



City of Artesia



Local Hazard Mitigation Plan (LHMP)

Last Updated: November 9, 2020



This page is intentionally left blank.



This page is intentionally left blank.



Contents

RECORD OF REVIEWS AND REVISIONS	iii
SECTION 1: INTRODUCTION	1
1.1 Hazard Mitigation Planning	1
1.2 Local Mitigation Planning Requirements.....	1
1.3 Hazard Mitigation Plan Description.....	3
1.4 Assembly Bill 2140	3
1.5 Grant Programs with Mitigation Plan Requirements	4
1.5.1 Stafford Act Grant Programs	4
1.5.2 National Flood Insurance Act Grant Programs.....	5
SECTION 2: PLANNING PROCESS	6
2.1 Plan History	6
2.2 Plan Purpose and Authority	6
2.3 Planning Process Description.....	7
2.4 Planning Team.....	8
2.4.1 Planning Team Activities.....	9
2.4.2 Other Jurisdictions Agency/Organizational Participation.....	9
Organization	9
Staff.....	9
Keith Wood	9
Geraldo Cruz	9
Francisco Martinez	9
Jennifer Pezda	9
David Ashman.....	9
2.5 Community Engagement.....	9
2.6 Incorporation into Other Planning Mechanisms.....	10
2.7 References and Documents	10
SECTION 3: Planning Area Description	13
3.1 Location.....	13



3.2	Geology	13
3.3	Climate	13
3.4	History.....	14
3.5	Government	14
3.6	Economy	15
3.7	Demographics	15
3.8	Land Use.....	16
SECTION 4: CAPABILITIES ASSESSMENT		18
4.1	Existing Authorities, Policies, Programs, and Resources	18
4.1.1	Planning and Regulatory Capabilities	19
4.1.3	Financial Capabilities.....	21
4.1.4	Education and Outreach Capabilities.....	22
4.1.5	National Flood Insurance Program Participation	22
SECTION 5: VULNERABILITY AND RISK ASSESSMENT		24
5.1	Hazard Identification and Screening.....	24
5.1.1	Artesia Disaster Proclamation History 2005	24
5.1.2	Disaster Proclamation Process.....	25
5.1.3	Hazard Risk Rating	26
5.2	Hazard Identification and Risk Profiles	28
5.2.1	Climate Change.....	29
5.2.2	Dam Inundation	33
5.2.3	Drought	37
5.2.4	Earthquake and Seismic Hazards	39
5.2.5	Extreme Heat	46
5.2.6	Flood.....	48
5.2.7	Urban Fire.....	50
5.2.8	Winter Storm/High Wind.....	52
5.3	Risk Assessment	55
5.3.1	Populations and Businesses at Risk.....	55



5.3.2	Identification of Critical Facilities and Assets.....	57
5.3.3	Land Use Trends.....	57
5.3.4	Cultural and Natural Resources Inventory	57
5.3.5	Risk Assessment and Potential Loss.....	58
5.3.6	Analysis of Potential Losses.....	59
SECTION 6: MITIGATION STRATEGY.....		60
6.1	Hazard Mitigation Statement.....	61
6.2	Hazard Mitigation Goals and Objectives.....	61
6.3	Mitigation Actions/Projects and Implementation Strategy.....	61
6.3.1	Previous Mitigation Actions/Projects Assessment	62
6.3.2	New Mitigation Actions	62
6.3.3	Mitigation Action Plan	65
SECTION 7: PLAN MAINTENANCE PROCEDURES.....		71
7.1	Monitoring and Evaluation.....	71
7.2	Plan Update	72
7.3	Continued Public Involvement.....	73
SECTION 8: PLAN APPROVAL AND ADOPTION		75
APPENDICES.....		78
APPENDIX A – LOCAL MITIGATION PLAN REVIEW TOOL		79
APPENDIX B – PLANNING TEAM MEETING DOCUMENTATION.....		94
1.	Project Kickoff Meeting:	94
2.	Project Planning Meeting #2:	103
3.	Project Planning Meeting #3:	110
APPENDIX C – PUBLIC ENGAGEMENT DOCUMENTATION.....		118
APPENDIX D – MITIGATION ACTION PRIORITIZATION (STAPLEE)		133
APPENDIX E – ACRONYMS.....		140



This page is intentionally left blank.



SECTION 1: INTRODUCTION

The City of Artesia has prepared the 2020 Local Hazard Mitigation Plan (LHMP) in order to assess the natural cause risks to City so as to reduce the potential impact of these hazards by creating mitigation strategies. The 2020 LHMP represents the City of Artesia's commitment to create a safer and more resilient community by taking actions to reduce risk and by committing resources to lessen the effects of hazards on the people and property of the City.

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

This introduction to the LHMP provides a brief description of hazard mitigation planning, local mitigation plan requirements, and an outline of the 2020 LHMP. There is also an overview of Federal Emergency Management Agency (FEMA) programs and grants related to hazard mitigation.

1.1 Hazard Mitigation Planning

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

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

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

1.2 Local Mitigation Planning Requirements

Hazard mitigation planning is governed by the Stafford Act, as amended by the Disaster Mitigation Act of 2000 (DMA 2000), and by federal regulations implementing the Stafford Act. DMA 2000

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



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

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

Federal law and the State of California's requirements for hazard mitigation plans require coverage of only natural hazards. The Artesia 2014 Emergency Operations Plan included technological and human-caused hazards as well as natural hazards. The planning team decided to cover naturally caused hazards only for the LHMP, including a description and analysis of each hazard.

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



1.3 Hazard Mitigation Plan Description

The 2020 LHMP consists of the sections and appendices described below:

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

Section 1: Plan Introduction	Section 1 includes an introduction to hazard mitigation planning, lists the LHMP planning requirements, provides a description of the plan, and discusses grants related to hazard mitigation.
Section 2: Planning Process	Section 2 describes the planning process for the 2020 LHMP, including an overview of how the LHMP was prepared, identification of the LHMP planning team, involvement of outside agencies and communities, the inclusion of related plans, reports and information, and stakeholder and public outreach activities.
Section 3: Community Description	Section 3 includes a description of the natural and built states of the City, including climate, geography, demographics and economic conditions.
Section 4: Capability Assessment	Section 4 identifies and evaluates the resources available for hazard mitigation within Artesia.
Section 5: Risk Assessment	Section 5 provides a list of the hazards identified in the 2020 LHMP, a profile of each hazard and hazard summary, and a risk assessment of the planning area.
Section 6: Mitigation Strategy	Section 6 identifies and evaluates the current, ongoing, and completed mitigation projects and programs in Artesia, and lists mitigation strategies for reducing potential losses.
Section 7: Plan Maintenance Procedures	Section 7 describes procedures for updating the LHMP to keep it current and for continued public engagement in the planning process.
Section 8: Adoption Resolution	Section 8 includes documentation of CalOES and FEMA processes, and adoption of the LHMP by the Artesia City Council.
Appendix A	Appendix A contains the FEMA <i>Local Mitigation Plan Review Tool</i> , which documents Artesia's compliance with the local hazard mitigation plan requirements of 44 CFR Part 201.
Appendix B	Appendix B contains documentation of the planning process for the planning team, including meetings, presentations, emails, etc.
Appendix C	Appendix C contains documentation of the planning process including meetings, presentations held for the stakeholders and public, and other stakeholder/public outreach efforts.
Appendix D	Appendix D lists acronyms and abbreviations used in the 2020 LHMP.

1.4 Assembly Bill 2140

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



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

1.5 Grant Programs with Mitigation Plan Requirements

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

1.5.1 Stafford Act Grant Programs

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

Hazard Mitigation Grant Program (HMGP)

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

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

The Pre-Disaster Mitigation (PDM) Program

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



1.5.2 National Flood Insurance Act Grant Programs

Flood Mitigation Assistance Grant Program

The goal of the Flood Mitigation Assistance (FMA) Grant Program is to reduce or eliminate flood insurance claims under the National Flood Insurance Program (NFIP). This program places emphasis on mitigating repetitive loss (RL) properties. The primary source of funding for the FMA program is the National Flood Insurance Fund. Grant funding is available for planning, project, and technical assistance. Project grants are awarded to local entities to apply mitigation measures to reduce flood losses to properties insured under the NFIP. In FY 2014, FMA funding totaled \$89 million. The cost-share for this grant is 75 percent federal and 25 percent nonfederal. However, a cost-share of 90 percent federal and 10 percent nonfederal is available in certain situations to mitigate severe repetitive loss (SRL) properties.

Repetitive Flood Claims Program

The Repetitive Flood Claims (RFC) Program provides funding to reduce or eliminate the long-term risk of flood damage to residential and non-residential structures insured under the NFIP. Structures considered for mitigation must have had one or more claim payments for flood damages. All RFC grants are eligible for up to 100 percent federal assistance.



SECTION 2: PLANNING PROCESS

The requirements for documentation of the LHMP planning process are described below. This section summarizes the planning area's hazard mitigation planning efforts in 2019. In addition, the section describes public and stakeholder outreach efforts as part of the LHMP planning process. The section also summarizes the review and incorporation of existing plans, studies, and reports used to develop the LHMP. Documentation of the 2020 LHMP planning process for the Hazard Mitigation Planning Team is provided in Appendix B, and documentation of the planning process for the Public and stakeholders is found in Appendix C. These appendices document the planning meetings and outreach, and include meeting agendas, presentation, materials and other documentation used to conduct the planning process.

FEMA REGULATION CHECKLIST: PLANNING PROCESS

Documentation of the Planning Process

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

Elements

A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? 44 CFR § 201.6(c)(1).

A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? 44 CFR 201.6(b)(2)

A3. Does the Plan document how the public was involved in the planning process during the drafting stage?
44 CFR 201.6(b)(1) and 201.6(c)(1)

A4. Does the Plan document the review and incorporation of existing plans, studies, reports, and technical information? 44 CFR 201.6(b)(3)

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

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

2.1 Plan History

This is the first stand-alone LHMP developed by the City.

2.2 Plan Purpose and Authority

The purpose of the Plan is to identify natural hazards that impact the City, assess the vulnerability and risk posed by those hazards to community-wide human and structural assets, develop strategies for mitigation of those identified hazards, present future maintenance procedures for



the plan, and document the planning process. The Plan is prepared in compliance with DMA 2000 requirements and represents a new LHMP.

The requirements for adoption of this LHMP by all local governing bodies, as set forth in the Stafford Act and as amended by DMA 2000, and its implementing regulations are described below. The local planning requirements are documented throughout the LHMP and in **Appendix A**, FEMA Local Mitigation Plan Review Tool. This is documented in the governing body meeting resolution documented in **Section 8**.

FEMA REGULATION CHECKLIST: PLAN ADOPTION
<u>Adoption by the Local Governing Body</u>
44 CFR § 201.6(c)(5): The local hazard mitigation plan shall include “[d]ocumentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).”
<u>Element</u>
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval?
<i>Source: FEMA, Local Mitigation Plan Review Tool, March 2013.</i>

Funding for the development of the Plan was provided by a Climate Adaptation and Resiliency Planning grant from the Southern California Gas Company. Constant & Associates was retained by the City to provide consulting services in guiding the planning process and Plan development.

2.3 Planning Process Description

In April 2019, the planning process for the 2020 LHMP began. Select staff from various City departments were invited to the Hazard Mitigation Planning Team for the purpose of developing the 2020 LHMP. Email solicitations were sent to local utility companies, and representatives from the Los Angeles County Fire and Los Angeles County Sheriff’s Departments. Eric Wosick of the City of Norwalk and Emely Melina of the City of Cerritos, neighboring jurisdictions, were invited by email to review the draft LHMP. The City of Cerritos provide a comment which was incorporated into the LHMP. Documentation of the emails is contained in Appendix C, Public Engagement Process.



2.4 Planning Team

Members of the LHMP planning team are listed in **Table 2-1**, below.

Table 2-1: LHMP Planning Team

Department or Agency	Member Name	Key Role
Administration and Public Works	Melissa Burke	<i>Chair of Planning Team; Primary Point of Contact; Provide input and guidance from the City Manager's Office; Provide input on public works capabilities, facilities, mitigation strategy and projects; Regulate development</i>
Los Angeles County Sheriff's Department	Deputy Cruz/Sgt. Knapp	<i>Provide input representing law enforcement</i>
Finance	Siamlu Cox	<i>Artesia capabilities, facilities, and mitigation strategy and projects</i>
Building Official	Los Angeles County Contract	<i>Artesia assets and planning projects, land use; Regulate development</i>
Planning	Fiona Graham	<i>Artesia building inventory; Regulate development, Planning capabilities and mitigation strategy and projects, Artesia assets</i>
Parks and Recreation	David Coleman, Rosa Pinuelas	<i>Artesia capabilities, assets, facilities, and mitigation strategy</i>
Los Angeles County Office of Emergency Service, Area E Coordinator	David Ashman	<i>County Hazard Mitigation Plan; County capabilities, assets, mitigation strategy, risk assessment and hazards</i>
Southern California Edison	Francisco Martinez	<i>Provide input regarding electric utilities and infrastructure in Artesia</i>
Southern California Gas Company	Jennifer Pezda	<i>Provide input regarding gas utilities and infrastructure in Artesia</i>
Planning Commissioner	Victor Manalo	<i>Provide input on planning capabilities and strategies</i>
Public Safety Commissioner/Church Representative	Betty Lou Ormonde	<i>Provide input from community standpoint regarding responding to disasters</i>
La Belle Chateau (Community Member)	Dody Bedingfield	<i>Provide input from community standpoint regarding responding to disasters</i>



2.4.1 Planning Team Activities

Three meetings were held with the planning team: representatives from the City held the responsibility of chairing the planning team. The Administration Office also copied documents for review and sent out meeting notices.

Table 2-2: Planning Activities

Date	Activity	Purpose
3/14/2019	LHMP Planning Team Kickoff Meeting /Team Meeting #1	Introduce Planning Team members, review project management plan, align expectations
5/16/2019	LHMP Planning Team Meeting #2	Review potential hazards and select those that pose risks, distribute data collection sheets, begin to develop potential mitigation activities
9/3/2019	LHMP Planning Team Meeting #3	Review of hazards covered in the draft document

2.4.2 Other Jurisdictions Agency/Organizational Participation

Several external organizations participated in Planning Team meetings. They were invited by an MS Outlook invitation to the meetings. Appendix B, Planning Team Meetings notes, documents their engagement. Table 2.3 lists the organizations and attendees:

Table 2.3: Organization Participation

Organization	Staff
Los Angeles County Fire Department (provides fire protection and emergency medical services via contract with the City)	Keith Wood
Los Angeles County Sheriff (provides police protection via contract with the City)	Geraldo Cruz
Southern California Edison	Francisco Martinez
Southern California Gas Company	Jennifer Pezda
Los Angeles County Disaster Management Area E Coordinator	David Ashman

Copies of the draft LHMP were provided to the Cities of Cerritos and Norwalk for their review. Comments received from these partners have been incorporated into the final draft of the LHMP and have been documented in Appendix C.

2.5 Community Engagement

The public survey input from the thirty-two (32) responders was used to select hazards and rank their effects. Extreme heat and earthquakes were ranked as the two top hazards. This input was also used to inform the Calculated Priority Risk Index (CPRI) contained in **Table 5.4**. Finally, survey input was used to select mitigation actions. Input from publicly posting the draft LHMP was used to refine the Plan and to prepare it for submission for review. **Appendix C** provides documentation of community outreach efforts and public participation.

On February 20, the City posted a link to the draft LHMP on its website and invited public review and comment. Appendix C contains screen shots of the website.



2.6 Incorporation into Other Planning Mechanisms

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

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

- City Emergency Operations Plans and Procedures
- Capital Improvement Planning and Programs
- Artesia Municipal Code
- Community Design Guidelines
- Drought and Water-efficiency Guidelines
- Stormwater Management Program
- Environmental Work Plan
- General Plan Safety Element

Incorporation of action items and processes from the 2020 LHMP into various planning documents will be completed as other plans are updated, and when new plans are developed. These efforts may coincide with the Plan Maintenance Method and Schedule activities listed in Section 7. Additional action items may be implemented through the creation of new public educational programs, continued interagency coordination, and public input and participation.

2.7 References and Documents

In updating the LHMP, the planning team used a large number of resource documents and references. **Table 2-3** contains a comprehensive list of guidance and tools incorporated to create the current Plan.



Table 2-3: Resource Documents and References, Reviewed and Incorporated in the Plan Update

Referenced Document or Technical Source	Resource Type	Description of Reference and Its Use
City of Artesia General Plan 2030 http://www.cityofartesia.us/index.aspx?nid=258	Comprehensive Plan	Source for history as well as demographic and development trend data for the unincorporated county.
Los Angeles County Operational Area Emergency Response Plan	Comprehensive Plan	All hazards emergency response plan.
California Climate Change Center (2006). Our Changing Climate: Assessing the Risks to California. A Summary Report from the California Climate Change Center http://meteora.ucsd.edu/cap/pdffiles/CA_climate_Scenarios.pdf	Technical and Planning Resource	Describes monitoring, analysis, and modeling of climate as well as efforts designed to reduce emissions.
California Climate Change Center, (2012). Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. A Summary Report on the Third Assessment from the California Climate Change Center http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf	Technical and Planning Resource	Describes monitoring, analysis, and modeling of climate as well as efforts designed to reduce emissions.
California Governor's Office of Emergency Services http://myhazards.caloes.ca.gov/	Technical and Planning Resource	Provides a tool for the general public to discover hazards in their area (earthquake, flood, fire, and tsunami) and learn steps to reduce personal risk.
California Department of Conservation https://www.conservation.ca.gov/cgs/geohazards	Technical and Planning Resource	Identifies significant geologic hazards that exist or are likely to exist so that informed land use and emergency response planning decisions can be made.
Federal Emergency Management Agency	Technical and Planning Resource	Resource for LHMP guidance (How-To series), floodplain and flooding related NFIP data (mapping, repetitive loss, NFIP statistics), and historic hazard incidents. Used in the risk assessment and mitigation strategy.

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Referenced Document or Technical Source	Resource Type	Description of Reference and Its Use
HAZUS-MH	Technical Resource	Base data sets within the program were used in the vulnerability analysis.
National Centers for Environmental Information https://www.ncdc.noaa.gov/data-access	Technical Resource	Online resource for weather-related data and historic hazard event data. Used in the risk assessment.
National Integrated Drought Information System (2019) https://www.drought.gov/drought/	Technical Resource	Source for drought-related projections and conditions. Used in the risk assessment.
National Inventory of Dams (2018) https://www.fema.gov/2018-national-inventory-dams	Technical Resource	Database used in the dam failure hazard profiling. Used in the risk assessment.
National Weather Service https://www.weather.gov/	Technical Resource	Source for hazard information, data sets, and historic event records. Used in the risk assessment.
United States Geological Survey (2018). Earthquake Hazards Program. https://earthquake.usgs.gov/hazards/hazmaps/conterminous/	Technical Data	Source for geological hazard data and incident data. Used in the risk assessment.
Western Regional Climate Center https://wrcc.dri.edu/	Website Data	Online resource for climate data used in climate discussion.



SECTION 3: Planning Area Description

The following description of the planning area includes its location, geography, history, government, economy, and demographics.

3.1 Location

The City of Artesia (City) has an area of 1.62 square miles and is situated nineteen (19) miles southeast of the City of Los Angeles, and ten (10) miles northwest of the City of Anaheim. The City center is located at 33°52'2"N 118°4'50"W (33.867215, -118.080622). Artesia is bounded by the City of Norwalk to the north, and the City of Cerritos to the south, east and west. A location map is provided in **Figure 1-1**.

3.2 Geology

The City is located within the Los Angeles basin, which is a depression several thousand feet deep in the earth's crust. This part of Southern California is characterized by elongated northwest-southeast trending ridges, valleys, and structural features. The City is within the alluvial plain of the San Gabriel River, which is comprised primarily of rocks, sand, and soil from the mountains to the north. Artesia is characterized by level topography with slopes of less than five percent. Ground elevations are approximately sixty-five (65) feet above sea level to the north and slope south to 45 feet above sea level.

The City is situated between two active faults, the Norwalk Fault and the Newport-Inglewood Fault. Additionally, several active faults are located within fifty (50) miles of the City.

3.3 Climate

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

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

The winter wet season normally lasts from November through early May. The average highs range from the upper 60's°F to 70°F with cooler overnight lows in the upper 40's and lower 50's°F. While there is an increase in rainfall during winter months, winter days are frequently sunny with mild temperatures. The greatest amount of rain falls during the thirty-one (31) days centered

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



around February 18, with an average total accumulation of 3.2 inches. Because the rainy season begins in late fall and ends in early to mid-spring, precipitation is measured using the water year instead of the calendar year, to give an accurate picture of each rainy season's precipitation amounts. Each water year begins October 1 and ends the following September 30.

3.4 History

The City traces its beginning as a community and retail trade center in southeast Los Angeles County to the mid-1800s. In 1869, Daniel Gridley purchased 1,600 acres of the Spanish Land Grant known as Rancho Los Coyotes. He sold 550 acres to the Artesia Land Company, which also acquired 2,400 acres from other parties.

The community of Artesia was launched at a three-day auction in February 1875. By the end of the year, nearly all the land was sold and approximately fifty (50) farms were established. Principal crops of the early Artesia farmers were corn, wheat, fruits and vegetables. There were small dairies and chicken ranches, though the only stocks raised for exportation were hogs and beef cattle. Nearly every farm had an artesian well, giving the area its name.

By the turn of the century, the core of the City was established at the junction of Pioneer Boulevard and the Pacific Electric Railroad. This core served as the trading, transportation, and social center for the surrounding agricultural area. In 1907, the Pacific Electric railway began a passenger and freight service from Los Angeles to Santa Ana through Artesia. A town subdivision was opened, and the present Artesia business district was established with the organization of a national bank. By 1923, those who had settled in Artesia formed the Artesia Chamber of Commerce to improve business and to build a better community.

In the early 1920s, dairymen, mostly of Portuguese descent, were brought from the San Joaquin Valley to fill the shortage of dairy hands. In the 1930s, prime dairy property began to attract Dutch dairy farmers.

As late as 1940, only 2,500 people lived in the area, but following World War II, many people around the country began to relocate to Southern California. This migration extended the urbanization of the County into Artesia's previously agricultural areas. In 1951, the Los Angeles County Board of Supervisors designated the area as the Artesia Zoned District. Artesia was incorporated in 1959 with an area of 1.62 square miles.

3.5 Government

The City has a City Manager/City Council form of government. The City Council is composed of five members elected at large who serve for four-year overlapping terms. The City Council is responsible for the implementation of all programs and services provided by the City. Police protection is provided by the Los Angeles Sheriff's Department and fire protection by the Los Angeles County Fire Department.



The City provides for four commissions, Beautification and Maintenance, Planning, Parks and Recreation and Public Safety. Each is composed of five (5) individuals who serve voluntarily. Members of the City Council appoint one person to each commission for a term of four (4) years.

City Departments include:

- Administration
- City Clerk
- Finance
- Human Resources
- Parks & Recreation
- Planning & Building
- Public Safety – Code Enforcement
- Public Works

3.6 Economy

Slightly over 6,000 people are employed in the City as of 2017. Education is the largest sector comprising 33.7% of persons employed, followed by leisure (18.2%), retail (10.1%), and professional (9.8%). Retail sales in 2017 totaled \$193 million. Median household income in 2017 was \$62,702. (Source: Southern California Association of Governments)

3.7 Demographics

The 2010 United States Census² reported that Artesia had a population of 16,522. The State of California Department of Finance 2018 population estimate for Artesia was 16,792. The 2010 population density was 10,194.7 people per square mile. The racial breakup was 6,446 (39.0%) White,^[15] 589 (3.6%) African American, 94 (0.6%) Native American, 6,131 (37.1%) Asian, 40 (0.2%) Pacific Islander, 2,630 (15.9%) from other races, and 592 (3.6%) from two or more races. Hispanic or Latino of any race were 5,910 persons (35.8%).

The Census reported that 15,909 people (96.3% of the population) lived in households, 69 (0.4%) lived in non-institutionalized group quarters, and 544 (3.3%) were institutionalized. The median age was 38.2 years. For every 100 females, there were 98.4 males. For every 100 females age 18 and over, there were 96.1 males. The City had a median household income of \$62,702, with 13.5% of the population living below the federal poverty line.

Of 4,535 households, 1,933 (42.6%) had children under the age of 18 living in them, 2,673 (58.9%) were opposite sex married couples living together, 670 (14.8%) had a female householder with no husband present, 334 (7.4%) had a male householder with no wife present. There were 661 (14.6%) households made up of individuals. There were 306 (6.7%) households with someone living alone who was 65 years of age or older. The average household size was 3.51. There were 3,677 families (81.1% of all households), and the average family size was 3.80 people.

² "2010 Census Interactive Population Search: CA - Artesia city". U.S. Census Bureau.



There were 4,697 housing units in the City, for a population density of 2,898.2 per square mile. Housing ownership was 2,523 (55.6%) owner-occupied, and 2,012 (44.4%) occupied by renters. The homeowner vacancy rate was 0.7%, and the rental vacancy rate was 3.7%.

3.8 Land Use

The majority of the land area within the City is developed with single-family homes built between the 1960s and 1980s. Apartments, townhomes and condominiums can also be found throughout the City. Commercial development is mainly located along Pioneer Boulevard, Artesia Boulevard and South Street, along with smaller neighborhood-serving retail centers scattered within residential areas. The City’s built-out nature presents opportunity for infill development and redevelopment to accommodate changing needs, market conditions, and demographics.

The existing land use pattern is depicted by **Table 3-1**, which quantifies the amount of actual existing acreage devoted to each land use, as well as the existing number of dwelling units or square feet within each category. **Figure 3-1** illustrates the City’s existing land use pattern.

Table 3-1: Land Use

2010 Existing Land Use (1)			
Land Use Type	Acres	Square Feet	Dwelling Units
Low Density Residential	406.0	–	3,018
High Density Residential	84.6	–	1,592
Commercial General	118.0	1,777,736	–
Institutional	93.8	129,333	–
Light Manufacturing and Industrial	48.0	603,623	–
Open Space and Recreation	24.3	–	–
Vacant	6.6	–	–
TOTAL	780.3	2,510,693	4,610

Notes: (1) Represents existing on-the-ground land use

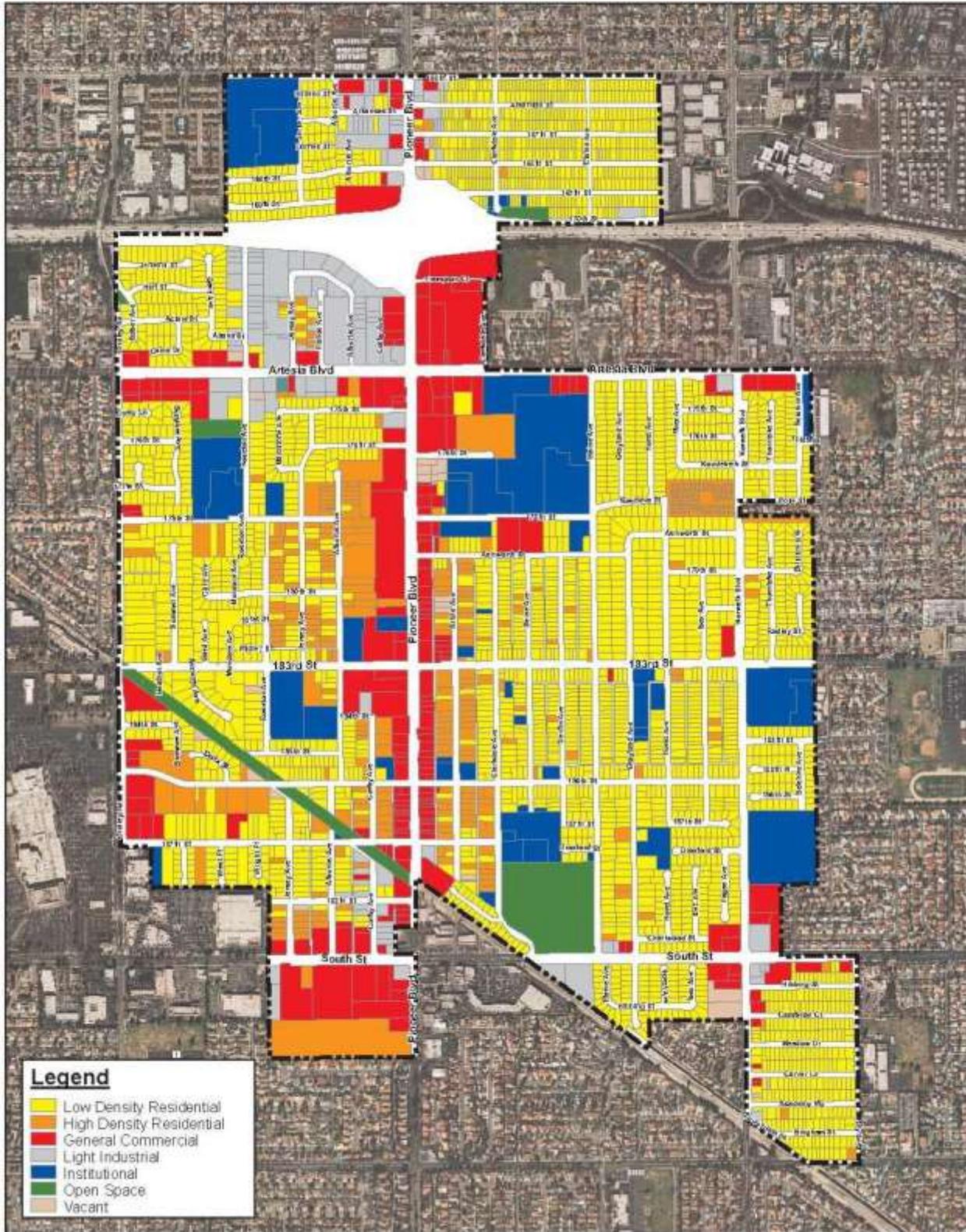


FIGURE 3-1: LAND USE IN CITY OF ARTESIA



SECTION 4: CAPABILITIES ASSESSMENT

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

FEMA REGULATION CHECKLIST: CAPABILITY ASSESSMENT

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

Elements

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

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

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

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

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

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

4.1 Existing Authorities, Policies, Programs, and Resources

An assessment of authorities, policies and programs, and resources was conducted to identify capabilities that contribute to the reduction of vulnerability to hazards. The capabilities include authorities and policies, such as legal and regulatory resources, fiscal resources, and staff (e.g., technical personnel such as planners/engineers with knowledge of land development and land



management practices, engineers trained in construction practices related to building and infrastructure, planners and engineers with an understanding of natural or human-caused hazards, floodplain managers, surveyors, personnel with GIS skills, and staff with expertise of the hazards in the City). The planning team also considered ways to expand on and improve these existing policies and programs with the goal of integrating hazard mitigation into the day-to-day activities and programs of the City. Tables 4-1, 4-2, 4-3, and 4-4 summarize the existing authorities, policies, programs, and resources to implement mitigation actions and projects.

4.1.1 Planning and Regulatory Capabilities

Planning and Regulatory Capabilities - Local ordinances, policies and laws to manage growth and development. Examples include land use plans, capital improvement plans, transportation plans, emergency preparedness and response plans, building codes and zoning ordinances.

Table 4-1: Local Legal and Regulatory Capabilities

Name	Description (Effect on Hazard Mitigation)	Hazards Addressed	Version/Date	Capability Type*
General Plan: Land Use Element Safety Element	Provides what can be built where to create a safe city which manages growth and development Expansion and Improvement: <ul style="list-style-type: none"> • The LHMP will be informed by reference into the Public Safety Element of the General Plan • The City will adopt the approved LHMP as part of the General Plan Safety Element to meet the requirements of AB 2140 	All	GP 2030, adopted in 2010	Planning
Municipal Code	Provides legal guidance on the following activities: <ul style="list-style-type: none"> • Finance • Public Safety • Public Welfare • Sanitation and Health • Public Works • Building Regulations • Planning and Zoning Expansion and Improvement: <ul style="list-style-type: none"> • Adherence to Municipal Code regulates growth and controls land use patterns • Addressing known hazards, as City Code is update, results in lowered risk and potentially less losses 	All	Updated quarterly	Planning, Regulatory

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



<p>City Emergency Operations Plan</p>	<p>Explains how the City will respond to a major emergency or disaster and coordinate between the Emergency Operations Center (EOC) and field level Incident Commanders</p> <p>Includes the hazards with a description of each:</p> <ul style="list-style-type: none"> • The concept of operations during a major emergency or disaster • The role of the EOC • The coordination that occurs between the EOC and City's departments and other local, state, and federal governments in times of disaster <p>Expansion and Improvement:</p> <ul style="list-style-type: none"> • The hazards section of the Emergency Operations Plan (EOP) is informed by the LHMP as the two are closely correlated 	<p>All</p>	<p>In progress</p>	<p>Administrative</p>
<p>*(Planning, Regulatory, Administrative, Technical, or Financial) if known</p>				

4.1.2 Administrative and Technical Capabilities

Administrative and Technical - Community (including public and private) staff and their skills and tools 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.

Table 4-2: Administrative and Technical Capabilities

Name	Description	Hazards Addressed	Version/ Date	Capability Type*
Constant and Associates	Consultant assisting in developing the LHMP and EOP for the City	All	Developing new EOP for 2020	Technical, Planning, Regulatory
Los Angeles County Disaster Management Area E	County Emergency Disaster Management – Provides training and resources for disaster management	All	N/A	Planning, Regulatory, Technical
City Planning Department	Internal staff provide knowledge and skills to mitigate hazards in building construction by upholding city codes	All	N/A	Planning, Regulatory, Administrative
Building Inspector	LA County Contractor – Provides inspections of facilities before releasing a certificate of occupancy and can also inspect after damage occurs for safety before permitting reentry	All	Codes updated by the county annually and the city adopts them by reference	Regulatory, Technical

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



City Management Team	Responsible for upholding city codes to ensure a safe environment and for implementing the EOP after a disaster Also responsible for writing grants/saving/budgeting to fund mitigation measures	All	N/A	Administrative, Financial
Southern California Association of Governments	Regional association which provides GIS data to the City as requested	All	N/A	Administrative
Gateway Water Management Authority	Association responsible for regional water resources and water management	Flooding/Drought	N/A	Administrative, Planning,
Lower San Gabriel Watershed Association	Regional association responsible for water resource, and water management	Flooding/Drought	N/A	Administrative, Regulatory, Planning
*(Planning, Regulatory, Administrative, Technical, or Financial) if known				

4.1.3 Financial Capabilities

Includes grants, general funds, property sales, income taxes, development impact fees, or stormwater utility fees. Based open procedures for each resource, these financial resources may be used to support mitigation activities.

Table 4-3: Financial Resources

Financial Resource	Administrator	Purpose
General Fund	19/20 fiscal year budget of \$10.1 million	Financial
Development Impact Fees	Assessing fees as of July 2019, for storm water management, streets/infrastructure improvements, parks/recreation	Financial
Community Development Block Grants (CDBG)	The City Manager's Office, Economic Development	The CDBG program provides funding for eligible senior activities such as in-home care, art classes, counseling and home delivered meals HUD also provides Disaster Recovery Assistance in the form of flexible grants to help cities, counties, and States recover from Presidentially declared disasters, especially in low-income areas, subject to availability of supplemental appropriations
Hazard Mitigation Grant Program (HMPG)	FEMA	Provides support for post-disaster mitigation plans and projects



Pre-Disaster Mitigation grant program (PDM)	FEMA	Provides support for pre-disaster mitigation plans and projects
Flood Mitigation Assistance grant program (FMA)	FEMA	Mitigates structures and infrastructure that have been repetitively flooded

4.1.4 Education and Outreach Capabilities

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

Table 4-4: Education and Outreach Resources

Name	Description	Hazards Addressed	Version/Date	Capability Type*
Los Angeles County Fire Emergency Survival Guide	LA County Fire provides materials to the city to distribute to the public as an Emergency Survival Guide to aid families in acquiring what they need to have to survive for seven (7) days if there is a disaster and first responders are not available for seven (7) days to reach them	Dam Inundation, Earthquake, Flood/ Flashflood, Winter Storm, High Winds	May 2017	Planning, Outreach
Los Angeles County Disaster Management Area E	Provides materials for communications offices for training and deployment	All	2019	Planning, Administrative, Outreach
California Joint Powers Insurance Authority	Provides training to employees for responding to hazards and describes prevention programs	All	Some trainings are annual, some are every other year, and some are every three years	Technical, Planning
City Staff	Provides information to the public through social media, web, print, and email	Any when media is still available	N/A	Outreach, Administrative

*(Planning, Regulatory, Administrative, Technical, or Financial) if known

4.1.5 National Flood Insurance Program Participation

Artesia participates in the National Flood Insurance Program (NFIP). Relevant information on their NFIP status is:

CID	Init FHBMI identified	Init FIRM Identified	Current Eff Map Date	Reg-Emer Date
060097#	06/28/74	09/26/08	(NSFHA)	03/30/79

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

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



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

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

There are no repetitive or severe repetitive loss structures in the City.

The City staff appear not to fully understand the NFIP. A mitigation action will include developing a better understanding of the value of this program.



SECTION 5: VULNERABILITY AND RISK ASSESSMENT

This section of the LHMP includes requirements for hazard profiles and a risk assessment, as provided in the Code of Federal Regulations.

FEMA REGULATION CHECKLIST: RISK ASSESSMENT

Hazard Identification

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

Elements

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

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

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

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

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

5.1 Hazard Identification and Screening

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

Hazard Identification

A list of all hazards that had the potential to occur in Artesia was presented to stakeholders in a meeting and to the general public through a survey. The list of hazards was derived from the General Plan, the 2016 Emergency Operations Plan, the 2016 Los Angeles Multi-Hazard Mitigation Plan, and the California State Hazard Mitigation Plan. Considering the results of the public survey and recommendations from the stakeholders, the planning team decided not to include technological and human-caused hazards to the Plan.

5.1.1 Artesia Disaster Proclamation History 2005

The planning team reviewed historical information and more recent past events to identify hazards where an emergency or disaster was proclaimed within the City. The following table shows the emergency or disaster proclamation history for the City:

- City Hall - After major rains, water flooded the lower (sub terrain) level of City Hall. Water damaged all flooring, and the bottom 2.5' of drywall. Water had to be professionally remediated, flooring was replaced, and drywall had to be replaced in some areas and



repainted. Flooding occurred after business hours and no injuries occurred. Damage was \$50,550.16 and was covered by the City’s Insurance Program through CJPIA after paying the deductible. A request for public assistance was submitted to FEMA and was approved - State reimbursed City \$4,968.

- Community Center- Following major rains, the roof at the Albert O. Little Community Center was compromised and had to be replaced following major leaks into the building. NO injuries occurred, but property was damaged. An insurance claim was submitted to replace the roof at an estimated cost of \$100,000. The City paid a \$5,000 deductible.
- Commercial property - Following heavy rains, the roof at a commercial property the city owns failed and was severely leaking. An engineer had to look at the facility to determine if it was safe to occupy and the tenant was removed for several hours until a determination was made. Roof was patched, in 2019 and is being replaced in 2020 for a cost of \$25,000.

Table 5-1: Artesia Emergency or Disaster Proclamations

Year	Resolution Number	Emergency/Disaster Type
2005	1914	A resolution of the City Council of the city of Artesia authorizing the filing of an application with the Governor’s Office of Emergency Services to obtain federal financial assistance under p.l.93-228 and/or finance assistance under the California Disaster Assistance Act and designating the City Manager as agency of the city (P.A. No. 037-02896-00).

5.1.2 Disaster Proclamation Process

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

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

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



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

Table 5-2: Los Angeles County Disaster Proclamation History

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

5.1.3 Hazard Risk Rating

For the 2020 LHMP the risk for each hazard was rated using the Calculated Priority Risk Index (CPRI). The CPRI examines four criteria for each hazard (probability, magnitude/severity, warning time, and duration (Table 5-3). For each hazard, an index value is assigned for each CPRI category from 0 to 4 with “0” being the least hazardous and “4” being the most hazardous situation. This value is then assigned a weighting factor and the result is a hazard ranking score (Table 5-4). Table 5-4 is an overall summary of the hazard evaluations for the City.



Table 5-3: Calculated Priority Risk Index

CPRI Category	Degree of Risk Chart			Assigned Weight
	Level ID	Description	Index Value	
Probability	Unlikely	Extremely rare with no documented history of events or occurrences. Annual probability of less than 0.001	1	45%
	Possible	Rare occurrences with at least one documented or anecdotal historic event. Annual probability of between 0.01 and 0.001	2	
	Likely	Occasional occurrence with at least two or more documented historic events. Annual probability of between 0.1 and 0.01	3	
	Highly Likely	Frequent events with a well-documented history of occurrence. Annual probability of greater than 0.1	4	
Magnitude-Severity	Negligible	Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure). Injuries or illnesses are treatable with first aid and there are no deaths Negligible quality of life lost Shut down of critical facilities for less than 24 hours	1	30%
	Limited	Slight property damages (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure) Injuries and illnesses do not result in permanent disability and there are no deaths Moderate quality of life lost Shut down of critical facilities for more than 1 day and less than 1 week	2	
	Critical	Moderate property damages (greater than 25% and less than 50% of critical and non-critical facilities and infrastructures) Injuries or illnesses result in permanent disability and at least one death Shut down of critical facilities for more than 1 week and less than 1 month	3	
	Catastrophic	Severe property damages (greater than 50% of critical and non-critical facilities and infrastructure). Injuries or illnesses result in permanent disability and multiple deaths Shut down of critical facilities for more than 1 month	4	
Warning Time	> than 24 hours	Population receives greater than 24 hours of warning	1	15%
	12 to 24 hours	Population receives between 12-24 hours of warning	2	
	6 to 12 hours	Population receives between 6-12 hours of warning	3	
	< than 6 hours	Population receives less than 6 hours of warning	4	
Duration	< than 6 hours	Disaster event will last less than 6 hours	1	10%
	6 to 24 hours	Disaster event will last between 6-24 hours	2	
	24 hours to 1 week	Disaster event will last between 24 hours and 1 week	3	
	> than 1 week	Disaster event will last more than 1 week	4	



Table 5-4: Calculated Priority Risk Index Summary

Hazard	Probability	Weighted 45%	Magnitude Severity	Weighted 30%	Warning Time	Weighted 15%	Duration	Weighted 10%	CPRI Ranking
Climate Change	4	1.8	4	1.2	1	.15	4	.40	3.55
Dam Inundation	2	.90	4	1.20	3	.45	4	.40	3.05
Drought	2	.90	2	.60	1	.15	4	.40	2.05
Earthquake and Seismic Hazards	3	1.35	4	1.20	4	.60	4	.40	3.55
Extreme Heat	3	1.35	2	.60	1	.15	3	.30	2.40
Urban Fire	2	.90	2	.60	3	.45	2	.30	2.25
Flood	3	1.35	2	.60	3	.45	3	.30	2.70
Winter Storm / High Wind	3	2.35	3	.90	3	.45	3	.30	3.00

CPRI Hazard Risk Scoring

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

Wildland fire was not included in the hazard risk rating as the City has no land in the wildland urban interface (WUI). Historic wildfire locations in Los Angeles County are over ten (10) miles distant from the City.

5.2 Hazard Identification and Risk Profiles

The hazards that exist in the City are profiled below. Each hazard profile includes a description of the type, location, extent, previous occurrences, regulatory environment and probability of future events within the description. Maps and graphs are used in this plan to display hazard identification data. Except for the future earthquake probability, which was taken from the third Uniform California Earthquake Rupture Forecast (UCERF3), the probability of future hazard events was calculated based on existing data. Probability was determined by dividing the number of events observed by the number of years on record and multiplying by one hundred (100). This gives the percent chance of an event happening in any given year (e.g., three (3) tornados over a thirty (30) year period equates to a 10% chance of a tornado in any given year). The likelihood of future occurrences is categorized into one of the following classifications:

- Highly Likely - Near 100% chance of occurrence in the next year or happens every year.
- Likely - Between ten percent (10%) and one hundred percent (100%) chance of occurrence in the next year or has a recurrence interval of ten (10) years or less.
- Occasional - Between one percent (1%) and ten percent (10%) chance of occurrence in the next year or has a recurrence interval of eleven (11) to one hundred (100) years.
- Unlikely - Less than one percent (1%) chance of occurrence in the next one hundred (100) years or has a recurrence interval of greater than every one hundred (100) years.



The following table lists the hazards described in the LHMP:

Table 5-5: Hazard Identification Table

2017 LHMP Hazards
1. Climate Change
2. Dam Inundation
3. Drought
4. Earthquake and Seismic Hazards
5. Extreme Heat
6. Fire (Urban)
7. Flood
8. Winter Storm/ High Winds

The 2020 LHMP lists eight (8) hazards that affect the planning area based on historical information, the presence of the hazard, and the likelihood of future occurrences of the hazard. The hazard profiles serve as the basis of the hazard assessment.

5.2.1 Climate Change

Description:

The earth’s climate is changing. The State has warmed about 2°F in the last century. Throughout the southwestern United States, heat waves are becoming more common, and snow is melting earlier in spring. In the coming decades, changing climate is likely to decrease the flow of water in the Colorado River, threaten the health of livestock, increase the frequency and intensity of wildfires, and convert some rangelands to desert.

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

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

Many people confuse climate change with global warming, the recent and ongoing rise in global average temperatures near Earth’s surface. However, global warming represents only one aspect of climate change. The Earth’s average temperature has risen by 1.4°F over the past century and is projected to rise another 2.5°F to 11.5°F over the next hundred years. Rising global



temperatures have been accompanied by changes in weather and climate. Many places have seen changes in rainfall resulting in more floods, droughts, or intense rain, as well as more frequent and severe heat waves. The planet's oceans and glaciers have also experienced changes - oceans are warming and becoming more acidic, ice caps are melting, and sea levels are rising. The effects of these indicators include:

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

History:

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

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

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



and glaciation has lagged atmospheric carbon dioxide (CO₂) content. **Figure 5-1** depicts global variations during the past 400,000 years as a correlation between temperature and atmospheric CO₂ content in part per million.³

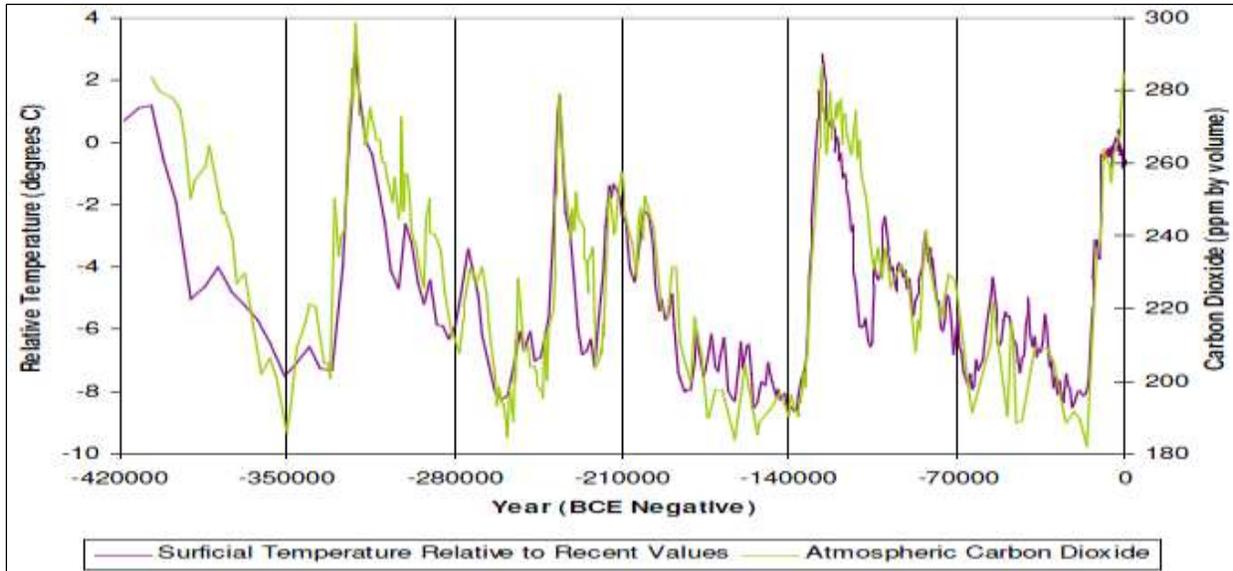


Figure 5.1: Temperature and Atmospheric CO₂ Variation Past 400,000 Years

Since about 22,000 years ago, the planet has slowly warmed and the glaciers retreated to high northern latitudes and mountains. In the last several decades of this period, human activity has likely led to a rapid increase in atmospheric CO₂ and a matching rise in global temperature. The result has been that climate change may be accelerating. **Figure 5.2** provides a graphical depiction of the recent history of temperature rise.⁴

³ Hogg, A.M., 2008, Glacial cycles and carbon dioxide: A conceptual model. *Geophysical Research Letters*, 35, L01701

⁴ NOAA

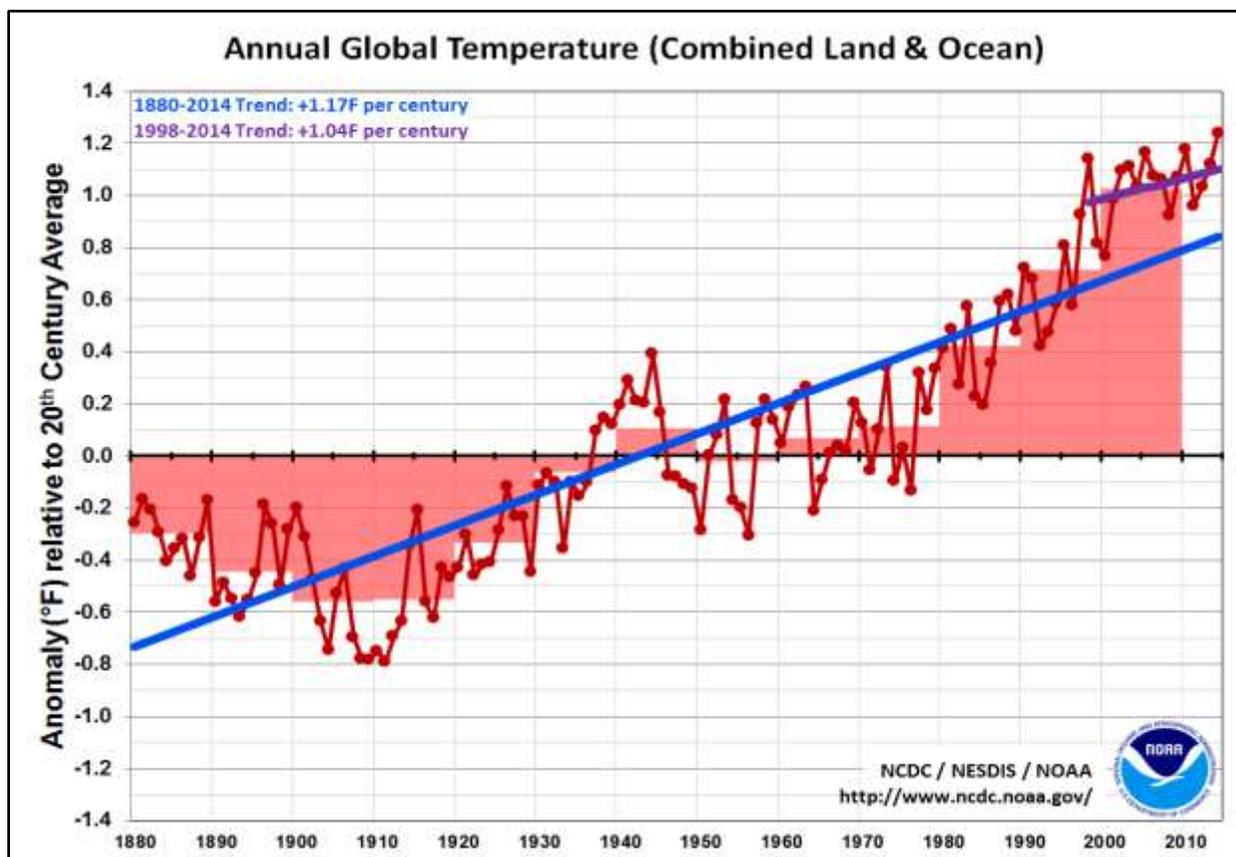


Figure 5.2: Temperature Rise Since 1880

Location:

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

Extent:

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

Specific likely impacts on California include:

- Agriculture: Increasing droughts and higher temperatures are likely to affect California's top agricultural products: cattle, dairy, and vegetables. Hot temperatures threaten cows' health and cause them to eat less, grow more slowly, and produce less milk. Livestock operations could also be impaired by fire, the lack of water, and changes in the landscape from grassland to woody shrubs more typical of a desert. Reduced availability of water would also create challenges for irrigated farms, which account for two-thirds of the water used in the state.



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

Probability of Future Events:

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

5.2.2 Dam Inundation

Description:

Dams and reservoirs of jurisdictional size are defined in the California Water Code Sections 6000 through 6008. There are currently more than 1,400 dams of jurisdictional size in California. Approximately 1,250 of these dams are under the jurisdiction of California's Department of Water Resources, Division of Safety of Dams. Dams and reservoirs owned by the federal government are not subject to state jurisdiction except as otherwise provided by federal law. In California, there are currently 149 dams owned by federal government agencies such as the United States Forest Service, Bureau of Reclamation, Army Corps of Engineers and the U.S. Military.



Los Angeles County leads the state as being the county with the most jurisdictional-size dams, with one hundred (100) dams. The County of Sonoma is second behind Los Angeles with sixty-three (63) dams.

The term “dam failure” encompasses a wide variety of circumstances. Situations that would constitute a dam failure vary widely, from developing problems to a partial or catastrophic collapse of the entire dam. Potential causes of a dam failure are numerous and can be attributed to deficiencies in the original design of the dam, the quality of construction, the maintenance of the dam and operation of the appurtenances while the dam is in operation, and acts of nature including precipitation in excess of the design, flood and damage from earthquakes.

Water overtopping the dam crest is a common cause of failure in earth dams. Overtopping will cause erosion and the dam crest and eventual dam breach. Piping of each dam is another common form of failure. Piping is a form of erosion that occurs underground caused by rodent burrowing and the presence of extensive root systems from vegetation growing on and around the dam.

This type of disaster is especially dangerous because it can occur suddenly, providing little warning or evacuation time for the downstream communities. The flows resulting from dam failure generally are much larger than the capacity of the downstream channels and therefore lead to extensive flooding. Flood damage occurs as a result of the momentum of the flood caused by the sediment-laden water flooding over the channel banks and impact debris carried by the flow.

History:

Dam failure has not affected the City in the past. Dams within Los Angeles County have failed or had the potential to fail within the past 100 years.

Major incidents include:

- March 12, 1928: The St. Frances Dam catastrophically failed, resulting in as many as 400 fatalities. The collapse is considered to be one of the worst American civil engineering disasters of the 20th century and remains the second-greatest loss of life due to a disaster in California’s history.
- December 14, 1963: The Baldwin Hills Dam inundated the neighborhood of South Los Angeles when the dam suffered a catastrophic failure and flooded the residential neighborhoods surrounding it. It began with signs of lining failure, followed by increasingly serious leakage through the dam at its east abutment. After three hours the dam breached, with a total release of 250 million US gallons resulting in five deaths and the destruction of 277 homes. Vigorous rescue efforts averted a greater loss of life.
- February 9, 1971: The San Fernando region was struck by one of the most devastating earthquakes in California history. With a Richter magnitude of 6.6, it claimed 65 lives and damage estimated at half a billion dollars. It was California’s third worst earthquake in terms of lives lost, only exceeded by San Francisco in 1906 and Long Beach in 1933.



The San Fernando earthquake could have been a catastrophe instead of just a costly disaster. That conclusion arises from its most striking episode: the near collapse of the lower dam at the Van Norman reservoir. The 1,100-foot dam held 3.6 billion gallons of water, but it was only half full, with the water level at thirty-six (36) feet below the lip. The top 30 feet of the structure crumbled, leaving the water only six feet from the top and fresh chunks of earth falling off with each aftershock. A UCLA study estimated that collapse of the dam could have killed between 71,600 and 123,400 people.

Location:

Whittier Narrows Dam poses the greatest dam failure threat to the City. The dam is a flood control and water conservation project constructed and operated by the U.S. Army Corps of Engineers, Los Angeles District (Corps) at the Whittier Narrows Dam in Montebello, California. Whittier Narrows Dam is a central element of the Los Angeles County Drainage Area (LACDA) flood control system. The Dam and Reservoir serve to collect runoff from uncontrolled drainage areas upstream as well as releasing into the San Gabriel River.

The primary purpose of the Dam is flood risk management. Construction of the dam was completed in October 1957. The San Gabriel River and Rio Hondo flow into the Reservoir bringing flows collected from a 554 square mile drainage reservoir. The two (2) river systems flow parallel in the reservoir, but do not convene. Although there is a significant amount of water released into the San Gabriel River from the dam, most of the water released from the dam is through the outlet works into the Rio Hondo. Releases from the dam outlet works to the Rio Hondo are limited to a maximum of 41,000 cfs.

The dam no longer meets tolerable-risk guidelines and could fail in the event of a very large, very rare storm, such as the one that devastated California in 1868. Specifically, federal engineers found that the Whittier Narrows structure could fail if water were to flow over its crest or if seepage eroded the sandy soil underneath.

Whittier Narrows Dam was risked characterized as Dam Safety Action Classification 1⁵ (DSAC) by the Corps, due to the combination of loss of life and a very high likelihood of failure only when filled by a rare flood event. The study shows, should this rare flood occur, the dam could fail through erosion underneath or even overtopping, putting the very large population downstream (in excess of 1 million people) at risk.

Extent:

A failure of the Whittier Narrow Dam will inundate the entire City. See Figure 5-3 for details.

Probability/Magnitude:

Dam failure can result from numerous natural or human activities. Earthquakes, internal erosion, improper siting, structural and design flaws, or rising floodwaters can all result in the collapse or failure of a dam. A dam failure may also be a result of the age of the structure or inadequate

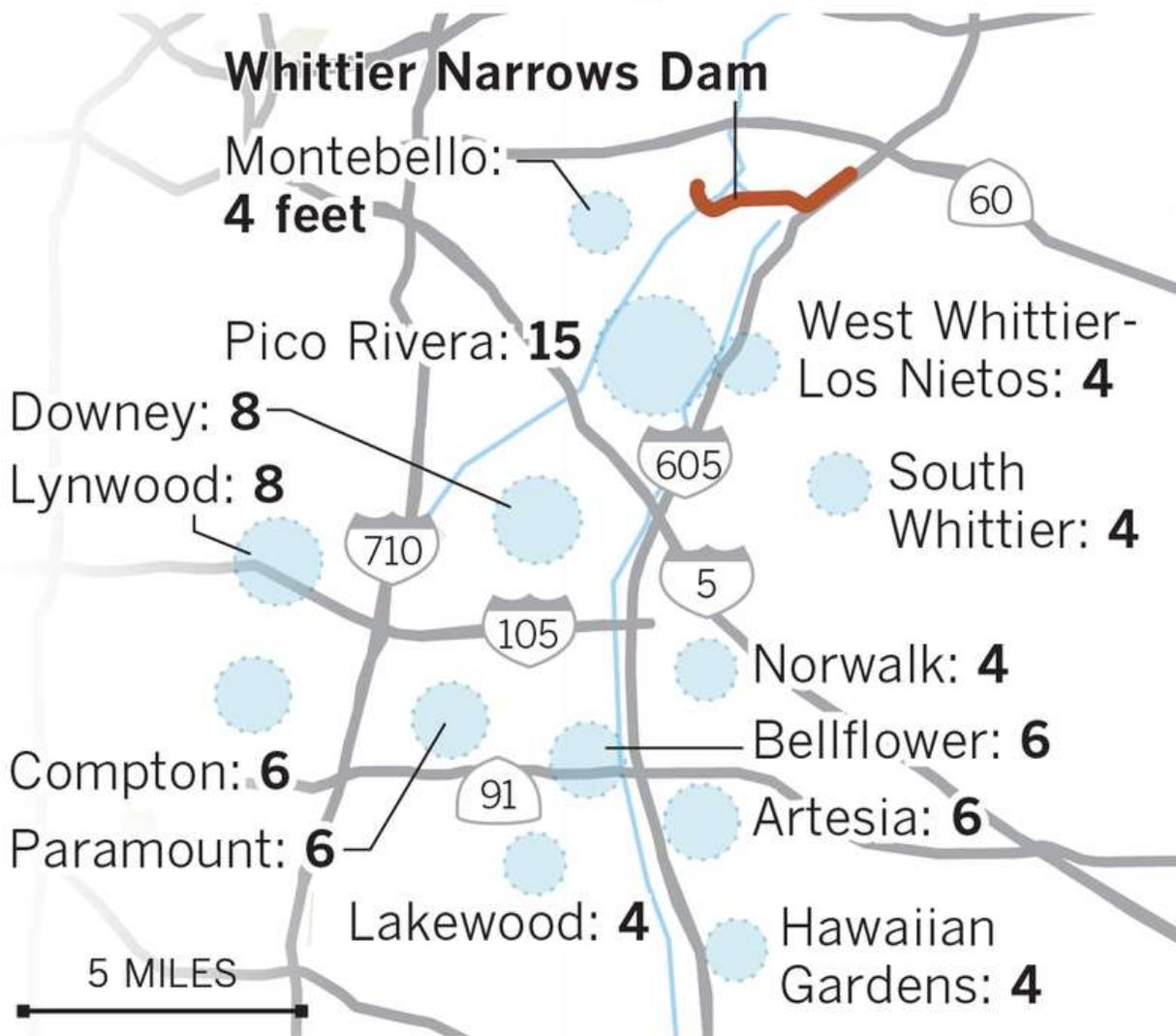
⁵ https://www.army.mil/article/218441/whittier_narrows_dam_weathers_storm



spillway capacity. The probability of a future dam failure affecting the City is unknown. While possible, it is unlikely that a dam failure event will occur within the next ten years. Based on event history, likelihood is less than or equal to 10% per year.

If the dam fails

Maximum flood depths if either of the embankments of the dam breaks during a 900-year storm.



Sources: U.S. Army Corps of Engineers, Nextzen, OpenStreetMap

@latimesgraphics

FIGURE 5.3



5.2.3 Drought

Description:

Drought is a normal part of virtually every climate on the planet, including areas of high and low rainfall. It is different from normal aridity, which is a permanent characteristic of the 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. The severity of drought can be aggravated by other climatic factors, such as prolonged high winds and low relative humidity.

Drought is a complex natural hazard which is reflected in the following four definitions commonly used to describe it:

- **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
- **Hydrological drought** is related to the effects of precipitation shortfalls on stream-flows and reservoir, lake, and groundwater levels
- **Agricultural drought** is defined principally in terms of naturally occurring soil moisture deficiencies relative to water demands of plant life, usually arid crops
- **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 for water exceeds the supply as a result of weather-related supply shortfall. It may also be called 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 also poses challenges in terms of comprehensive risk assessments.

Drought differs from other natural hazards in three (3) ways. First, 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. Second, the lack of an exact and universally accepted definition adds to the confusion of its existence and severity. Third, in contrast with other natural hazards, the impact of drought is less obvious and may be spread over a larger geographic area. These characteristics have hindered the preparation of drought contingency or mitigation plans by many governments.

Droughts may cause a shortage of water for human and industrial consumption, hydroelectric power, recreation, and navigation. Water quality may also decline, and the number and severity of wildfires may increase. Severe droughts may result in the loss of agricultural crops and forest products, undernourished wildlife and livestock, lower land values, and higher unemployment.

History:

Droughts occur frequently in California. Recent periods of drought include:

- **1976–1977:** 1977 had been the driest year in state history to date. According to the *Los Angeles Times*, "Drought in the 1970s spurred efforts at urban conservation and the state's Drought Emergency Water Bank came out of drought in the 1980s.
- **1986–1992:** California endured one of its longest droughts ever, observed from late 1986 through late 1992. Drought worsened in 1988 as much of the United States also suffered from severe drought. In California, the six (6) year drought ended in late 1992 as a significant El Niño event in the Pacific Ocean (and the eruption of Mount Pinatubo in June 1991) most likely caused unusual persistent heavy rains.



- **2007–2009:** Saw three years of drought conditions, the 12th worst drought period in the state's history, and the first drought for which a statewide proclamation of emergency was issued. The drought of 2007–2009 also saw greatly reduced water diversions from the state water project. The summer/fall of 2007 saw some of the worst wildfires in Southern California history.
- **2011–2017:** The period between late 2011 and 2014 was the driest in California history since record-keeping began. The drought led to Governor Jerry Brown instituting mandatory twenty-five percent (25%) water restrictions in June 2015. Many millions of trees died from the drought – approximately 102 million, including 62 million in 2016 alone. By the end of 2016, thirty percent (30%) of California had emerged from the drought, mainly in the northern half of the state, while forty percent (40%) of the state remained in the extreme or exceptional drought levels. Heavy rains in 2017 ended the drought except for the southernmost area of the state.

Location:

When a drought is in effect, the entire City is affected.

Extent:

The National Integrated Drought Information System (NIDIS) Act of 2006 (Public Law 109-430) prescribes an interagency approach for drought monitoring, forecasting, and early warning (NIDIS, 2007). The NIDIS maintains the U.S. Drought Portal⁶ which is a centralized, web-based access point to several drought related resources including the U.S. Drought Monitor (USDM) and the U.S. Seasonal Drought Outlook (USSDO).

The primary indicators for these maps for the Western U.S. are the Palmer Hydrologic Drought Index and the 60-month Palmer Z-index. The Palmer Drought Severity Index (PDSI) is a commonly used index that measures the severity of drought for agriculture and water resource management. It is calculated from observed temperature and precipitation values and estimates soil moisture. However, the Palmer Index is not considered to be consistent enough to characterize the risk of drought on a nationwide basis (FEMA, 1997). Commonly use drought severity classifications are depicted in Figure 5.4.

⁶ <https://www.drought.gov/drought/>



Drought Severity Classification

Category	Description	Possible Impacts	Ranges				
			Palmer Drought Index	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	Objective Short and Long-term Drought Indicator Bands (Percentiles)
D0	Abnormally Dry	Going into drought; short-term dryness slowing planting, growth of crops or pastures. Coming out of drought, some lingering water deficits; pastures or crops not fully recovered.	-1.0 to -1.9	21-30	21-30	-0.5 to -0.7	21-30
D1	Moderate Drought	Some damage to crops, pastures, streams, reservoirs, or wells low, some water shortages developing or imminent, voluntary water-use restrictions required.	-2.0 to -2.9	11-20	11-20	-0.8 to -1.2	11-20
D2	Severe Drought	Crop or pasture losses likely; water shortages common; water restrictions imposed.	-3.0 to -3.9	6-10	6-10	-1.3 to -1.5	6-10
D3	Extreme Drought	Major crop/pasture losses, widespread water shortages or restrictions.	-4.0 to -4.9	3-5	3-5	-1.6 to -1.9	3-5
D4	Exceptional Drought	Exceptional and widespread crop/pasture losses, shortages of water at reservoirs, streams, and wells creating water emergencies.	-5.0 or less	0-2	0-2	-2.0 or less	0-2

FIGURE 5.4

Impact of Climate Change:

Higher temperatures throughout the State will result in increasing droughts and are likely to affect the City. Annual precipitation has decreased in California during the last century, and it may continue to decrease. Soils are likely to be drier, and periods without rain are likely to become longer, making droughts more severe.

The changing climate is likely to increase the need for water but reduce the supply. Rising temperatures increase the rate at which water evaporates (or transpires) into the air from soils, plants, and surface waters. Irrigated farmland would thus need more water. But less water is likely to be available, because precipitation is unlikely to increase enough to make up for the additional water lost to evaporation.

Probability and Magnitude:

There is no commonly accepted return period or non-exceedance probability for defining the risk from drought (such as the 100-year or 1% annual chance of flood). The magnitude of drought is usually measured in time and the severity of the hydrologic deficit. There are several resources available to evaluate drought status and even project expected conditions for the very near future. Drought conditions can be monitored at the National Integrated Drought Information System <https://www.drought.gov/drought/states/>.

5.2.4 Earthquake and Seismic Hazards

Description:

The City is located in a high seismic risk zone. This region is one of the most seismically active in the world, marked by the number of large, damaging earthquakes that have occurred in the past



(California Geological Survey). The following geologic hazards are associated with earthquakes and may be caused by seismic activity, increasing the resulting damage:

Ground Shaking:

Ground shaking caused by a strong earthquake is probably the most important seismic hazard that can be expected anywhere in the Artesia and larger Southern California Area. The amount of earthquake shaking at a site is associated with the earthquake magnitude; the type of earthquake fault; the distance between the site and the earthquake source; the geology of the site; and how the earthquake waves decrease or increase as they travel from their source to the site in question. Shaking from the earthquake intensifies with a greater magnitude and closer distance to the epicenter. Softer soils and topographic ridges can also amplify seismic ground motions.

The shaking of the ground is caused by the sudden breaking and movement of tectonic plates (large sections) of the earth's rocky outermost crust. Movements within the Earth's crust cause stress to build up at points of weakness and can cause deformation of rocks in the earth's crust. Stored energy builds up and when the stress finally exceeds the strength of the rock, the rock fractures along a fault, often at a zone of existing weakness within the rock. The stored energy is suddenly released as an earthquake. Intense vibrations, or seismic waves, radiate outward from the initial point of rupture, or focus, where the earthquake begins. These seismic waves are what makes the ground shake and can travel large distances in all directions. Near the focus, the waves can be very large, making them extremely destructive. The epicenter is the point on the Earth's surface located directly above the focus of an earthquake.

Liquefaction:

Soil liquefaction is a phenomenon in which the strength and stiffness of a soil is reduced by earthquake shaking or other rapid loading. Liquefaction and related phenomena have been responsible for tremendous amounts of damage in historical earthquakes around the world. Liquefaction can result in the settling and compacting of unconsolidated sediment in the event of a major earthquake. Liquefaction may increase as the ground acceleration and duration of shaking increase.

The vast majority of liquefaction hazards are associated with sandy soils and soils of low plasticity, such as silt. The composition of the soil must be saturated or nearly saturated to be susceptible to liquefaction. When an earthquake occurs, the soil particles can no longer support the water weight, and the groundwater pressure begins to rise. The soil particles become entrained in the water and begin to flow. Liquefied soil will force open ground cracks in order to escape to the surface. The ejected material often results in flooding and may leave cavities in the soil.

Liquefaction has resulted in substantial loss of life, injury, and damage to property. In addition, liquefaction increases the hazards of fires because of explosions induced when underground gas lines break, and because the breakage of water mains substantially reduces fire suppression capability. Liquefaction hazard in Artesia ranges from very low to high.



Surface Fault Rupture:

Surface rupture is an offset of the ground surface when fault rupture extends to the Earth's surface. Fault rupture almost always follows preexisting faults, which are zones of weakness. Any structure built across the fault is at risk of being torn apart as the two sides of the fault slip past each other. Normal and reverse surface fault ruptures have vertical motion while strike-slip surface fault ruptures produce lateral offsets. Artesia does not have active faults within the City and is not subject to surface fault rupture.

Subsidence:

Land subsidence is defined as the lowering of the land surface. Many different factors can cause the land surface to subside, such as a sinkhole or underground mine collapse, or during a major earthquake. Land subsidence can also occur when large amounts of groundwater have been excessively withdrawn from an aquifer. The clay layers within the aquifer compact and settle, resulting in lowering the ground surface in the area from which the groundwater is being pumped. Over time, as more water is removed from the area, the ground drops and creates a cone. Once the water has been removed from the sediment, it cannot be replaced.

Land subsidence can occur in various ways during an earthquake. Movement that occurs along faults can be horizontal or vertical or have a component of both. As a result, a large area of land can subside drastically during an earthquake. Land subsidence can also be caused during liquefaction. Liquefaction can result in the settling and compacting of unconsolidated sediment in an event of a major earthquake. This can result in the lowering of the land surface.

Expansive Soils:

Expansive soils contain mixed-layer clay minerals that increase and decrease in volume upon wetting and drying, respectively. Expansive soils are common throughout California and can cause damage to foundations and slabs unless properly treated during construction.

Landslides:

Some soil materials, such as clay minerals, have the capacity to absorb water, resulting in a reduction of shear strength. The force of gravity can cause landslides when the shear strength of saturated clay is reduced below its minimum stability threshold. Earthquake-induced landslides of steep slopes can occur in either bedrock or soils. Areas at risk from landslides typically have steep slopes (fifteen percent (15%) or greater), unstable rock or soil characteristics, or other geologic evidence of instability. Artesia does not have slopes of this steepness.

While ground shaking, liquefaction, surface fault rupture, subsidence, expansive soils and landslides may all result from an earthquake, the City has taken the approach of developing mitigation activities that address earthquake as a single hazard. This is based upon the fact that the sub-hazards of landslide and surface fault rupture are unlikely in the City, and that ground shaking, liquefaction, subsidence and expansive soils result in damage to structures and facilities. Mitigation actions will be designed to address the sub-hazards a single hazard. For this planning cycle, the City has chosen not to develop any mitigation actions specific to these sub-hazards.



Location:

Artesia is located in a seismically active area. The Alquist-Priolo Act requires that the California Geologic Survey identify faults in the state that may pose a risk of fault rupture. These faults, known as Alquist-Priolo faults, are also capable of creating a significant ground shaking event, and include most of the major faults present in California. While there are no Alquist-Priolo faults within the City, there are a number of these faults in the surrounding area. The following active faults, most of which are designated as Alquist-Priolo faults, are located within sixty (60) miles of the community and are capable of producing significant earthquakes:

- The Newport-Inglewood Fault Zone is made up of three distinct segments and several faults and fractures, running approximately from the Santa Monica Mountains near Beverly Hills to Newport Beach. It passes approximately eight (8) miles from Artesia at its closest point. The last major event along this fault was the 1933 Long Beach earthquake. The Southern California Earthquake Center estimates that a future major event along this fault could measure 6.0 to 7.4 on the moment magnitude scale.⁷
- The Palos Verdes Fault Zone extends from the Palos Verdes peninsula south into the Pacific Ocean, running approximately nine (9) miles from Artesia at its closest point. It has not produced a significant earthquake in recorded history. While not a major Alquist-Priolo fault, The Southern California Earthquake Center estimates that substantial activity from the fault has occurred within the past 10,000 years, and that this fault is capable of producing an earthquake measuring 6.0 to 7.0 or more on the moment magnitude scale.⁸
- The Whittier-Elsinore Fault Zone runs from the Chino Hills region to the California-Mexico border, and is approximately eight (8) miles from Artesia at its closest point. Near Chino Hills it splits into two separate segments, the Chino Fault and the Whittier Fault. The last major event along this fault was a 1910 earthquake measuring an estimated 6.0 on the moment magnitude scale. This fault is believed to cause a major event approximately every 250 years with a probable magnitude of 6.5 to 7.5 on the moment magnitude scale.⁹
- The Sierra Madre Fault Zone runs along the southern edge of the San Gabriel Mountains from La Cañada-Flintridge to Claremont, approximately fifteen (15) miles from Artesia at its closest point. It is made up of five segments; scientists are unclear if any event along this fault could be limited to one segment or if events along multiple segments are possible. The Southern California Earthquake Center estimates that the last major event along the fault zone happened within the past 10,000 years (although no specific event is known) and suggests that it is capable of producing an event measuring 6.0 to 7.0 on the moment magnitude scale. It is not a major Alquist-Priolo fault.¹⁰
- The San Andreas Fault, the largest and most well-known of California's faults, runs from Cape Mendocino to the Salton Sea. It is approximately forty-four (44) miles from Artesia at its closest point. It has caused numerous major earthquakes throughout California's history, including the 1857 Fort Tejon earthquake, which had an estimated moment magnitude of 7.9 and is the strongest earthquake in California's recorded history. Approximately 225 miles of the fault ruptured during this event, including areas near the

⁷ <http://scedc.caltech.edu/>

⁸ IBID

⁹ IBID

¹⁰ IBID



Extent:

There are two scales that are used to measure the severity and intensity of an earthquake. The Modified Mercalli Intensity (MMI) Scale measures the ground shaking intensity in terms of acceleration, velocity, and displacement. The Moment Magnitude (Mw) Scale measures the severity of the earthquake by the amount of energy released at the source of the earthquake. The Mw scale, based on the concept of seismic moment, is uniformly applicable to all sizes of earthquakes. The extent of damage from an earthquake is determined by the magnitude of the earthquake, distance from the epicenter, and characteristics of surface geology. Table 5-6 shows an approximate correlation between the Moment Magnitude (Mw) and the Modified Mercalli Intensity (MMI) Scale and its effects.

Table 5-6: Severity (Mw) and Intensity (MMI) Comparisons

Magnitude (Mw)	MMI Scale: Intensity	Abbreviated MMI Scale: Effects	
1.0-3.0	I	I. Not felt except by a very few under especially favorable conditions	
3.0 - 3.9	II – III	II. <ul style="list-style-type: none"> Felt only by a few persons at rest, especially on upper floors of buildings 	III. <ul style="list-style-type: none"> Felt quite noticeably by persons indoors, especially on upper floors of buildings Many people do not recognize it as an earthquake Standing motor cars may rock slightly Vibrations similar to the passing of a truck Duration estimated
4.0 - 4.9	IV – V	IV. <ul style="list-style-type: none"> Felt indoors by many, outdoors by few during the day At night, some awakened Dishes, windows, doors disturbed; walls make cracking sound Sensation like heavy truck striking building 	V. <ul style="list-style-type: none"> Felt by nearly everyone, many awakened Some dishes and windows broken Unstable objects overturned Pendulum clocks may stop
5.0 - 5.9	VI – VII	VI. <ul style="list-style-type: none"> Felt by all, many frightened Some heavy furniture moved A few instances of fallen plaster Damage slight 	VII. <ul style="list-style-type: none"> Damage negligible in buildings of good design and construction Slight to moderate in well-built ordinary structures Considerable damage in poorly built or badly designed structures Some chimneys broken



Magnitude (Mw)	MMI Scale: Intensity	Abbreviated MMI Scale: Effects	
6.0 - 6.9	VIII – IX	VIII. <ul style="list-style-type: none"> • Damage slight in specially designed structures • Considerable damage in ordinary substantial buildings with partial collapse • Damage great in poorly built structures • Fall of chimneys, factory stacks, columns, monuments, walls • Heavy furniture overturned 	IX. <ul style="list-style-type: none"> • Damage considerable in specially designed structures • Well-designed frame structures thrown out of plumb • Damage great in substantial buildings, with partial collapse • Buildings shifted off foundations
7.0 and higher	X - XI	X. <ul style="list-style-type: none"> • Some well-built wooden structures destroyed • Most masonry and frame structures destroyed with foundations • Rails bent 	XI. <ul style="list-style-type: none"> • Few, if any (masonry) structures remain standing • Bridges destroyed • Rails bent greatly
	XII	XII. <ul style="list-style-type: none"> • Damage total • Lines of sight and level are distorted • Objects thrown into the air 	

Source: US Geological Survey (USGS): http://earthquake.usgs.gov/learn/topics/mag_vs_int.php

History:

Southern California is one of the most seismically active areas in the U.S. The region has experienced at least 22 earthquakes of Magnitude 6.5 or higher since 1812.

Table 5-7: Historical Earthquakes Recorded in Southern California

Date	Magnitude	Fault Name (Incident Name)
12/8/1812	7.5	San Andreas (Wrightwood Earthquake)
1/9/1857	7.9	San Andreas (Fort Tejon Earthquake)
4/21/1918	6.8	San Jacinto
11/4/1927	7.1	Unknown (Lompoc Earthquake)
5/18/1949	6.9	Imperial (Imperial Valley Earthquake)
7/21/1954	7.5	White Wolf
2/9/1971	6.5	San Fernando (San Fernando Earthquake)
1/17/1994	6.7	Northridge Thrust (Northridge Earthquake)

Impact of Climate Change:

Climate change is not expected to have any direct influence on the likelihood, size, and/or severity of any future seismic-related event.



Probability of Future Events:

Earthquake probabilities are calculated by projecting earthquake rates based on earthquake history and fault slip rates (not simply the number of occurrences within a span of years). The result is expressed as the probability that an earthquake of a specified magnitude will occur on a fault or within an area.

There is a strong likelihood that Artesia will experience a significant earthquake from one of the known major faults in the next thirty (30) years. In 2015, the Working Group on California Earthquake Probabilities (WGCEP) issued its third Uniform California Earthquake Rupture Forecast (UCERF3)¹³ which determined the likelihood for magnitude 6.7 and larger earthquakes within the next 30 year, somewhere in the region remains near certainty (greater than 99 percent). Within the next 30 years the probabilities of earthquakes in Southern California are:

- 60% that an earthquake measuring magnitude 6.7
- 46% that an earthquake measuring magnitude 7.0
- 31% that an earthquake measuring magnitude 7.5

5.2.5 Extreme Heat

Description:

According to the National Weather Service (NWS), extreme heat occurs when the temperature reaches high levels or when the combination of heat and humidity causes the air to become oppressive and stifling. The NWS will issue advisories or warnings when the heat index is expected to have a significant impact on public safety. The common guidelines for the issuance of excessive heat warnings are when the maximum daytime index is expected to reach 105°F and the nighttime low temperature does not fall below 75°F.¹⁴

Location:

The entire City is subject to extreme heat.

History:

The worst heat event in California history occurred in the Los Angeles area in 1955, when an eight-day heat wave resulted in temperatures as high as 108°F in downtown Los Angeles and killed 946 people. A heat wave in July 2006 killed 147 people throughout the state, although the Los Angeles region was less impacted than the Central Valley. According to Cal Adapt (the State of California Climate Adaptation data portal),¹⁵ an extreme heat event in Artesia occurs when temperatures in the area rise above 97.7°F, which on average occurs four times each year.

Extent:

An Excessive Heat Outlook occurs when the potential exists for an excessive-heat event in the next three to seven days. The NWS will provide an indication of areas where people and animals may need to take precautions. The outlook is based on a combination of temperature and

¹³ WGCEP <http://www.wgcep.org/ucerf3>

¹⁴ NWS <http://www.nws.noaa.gov/om/heat/ww.shtml>

¹⁵ Cal Adapt <http://cal-adapt.org/tools/extreme-heat/>



humidity, or the Heat Index,¹⁶ over a certain number of days. An outlook is used to indicate that a heat event may develop. It is intended to provide information to those who need lead time to prepare for the event, such as public utilities, emergency management personnel, and public health officials. **Table 5.8** provides a description of heat- related public notifications.

Table 5.8 Heat Advisories, Warnings and Watches

Notification	Description
<p>Heat Advisories</p>	<p>The Heat Index has to remain at or above 100°F for a minimum of two hours. Heat advisories are issued by zone when any location within that zone is expected to reach criteria. For example: If you expected the heat index to reach 100°F in Visalia, a heat advisory would be issued for that county.</p> <p>A heat advisory means that people can be affected by heat if precautions are not taken. The issuance of a heat advisory is important to raise public awareness that these precautions need to be taken. Heat advisories are also used to trigger other actions and regulations such as no evictions, no turning off of power, changing outdoor work requirements, etc.</p>
<p>Excessive Heat Watches</p>	<p>Issued when Heat Warning criteria is possible (50-79%) 1 to 2 days in advance.</p>
<p>Excessive Heat Warnings</p>	<p>Criteria for an Excessive Heat Warning is a Heat Index of 105°F or greater that will last for two hours or more. Heat Warnings are issued by zone when any location within that zone is expected to reach criteria. For example: If you expected the Heat Index to reach 105°F in Visalia an Excessive Heat Warning would be issued for that zone.</p> <p>A heat warning means that some people can be seriously affected by heat if precautions are not taken. Studies in Canada, Europe, and the U.S. have indicated that mortality begins to increase exponentially as the heat increases or stays above a Heat Index of 104°F.</p> <p>In addition to raising public awareness, the issuance of a heat warning will alert hospitals and officials to take certain actions to prepare and respond to an increase in emergency calls and activate programs to check on elderly and the home bound. In some cases, cooling centers can be open or designated and donation programs activated for fans and air conditioners. As in the case of an advisory, certain regulations may change such as turning off people's electricity, evictions, and outside work requirements.</p>

Impact of Climate Change:

Climate change is likely to cause an increase in the frequency and severity of extreme heat events throughout California. Although the greatest increases are likely to occur in more inland areas, scientists have identified areas such as Artesia as being at an elevated risk because people in these areas are not used to extreme heat. There is a wide range of potential frequency and

¹⁶ NWS http://www.nws.noaa.gov/om/heat/heat_index.shtml for a detailed description



severity of extreme heat events as a result of climate change, but scientific consensus is that extreme heat will pose a greater risk in future years than it currently does due to climate change.

Probability of Future Events:

The risk of extreme heat events is likely to rise in Artesia and throughout California. An increase in extreme heat events is one of the primary threats posed by climate change. Future extreme heat events are likely to be more frequent and more intense, and potentially longer lasting. In addition to direct health impacts, this may cause street trees and other vegetation in Artesia to suffer further stress, making them more vulnerable to disease or death. This is of particular concern since street trees help provide necessary shade, reducing the urban heat island effect.

Like other communities in the region, Artesia is at an elevated risk of extreme heat. Urbanized areas experience higher temperatures than rural communities (known as the urban heat island effect), which could further elevate temperatures in and around the City.

5.2.6 Flood

Description:

A flood occurs when the existing channel of a stream, river, canyon, or other watercourse cannot contain excess runoff from rainfall or snowmelt, resulting in overflow onto adjacent lands. A floodplain is the area adjacent to a watercourse or other body of water that is subject to recurring floods. Floodplains may change over time from natural processes, changes in the characteristics of a watershed, or human activity such as construction of bridges or channels. River channels change as water moves downstream, acting on the channel banks and on the channel bottom. On the outside of a channel curve, the banks are subject to erosion as the water scours against them. On the inside of a channel curve, the banks receive deposits of sand and sediment transferred from the eroded sites. In areas where flow contains a high-sediment load, the course of a river or stream may shift dramatically during a single flood event. There are two major types of flooding within the City: riverine flooding (also known as overbank flooding) and localized drainage flooding.

- Riverine flooding occurs when downstream channels receive more rain or snowmelt from their watershed than normal, or a channel is blocked by an ice jam or debris. Excess water overloads the channels and flows out onto the floodplain. When flooding occurs in steep, mountainous areas, it is usually confined, strikes with less warning time, and has a short duration. In comparison, larger rivers typically have longer, more-predictable flooding sequences and broad floodplains. Riverine floodplains range from narrow, confined channels in the steep valleys of mountainous and hilly regions to wide, flat areas in plains and coastal regions. The amount of water in the floodplain is a function of the size and topography of the contributing watershed, the regional and local climate, and land use characteristics.
- Localized flooding in the City is generally associated with urban flooding. Urban flooding results in the inundation of property in a built environment, particularly in more densely populated areas, caused by rain falling on increased amounts of impervious surfaces and



overwhelming the capacity of drainage systems. Although sometimes triggered by events such as flash flooding or snowmelt, urban flooding is a condition, characterized by its repetitive and systemic impacts on communities, that can happen regardless of whether or not affected communities are located within designated floodplains or near any body of water. For this LHMP, flash flooding is considered as a potential cause of localized flooding and there are no specific mitigation actions within the mitigation strategy.

Location:

Although the City is not in the FEMA, NFIP 100-year flood plain, it is potentially subject to flooding. A storm system resulting in overtopping or large outflows from the Whittier Narrows Dam could result in overflowing the San Gabriel River Channel. Because the City has little difference in elevation, most of the City could expect to be flooded.

History:

Flooding occurred regularly in cities in the alluvial fan of the San Gabriel River. Construction of the Whittier Narrows Dam and channelization of the river have reduced the occurrence of floods. Past flooding events include:

- 1938: The Los Angeles flood of 1938 was one of the largest floods in the history of Los Angeles, Orange, and Riverside Counties in southern California. The flood was caused by two Pacific storms that swept across the Los Angeles Basin in February-March 1938 and generated almost one year's worth of precipitation in just a few days. Between 113–115 people were killed by the flooding. The Los Angeles, San Gabriel and Santa Ana Rivers overtopped their banks, inundating much of the coastal plain, the San Fernando and San Gabriel Valleys, and the Inland Empire.
- 1952: By mid-January 1952, Southern California had received twelve (12) inches of rain, twice the amount normally expected for that point in the annual rainfall cycle. Then a new storm added four (4) inches. Some of the most serious and extensive rescue work was near Artesia. Approximately 4,000 persons were threatened in the southern section of the agricultural community by waters that stood up to three (3) feet deep in homes.

Extent:

The magnitude of flooding that is used as the standard for floodplain management in the U.S. is a flood with a probability of occurrence of one percent (1%) in any given year. This flood is also known as the 100-year flood or base flood. The most readily available source of information regarding the 100-year flood, as well as the 500-year flood (0.2 % probability of occurrence in any given year), is the system of Flood Insurance Rate Maps (FIRMs) prepared by FEMA. These maps are used to support the NFIP.

The USGS and other agencies refer to the percent chance of occurrence as an Annual Exceedance Probability (AEP). An AEP is always a fraction of one. A 0.2 AEP flood has a twenty percent (20%) chance of occurring in any given year, and this corresponds to a 5-year recurrence-interval flood. Recurrence-interval terminology tends to be more understandable for flood intensity comparisons, but may be misleading due to the fact that a 100-year flood could occur two years in a row. The 1938 flood was categorized as a 50-year flood.



Impact of Climate Change:

Severe weather such as more powerful rainstorms are likely to occur as a result of climate change. Atmospheric rivers which can create flooding throughout California may occur more frequently due to warmer weather and more moisture in storm systems. Climate change has the potential to cause more frequent and more damaging flood incidents.

Probability of Future Events:

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

5.2.7 Urban Fire

Description:

Urban fires occur primarily in cities or towns with the potential to rapidly spread to adjoining structures. These fires damage and destroy homes, schools, commercial buildings and vehicles. Urban fires are typically the result of another hazard such as a civil unrest, terrorist action, wildland fire, earthquake or flammable material release.

Location:

Due to the built-out nature of the City, an urban fire may occur anywhere within the City limit. It may also spread to the City from adjacent jurisdictions.

History:

The City has no history of large urban fires. Large urban fires are common. Nationwide, the following urban fires are ranked by the number of fatalities:

Rank	Fire/Location	Dates	Number of Fatalities
1	The World Trade Center (New York, NY)	September 11, 2001	2,666
2	Iroquois Theater (Chicago, IL)	December 30, 1903	602
3	Cocoanut Grove night club	November 28, 1942	492
4	Ohio State Penitentiary (Columbus, OH)	April 21, 1930	320
5	Earthquake and fire (San Francisco, CA)	April 18, 1906	315
6	Consolidated School gas explosion (PDF) (New London, TX)	March 18, 1937	294
7	Conway's Theater (Brooklyn, NY)	December 5, 1876	285
8	Great Chicago Fire (Chicago, IL)	October 8-9, 1871	250

Extent:

The is no specific scale for an urban fire. Fire services use a system of alarms to describe the response resources dispatched to a fire. The Fire Department of New York City Dispatch Policy which is widely used by other fire departments is contained below.

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Each apparatus count is in an addition per alarm (a five-alarm fire assignment has twenty-one (21) engine companies total). Each total is the total number of units on scene.

Alarm levels and units assigned	1st Alarm fire / Box Alarm	1st Alarm fire/ "All Hands" Box Alarm	2nd Alarm fire	3rd Alarm fire	4th Alarm fire	5th Alarm fire
Engine Companies	3 Engine Companies	4 Engine Companies	8 Engine Companies	12 Engine Companies	16 Engine Companies	21 Engine Companies
Ladder Companies	2 Ladder Companies	3 Ladder Companies (operating as <u>Firefighter assist and search team (FAST) units</u>)	5 Ladder Companies	7 Ladder Companies	9 Ladder Companies	11 Ladder Companies
Battalion Chief	1 Battalion Chief	2 Battalion Chiefs (one as a Firefighter Assist and Search Team (FAST) unit)	5 Battalion Chiefs	6 Battalion Chiefs	6 Battalion Chiefs	6 Battalion Chiefs
Squad Companies		1 Squad Company	1 Squad Company	1 Squad Company	1 Squad Company	1 Squad Company
Rescue Companies		1 Rescue Company	1 Rescue Company	1 Rescue Company	1 Rescue Company	1 Rescue Company
Division Chief		1 Division Chief	1 Division Chief	1 Division Chief	1 Division Chief	1 Division Chief
Deputy Chief			1 Deputy Chief	1 Deputy Chief	1 Deputy Chief	1 Deputy Chief
RAC Unit			1 RAC Unit	1 RAC Unit	1 RAC Unit	1 RAC Unit
Satellite			1 Satellite	1 Satellite	1 Satellite	1 Satellite
Safety Battalion			1 Safety Battalion	1 Safety Battalion	1 Safety Battalion	1 Safety Battalion
SOC Battalion			1 SOC Battalion	1 SOC Battalion	1 SOC Battalion	1 SOC Battalion
Tactical Support Unit			1 Tactical Support Unit			
Field Communications Unit			1 Field Communications Unit			
Field Communications Battalion			1 Field Communications Battalion			
Communications Unit			1 Communications Unit	1 Communications Unit	1 Communications Unit	1 Communications Unit
Mask Service Unit				1 Mask Service Unit	1 Mask Service Unit	1 Mask Service Unit
Air Recon Chief				1 Air Recon Chief	1 Air Recon Chief	1 Air Recon Chief
Mobile Command Unit					1 Mobile Command Unit	1 Mobile Command Unit
Planning Section Chief					1 Planning Section Chief	1 Planning Section Chief



Impact of Climate Change:

Climate change is likely to cause more urban fires that spread from an increased number and severity of wildland fires. It may also contribute to the severity of urban fires caused by other reasons due to increased temperature and decrease humidity.

Probability of Future Events:

The probability of a large urban fire in the City is low with an expected occurrence of less than 1 percent per year.

5.2.8 Winter Storm/High Wind

Description:

Winter storms may produce high winds. They may also produce heavy rainfall and other phenomena. Heavy rainfall is addressed as part of the flood hazard with its own set of mitigation actions. Other sub-hazards such as lightening, coastal flooding and snow are very rare or don't occur in the City. There are no mitigation actions in the LHMP to address these sub-hazards.

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

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

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

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

Location:

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



History:

Since 1995, South-central Los Angeles County has experienced thirty-six (36) extreme weather events, resulting in nine (9) fatalities, forty-one (41) severe injuries, and damage to private propertyⁱ. Tornado activity has also occurred near the City. Most of the fatalities and deaths were due to heavy rain and flooding. There have been no tornadoes, high winds or winter storms that have resulted in deaths or property loss in Artesia.

During the same period, the County experienced fifty-one (51) days of winter storms. Minor damage from vegetative debris from winter storms is likely to occur in the City’s parks or public spaces with trees and other landscaping.

High wind events in Los Angeles County occur mainly in the Santa Monica and San Gabriel Mountains. While tornadoes have occurred nearby, they have been F-0 events with one exception that occurred in Long Beach which experienced and F1 tornado that resulted in one injury.

Table 5-9 lists history of tornados that have been sighted in nearby jurisdictions.

Table 5.9: Historic Tornados Near Artesia

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

Extent:

A tornado in the City may cause damage based on the windspeed as described by the Fujita Scale. More effects are shown in **Table 5.10**.



Table 5.10: Fujita Scale and Effects

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

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

Source: NOAA

Impact of Climate Change:

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

Currently, the West Coast is likely to receive rain or snow from atmospheric rivers between twenty-five (25) and forty (40) days each year, the analysis concluded. By century’s end, that’s expected to rise to between thirty-five (35) and fifty-five (55) days annually. Meanwhile, the number of days each year on which the atmospheric rivers bring “extreme” amounts of rain and snow to the region could increase by more than a quarter.

Probability of Future Events:

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



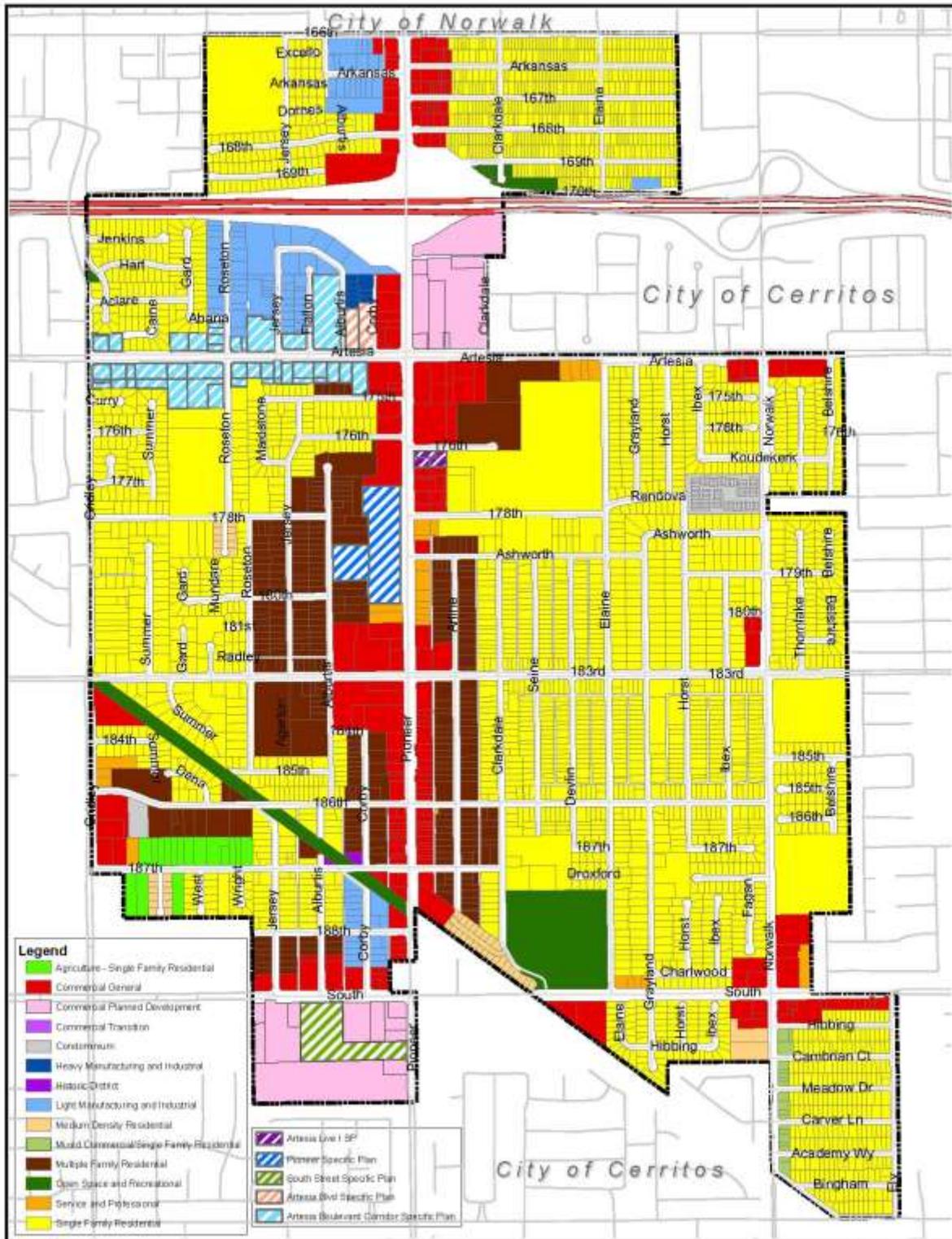
5.3 Risk Assessment

A risk assessment involves evaluating vulnerable assets, describing potential impacts, and estimating losses for each hazard. The intention of a risk assessment is to help the community understand the greatest risks facing the City. The risk assessment defines and quantifies vulnerable populations, buildings, critical facilities, and other assets at risk from hazards, and is based on the best available data and the significance of the hazard. The risk assessment further examines the impact of the identified hazards on the City, determines which areas of the City are most vulnerable to each hazard, and estimates potential losses to City facilities for each hazard.

5.3.1 Populations and Businesses at Risk

Residential population data for Artesia was obtained from the State of California Department of Finance E-1 Population Estimates for Cities, Counties, and the State - January 1, 2017/2018. The population is estimated to be 17,791. The 2010 Census Data lists the building inventory in Artesia to have 4,780 residential units and 2012 Census Data lists 633 commercial-industrial buildings in Artesia. The zoning district map shows the distribution of residential and business districts throughout the city.

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Revised 01/07/2019

City of Artesia
Zoning Map





5.3.2 Identification of Critical Facilities and Assets

The location and operations of high-risk facilities such as critical infrastructures and key assets in or near Artesia are a significant concern with respect to a disaster. The planning team used FEMA's "Public Assistance Guide" (FEMA 322) that defines critical facilities as shelters, hospitals, EOCs, data centers, utility plants or highly hazardous materials facilities. They also used the FEMA Hazard Mitigation Handbook which describes three categories of facilities for analysis to revise this list: critical facilities such as City operations and public safety; high potential loss facilities such as businesses, churches, schools, and facilities with hazardous materials; and critical infrastructure such as streets and bridges, airports, and oil refineries. Table 5-11 lists the critical facilities for the 2020 LHMP.

TABLE 5.11

Facility Name	Category	Site Purpose
Artesia City Hall	Critical Infrastructure	Operations Center
Public Services Center	Critical Infrastructure	Public Works Facility
Albert O. Little Community Center	Critical Infrastructure	Shelter/Cooling Center
North Artesia Community Center	Critical Infrastructure	Shelter/Cooling Center

5.3.3 Land Use Trends

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

Changes in the demographic characteristics have resulted in a demand for more housing and while population has grown, housing has not.

5.3.4 Cultural and Natural Resources Inventory

The City has several unique historical resources. They include:

- **Artesia Water Tower:** The Artesia Water Tower, the inactive water storage tank located on Clarkdale Avenue just south of 183rd Street, has been a familiar sight for citizens of Artesia for many years. However, little is known of its active past or when it was actually constructed. The Tower, which can store up to 50,000 gallons of water, was once owned by the Southern California Water Company, and was sold to the City of Artesia as an inactive water storage facility in 1988.
- **Frampton-Dantema Home:** In 2002, in partnership with the City of Artesia, the Artesia Historical Society saved the historic 1929 Spanish Style Frampton-Dantema home which was moved to a former park site. This home was restored and has become the Artesia Historical Museum which is now open to the public. The museum is located at 18644 Alburto Avenue and is open the second Saturday of every month, from 1 to 3 p.m.
- **Old Fire Station 30 Museum;** in 2010, in partnership with the City of Artesia, the Artesia Historical Society renovated the historic original fire station which was also moved from a former site when the new station was opened. The museum has been open to the public since 2012. The museum is located at 18641 Corby Avenue.



- The International Cultural District: There are a large number of Indian-owned stores and restaurants along Pioneer Boulevard in Artesia. The area represents a major economic source for the City and is an important tourist destination.

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

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

5.3.5 Risk Assessment and Potential Loss

A risk assessment determines the vulnerability of assets within the City by evaluating the inventory of City- owned existing property and the population exposed to a hazard. A quantitative vulnerability assessment is limited to the exposure of people, buildings, and infrastructures to the identified hazards. This risk assessment includes only those hazards that have the ability to cause damage to buildings and infrastructure. More detailed assessments of risk that would include deaths and injuries, and economic losses, are beyond the scope of this plan. Table 5.12 provides an analysis of Artesia’s critical infrastructure.

Table 5.12: Critical Facilities in Artesia

Critical Facilities	Impacting Hazards							Value			
	Climate Change	Dam Inundation	Drought	Earthquake/Seismic	Excess Heat	Flood / Flash Flood	Urban Fire	Winter Storm High Wind	Facility	Contents	Total Value
Artesia City Hall	X	X		X		X	X	X	\$3,225,143	\$690,786	\$3,915,929
Albert O. Little Community Center	X	X	X	X	X		X	X	\$6,863,064	\$623,438	\$7,486,502
Public Service Center		X		X		X	X		\$3,845,360	\$552,067	\$4,397,427
North Artesia Community Center	X	X	X	X	X		X	X	\$1,3311,48	\$211,779	\$1,523,260
Total									\$14,477,752	\$2,024,458	\$16,502,210



5.3.6 Analysis of Potential Losses

FEMA requires that an estimation of loss be conducted for the identified hazards to include the number of potential structures impacted by the hazards and the total potential costs. The analysis of potential losses calculated in Table 5-13 used the best data currently available to produce the estimations of loss. These estimates may be used to understand relative risk from hazards and potential losses. There are uncertainties in any loss estimation method, resulting from lack of scientific study and the exact result of hazard effects on the built environment, and from the use of approximations that are necessary for a comprehensive analysis.

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

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

Table 5.13: Potential Losses

Hazard Type	# of Critical Facilities	Percent Damage	Replacement Value	Content Value	Estimated Replacement Loss	Estimated Content Loss	Total Estimated Loss
Climate Change	4	10%	\$14,477,752	\$2,024,458	\$1,447,775	\$202,556	\$1,650,221
Dam Inundation	4	50%	\$14,477,752	\$2,024,458	\$7,328,876	\$1,012,229	\$8,341,155
Drought	2000 Trees	25%	\$5,616,770	0	\$1,416,925	0	1,416,925
Earthquake and Seismic Hazards	4	50%	\$14,477,752	\$2,024,458	\$7,328,876	\$1,012,229	\$8,341,155
Excess Heat	0						
Flood/Flashflood	3	30%	\$10,631,533	\$1,507,500	\$3,189,460	\$452,250	\$3,651,710
Urban Fire	4	50%	\$14,477,752	\$2,024,458	\$7,328,876	\$1,012,229	\$8,341,155
Winter Storm/High Winds	3	10%	\$10,631,533	\$1,507,500	\$1,063,153	\$150,750	\$1,213,903



SECTION 6: MITIGATION STRATEGY

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

FEMA REGULATION CHECKLIST: CAPABILITY ASSESSMENT

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

Elements

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

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

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

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

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

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

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

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

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



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

6.1 Hazard Mitigation Statement

The 2020 LHMP represents the City’s commitment to create a safer, more resilient community by taking actions to reduce risk and by committing resources to lessen the effects of hazards on the people and property of the City.

6.2 Hazard Mitigation Goals and Objectives

Mitigation goals are guidelines that represent what the community wants to accomplish through the mitigation plan. Goals are broad statements that represent a long-term, community-wide vision. The planning team reviewed example goals and objectives from the previous LHMP and determined which goals best met the City’s objectives for mitigation. The 2020 goals are new as this is the City’s first LHMP. In addition to the overarching hazard mitigation goals, the City worked with City Planning to develop the strategies in alignment with the City General Plan Safety Element. The goals align with the hazards in the 2030 General Plan and reflect input provided by stakeholders and the public. Table 6-1 lists the goals for the 2020 LHMP.

Table 6-1: Hazard Mitigation Goals

2020 Goals
Goal 1: Protect life, property, and reduce potential injuries from natural, technological, and human-caused hazards including the potentially catastrophic threats posed by the USACE owned Whittier Narrows Dam, which is a high hazard dam, and a large regional earthquake measuring greater than 7.0M
Goal 2: Improve public understanding, support of and need for hazard mitigation measures
Goal 3: Promote disaster resilience for Artesia’s natural, existing, and future built environment
Goal 4: Strengthen partnerships and collaboration to implement hazard mitigation activities
Goal 5: Enhance the City’s ability to effectively and immediately respond to disasters

6.3 Mitigation Actions/Projects and Implementation Strategy

Mitigation actions are specific activities or projects that serve to meet the goals that the community has identified. Mitigation actions and projects are more specific than goals or objectives, and often include a mechanism, such as an assigned timeframe, to measure the success and ensure the actions are accomplished. The planning team conducted a review of the mitigation actions and strategies from the State Hazard Mitigation Plan and from other cities’ planning efforts to develop new mitigation actions and projects to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure.



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

FEMA REGULATION CHECKLIST: MITIGATION STRATEGY; PLAN REVIEW AND REVISION
Implementation of Mitigation Actions
44 CFR § 201.6(c)(3)(iii): The mitigation strategy section shall include “an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction.
Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.”
Element
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost-benefit review), implemented, and administered by the jurisdiction? 44 CFR § 201.6(c)(3)(iii)
Plan Review and Revision
44 CFR § 201.6(d)(3): “A local jurisdiction must review and revise its plan to reflect...changes in priorities...”

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

6.3.1 Previous Mitigation Actions/Projects Assessment

There are no mitigation actions or projects from previous LHMPs.

6.3.2 New Mitigation Actions

Mitigation actions are specific activities or projects that serve to meet the goals that the community has identified. Mitigation actions and projects are more specific than goals or objectives, and often include a mechanism, such as an assigned time period, to measure the success and ensure the actions are accomplished. The planning team conducted a review of the mitigation actions and strategies and developed 31 new mitigation actions and projects to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure.

Table 6-2 lists the potential mitigation actions developed by the planning team. For each mitigation action, the following information is listed: type of mitigation project; hazard(s) addressed; type of development affected by action; and the source of the mitigation project idea.



Table 6-2: 2020 Mitigation Action Items and Projects

Goal	Action Item #	Action Description	Mitigation Type	Related Hazards
Goal 1: Protect life and property and reduce potential injuries from natural caused hazards.	1.1	Develop a program to assess the City for soft story buildings requiring seismic retrofitting. Consider implementing a Soft Story Seismic Retrofit Ordinance.	Prevention	Earthquake
	1.2	Encourage seismic strength evaluations of critical facilities in the City to identify building integrity.	Prevention	Earthquake
	1.3	Evaluate City and non-City facilities identified as potential shelter sites for structural integrity.	Preparedness	All Hazards
	1.4	Install alternative power source (e.g., emergency generator, solar panels) to ensure continued use of recreation center as a shelter/cooling center in the event of loss of power.	Preparedness	Dam Inundation, Earthquake, Extreme Heat, Flood/ Flashflood, Winter Storm/High Winds
	1.5	Develop alternative communications systems (i.e., satellite phones, radios) to maintain city communications in the event that primary systems are inoperative.	Preparedness	All Hazards
	1.6	In coordination with the County, develop storm water management plans for areas subject to flooding.	Preparedness	Flood/Flashflood
	1.7	Develop and implement a plan to decrease the likelihood and severity of potential flooding of City Hall.	Prevention	Flood/Flashflood
	1.8	Continue to update building and fire codes.	Prevention	Urban Fire
	1.9	Reach out to homeowners to hire licensed electricians for residential electrical work.	Public Education	Urban Fire
	1.10	Acquire the latest Emergency Action Plan for the Whittier Narrows Dam. Participate in annual training and exercises on dam emergencies.	Preparedness	Dam Inundation
Goal 2: Improve public understanding, support and need for hazard mitigation measures.	2.1	Develop a public outreach and awareness program about the hazards in Artesia and mitigation actions community members can do in their homes.	Public Education	All Hazards
	2.2	Place more stress on the risks associated with natural and manmade hazards at public awareness campaigns conducted by various City departments.	Public Education	All Hazards
	2.3	Increase public awareness of dam failure hazards and mitigation measures to address them	Public Education	Dam Inundation

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Goal	Action Item #	Action Description	Mitigation Type	Related Hazards
Goal 3: Promote disaster resistance for Artesia's natural, existing, and future built environment.	3.1	Implement program to maintain tree health on city and streets including removal of dead or dying trees and branches.	Prevention	Climate Change, Winter Storm/High Wind
	3.2	Encourage the school district and private landowners to maintain the health of trees on their properties.	Prevention	Climate Change, Winter Storm/High Wind
	3.3	Integrate appropriate items from the Local Hazard Mitigation Plan (LHMP) into the Safety Element of the General Plan and other regulatory documents as appropriate.	Regulatory	All Hazards
	3.4	Develop a climate change action plan to address climate change and reduce the city's carbon footprint.	Regulatory	Climate Change
	3.5	Continue to work with local water purveyors to encourage property owners to replace sod with drought tolerant landscaping.	Public Education	Drought
	3.6	Encourage property owners to plant hardier trees that resist drought.	Public Education	Drought
Goal 4: Strengthen partnerships and collaboration to implement hazard mitigation activities.	4.1	Strengthen communication and coordination with public agencies, residents, non-profit organizations, business and industry to create interest in the implementation of mitigation measures.	Emergency Services	All Hazards
	4.2	Partner with insurance companies to encourage homeowners and business to implement hazard mitigation measures.	Prevention	All Hazards
Goal 5: Enhance the City's ability to effectively and immediately respond to disasters.	5.1	Develop warning system (e.g., warning sirens, loudspeakers on city vehicles) to warn residents of impending flooding from dam failure.	Technology	Dam Inundation
	5.2	Implement program for routine monitoring of weather channel and NOAA advisories for early warning of severe weather	Technology	Dam Inundation, Extreme Heat, Flood/Flashflood, Winter Storm/High Wind
	5.3	Coordinate with the utility companies and vendors to strengthen, safeguard, or take other appropriate measures such as providing supplemental services, to protect and secure high-voltage lines, water, sewer, natural gas	Prevention	All Hazards



Goal	Action Item #	Action Description	Mitigation Type	Related Hazards
		and petroleum pipelines, and trunk electrical and telephone conduits from hazards.		
	5.4	Coordinate with Los Angeles County on hazard mitigation efforts for Artesia to protect two-way radio equipment from hazards by bracing antennas, securing repeaters, etc., from hazards.	Technology	Earthquake
	5.5	Develop plan for pre-staging emergency supplies.	Preparedness	Dam Inundation, Earthquake, Extreme Heat, Flood/Flashflood, Winter Storm/High Wind

6.3.3 Mitigation Action Plan

The mitigation action plan developed by the planning team includes the action items that the City intends to implement during the next five years, assuming funding availability. The action plan, shown in **Table 6-3** includes the implementing department, an estimate of the timeline for implementation, and potential funding sources.

The new mitigation actions include a broad range of approaches to hazard mitigation such as retrofitting, code enforcement, development of new regulations, public education, development of redundant facilities, and others. Measures are included to mitigate risks to existing buildings and infrastructure, as well as new buildings and infrastructure. The mitigation action plan assigns primary responsibility for each of the action items to an implementing department. The implementing department is the controlling department that will assign funding and oversee activity implementation, monitoring, and evaluation.

The planning team does not presume the expertise to prescribe which projects will be implemented. The prioritization of projects in the LHMP is a means to provide a basis for implementing the mitigation strategies, but all new mitigation actions and projects will be formally prioritized and selected by the implementing department. This will accommodate the project funding, schedule of the department, staff requirements, and ability to integrate the new project into existing and ongoing projects. Departments will take into account the funding source, the cost effectiveness of the project, alternative projects, the compatibility of the new project with ongoing projects, the extent to which the project addresses the risks assessed in Section 4, and the potential of economic and social damage.

Prioritization

To assist with implementing the mitigation action plan, the planning team used the following ranking process to provide a method to prioritize the projects for the Action Plan. Designations of



High, Medium, and Low priorities have been assigned to each action item using the following criteria.

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

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

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

Using the criteria above, the planning team employed the STAPLEE method to rank actions in the mitigation action plan. The results are contained in **Appendix D**.

Benefit-Cost Analysis

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

Funding

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



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

Implementation

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



Table 6-3 Mitigation Action Plan

Action Item #	Priority	Action Description	Timeline	Funding Source	Estimated Cost	Implementing Department/s
1.1	Low	Develop a program to assess the City for soft story buildings requiring seismic retrofitting. Consider implementing a Soft Story Seismic Retrofit Ordinance.	Long-range	General Fund or Other	N/A	Community Development
1.2	Low	Encourage seismic strength evaluations of critical facilities in the City to identify building integrity.	Long-range	General Fund	N/A	Planning
1.3	High	Evaluate City and non-City facilities identified as potential shelter sites for structural integrity.	Short-range	General Fund or Grant	\$5,000	Administration
1.4	High	Install alternative power source (e.g., emergency generator, solar panels) to ensure continued use of recreation center as a shelter/cooling center in the event of loss of power.	Mid-range	Grant	\$50,000	Maintenance
1.5	High	Develop alternative communications systems (i.e., satellite phones, radios) to maintain city communications in the event that primary systems are inoperative.	Short-range	Grant/Area E	\$10,000	Administration
1.6	Med	In coordination with the County, develop storm water management plans for areas subject to flooding. Improve City staff understanding of the NFIP to promote meeting program requirements.	Long-range	Grant	\$100,000	Community Development
1.7	High	Develop and implement a plan to decrease the likelihood and severity of potential flooding of City Hall	Mid-range	Grant	\$20,000	Maintenance
1.8	High	Continue to update building and fire codes.	Short-range	General Fund	N/A	Planning
1.9	Med	Reach out to homeowners to hire licensed electricians for residential electrical work.	Short-range	General Fund or Grant	\$5,000	Administration
1.10	High	Acquire the latest Emergency Action Plan for the Whittier Narrows Dam. Participate in annual training and exercise on dam emergencies.	Ongoing	General Fund	\$10,000	Office of Emergency Services
2.1	Med	Develop a public outreach and awareness program about the hazards in Artesia and mitigation actions community members can do in their homes.	Short-range	General Fund or Grant	\$5,000	Administration

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Action Item #	Priority	Action Description	Timeline	Funding Source	Estimated Cost	Implementing Department/s
2.2	Med	Place more stress on the risks associated with natural and manmade hazards at public awareness campaigns conducted by various City departments.	Short-range	General Fund or Grant	\$5,000	Administration
2.3	High	Increase public awareness of dam failure hazards and mitigation measures to address them	Ongoing	General Fund	\$5,000	Office of Emergency Services
3.1	High	Implement program to maintain tree health on city and streets including removal of dead or dying trees and branches.	Short-range	General Fund or Grant	\$50,000 annually	Maintenance
3.2	Low	Encourage the school district and private landowners to maintain the health of trees on their properties.	Mid-range	General Fund or Grant	\$5,000	Code Enforcement
3.3	Med	Integrate appropriate items from the Local Hazard Mitigation Plan (LHMP) into the Safety Element of the General Plan and other regulatory documents as appropriate.	Long-range	Grant	\$200,000	Planning
3.4	High	Develop climate change action plan to address climate change and reduce the city's carbon footprint.	Short-range	General Fund or Grant	\$100,000	Administration
3.5	Med	Continue to work with local water purveyors to encourage property owners to replace sod with drought tolerant landscaping.	Mid-range	General Fund or Grant	\$5,000	Planning/ Community Development
3.6	Med	Encourage property owners to plan hardier trees that resist drought.	Short-range	General Fund	\$5,000	Administration
4.1	Med	Strengthen communication and coordination with public agencies, residents, non-profit organizations, business and industry to create interest in the implementation of mitigation measures.	Mid-range	General Fund or Grant	\$5,000	Administration
4.2	Med	Partner with insurance companies to encourage homeowners and businesses to implement hazard mitigation measures.	Mid-range	Grant	Unsure	Administration

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Action Item #	Priority	Action Description	Timeline	Funding Source	Estimated Cost	Implementing Department/s
5.1	Med	Develop warning system (e.g., warning sirens, loudspeakers on city vehicles) to warn residents of impending flooding from dam failure.	Mid-range	Grant	\$40,000	Maintenance
5.2	Med	Implement program for routine monitoring of weather channel and NOAA advisories for early warning of severe weather	Long-range	General Fund or Grant	\$30,000	Administration
5.3	Med	Coordinate with the utility companies and vendors to strengthen, safeguard, or take other appropriate measures such as providing supplemental services, to protect and secure high-voltage lines, water, sewer, natural gas and petroleum pipelines, and trunk electrical and telephone conduits from hazards.	Long-range	Grant	Unsure	Administration
5.4	Med	Coordinate with Los Angeles County on hazard mitigation efforts for Artesia to protect two-way radio equipment from hazards by bracing antennas, securing repeaters, etc., from hazards.	Long-range	Grant	\$50,000	Administration
5.5	High	Develop plans for pre-staging emergency supplies to support shelters and cooling centers, and for home protections such as sandbags.	Short-range	General Fund or Grant	\$100,000 annually	Administration



SECTION 7: PLAN MAINTENANCE PROCEDURES

FEMA REGULATION CHECKLIST: PLANNING PROCESS

Documentation of the Planning Process

44 CFR § 201.61(1): The plan shall include documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

Elements

A5. Is there discussion on how the community will continue public participation in the plan maintenance process? 44 CFR 201.61(4)(iii)

A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? 44 CFR 201.61(4)(i)

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

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

The planning team represents City staff from each department and other stakeholders that contributed to the development of the 2020 plan. The planning team oversaw the development of the plan, and made recommendations on key elements of the plan, including the maintenance strategy.

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

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

7.1 Monitoring and Evaluation

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



implementation and evaluation will be a shared responsibility among all departments and agencies that contributed to the mitigation action plan.

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

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

The planning team will monitor the hazard mitigation strategies during the year and at a meeting held in January of each year, team members will provide information for the evaluation of the progress of the 2020 LHMP. This evaluation will include:

- A summary of any hazard events that occurred during the prior year and their impact on the planning area
- A review of successful mitigation initiatives identified in the 2020 plan
- A brief discussion about the targeted strategies that were not completed
- A re-evaluation of the action plan to determine if the timeline for identified projects needs to be amended, and the reason for the amendment, e.g., funding issues
- Any recommendations for new projects
- Any changes in or potential for new funding options (grant opportunities)
- Any impacts of other planning programs or initiatives in the City that involve hazard mitigation

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

7.2 Plan Update

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



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

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

At a minimum of six (6) months prior to the expiration date of the 2020 LHMP, the planning team will implement a plan revision schedule to formally update the 2020 plan. The plan will be revised using the latest FEMA hazard mitigation guidance documents, such as the Mitigation Planning Tool and Regulation Checklist to ensure compliance with current hazard mitigation planning regulations.

7.3 Continued Public Involvement

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

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

Projects that mitigate hazards are included in the City's annual budget planning process. The public is made aware of the planning through City Council meetings 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 feels about the progress being made on LHMP activities. The City will also provide press releases and information about hazard mitigation projects to the public on a regular basis. At a minimum, the public will be engaged to learn about current LHMP activities and given the opportunity to provide comments and information on an annual basis to update and maintain the LHMP. The Management Analyst



tasked with public outreach will be responsible to ensure the public is included and involved in the annual public plan update and outreach.

When the time comes to begin revising the 2020 LHMP, the plan update process will be implemented, which will include continued public involvement and input through attendance at designated public meetings, web postings, through press releases to local media, community fairs and events, and surveys. As part of this effort, a series of public meetings will be held, and public comments will be solicited on the revisions to the LHMP according to the five-year cycle. **Table 7-1** summarizes successful public involvement efforts previously conducted by the City, as well as proposed activities for public involvement and dissemination of information that shall be pursued whenever possible and appropriate.

Table 7-1: Past and proposed continued public involvement activities or opportunities identified by the City		
Department	Public Involvement Activity or Opportunity	
	PAST	PROPOSED
Administration	<ul style="list-style-type: none"> LHMP Survey conducted online and given out at city events in person 	<ul style="list-style-type: none"> Conduct annual surveys completed online and at the annual Public Safety Event
All		<ul style="list-style-type: none"> Place more emphasis on the risks associated with natural and manmade hazards at public awareness campaigns conducted by various City departments. Consider developing and distributing public education materials for natural hazards
Law Enforcement, Administration	<ul style="list-style-type: none"> City agencies, such as Law Enforcement and Emergency Management, and federal and congressional officials have conducted training events such as first aid and CPR, active shooter, annual Community Emergency Response Team (CERT) training, school lockdown drills, emergency alert notification, American Red Cross training and smoke alarm distribution, as ways to educate the public and community leaders in responding to circumstances and situations 	<ul style="list-style-type: none"> Increase public awareness of the natural, human-caused, and technological hazards to businesses as a means to reduce the potential damage from each hazard through educational and outreach Place more stress on the risks associated with natural and manmade hazards at public awareness campaigns conducted by various City departments. Consider developing and distributing public education materials for natural hazards



SECTION 8: PLAN APPROVAL AND ADOPTION

FEMA REGULATION CHECKLIST: PLAN ADOPTION

Adoption by the Local Governing Body

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

Element

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

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

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

The 2020 Artesia LHMP meets all requirements on the regulation checklist and was adopted by City Council of the City Council on 9th of November 2020. A scanned copy of the resolution is included on the following page. Accordingly, the City of Artesia meets the requirements of the Stafford Act, as amended, and 44 CFR § 201.6I(5).



RESOLUTION NO. 20-2829

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF
ARTESIA, CALIFORNIA, ADOPTING THE CITY OF ARTESIA
2020 LOCAL HAZARD MITIGATION PLAN**

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

WHEREAS, the Federal Emergency Management Agency ("FEMA") requires all State and local governments to prepare local hazard mitigation plan (LHMP) as a condition to pre- and post-disaster assistance;

WHEREAS, the California Assembly Bill 2140 (AB 2140) requires a City or County adopt its local hazard mitigation as part of the safety element of its general plan in order to qualify for disaster reimbursement costs beyond 75 percent;

WHEREAS, the City is concerned about mitigating damage to buildings and infrastructure, and minimizing economic losses from natural disasters before they occur;

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

WHEREAS, this LHMP was prepared through a process which included a Planning Team consisting of representatives from City departments, County of Los Angeles Office of Emergency Management as well as public participation review and comments;

WHEREAS, the California State Office of Emergency Services and FEMA Region IX have reviewed the plan and found it meets the requirements of DMA 2000;

WHEREAS, formal adoption of the LHMP by the City Council is required before final approval of the plan can be obtained from the Federal Emergency Management Agency; and

WHEREAS, formal adoption of the LHMP by the City and final approval of the LHMP is needed for the City's grant application to FEMA for mitigation grant funding.

NOW, THEREFORE, the City Council finds, determines, and resolves as follows:

SECTION 1. Findings and Determinations. The City Council hereby finds and determines that the above recitals are true and correct and have served as the basis, in part, for the findings and actions of the City set forth below.

SECTION 2. Authorization and Direction.

- A. The City Council of the City of Artesia hereby approves and adopts the City of Artesia Hazard Mitigation Plan 2020 that identifies and assesses potential natural hazards to meet the requirements of the Disaster Mitigation and Cost Reduction Act of 2000 and as it related to lessening the impact of future disasters.
- B. The City Council hereby approves and adopts the City of Artesia Hazard Mitigation Plan 2020 as part of the City's General Plan Safety Element in order to qualify for additional State disaster recovery funding.
- C. The City of Artesia will utilize the City of Artesia Hazard Mitigation Plan to implement goals and strategies outlined to avert and mitigate damage to property and infrastructure, and engage in assistance from California State Office of Emergency Services and Federal Emergency Management Agency.

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)

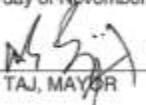


D. The City Council authorizes the City Manager or his designee to oversee plan implementation, updates, and make minor, non-substance modifications to the plan.

SECTION 3. California Environmental Quality Act. The City Council hereby finds that adoption of this Resolution is not a "project" under the California Environmental Quality Act, because the Resolution does not involve any commitment to a specific project which may result in a potentially significant physical impact on the environment, as contemplated by Title 14, California Code of Regulations, Section 15378(b)(4).

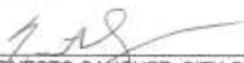
SECTION 4. Certification and Effective Date. The City Clerk shall certify to the passage and adoption of this resolution, enter into the book of original Resolutions and submit a copy of such to the Federal Emergency Management Agency. This Resolution shall take effect immediately upon its adoption.

PASSED, APPROVED and ADOPTED this 9th day of November, 2020.



ALI SAJJAD TAJ, MAYOR

ATTEST:



ERNESTO SANCHEZ, CITY CLERK

I, Ernesto Sanchez, City Clerk of the City of Artesia, do hereby certify that the forgoing Resolution was introduced and adopted at the Regular City Council Meeting held on the 9th day of November 2020, by the following roll call vote:

AYES:	COUNCIL MEMBERS:	TAJ, TREVINO, RAMOSO, CANALES, LIMA
NOES:	COUNCIL MEMBERS:	NONE
ABSENT:	COUNCIL MEMBERS:	NONE
ABSTAIN:	COUNCIL MEMBERS:	NONE



ERNESTO SANCHEZ, CITY CLERK



APPENDICES



APPENDIX A – LOCAL MITIGATION PLAN REVIEW TOOL

REGION IX LOCAL HAZARD MITIGATION PLAN REVIEW TOOL

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

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

Jurisdiction: City of Artesia	Title of Plan: Artesia Local Hazard Mitigation Plan	Date of Plan: March 9, 2020
Local Point of Contact: Melissa Burke	Address: 18747 Clarkdale Avenue Artesia, CA 90701	
Title: Administrative Manager		
Agency: City of Artesia		
Phone Number: (562) 865-6262 (office); (562) 537-2855 (cell)	E-Mail: mburke@cityofartesia.us	

State Reviewer: Karen McCready-Hoover (916) 845-8177 Karen.McCready-Hoover@caloes.ca.gov	Title: Emergency Services Coordinator	Date: June 19, 2020
Date Received at State Agency	4/10/20, 6/2/20	
Date Sent to FEMA	6/19/20	

FEMA Reviewer: Xing Liu	Title: Sr. Hazard Mitigation Planner	Date: 7/14/2020
Date Received in FEMA Region IX	6/19/2020	
Date Not Approved	7/21/2020	
Date Approvable Pending Adoption	10/20/2020	
Date Approved		



**SECTION 1:
REGULATION CHECKLIST**

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

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
ELEMENT A. PLANNING PROCESS				
A1. Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	a. Does the plan provide documentation of how the plan was prepared? This documentation must include the schedule or timeframe and activities that made up the plan’s development as well as who was involved.	Section 2 Appendix B, Appendix C	X	
	b. Does the plan list the jurisdiction(s) participating in the plan that are seeking approval?	Section 2	X	
	c. Does the plan identify who represented each jurisdiction? (At a minimum, it must identify the jurisdiction represented and the person’s position or title and agency within the jurisdiction.)	Section 2.4	X	



1. REGULATION CHECKLIST Regulation (44 CFR 201.6 Local Mitigation Plans)		Location in Plan (section and/or page number)	Met	Not Met
A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	a. Does the plan document an opportunity for neighboring communities, local, and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development, as well as other interested parties to be involved in the planning process?	Sec. 2.3 and 2.4, Appendix C	X	
	b. Does the plan identify how the stakeholders were invited to participate in the process?	Sec. 2.3 and 2.4, Appendix C	X	
A3. Does the plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	a. Does the plan document how the public was given the opportunity to be involved in the planning process?	Sec. 2.5 Appendix C	X	
	b. Does the plan document how the public's feedback was incorporated into the plan?	Sec. 2.5, Table 5.4, Appendix C	X	
A4. Does the plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))		Sec. 2.7	X	
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))		Sec. 7.3	X	
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	a. Does the plan identify how, when, and by whom the plan will be monitored (how will implementation be tracked) over time?	Sec. 7.1	X	
	b. Does the plan identify how, when, and by whom the plan will be evaluated (assessing the effectiveness of the plan at achieving stated purpose and goals) over time?	Sec. 7.1	X	
	c. Does the plan identify how, when, and by whom the plan will be updated during the 5-year cycle?	Sec. 7.2	X	



1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or page number)		
ELEMENT A: REQUIRED REVISIONS				
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT				
(Reviewer: See Section 4 for assistance with Element B)				
B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	a. Does the plan include a general description of all natural hazards that can affect each jurisdiction?	Sec. 5 Refer to the HAZARD IDENTIFICATION AND RISK ASSESSMENT MATRIX on pages 19-21 of this review tool for a detailed analysis of the hazard assessments	X	
	b. Does the plan provide rationale for the omission of any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area?	All commonly recognized natural hazard for the area included Sec. 5	X	
	c. Does the plan include a description of the type of all natural hazards that can affect each jurisdiction?	Sec. 5.2	X	
	d. Does the plan include a description of the location for all natural hazards that can affect each jurisdiction?	Sec. 5.2	X	
	e. Does the plan include a description of the extent for all natural hazards that can affect each jurisdiction?	Sec. 5.2	X	



1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or page number)		
B2. Does the plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	a. Does the plan include information on previous occurrences of hazard events for each jurisdiction?	Sec. 5.2	X	
	b. Does the plan include information on the probability of future hazard events for each jurisdiction?	Sec. 5.2	X	
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	a. Is there a description of each hazard's impacts on each jurisdiction (what happens to structures, infrastructure, people, environment, etc.)?	Sec. 5.2	X	
	b. Is there a description of each identified hazard's overall vulnerability (structures, systems, populations, or other community assets defined by the community that are identified as being susceptible to damage and loss from hazard events) for each jurisdiction?	Sec. 5.3	X	
B4. Does the plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))		Sec. 4, Sec. 4.1.5	X	
<u>ELEMENT B: REQUIRED REVISIONS</u>				
ELEMENT C. MITIGATION STRATEGY				
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	a. Does the plan document each jurisdiction's existing authorities, policies, programs and resources?	Sec. 4.1	X	
	b. Does the plan document each jurisdiction's ability to expand on and improve these existing policies and programs?	Sec. 4.1	X	



1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or page number)		
C2. Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))		Sec. 4, 4.1.5, 6.3.3 Mitigation Actions 1.6, 1.7, 2.1, 4.2	X	
C3. Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))		Sec. 6.2	X	
C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	a. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects to reduce the impacts from hazards?	Sec. 6.3.2, Table 6.2 Refer to the HAZARD IDENTIFICATION AND RISK ASSESSMENT MATRIX on pages 19-21 of this review tool for a detailed analysis of the mitigation actions	X	
	b. Does the plan identify mitigation actions for every hazard posing a threat to each participating jurisdiction?	Sec. 6.3.2, Table 6.2	X	
	c. Do the identified mitigation actions and projects have an emphasis on new and existing buildings and infrastructure?	Actions for existing structures and infrastructure: 1.1, 1.2, 1.8, 5.3, & 5.4 Actions for new structures and infrastructure: 1.4, 1.7, & 1.8	X	
C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered	a. Does the plan explain how the mitigation actions will be prioritized (including cost benefit review)?	Sec. 6.3.3, Table 6.3, Appendix D	X	



1. REGULATION CHECKLIST		Location in Plan	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)		(section and/or page number)		
by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	b. Does the plan identify the position, office, department, or agency responsible for implementing and administering the action, potential funding sources and expected timeframes for completion?	Sec. 6.3.3, Table 6.3, Appendix D	X	
C6. Does the plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	a. Does the plan identify the local planning mechanisms where hazard mitigation information and/or actions may be incorporated?	Section 2.6, Table 6-3 Action Item # 3.3	X	
	b. Does the plan describe each community's process to integrate the data, information, and hazard mitigation goals and actions into other planning mechanisms?	Table 6-3 Action 3.3, Sec. 2.6	X	
	c. The updated plan must explain how the jurisdiction(s) incorporated the mitigation plan, when appropriate, into other planning mechanisms as a demonstration of progress in local hazard mitigation efforts.	N/A. No previously adopted/ approved plan	X	
<u>ELEMENT C: REQUIRED REVISIONS</u>				
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (Applicable to plan updates only)				
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))		N/A no previous plan	X	
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))		N/A, no previous plan	X	
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))		N/A, no previous plan	X	
<u>ELEMENT D: REQUIRED REVISIONS</u>				



1. REGULATION CHECKLIST	Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)			
ELEMENT E. PLAN ADOPTION			
E1. Does the plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	Sec. 8 Pending APA	X	
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	N/A		
<u>ELEMENT E: REQUIRED REVISIONS</u>			
We will issue final approval once adoption documentation has been received.			
ELEMENT F. ADDITIONAL STATE REQUIREMENTS (Optional for State Reviewers only; not to be completed by FEMA)			
F1.			
F2.			
<u>ELEMENT F: REQUIRED REVISIONS</u>			

OPTIONAL: HIGH HAZARD POTENTIAL DAM RISKS (Applicable to jurisdictions interested in becoming sub applicants to FEMA's Rehabilitation of High Hazard Potential Dams (HHPD) Grant Program only)			
HHPD1. Did Element A4 (planning process) describe the incorporation of existing plans, studies, reports, and technical information for high hazard potential dams?	Sec. 2.7	X	
HHPD2. Did Element B3 (risk assessment) address HHPDs? NOTE TO FEMA - Whittier Narrows dam poses the greatest dam failure threat to the City. It is owned and operated by the USACE. This dam is risk characterized as Dam Safety Action Classification 1⁵. Dam inundation is ranked as a high risk to the City.	Sec. 5.1.3, 5.2.2	X	
HHPD3. Did Element C3 (mitigation goals) include mitigation goals to reduce long-term vulnerabilities from high hazard potential dams that pose an unacceptable risk to the public?	Sec. 6.2	X	
HHPD4. Did Element C4-C5 (mitigation actions) address HHPDs prioritize mitigation actions to reduce vulnerabilities from high hazard potential dams that pose an unacceptable risk to the public?	Sec. 6.3.2 1.4, 1.10, 2.1, 2.2, 2.3, 3.3, 4.1, 4.2, 5.1, 5.2, 5.3	X	
<u>REQUIRED REVISIONS</u>			



**SECTION 2:
PLAN ASSESSMENT**

A. Plan Strengths and Opportunities for Improvement

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

Element A: Planning Process

Strengths:

- 1) Your public engagement process was very thorough and covered a comprehensive range of platforms from online to in person. You were also able to incorporate public feedback into the periodization of hazards to profile.
- 2) Planning meetings were well documented and detailed notes provided excellent insight into the interactions within the planning team and how their feedback and input were captured into the planning process.

Opportunities for Improvement:

- 1) Section 1.5.1 included the Repetitive Flood Claims Program which has been discontinued since the Biggert Waters Act of 2012. In your next plan update, please update your reference to these respective FEMA grant programs.

Element B: Hazard Identification and Risk Assessment

Strengths:

- 1) Incorporating the cascading impacts of climate change on multiple hazards is a really good approach in your risk assessment.
- 2) Your vulnerabilities assessment didn't just capture critical facilities and infrastructure but also included an inventory of cultural and natural resources.

Opportunities for Improvement:

- 1) According to your planning meeting notes, it looks like the planning team was asked to review and provide input to the hazard identification worksheet at the same time that they were filling out the mitigation measures worksheet. We would think that the hazard risk assessment needs to occur before the planning team can look at proposing measures to mitigate risks. Having the broader context around hazards, risks, and vulnerabilities would make the discussion of mitigation measures more grounded. Please consider making this change in future revisions.



2) In future plan updates, we encourage you to identify vulnerable populations to specific hazards and include a social vulnerabilities analysis in your overall vulnerability assessment.

Element C: Mitigation Strategy

Strengths:

- 1) For a new plan, the Mitigation Strategy sections captured a comprehensive range of mitigation measures that addressed risk reduction for all profiled hazards.
- 2) I like the fact that you separated actions into categories (Preparedness, Prevention, Public Education, etc.)

Opportunities for Improvement:

- 1) Given that this is the City's first plan, it is understandable that the proposed actions are mostly about preparedness and public education. Once the City has implemented these actions and built some good awareness around risks from various hazards, the next iteration of the plan can look into taking on more direct mitigation projects that physically reduce risk from such hazards.

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

Strengths:

- 1) Well thought-out continued public engagement strategies were proposed in the plan.

Opportunities for Improvement:

- 1) We encourage you to include narratives in the plan maintenance section about leveraging post-disaster environments to re-evaluate priorities and re-align the plan, should disasters occur.



B. Resources for Implementing and Updating Your Approved Plan

This resource section is organized into three (3) categories:

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

Guidance and Resources

Local Mitigation Planning Handbook

<https://www.fema.gov/media-library/assets/documents/31598>

Beyond the Basics

<http://mitigationguide.org/>

Mitigation Ideas

<https://www.fema.gov/media-library/assets/documents/30627>

Plan Integration: Linking Local Planning Efforts

<https://www.fema.gov/media-library/assets/documents/108893>

Integrating Disaster Data into Hazard Mitigation Planning

<https://www.fema.gov/media-library/assets/documents/103486>

Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning

<https://www.fema.gov/ar/media-library/assets/documents/4317>

Community Rating System User Manual

<https://www.fema.gov/media-library/assets/documents/8768>

U.S. Climate Resilient Toolkit

<https://toolkit.climate.gov/>

2014 National Climate Assessment

<http://nca2014.globalchange.gov/>

Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation

http://ipcc-wg2.gov/SREX/images/uploads/SREX-All_FINAL.pdf

FY15 Hazard Mitigation Assistance Unified Guidance

<https://www.fema.gov/media-library/assets/documents/103279>

Climate Resilient Mitigation Activities for Hazard Mitigation Assistance

<https://www.fema.gov/media-library/assets/documents/110202>

Training

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

Mitigation Planning

IS-318 Mitigation Planning for Local and Tribal Communities

<https://training.fema.gov/is/courseoverview.aspx?code=is-318>

IS-393 Introduction to Hazard Mitigation

<https://training.fema.gov/is/courseoverview.aspx?code=is-393.a>



G-318 Preparing and Reviewing Local Plans

G-393 Mitigation for Emergency Managers

Hazard Mitigation Assistance (HMA) Grant Programs

IS-212.b Introduction to Unified HMA

<http://www.training.fema.gov/is/courseoverview.aspx?code=IS-212.b>

IS-277 Benefit Cost Analysis Entry Level

<http://www.training.fema.gov/is/courseoverview.aspx?code=IS-277>

E-212 HMA: Developing Quality Application Elements

E-213 HMA: Application Review and Evaluation

E-214 HMA: Project Implementation and Programmatic Closeout

E-276 Benefit-Cost Analysis Entry Level

GIS and Hazus-MH

IS-922 Application of GIS for Emergency Management

<http://www.training.fema.gov/is/courseoverview.aspx?code=IS-922>

E-190 ArcGIS for Emergency Managers

E-296 Application of Hazus-MH for Risk Assessment

E-313 Basic Hazus-MH

Floodplain Management

E-273 Managing Floodplain Development through the NFIP

E-278 National Flood Insurance Program/ Community Rating System

Potential Funding Sources

Hazard Mitigation Grant Program

POC: FEMA Region IX and State Hazard Mitigation Officer

Website: <https://www.fema.gov/hazard-mitigation-grant-program>

Pre-Disaster Mitigation Grant Program

POC: FEMA Region IX and State Hazard Mitigation Officer

Website: <https://www.fema.gov/pre-disaster-mitigation-grant-program>

Flood Mitigation Assistance Grant Program

POC: FEMA Region IX and State Hazard Mitigation Officer

Website: <https://www.fema.gov/flood-mitigation-assistance-grant-program>

Emergency Management Performance Grant Program

POC: FEMA Region IX

Website: <https://www.fema.gov/emergency-management-performance-grant-program>



SECTION 3:
MULTI-JURISDICTIONAL SUMMARY SHEET

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

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



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

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

HAZARD IDENTIFICATION AND RISK ASSESSMENT MATRIX								
Hazard	Requirement Met? (Y/N)							
	Type	Location	Extent	Previous Occurrences	Probability	Impacts	Vulnerability	Mitigation Action
Climate Change (high priority)	Sec. 5.1.3, 5.2.1	Sec. 5.2.1	Sec. 5.2.1	Sec. 5.1, 5.2.1,	Sec. 5.1.3, 5.2.1	Sec. 5.2.1	Sec. 5.3	2.1, 2.2, 3.1, 3.3, 3.4, 4.1, 4.2
Dam Inundation (high priority)	Sec. 5.1.3, 5.2.2	Sec. 5.2.2	Sec. 5.2.2	Sec. 5.1, 5.2.2	Sec. 5.1.3, 5.2.2	Sec. 5.2.2 see History	Sec. 5.3	1.4, 1.10, 2.1, 2.2, 2.3, 3.3, 4.1, 4.2, 5.1, 5.2, 5.3
Drought	Sec. 5.1.3, 5.2.1, 5.2.3	Sec. 5.2.3	Sec. 5.2.3	Sec. 5.1, 5.2.3	Sec. 5.1.3, 5.2.3	Sec. 5.2.3	Sec. 5.3	1.4, 2.1, 2.2, 3.3, 3.5, 3.6, 4.1, 4.2
Earthquake & Seismic (high priority)	Sec. 5.1.3, 5.2.4	Sec. 5.2.4	Sec. 5.2.4	Sec. 5.1, 5.2.4	Sec. 5.1.3, 5.2.4	Sec. 5.2.4	Sec. 5.3	1.1, 1.2, 1.4, 2.1, 2.2, 3.3, 4.1, 4.2, 5.3, 5.4
Heat	Sec. 5.1.3, 5.2.5	Sec. 5.2.5	Sec. 5.2.5	Sec. 5.1, 5.2.5	Sec. 5.1.3	Sec. 5.2.4	Sec. 5.3	1.4, 2.1, 2.2, 3.3, 4.1, 4.2
Flood & Flash Flood	Sec. 5.1.3, 5.2.6	5.2.6	Sec. 5.2.6	Sec. 5.1, 5.2.6	Sec. 5.1.3, 5.2.6	Sec. 5.2.6 See History	Sec. 5.3	1.4, 1.6, 1.7, 2.1, 2.2, 3.1, 3.2, 3.3, 4.1, 4.2, 5.3
Flooding	Sec. 4.1.5 Zone X so not a major hazard, 5.2.6 Not in 100-yr floodplain	N/A	N/A	N/A	N/A	N/A	N/A	N/A



HAZARD IDENTIFICATION AND RISK ASSESSMENT MATRIX								
Hazard	Requirement Met? (Y/N)							
	Type	Location	Extent	Previous Occurrences	Probability	Impacts	Vulnerability	Mitigation Action
Urban Fire	Sec. 5.1.3, 5.2.7	Sec. 5.2.7	Sec. 5.2.7	Sec. 5.1, 5.2.7	Sec. 5.1.3, 5.2.7	Sec. 5.2.7 – History section includes deaths	Sec. 5.3	1.4, 1.8, 2.1, 2.2, 3.1, 3.2, 3.3, 4.1, 4.2, 5.3
Winter Storms/Wind (high priority)	Sec. 5.1.3, 5.2.8	Sec. 5.2.8	Sec. 5.2.8	Sec. 5.1, 5.2.8	Sec. 5.1.3	Sec. 5.2.8	Sec. 5.3	1.4, 2.1, 2.2, 3.1, 3.2, 3.3, 4.1, 4.2, 5.2, 5.3, 5.4
Wildfire	Not a high-risk hazard so no risk assessment. See sec. 5.1.3 p.28	N/A	N/A	N/A	N/A	N/A	N/A	N/A



APPENDIX B – PLANNING TEAM MEETING DOCUMENTATION

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

Meeting Date	Meeting Title	Meeting Handouts, Presentation Included in LHMP
3/14/2019	LHMP Planning Team Kickoff Meeting Team Meeting #1	<ul style="list-style-type: none"> - Invitation to Stakeholders - Sign-In Sheet - Meeting Notes - Presentation (title slide only)
5/16/2019	LHMP Planning Team Meeting #2	<ul style="list-style-type: none"> - Invitation to Stakeholders - Sign-In Sheet - Meeting Notes - Presentation (title slide only)
9/3/2019	LHMP Planning Team Meeting #3	<ul style="list-style-type: none"> - Invitation to stakeholders - Sign-In Sheet - Meeting Notes - Presentation (title slide only)

1. Project Kickoff Meeting:

Thursday, March 14, 2019
10:00 a.m. – 12:00 p.m.

City of Artesia City Hall
18747 Clarkdale Ave
Artesia, CA 90701

Invitation:

When: 10:00AM – 12:00PM, March 14, 2019
Subject: Project Planning Meeting
Location: Artesia City Hall

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Sign in:

City of Artesia
EOP and LHMP Update Project
Stakeholder Kick-off Meeting

SIGN-IN SHEET

KICK-OFF MEETING

CITY OF ARTESIA EMERGENCY OPERATIONS PLAN (EOP) AND LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE PROJECT

Thursday, March 14, 2019
10:00 AM - 12:00 PM
City of Artesia City Hall
18747 Clarkdale Ave

#	Name	Department/Organization	Telephone	Email	Signature
1.	<i>Dody Berglund</i>	<i>La Bolla Children</i>	<i>561-560-9100</i>	<i>scow@city</i>	<i>Dody Berglund</i>
2.	<i>Siamko Cox</i>	<i>City of Artesia</i>	<i>(627) 865-6262</i>		<i>SC</i>
3.	<i>Jennifer Pezda</i>	<i>DelCastros</i>	<i>213-321-8443</i>	<i>jpezdac@empireinvest.com</i>	<i>J.Pezda</i>
4.	<i>FRANCISCA MARTINEZ</i>	<i>S.C.E</i>			<i>[Signature]</i>
5.	<i>Jennica Chaparro</i>	<i>Admin-ADA coord</i>	<i>962-805-6226</i>		<i>[Signature]</i>
6.	<i>Karen Lee</i>	<i>Admin -Title VI coord</i>	<i>962-865-6262</i>	<i>klee@cityofartesia.us</i>	<i>[Signature]</i>
7.	<i>Boyd Horan</i>	<i>Admin /HR</i>	<i>(520) 865-6262</i>	<i>phosand@cityofartesia.us</i>	<i>[Signature]</i>
8.	<i>Betty Lou Ormonde</i>	<i>Holy Family / Public Safety</i>	<i>562-400-031</i>	<i>betty.lou@stjohns.org</i>	<i>Betty Lou Ormonde</i>
9.	<i>Vicente martino</i>	<i>Planning /Community member</i>	<i>522-9199</i>	<i>vmarino@consolidated.com</i>	<i>[Signature]</i>

Artesia, CA 90701

1

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)





City of Artesia
 EOP and LHMP Update Project
 Stakeholder Kick-off Meeting

#	Name	Department/Organization	Telephone	Email	Signature
10.	Melissa Burke	Plc./CIM office	605-6262	mburke@cityofartesia.us	
11.	David Coleman	Parkst Rec/Chamber	907 570 5827	dcoleman@11	
12.	Keith Wood	Los Angeles Co FD	949-939 4470	Keith.Wood@Fire.LA County	
13.	Jim Sims	Constant Assoc	924-310-2596	jim@constantassociates.com	
14.	Evan Koepke	Constant Assoc.	310.292.6751	evan@constantassociates.com	
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					


2

Meeting Notes:

Table 1: Action Items

#	Item	Due Date	Responsible Party
1	Set up Mid-Term Meeting in June	TBD	Jim
2	Collect Stakeholder Concerns	By Midterm Meeting	Melissa
3	Create questionnaire for stakeholders	3/29/2019	Constant
4	Send meeting minutes to Stakeholders	3/29/2019	Melissa

1. Welcome

- a. Melissa welcomed the group and thanked participants for attending. She highlighted the meeting goals and agenda then gave the floor to Jim.
- b. Jim welcomed the group and noted that Constant has been contracted to assist the City's update of their emergency operations plan and local hazard mitigation plan. The plans will become official city documents by September.

2. Introductions

- a. Jim asked meeting attendees to introduce themselves with their names and the agency that they represent.



- b. Jim noted that attendees would contribute by both spreading the word regarding the effort to update the EOC and LHMP and offering insights from the wider community to assist in the planning effort.

3. Purpose of the Meeting

- a. Description of the Project
 - i. Jim reviewed the purpose of the project, highlighting that the plans will help ensure that the city is able to manage disaster events and gain access to necessary resources.
- b. Roles and Responsibilities
 - i. Jim noted that a wide array of information was going to be needed for this project and that is why this group had been brought together.

4. Emergency Operations Plan Update

- a. Jim described the purpose and history of the emergency operations plan, highlighting its contents. He noted how it enables the city to coordinate its response to emergency and disaster events and sets a training and exercise plan for ensuring that the city is ready to implement the plan.
- b. Jim additionally highlighted the content of plan annexes and appendices, describing their importance and the content of functional annexes, hazard specific annexes, and appendices. He stated that while these follow the national standard, adjustments will be made that are specific to the City of Artesia. He noted that these are important due to the need to coordinate specific functions such as emergency communications and plan specific actions in response to major hazards.
- c. Jim reviewed the planning process for updating the EOP, highlighting use of CPG 101 (FEMA document) as a guide for the planning process, and content of EOP; noting the research period necessary to get the process started (including review of other plans, best practices, and what other cities near Artesia are doing; combined with input from the city departments and community members.
- d. Jim reviewed the project schedule. He noted that the planning team will build content based on the CPG 101 guidance, building an EOP crosswalk to identify all critical plan requirements followed by preparation of a draft EOP. The draft will be shared for feedback to discuss necessary revisions and improvements. A meeting will be held to support this review process. The final draft will then be submitted to city council for adoption.
- e. Jim stated that the next deliverables will be the EOP crosswalk, followed by an EOP annotated outline (which will contain descriptions of precise content), and the promulgation of a questionnaire to collect necessary information from all necessary stakeholders.

5. Local Hazard Mitigation Plan Update

- a. Jim reviewed the history of the last hazard mitigation plan update, noting that the previous revision did not meet federal review requirements. He noted that the



review process can take several months, including approval and adoption by the city and review by the state. He highlighted that Constant will help the city through the entire update and review process.

- b. Jim reviewed the purpose and importance of local hazard mitigation plans. He highlighted the plan needs to be updated every 5 years and that it is the key to gaining access to federal disaster recovery and hazard mitigation funding.
- c. Jim reviewed the content and process for developing a LHMP, including identifying the community's capabilities and hazards, as well as mitigation goals and plans. He highlighted that the mitigation planning process is crucial because the mitigations can be costly and need to be realistic. They also need to account for hazards originating in nearby jurisdictions. Finally, he noted the importance of prioritizing and assigning responsibility for the implementation of mitigation actions.
- d. Jim noted that a risk analysis study would need to be conducted for all events ranging from small disasters to possible large-scale flooding caused by climate change. He also stated that the mitigation measures had to be practical due to high costs amongst other factors.
- e. Jim reviewed the process for developing an updated LHMP plans. He highlighted the increased complexity of this process and noted the importance of community participation.
- f. Jim introduced the project schedule and handed out a list of critical information requirements for LHMP development. He noted that the handout was to give everyone an idea of what information is needed to get the job done.

6. Roles & Responsibilities

- a. Jim reviewed the role of the Constant Team as coordinators, information collectors, and plan writers in order to shepherd the process forward. Jim additionally described the role of city and county staff, noting their importance in helping to collect data and provide feedback on content. He also noted the importance of community participation, since they will ultimately be the ones that benefit and experience the outcomes of this plan's adoption. As such Stakeholder feedback and assistance in getting wider public participation is crucial.

7. Information Collection Questions

- a. Jim highlighted the broad documentation of community change and hazard related efforts and asked the group the best places to gather information
 - i. Jim noted that all departments from the City of Artesia will be a large part of input and planning steps.

8. Next Steps

- a. Jim noted that the next meeting, the mid-term meeting will provide a progress report as well as drafts of the planning products for review. However, they will be sent out in advance to allow the group to review the documents in full. The



feedback from that meeting will be integrated and put out for final public review. After a final review meeting, the adoption and review process will be started. This process can take some time since the state and FEMA tend to have comments and revisions. The updated EOP and LHMP plans are scheduled to be ready for city wide adoption by September.

- b. Jim noted that, in the meantime, Melissa will provide the group Minutes from the meeting.

9. Questions & Discussion

- a. Jim opened the discussion to the group for questions.
- b. Francisco Martinez, the Edison representative asked if the comments should be specific to an organization, or if comments should be for the general plan as a whole.
 - i. Jim responded that when creating the EOC and LHMP Constant and the city of Artesia will look at both specific comments and comments on the general plan as a whole.
- c. Another attendee asked if the process can include a check of air quality surrounding a trailer park area where she lives. (32:30)
 - i. Jim noted that these are some of the issues that need to be examined through this process.
- d. Betty Lou Ormonde stated that her group was working with the Red Cross on an EOC and asked if they should discontinue their plan or if these two plans would come into conflict.
 - i. Jim recommended that the planning process continue, but it will be essential for the groups to compare notes.
 - ii. Jennifer noted that the local Red Cross is very involved in hazard planning and generally attend most city meetings.
- e. Is there a requirement to translate the documents?
 - i. Melissa and Jim clarified that outreach materials and report summaries will have to be translated, though it will be necessary to identify the languages that need translation. Jim emphasized the importance of ensuring the whole community gets a chance to provide input.
- f. Asked if Constant looking for guidance regarding who to reach out to in order to educate about the process and get feedback.
 - i. Jim replied that all groups affected (non-residents, nearby cities, etc.) should be contacted and educated.
 - ii. Melissa stated that she can collect that information and pass it on.
- g. Question about planning for adaptation among local businesses.
 - i. Attendee noted that the Chamber of Commerce does not yet have a plan but attended the meeting for that reason.
- h. Jim asked for final questions.
- i. Melissa asked if the Red Cross should be added to the stakeholder list and invited to future meetings.



- i. Jim stated that the Red Cross was a key stakeholder and inviting them to future meetings would be beneficial.
- j. Melissa asked when the next meeting will be.
 - i. Jim reviewed the schedule and said the meeting was tentatively scheduled for mid-June.
- k. Melissa – what does the group need to do? What input is needed?
 - i. Jim noted that each group should gather information on how they would be impacted and then pass it along to ensure all needs and concerns are met.
 - ii. Fire Dept noted they have earthquake and flood plans
 - iii. Jim clarified that any official plans would be beneficial to pass along
- l. Melissa directed the group to bring up any issues that they think should be addressed or stakeholder groups that need to be integrated into the planning process and provide them to her. She added that Dave will talk to chamber of commerce next week.
- m. An attendee asked what the scope of the project in regard to the types of hazards should be addressed.
 - i. Jim clarified that it needs to be emergency or disaster focused
 - ii. An example was provided regarding climate change, in which higher temperatures have impacts on infrastructure and lifestyles.
 - iii. Jim replied that all of these issues would be examined during this process and would be covered under the climate change section
- n. Another attendee asked if businesses/man made hazards (using an ice factory ammonia discharge as an example) would be examined in the EOP.
 - i. Jim asked for assistance from stakeholders in identifying these potential issues
 - ii. Evan clarified that the plan will focus on Natural Hazards, but want man-made hazards for potential events to be identified
- o. Melissa highlighted the flooding hazard from nearby dam and need for evacuation planning in the EOP, city cannot effectively manage the flooding risk by itself, and must work with neighboring jurisdictions and stakeholders to do so effectively.”
- p. Jim thanked the group for attending and directed the group to send additional questions and information to Melissa.

10. Adjourn



Table 2: Meeting Attendees

Name	Agency	Email
Francisco Martinez	Southern California Edison	
Karen Lee	City of Artesia	klee@cityofartesia.us
Jim Sims	Constant Associates	jim@constantassociates.com
Evan Koepke	Constant Associates	evan@constantassociates.com
Betty Lou Ormonde	Public Safety Commission City of Artesia	betty.lou4528@yahoo.com
Victor Manalo	Planning Commissioner City of Artesia	vmanaloconsulting@gmail.com
Melissa Burke	Public Works and City Manager's Office	mburke@cityofartesia.us
Jennifer Pezda	Senior Environmental Planning Advisor SoCal Gas	jpezda@semprautilities.com
Keith Wood	Fire Captain Station 30	keith.wood@fire.lacounty.gov
David Coleman	Parks and Rec Manager	dcoleman@cityofartesia.us
Jennifer Chaparro	ADA Coordinator City of Artesia	jchaparro@cityofartesia.us
Boyd Horan	Human Resources Manager City of Artesia	bhoran@cityofartesia.us
Siamlu Cox	City of Artesia	scox@cityofartesia.us



Presentation (title slide only):

**Stakeholder
Kick-Off Meeting**

City of Artesia
Emergency Operations Plan (EOP) &
Local Hazard Mitigation Plan (LHMP)
Update Project

Thursday, March 14, 2019

 CONSTANT
ASSOCIATES



2. Project Planning Meeting #2:

Thursday May 16, 2019

9:30 – 11:00am

Invitation:

From: mburke@cityofartesia.us

When: 9:30 AM – 10:30 AM May 16, 2019

Subject: Emergency Management Review Meeting

Location: Downstairs conference room

We will be reviewing the draft materials for the EOP and LHMP emergency management plans. This will likely be the 1st of 3 meetings before the documents are finalized in the next few months. I should have the materials next week so you can review them ahead of time and provide the consultants feedback.

Sign in:

City of Artesia
EOP and LHMP Update Project
Data Review Meeting



SIGN-IN SHEET

DATA REVIEW MEETING
CITY OF ARTESIA EMERGENCY OPERATIONS PLAN (EOP) AND LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE PROJECT

Thursday May 16, 2019
9:30 AM – 10:30 AM
City of Artesia City Hall
18747 Clarkdale Ave
Artesia, CA 90701

#	Name	Department/Organization	Telephone	Email	Signature
1.	Melissa Burke	Administration		mburk@cityofartesia.us	<i>[Signature]</i>
2.	Lee Rosenberg				<i>[Signature]</i>
3.	Jim Sims	CONSTANT		jim@constantassociates.com	<i>[Signature]</i>
4.	Ryan Dufour	CONSTANT		ryan@constantassociates.com	
5.	Siamlu Cox	City of Artesia		scox@cityofartesia.us	<i>[Signature]</i>
6.	Boyd Horan	City of Artesia		bhoran@cityofartesia.us	<i>[Signature]</i>
7.	Karen Lee	City of Artesia		klee@cityofartesia.us	<i>[Signature]</i>



1

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



City of Artesia
EOP and LHMP Update Project
Data Review Meeting



8.	Jennica Chaparro	City of Artesia	JChaparro@cityofartesia.us	
9.	Fiona Graham	City of Artesia	FGraham@cityofartesia.us	
10.	OKINA DUA	CITY OF ARTESIA	odua@cityofartesia.us	
11.	Diana Alvarez	ALCANTARA	jalvarez@alcantara.com	
12.	Jennifer ^{Josda} Renteria	SOLUSION	jrenteria@soluciones.com	
13.	ESPARDO CAJAL	LA 3 D	3cajal@LA3D.org	
14.				





Meeting Notes:

City of Artesia
EOP and LHMP Update Project
Project Status Review Meeting



PROJECT STATUS REVIEW MEETING

**CITY OF ARTESIA EMERGENCY OPERATIONS PLAN (EOP) AND
LOCAL HAZARD MITIGATION PLAN (LHMP) UPDATE PROJECT**

Thursday, May 16, 2019
9:30 AM – 10:30 AM

City of Artesia City Hall
18747 Clarkdale Ave
Artesia, CA 90701

Conference Line: 267-930-4000
Participant Pin: 840-228-492

AGENDA

- I. Welcome
- II. Project Status Briefing
- II. LHMP Data Review
- IV. EOP Data Review
- V. Review Outstanding Data Needs
- VI. Public Outreach Strategy
- VII. Other Issues
- VIII. Recap Action Items

MEETING MINUTES

Table 1: Action Items

#	Item	Due Date	Responsible Party
1.	Develop and distribute Meeting Minutes	Friday, May 24	CONSTANT
2.	Distribute LHMP Information Forms	Complete	CONSTANT
3.	Submit remaining LHMP data items to CONSTANT	Friday, June 7	Planning Team



4.	Identify Best Special Events to Collect Survey Responses	Friday, May 31	Planning Team
5.	Complete First Draft of EOP	Friday, June 21	CONSTANT
6.	Complete First Draft of LHMP	Friday, June 14	CONSTANT

I. Welcome

- a. Jim Sims introduced the team and went around the room and had the group introduce themselves as well as their organization.
- b. Lee Rosenberg joined the meeting by phone and introduced himself.

II. Hazard Identification Worksheet

- a. Lee began with the Hazard Identification Worksheet to look over the hazards already identified.
- b. Karen Lee asked that extreme wind be added as a hazard given the number of mature trees within city limits.
- c. Karen stated that the city has recently dealt with fallen trees causing traffic hazards.
- d. Lee asked for further data on wind incidents that occurred in the past within city limits so that he could add this hazard to the plan.
- e. Karen clarified that the Santa Ana winds were the major concern.
- f. Melissa Burke gave an example of an oak tree that fell in April in front of an elementary school due to high winds.
- g. Karen asked if the plan that would include types of trees that should be planted in order to mitigate tree fallings and maintain climate change mitigation measures created by the city.
- h. Jennifer Pezda asked if extreme heat would be included in the Hazard Identification.
- i. Jim clarified that it is up to the city if it should be included.
- j. Okina Dor said that extreme heat should be added to the LHMP.
- k. Lee asked the team how the city could be affected by extreme flooding.
- l. Okina said that flooding was a major concern for Artesia given that the city is incredibly flat and that City Hall had been flooded before.
- m. Lee asked the team if the city was a member of the National Flood Insurance Program.
- n. Okina said that the city was not a part of the National Flood Insurance Program. (FEMA documents show participation in the NFIP)
- o. David Ashman clarified that city needed to identify any properties that had reoccurring flooding.
- p. Lee addressed the Wittier Dam situation and stated that it would be included in the Artesia LHMP mitigation plan.
- q. Fiona Graham clarified that Liquefaction needed to be included
- r. Okina stated they do have an expansive soil zone and that it should be included in the plan as the County has stated.



- s. Okina stated he had a meeting with the Lower San Gabriel River Watershed Board that afternoon where he would attempt to obtain a report from them.
- t. David stated he would send an updated USGS map to examine the fault lines that may affect the City of Artesia the most.
- u. David and Okina stated that while the plan was focused on natural hazards, they thought that one hazard included should be infrastructure given that the city has some older infrastructure.
- v. Melissa stated that the Albert O'Little community center in Artesia did not have a generator and were unable to provide a city cooling center or shelter during an earthquake or extreme heat.
- w. David said that Tom at the Emergency Operations Center could help answer any questions the section regarding power shutoffs.
- x. Lee said that he would reach out to Tom.

III. Mitigation Measures Worksheet

- a. Lee stated that this sheet included general mitigation measures, but that it was key to have planning teams for each section review this part separately.
- b. David stated that examples would helpful to include in this table to assist the planning team for clarification.
- c. Lee said that he would update the sheet with key examples to assist the planning teams with their work.
- d. Melissa asked when Lee would need feedback from the Planning Teams to maintain the current timeline.
- e. Lee and Jim stated that feedback should be given by the first week in June.

IV. Facility Inventory

- a. Lee stated this should include all addresses of locations that the city considered critical.
- b. Lee stated that this list should include facilities that are critical even if they are not owned and operated by the city including hospitals.
- c. Okina stated that he has already created a Facility Inventory and that he would edit it to include the Botanical Gardens and would send it to the CONSTANT team.
- d. David asked if they were looking at the sheriff's office and County Fire facilities as well.
- e. Okina stated that those buildings fall outside of city boundaries.
- f. Lee stated this needed to be done so they could create an estimate for how much money would be lost in the event of a hazard occurring.

V. Capabilities Worksheet

- a. Lee stated he included examples of capabilities for each category of the worksheet.
- b. Lee discussed Planning and Regulatory Section, Administrative and Technical, and Financial, and Education and Outreach.



- c. Melissa stated that given Artesia's small population in a large county she wanted to clarify how to make sure Artesia could help themselves if they were not a top priority for the county.
- d. Lee stated there was a statewide program that could help mitigate the concern of building inspector's availability.
- e. Lee stated that this concern would be addressed in the EOP.
- f. Lee stated that geologists and civil engineers could go through a program and become building inspectors.
- g. Okina stated that he has the ability to tag buildings within city limits and could act as a building inspector.
- h. Lee asked if there were any more examples that could be included in the financial capabilities section.
- i. Melissa stated that the city council had approved the next fiscal year budget and she would pass that along to the CONSTANT team.
- j. Lee asked the planning team to pass along the name of the person in charge of outreach, including their social media, so that he could reach out to them.
- k. Okina stated that they had a city CERC program a few years ago and that it should be brought back as part of this plan.
- l. Lee stated that CERC should be included as an administrative resource, but that they would need to ensure that their qualifications were up to date.
- m. Lee asked the team if they had a HAM Radio Program.
- n. Melissa stated that they did not have a program, but they did have the HAM Radio and would be looking to update the program.
- o. Lee stated that FEMA would send the plan back to the city if they did not believe that the plan addressed all necessary capabilities.
- p. David stated that he would connect Melissa with CERC partners in order to complete more CERC training for employees as the City has been unable to fill quotas.
- q. The planning team decided that Neighborhood Watch should be added to the capabilities list.

VI. EOP Data Review

- a. The team stated that the authority to activate the EOP should include the City Manager's Designee in the event that the City Manager was unavailable.
- b. Jim reviewed the structure of the Incident Command System and asked if there was any need for alternates.
- c. Melissa asked if they should be coupled together including Logistics and Planning.
- d. Jim stated that given that the city staff is small the availability of staff in an emergency may require some to handle two jobs.
- e. David said that the EOP should include a priority list for which jobs should be filled first based on what is needed in the emergency.



- f. Jim stated that most of the emergency reaction would be led by the Sherriff's office and County Fire outside the city.
- g. Jim stated that it was key that the city was able to communicate effectively within city limits and with outside agencies.
- h. Melissa stated that the City Manager should be the one tasked with the Liaison Officer as well as Incident Commander roles.
- i. David stated that new laws took effect on July 1st that would affect the alternate communications systems that were already in place.
- j. Jim stated that the first draft of the EOP would include further information about NIMS/SEMS Training and EOP training.
- k. Jim stated that the city needed further contact with the Sherriff and Fire offices in order to coordinate interactions between the county and city during an emergency.
- l. Melissa stated that the city does have emergency spending capabilities within the code.
- m. Jim stated that the city needed to ensure they could contact employees in the event of an emergency occurred outside work hours.
- n. David said that the Red Cross may not be able to assist fully in event of an emergency, but that the legality fell back on the city if shelters were not properly staffed.

VII. Public Outreach Strategy

- a. Jim stated that through use of the City's social media they help to reach out to the community regarding the plans.
- b. Jim stated this was in lieu of a public meeting specifically to mitigate the concern that the project would not reach enough people.
- c. David stated that a public meeting would allow for transparency.
- d. Melissa stated that the public outreach program was to collect data and feedback from the community and that after this data was collected, they would hold a City Council Meeting as well.
- e. Karen asked Jennifer if SoCal Gas would still be willing to help administer the survey through other means.
- f. Jennifer stated that concerns of social media following may be too small and that a public meeting would allow for more transparency.
- g. Melissa stated that the city had events during the summer where they could distribute paper surveys.
- h. Jim stated that they would supplement their social media outreach program with paper surveys distributed to Neighborhood Watch Program and at the City's upcoming events such as Movie Night in the Park and the Carnival.

VIII. Other Issues



- a. David clarified that the EOP would need to be disseminated to the cities who border Artesia for comment.
- b. David also clarified this would not slow down the ability to submit the EOP, but that legally it was necessary to share the plan.

IX. Adjourn

Table 2: Meeting Attendees

#	Name	Agency/Organization	Email
1.	Melissa Burke	Administration	mburk@cityofartesia.us
2.	Ryan Dufour	CONSTANT	ryan@constantassociates.com
3.	Jim Sims	CONSTANT	jim@constantassociates.com
4.	Lee Rosenberg	CONSTANT	lee@constantassociates.com
5.	Siamlu Cox	City of Artesia	scox@cityofartesia.us
6.	Boyd Horan	City of Artesia	bhoran@cityofartesia.us
7.	Karen Lee	City of Artesia	klee@cityofartesia.us
8.	Jennica Chaparro	City of Artesia	jchaparro@cityofartesia.us
9.	Fiona Graham	City of Artesia	fgraham@cityofartesia.us
10.	Okina Dor	City of Artesia	odor@cityofartesia.us
11.	David Ashman	Disaster Management Area Coordinator	Dmac@dmce.cc.gov
12.	Jennifer Pezda	SoCal Gas	jpezda@semprautilities.com
13.	Gerardo Cruz	Los Angeles Sheriff's Department	gcruz@lasd.org

Presentation (title slide only):

No presentation was used for this meeting

3. Project Planning Meeting #3:

Invitation:

From: mburke@cityofartesia.us

When: Tuesday, September 3, 2019 at 9:00 – 10:00 AM,

Subject: LHMP Planning Meeting

Location: Artesia City Hall – Downstairs Conference Room

CITY OF ARTESIA Local Hazard Mitigation Plan (LHMP)



The screenshot shows an Outlook window with the following details:

- From:** Ryan Dufour on behalf of Melissa Burke <mburke@cityofartesia.us>
- Sent:** Monday, January 13, 2020 10:23 AM
- To:** Lee Rosenberg <lee@constantassociates.com>
- Subject:** Fw: LHMP Planning Meeting
- When:** Tuesday, September 3, 2019 9:00-10:00
- Where:** Artesia City Hall - Downstairs Conference Room

Body Content:

Hey Lee,

I have forwarded along the LHMP Planning Meeting from Sept. 3rd for you to populate into the LHMP. However we did not have a presentation for that meeting so the agenda acted the guide for Jim to review the meeting materials so we don't have that to include.

Let me know if there is anything else I can help you with .

Ryan Dufour

CONSTANT ASSOCIATES

Calendar Entry: LHMP Planning Meeting, Artesia City Hall - Downstairs Conference Room, Melissa Burke

Search Results (Left Panel):

From	Subject	Date
Ryan Dufour	Re: SD Outreach - Healthcare	1/28/2020
Ryan Dufour	Re: SD Outreach - Healthcare	1/20/2020
Ryan Dufour	Re: New Stadium Tour	1/9/2020
Ryan Dufour	Strategic Implementation Plan...	1/19/2020
Melissa Burke	Fw: LHMP Planning Meeting	1/13/2020
Ryan Dufour	Re: UCLA x USC	11/5/2019
Ryan Dufour	Office Football Night: Cats @ ...	10/21/2019

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Sign in:

City of Artesia
EOP and LHMP Update Project
Planning Meeting



#	Name	Department/Organization	Email	Signature
1.	Jim Sims	CONSTANT	jim@constantassociates.com	
2.	Ryan Dufour	CONSTANT	ryan@constantassociates.com	
3.	Lee Rosenberg	CONSTANT	Lee@constantassociates.com	via phone
4.	Melissa Burke	Administration	mburke@cityofartesia.us	
5.	Siamlu Cox	City of Artesia	scox@cityofartesia.us	
6.	Boyd Horan	City of Artesia	bhoran@cityofartesia.us	
7.	Okina Dor	City of Artesia	odor@cityofartesia.us	
8.	Ernesto Sanchez	City of Artesia	esanchez@cityofartesia.us	
9.	Karen Lee	City of Artesia	klee@cityofartesia.us	
10.	Greg Knapp	L.A. COUNTY SHERIFFS	gknapp@lacoed.org	
11.	Francisco Martinez			
12.	Jennifer Pezda	SoCal Gas		
13.	Dave Ashman	Airon E Dmac	Dmac@dmac.org	
14.	Jeremy Foster	City of Artesia	jfoster@cityofartesia.us	

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



City of Artesia
EOP and LHMP Update Project
Planning Meeting

15.	Rosa Pinuelas	City of Artesia	Rpinuelas@CityofArtesia.us	
16.				
17.				
18.				
19.				
20.				

CONSTANT ASSOCIATES

3



Meeting Notes:

PLANNING MEETING MINUTES

PROJECT PLANNING MEETING

September 3, 2019

Artesia City Hall

9:00 a.m.

Table 1 Action Items

#	Item	Due Date	Responsible Party
1	Send LHMP Draft to Planning Team	9/13/19	CONSTANT
2	Respond to LHMP Draft with comments	9/25/19	Planning Team
3	Send meeting minutes to Stakeholders	9/11/19	Ryan

I. Welcome

- a. Jim welcomed the entire team to the meeting

II. Introduction

III. Meeting Materials

- a. Jim reviewed the meeting materials and the current status of the LHMP project.
- b. Jim noted that a draft of the LHMP has already circulated and that after the input from the team today they would release another draft after this meeting that would need to circulate with the public for 30 days following Planning Team Review.

IV. Identify Hazards

- a. Lee began the discussion of hazards that can affect the jurisdiction.
- b. Lee listed the hazards so far suggested for the city including Climate change, dam inundation, drought, earthquake and seismic hazards, extreme heat, fire/wildfire, flood/flash flood, and winter storm/high wind.
- c. Lee reviewed each scoring for each of the potential hazards. The Team reviewed and agreed with the scores.
- d. Lee suggested that the planning team select hazards from the list that they had created.
- e. Okina Dor noted that given that Artesia's building expansion leading to higher density he suggested keeping Fire and Urban Fire as a mitigation measure.
- f. The planning team agreed and decided to include urban fire as a hazard given the possible building density increases over the next 5 years.



- g. David Ashman noted that the team could add as many hazards as they thought appropriate.
- h. After discussion, it was suggested that the final LHMP include 9 hazards to separate winter storm and high winds given that they can occur separately.
- i. The Team agreed that winter storm and high winds should be separated given issues of ground saturation amongst other issues that can occur given El Nino and El Nina winds.
- j. The planning team agreed on the 9 hazards being: climate change, dam inundation, drought, earthquake, seismic hazards, extreme heat, urban fire, flood/flash flood, winter storm, and high wind.

V. Select Mitigation Measures

- a. Lee noted that there are 5 major goals to ensuring mitigation measures are taken in the event of a hazard.
- b. Okina noted that the city has already released a plan for seismic retrofitting ordinance and the city had already begun work on these projects
- c. Dave Ashman noted processes already “coming down the pike” should be included in the plan to show the state that the city is already attempting to make these changes.
- d. Siamlu Cox asked if the plan would include costs for the mitigation measures.
- e. Jim noted that detailed costs would be included in the grant application forms that the city would apply for.
- f. Okina asked if the implementing department column would be completed at this meeting or at a later date.
- g. Jim and Lee both noted that the implementing department column will be finalized once the mitigation measures are selected and completed.
- h. The team decided that for Goal 5 they would like to include language that included recovery so that they could make sure they were able to apply for recovery grant funding as well.
- i. Karen Lee asked for the difference between climate change and some of the hazards that are exacerbated by climate change including extreme heat, flooding, etc.
- j. The team noted one mitigation measure specific to the city would be that their community center is a Red Cross shelter however there is no backup generator so they would like to apply for funding for this.



- k. The Team noted specific instructions for climate change as they would like to include a mitigation example that states the city will develop and implement policies to address climate change.
- l. The team agreed to include a mitigation measure that included developing and maintaining evacuation plan, warning plan and notification system in case of dam inundation.
- m. The team suggested a number of mitigation measures that addressed each of the identified hazards.
- n. Jim noted that mitigation measures should give the city room for flexibility in how they are actually implemented.
- o. The team identified a series of mitigation measures to address each of the identified hazards. Jim agreed that CONSTANT would develop the descriptions of each of the measures discussed for inclusion in the next LHMP draft.
- p. Lee noted for the 30-day review should include keeping the draft at City Hall, the Public Library, but it does not need to have a public hearing.
- q. Melissa and Jim agreed to take the LHMP draft to City Council to gain administrative approval to make changes first before submitting to Cal OES and FEMA.
- r. Okina asked if they could bring a draft of the LHMP to their diversity festival which would have over 40,000 people in foot traffic and they could include drafts at their information booths for public review and outreach.

VI. Questions/Discussion

VII. Adjourn

Table 2 Meeting Attendees

#	Name	Department
1	Ryan Dufour	CONSTANT
2	Lee Rosenberg	CONSTANT
3	Jim Sims	CONSTANT
4	Melissa Burke	Administration
5	Siamlu Cox	City of Artesia
6	Boyd Horan	City of Artesia
7	Okina Dor	City of Artesia
8	Ernesto Sanchez	City of Artesia
9	Karen Lee	City of Artesia
10	Greg Knapp	City of Artesia
11	Dave Ashman	Area E DMAC
12	Jeremy Bates	City of Artesia

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



13	Ros Pinuelas	City of Artesia
----	--------------	-----------------

Presentation (title slide only):

No presentation was used for this meeting



APPENDIX C – PUBLIC ENGAGEMENT DOCUMENTATION

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

Event Date	Event Activity	Documentation
June 7-28, 2019	Social Media Campaign	<ul style="list-style-type: none"> - Posting on City website - Postings on City Facebook page
June 7-28, 2019	Survey on City Website	<ul style="list-style-type: none"> - Survey questions and results
June 7-9, 2019	In-Person Survey at 60 th Anniversary Carnival	<ul style="list-style-type: none"> - Survey questions and results
February 20, 2020	Public Draft LHMP posted on City website and sent to the following neighboring jurisdictions for review and comment: City of Cerritos City of Norwalk	<ul style="list-style-type: none"> - Posting on City Website - Email to neighboring jurisdictions and Operational Area - Comments received



Sample 1: City Website Survey Announcement (June 7-28, 2019)

8/13/2019 Artesia, CA - Official Website - Local Hazard Mitigation Plan Survey

Engage your community - connect to news, events and information you care about. [View more information...](#) [Sign In](#)

Search Artesia

ARTESIA CALIFORNIA

Service Builds Tomorrow's Progress



ABOUT US GOVERNMENT RESIDENTS VISITORS BUSINESSES HOW DO IT

You are here: [Home](#) > [Feature Links](#) > [Local Hazard Mitigation Plan Survey](#)

Local Hazard Mitigation Plan Survey

The City of Artesia is developing a Local Hazard Mitigation Plan, or LHMP! The LHMP will help the City better prepare for natural hazards and disasters, and will enable us to better serve the community. Please fill out the survey below. We will be accepting survey responses until Friday, June 28 at 11:59 PM. You can share the survey with family and friends with the following link: www.surveymonkey.com/r/ArtesiaLHMP.

[Create your own user feedback survey](#)

- City Hall Hours
- Job Opportunities
- International Fair & Diversity Festival
- Catalog of Enterprise Systems
- CR&R, Incorporated - Artesia's Waste Hauler
- Parking Permit Program
- Agendas & Minutes
- Municipal Code
- Parking Citations
- Parking Permit Program
- Public Safety
- Recreation & Classes
- Local Hazard Mitigation Plan Survey
- 60th Anniversary Celebration
- Artesia Community Support Center
- Social Media
- Home Alarm Rebate Program
- Graffiti Removal Pilot Program

<https://www.cityofartesia.us/index.aspx?NID=326> 1/2

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Sample 2: City Facebook Survey Announcement (June 7, 2019)



Sample 3: City Facebook Survey Announcement (June 24, 2019)



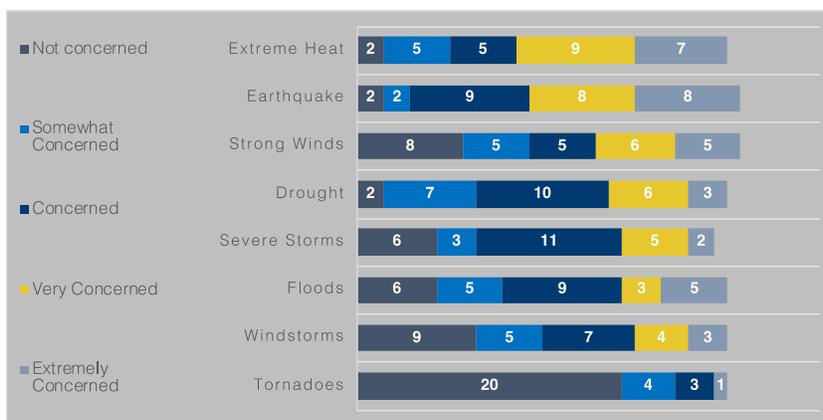


Sample 4: LHMP Survey Results Analysis

LHMP SURVEY RESULTS ANALYSIS

To inform the update of Artesia’s Local Hazard Mitigation Plan (LHMP), a survey was conducted measuring citizens level of concern for various hazards and their general level of preparedness. The poll was conducted from June 7 to 11, 2019. Responses were collected via an electronic survey shared via the City’s website and social media, as well as an in-person collection effort conducted at a high-profile festival which occurred during the survey period.

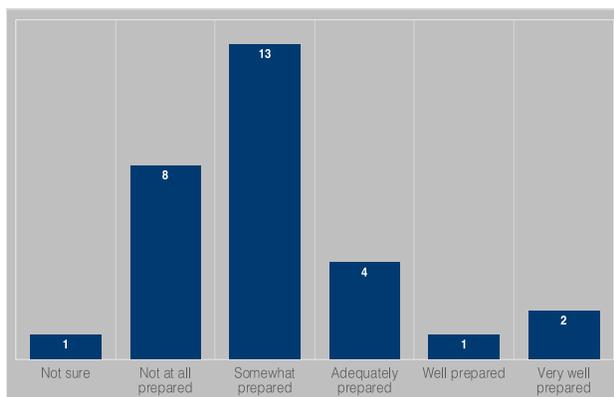
QUESTION 1: How Concerned are you about the following Hazards in Artesia?



Extreme Heat, Earthquake, and Floods are the cause for most concern in Artesia. Out of the Thirty-two individuals who took part in the survey, twenty-five reported being concerned or having an increased concern with Earthquakes (78%). Twenty-one individuals recorded strong winds to be a cause of

concern. Extreme Heat received twenty-one responses marked concerned or higher (65%). A most citizens found that tornadoes are of least concern, with twenty out of thirty-two responses indicating they were not concerned with that particular disaster (62%).

QUESTION 2: How Prepared is your household to cope with a hazard event?

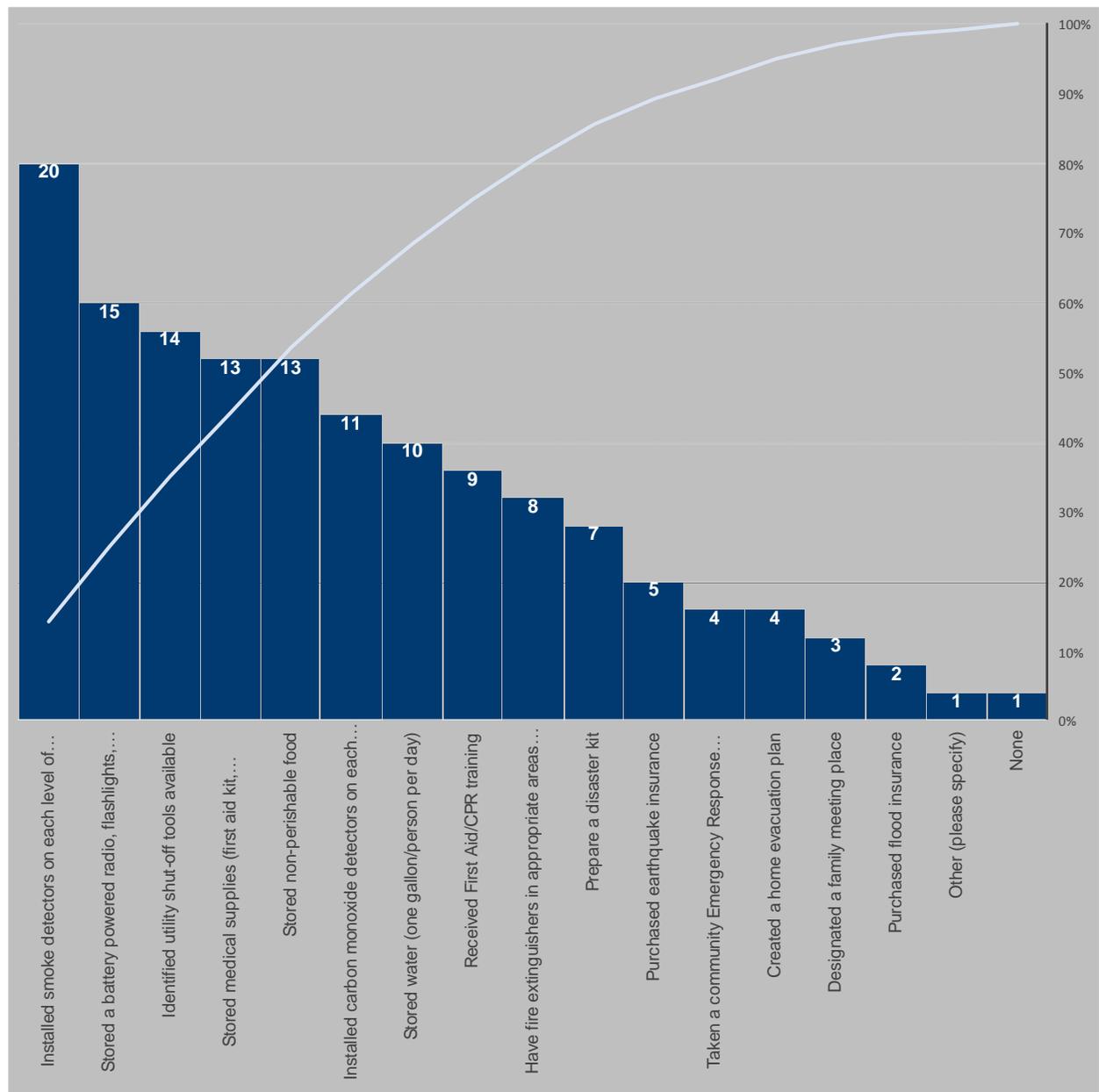


Only seven (7) out of twenty-nine (29) households reported being adequately prepared, well prepared, and very well prepared (24%). Thirteen (13) responses indicated they were somewhat prepared (44%). Nine responses detailed their lack of preparation for a hazardous event (31%).



QUESTION 3: Which of the following actions has your household taken to prepare for a hazard event?

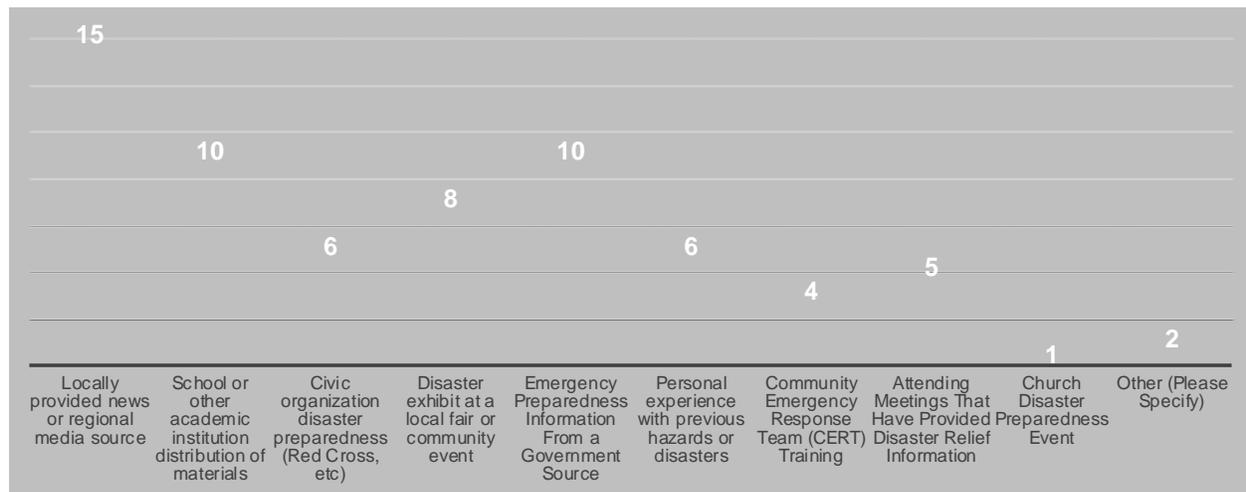
Participants in the survey provided the following responses to detail the actions their household has taken to prepare for a hazardous event. One Hundred and twenty (120) answers were provided, spread across seventeen different categories. Twenty (20) households installed smoke detectors (16%). Fifteen (15) stored some type of electronic emergency device such as a radio, flashlights, and batteries (12%). Fourteen (14) of the houses identified utility shut off tools (11%). Thirteen (13) answers reported in two categories indicated that households stored medical supplies as well as non-perishable foods (10% each). Eleven (11) installed carbon monoxide detectors on each... Stored water (one gallon/person per day) Received First Aid/CPR training Have fire extinguishers in appropriate areas... Prepare a disaster kit Purchased earthquake insurance Taken a community Emergency Response... Created a home evacuation plan Designated a family meeting place Purchased flood insurance Other (please specify) None





QUESTION 4: Which of the following sources of information have helped you to prepare for a hazard event?

From the information received by the surveys, fifteen (15) out of sixty-seven (67) (22%) reported residents of Artesia have found locally provided news or regional news sources to be the most helpful during a hazard event. In addition, school and government sources both received ten (10) (15%) responses. The chart above indicates the remaining data gathered from participants.



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

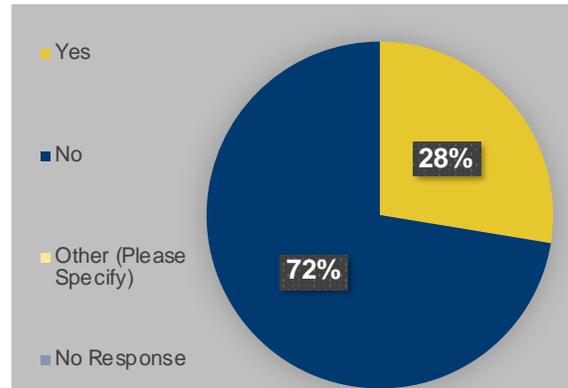
An overwhelming majority of responses indicated the community-wide actions to a hazard are extremely important. In total, seventy-one (71) of one hundred forty-two (142) answers (50%), indicated this. Forty-four (44) of the 142 (31%) responses found community actions to be very important when reducing the risks of hazards. Overall, 81% of the community believed the first five categories are very or extremely important.

Importance Level	Action Category	Count	Count	Count	Count	Count
Not Important	Emergency Services Actions	4	8	16		
	Structural Projects Intended To Lessen Hazard Impact	6	7	15		
Somewhat Important	Public Education and Awareness Activities	4	11	13		
	Prevention Activities	1	5	7	15	
Very Important	Property Protection Actions	5	11	11		
	Other (Please Specify): Certification FEMA Training From Certified CERT Instructors In...	11				



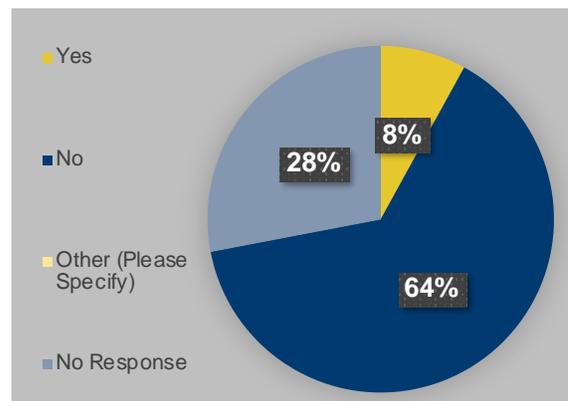
QUESTION 6: Do you or anyone in your household have disabilities and/or access and functional needs that would require early warning notifications or specialized response to evacuate during?

The chart to the right displays the data from respondents that required special needs during an evacuation. Eight (8) participants out of twenty-nine (29) (28%) indicated they do need some type of assistance during an evacuation. In addition, twenty-one (21) (72%) of respondents indicated they did not need assistance in evacuating.



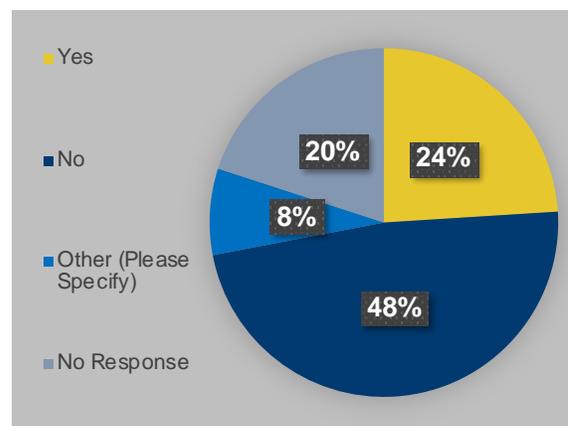
QUESTION 7: Do you have a certified service animal that would need to be evacuated with you or a household member to a shelter during a disaster?

The chart to the right shows that two individuals out of twenty-five (25) (8%) required assisted service for evacuating their service animal. Sixteen (16) participants in the survey (64%) out of twenty-five (25) responded that they did not require special assistance for their animal. Lastly, seven (7) citizens (28%) had no response to the question. Out of the twenty-nine (29) respondents that answered question six, only twenty-five (25) took part in questions seven and eight.



QUESTION 8: If you answered yes to Question 6, would you participate in a Disaster Assistance Registry for people with disabilities and/or access and functional needs?

The following chart to the right shows the data collected. Twelve (12) out of twenty-five (25) individuals (48%) did not wish to participate in a Disaster Assistance Registry. In addition, six (6) of the twenty-five (25) (24%) responded that they did wish to participate in the registry. Lastly, five (5) of the respondents (20%) gave no response, while two (2) people (8%) responded with other or did not know if they wished to participate in the registry. Out of the twenty-nine (29) respondents that answered question six, only twenty-five (25) took part in questions seven and eight.





Sample 5: Preparedness and Mitigation Survey

A Plan for Reducing Disaster Risk

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

Public Input is Critical

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

Help Us to Help You

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



Community Survey Questions

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

	Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned
Earthquake	<input type="checkbox"/>				
Severe Storms	<input type="checkbox"/>				
Drought	<input type="checkbox"/>				
Extreme Heat	<input type="checkbox"/>				
Strong Winds	<input type="checkbox"/>				
Tornadoes	<input type="checkbox"/>				
Floods	<input type="checkbox"/>				



Windstorms

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

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

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

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



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

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

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

	Not Important	Somewhat Important	Very Important	Extremely Important
<u>Prevention activities</u> such as administrative or regulatory actions that influence the way land is developed and buildings are built (ex: planning, zoning, & building codes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Property protection actions</u> that modify existing buildings to protect them from a hazard or removal from the hazard area, such as acquisition, relocation, elevation, and structural retrofits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Structural projects intended to lessen hazard impact</u> by modifying the natural progression of the hazard, such as	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



detention/retention basins, retaining walls, storm sewers, and restoration efforts to increase the natural environment's capacity to absorb hazard impacts

Emergency services actions

that protect people and property during and immediately after a hazard event, such as warning systems, evacuation planning, emergency response training, and protection of critical emergency facilities or systems

Public education and awareness activities

to inform community members about hazards and the techniques they can use to protect and prepare their property and themselves, including outreach projects, CERT, school programs, library materials, and safety fair events

Other (Please Specify):

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

- Yes
- No
- Other (Please Specify):



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

- Yes
- No
- Other (Please Specify):

8. If you answered yes to Question 6: would you participate in a Disaster Assistance Registry for people with disabilities and / or access and functional needs?

- Yes
- No
- Other (Please Specify):

Additional Comments/Answer Space:

Sample 6: Public Draft LHMP City Website Posting (February 20-March 5, 2020)

CITY OF ARTESIA Local Hazard Mitigation Plan (LHMP)



Sample 7: Email to City of Cerritos (February 20, 2020)

From: Melissa Burke
Sent: Thursday, February 20, 2020 3:46 PM
To: emerina@cerritos.us
Subject: Artesia draft LHMP

Good Afternoon Emely,

Artesia finished our draft LHMP and we are circulating it for public review. As our neighbor we are sending it for your review as well. Our public comment period is open until March 5, 2020. If you have any comments please let me know.

Melissa

NOTICE: This communication may contain privileged or other confidential information. If you are not the intended recipient of this communication, or an employee or agent responsible for delivering this communication to the intended recipient, please advise the sender by reply Email and immediately delete the message and any attachments without copying or disclosing the contents. Thank you.

Sample 8: Email to City of Norwalk (February 20, 2020)

From: Melissa Burke
Sent: Thursday, February 20, 2020 3:36 PM
To: 'Eric Wosick' <ewosick@norwalkca.gov>
Subject: Artesia draft LHMP

Hi Eric,

Attached is the draft LHMP for the City of Artesia. If you would like to review and provide any comments we are accepting public comments until March 5, 2020 before submitting the document to the City Council and the state.

Thank you,

Melissa

NOTICE: This communication may contain privileged or other confidential information. If you are not the intended recipient of this communication, or an employee or agent responsible for delivering this communication to the intended recipient, please advise the sender by reply Email and immediately delete the message and any attachments without copying or disclosing the contents. Thank you.



Sample 9: Comments received from Cerritos (March 3, 2020)

From: Emely Merina [<mailto:emerina@cerritos.us>]
Sent: Tuesday, March 03, 2020 3:53 PM
To: Melissa Burke <mburke@cityofartesia.us>
Subject: Re: Artesia draft LHMP

Hi Melissa,

I reviewed the plan - it looks fine. I do have a question on page 23 under "Demographics." The 3rd line as you discuss racial breakup, the wording is confusing, the parenthesis and bracket for non-hispanic white doesn't seem right. Or it's my eyes.

On a different note - a young man from Cerritos HS has scheduled a "Sound the Alarm" event in Cerritos. He is part of the school's Red Cross Club. Was wondering, since Artesia is right next to us, if your City would be interested in being canvassed for the free smoke alarms. Also if you have anyone interested in volunteering to assist. The date of the event is Saturday, March 28 from 7:45 am to 1pm. The base camp is the City's community room in the Cerritos Sheriff's Station.

Let me know.

Thank you.
Emely

>>> Melissa Burke <mburke@cityofartesia.us> 2/20/2020 3:45 PM >>>

Good Afternoon Emely,

Artesia finished our draft LHMP and we are circulating it for public review. As our neighbor we are sending it for your review as well. Our public comment period is open until March 5, 2020. If you have any comments please let me know.

Melissa

NOTICE: This communication may contain privileged or other confidential information. If you are not the intended recipient of this communication, or an employee or agent responsible for delivering this communication to the intended recipient, please advise the sender by reply Email and immediately delete the message and any attachments without copying or disclosing the contents. Thank you.



APPENDIX D – MITIGATION ACTION PRIORITIZATION (STAPLEE)

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

STAPLEE Prioritization Tool																								
(Scoring: “+” = 1 point, “-” = -1 point, “n/a” = 0 point, “n/k” = not known)																								
Mitigation Action	S Social		T Technical			A Administrative			P Political			L Legal			E Economic				E Environmental				Priority Total (net)	
	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals		Consistent with Federal Environmental Laws
1.1 Develop a program to assess the City for soft story buildings requiring seismic retrofitting. Consider implementing a Soft Story Seismic Retrofit Ordinance.	-	+	+	+	n/k	0	0	0	-	-	+	+	+	0	+	-	+	-	0	0	+	+	+	6
1.2 Encourage seismic strength evaluations of critical facilities in the City to identify building integrity.	-	+	+	+	n/k	0	0	0	-	-	+	+	+	0	+	-	+	-	0	0	+	+	+	6

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	Priority Total (net)
1.3 Evaluate City and non-City facilities identified as potential shelter sites for structural integrity.	+	+	+	+	n/k	0	0	0	+	+	+	+	+	0	+	-	+	0	0	0	+	+	+	13
1.4 Install alternative power source (e.g., emergency generator, solar panels) to ensure continued use of recreation center as a shelter/cooling center in the event of loss of power.	+	+	+	+	+	0	0	0	+	+	+	+	+	0	+	-	+	0	0	0	+	+	+	14
1.5 Develop alternative communications systems (i.e., satellite phones, radios) to maintain city communications in the event that primary systems are inoperative.	+	+	+	+	+	0	0	+	+	+	+	+	+	+	+	-	+	0	0	0	+	+	+	16
1.6 In coordination with the County, develop storm water management plans for areas subject to flooding.	+	+	+	+	+	0	0	0	0	+	+	+	+	0	+	-	0	0	0	+	+	+	+	12

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	Priority Total (net)
1.7 Develop and implement a plan to decrease the likelihood and severity of potential flooding of City Hall.	+	+	+	+	+	0	0	+	+	+	+	+	+	0	+	-	0	0	0	0	+	+	+	14
1.8 Continue to update building and fire codes.	+	+	+	+	+	0	0	0	+	+	+	+	+	0	+	0	+	0	0	0	+	+	+	15
1.9 Reach out to homeowners to hire licensed electricians for residential electrical work.	0	+	+	+	+	0	0	0	+	0	0	+	+	0	+	-	+	0	0	0	+	+	+	11
1.10 Acquire the latest Emergency Action Plan for the Whittier Narrows Dam. Participate in annual training and exercises on dam emergencies.	+	+	+	+	+	0	+	0	+	+	+	+	+	0	+	0	+	0	0	0	+	+	+	16
2.1 Develop a public outreach and awareness program about the hazards in Artesia and mitigation actions community members can do in their homes.	+	+	+	+	+	-	0	0	+	+	+	+	+	0	+	-	0	0	0	0	+	+	+	12

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	Priority Total (net)
2.2 Place more stress on the risks associated with natural and manmade hazards at public awareness campaigns conducted by various City departments.	+	+	+	+	+	-	0	0	+	+	+	+	+	0	+	-	0	0	0	0	+	+	+	12
2.3 Increase public awareness of dam failure hazards and mitigation measures to address them.	+	+	+	+	+	0	+	0	+	+	+	+	+	0	+	0	+	0	0	0	+	+	+	16
3.1 Implement program to maintain tree health on city and streets including removal of dead or dying trees and branches.	+	+	+	+	+	-	0	-	+	+	+	+	+	0	+	0	0	0	0	0	0	+	+	11
3.2 Encourage the school district and private landowners to maintain the health of trees on their properties.	+	+	+	+	+	-	0	-	+	+	+	+	+	0	+	0	0	0	0	0	0	+	+	11
3.3 Integrate appropriate items from the Hazard Mitigation Plan (LHMP) into the Safety Element of the General Plan and other regulatory documents as appropriate.	+	+	+	+	+	0	0	0	+	+	+	+	+	0	+	0	0	0	0	0	0	0	+	12

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	Priority Total (net)
3.4 Develop climate change action plan to address climate change and reduce the city's carbon footprint.	+	+	+	+	+	0	-	0	+	+	+	+	+	-	+	0	0	0	+	0	0	+	+	12
3.5 Continue to work with local water purveyors to encourage property owners to replace sod with drought tolerant landscaping.	0	+	+	+	+	0	-	0	+	+	0	+	+	0	+	-	0	0	+	0	0	+	+	9
3.6 Encourage property owners to plan hardier trees that resist drought.	0	+	+	+	+	0	0	0	+	+	+	+	+	0	+	0	0	0	+	0	0	0	+	12
4.1 Strengthen communication and coordination with public agencies, residents, non-profit organizations, business and industry to create interest in the implementation of mitigation measures.	+	+	+	+	+	-	0	0	+	+	+	+	+	0	+	0	+	0	0	0	0	0	+	12
4.2 Partner with insurance companies to encourage homeowners and business to implement hazard mitigation measures.	+	+	+	+	+	0	0	0	+	+	+	+	+	0	+	0	0	0	0	0	0	0	+	12

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal	Priority Total (net)
5.1 Develop warning system (e.g., warning sirens, loudspeakers on city vehicles) to warn residents of impending flooding from dam failure.	0	+	+	+	+	0	0	-	+	+	+	+	+	0	+	0	0	-	0	0	0	+	+	10
5.2 Implement program for routine monitoring of weather channel and NOAA advisories for early warning of severe weather.	+	+	+	+	0	0	0	0	+	0	+	+	+	0	+	0	0	0	0	0	0	0	+	10
5.3 Coordinate with the utility companies and vendors to strengthen, safeguard, or take other appropriate measures such as providing supplemental services, to protect and secure high-voltage lines, water, sewer, natural gas and petroleum pipelines, and trunk electrical and telephone conduits from hazards.	+	+	+	+	+	0	0	0	+	+	+	+	+	0	+	0	0	0	0	0	0	0	+	12

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



Mitigation Action	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land / Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Comm. Environmental Goals	Consistent with Federal Environmental Laws	Priority Total (net)
5.4 Coordinate with Los Angeles County on hazard mitigation efforts for Artesia to protect two-way radio equipment from hazards by bracing antennas, securing repeaters, etc., from hazards.	+	+	+	+	+	0	0	0	+	+	+	+	+	0	+	0	0	-	0	0	0	0	+	11
5.5 Develop plans for pre-staging emergency supplies to support shelters and cooling centers, and for home protections such as sandbags.	+	+	+	+	+	0	0	0	+	+	+	+	+	+	+	0	+	-	0	0	0	0	+	13



APPENDIX E – ACRONYMS

The following table provides a list of acronyms and their full meaning

Cal OES	California Office of Emergency Services
CDAAC	California Disaster Assistance Act
CDBG	Community Development Block Grants
CERT	Community Emergency Response Team
CJPIA	California Joint Powers Insurance Agency
CO₂	Carbon Dioxide
CPG	Comprehensive Preparedness Guide
CPRI	Calculated Priority Risk Index
DMA 2000	Disaster Mitigation Act of 2000
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FMA	Flood Mitigation Assistance
HMA	Hazard Mitigation Assistance
HMGP	Hazard Mitigation Grant Program
ITCZ	Intertropical Convergence Zone
LACDA	Los Angeles County Drainage Area
LHMP	Local Hazard Mitigation Plan
MMI	Modified Mercalli Intensity
Mw	Magnitude
NFIP	National Flood Insurance Program
NWS	National Weather Service
PDM	Pre-Disaster Mitigation
RFC	Repetitive Flood Claims

CITY OF ARTESIA
Local Hazard Mitigation Plan (LHMP)



RL	Repetitive Loss
SHMO	State Hazard Mitigation Officer
SRL	Severe Repetitive Loss
STAPLEE	Social, Technical, Administrative, Political, Legal, Economic, and Environmental

ⁱ NOAA

ⁱⁱ Enhanced Fujita Scale <http://www.spc.noaa.gov/faq/tornado/ef-scale.html>