LHMP planning process.
- Vulnerability, Impact, and Risk.
- Local hazards.
- Climate Change.
- Open LHMP review and comment period.



Attendance Sheet



Manhattan Beach LHMP Meeting – Joslyn Community Center – Older Adult Program Discussion Group Monday, March 4, 2024	
First and Last Name	Signature
REGINA KODIMER	Regina Kodimer
STEVE DE BAETS	SD
Paul Gross	Paul Gross
LIDA SANDERA	Lida Sandera
Margaret McElwain	Margaret McElwain
Kathleen Salinas	Kathleen Salinas
Shiranne Greg Kovacs	
Muriel Berkes	Muriel Berkes
Carol Patterson	Carol Patterson
BARBARA THOMAS	Barbara T. Thomas
Elizabeth Konick	Elizabeth Konick



Manhattan Beach LHMP Meeting – Joslyn Community Center – Older Adult Program Discussion Group Monday, March 4, 2024	
First and Last Name	Signature
Kenneth Thompson	Kenneth Thompson
PETER LANDECKER	Peter Landecker
FRED MANNA	Fred Manna
EVELYN KARRAS	Evelyn Karras
Don Spencer	Don Spencer
Shela Smith	Shela Smith
Barbara Colbert	Barbara Colbert
TERI HAVEL	Teri Havel
BUCK FARRELL	Buck Farrell
ERIC WEBSTER	Eric Webster
Ellis Levin	Ellis Levin
ERIC INGELMAN	Eric Ingelman

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
April 2024



Manhattan Beach LHMP Meeting – Joslyn Community Center – Older Adult Program Discussion Group Monday, March 4, 2024	
First and Last Name	Signature
Mary Spangenberg	Spokane Visitor
	Mary E. Spangenberg

Photo



C.5 Community Meetings/Events

C.5.1 Community Meeting: Manhattan Beach Library

Event Summary

On the evening of March 26, 2024, an informative and engaging LHMP information session was conducted at the MB Library from 6:30 p.m. to 7:30 p.m. The event was marked by a highly interactive and insightful discussion, characterized by excellent queries and active participation. To facilitate understanding and provide detailed insights, attendees were provided with printed copies of the PowerPoint presentation used during the session. In addition, a one-sheet handout featuring a QR code to access the LHMP and feedback form was distributed, offering an innovative and convenient way for guests to access further information. The session was documented through various materials including a sign-in sheet and a collection of four photographs capturing the event's key moments. These supporting documents underscore the session's effectiveness and the quality of interaction, highlighting the event's significance in promoting informed conversations around LHMP.

Meeting Announcement



LOCAL HAZARD MITIGATION PLAN (LHMP) INFORMATION SESSION

The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural hazards. This is achieved by assessing and updating the city's Hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach.

WANT TO LEARN MORE? JOIN US!

TUESDAY, MARCH 26, 2024
6:30 PM TO 7:30 PM
LIBRARY MEETING ROOM
1320 Highland Avenue

 www.manhattanbeach.gov/LHMP

 @citymb

 communications@manhattanbeach.gov

 dylan.yates@constantassociates.com

CAN'T MAKE THE MEETING? WAYS YOU CAN HELP



REVIEW THE LHMP FOR MB
MONDAY, MARCH 25 - FRIDAY, APRIL 5

The City of Manhattan Beach is asking for your input on the proposed Local Hazard Mitigation Plan for Manhattan Beach. This plan will develop the infrastructure for our community to help with early identification and mitigation of natural hazards.

The plan will be available for public review and input Monday, March 25 - Friday, April 5 on the Local Hazard Mitigation Plan webpage:
www.manhattanbeach.gov/LHMP



STAY INFORMED & SPREAD THE WORD

Keep yourself informed about the progress of the project by visiting our website and following our social media accounts. Share information about the project with your neighbors, friends, and family. The more people involved, the stronger our community's resilience.

Meeting Materials



Public Information Session:
MB Library: 6:30 p.m. – 7:30 p.m.

CITY OF MANHATTAN BEACH

LOCAL HAZARD MITIGATION PLAN (LHMP)

Tuesday, March 26, 2024



LOCAL HAZARD MITIGATION PLAN (LHMP) INFORMATION SESSION

The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural hazards. This is achieved by assessing and updating the city's Hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach.

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TUESDAY, MARCH 26, 2024
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LIBRARY MEETING ROOM
1320 Highland Avenue

www.manhattanbeach.gov/LHMP

[@citymb](https://www.facebook.com/citymb)

communications@manhattanbeach.gov

dylan.yates@constantassociates.com

CAN'T MAKE THE MEETING? WAYS YOU CAN HELP



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MONDAY, MARCH 25 - FRIDAY, APRIL 5

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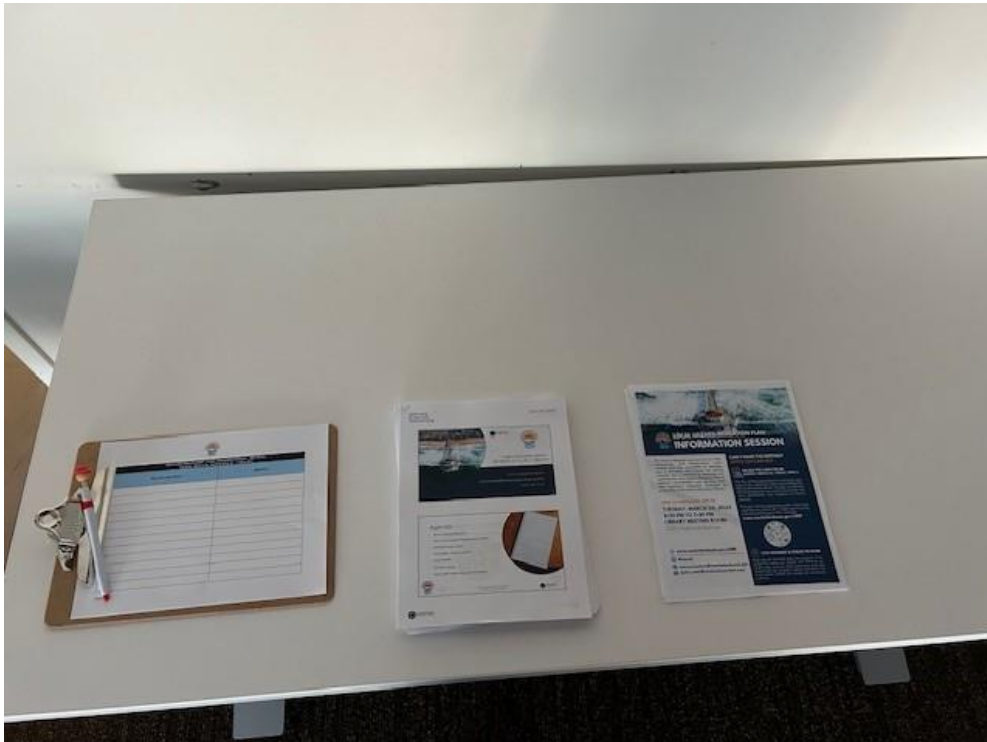
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Photos



C.5.2 North Manhattan Beach Business Briefing

Event Summary

On January 10, 2024, at 6:00 pm the City of Manhattan Beach Emergency Preparedness Administrator attended a North Manhattan Beach Business Meeting with the Chamber

of Commerce. During the meeting, they outlined the key components of LHMP, emphasizing how attendees could actively participate and contribute to the planning process.

C.5.3 Farmers Market Event

Event Summary

On Tuesday, March 19, 2024, an outreach booth was set up at the Manhattan Beach Farmers' Market to promote the Local Hazard Mitigation Plan (LHMP). The market, which operates every Tuesday, features 50-60 vendors and serves as an ideal platform for community engagement.

Activities:

- **LHMP Outreach Booth:** A dedicated booth was established to provide information on the LHMP, engaging with attendees, answering questions, and distributing relevant materials.
- **Material Distribution:** The LHMP handout was shared with marketgoers to provide detailed information about the plan and its benefits for the community as well as the public review period.
- **Social Media Engagement:** A project flyer and message related to the LHMP outreach was circulated on social media and other Manhattan Beach media channels to extend the reach beyond the market attendees.

Photo

 **Manhattan Beach Fire Department** 6h · 🌐

Stop by the [@mbfarmersmarket](#) and say hi to our Emergency Preparedness Administrator, Amanda! Learn about the Local Hazard Mitigation Plan and how you can be better prepared for natural disasters.

[#mbfire](#) [#manhattanbeachfire](#)
[#manhattanbeachfiredepartment](#) [#manhattanbeach](#)
[#mbfarmersmarket](#)



👍 1

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C.5.4 City Council Briefing

On Tuesday, December 5, 2023, the Manhattan Beach City Council meeting featured a presentation by Amanda MacLennan, the Emergency Preparedness Administrator. Addressing an audience that included the Honorable Mayor, Mayor Pro Tem, council members, colleagues, and community members, MacLennan highlighted the ongoing efforts to update the Local Hazard Mitigation Plan (LHMP). MacLennan announced the LHMP update and described its purpose in enhancing the resilience of the community and its infrastructure to the impacts of natural hazards.

MacLennan stressed the importance of community involvement in the planning process. She pointed out that the insights and feedback from community members, especially those most at risk, are invaluable for the effectiveness of the LHMP. To facilitate this, she shared that a series of meetings had been scheduled, with the first one held on November 28, 2023. Three more meetings she shared were scheduled for Tuesdays from 9:30 a.m. to 11:30 a.m., with dates including December 12, 2023, January 9, 2024, and January 30, 2024. All sessions were mentioned to be accessible to the public, with participation either in-person at the Council Chambers or virtually via Zoom.

In addition to attending meetings, community members were encouraged to participate in a survey, available in both English and Spanish. This survey was shared to be designed to gather input on the community's preparedness and mitigation strategies concerning various natural hazards like earthquakes, tsunamis, and severe weather. The goal is to understand the community's level of awareness and concerns, which will inform the development of a more effective LHMP. All relevant information, including details about the upcoming meetings and the survey, was highlighted that they can be located on the city's website at www.manhattanbeach.gov/LHMP.


Photos (Meeting Slides)



LOCAL HAZARD MITIGATION PLAN (LHMP)
SURVEY





ENGLISH



SPANISH

www.manhattanbeach.gov/LHMP

 dylan.yates@constantassociates.com  communications@manhattanbeach.gov



CITY OF MANHATTAN BEACH **LOCAL HAZARD MITIGATION PLAN (LHMP)**

PLANNING COMMITTEE MEETINGS

Meeting #2: Tuesday, December 12th
9:30 AM – 11:30 AM

Meeting #3: Tuesday, January 9th
9:30 AM – 11:30 AM

Meeting #4: Tuesday, January 30th
9:30 AM – 11:30 AM

www.manhattanbeach.gov/LHMP

✉ dylan.yates@constantassociates.com

✉ communications@manhattanbeach.gov

C.5.5 Manhattan Heights Park Community Center

Photos







C.6 Public Comment Period

C.6.1 Pre-Announcement of Public Comment Period (English)

[Departments](#) » [Fire Department](#) »

Local Hazard Mitigation Plan (LHMP)

Font Size: [+](#) [-](#) [Feedback](#) [Print](#)



Review of the Local Hazard Mitigation Plan (COMING SOON)

Monday, March 25 to Friday, April 5

The City of Manhattan Beach is asking for your input on the proposed Local Hazard Mitigation Plan for Manhattan Beach. This plan will develop the infrastructure for our community to help with early identification and mitigation of natural hazards. **The plan will be available for public review and input Monday, March 25 - Friday, April 5.**

BACKGROUND

The Hazard Mitigation process aims to make communities and infrastructure more resilient and less susceptible to damage, loss, or disruption when faced with natural or man-made hazards. This is achieved by assessing and updating the city's hazard Mitigation Plan to address vulnerabilities and develop short and long-term mitigation strategies to protect the community of Manhattan Beach. Please note that The Federal Emergency Management Agency (FEMA) requires hazard mitigation plans to be updated every five years. The City of Manhattan Beach adopted the current LHMP in May of 2019; therefore, the LHMP Update is due to FEMA by May 13, 2024.

The City is committed to protecting lives, promoting equity, and building resilience by tailoring strategies to address the unique needs and challenges faced by our vulnerable community members. Broad and engaged participation in the LHMP update will ensure the plan is a strong and important tool, resulting in a safer future for all.

C.6.2 Pre-Announcement of Public Comment Period (Spanish)

[Departamentos](#) » [Departamento de Bomberos](#) »

Plan local de mitigación de peligros (LHMP)

Tamaño de fuente: [+](#) [-](#) [Comentario](#) [Imprimir](#)



Revisión del Plan Local de Mitigación de Riesgos (PRÓXIMAMENTE)

Del lunes 25 de marzo al viernes 5 de abril

La ciudad de Manhattan Beach solicita su opinión sobre el Plan Local de Mitigación de Riesgos propuesto para Manhattan Beach. Este plan desarrollará la infraestructura para nuestra comunidad para ayudar con la identificación temprana y la mitigación de peligros naturales. **El plan estará disponible para revisión y aportes del público del lunes 25 de marzo al viernes 5 de abril.**

ANTECEDENTES

El proceso de mitigación de peligros tiene como objetivo hacer que las comunidades y la infraestructura sean más resilientes y menos susceptibles a daños, pérdidas o perturbaciones cuando se enfrentan a peligros naturales o provocados por el hombre. Esto se logra evaluando y actualizando el Plan de mitigación de peligros de la ciudad para abordar las vulnerabilidades y desarrollar estrategias de mitigación a corto y largo plazo para proteger la comunidad de Manhattan Beach. Tenga en cuenta que la Agencia Federal para el Manejo de Emergencias (FEMA) exige que los planes de mitigación de riesgos se actualicen cada cinco años. La ciudad de Manhattan Beach adoptó el LHMP actual en mayo de 2019; por lo tanto, la actualización del LHMP debe presentarse a FEMA antes del 13 de mayo de 2024.

La Ciudad está comprometida a proteger vidas, promover la equidad y desarrollar resiliencia adaptando estrategias para abordar las necesidades y desafíos únicos que enfrentan los miembros vulnerables de nuestra comunidad. Una participación amplia y comprometida en la actualización del LHMP garantizará que el plan sea una herramienta sólida e importante, lo que dará como resultado un futuro más seguro para todos.

C.6.3 Announcement of Public Comment Period

- Fire Department

Local Hazard Mitigation Plan

Fire Calendar

About MBFD

Listen Live

Emergency Preparedness

Emergency Plans

+ Public Safety Tips

+ Community Risk Reduction

Envelope of Life

The Manhattan Beach CERT Program

Volunteer Reserve Firefighter Program

Contact Fire

FAQ

[Departments](#) » [Fire Department](#) »

Local Hazard Mitigation Plan (LHMP)

Font Size: [+](#) [-](#) [Feedback](#) [Print](#)



Review of the Local Hazard Mitigation Plan

Monday, March 25 to Friday, April 5

The City of Manhattan Beach is asking for your input on the proposed Local Hazard Mitigation Plan for Manhattan Beach. This plan will develop the infrastructure for our community to help with early identification and mitigation of natural hazards. **The plan will be available for public review and input Monday, March 25 - Friday, April 5.**

[City of Manhattan Beach LHMP: Public Review Draft](#) (PDF)

Do you have feedback for the City of Manhattan Beach LHMP: Public Review Draft? Submit your feedback using the links below:

[English Survey Link](#)

[Spanish Survey Link](#)

The surveys will close at the end of the public review period on **Friday, April 5, 2024.**

C.6.4 Public Comment Feedback Form (English)

LHMP Public Review Feedback Form

Thank you for taking the time to provide your valuable feedback on the Local Hazard Mitigation Plan (LHMP). Your input is crucial in helping us improve our strategies and actions to reduce risk and ensure the safety and well-being of our community. This form is designed to gather your insights, suggestions, and overall impressions of the LHMP. Your responses will be instrumental in guiding future revisions and enhancements to the plan.

Please complete this form by Friday, April 5, 2024.

Feedback Questions

1. If you have any other comments, suggestions, or concerns about the LHMP, please share them here. Please reference the section of the plan you have comments on.

C.6.5 Public Comment Feedback Form (Spanish)

Formulario de Retroalimentación Pública del LHMP

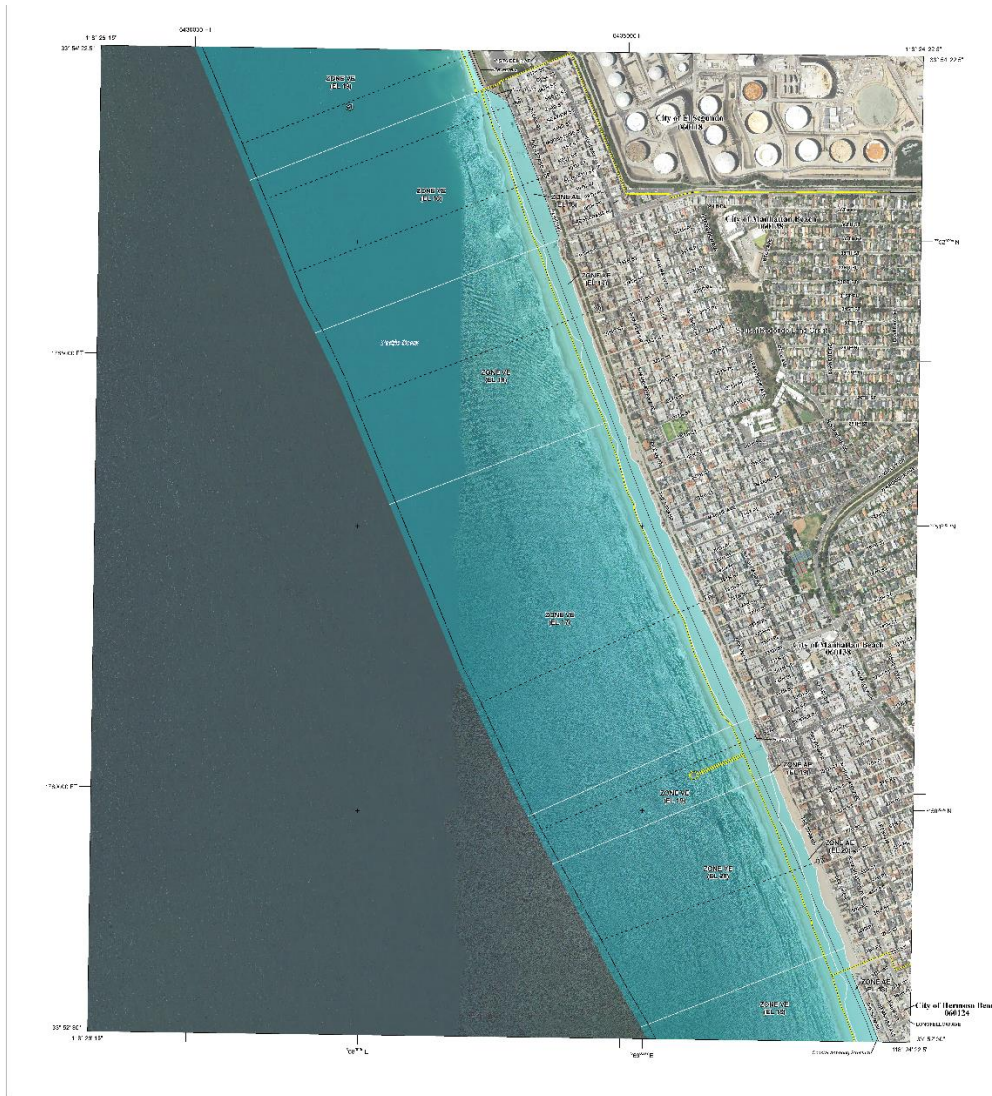
Gracias por tomarse el tiempo de proporcionar su valiosa retroalimentación sobre el Plan de Mitigación de Riesgos Locales (LHMP). Su aporte es crucial para ayudarnos a mejorar nuestras estrategias y acciones para reducir riesgos y asegurar la seguridad y el bienestar de nuestra comunidad. Este formulario está diseñado para recopilar sus perspectivas, sugerencias e impresiones generales sobre el LHMP. Sus respuestas serán fundamentales para guiar las futuras revisiones y mejoras del plan.

Por favor, complete este formulario para el viernes 5 de abril de 2024.

Preguntas de Retroalimentación

1. Si tiene algún otro comentario, sugerencia o preocupación sobre el LHMP, compártalos aquí. Por favor, haga referencia a la sección del plan sobre la que tiene comentarios.

APPENDIX D: FIRM PANELS



FLOOD HAZARD INFORMATION

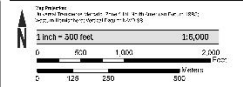
SCALE: 1" = 300 FEET. THIS INFORMATION IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. FOR THE MOST CURRENT INFORMATION, PLEASE VISIT THE CITY OF MANHATTAN BEACH WEBSITE AT <https://www.manhattanbeach.gov>.

- SPECIAL FLOOD HAZARD ASSES**
 - Without Base Flood Elevation (BFE) (Zone A)
 - With BFE or Depth (Zone AE, A1.1, A1.2, A3)
 - Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD**
 - 0.2% Annual Chance Flood Hazard: Areas of 0.2% annual chance flood with average depths less than one foot or with drainage areas of less than one square mile.
 - Future Conditions: 1% Annual Chance Flood Hazard
 - Areas with Reduced Flood Risk due to Levee Spillover
 - Areas with Flood Risk due to Levee Spillover
 - Areas of Minimal Flood Hazard
 - Areas of Undetermined Flood Hazard
- OTHER AREAS**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
- CENTRAL STRUCTURES**
 - Cross Sections with 1% Annual Chance Water Surface Elevation
 - Coastal Transport
 - Coastal Transport Baseline
 - Profile Baseline
 - Hydrographic Features
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
- OTHER FEATURES**

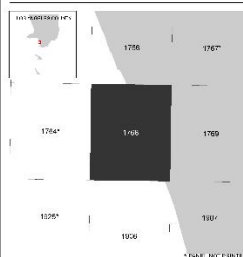
NOTES TO USERS

This map was prepared using data from the National Flood Insurance Program (NFIP) and the City of Manhattan Beach. The map is intended for informational purposes only and should not be used for engineering or construction purposes. The map is subject to change without notice. The City of Manhattan Beach is not responsible for any errors or omissions on this map. For more information, please contact the City of Manhattan Beach Planning Department at (310) 373-1000.

SCALE



PANEL LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

LOS ANGELES COUNTY, CALIFORNIA

Panel 1768 to 2350

Panel 1046

Version Number: 0.2.3

Map Number: 06037G3784G

Effective Date: APRIL 21, 2021

APPENDIX E: CRITICAL FACILITIES LIST

FACILITY	Category	Community Lifeline	ADDRESS	Asset/Replacement Value
CITY HALL	City Hall	Safety and Security, Communications	1400 HIGHLAND AVE	\$ 12,992,205
City Hall Annex (Post Office / Chamber of Commerce)	City Hall	Safety and Security, Communications	425 15th St	\$ 1,391,343
Sprint/Clearwire Telecommunications	Communications	Communications	1201 Morningside Drive	Not Available
Verizon Telecommunications	Communications	Communications	1201 Morningside Drive	Not Available
T-Mobile Telecommunications	Communications	Communications	509 N. Sepulveda	Not Available
AT&T Telecommunications	Communications	Communications	3620 Highland Avenue	Not Available
Sprint/Clearwire Telecommunications	Communications	Communications	2409 Sepulveda	Not Available
T-Mobile Telecommunications	Communications	Communications	1765 Artesia	Not Available
AT&T Telecommunications	Communications	Communications	1765 Artesia	Not Available
Verizon Telecommunications	Communications	Communications	1500 Sepulveda (Toyota)	Not Available
AT&T Telecommunications	Communications	Communications	111 N. Sepulveda	Not Available
Sprint Telecommunications	Communications	Communications	1721 Sepulveda	Not Available
Sprint/AT&T Telecommunications	Communications	Communications	1400 Parkview	Not Available
AT&T Telecommunications	Communications	Communications	1570 Rosecrans Ave.	Not Available
Sprint/Clearwire Telecommunications	Communications	Communications	850 N. Sepulveda	Not Available
AT&T Telecommunications	Communications	Communications	200 Aviation	Not Available
T-Mobile Telecommunications	Communications	Communications	1175 Rowell (ROW)	Not Available
AT&T Telecommunications	Communications	Communications	Valley Dr & Pacific Ave	Not Available
Verizon Telecommunications	Communications	Communications	26th St./Highland (ROW)	Not Available

FACILITY	Category	Community Lifeline	ADDRESS	Asset/Replacement Value
T-Mobile Telecommunications	Communications	Communications	2727 Grandview (ROW)	Not Available
T-Mobile Telecommunications	Communications	Communications	NE corner of Pacific and 27th St. (ROW)	Not Available
Verizon Telecommunications	Communications	Communications	1901 Valley (Live Oak Park)	Not Available
Clearwire Telecommunications	Communications	Communications	3770 Highland Ave	Not Available
T-Mobile Telecommunications	Communications	Communications	312 Rosecrans Avenue	Not Available
Verizon Telecommunications	Communications	Communications	3113 N. Sepulveda	Not Available
Next G Telecommunications	Communications	Communications	SE Corner of Crest/36th St. (ROW)	Not Available
AT&T Telecommunications	Communications	Communications	Bayview Dr & 26th St	Not Available
AT&T Telecommunications	Communications	Communications	Manhattan Ave & 36th St	Not Available
AT&T Telecommunications	Communications	Communications	Alma Ave & 28th St	Not Available
AT&T Telecommunications	Communications	Communications	Manhattan Ave & 29th St	Not Available
AT&T Telecommunications	Communications	Communications	Highland Ave & 32nd Pl	Not Available
AT&T Telecommunications	Communications	Communications	Ingleside Dr & 5th Pl	Not Available
AT&T Telecommunications	Communications	Communications	Morningside Dr & 2nd St	Not Available
AT&T Telecommunications	Communications	Communications	Manhattan Ave & Manhattan Beach Bl	Not Available
LIVE OAK PARK	Community Centers	Safety and Security, Food and Shelter	1901 N VALLEY DR	\$ 2,059,888
MANHATTAN HEIGHTS PARK & TENNIS COURTS	Community Centers	Safety and Security, Food and Shelter	1600 MANHATTAN BEACH BLVD	\$ 2,965,565
MANHATTAN VILLAGE FIELD	Community Centers	Safety and Security, Food and Shelter	1300 PARKVIEW AVE	\$ 217,240
MARINE AVE PARK & SPORTS COMPLEX	Community Centers	Safety and Security, Food and Shelter	1625 MARINE AVE	\$ 2,368,772

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

FACILITY	Category	Community Lifeline	ADDRESS	Asset/Replacement Value
POLLIWOG PARK	Community Centers	Safety and Security, Food and Shelter	1601 MANHATTAN BEACH BLVD	\$ 1,612,780
MANHATTAN BEACH ART CENTER	Community Centers	Safety and Security, Food and Shelter	1560 MANHATTAN BEACH BLVD	\$ 1,800,613
JOSLYN CENTER	Community Centers	Safety and Security, Food and Shelter	1601 N VALLEY DR	\$ 4,327,619
Scout House	Community Centers	Safety and Security, Food and Shelter	1617 N Valley Dr	\$ 6,800,000
LIBRARY	Community Centers	Safety and Security, Food and Shelter	1320 HIGHLAND AVE	Not Available
JOURNEY OF FAITH	Community Centers	Safety and Security, Food and Shelter	1243 ARTESIA BLVD	Not Available
Edison Substation	Energy	Energy	219 S Dianthus St	Not Available
Galaxy Substation	Energy	Energy	Redondo Ave & 33rd St	Not Available
Edison Substation	Energy	Energy	Adjacent to 1230 Rosecrans	Not Available
Edison Substation	Energy	Energy	2515 Blanche Rd	Not Available
FIRE & POLICE HEADQUARTERS	Fire	Safety and Security, Communications, Hazardous Materials	400-420 15TH ST	\$ 39,137,609
FIRE STATION NO. 2	Fire	Safety and Security, Communications, Hazardous Materials	1400 MANHATTAN BEACH BLVD	\$ 1,321,571
CIVIC CENTER (upper)	Government Offices	Safety and Security, Communications	320 15TH ST	Value included in city facilities
CIVIC CENTER (lower)	Government Offices	Safety and Security, Communications	325 13TH ST	Value included in city facilities
NAT GUARD ARMORY	Government Offices	Safety and Security, Communications	3601 BELL AVE	Not Available
NAT GUARD ARMORY	Government Offices	Safety and Security, Communications	3521 BELL AVE	Not Available

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

FACILITY	Category	Community Lifeline	ADDRESS	Asset/Replacement Value
POST OFFICE	Government Offices	Safety and Security, Communications	1007 N SEPULVEDA BLVD	Not Available
POST OFFICE / CHAMBER OF COMMERCE	Government Offices	Safety and Security, Communications	425 15TH ST	Not Available
Torrance Memorial Urgent Care	Medical Facilities	Health and Medical	855 Manhattan Beach Blvd, Manhattan Beach, CA 90266	Not Available
GRANDVIEW ELEMENTARY SCHOOL	Schools	Safety and Security, Food and Shelter	455 24TH ST	Not Available
MB MIDDLE SCHOOL	Schools	Safety and Security, Food and Shelter	1501 N REDONDO AVE	Not Available
MEADOWS ELEMENTARY SCHOOL	Schools	Safety and Security, Food and Shelter	1200 N MEADOWS AVE	Not Available
MIRA COSTA HIGH SCHOOL	Schools	Safety and Security, Food and Shelter	1401 ARTESIA BLVD	Not Available
PACIFIC ELEMENTARY SCHOOL	Schools	Safety and Security, Food and Shelter	1214 PACIFIC AVE	Not Available
PENNEKAMP ELEMENTARY SCHOOL	Schools	Safety and Security, Food and Shelter	110 S ROWELL AVE	Not Available
ROBINSON ELEMENTARY SCHOOL	Schools	Safety and Security, Food and Shelter	80 MORNINGSIDE DR	Not Available
SCHOOL DISTRICT MAINTENANCE YARD	Schools	Safety and Security, Food and Shelter	1517 MANHATTAN BEACH BLVD	Not Available
AMERICAN MARTYRS SCHOOL	Schools	Safety and Security, Food and Shelter	1701 LAUREL AVE	Not Available
LOT 2	Transportation	Transportation	222 12TH ST	\$ 740,538
LOT 3	Transportation	Transportation	1155 MORNINGSIDE DR	\$ 2,901,834
LOT 4	Transportation	Transportation	3714 HIGHLAND AVE	\$ 1,157,287
PARKING STRUCTURE - METLOX	Transportation	Transportation	1200 MORNINGSIDE DR	\$ 20,694,247

City of Manhattan Beach
2024 Local Hazard Mitigation Plan Update
 April 2024

FACILITY	Category	Community Lifeline	ADDRESS	Asset/Replacement Value
Roads (120 miles)	Transportation	Transportation	120 miles of road	\$ 63,000,000
BLOCK 35 RESERVOIR, PUMP STATION, ELEVATED TANK	Water/Sewer	Water Systems	1431 6TH ST	\$ 6,569,121
PECK RESERVOIR	Water/Sewer	Water Systems	1800 N PECK AVE	\$ 8,797,460
PUBLIC WORKS YARD	Water/Sewer	Water Systems	3621 BELL AVE	\$ 8,818,285
Well 11A	Water/Sewer	Water Systems	1932 Manhattan Beach Blvd	\$ 1,042,762
Well 15	Water/Sewer	Water Systems	2230 Manhattan Beach Blvd	\$ 783,619
Bell Avenue Pump Station	Water/Sewer	Water Systems	549 31st St	\$ 187,536
Pressure Monitoring Station	Water/Sewer	Water Systems	477 31st Pl	\$ 232,331
Palm Avenue Pump Station	Water/Sewer	Water Systems	3529 Palm Ave	\$ 186,536
Pacific Avenue Pump Station	Water/Sewer	Water Systems	2803 Pacific Ave	\$ 275,829
Pier Lift Station	Water/Sewer	Water Systems	1 Manhattan Beach Blvd	\$ 84,532
Civic Center Pump Station	Water/Sewer	Water Systems	1400 Highland Ave	\$ 30,737
Poinsettia Avenue Pump Station	Water/Sewer	Water Systems	1100 Poinsettia Ave	\$ 150,740
Golf Course Pump Station	Water/Sewer	Water Systems	1400 Parkview Ave	\$ 496,556
Peck Avenue Pump Station	Water/Sewer	Water Systems	1501 23rd St	\$ 431,850
2nd Street Pump Station	Water/Sewer	Water Systems	1050 2nd St	\$ 113,183
Larsson Street Pump Station	Water/Sewer	Water Systems	213 Larsson St	\$ 423,148
Voorhees Ave Pump Station	Water/Sewer	Water Systems	1364 Voorhees Ave	\$ 187,536
SANITATION DISTRICT PUMP STATION	Water/Sewer	Water Systems	2601 THE STRAND	Not Available

APPENDIX F: MITIGATION PROGRESS REPORT WORKSHEET

2024 MANHATTAN BEACH LHMP – MITIGATION PROJECT PROGRESS REPORT WORKSHEET	
Progress Report Period From (Date):	
Project Title:	
Project ID:	
Description of Project	
Implementing Department/Agency:	
Supporting Department/Agency:	
Contact Name	
Contact E-Mail:	
Contact Phone Number:	
Grant/Finance Administrator:	
Total Project Cost:	
Anticipated Cost Overrun/Underrun:	
Date of Project Approval:	
Project Start Date:	
Anticipated Completion Date:	
SUMMARY OF PROJECT PROGRESS FOR THIS REPORTING PERIOD	
What was accomplished during this reporting period?	
What obstacles, problems or delays did the project encounter, if any?	

How were the problems resolved?
Does this project affect vulnerable populations (the underserved, homeless, senior citizens, AFN, etc.)?

APPENDIX G: FEMA LOCAL HAZARD MITIGATION REVIEW TOOL

The Plan Review Checklist is completed by FEMA. States and local governments are encouraged, but not required, to use the PRT as a checklist to ensure all requirements have been met prior to submitting the plan for review and approval. The purpose of the checklist is to identify the location of relevant or applicable content in the plan by element/sub-element and to determine if each requirement has been “met” or “not met.”

FEMA completes the “required revisions” summary at the bottom of each element to clearly explain the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is “not met.” Sub-elements in each summary should be referenced using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each element and sub-element are described in detail in Section 4: Local Plan Requirements of this guide.

Plan updates must include information from the current planning process. If some elements of the plan do not require an update, due to minimal or no changes between updates, the plan must document the reasons for that.

G.1 Review Tool Elements

Element A: Planning Process

Element A Requirements	Location in Plan (section and/or page number)	Met / Not Met
A1. Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement 44 CFR § 201.6(c)(1))		
A1-a. Does the plan document how the plan was prepared, including the schedule or time frame and activities that made up the plan’s development, as well as who was involved?	Click or tap here to enter text.	Choose an item.
A1-b. Does the plan document how the plan was prepared, including the schedule or time frame and activities that made up the plan’s development, as well as who was involved?	Click or tap here to enter text.	Choose an item.

Element A Requirements	Location in Plan (section and/or page number)	Met / Not Met
A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process? (Requirement 44 CFR § 201.6(b)(2))		
A2-a. Does the plan identify all stakeholders involved or given an opportunity to be involved in the planning process, and how each stakeholder was presented with this opportunity?	Click or tap here to enter text.	Choose an item.
A3. Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval? (Requirement 44 CFR § 201.6(b)(1))		
A3-a. Does the plan document how the public was given the opportunity to be involved in the planning process and how their feedback was included in the plan?	Click or tap here to enter text.	Choose an item.
A4. Does the plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement 44 CFR § 201.6(b)(3))		
A4-a. Does the plan document what existing plans, studies, reports and technical information were reviewed for the development of the plan, as well as how they were incorporated into the document?	Click or tap here to enter text.	Choose an item.
ELEMENT A REQUIRED REVISIONS		
Required Revision: Click or tap here to enter text.		

Element B: Risk Assessment

Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the jurisdiction? Does the plan also include information on previous occurrences of hazard events and on the probability of future hazard events? (Requirement 44 CFR § 201.6(c)(2)(i))		
B1-a. Does the plan describe all natural hazards that can affect the jurisdiction(s) in the planning area, and does it provide the rationale if omitting any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area?	Click or tap here to enter text.	Choose an item.
B1-b. Does the plan include information on the location of each identified hazard?	Click or tap here to enter text.	Choose an item.
B1-c. Does the plan describe the extent for each identified hazard?	Click or tap here to enter text.	Choose an item.
B1-d. Does the plan include the history of previous hazard events for each identified hazard?	Click or tap here to enter text.	Choose an item.
B1-e. Does the plan include the probability of future events for each identified hazard? Does the plan describe the effects of future conditions, including climate change (e.g., long-term weather patterns, average temperature and sea levels), on the type, location and range of anticipated intensities of identified hazards?	Click or tap here to enter text.	Choose an item.
B1-f. For participating jurisdictions in a multi-jurisdictional plan, does the plan describe any hazards that are unique to and/or vary from those affecting the overall planning area?	Click or tap here to enter text.	Choose an item.
B2. Does the plan include a summary of the jurisdiction’s vulnerability and the impacts on the community from the identified hazards? Does this summary also address NFIP-insured structures that have been repetitively damaged by floods? (Requirement 44 CFR § 201.6(c)(2)(ii))		
B2-a. Does the plan provide an overall summary of each jurisdiction’s vulnerability to the identified hazards?	Click or tap here to enter text.	Choose an item.

Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
B2-b. For each participating jurisdiction, does the plan describe the potential impacts of each of the identified hazards on each participating jurisdiction?	Click or tap here to enter text.	Choose an item.
B2-c. Does the plan address NFIP-insured structures within each jurisdiction that have been repetitively damaged by floods?	Click or tap here to enter text.	Choose an item.
ELEMENT B REQUIRED REVISIONS		
Required Revision: Click or tap here to enter text.		

Element C: Mitigation Strategy

Element C Requirements	Location in Plan (section and/or page number)	Met / Not Met
C1. Does the plan document each participant’s existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement 44 CFR § 201.6(c)(3))		
C1-a. Does the plan describe how the existing capabilities of each participant are available to support the mitigation strategy? Does this include a discussion of the existing building codes and land use and development ordinances or regulations?	Click or tap here to enter text.	Choose an item.
C1-b. Does the plan describe each participant’s ability to expand and improve the identified capabilities to achieve mitigation?	Click or tap here to enter text.	Choose an item.
C2. Does the plan address each jurisdiction’s participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement 44 CFR § 201.6(c)(3)(ii))		
C2-a. Does the plan contain a narrative description or a table/list of their participation activities?	Click or tap here to enter text.	Choose an item.

Element C Requirements	Location in Plan (section and/or page number)	Met / Not Met
C3. Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement 44 CFR § 201.6(c)(3)(i))		
C3-a. Does the plan include goals to reduce the risk from the hazards identified in the plan?	Click or tap here to enter text.	Choose an item.
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 44 CFR § 201.6(c)(3)(ii))		
C4-a. Does the plan include an analysis of a comprehensive range of actions/projects that each jurisdiction considered to reduce the impacts of hazards identified in the risk assessment?	Click or tap here to enter text.	Choose an item.
C4-b. Does the plan include one or more action(s) per jurisdiction for each of the hazards as identified within the plan's risk assessment?	Click or tap here to enter text.	Choose an item.
C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including a cost-benefit review), implemented, and administered by each jurisdiction? (Requirement 44 CFR § 201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))		
C5-a. Does the plan describe the criteria used for prioritizing actions?	Click or tap here to enter text.	Choose an item.
C5-b. Does the plan provide the position, office, department or agency responsible for implementing/administrating the identified mitigation actions, as well as potential funding sources and expected time frame?	Click or tap here to enter text.	Choose an item.
ELEMENT C REQUIRED REVISIONS		
Required Revision: Click or tap here to enter text.		

Element D: Plan Maintenance

Element D Requirements	Location in Plan (section and/or page number)	Met / Not Met
D1. Is there discussion of how each community will continue public participation in the plan maintenance process? (Requirement 44 CFR § 201.6(c)(4)(iii))		
D1-a. Does the plan describe how communities will continue to seek future public participation after the plan has been approved?	Click or tap here to enter text.	Choose an item.
D2. 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? (Requirement 44 CFR § 201.6(c)(4)(i))		
D2-a. Does the plan describe the process that will be followed to track the progress/status of the mitigation actions identified within the Mitigation Strategy, along with when this process will occur and who will be responsible for the process?	Click or tap here to enter text.	Choose an item.
D2-b. Does the plan describe the process that will be followed to evaluate the plan for effectiveness? This process must identify the criteria that will be used to evaluate the information in the plan, along with when this process will occur and who will be responsible.	Click or tap here to enter text.	Choose an item.
D2-c. Does the plan describe the process that will be followed to update the plan, along with when this process will occur and who will be responsible for the process?	Click or tap here to enter text.	Choose an item.
D3. Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement 44 CFR § 201.6(c)(4)(ii))		
D3-a. Does the plan describe the process the community will follow to integrate the ideas, information and strategy of the mitigation plan into other planning mechanisms?	Click or tap here to enter text.	Choose an item.
D3-b. Does the plan identify the planning mechanisms for each plan participant into which the ideas, information and strategy from the mitigation plan may be integrated?	Click or tap here to enter text.	Choose an item.
D3-c. For multi-jurisdictional plans, does the plan describe each participant's individual process for integrating information from the mitigation strategy into their identified planning mechanisms?	Click or tap here to enter text.	Choose an item.

ELEMENT D REQUIRED REVISIONS

Required Revision:
 Click or tap here to enter text.

Element E: Plan Update

Element E Requirements	Location in Plan (section and/or page number)	Met / Not Met
E1. Was the plan revised to reflect changes in development? (Requirement 44 CFR § 201.6(d)(3))		
E1-a. Does the plan describe the changes in development that have occurred in hazard-prone areas that have increased or decreased each community’s vulnerability since the previous plan was approved?	Click or tap here to enter text.	Choose an item.
E2. Was the plan revised to reflect changes in priorities and progress in local mitigation efforts? (Requirement 44 CFR § 201.6(d)(3))		
E2-a. Does the plan describe how it was revised due to changes in community priorities?	Click or tap here to enter text.	Choose an item.
E2-b. Does the plan include a status update for all mitigation actions identified in the previous mitigation plan?	Click or tap here to enter text.	Choose an item.
E2-c. Does the plan describe how jurisdictions integrated the mitigation plan, when appropriate, into other planning mechanisms?	Click or tap here to enter text.	Choose an item.

ELEMENT E REQUIRED REVISIONS

Required Revision:
 Click or tap here to enter text.

Element F: Plan Adoption

Element F Requirements	Location in Plan (section and/or page number)	Met / Not Met
F1. For single-jurisdictional plans, has the governing body of the jurisdiction formally adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))		
F1-a. Does the participant include documentation of adoption?	Click or tap here to enter text.	Choose an item.
F2. For multi-jurisdictional plans, has the governing body of each jurisdiction officially adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))		
F2-a. Did each participant adopt the plan and provide documentation of that adoption?	Click or tap here to enter text.	Choose an item.
ELEMENT F REQUIRED REVISIONS		
Required Revision: Click or tap here to enter text.		

Element G: High Hazard Potential Dams (Optional)

HHPD Requirements	Location in Plan (section and/or page number)	Met / Not Met
HHPD1. Did the plan describe the incorporation of existing plans, studies, reports and technical information for HHPDs?		
HHPD1-a. Does the plan describe how the local government worked with local dam owners and/or the state dam safety agency?	Click or tap here to enter text.	Choose an item.
HHPD1-b. Does the plan incorporate information shared by the state and/or local dam owners?	Click or tap here to enter text.	Choose an item.
HHPD2. Did the plan address HHPDs in the risk assessment?		
HHPD2-a. Does the plan describe the risks and vulnerabilities to and from HHPDs?	Click or tap here to enter text.	Choose an item.

HHPD Requirements	Location in Plan (section and/or page number)	Met / Not Met
HHPD2-b. Does the plan document the limitations and describe how to address deficiencies?	Click or tap here to enter text.	Choose an item.
HHPD3. Did the plan include mitigation goals to reduce long-term vulnerabilities from HHPDs?		
HHPD3-a. Does the plan address how to reduce vulnerabilities to and from HHPDs as part of its own goals or with other long-term strategies?	Click or tap here to enter text.	Choose an item.
HHPD3-b. Does the plan link proposed actions to reducing long-term vulnerabilities that are consistent with its goals?	Click or tap here to enter text.	Choose an item.
HHPD4-a. Did the plan include actions that address HHPDs and prioritize mitigation actions to reduce vulnerabilities from HHPDs?		
HHPD4-a. Does the plan describe specific actions to address HHPDs?	Click or tap here to enter text.	Choose an item.
HHPD4-b. Does the plan describe the criteria used to prioritize actions related to HHPDs?	Click or tap here to enter text.	Choose an item.
HHPD4-c. Does the plan identify the position, office, department or agency responsible for implementing and administering the action to mitigate hazards to or from HHPDs?	Click or tap here to enter text.	Choose an item.
HHPD Required Revisions		
Required Revision: Click or tap here to enter text.		

Element H: Additional State Requirements (Optional)

Element H Requirements	Location in Plan (section and/or page number)	Met / Not Met
This space is for the State to include additional requirements.		
Click or tap here to enter text.	Click or tap here to enter text.	Choose an item.

Plan Assessment

These comments can be used to help guide your annual/regularly scheduled updates and the next plan update.

Element A. Planning Process

Strengths

[insert comments]

Opportunities for Improvement

[insert comments]

Element B. Risk Assessment

Strengths

[insert comments]

Opportunities for Improvement

[insert comments]

Element C. Mitigation Strategy

Strengths

[insert comments]

Opportunities for Improvement

[insert comments]

Element D. Plan Maintenance

Strengths

[insert comments]

Opportunities for Improvement

[insert comments]

Element E. Plan Update

Strengths

[insert comments]

Opportunities for Improvement

[insert comments]

Element G. HHPD Requirements (Optional)

Strengths

[insert comments]

Opportunities for Improvement

[insert comments]

Element H. Additional State Requirements (Optional)

Strengths

[insert comments]

Opportunities for Improvement

[insert comments]

APPENDIX H: ADOPTION AND RESOLUTION

The adoption by a local governing body demonstrates the City's commitment to fulfilling the hazard mitigation commitment to the hazard mitigation goals and actions outlined in the plan. The adoption legitimizes the plan and authorizes the responsible departments to perform their responsibilities. Renewed adoption of updated plans underscores the City's acknowledgement of the ongoing planning process, recognizes changes over the previous five years, and affirms the priorities for hazard mitigation actions. Failure to adopt indicates an incomplete mitigation planning process by the City, rendering it ineligible for specific FEMA assistance, including funding from programs such as HMA or HHPD grants.

H.1 Plan Adoption Resolutions

H.1.1 Resolution, City of Manhattan Beach

PLACE HOLDER FOR CITY RESOLUTION

H.1.2 State of California Approval Letter

PLACE HOLDER FOR STATE APPROVAL LETTERS

H.1.3 FEMA Approval Letter

PLACE HOLDER FOR FEMA APPROVAL LETTERS



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