





SANTA FE IRRIGATION DISTRICT

A Special District of the State of California

Hazard Mitigation Plan
August 2024

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ES.1 Plan Requirements and Objectives

The Santa Fe Irrigation District (District) Hazard Mitigation Plan (HMP) is a living document that reflects ongoing hazard mitigation activities. Hazard mitigation involves strategies to reduce short and long-term vulnerability to identified hazards. This document serves as the framework for the ongoing identification and implementation of hazard mitigation strategies developed for the District's service area.

In 2010, the District decided to engage in a mitigation planning effort separate from the County's Multi-Jurisdictional Plan. The product of that effort was the development of the District's initial Local Hazard Mitigation Plan in 2013 which was updated again in 2018. The following document serves as an update to that 2018 Plan.

Background Information

In 2000, the United States Congress determined that disasters and, more importantly, lack of preparedness for disasters, were significant causes of loss of life, human suffering, loss of income, and property damage. Furthermore, because disasters often disrupt the normal functioning of governments and communities and adversely affect individuals and families with great severity, special measures designed to assist the efforts of the affected States in expediting the rendering of aid, assistance, and emergency services, and the reconstruction and rehabilitation of devastated areas, were necessary. As a result, Congress passed the Disaster Mitigation Act of 2000 (DMA 2000), or Public Law 106-390, to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act. This provided an opportunity for States, Tribal governments, and local jurisdictions to apply for Federal assistance in carrying out their responsibilities to alleviate the suffering and damage which result from such disasters by:

a. revising and broadening the scope of existing disaster relief programs;

b. encouraging the development of comprehensive disaster preparedness and assistance plans, programs, capabilities, and organizations by the States, local governments, and special districts;

c. achieving greater coordination and responsiveness of disaster preparedness and relief programs;

d. encouraging hazard mitigation measures to reduce losses from disasters, including development of land use and construction regulations; and

e. providing Federal assistance programs for both public and private losses sustained in disasters.

DMA 2000 allows State, Tribal, and local jurisdictions to obtain Federal assistance through pre-disaster hazard mitigation planning. As part of the requirements for receiving Federal grants for improving a locality's resistance to disasters, each locality must determine their existing vulnerabilities and develop a plan to reduce or eliminate these vulnerabilities and must have this plan approved by the appropriate State and Federal officials. Upon approval of this plan, each locality is eligible to receive various types of disaster-related assistance through the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Assistance (HMA) Program. This includes the Building Resilient Infrastructure and Communities (BRIC) program , Pre-Disaster Mitigation (PDM) program and Hazard Mitigation Grant Program (HMGP) which releases grant funds before and after a hazard event as well as the Flood Mitigation Assistance Grant (FMA) Program which appropriates funds for projects and planning that will reduce long-term risk of flood damage to structures insured under the National Flood Insurance Program (NFIP). Although the District is not an NFIP Flood Plain Manager, District personnel can work with local Flood Plain Managers/cities to improve flood control.

Both the BRIC and PDM program provide funds for hazard mitigation planning and the implementation for mitigation actions prior to a disaster event. These grants are funded and approved through FEMA on a competitive basis. The HMGP provides grants to implement long-term hazard mitigation measures after a major disaster declaration. These grants are funded by FEMA but are distributed by the State. In California, that agency is the Governor's Office of Emergency Services (Cal OES).

FEMA has developed guidance to assist communities in developing both the vulnerability assessments and plans to reduce or eliminate their vulnerabilities to disasters. These tools, coupled with techniques from the security and safety industries, were used to develop the District HMP. Additional information regarding the HMGP and PDM programs can be found in FEMA's "Hazard Mitigation Assistance Unified Guidance" document, located in FEMA's Hazard Mitigation Assistance portal (http://www.fema.gov/hazard-mitigation-assistance).

In order to be eligible for certain Federal disaster assistance and mitigation funding, the District is required to have a FEMA-approved HMP. As a result, the District developed this document to fulfill FEMA requirements and provide direction and guidance on implementing hazard mitigation actions on a hazard-level, probability, and cost-priority basis. The overall goal of the Plan is to reduce the potential for damage to critical assets from natural and man-made hazards. In addition, the Plan describes past and current

hazard mitigation activities and philosophies and outlines future mitigation goals and strategies.

FEMA Requirements

FEMA requires the HMP to meet certain requirements. First, the planning process must be open and public, and must allow the public to have an opportunity to comment during the drafting stage and prior to plan approval. Second, the process must allow other local jurisdictions to be involved in the planning process. Third, the Plan must incorporate, if appropriate, existing plans, studies, reports, and technical information.

FEMA expects that each HMP have the following information:

1. Documentation of the ***planning process*** used to develop the plan
2. A ***risk assessment*** that provides a factual basis for upgrades and recommendations
3. A ***description of the natural hazards*** that can affect the jurisdiction
4. A ***description of the jurisdiction's vulnerability*** to these natural hazards
5. A ***description of land usage***, and ***estimate of losses*** should a disaster occur
6. A ***mitigation strategy***
7. A plan ***maintenance process***
8. ***Documentation*** that the plan has been adopted by the jurisdiction's governing body
9. ***Review*** by the State Hazard Mitigation Officer

ES.2 Mitigation Definition

Mitigation is the ongoing effort to prevent or lessen future emergency or disaster incidents, and the impacts they might have on people, property, and the environment. Examples of mitigation activities include the following:

- Policies and Procedures
- Engineering and building policies;
- Hazard mitigation plans & teams;
- Technical guidance & assistance;
- Financial assistance;
- Hazard Identification;
- Risk Analysis;
- Evaluation;
- Research; and
- Education.

Mitigation decreases the demand for emergency response resources, reduces the principal causes of injuries and deaths, enables quicker lifesaving response and economic recovery because the community infrastructure remains intact, and it reduces the societal impacts of the emergency because it results in less disruption to the social environment. In essence, mitigation is the foundation of sustainable community development.

ES.3 Planning Process Summary

Hazard mitigation planning is a dynamic process built on realistic assessments of past and present information that enables the District to anticipate future hazards and provide mitigation strategies to address possible impacts and identified needs. The overall approach to the HMP included developing a baseline understanding of the natural and man-made hazards, determining ways to reduce those risks, and prioritizing mitigation action recommendations for implementation.

To complete these objectives, the District compiled a qualified team with various expertise, including Management, Engineering, Operations, and Maintenance departments as well as other agencies to participate on a Steering Committee to guide the development of the comprehensive HMP. Additionally, the Steering Committee solicited public involvement throughout the planning process, including inviting the public to a town hall meeting, allowing the public to comment during the drafting stage, and making the draft Plan available to allow the public to comment on its contents. Chapter 1 contains descriptions of the Planning Process, including information on the Steering Committee and public involvement.

ES.4 Hazard Analysis

The District Service Area is vulnerable to a wide range of natural and man-made hazards that threaten life and property. In order to identify the hazards that the District perceives as the largest threat, each member of the Steering Committee participated in the Hazard Identification Exercise during the first Steering Committee Meeting. The Steering Committee brainstormed potential hazards based on past incidents that have impacted the service area and information incorporated from other studies. Each identified hazard was then qualitatively ranked based upon hazard probability/frequency, consequence/severity, and the District's overall vulnerability using an interactive model. Section 3.2 Hazard Identification contains detailed information regarding the hazard ranking. Table ES.1 provides a summary of the hazard ranking.

Table ES.1: Hazard Ranking Summary

Hazard Rank	Score
High	
Wildfire	48
Earthquake	30
Moderately High	
Moderate	
Severe Storm/Flood	24
Terrorism/ Adversarial Events	24
Dam/Reservoir Failure	20
Disease Outbreak	18
Moderately Low	
Hazardous Material Release/Pipeline Failure	12
Drought	9
Low	
Power Failure	3

Asset Inventory and Loss Estimates

In addition to the hazard profiles, the Risk Assessment contains a detailed asset inventory that lists the District's assets, such as buildings, pump stations, dams, and reservoirs. This asset inventory was used in the vulnerability assessment to estimate potential losses for each hazard. The Steering Committee reviewed each hazard and assigned a potential percentage of damage expected. This also included loss of function values for water service. Section 3.13 Loss Estimates, includes a detailed breakdown of the vulnerability assessment calculations.

Table ES.2: Loss Estimate Summary

Hazard	Total Losses
Earthquake	$383,748,000
Wildfire	$122,253,000
Dam/ Reservoir Failure	$82,730,000
Terrorism/ Adversarial Events	$55,920,000
Hazardous Material Release/ Pipeline Failure	$30,632,000
Severe Storm/ Flood	$17,764,000
Drought	$32,000
Power Failure	$32,000

Note: A total value is not included since it is not expected for all hazards to occur simultaneously.
Note: Values rounded to the nearest thousand

ES.5 Mitigation Strategies and Implementation Plan

Plan Goals and Objectives

As part of the development process, Plan goals and objectives were revalidated to provide a framework for mitigating hazards and proposing potential mitigation actions. The goals were developed by the Steering Committee and are consistent with the California State Hazard Mitigation Plan and San Diego Multi-Jurisdictional Hazard Mitigation Plan. The District's overall Plan goals are to:

1. Protect Life and Property
2. Promote Public Awareness and Outreach
3. Preserve the Environment
4. Encourage Regional, Inter-Agency Involvement with Hazard Mitigation
5. Increase the Capacity Emergency Operations Functionality

In addition to the overall Plan goals, individual objectives were developed which support the overall Plan goals and translate more easily into mitigation actions. Section 4.1 Mitigation Goals and Objectives contains the full list of the Plan goals and objectives.

Mitigation Strategies

Mitigation strategies are administrative and/or engineering project recommendations to reduce the vulnerability to the identified hazards. The Steering Committee identified specific mitigation actions to reduce the impact or likelihood of the hazards that reflected the Plan goals and objectives.

Implementation Plan

Following the identification of mitigation actions, a simplified Benefit-Cost Review was applied in order to prioritize the mitigation action for implementation. The priority for implementing mitigation actions depend upon the overall cost effectiveness of the action, when considering monetary and non-monetary costs and benefits associated with each action. Additionally, the following questions were considered when developing the Benefit-Cost Review:

- How many people will benefit from the action?
- How large an area is impacted?
- How critical are the facilities that benefit from the action?

- Environmentally, does it make sense?

The Benefit-Cost Review yielded a relative priority ranking (High, Medium, or Low) for each mitigation action. Each ranking is defined as follows.

- High: Benefits are perceived to exceed costs without further study or evaluations; or the action is critical.
- Medium: Benefits are perceived to exceed costs but may require further study or evaluation prior to implementation.
- Low: Benefits and costs require evaluation prior to implementation.

Mitigation actions identified as high priority are typically implemented before lower ranked actions. Results from the Benefit-Cost Review are located in Chapter 4.4 Prioritization of Mitigation Recommendations. The Steering Committee considered responsible departments, funding resources, and estimated implementation timeframe when developing the implementation plan.

Chapter 4, Mitigation Strategies, contains additional information regarding the mitigation strategies and implementation plan. Table ES.3 provides a summary of each mitigation action, including the hazard(s) mitigated, responsible agency/department, and relative priority rank taken from the Benefit-Cost Review.

Table ES.3: Mitigation Action Summary

Action ID	Mitigation Action	Hazards Mitigated	Responsible Agency/Department	Priority
2023.HMP.01	Develop a Business Continuity Plan, utilizing the hazard profile information from the Hazard Mitigation Plan, to enhance economic resiliency and water service capabilities for sensitive populations following a hazard event.	All-Hazard	Prevention	Medium
2023.HMP.02	Develop secondary emergency entrance points for critical facilities to allow better access for first responders; improving emergency management.	Wildfire	Property Protection\ Emergency Services	High
2023.HMP.03	Conduct a seismic assessment and implement structural improvements at the Larrick Reservoir accordingly.	Earthquake	Property Protection/ Structural Project	Medium
2023.HMP.04	Evaluate hazard vulnerability and implement structural improvement projects as necessary for district facilities. This action should also include considerations for business network system protection.	Earthquake\ Flooding\ Wildfire\ Dam Failure	Property Protection\ Structural Project	Medium
2023.HMP.05	Relocate Business Network Systems equipment to mitigate identified hazards.	Earthquake\ Flooding\ Wildfire\ Dam Failure	Prevention\ Property Protection	Medium

Action ID	Mitigation Action	Hazards Mitigated	Responsible Agency/Department	Priority
2023.HMP.06	Conduct an evaluation of security features at all critical facilities for system adequacy and implement security upgrades (e.g., fencing, cameras, sensors, etc.), as necessary.	Terrorism\ Adversarial\ Human-Caused Events	Emergency Services\ Property Protection	High
2023.HMP.07	Expand presence in public forums, ensuring outreach to sensitive populations, to encourage participation in water conscious government rebates and other resources such as customer portal access to personally manage water access.	Drought	Public Education & Awareness	Medium
2023.HMP.08	Implement notification drills in accordance with Process Safety Management requirements.	HazMat\ Gas	Emergency Services	Medium
2023.HMP.09	Review and update the District's environmental policies to identify resources for natural system information and enhance environmental considerations for new projects.	All-Hazard	Natural Resource Protection	Low
2023.HMP.10	Improve mutual aid agreement with the fire department to prioritize the protection of the water filtration plant to improve resiliency of water services for fire protection.	Wildfire	Emergency Services\ Natural Resource Protection	High
2023.HMP.11	Replace the backup generator for the administration building/corporate yard. Ensure new generator(s) meets increasing power demands and regulatory requirements.	Power Failure	Emergency Services\ Natural Resource Protection	Medium

Action ID	Mitigation Action	Hazards Mitigated	Responsible Agency/Department	Priority
2023.HMP.12	Enhance backup power capability for business network system.	Power Failure	Emergency Services	Medium

ES.6 Monitoring, Evaluating, and Updating the Plan

The HMP is a living document that reflects ongoing hazard mitigation activities and requires monitoring, evaluating, and updating to ensure mitigation actions are implemented. To facilitate the Hazard Mitigation Planning process and adhere to regulatory requirements, the Plan will be reviewed annually, and any revisions will be incorporated into the five-year update. In addition, public involvement will be requested when applicable. Chapter 5, Plan Maintenance, outlines the update requirements and planning mechanisms the District has in place for ongoing hazard mitigation.

1 PLANNING PROCESS

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1.1 Narrative Description of the Planning Process

§201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and non-profit interests to be involved in the planning process; and

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

§201.6(c)(1): [The plan **shall** document] 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.

Hazard mitigation planning is a dynamic process built on realistic assessments of past and present information that engages Santa Fe Irrigation District (District) personnel to anticipate future hazards and develop meaningful strategies to address possible impacts and identified needs. The hazard mitigation planning process involves the following tasks:



- Organizing resources
- Assessing risks
- Developing mitigation strategies, goals, and priorities
- Adopting a plan
- Implementing the plan
- Monitoring progress
- Revising the plan as necessary

The overall approach to the Hazard Mitigation Plan (HMP) update included building off the baseline understanding of hazards as defined in the 2018 HMP, determining ways to

reduce those risks, and prioritizing those recommendations for implementation. The following task descriptions provide a detailed narrative of the overall project progression.

Organize Resources

Identify Stakeholders and Compile Steering Committee

Rocky Hughes, Safety Coordinator for the District, invited and coordinated participation for a Steering Committee from District personnel, other water districts, neighboring City Government representatives, and the local Fire Department. The Steering Committee was responsible for providing essential insight into past hazard events, current hazard vulnerability (including specific locations), critical assets, and possible mitigation projects. The invitations were sent out via email. The following groups were invited to participate in the plan development:

- Santa Fe Irrigation District (Operations, Maintenance, Safety, Administrative, etc.)
- San Dieguito Water District
- City of Solana Beach
- City of San Diego
- Rancho Santa Fe Fire Protection District
- Olivenhain Municipal Water District
- San Diego County Emergency Services
- Rancho Santa Fe Association
- San Diego State Policy Institute
- Solano Beach Chamber of Commerce
- Rancho Santa Fe School District - R. Rodger Rowe Elementary School
- Horizon Christian Fellowship

The District was able to gather valuable input from local agencies involved in hazard mitigation and agencies that have the authority to regulate development by having members of SFID Operations, Maintenance, Safety, and Administrative departments participate in the Steering Committee meetings. Additionally, the neighboring city of Solana Beach was invited to participate in the planning process and members of their planning department who represented the City were crucial to the process, as they additionally have the ability to regulate development. To understand the concerns and recommendations of vulnerable populations, the District granted an opportunity for

representatives of the Rancho Santa Fe School District and Horizon Christian Fellowship to participate in the plan process and provide input on the District's mitigation actions. The District identified Rancho Santa Fe School District and Horizon Christian Fellowship as the groups that were best suited to garner participation for vulnerable populations due to their continuous work with various members of the community including the very young, and those who might request access to special resources/assistance through their place of worship. Both of these groups have a long-standing history of helping vulnerable populations throughout the District's service area. Additionally, The District's Safety Director went in-person to Rancho Santa Fe School District's R. Rodger Rowe Elementary School and Horizon Christian Fellowship to hand-deliver copies of the Draft Plan to gather input and invite recommendations from representatives of the vulnerable populations they serve, mainly the young and those who struggle with English proficiency. However, while attempts were made to gather comments from representatives of these groups to gain insight as to how they felt the District would be able to reduce the impact of hazard events based on their stakeholder's specific needs, the District did not receive any comments or recommendations from them. Targeted outreach to the District's stakeholders is documented in Appendix D.

Public Process

The Disaster Mitigation Act of 2000 requires an "Open and Public Process" for updating the HMP. This process requires, at a minimum, the public be allowed to comment on the Plan during the draft phase and prior to adoption. In addition to soliciting public involvement in the Steering Committee, the District conducted a public meeting at the District's Administrative Building to allow the public to comment during the drafting stage of the report prior to submittal of the plan to Cal OES and FEMA for review. The public meeting was held on May 1, 2023.

Risk Assessment

Identify Hazards

This task was designed to identify all the natural and man-made hazards that might affect the District and then narrow the list to the hazards that are most likely to occur. The hazards included natural, technical, and human-caused events, with an emphasis on the effect of natural disasters on the District's critical assets. In order to compile the list, the Steering Committee built upon the list of hazards identified in the 2018 HMP and then continued to research newspapers, historical records, and websites to determine any additional hazards. In addition, the Steering Committee reviewed a list of hazards that have affected the District in the past with specific information regarding frequency, magnitude, and associated consequences. A hazard identification exercise was conducted during the first Steering Committee Meeting to identify and evaluate each selected hazard. The following hazards were included in the HMP:

- Wildfire
- Earthquake
- Severe Storm/Flood
- Terrorism/Adversarial Events
- Dam/Reservoir Failure
- Disease Outbreak
- Hazardous Material Release/Pipeline Failure
- Drought
- Power Failure

This list does not include all the hazards discussed during the Hazard Identification Workshop. Hazards not thought to pose significant risk to the District were not included in this plan. In addition, some items were captured as sub-items of the hazards listed above. For example, climate change is discussed with hazards where the impact of changes in weather patterns could act as a catalyst for those scenarios. (i.e., Flooding, Wildfire, and Drought).

Profile Hazard Events

The hazard event profiles consist of either a map indicating the area impacted by each hazard or an important piece of data regarding the characteristics of hazard events within

the service area. To develop detailed hazard profiles, the Steering Committee researched and reviewed relevant open-source hazard studies and mapping projects. In addition, the District supplied any hazard studies that had been developed specifically for the District. This task determined the hazard magnitude, frequency, and location characteristics (predicted ground acceleration values, fault locations, flood plains, etc.) that were used as the design-basis for the loss estimates and hazard ranking.

Asset Inventory

The purpose of this task was to determine the quantity of District assets that lie in the different hazard areas and what portion of the District this represents. The asset inventory was completed by reviewing the list of District assets from the 2018 HMP during a Steering Committee meeting and including any new or recently acquired facilities. This completed asset inventory enabled the Steering Committee to estimate losses resulting from hazard events and to determine where resources should be allocated to address mitigation issues.

Loss Estimates

The Project Team developed loss assessment tables for each specific hazard which identify potential damage within the City, critical infrastructure, and buildings. This task was crucial in determining which assets are subject to the greatest potential damage and which hazard event is likely to produce the greatest potential losses. The conclusion of this task precipitated a comprehensive loss estimate (vulnerability assessment) for each identified hazard for each specific asset in terms of damages, economic loss, and the associated consequences.

Mitigation Strategy Development

Development Mitigation Goals and Objectives

The Steering Committee documented the mitigation features and resources the District currently has in place. These mitigation features provided a framework to determine where practical improvements could be made and where sufficient improvements would be prohibitive due to cost, schedule, or impracticality of implementation.

For each of the hazard events, mitigation goals and objectives were developed with the intention of reducing or eliminating the potential hazard impacts. The mitigation goals and objectives were developed at a Steering Committee meeting to provide the basis for determining the associated mitigation projects.

Identify and Prioritize Mitigation Actions

Mitigation strategies are administrative and/or engineering project recommendations to reduce the vulnerability to the identified hazards. It was imperative to have critical District staff and representatives from local agencies involved in this phase of the Plan in order to develop strategies and projects that will mitigate hazards cost-effectively, as well as ensure consistency with the District's long-term mitigation goals and capital improvements. At a Steering Committee meeting, a team-based approach was utilized to brainstorm mitigation projects based on the identified hazards and associated loss estimates. The evaluation and prioritization of the mitigation actions produced a list of recommended mitigation actions to incorporate into the mitigation HMP. The Steering Committee also conducted a Benefit-Cost Review for each proposed mitigation action to determine the relative priority level of the recommendation.

Implementation & Monitoring

Prepare an Implementation Strategy

The Steering Committee developed an action plan to detail how the mitigation recommendations will be prioritized, implemented, and administered by the District. Throughout the HMP update process, the Steering Committee developed a mitigation project implementation strategy (including identifying responsible departments, funding resources, and estimated implementation timeframe).

1.2 Steering Committee / Public Involvement



While District personnel and Risk Management Professionals had lead responsibility for the development of the District's HMP, neighboring communities, agencies, and other interested parties were invited to participate on the Steering Committee to review the HMP during each phase of the document development. Each participating member of the Steering Committee had the opportunity to impact all aspects of the planning process. In addition, District and Risk Management Professionals personnel assessed community support through active community involvement, engaging the public through online review opportunities and a public meeting.

§201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and non-profit interests to be involved in the planning process; and

§201.6(c)(1): [The plan **shall** document] 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.

1.2.1 Steering Committee Participant Solicitation

The District solicited participation in the HMP Steering Committee by contacting both internal and external stakeholders. Internal stakeholders included members of the various District departments. External stakeholders were comprised of representatives from local agencies.

1.2.2 Steering Committee Participants

The District brought together personnel from Management, Engineering, Operations, and Maintenance departments as well as other agencies to ensure the Steering Committee included members with a variety of backgrounds. Additionally, the District compiled historical hazard data, provided relevant planning documents for incorporation into the HMP and coordinated participation with the public. Each draft chapter was reviewed by members of the Steering Committee and specific comments were incorporated into the Plan. The multidisciplinary Steering Committee enabled the District to work together and incorporate each individual's expertise which provided for a more comprehensive HMP.

The HMP was developed with assistance and advice from participants within the District and neighboring cities/agencies. Table 1.1 provides a list of the Steering Committee Participants. Individuals are listed in alphabetical order by last name.

Table 1.1: Steering Committee Participants

Name	Affiliation	Title	SCM1	SCM2	SCM3	SCM4
Bray, Ryan	Risk Management Professionals	Technical Consultant	X	X	X	X
Bailey, Tim	Santa Fe Irrigation District	Treatment Manager	X		X	X
Bozir, Chris	Santa Fe Irrigation District	Operations Supervisor	X			
Dodd, Hanna	Santa Fe Irrigation District	Senior Engineer				X
Harris, David	Santa Fe Irrigation District	Maintenance Supervisor	X	X	X	
Hughes, Rocky	Santa Fe Irrigation District	Safety Coordinator	X	X	X	X
Isabell, Nicholas	Santa Fe Irrigation District	Distribution Operations Supervisor	X			
Kogan, Roman	Santa Fe Irrigation District	Information Technology Administrator	X	X		X
McQuead, Dave	Rancho Santa Fe Fire Department	Fire Chief		X		
Olson, Christina	Santa Fe Irrigation District	Senior Engineer		X		
Penunuri, Teresa	Santa Fe Irrigation District	Public Communications	X	X		
Potter, Marissa	Santa Fe Irrigation District	Engineering Manager		X		
Preciado, Guillermo	Santa Fe Irrigation District	Preventive Maintenance Coordinator	X		X	X
Reuther, Matt	Santa Dieguito Water District	Engineer	X			
Schuette, Tim	Olivenhain Municipal Water District	Safety and Risk Compliance	X	X		
Slattery, Brian	Rancho Santa Fe Fire Department	Deputy Chief		X		

The Steering Committee met four times during the course of the project to discuss project progress and obtain valuable input and information for documenting the HMP. The meetings are detailed over the subsequent pages. Appendix D – Public Participation contains copies of the presentations used at each meeting, specific meeting handouts, and sign in sheets.

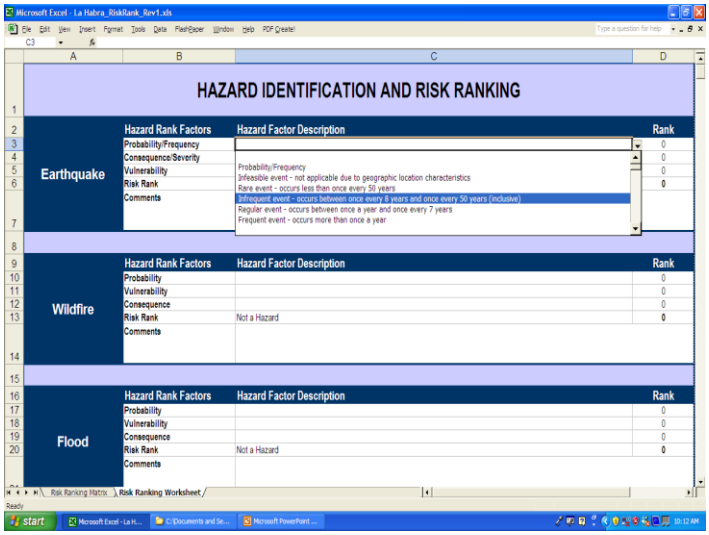
1.2.3 Steering Committee Meeting Descriptions

Steering Committee Meeting #1 – Project Initiation, Hazard Identification, and Information Collection

August 1, 2022

During the Project Initiation, Hazard Identification, and Information Collection Meeting, Risk Management Professionals provided a project overview that detailed the objectives and scope of the Plan update. After a review of the project schedule and key tasks, the Steering Committee participant's areas of expertise, resultant member responsibilities, and the community meeting process was discussed.

Example Hazard Ranking Worksheet



The Steering Committee Meeting also served as a mechanism to determine the hazards the Plan would profile in detail. To effectively characterize the District's risk and vulnerability, Risk Management Professionals facilitated a discussion of the historical hazards with the Steering Committee during this meeting. This meeting also served as a forum to discuss any background information and obtain asset inventory specifics.

The Steering Committee determined the initial hazard profile ranking through a facilitated exercise using an automated interactive spreadsheet that asked specific questions regarding potential hazards and then assigned a relative value to each potential hazard, accordingly, including numerical rankings (1-5) for the following criteria:

- **Consequence/Severity** – How widespread is the impact area?

- **Secondary Effects** – Could the event trigger another event and separate response?
- **Probability/Frequency** – Historical view of how often this type of event occurs locally and projected recurrence intervals.
- **Warning/Onset** – Advance warning of the event, or none.
- **Duration** – Length of elapsed time where response resources are active.
- **Recovery** – Length of time until lives and property return to normal.

Chapter 3 outlines the methodology used for hazard rankings. All Steering Committee participants were requested to provide existing plans and technical studies, GIS data, and identify existing mitigation features as part of a detailed information request.

Steering Committee Meeting #2 –Goals and Objectives Identification

September 13, 2022

The Plan's mitigation goals and objectives were updated with the intention of reducing or eliminating the potential hazard impacts, which also provided the bases for determining the associated mitigation projections. The Steering Committee reviewed the goals and objects from the 2018 HMP, the 2021 California State Multi-Hazard Mitigation Plan, and the 2023 San Diego County Hazard Mitigation Plan (in the draft phase) as a baseline for determining the District's current mitigation Goals and Objectives. The Steering Committee ensured the updated plan Goals and Objectives were in-line with state and county goals while adjusting goals to align with current trends within the District.

Steering Committee Meeting #3 – Asset Inventory Review and Vulnerability Assessment

November 14, 2022

During the third Steering Committee meeting, the asset inventory was reviewed for completeness and then used by the Steering Committee to develop loss estimates for all the identified hazard scenarios. The asset inventory included locations and specifications for general buildings: well sites, administration buildings, reservoirs, piping, etc. The hazard probabilities and recurrence intervals were applied to the District assets to determine which assets were subject to the greatest potential damages and which hazard events had the potential to produce the greatest losses. The result of this meeting was a separate hazard ranking based on the perceived potential damage to structures. The hazard ranking created during this meeting was significantly different from the hazard ranking developed during the first meeting. However, rather than interpreting the

differences as contradictions, the Steering Committee gained a better understanding of the perceived hazards through the differences. For instance, although Wildfire was identified in the first meeting as the hazard of highest vulnerability, Earthquake hazards presented the highest vulnerability to assets. This demonstrated the difference in community impact and hazards to water service.

Steering Committee Meeting #4 – Mitigation Actions and Benefit-Cost Review

January 15, 2023

The Hazard Ranking and Mitigation Goals and Objectives from Steering Committee Meeting #1 and #2 were reviewed and validated with the Steering Committee. This meeting facilitated the identification of mitigation actions. Mitigation actions are projects that will reduce the impact of identified hazards. During the meeting, the Steering Committee participants brainstormed possible actions and projects to mitigate the effects of the identified hazards based on the hazard profiles and Plan goals. As the mitigation actions were identified, the Steering Committee discussed the mitigation action implementation plan according to the following characteristics:

- Mitigation Action Category – Prevention, Property Protection, Public Education and Awareness Natural Resource Protection, Emergency Services, and Structural Projects
- Corresponding Goals and Objectives
- Responsible Department – Construction Department, Engineering, Maintenance and Grounds, IT Department, etc.
- Resources – General Fund, Grant Programs, Staff Time, Capital Improvements etc.
- Implementation Timeframe – Ongoing, Short-Term (within two years), Medium-term (between three and ten years), and Long-Term (greater than ten years)

Additionally, the identified mitigation actions from Steering Committee Meeting #2 were reviewed and validated with the Steering Committee. The Steering Committee then performed a high-level Benefit-Cost Review on each of the identified mitigation actions. The review consisted of identifying all benefits and costs associated with implementing a mitigation action. Typical benefits include:

- Avoided physical damages (e.g., to buildings, infrastructure, and equipment)
- Avoided Loss of Function Costs (e.g., loss of utilities and lifeline)

- Avoided Causalities
- Avoided emergency management costs (e.g., emergency operations center costs, evacuations/rescue costs, and other management costs)

Example FEMA Benefit-Cost Analysis

Actions	Benefits (Pros)	Costs (Cons)	Priority
Floodproof 10 businesses in the downtown area	- Avoidance of 1 loss of life every 20 years (casualties reduced by half) - Saving of $90,000 in private damages and $5,000 in public cost - Loss of use of 10 downtown businesses completely eliminated - Community's problem of business interruption solved - Federal grants like FMA and PDM can be applied for to implement the proposed floodproofing - Will help improve CRS rating in the long term (so entire community's flood insurance premium will be reduced) - More than half the members of the City Council are opposed to buy-outs; it might be easier to get their support for an alternative to buy-outs	- Floodproofing cost = $10,000 X 10 = $100,000 - Need at least 3 people to administer (after obtaining technical assistance from the State) - Need a year to implement	High (Priority no. 1)
Build safe rooms for a neighborhood of 50 homes without basements	- Avoidance of 5 lives lost every 20 years (casualties reduced by half) - Public and political support for mitigating this hazard exists (due to regular recurrence of tornadoes)	- City will share 50% of the cost per existing home = $2,000 X 50 = $100,000 - Administrative cost per home = $1,000 X 50 = $50,000 - Need 3 years to complete - Tornadoes are unpredictable; they may never strike this exact area again	Medium (Priority no. 2)
Broadcast educational video on local channel on hazard mitigation	- Local channel might be willing to broadcast free of cost - Publicity would spread awareness about mitigation methods as well as what to do in an emergency	- Cost of preparing video = $5,000 - Only 5% of population might notice the broadcast - Only 5% of that 5% might actually consider acting on individual mitigation methods	Low (Priority no. 3)

Once the benefits and costs were calculated, a relative priority was assigned for each action based upon the evaluation.

1.2.4 Public Meetings and Outreach

The District actively solicited public involvement for the Plan update through advertisements and posts on the District website. Hardcopy flyers were displayed on the message board located in the lobby of the District's administration building to invite the public to attend a workshop aimed to provide the public with insight into the planning process and provide comment on the update. No members of the public attended the Public Meeting held on May 1, 2023.

Members of the public were also able to provide direct input for HMP development and attend a public meeting in order to review the HMP during the drafting stage and provide comments. No comments were received through the website or at the public meeting.

Although no comments were received during the update of the HMP, the Plan will be posted on the District website allowing the public to provide comments at any time moving forward. Any comments will be provided to the Steering Committee and the Plan will be updated as appropriate.

1.3 Review and Incorporation of Existing Plans

§201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

While updating the District's HMP, the Steering Committee reviewed existing plans (detailed below) and incorporated relevant information into the planning efforts.

2021 State of California Multi-Hazard Mitigation Plan

The State of California Multi-Hazard Mitigation Plan was reviewed to ensure consistency between the State and District plan with respect to identified hazards and vulnerability, goals and objectives, and mitigation actions. The State goals served as the basis for developing the goals at the District level. District goals and objectives are outlined in Chapter 4.

San Diego County 2023 Local Hazard Mitigation Plan

Like the California Multi-Hazard Mitigation Plan, the County HMP was reviewed to ensure consistency between the County and District Plan. County Plan goals served as a basis for updating the District's goals (along with the State) in addition to hazard profile information found in Chapter 3.

2018 Hazard Mitigation Plan

The District's 2010 Hazard Mitigation Plan was crucial in comparing previous mitigation ideas and attitudes to the District's current needs and concerns. The Steering Committee referred to this plan constantly throughout the updating process. The Plan provides insight into hazard ranking, hazard history, previously proposed mitigation projects, etc.

2020 Urban Water Management Plan

The District's Urban Water Management Plan is updated every five years to monitor water supply issues and mitigate drought situations. As part of the HMP update, the district will review the Urban Water Management Plan and incorporate data into the drought hazard profile in the HMP.

2018 Asset Management Program

The District's Asset Management Plan was utilized in the development of a complete asset inventory. In addition to contributing to a complete list of assets, the Plan provided realistic

estimates of replacement values for critical assets. Loss estimates were created based, in part, on information provided in the Asset Management Plan. For more details, please see the Loss Estimates section in Chapter 3.

2020 California Adaptation Planning Guide

FEMA, Cal OES, and the California Natural Resources Agency developed the California Adaptation Planning Guide to assist municipalities in recognizing local climate change and to provide guidance addressing potential vulnerabilities. The information was used to develop potential hazards and to provide background information that allowed the Steering Committee to make educated decisions regarding mitigation actions designed to alleviate the effects of climate change.

Emergency Operations Plan

The District periodically updates the Emergency Operations Plan, which includes specific response procedures for earthquake, flooding, reservoir failure, fire, etc. In order to ensure the plan includes an appropriate response, the District will incorporate the risk assessment element of the HMP into the Emergency Operations Plan update. In addition, many of the mitigation actions identified by the District are geared toward emergency response and the Emergency Operations Plan will be updated to reflect the implemented mitigation actions from the Hazard Mitigation Plan.

2 PLANNING AREA PROFILE

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2.1 Service Area Description

The Santa Fe Irrigation District (District), located in northern San Diego County California, was formed on January 26, 1923 under the California Irrigation District Act. The District serves the City of Solana Beach and the communities of Rancho Santa Fe and Fairbanks Ranch, located in unincorporated areas of the County. The District has a total service area of approximately 16 square miles and provides retail water supply to almost 20,000 customers, of which approximately two-thirds are in the City of Solana Beach area.

The District is supplied by four water sources: imported treated water, imported raw water, local surface water from Lake Hodges, and recycled water. Potable water service is provided to meet domestic, commercial, outdoor irrigation, and agricultural demands. The District joined the San Diego County Water Authority in 1948 to acquire the right to purchase and distribute imported water throughout its service area. All imported raw and treated water is purchased from the Water Authority. Recycled water is used for irrigation of golf courses, parks, and other landscape irrigation demands.

A five-member Board of Directors governs the District. Each director serves an area of equivalent population size within the District's boundaries and is elected to office every four years. As a member agency of the Water Authority, the District also has a board member appointed to the Water Authority's Board of Directors.

The climate of the District's service area is characterized as a Mediterranean coastal with mild, warm, and dry summers while winters are mild and cool. According to the National Oceanic and Atmospheric Association (NOAA) average highs for the region peak in the mid 70's °F, while its mild winters temperatures average in the mid 50's. The region is subject to wide variations in annual precipitation, ranging from a low of 3.4 inches to a high of 20.9 inches in the last half century. The average annual rainfall is 10.25 inches.

The map on the following page provides an overview of the District's service area.

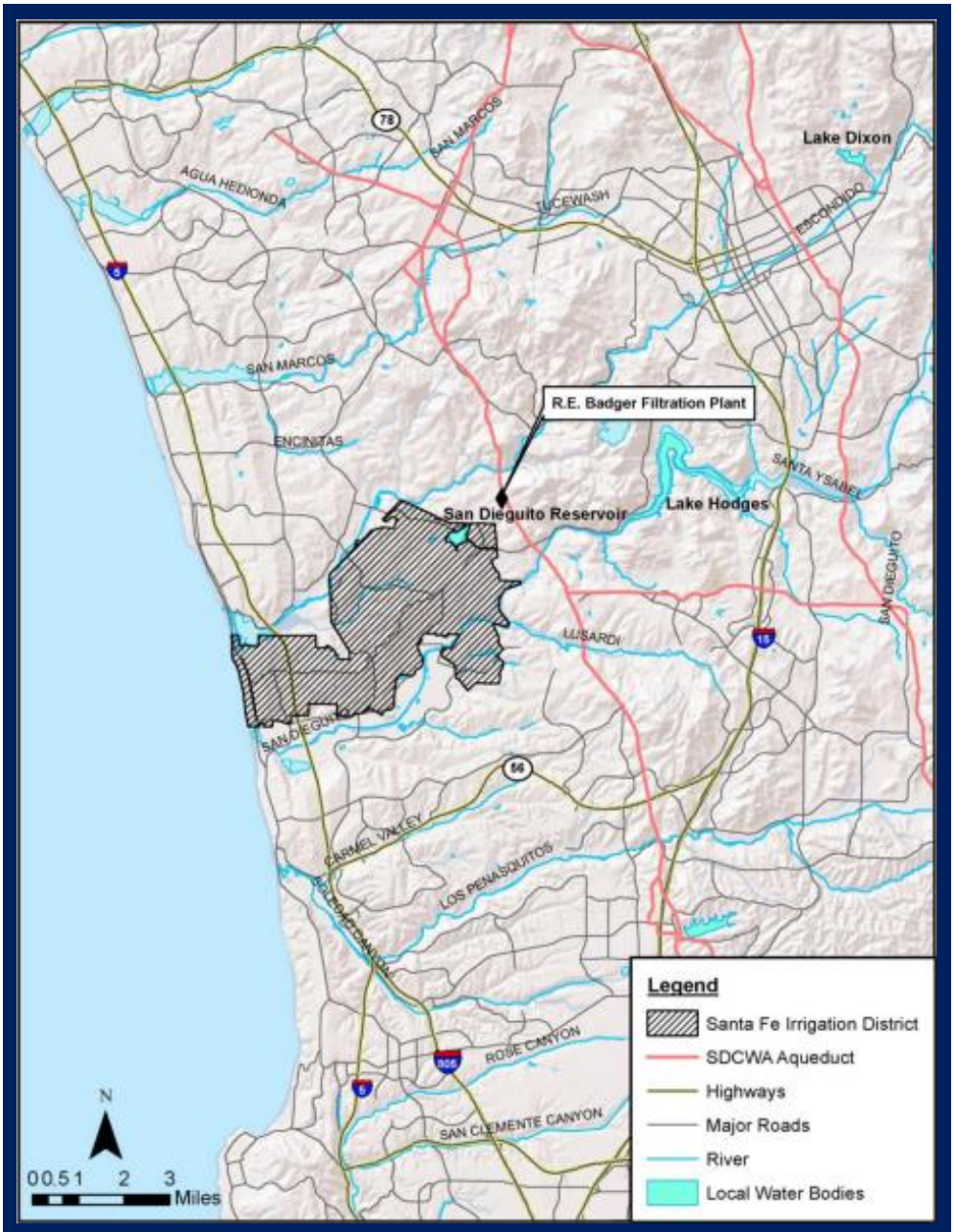


Figure2.1: Santa Fe Irrigation District Overview Map

2.2 Development Trends

§201.6(c)(2)(ii)(C): [The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

The District's service area is characterized by low urban development, including large, estate properties. Approximately 82% of the District's water demand is for residential uses. Of the residential acres currently developed, approximately two-thirds are low-density single-family parcels. Many of these low-density residential properties have extensive irrigated landscapes, and the District estimates that 80% of its service area water demands are for outdoor usage.

Commercial water use, though much smaller, is similar to residential use. The primary uses of commercial water are landscape irrigation for storefront areas, comprising approximately 4% of the District's water deliveries. Within the District's service area, agricultural water use comprises less than 1% of total demands and has declined over the past decade. The following table provides an overview of the recent water demands broken down by sector and is taken from the 2020 Urban Water Management Plan (UWMP).

Table 2.1: Demands for Potable and Water (2020)

Use Type	Volume
Residential	7,294
Commercial	324
Institutional/Governmental	129
Landscape	522
Agricultural	110
Sales/Transfers/Exchanges to other agencies	91
Water Losses	348
Other	12
Total	**8,830**

Note: Units are in acre-feet.

As a result of conservation efforts, the District's potable water demands have dropped substantially over the past several years. Additionally, water deliveries have recently

reduced due to mandatory water use prohibitions. The following table provides future projections for water demand and is also taken from the 2020 UWMP.

Table 2.2: Projected Potable Water Demands – 2025-2045

Use Type	Projected Water Use				
	2025	2030	2035	2040	2045
Single Family	6,546	6,983	7,117	7,213	7,517
Multi-Family	567	605	617	625	652
Commercial	447	477	486	492	513
Institutional/Government	86	91	93	94	98
Landscape	514	548	558	566	590
Agriculture	110	110	110	110	110
Transfer to Other Agencies	68	73	74	75	79
Other	34	36	37	37	39
Water Losses	534	570	580	588	578
Total	**8,906**	**9,494**	**9,673**	**9,802**	**10,176**

Note: Units are in acre-feet.

Limited growth in population and water demands are expected by the District over the next 20 years, so no major projects are currently planned to accommodate growth. The District currently has no internal projects that will effect the District's water supply and ability to supply water to the service area. For a summary of external projects that may have an effect on the District' water supply, refer to Section 2.2.1.

2.2.1 External Projects

Recent developments and planned projects concerning the reduced usage of the Colorado River may have a possible effect on the District's water supply and ability to meet water demands. The District currently relies on the San Diego County Water Authority as a means to purchase water when Lake Hodges has insufficient means to meet water demands. San Diego County Water Authority imports water from the Colorado River, as part of the Quantification Settlement Agreement established in 2003, when drought conditions limit water supply. Imposed water use reduction from the Colorado River would affect the District's ability to obtain water when local supply is low. Effects of reduced water supply and drought hazards on the District are discussed in Chapter 3 of the 2023 Hazard Mitigation Plan.

2.3 Population

The District is relatively built out and the population is expected to only increase by 6% (average of 42 additional people each year) between 2020 and 2045. Compared to other areas in southern California that are experiencing population booms, the relatively low growth rate of the District's service area helps ensure that the District will be able to meet projected demands. The following table provides the District's projected service area population growth to 2045.

Table 2.3: Current and Projected Population

	2020	2025	2030	2035	2040	2045
Service Area Population	19,439	19,924	20,121	20,288	20,340	20,477

Source: SANDAG Regional Growth Forecast Series 14, Version 17

2.4 Demographics

When considering the overall impacts of hazard scenarios on the community, the District is cognizant that some portions of the service area might be impacted to a greater extent than others. A better understanding of how disasters impact the service area, even disproportionately, can help guide resiliency efforts to better serve the entire service area. Although other factors may be present, this section will focus on who the vulnerable populations in the District's service are, and how low economic status and age can exacerbate the impacts of a hazard scenario. At the time of this report, economic status and age are the clearest indicators of increased/reduced suffering during a disaster situation based on the information available. It should also be noted that the onus for public safety rests with the local governments within the service area. The District will focus on how the following elements impact access to water service.

Economic Status

The July 2017 issue of the Supplemental Research Bulletin published by the Substance Abuse and Mental Health Services Administration (SAMSA) states that disasters are experienced differently by people in poverty, even at the preparedness stage. The Supplemental Research Bulletin also notes, according to a 2004 report by Fothergill and Peek, impoverished people are likely to have less access to education, and are therefore,

typically not able to be as prepared for disasters increasing their vulnerability to disasters addressed in the District's Hazard Mitigation Plan. It is also speculated that preparedness actions may be costly, and possibly too expensive, for people with low incomes to be able to implement. Furthermore, the poor generally are assumed to have to live in homes with lower quality construction which are more susceptible to the impacts of disasters. The bulletin also cites a 1983 report (Rossi, Wright, Weber-Burdin, & Pereira) which found higher rates of injury during natural disasters for lower income households. This also may be tied to the high cost of preparedness measures leaving the poor at a higher rate of vulnerability. World Bank and GFDRR report authors note that people in poverty around the world are more likely than others to live in areas at high risk of disaster impacts. They explain that this may be the case because these more dangerous areas are less expensive, or simply more available, in parts of the world with limited space for housing (Hallegatte et al., 2017).

Age

According to a statement from the Red Cross, "new research has found that older adults are more vulnerable and experience more casualties after natural disasters compared to other age groups". While not universal, older adults are more likely to have a greater prevalence for chronic conditions, multi-morbidity, cognitive impairment, and medical concerns that other age groups. Generally, older adults are more likely to be dependent on assistive devises and caregivers, more likely to be isolated, more likely to have gaps in preparedness, and potentially be at higher risk for psychological distress. All of these factors increase the potential for injury during a disaster event. Youth can also be factor in determining the impacts of disasters on the service area; especially long-term. According to the Center for Disease Control and Prevention (CDC), children may experience anxiety, fear, sadness, sleep disruption, irritability, difficulty concentrating, and anger outburst following a disaster. Furthermore, the CDC states children under 8 years of age are at particular risk for long-term mental health issues after experiencing a disaster.

District Vulnerability

To estimate the impact of low income and population age on the District, Table 2.4 summarizes some of the applicable estimates provided by the 2021 United States Census regarding the economic status of the service area. The service area encompasses districts such as Solana Beach, Rancho Santa Fe and Fairbanks Ranch. The United States

Census does not include information for Rancho Santa Fe and Fairbanks Ranch since their total population is less than 5,000 people. Solana Beach census data will be used as an estimate to gauge percentiles of customers within the service area. Santa Fe Irrigation District reports Solana Beach as composing roughly 65% of the entire service area population.

Table 2.4: City of Solana Beach Demographic Estimates

Estimate Category	Census Estimates
Population (2021)	12,867
Persons under 5 years	4.8%
Person under 18 years	20.7%
Persons 65 years and over	21.7%
Households (2016 – 2020)	5,405
Persons per household (2016-2020)	2.46
Households with a computer (2016-2020)	99.4%
High School Graduate or higher, percent of persons aged 25 years+ (2016-2020)	96.0%
Bachelor's Degree or higher, precent of persons aged 25 years+ (2016-2020)	69.6%
Median Household Income (in 2020 dollars, 2016-2020)	$106,904
Per Capita income in past 12 months (in 2020 dollars, 2016-2020)	$67,623
Persons in poverty, percent	4.7

The data contained in Table 2.4 will be used as relative reference for the service area of District. It can be noted that the population information for Solana Beach reflects that 4.8% of the population is recorded as being under the age of 5. Additionally, 21.7% of the population is recorded as being over the age 65. While these percentages may produce a small percentile of the service are population, it can be assumed that this percentile of the service area will be heavily impacted by disasters when compared to the rest of the

population. It is also critical to note that 4.8% of the population of Solana Beach is currently at or below the poverty level. Since Solana Beach does not encompass the entirety of the District's service area and unaccounted areas within the service area would likely have a much lower poverty percentage, the District will conservatively recognize a poverty percentage of 3%.

While some of these statistics do not directly impact the District. Understanding the disparities within the communities that make up the service area can lead in the development of equitable resiliency goals for the District.

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3.1 Risk Assessment

The Risk Assessment consists of four steps: Hazard Identification, Hazard Profiling, Asset Inventory, and Loss Estimates. This chapter includes the Hazard Identification and Hazard Profiling steps to evaluate the hazards of primary concern to local decision-makers to provide a basis for loss estimates which is also included within this chapter. Additionally, the Risk Assessment provides a foundation for the evaluation of mitigation measures, included in Chapter 4 of this plan, which can help reduce the impacts of a potential hazard event.



Step 1: Identify Hazards

In this step, The Steering Committee identified the natural and man-made hazards that might affect the Santa Fe Irrigation District (District) and then narrowed the list to the hazards that are most likely to occur. These hazards included natural, technical, and human-caused events, with an emphasis on the effect of natural disasters on critical facilities (e.g., administration building, storage reservoirs, pump stations, plants, and water system components). The Steering Committee participated in a Hazard Identification Workshop during the first Steering Committee Meeting to identify and rank the potential hazards within the District.

Step 2: Hazard Profiling

The hazard profiles consist of either a map indicating the area impacted by each hazard or key information regarding the characteristics of hazard events within the service area. To develop detailed hazard profiles, relevant open-source hazard studies and mapping projects were reviewed and documented within this report. In addition, the District supplied local accounts of hazard events that included specific hazard and emergency information. This planning step also determined the magnitude, frequency, and location characteristics of relevant natural hazards (wildfire, fault locations, flood plains, etc.) that were utilized as the design-basis for the loss estimates.

Step 3: Inventory Assets

The purpose of this step was to determine the quantity of buildings and assets in District's service area that lie in the different hazard areas and what proportion of the District this represents. The asset inventory was completed utilizing spatial GIS asset locations and specifications for the following assets:

- Administration building
- Water Treatment Facilities
- Reservoirs
- Dams
- Pump Stations
- Wells
- Other water system components

The development of the comprehensive inventory facilitated the development of loss estimates for all hazard scenarios.

Step 4: Loss Estimates

The loss estimate step relied on detailed information regarding the hazard probability and maps that were completed as part of the hazard profiles. This information was utilized to apply the hazard probabilities and recurrence intervals to the assets and inventory (buildings and infrastructure) of the District. This step was critical in determining which assets were subject to the greatest potential damage and which hazard event was likely to produce the greatest potential losses.

The conclusion of this step precipitated a comprehensive loss estimate (vulnerability assessment) for each identified hazard for each specific asset in terms of damages, economic loss, and the associated consequences for the District.

3.2 Hazard Identification

§201.6(c)(2)(i): [The risk assessment **shall** include a] description of the type, location, and extent of all-natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

§201.6(c)(2)(ii): [The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in `paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.

§201.6(c)(2)(ii): [The risk assessment] **must** also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged floods.

§201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment **must** assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

The hazard identification and ranking were obtained primarily from a Hazard Identification Exercise completed during the initial Steering Committee meeting. Each hazard profile includes a summary of the Hazard Identification Exercise identified risk factors and overall rank for each hazard, in addition to the detailed hazard description, historical occurrences, and projected future probability, magnitude, and frequency.

Each member of the Steering Committee participated in the Hazard Identification Exercise to identify the potential hazards within the District's service area. The Hazard Identification Workshop was facilitated using an interactive spreadsheet program that asks specific questions on potential hazards and then rates them accordingly. These questions guide the Steering Committee in the correct facilitation and application of the program. Table 3.1 summarizes the Hazard Identification Workshop risk factors, lists the descriptions of each factor, provides the specific descriptor choices for each risk factor and description, and summarizes the risk ranking associated with each hazard:

Table 3.1: Hazard Identification Risk Factors

Risk Factor	Description	Descriptors	Value
Probability/ Frequency	Prediction of how often a hazard will occur in the future	Infeasible event - not applicable due to geographic location characteristics	0
		Rare event - occurs less than once every 50 years	1
		Infrequent event - occurs between once every 8 years and once every 50 years (inclusive)	2
		Regular event - occurs between once a year and once every 7 years	3
		Frequent event - occurs more than once a year	4
Consequence/ Severity	Physical Damage - structures and lifelines Economic Impact – loss of function for power, water, sanitation, roads, etc.	No damage	1
		Minor/slight damage to buildings and structures, no loss of lifelines	2
		Moderate building damage, minor loss of lifelines (less than 12 hours)	3
		Moderate building damage, lifeline loss (less than 24 hours)	4
		Extensive building damage, widespread loss of lifelines (water, gas, electricity, sanitation, roads), loss of life	5
Vulnerability	Impact Area - area impacted by a hazard event Secondary Impacts - Capability of triggering additional hazards Onset - Period of time between initial recognition of an approaching hazard and when the hazard begins to impact the community	No physical damage, no secondary impacts	1
		Localized damage area	2
		Localized damage area, minor secondary impacts, delayed hazard onset	3
		Moderate damage area, moderate secondary impacts, moderate warning time	4
		Widespread damage area, significant secondary impacts, no warning time	5

Each profile hazard was assigned a risk rank (ranging from no/low hazard to severe/high hazard) based on the risk factors determined during the Hazard Identification Workshop. The risk score is calculated by Risk = Probability x Consequence x Vulnerability. Table 3.2 provides the risk ranking matrix used to calculate the risk score.

Table 3.2: Risk Ranking Matrix

Probability/Frequency Description	Risk Ranking Matrix						
Rare Event: Occurs less than once every 50 years	Probability/Frequency Value = 1	Consequence/ Severity					
	Vulnerability	1	2	3	4	5
	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25
Infrequent Event: Occurs between once every 8 years and once every 50 years (inclusive)	Probability/Frequency Value = 2	Consequence/ Severity					
	Vulnerability	1	2	3	4	5
	1	2	4	6	8	10
	2	4	8	12	16	20
	3	6	12	18	24	30
	4	8	16	24	32	40
	5	10	20	30	40	50
Regular Event: Occurs between once a year and once every 7 years	Probability/Frequency Value = 3	Consequence/ Severity					
	Vulnerability	1	2	3	4	5
	1	3	6	9	12	15
	2	6	12	18	24	30
	3	9	18	27	36	45
	4	12	24	36	48	60
	5	15	30	45	60	75
Frequent Event: Occurs more than once a year	Probability/Frequency Value = 4	Consequence/ Severity					
	Vulnerability	1	2	3	4	5
	1	4	8	12	1	20
	2	8	16	24	3	40
	3	1	24	36	4	60
	4	1	32	48	6	80
	5	2	40	60	8	100

The final risk score yields a profile ranking of each hazard, as illustrated in Table 3.3. The Steering Committee determined this initial profile ranking based on all of the hazard identification, profile research, group discussion, and evaluation of all of the data.

Table 3.3: Risk Rank Categorization

Hazard Ranking	Matrix Value
High Hazard	**50 to 100**
Moderately High Hazard	**25 to 49**
Moderate Hazard	**15 to 24**
Moderately Low Hazard	**5 to 14**
Low Hazard	**1 to 4**

3.2.1 Hazard Profiling

This section presents additional information regarding the hazards of concern (detailed below) as hazard profiles. Hazard profiles are designed to assist communities in evaluating and comparing the hazards that can impact their community by comparing a number of hazard factors. Each type of hazard has unique characteristics and the impact associated with a specific hazard can vary depending on the magnitude and location of each event (a hazard event is a specific, uninterrupted occurrence of a particular type of hazard). Furthermore, the probability of occurrence of a hazard in a given location impacts the priority assigned to that hazard. Finally, each hazard will impact different communities in different ways, based on geography, local development, population distribution, age of buildings, and mitigation measures already implemented. Table 3.4 summarizes the hazard ranking summary for the District.

Table 3.4: Hazard Ranking Summary

Hazard Rank	Score
High	
Moderately High	
Wildfire	48
Earthquake	30
Moderate	
Flood	24
Terrorism/Adversarial Events	24
Dam/Reservoir Failure	20
Moderately Low	
Hazardous Material Release/ Natural and/or Liquid Gas Pipeline Failure	12
Drought	9
Low	
Power Failure	3

3.2.2 Trends in Perceived Hazard Vulnerability

As illustrated above, the Steering Committee reviewed the District's perceived vulnerability to determine the potential impact of each hazard on the service area. The Steering Committee began with the hazards identified in the 2018 Hazard Mitigation Plan and used the list as a springboard in determining current perceived vulnerability. Although the identified hazards did not change, there was a trend to decrease the perceived vulnerability. The Steering Committee discussed how efforts within the District had improved resiliency (i.e., structural improvements at the Filtration Plant).

Hazards Addressed/Omitted

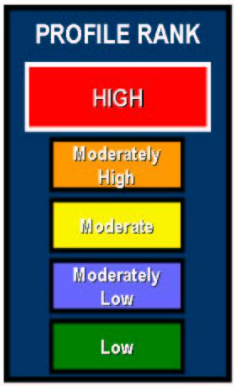
According to FEMA's National Risk Index, the hazards with the greatest risk in the service area include wildfire, earthquake, heat wave, landslide, flooding, drought, lightning, and tornado.

The Steering Committee agreed upon addressing Wildfire, Earthquake, Flooding and Drought in this Plan as these were perceived to be the highest ranked hazards. However, the Committee's consensus was to omit Heat Wave, Landslide, Lightning, and Tornado for the following reasons.

Heat wave was omitted from this chapter since the District did not consider it relevant to specifically identify it as a hazard that could be mitigated. Impacts to public health due to a heat wave are not within the District's jurisdiction. Moreover, the District has provided service for over one hundred years, with heat waves being experienced often. They have determined that while this hazard is present in the area, it does not affect the District's ability to maintain water service. In addition, landslide was not discussed in this chapter because it did not represent any new vulnerability separate from an earthquake. This is due to the fact that earth movement was already captured by earthquake, therefore making landslide a secondary impact to an earthquake. Furthermore, lightning was another hazard identified by the National Risk Index which the Steering Committee agreed not to include in this chapter. It was determined that lightning events would not impact the District since the water service is mostly provided through underground infrastructure. Tornadoes were the last of the high ranked hazards that the Committee omitted from the chapter since it has been 97 years since a significant tornado was present in San Diego County. It was determined that the water service runs mostly through underground infrastructure, therefore it would not be impacted by a tornado.

Apart from the recognized hazards present in FEMA's National Risk Index, the Steering Committee had discussed inclusion of Disease Outbreak. On the heels of the Coronavirus pandemic, the team discussed how it might better prepare for a similar scenario. However, after much discussion, it was determined that the District, with no responsibility for public safety, could not expand upon its current effort in any significant way. In addition, the Steering Committee discussed extremely cold temperatures as this planning effort took place during a winter with record low temperatures. However, the temperature had no impact on water service and was ultimately left out of the plan update.

3.3 Wildfire Hazard Profile

Wildfire Risk Assessment Summary		
Risk Rank: High		
Probability/ Frequency:	Regular event – occurs between once a year and once every 7 years	
Consequence/ Severity:	Extensive building damage, widespread loss of lifelines (water, gas, electricity, sanitation, roads), loss of life	
Vulnerability:	Moderate damage area, moderate secondary impacts, moderate warning time	
Hazard Risk Rank Score:	48	
Hazard Type	Natural Hazard - Hydrological	

3.3.1 Wildfire Hazard Information and Background



Fire is a rapid oxidation process that can lead to uncontrolled burning, exposing and possibly consuming structures. Fires often spread quickly and are usually signaled by dense smoke that may fill the area for miles around. Fires can be human caused through acts such as arson or can be caused by natural events such as lightning. Fires are typically classified according to the following categories:

- **Urban fires** are primarily associated with structures and the activities in and around them.
- **Wildland fires** occur in forests or other generally uninhabited areas and are fueled primarily by natural vegetation.

- **Urban Interface fires** occur where development and forest interface, with both vegetation and structures providing fuel, and are sometimes referred to as urban-wildland interface fires.

The following factors contribute significantly to aforementioned fire behavior:

- **Slope/Topography**: As slope increases, the rate of fire spread increases. South facing slopes are also subject to greater solar radiation, making them drier and thereby intensifying fire behavior.
- **Fuel**: Weight and volume are the two methods of classifying fuel, with volume also referred to as fuel loading. Each fuel is assigned a burn index (the estimated amount of potential energy released during a fire), an estimate of the effort required to contain a fire, and an expected flame length.
- **Weather**: Variations in weather conditions have a significant effect on the occurrence and behavior of fires.

Firestorms that occur during extreme weather (e.g., high temperatures, low humidity, and high winds) have high intensity, making fire suppression virtually impossible at times. These events typically burn until the conditions change, or the fuel is exhausted. Even small fires can threaten lives and resources and destroy improved properties. It is also important to note, in addition to affecting people, fires may severely affect livestock and pets. Such events may require emergency watering/feeding, shelter, evacuation, and even burying of animals.

Fire Secondary Events

The aftermath of a fire can be as disastrous if not more so than the fire. A particularly destructive fire burns away plants and trees that prevent erosion. If heavy rains occur after such a fire, landslides, ash flows, and flash floods can occur. This can result in property damage outside the immediate fire area, and can affect the water quality of streams, rivers, and lakes.

Fire as a Secondary Event

In addition to typical ignition sources for fires, earthquakes or floods have the potential to rupture buried gas lines, and high winds or accidents could cause overhead electric lines to break, creating ignition sources for fires. Catastrophic earthquakes could cause widespread urban fires, as multiple gas and electrical lines could be broken or disrupted.

3.3.2 Wildfire History

The District is located in San Diego County, which is subject to periodic wildland fires. In order to illustrate the potential for fire, Table 3.5 depicts some of the recent fires in San Diego County.

Table 3.5: San Diego County Fires (2001-2022)

Fire Name	Date	Approximate Damage
Viejas Fire	January 3 – 8, 2001	Burned 10,353 acres
Gavilan Fire	February 10 – 15, 2002	Burned 5,763 acres
Garnet Fire	July 13 – 16, 2002	Burned 1,166 acres
Pines Fire	July 29 – August 16, 2002	Burned 61,690 acres
Coyote Fire	July 17 – 26, 2003	Burned 18,705 acres
Cedar Fire	October 25 – November 4, 2003	Burned 273,246 acres
Paradise Fire	October 26 – November 6, 2003	Burned 56,700 acres
Mine Fire	October 26 – October 28, 2003	Burned 46,000 acres
Mataguary Fire	July 13 – 15, 2004	Burned 8,649 acres
Volcan Fire	September 6 – 11, 2005	Burned 685 acres
Border #50 Fire	October 5 – 8, 2005	Burned 4,103 acres
Horse Fire	July 23 – August 1, 2006	Burned 16,681 acres
Witch Creek Fire	October 21 – 31, 2007	Burned 197,990 acres
Harris Fire	October 21 – November 9, 2007	Burned 90,440 acres
Rice Fire	October 22 – November 5, 2007	Burned 9,472 acres
Poomacha Fire	October 23 – November 11, 2007	Burned 49,410 acres
Ammo Fire	October 23 – 28, 2007	Burned 21,004 acres
Juliett Fire	October 13 – 17, 2008	Burned 4,026 acres
Aliso Fire	July 13 – 15, 2010	Burned 3,225 acres

Fire Name	Date	Approximate Damage
Long Canyon Fire	September 23, 2010	Burned 40 acres, Injured 4
Shockey Fire	September 23 – 26, 2012	Burned 2,556 acres, Injured 3
Chariot Fire	July 6 – 15, 2013	Burned 7,055 acres, injured 12
Bernardo Fire	May 13 – 17,2014	Burned 1,548 acres,
Multiple Fires	May 15 – 17, 2014	Burned 27,000 acres
Border Fire	June 19 – 30, 2016	Burned 7,609 acres, 2 deaths
Lilac Fire	December 7 – 9, 2017	Burned 4,100 acres
Miramar	July 6, 2018	Burned 100 acres
Pendleton Complex Fire	July 7, 2018	Burned 1,800 acres
West Fire	July 9, 2018	Burned 505 acres 34 homes destroyed
Caliente Fire	August 1 – 3, 2019	Burned 448 acres
India Fire	June 9 – 12, 2020	Burned 1,100 acres
Valley Fire	September 5 – 24, 2020	Burned 16,390 acres
Southern Fire	May 2 – 6, 2021	Burned 5,366 acres
Border 13 Fire	June 13 – September 11, 2022	Burned 577 acres
Border 32 Fire	August 31 – September 5, 2021	Burned 4,456 acres

Source: California Department of Forestry and Fire Protection historical fire archives, NOAA Storm Events Database, and local news articles.

State and Federally Declared Wildfire Disasters

Due to the fact that the District lies in the San Diego County, there have been a few instances of state and federal disaster declarations regarding wildfires affecting the service area. According to the State of California Franchise Tax Board, in July of 2018, the West Fire was declared a disaster by the state. Following this, in October 2019 and August and September of 2020, the wildfires throughout California that impacted numerous counties, including San Diego County, were also declared as distaters at state and federal levels.

It is crucial to note that numerous counties in California, with some neighboring the service area, had state declared wildfire disasters since the last plan update. The following list details state-declared wildfire disasters and the counties that were impacted.

- July 2018: Holiday Fire (Santa Barbara), Cranston Fire (Riverside), Ferguson Fire (Mariposa), River, Ranch, and Steele Fires (Lake, Mendocino, Napa)
- August 2018: Holy Fire (Orange, Riverside)
- October 2019: Eagle, Reche, Saddleridge, Sandalwood, and Wolf Fires (Los Angeles, Riverside), Kincade and Tick Fires (Los Angeles, Sonoma)
- July 2021: Dixie, Fly, and Tamarack Fires (Alpine, Butte, Lassen, Plumas)
- August 2021: Antelope and River Fires (Nevada, Placer, Siskiyou), Caldor Fire (El Dorado), Cache Fire (Lake)
- July/August 2021: Dixie, McFarland, and Monument Fires (Shasta, Tehama, Trinity),
- September 2021: Fawn Fire (Shasta)
- July/August/September 2021: River Complex, French, Washington, Windy, KNP Complex, and Hopkins Fires (Kern, Mendocino, Siskiyou, Trinity, Tulare, Tuolumne)
- July 2022: Alisal Fire (Santa Barabara), Colorado Fire (Monterey), Oak Fire (Mariposa), McKinney, China 2, and Evans Fires (Siskiyou)
- September 2022: Mill Fire (Siskiyou), Fairview and Mosquito Fires (El Dorado, Placer, Riverside), Fork, Barnes, and Mountain Fires (Madera, Modoc, Siskiyou)
- November 2022: Route Fire (Los Angeles)

In addition, the list below details wildfire disasters in California declared at both the state and federal levels since the last plan update:

- July 2018: Carr Fire (Shasta)
- November 2018: Camp Fire (Butte), Hill and Woolsey Fires (Los Angeles, Ventura) (DR-4407-CA)

3.3.3 Wildfire Probability, Frequency, and Magnitude

Wildfires are a major environmental hazard that have historically cost California more than $800 million each year and contribute to "bad air days" throughout the state. Heat and smoke from fires can be more dangerous than flames. Inhaling the hot smoke can sear the lungs. Fire also produces poisonous gases that can cause disorientation and drowsiness. As a result, asphyxiation is the leading cause of fire deaths, exceeding burns by a three-to-one ratio.

Figure 3.1 on the following page illustrates the fire threat to the District's service area. As demonstrated in the figure, the expected fire hazard is low for most of the District's service area. However, there are areas west of Rancho Santa Fe and portions of the northeastern border which are more vulnerable to wildfire. It is likely that a fire event would have a greater ability to impact these areas but would have minimal impact on District assets.

Impacts on Vulnerable Populations/Assets

If a wildfire were to emerge in the service area, sensitive populations may be impacted to a greater extent than others in the community. A wildfire may cause infrastructure /systems damage as well as loss of equipment, which would restrict access and use of facilities that cater to high-risk members of the community. There are various medical clinics and health centers such as Coastal Breeze Assisted Living and Memory Care and Scripps Medical Center that cater to the elderly population in the service area. In addition, Le Port Montessori Solana Beach and Skyline Elementary are in the service area and provide care for the very young. As the elderly and the very young have been identified as vulnerable populations throughout the District's service area, residents at the care facilities and schools listed above may be more at risk in the event of a wildfire disaster. While it is important to note that in the event of a wildfire, these populations may face a greater impact, there is no way for the District to know which of these is more likely to be impacted. Therefore, the District can assume that the sensitive population will have the same level of risk since we cannot predict where a wildfire would occur. In addition, the response to the public safety of these populations does not fall under the District's jurisdiction. It is useful to note that the City and County emergency plans that are in the service area will include considerations for sensitive populations for response in the event of a wildfire. Escondido residents who live on the streets of Via Pravada, Via Valle Vista, and Via De Encanta, are all subject to higher risk in the event of a wildfire due to their close proximity to the Bernardo Mountain which is located in a region that could spread wildfire.

Additionally, it is important to note that certain District assets face a higher vulnerability to wildfire. These include the Lake Hodges Floating Weather Station and the Lake Hodges Raw Water Flume. Due to the facilities being in close proximity to the Bernardo Mountain Peak, which is at wildfire risk, the District has identified these facilities as being more vulnerable in the event of a wildfire. Other facilities that the District has identified as being more vulnerable to wildfire include the Cielo Raw Pump Station and R.E. Badger Filtration Plant as they are both located near mountainous regions that are more at risk of spreading wildfire. With these facilities being located near regions where wildfire is likely to spread, it is important to note that these facilities would need improved emergency response to allow the fires at and around the facilities to be put out more efficiently. To bridge the gap between these vulnerabilities, the District has developed mitigation strategies that include developing secondary emergency entrance points for critical facilities, evaluating hazard vulnerability and implementing structural improvements, relocating business network systems equipment, and improving mutual aid with the fire department to reduce the risk that the above populations and facilities might face. These actions are addressed in Mitigation Strategies 2023.HMP.02, 2023.HMP.04, 2023.HMP.05, and 2023.HMP.10 which can be found in Table 4.2- Mitigation Action Identification.

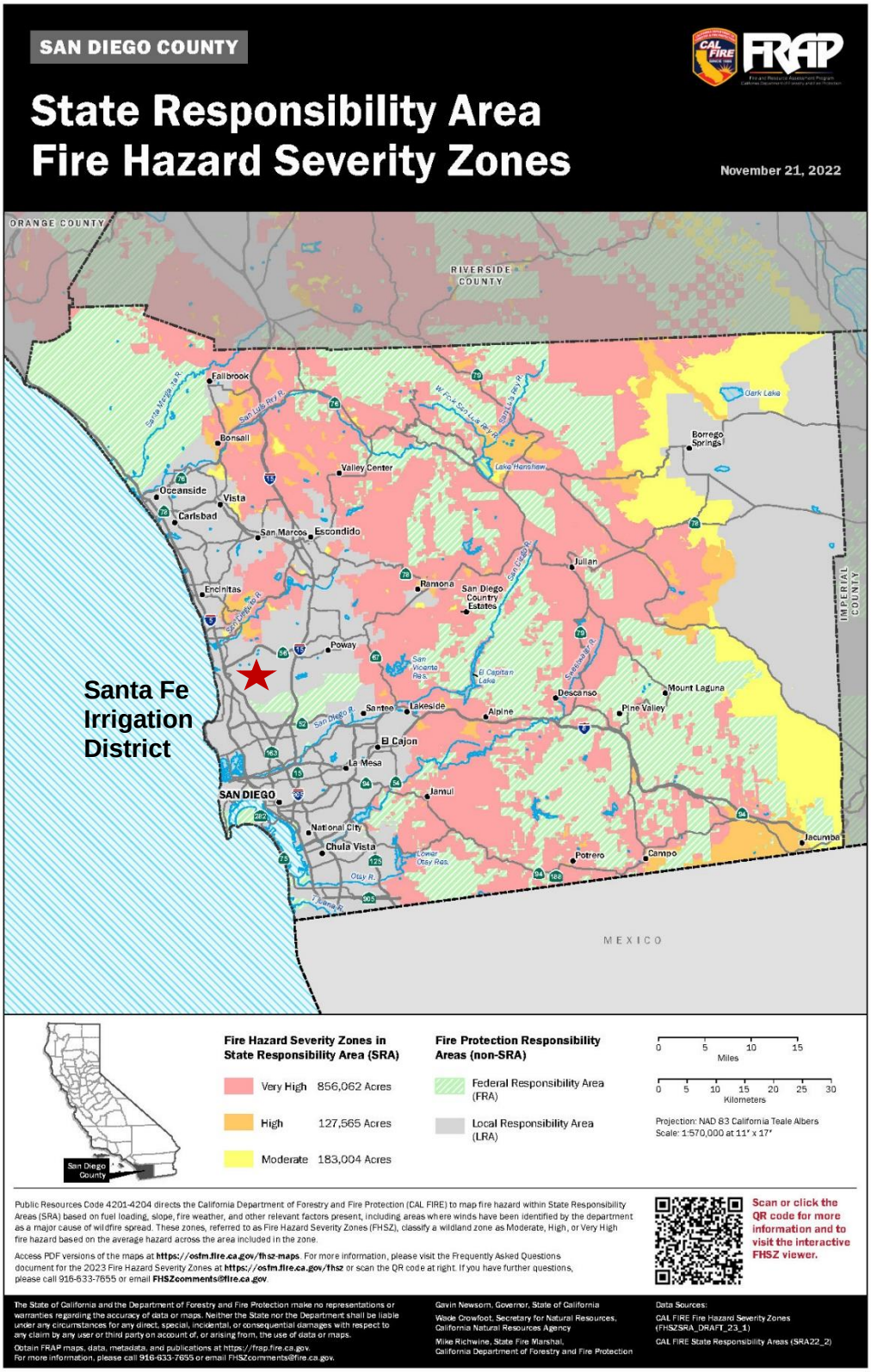
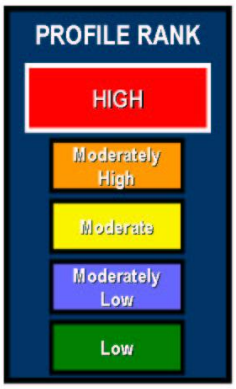


Figure 3.1: Santa Fe Irrigation District Fire Hazard Map

Wildfires and Climate Change

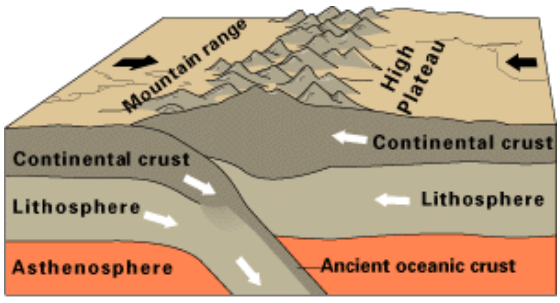
Increased usage of fossil fuels for transportation and electricity, along with increased deforestation has led to the overloading of the atmosphere with greenhouse gases such as carbon dioxide (CO_2). These heat trapping emissions act as a blanket and increase the overall atmospheric temperature, thus warming the planet. As summers get hotter and longer, the conditions for wildfires increase exponentially. Wildfires in the U.S. have been on an increasing trend and the effects of climate change has shown to aggravate the frequency and duration of wildfires. High levels of climate variability are a result of climate change. There is an expectation that the service area will see significantly longer dry spells. As the region experiences an extended dry weather period, it is expected that there will be reduced amounts of precipitation. The time period for the risk of wildfire is significantly increasing because of these extended dry periods. In addition, climate change effects can increase the severity of a wildfire and potentially hasten the spread of wildfires or force them into more populated areas, ultimately increasing the risk to the District's service area. It is anticipated that warmer weather coupled with longer dry spells may increase the surface area of land in the service area that is vulnerable to wildfires.

3.4 Earthquake Hazard Profile

Earthquake Risk Assessment Summary		
Risk Rank: High		
Probability/ Frequency:	Infrequent event - occurs between once every 8 years and once every 50 years (inclusive)	
Consequence/ Severity:	Moderate building damage, lifeline loss (less than 24 hours), severe injury or disability	
Vulnerability:	Widespread damage area, significant secondary impacts, no warning time	
Hazard Risk Rank Score:	40	
Hazard Type	Natural Hazard - Geological	

3.4.1 Earthquake Hazard Information and Background

Plate tectonics is a starting point for understanding the forces within the Earth that cause earthquakes. Plates are thick slabs of rock that make up the outermost 100 kilometers of the Earth. The term "tectonics" describes the deformation of the Earth's crust, the forces producing such deformation, and the geologic and structural features that result. The constant motion of the plates causes stress in the brittle upper crust of the earth. These tectonic stresses build as the rocks are gradually deformed. The rock deformation, or strain, is stored in the rocks as elastic strain energy. When the strength of the rock is exceeded, rupture occurs along a fault. The rocks on opposite sides of the fault slide past each other as they spring back into a relaxed position.



Continental-continental convergence

The strain energy is released partly as heat and partly as elastic waves called seismic waves. The passage of these seismic waves produces the ground shaking in earthquakes.

Faults are more likely to produce future earthquakes if they have rapid rates of movement, have had recent earthquakes along them, experience greater total displacements, and are aligned so that movement can relieve the accumulating tectonic stresses. Geologists classify faults by their relative hazards. “Active” faults, which represent the highest hazard, are those that have ruptured to the ground surface during the Holocene period (about the last 11,000 years). In contrast, “potentially active” faults are those that displaced layers of rock from the Quaternary period (the last 1,800,000 years). Determining if a fault is “active” or “potentially active” depends on geologic evidence, which may not be available for every fault.

Shaking

The amount of energy released during an earthquake is usually expressed as a magnitude and is measured directly from the earthquake as recorded on seismographs. An earthquake’s magnitude is expressed in whole numbers and decimals (e.g., 6.8). Seismologists have developed several magnitude scales. One of the first was the Richter Scale, developed in 1932 by the late Dr. Charles F. Richter of the California Institute of Technology. The most commonly used scale today is the Moment Magnitude Scale. Moment magnitude is related to the total area of the fault that ruptured and the amount of offset (displacement) across the fault. It is a more uniform measure of the energy released during an earthquake.

The other commonly used measure of earthquake severity is intensity. Intensity is an expression of the amount of shaking at any given location on the ground surface. In general, it decreases with distance from the source of an earthquake, but it may be increased or decreased by a number of factors.

The Modified Mercalli Intensity Scale and Corresponding Richter Scale Magnitudes

Shaking intensity is often described using the Modified Mercalli Intensity Scale, which rates an earthquake’s effects based on human observation. While an earthquake has only one magnitude it may have many intensity values, which will generally decrease with distance from the epicenter. The table below lists the Mercalli Scale’s various intensity levels.

Table 3.6: Modified Mercalli Intensity Scale

Mercalli Intensity		Description
I	Instrumental	Detected only by a seismograph
II	Feeble	Noticed by sensitive people
III	Slight	Like the vibrations due to a passing truck
IV	Moderate	Felt by people while walking; rocking of loose objects, including standing vehicles
V	Rather Strong	Felt generally; most sleepers are awakened and bells ring
VI	Strong	Trees sway and all suspended objects swing; damage by over-turning and falling of loose objects
VII	Very Strong	General alarm; walls crack; plaster falls
VIII	Destructive	Car drivers seriously disturbed; masonry fissured; chimneys fall; poor constructed buildings damaged
IX	Ruinous	Some houses collapse where ground begins to crack, and pipes break
X	Disastrous	Ground cracks badly; many buildings destroyed, and railway lines bent; landslides on steep slopes
XI	Very disastrous	Few buildings remain standing; bridges destroyed; all services (railway, pipes, and cables) out of action; great landslides and floods
XII	Catastrophic	Total Destruction; objects thrown into air; ground rises and falls in waves

Amplification of Seismic Shaking

Although seismic waves radiate from their source like ripples on a pond, the radiation is not uniform due to the complex nature of an earthquake rupture, the different paths the waves follow through the earth, and the different rock and soil layers near the earth's surface. Large earthquakes begin to rupture at their hypocenter deep in the earth and the fault ruptures outward from that point. Because the speed of an earthquake rupture on a fault is similar to the speed of seismic waves, waves closer to the epicenter can be compounded by waves from farther along the rupture, creating a pulse of very strong seismic waves that moves along the fault in the direction of the fault rupture. Seismic waves may also be modified as they travel through the earth's crust.

As seismic waves approach the ground surface, they commonly enter areas of loose soil where the waves travel more slowly. As the waves slow down, their amplitude increases, resulting in larger waves with frequencies that are more likely to damage structures. Waves can also be trapped within soft sediments between the ground surface and deep, hard basement rocks, their destructive energy multiplying as they bounce back and forth, producing much greater shaking at the ground surface.

Ground Failure

Fissuring, settlement, and permanent horizontal and vertical shifting of the ground often accompany large earthquakes. Although not as pervasive or as costly as the shaking itself, these ground failures can significantly increase damage and under certain circumstances can be the dominant cause of damage.

Fault Rupture

The sudden sliding of one part of the earth's crust past another releases a vast store of elastic energy in the rocks as an earthquake. The resulting fracture is known as a fault while the sliding movement of earth on either side of a fault is called fault rupture. Fault rupture begins below the ground surface at the earthquake hypocenter, typically between three and ten miles below the ground surface in California. If an earthquake is large enough, the fault rupture will actually travel all the way to the ground surface, severely damaging structures built across its path.

Liquefaction

In addition to the primary fault rupture that occurs right along a fault during an earthquake, the ground many miles away can also fail during the intense shaking. One common type of failure occurs when soft, water-saturated soil settles, causing the water to eject sediment particles as it works its way to the ground surface. This phenomenon, known as liquefaction, turns the soil into a fluid, causing it to lose the ability to support buildings and other structures. Areas susceptible to liquefaction include places where sandy sediments have been deposited by rivers along their course or by wave action along beaches.

Landslides

Landslides are the result of the down-slope movement of unstable hillside materials under the influence of weathering and gravity over time. Strength of rock and soil, steepness of slope, and weight of the hillside material all play an important role in the stability of hillside areas. Weathering and absorption of water can weaken slopes, while the added weight of saturated materials or overlying construction can increase the chances of slope failure.

Sudden failure can be triggered by heavy rainfall, excavation of weak slopes, and earthquake shaking, among other factors.

3.4.2 Earthquake History

To indicate the potential for an earthquake event, the following table lists all significant recorded earthquakes in Southern California and the associated magnitudes:

Table 3.7: Southern California Historical Earthquakes

	Under magnitude 4.5		Magnitude 4.5 - 5.4		Magnitude 5.5 - 6.4
	Magnitude 6.5 - 7.4		Magnitude > 7.5		

Magnitude	Year	Earthquake Name
Magnitude 6.5 - 7.4	1918	San Jacinto Earthquake
Magnitude 5.5 - 6.4	1922	Parkfield Earthquake
Magnitude 5.5 - 6.4	1923	North San Jacinto Fault Earthquake
Magnitude 5.5 - 6.4	1925	Santa Barbara Earthquake
Magnitude 6.5 - 7.4	1927	Lompoc Earthquake
Magnitude 5.5 - 6.4	1933	Long Beach Earthquake
Magnitude 5.5 - 6.4	1934	Parkfield Earthquake
Magnitude 5.5 - 6.4	1937	San Jacinto Fault ("Terwilliger Valley") Earthquake
Magnitude 6.5 - 7.4	1940	Imperial Valley Earthquake
Magnitude 5.5 - 6.4	1941	Santa Barbara Earthquake
Magnitude 4.5 - 5.4	1941	Torrance-Gardena Earthquakes
Magnitude 6.5 - 7.4	1942	Fish Creek Mountains Earthquake
Magnitude 5.5 - 6.4	1946	Walker Pass Earthquake
Magnitude 6.5 - 7.4	1947	Manix Earthquake
Magnitude 5.5 - 6.4	1948	Desert Hot Springs Earthquake
Magnitude > 7.5	1952	Kern County Earthquake
Magnitude 5.5 - 6.4	1952	Bakersfield Earthquake
Magnitude 5.5 - 6.4	1954	San Jacinto Fault Earthquake
Under magnitude 4.5	1966	Imperial Fault Earthquake
Magnitude 5.5 - 6.4	1966	Parkfield Earthquake
Magnitude 6.5 - 7.4	1968	Borrego Mountain Earthquake

	Under magnitude 4.5		Magnitude 4.5 - 5.4		Magnitude 5.5 - 6.4
	Magnitude 6.5 - 7.4		Magnitude > 7.5		

Magnitude	Year	Earthquake Name
Magnitude 4.5 - 5.4	1970	Lytle Creek Earthquake
Magnitude 6.5 - 7.4	1971	San Fernando (Sylmar) Earthquake
Magnitude 4.5 - 5.4	1973	Point Mugu Earthquake
Magnitude 4.5 - 5.4	1975	Galway Lake Earthquake
Magnitude 4.5 - 5.4	1978	Santa Barbara Earthquake
Magnitude 4.5 - 5.4	1979	Malibu Earthquake
Magnitude 5.5 - 6.4	1979	Imperial Valley Earthquake
Magnitude 5.5 - 6.4	1980	White Wash Earthquake
Magnitude 4.5 - 5.4	1982	"Anza Gap" Earthquake
Magnitude 5.5 - 6.4	1986	North Palm Springs Earthquake
Magnitude 4.5 - 5.4	1986	Oceanside Earthquake
Magnitude 6.5 - 7.4	1987	Elmore Ranch/Superstition Hills Earthquakes
Magnitude 5.5 - 6.4	1987	Whittier Narrows Earthquake
Magnitude 4.5 - 5.4	1988	Tejon Ranch Earthquake
Magnitude 4.5 - 5.4	1988	Upland Earthquake
Magnitude 4.5 - 5.4	1988	Pasadena Earthquake
Magnitude 4.5 - 5.4	1989	Malibu Earthquake
Magnitude 4.5 - 5.4	1989	Newport Beach Earthquake
Magnitude 4.5 - 5.4	1989	Montebello Earthquake
Magnitude 4.5 - 5.4	1990	Upland Earthquake
Magnitude 5.5 - 6.4	1991	Sierra Madre Earthquake
Magnitude 5.5 - 6.4	1992	Joshua Tree Earthquake
Magnitude 6.5 - 7.4	1992	Landers Earthquake
Magnitude 5.5 - 6.4	1992	Big Bear Earthquake
Magnitude 5.5 - 6.4	1992	Mojave (Garlock) Earthquake
Magnitude 4.5 - 5.4	1993	Wheeler Ridge Earthquake
Magnitude 6.5 - 7.4	1994	Northridge Earthquake
Magnitude 5.5 - 6.4	1995	Ridgecrest Earthquakes

	Under magnitude 4.5		Magnitude 4.5 - 5.4		Magnitude 5.5 - 6.4
	Magnitude 6.5 - 7.4		Magnitude > 7.5		

Magnitude	Year	Earthquake Name
Magnitude 4.5 - 5.4	1996	Coso Earthquake
Magnitude 4.5 - 5.4	1997	Calico Earthquake
Magnitude 4.5 - 5.4	1998	Coso Earthquakes
Magnitude 4.5 - 5.4	1998	Crafton Hills (Redlands) Earthquake
Magnitude 4.5 - 5.4	1998	San Bernardino Earthquake
Magnitude 4.5 - 5.4	1998	Whiskey Springs (Big Bear City) Earthquake
Magnitude 6.5 - 7.4	1999	Hector Mine Earthquake
Under magnitude 4.5	2001	West Hollywood Earthquake
Magnitude 4.5 - 5.4	2001	Anza Earthquake
Magnitude 5.5 - 6.4	2002	Laguna Salad Earthquake
Magnitude 6.5 - 7.4	2003	San Simeon Earthquake
Magnitude 4.5 - 5.4	2005	Mettler Earthquake
Magnitude 4.5 - 5.4	2008	Chino Hills Earthquake
Magnitude 4.5 - 5.4	2009	Inglewood Earthquake
Magnitude 5.5 - 6.4	2009	Baja California Earthquake
Magnitude 6.5 - 7.4	2010	Sierra El Mayor Earthquake
Magnitude 4.5 - 5.4	2010	Ocotillo Earthquake
Magnitude 4.5 - 5.4	2010	Borrego Springs Earthquake
Magnitude 4.5 - 5.4	2012	Brawley Earthquake
Magnitude 4.5 - 5.4	2013	Anza Earthquake
Magnitude 4.5 - 5.4	2013	Isla Vista Earthquake
Magnitude 4.5 - 5.4	2014	Brea Earthquake
Magnitude 4.5 - 5.4	2014	Running Springs Earthquake
Magnitude 4.5 - 5.4	2016	Borrego Springs Earthquake
Magnitude 4.5 - 5.4	2018	Santa Cruz Earthquake
Magnitude 6.5 - 7.4	2019	Ridgecrest Earthquake
Magnitude 5.5 - 6.4	2020	Lone Pine

Source: Southern California Earthquake Data Center & the U.S. Geological Survey

Southern California Historic Earthquakes

One of the best indicators of earthquake potential is learning the earthquake history of the area. The following is a discussion on large earthquakes that affected the District's service area and Southern California in general, which were also included in the table above.

1940 El Centro Earthquake



The 1940 El Centro Earthquake occurred on May 18 on the Imperial Fault. The 6.9 magnitude earthquake was the strongest recorded earthquake to hit Imperial Valley, killing nine people and injuring at least another 20. The earthquake severely damaged the underground water pipelines in the area and directly caused $6 million in property damage.

1979 Imperial Valley Earthquake



On October 15, a 6.6 magnitude earthquake with a maximum perceived intensity of IX on the Mercalli intensity scale struck Imperial County. It was felt from Las Vegas, Nevada to northern Mexico. The earthquake badly damaged the underground water pipelines in the Imperial Valley and caused property damage estimated at nearly $30 million. Fortunately, there were no deaths as a result of the earthquake.

1986 Oceanside Earthquake

On July 13, 1986, a 5.4 magnitude earthquake struck San Diego County. The earthquake occurred on the Coronado Bank fault off the coast of Oceanside, causing at least twenty-nine injuries and one death. The earthquake shook buildings from San Diego all the way up to Newport Beach, with damage estimates reaching nearly $1 million. The earthquake was also followed by several large aftershocks that continued to shake the region.

Cost of Past Disasters in Today's Dollars:

When comparing the greatest recorded earthquakes in American history, and the level of population and development today with that which existed at the time of the event, the scale of potential damage is staggering.

- 1811-12 New Madrid Earthquake 1811-12, series of 4 Earthquakes over 7 weeks; Estimated insured damage, today's dollars - $88 Billion

- 1906 San Francisco Earthquake M8.3 Significant fire following damage; Estimated insured damage, today's dollars - $36 Billion

Even if the epicenter of a major earthquake is not located directly within the District, the aftershocks associated with that earthquake can cause significant damage. The hazards associated with aftershock earthquakes are the same as mainshock earthquakes and may cause significant damage and disruption. The primary difference between mainshock and aftershock earthquakes is aftershock earthquakes are categorized by the following two guidelines. First, it must occur within one rupture length of the mainshock rupture surface, or alternatively, within an "aftershock zone" based upon early aftershock activity and defined by seismologists. Second, it must occur within that designated area before the seismicity rate in that area returns to its "background", meaning pre-mainshock, level. Figure 3.2 from the Southern California Earthquake Data Center details the locations and magnitudes for historic Southern California earthquakes.

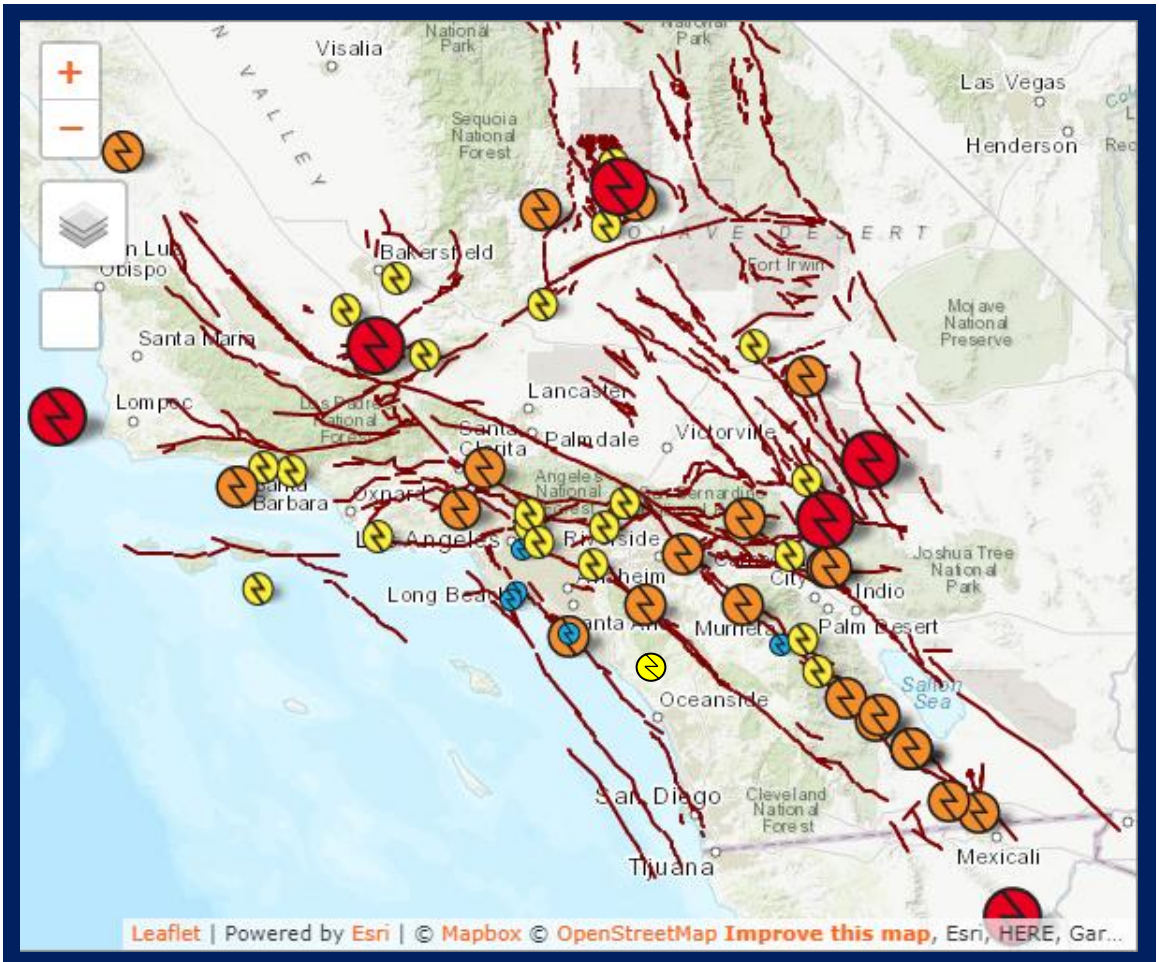


Figure 3.2: Historic Southern California Earthquake Locations

Source: Southern California Earthquake Data Center

Southern California Seismic Activity

In addition to significant earthquakes, the relative seismicity of the region indicates the potential for future significant and catastrophic earthquakes. The map below illustrates all recorded seismic events that have occurred in Southern California in the years from 1932 through 1996. Each earthquake is represented by a single red pixel (many overlap). Plotted for reference on the background are the surface traces of the major faults in the area (shown as light blue-green lines) and the major area highways (shown in yellow).

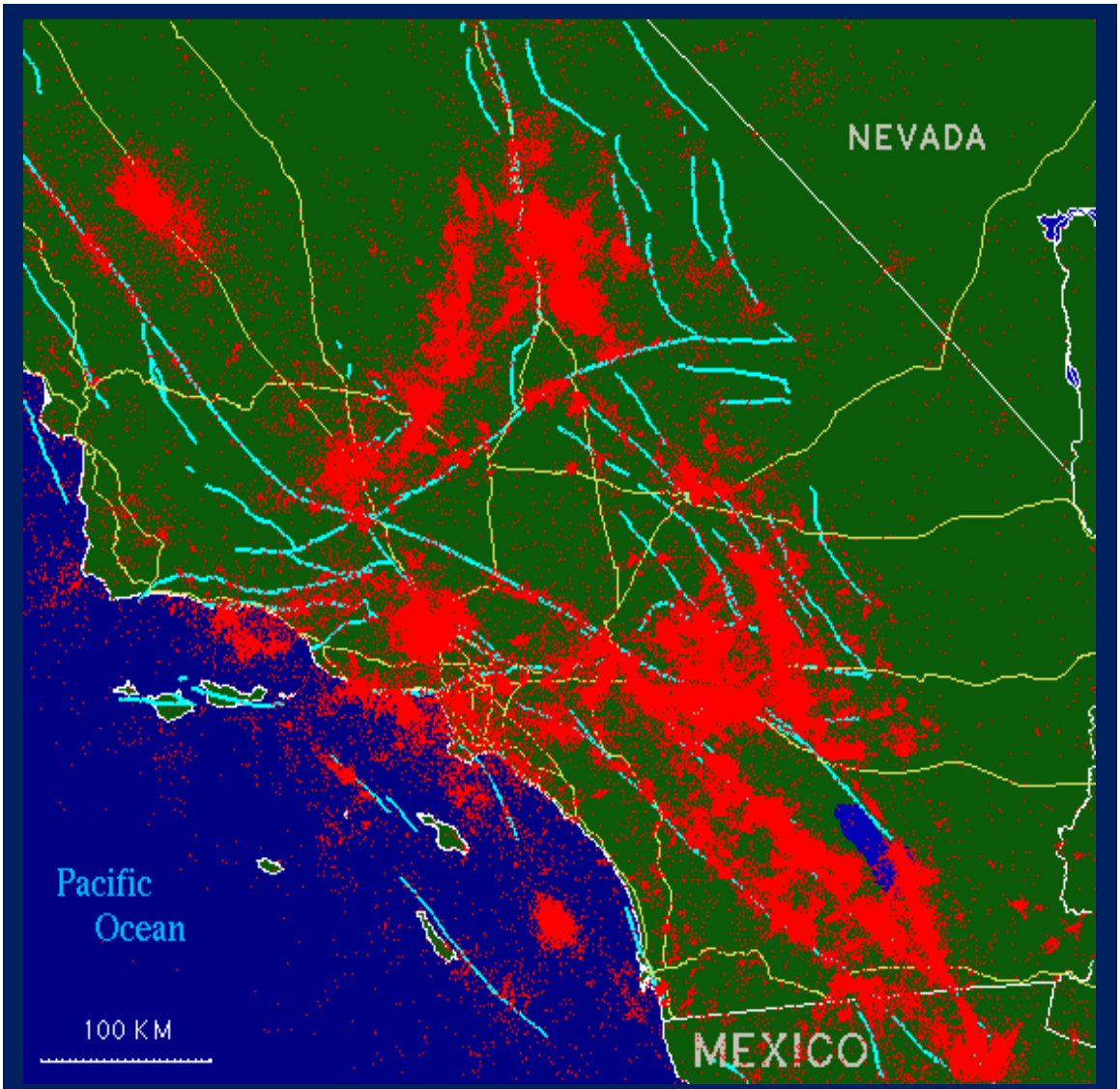


Figure 3.3: Southern California Seismicity Map

Source: Southern California Earthquake Data Center

State and Federally Declared Earthquake Disasters

While the service area has neither had state nor federally declared earthquake disasters since the last plan update, it is important to note that other California counties have. This includes Kern and San Bernadino Counties in July of 2019. This earthquake event resulted in the state declaring a disaster for those counties. In addition, Humboldt County experienced an earthquake in December of 2022, also resulting in the governor classifying the event as a state recognized disaster. It is crucial to recognize the history of state declared earthquake disasters in other California counties due to the fact that the service area is set in an earthquake fault zone and can occur at any moment without warning.

3.4.3 Earthquake Probability, Frequency, and Magnitude

The Steering Committee ranked earthquake as the second greatest threat as the western portion of the service area lies within an earthquake fault zone according to the Alquist-Priolo zone map provided by the California Department of Conservation. The District is located in a moderate high seismic risk zone.

Fault Zones

There are many faults and fault zones throughout Southern California. After reviewing maps of the Southern California area, the research resulted in earthquakes that could impact the District. Faults that were reviewed included: the San Andreas, Newport-Inglewood, Rose Canyon, San Joaquin Hills, Coronado Bank fault, Elsinore Fault, San Diego Trough, and San Clemente Faults. These faults, all considered active, are capable of producing earthquakes in the 4.5 – 8+ range. This report focused on the five faults that could most seriously impact the area.

1. San Andreas Fault
2. Newport-Inglewood Fault
3. Rose Canyon
4. Coronado Bank Fault
5. San Diego Trough Fault

A major earthquake along any of these five faults could result in substantial casualties and damage resulting from collapsed buildings, damaged roads and bridges, fires, flooding, and other threats to life and property. There may still be unmapped earthquake faults throughout Southern California that could also affect the District. The tables on the following pages provide the local earthquake faults in the District's service area and Southern California.

The San Andreas Fault

Type of fault:	Right-lateral strike-slip
Length:	1200 km
Nearby Communities:	Parkfield, Frazier Park, Palmdale, Wrightwood, San Bernardino, Banning, Indio
Last Major Rupture:	January 9, 1857 (Mojave segment); April 18, 1906 (Northern segment)
Slip rate:	20-35 mm/yr.
Interval Between Major Ruptures:	Average of about 140 years on the Mojave segment; recurrence interval varies greatly from under 20 years (at Parkfield only) to over 300 years
Probable Magnitudes:	6.8-8.0

Distance and Direction from the District:	Approximately 80 miles northeast of the District

Source: Southern California Earthquake Data Center

The San Andreas Fault is located approximately 80 miles northeast of the District. This fault is capable of producing earthquakes in the magnitude 8+ range. It has been determined through a carbon dating process that a major earthquake on this fault has occurred approximately every 145 years plus or minus 20 years. The last major earthquake on the Mojave segment of the San Andreas Fault occurred in 1857 (261 years ago as of 2018). The San Andreas Fault is considered one of the most active faults in the world today. A major earthquake up to an 8.3 magnitude is expected to occur again within the next 20 years. The San Andreas Fault traverses the Southern California region. The ground shaking of an 8.3 magnitude earthquake on the Southern San Andreas Fault would result in serious damage in Southern California, including affecting the District.

The Newport-Inglewood Fault

Type of fault:	Right lateral; local reverse slip associated with fault steps
Length:	75 km
Nearby Communities:	Culver City, Inglewood, Gardena, Compton, Signal Hill, Long Beach, Seal Beach, Huntington Beach, Newport Beach, Costa Mesa
Last Major Rupture	March 10, 1993, M_W 6.4
Slip rate:	0.6 mm/yr.
Interval Between Major Ruptures:	Unknown
Probable Magnitudes:	6.0-7.4
Distance and Direction from the District:	Approximately 70 miles north of the District

Source: Southern California Earthquake Data Center

The Newport-Inglewood Fault is considered the second most active fault in California. It runs from the City of Inglewood through Huntington Beach and out into the Pacific Ocean in the Newport Beach area. This fault is capable of producing earthquakes in the range of 6.3 to 7.5 magnitude. The 1933 Long Beach earthquake occurred on the Newport-Inglewood fault causing 120 deaths and severe damage.

The Rose Canyon Fault

Type of fault:	Right-lateral strike-slip
Length:	90 km
Nearby Communities:	San Diego, La Jolla, Linda Vista
Last Major Rupture	Holocene, in part; mostly Quaternary
Slip rate:	0.8 to 2.1 mm/yr.
Interval Between Major Ruptures:	Unknown
Probable Magnitudes:	6.0-7.2
Distance and Direction from the District:	Approximately 22 miles southwest of the District

Source: Southern California Earthquake Data Center

The Rose Canyon Fault is located in San Diego. The Fault begins in the Mission Valley area and runs northwest through La Jolla before entering the Pacific Ocean. Though a small fault, it has recently come under attention due its location in some highly populated areas of San Diego.

Coronado Bank Fault

Type of fault:	Right lateral and normal faulting
Length:	At least 90 km
Nearby Communities:	San Diego (20 km offshore)
Most recent surface rupture:	Holocene
Slip rate:	Roughly 2.0 mm/yr.
Maximum Magnitudes:	7.6
Distance and Direction from the District:	Approximately 40 miles southwest off the District

Source: Southern California Earthquake Data Center

The Coronado Bank fault is a 90 km fault located off the coast of San Diego and is continuous with the Palos Verdes Fault for a total length of at least 180 km. The Fault begins off the coast of northern San Diego County and continues southward, ending just north of Ensenada, Mexico. It is thought that ruptures extending from the Palos Verdes Fault to the Coronado Bank Fault are possible.

San Diego Trough Fault

Type of fault:	Right lateral
Length:	At least 150 km
Nearby Communities:	Always at least 20 km offshore; San Diego is 40 km away
Most recent surface rupture:	Holocene
Slip rate:	Roughly 1.5 mm/yr.
Interval Between Major Ruptures:	Unknown
Distance and Direction from the District:	Approximately 68 miles southwest from the District

Source: Southern California Earthquake Data Center

The San Diego Trough Fault begins off the Mexican border near Punta Santa Tomas and runs approximately 150 km north along the coast to Crespi Knoll, about 40 km offshore of San Clemente.

Peak Ground Acceleration

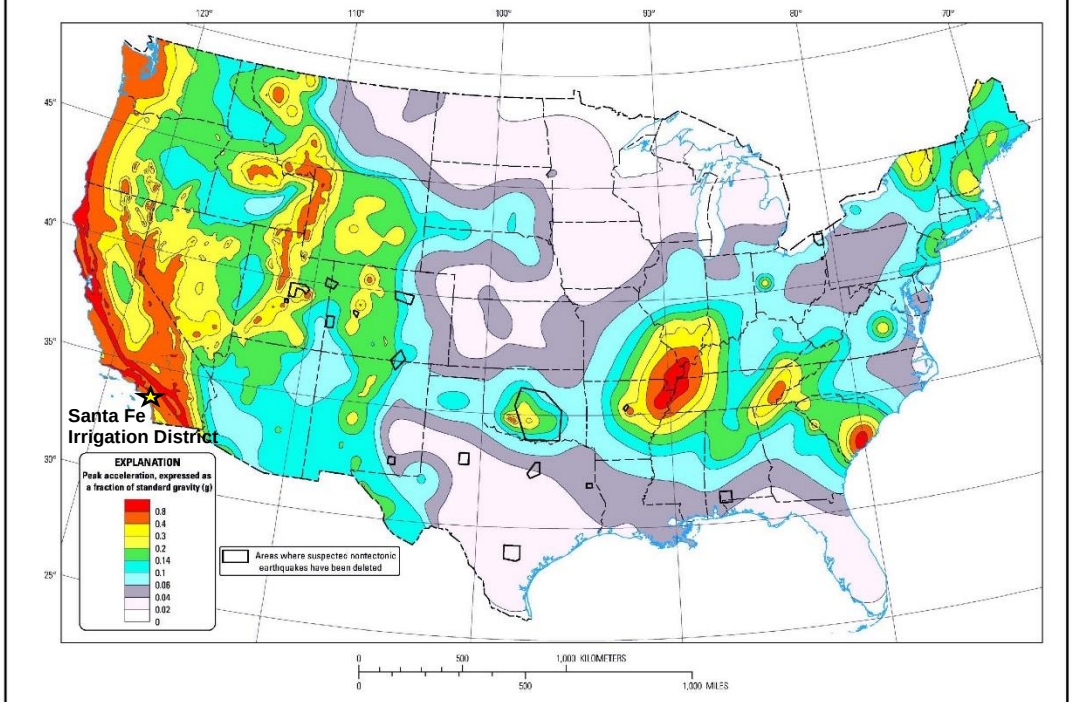
The Peak Ground Acceleration (PGA) mapping represents peak horizontal acceleration of the ground on firm-rock conditions. The approach of representing peak horizontal ground acceleration on firm-rock is a common and widely used method of showing ground accelerations. The development of probabilistic acceleration maps are a result of three types of basic input parameters:

1) Attenuation of ground shaking with distance from the earthquake source;

2) Frequency of earthquakes within an area or region, termed recurrence; and

3) The character and extent of regions and faults that generate earthquakes.

According to the following Peak Ground Acceleration Map, the District is located in an area that will experience a PGA ranging from 0.34 g to 0.65 g with 10% exceedance in 50 years (0.0021 annual probability).



Two-percent probability of exceedance in 50 years map of peak ground acceleration

Note:
Peak Ground Acceleration (PGA) image downloaded from http://earthquake.usgs.gov/hazards/products/conterminous/2014/2014pga2pct.pdf on June 13, 2016.

Santa Fe Irrigation District
Earthquake Hazard
Peak Ground Acceleration Map

Figure 3.4: California Peak Ground Acceleration Map

According to the table below (provided by the United States Geographic Survey), this PGA Value is typically associated with a range of 6.2 magnitude earthquake. Thus, there is a 0.21% annual possibility of a 6.2 magnitude earthquake affecting all areas within the District service area.

Table 3.8: Mercalli Intensity and Corresponding Peak Ground Acceleration

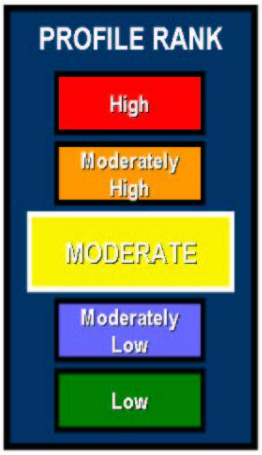
Mercalli Intensity	Richter Intensity	Acceleration (%g)	Velocity (cm/s)	Perceived Shaking	Potential Damage
I	3.5	< 0.17	< 0.1	Not Felt	None
II-III	4.2 – 4.3	0.17 - 1.4	0.1 - 1.1	Weak	None
IV	4.8	1.4 - 3.9	1.1 - 3.4	Light	None
V	4.9 – 5.4	3.9 - 9.2	3.4 - 8.1	Moderate	Very light
VI	5.5 – 6.0	9.2 - 18	8.1 - 16	Strong	Light
VII	6.1	18 - 34	16 - 31	Very Strong	Moderate
VIII	6.2	34 - 65	31 - 60	Severe	Moderate to Heavy
IX	6.9	65 - 124	60 - 116	Violent	Heavy
X+	> 7.0	> 124	> 116	Extreme	Very Heavy

Impacts to Vulnerable Populations/Assets

In the event of an earthquake, there is a possibility of loss of containment at the Larrick Reservoir. If this were to happen, the surrounding community would be at higher risk. Located near the Larrick Reservoir and Larrick Pump Station are Skyline Elementary School and Earl Warren Middle School. It Is important to note that Skyline Elementary School caters to those who the District has identified as being especially vulnerable due to their very young age. To help improve resiliency, the District has developed Mitigation Strategies 2023.HMP.03, 2023.HMP.04, and 2023.HMP.05 which promote conducting a seismic assessment at the reservoir, implementing structural improvement projects, and relocating business network systems equipment. A detailed description of each of these

mitigation strategies can be found in Table 4.2- Mitigation Action Identification. It is important to note that while an earthquake might affect the District's underground infrastructure, sensitive populations would not be significantly impacted in a greater way than other community members. In the event of an earthquake emergency, the District will be able to repair the damage done to a water line if it breaks, but public safety response does not fall under the District's jurisdiction.

3.5 Flood Hazard Profile

Flood Risk Assessment Summary		
Risk Rank: Moderate		
Probability/ Frequency:	Frequent event - occurs more than once a year	
Consequence/ Severity:	Minor/slight damage to buildings and structures, no loss of lifelines, first aid injury and no disability	
Vulnerability:	Localized damage area, minor secondary impacts, delayed hazard onset	
Hazard Risk Rank Score:	24	
Hazard Type	Natural Hazard – Atmospheric/Hydrological	

3.5.1 Flood Hazard Information and Background

The following subsections seek to provide descriptions for some of the manifestations of flood generally assumed to be the result of a severe storm or heavy rain event.

Flood

According to the NFIP, flood is the most common type of disaster including both man-made and naturally occurring incidents in the U.S. Land along rivers, streams, lakeshores, and coastlines are particularly susceptible to flooding. Each year, many low-lying areas of the District face flooding problems.

The primary responsibility of the local governments during widespread flooding is to protect public safety. Secondary is protection of the environment followed by property such as: highways, streets, bridges, and structure protection.

The types and causes of flooding that can occur within the District boundaries are the result of:

- Heavy rains,
- Flood control channel overflow,
- Coastal, tropical, and/or hurricane storms,
- Accidents such as reservoir leaks and water main breaks, and
- High water table.

What are floods?

A flood occurs any time a body of water rises to cover what is usually dry land. Floods have many causes, including heavy rains, spring snowmelt, tsunamis, coastal storms, and dam or levee failure. When flooding occurs, affected areas may sustain damage to structures and personal property, as well as severe damage to the environment in the form of soil erosion and deforestation and damage to utilities and transportation systems.

The special hazards that threaten the District include:

- **San Dieguito River** – Inland runoff fills the San Dieguito River. The river runs from the inland mountains to Lake Hodges, before ending at the Pacific Ocean in the City of Del Mar, just south of Solana Beach.
- **Dam Failure** – There are two main dams that affect the District. The Hodges Dam is located several miles upstream of the District service area. The San Dieguito Dam is located within the Service Area. Approximately 30,250 acre-feet of water (about 10 billion gallons) of water can be stored in Lake Hodges and 850 acre-feet of water (277 million gallons) in the San Dieguito Reservoir.

Floods can take several hours to days to develop; the following flood characterization designates the amount of time for response:

- **Flood Watch** – a flood is possible in the area.
- **Flood Warning** – flooding is already occurring or will occur soon in the area.
- **Flash Flood Watch** – a flash flood is possible in the area. Seek immediate shelter or higher ground.
- **Flash Flood Warning** – flooding is already occurring or will occur soon in the area. Flash floods can occur without warning, during heavy rain in mountainous regions ensure that precautions and flash flood warnings are adhered to.

Alluvial Fan Flooding

Alluvial fan flooding occurs in the steep arid or semiarid mountains found throughout California. Alluvial fans are fan-shaped deposits of eroded rock and soil carried out of mountains and into valley floors by landslides, mudslides, mudflows, and surface runoff. At the beginning of the valley, alluvial fans are steep and narrow with boulders and other course material. The deposited material becomes increasingly fine as the gradient decreases and the material, mainly gravels, sand and mud, spreads.

When rain falls, runoff from the canyon walls flows as a high-velocity sheet that channels into rivulets, and then to natural drainage courses. The rapidly moving water often carries large boulders and other material from the watershed depositing them into runoff channels, blocking the flow of water. Floodwater then spills out onto the fan, with each event finding a new channel that soon fills up with deposits and overflows. Flooding in alluvial fans often can cause greater damage than clear-water flooding.

Flash Flooding

A flash flood is a rapid flooding of low-lying areas, rivers, and streams that is caused by the intense rainfall associated with a thunderstorm, or multiple thunderstorms. Flash floods also occur when a man-made structure, such as a dam, collapses. Flash flooding occurs when the ground under a storm becomes saturated with water so quickly that it cannot be absorbed. The runoff collects in low-lying areas and flows rapidly downhill. As a result, anything in its path is suddenly in rising water. A typical flash flood begins with a slow-moving thunderstorm. This usually takes longer to move out of the affected areas and causes the area to endure a greater amount of rainfall for a longer period of time. In addition, a thunderstorm may pass over an affected area repeatedly, dumping even more rainfall.

The heavy rainfall associated with these storm systems contributes to urban flooding in a number of ways. Primarily, heavy rainfall will often overwhelm the capacity of the conventional drainage system made up of storm drains, catch basins, sewers, and additional natural mechanisms for storm-water management. These systems typically cannot handle more than one or two inches of rainfall per hour before they begin to back up and overflow. This amount is further diminished if the storm drains, and other components of the storm-water management system, have not been adequately maintained, are clogged with debris such as trash or natural waste, or are old and in a state of disrepair. Heavy rainfall, combined with storm-water runoff, can cause local waterways to rise and overflow their banks.

3.5.2 Flood Hazard History

A flood event in San Diego County can range from a few isolated areas where a number of streets are flooded preventing temporary access to homes and businesses, to numerous homes inundated with several feet of water causing millions of dollars of damage. Floods in the San Diego County area can cause extensive damage to residential and business properties, parks and recreational facilities, road and highway infrastructure, and critical utility facilities.

To indicate the potential for a flooding event, Table 3.10 lists an excerpt of large-scale flooding events that have resulted in damage in San Diego County:

Table 3.9: Historical Flooding Damage in San Diego County

Date	Injuries	Property Damage	Crop Damage
01/10/1995	0	$5,000,000	$5,000,000
02/23/1998	0	$10,300,000	$6,900,000
08/29/2000	0	$1,000,000	$0
11/29/2002	0	$300,000	$0
08/01/2003	0	$150,000	$0
01/11/2005	0	$1,500,000	$0
12/21/2005	0	$100,000	$0
12/17/2008	3	$250,000	$610,000
12/21/2010	0	$2,000,000	$0
9/10/2012	0	$9,000	$0
12/16/2014	0	$10,000	$0
2/28/2017	0	$5,050,000	$0
5/7/2017	1	$10,000	$0

Date	Injuries	Property Damage	Crop Damage
12/06/2018	0	$50,000	$0
2/13/2019	0	$100,000	$0
4/10/2020	0	$250,000	$0
1/29/2021	9	$0	$0

Source: National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC)

El Nino

El Nino is a recurring weather pattern associated with a band of warm ocean water that develops in the central and east-central equatorial Pacific. It occurs every two to five years and brings significant precipitation to California in the form of rain and strong winds which increase vulnerability to flooding and mudslides, particularly for areas affected by wildfires. Additionally, after several years of drought, many of the trees throughout the State have been weakened as a result of limited water supply. Coupled with strong winds resulting from an El Nino phenomenon, these trees can pose danger to people and property.

Historical Flooding Events

San Diego Flood of 1916

According to the San Diego Historical Society, the San Diego Flood of 1916 began on January 14, when a large rainstorm began pouring rain in Southern California. Over the next six days, the mountains above San Diego received 18 inches of rainfall. The rain stopped on January 19, but picked up again a few days later, adding an additional 14 inches to the mountains over the next several days. The land was already saturated with water and retained little of the new rains, so the water travelled down from the mountains. Several dams overtopped, and the Lower Otay Dam and Sweetwater Dams were completely destroyed, releasing a wave of water initially nearly 100 feet high that destroyed every structure in its path and caused 22 fatalities. By the end of the flood, most of the bridges in San Diego had been washed out, leaving many people displaced and stranded.





The photographs presented above are courtesy of the San Diego Historical Society.

Most of the damage occurred in San Diego and the Chula Vista area, south of the District's service area, so the dam failure did not affect the District. However, smaller-scale flooding events usually occur in localized areas throughout San Diego County during average seasonal rainstorms.

State and Federally Declared Disasters

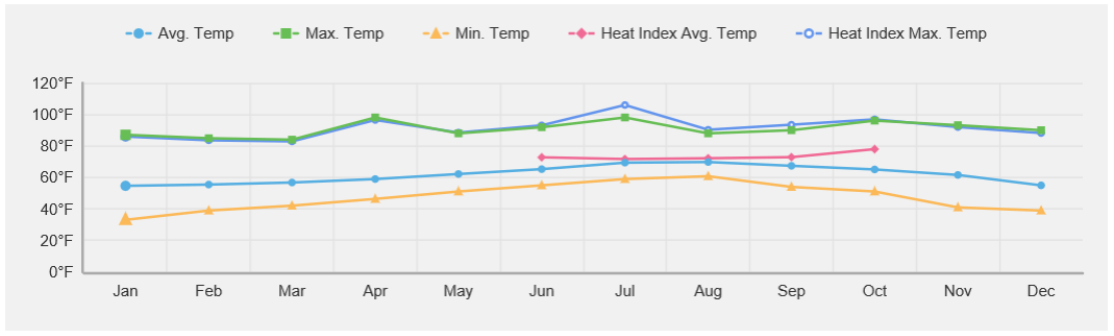
Since the last plan update, there have been numerous instances of state and federally declared disasters relating to flooding resulting from excessive precipitation. In January and February of 2019, the service area, along with numerous counties in California, experienced an atmospheric river storm that brought significant amounts of flooding, which was declared a disaster at the state level. In December of 2019 and January, February, and March of 2023, the flooding events resulting from severe winter storms and excessive precipitation were declared disasters at both the state and federal levels (DR-4683-CA). These declared disasters included the service area as well as a large number of counties throughout the state.

3.5.3 Flood Hazard Probability, Frequency, and Magnitude

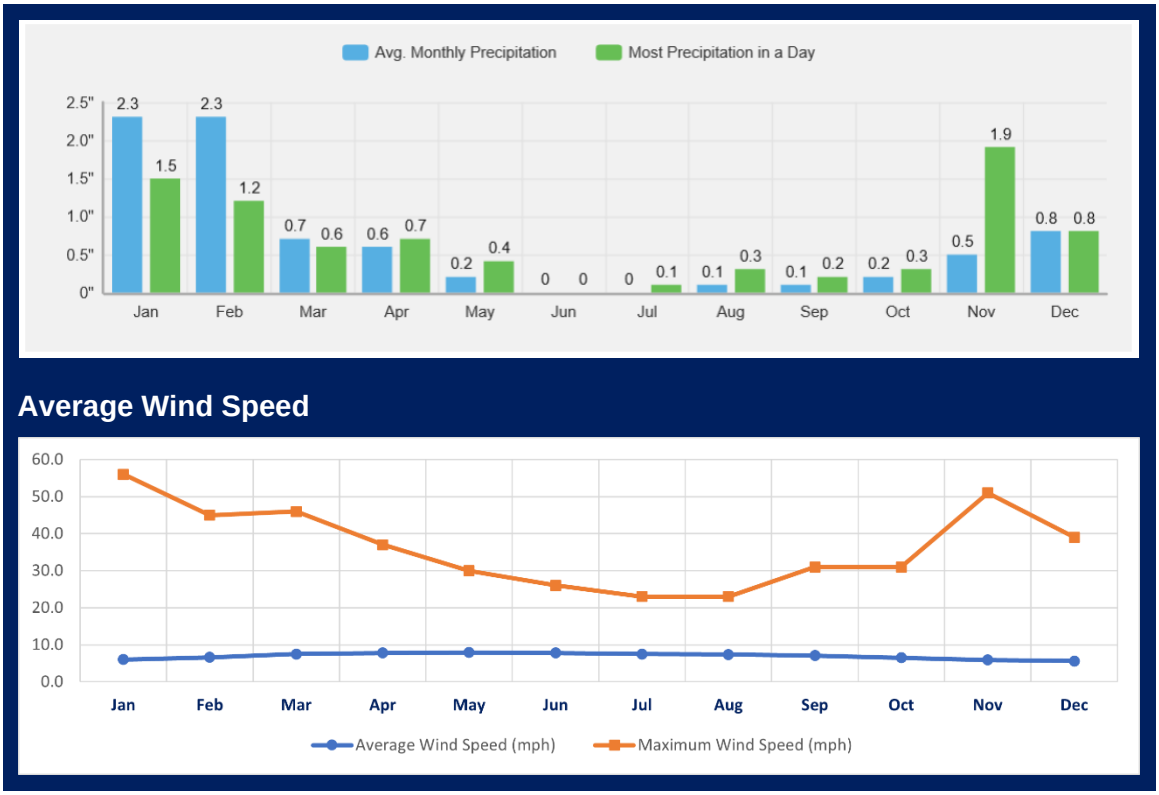
Given the excessive precipitation history in the District, flood events resulting in fog, rain, lightning, thunderstorms, and winter weather, are very likely to continue to occur frequently. The following pages provide information and trends for the aforementioned hazards, including average climate information for Rancho Santa Fe although floods can impact any part of the service area.

Table 3.10: Rancho Santa Fe Average Weather Data

Average Monthly Temperature



Monthly Precipitation with Daily Maximum



Source: Western Regional Climate Center

With regard to flooding, the FEMA Flood Insurance Rate Map (FIRM) maps on the following pages shows how several small portions of the District are located in 100-year flood plains with the majority falling in the 500-year zones. The 100- and 500-year recurrence intervals indicate a 0.01 and 0.002 annual probability of a flooding event, respectively.

Effects of Climate Change

With climate change comes highly diversiform climate patterns. It is expected that the service area will experience substantially longer periods of dry weather and more intense periods of wet weather. With an increase in precipitation levels and intensity, the District is preparing for an increase in flood events within the service area. Heavy rainfall can cause potential damage to buildings, road networks, utilities, and critical infrastructure. Therefore, the District finds that the service area can expect to see more erosion which can compromise the structural integrity of the service area's infrastructure. Mitigation actions to ensure that the structural improvement projects are conducted to mitigate the effects of flood due to excessive precipitation are included in the mitigation Action Table in Table 4.2

Impacts to Vulnerable Populations/Assets

The Santa Fe Irrigation District is not prone to large flood events and damage is only expected to impact electrical components at facilities below grade. Although there are sensitive populations attended to in special facilities throughout the service area, it is unclear whether they would be affected to a greater degree than any other resident. The facilities that house the elderly, such as Coastal Breeze Assisted Living, and schools that are occupied by young children under the age of 5, are distributed throughout the service area. As mentioned in Section 4.3 of this plan, the District has no identified repetitive loss properties for flood meaning there are no structures in the District, whether housing sensitive population or not, which are recognized as been more susceptible to flood events. As such, the District can only conclude that if sensitive populations are impacted by flood, it would be a random event and targeted pre-disaster actions would be impossible to develop. While it might not be possible to determine what populations would be more vulnerable in the event of a major flood, it is important to note that the District has identified the critical assets listed in Table 3.18 as being more vulnerable to a natural disaster such as a flood. To improve asset resiliency, the District has developed mitigation actions 2023.HMP.04 and 2023.HMP.05 which propose evaluating hazard vulnerability, implementing structural improvement projects, and relocating business network systems equipment. A detailed description of the proposed mitigation strategies can be found in Table 4.2. It is useful to note that the Cities' and County emergency plans will include considerations for sensitive populations for response in the event of a flood.

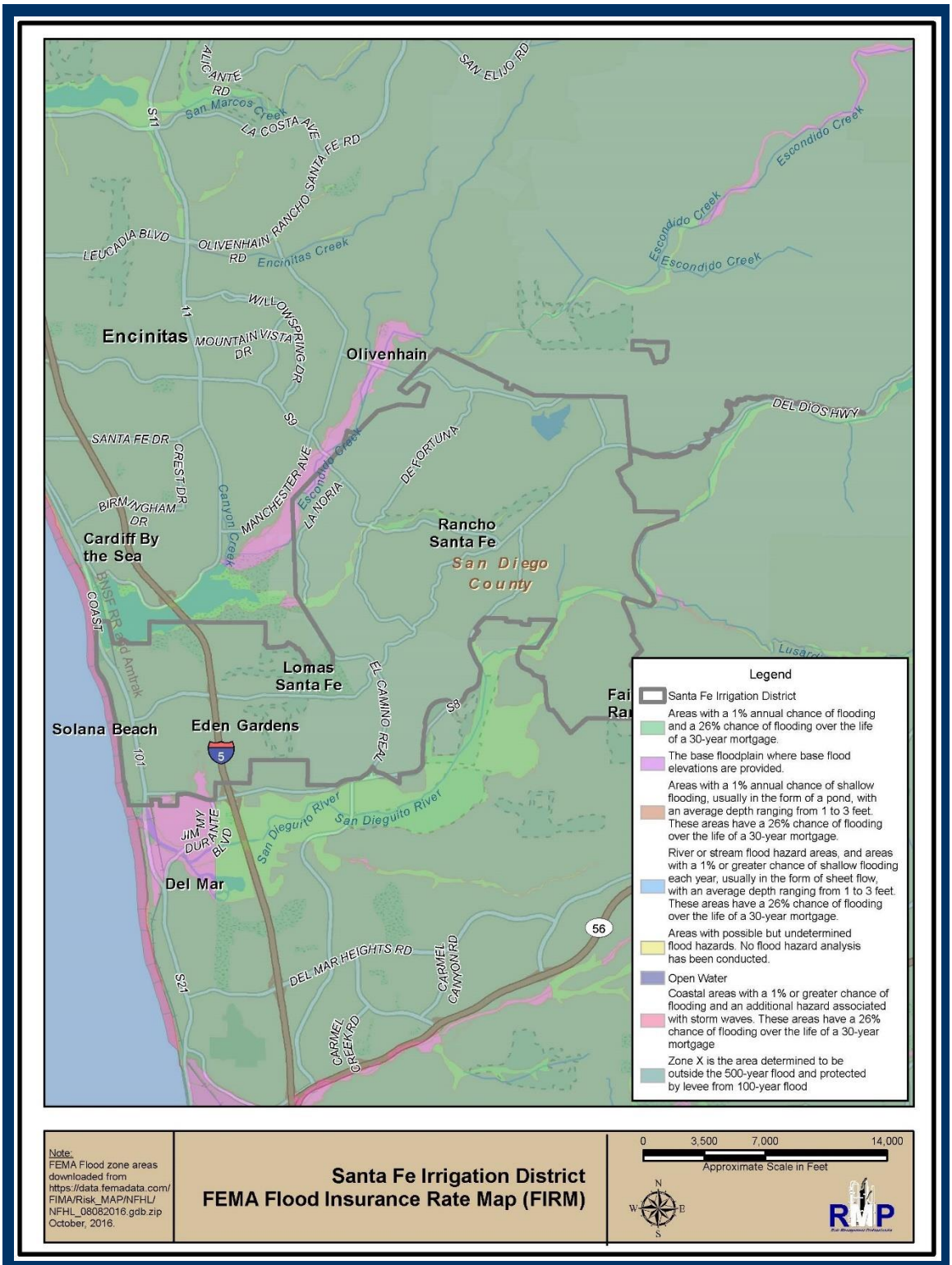
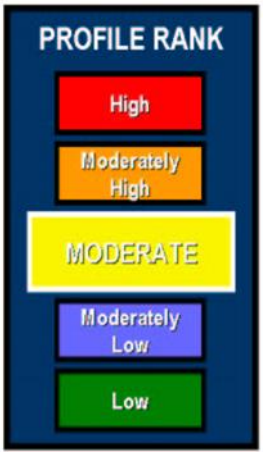


Figure 3.5: FEMA Flood Insurance Rate Map (FIRM)

3.6 Dam/Reservoir Failure Hazard Profile

Dam/Reservoir Failure Risk Assessment Summary		
Risk Rank: Moderate		
Probability/ Frequency:	Rare event - occurs less than once every 50 years	
Consequence/ Severity:	Extensive building damage, widespread loss of lifelines (water, gas, electricity, sanitation, roads), loss of life	
Vulnerability:	Moderate damage area, moderate secondary impacts, moderate warning time	
Hazard Risk Rank Score:	20	
Hazard Type	Structural	

3.6.1 Dam/Reservoir Failure Hazard Information and Background

The District could be potentially affected by two dams, Hodges, and San Dieguito. The Hodges Dam is located east of the District service area up the Del Dios Gorge, and the San Dieguito Dam is located in the northeastern part of the District in Rancho Santa Fe.

A dam is a barrier preventing the flow of water or loose solid materials (such as soil or snow); or a barrier built across a watercourse for impounding water. Dams are artificial barriers, which are 25 feet or more in height or have an impounding capacity of 50 acre-feet or more. Dam failure is the uncontrolled release of impounded water from behind a dam. Flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, vandalism, and terrorism can all cause a dam to fail. Dam failure causes downstream flooding that can affect life and property.

Common Causes of Dam Failure

Dam failures can result from a number of natural or man-made causes such as earthquakes, erosion of the face or foundation and improper sitting of the dam, rapidly rising floodwaters, and structural/design flaws. Dam failure can result in severe flood events to lower-lying areas. A dam failure from the Hodges and/or San Dieguito Dams would severely impact the District.

Impacts of Dam Failure

A dam failure has the potential to result in loss of life, damage to property, and other ensuing hazards, as well as the displacement of persons residing in the inundation path. Damage to electric generating facilities and transmission lines could also impact life support systems in communities outside the immediate hazard areas.

A catastrophic dam failure, depending on the size of the dam and the population downstream, could exceed the response capability of local communities especially overtaxing the public safety personnel and resources.

San Dieguito River, Hodges, and San Dieguito Dams

San Dieguito River

The San Dieguito River is a major river in San Diego County, forming in the Volcan Mountains and travelling about 24 miles to empty into the Pacific Ocean. The San Dieguito River watershed is a drainage area of approximately 346 square miles. The River begins at the headwaters of the Santa Ysabel Creek at an elevation of approximately 2,000 feet, which is impounded by the Sutherland Dam to form Lake Sutherland. From there, the River flows westward through the San Pasqual Valley before being impounded by the Hodges Dam, just south of Escondido. This dam, completed in 1918, forms the Lake Hodges Reservoir.

Downstream of Lake Hodges, the San Dieguito River is broken into two distinct segments. The first segment runs for about 5 miles from Lake Hodges through the Del Dios Gorge. The second segment runs west for about 8 miles until it reaches the San Dieguito Lagoon and terminates at the Pacific Ocean. The low flow river channel varies from 200 to 300 feet wide and is expected to contain a 2-year flood event; however, any larger flood events would overflow the low flow channel. A 100-year flood event would cover the entire valley floor, ranging from 2,000 – 3,000 feet wide, from nearly Via de la Valle in the north to the base of the valley in the south.

Hodges Dam

Hodges Dam is a 131 feet tall, multiple arch dam across the San Dieguito River just south of Escondido in San Diego County, upstream of the District. The resulting impounded water creates the Lake Hodges Reservoir, which has a capacity of approximately 30,250 acre-feet (10 billion gallons). Funded by the Santa Fe Railroad Company and designed by John S. Eastwood, the dam was completed in 1918 and sold to the City of San Diego in 1925. The District shares water rights with the City of San Diego and the County Water Authority. The District and the San Dieguito Water District share water rights with the City of San Diego. The two Districts together have 25% water rights to the Lake, while the City of San Diego has 25% and the San Diego County Water Authority has 50%. The County of San Diego Water Authority maintains water in Lake Hodges as part of the Emergency Storage Project. Of that water, The District has water rights of 5,000-acre feet and City of San Diego has water rights of 5,000-acre feet. Water from Lake Hodges is transferred to the San Dieguito Reservoir which is then transferred to the R.E. Badger Filtration for treatment. The Hodges Dam has a spillway elevation of 314 feet above sea level. In 2019, the elevation of the water storage at the Hodges was set to be maintained at a maximum level of 295 feet to help maintain the safety of the structural integrity of the dam by relieving the water pressure on the dam and reducing the total volume within the reservoir, ensure efficient supply of local water to the surrounding cities and local water agencies, and to allow for proper maintenance and improvement work to be performed on the Hodges Dam. The elevation restriction was considered safe by the Division of Safety of Dams and deemed necessary as the dam is more than 100 years old and has deteriorated to a degree where repairs are required to improve the structural integrity of the dam. The City of San Diego monitors these levels and if the level increases, partner agencies will initiate water transfer to lower the level below the 295 feet elevation.

As part of its current maintenance project that began in May 2022, the elevation of the water storage at the Hodges Dam is required to be maintained at a maximum level of 275 feet to make repairs to an area in the upstream face of the dam. This was identified during a recent inspection which found exposed rebar that needed to be sealed to maintain the safety of the dam. Following the recent maintenance project, the City plans to continue investing in the City’s infrastructure to ensure the structural integrity of this dam is maintained.



Images of the Hodges Dam

San Dieguito Dam

The San Dieguito Dam is a multiple arch dam on a tributary of the Escondido Creek in Rancho Santa Fe, located within the Santa Fe Irrigation District. The resulting impounded water creates the San Dieguito Reservoir, which has a capacity of approximately 850 acre-feet (277 million gallons). Construction of the Dam was completed in just four months at a cost of $160,000 by the Santa Fe Land & Improvement Co. in 1918 to create a regulating reservoir for water received from Lake Hodges. The Dam was reinforced with 12 inches of reinforced shotcrete in 1948.

Originally, the Reservoir was connected to Lake Hodges by the open channel Hodges Flume, but this water was replaced by an enclosed 36-inch water pipeline in 2004. The District and San Dieguito Water District currently share ownership of the Reservoir. The Reservoir is used for operational storage of water from Lake Hodges, holding the water

before treatment and distribution at the R. E. Badger Treatment Plant. The Reservoir also serves as an emergency water storage facility and is not open to the public for recreation. The San Dieguito Reservoir has an upstream watershed of approximately 715 acres. The top of the dam is at an elevation of 251 feet above sea level and the spillway is at an elevation of 250 feet above sea level. Every year, the District is required to lower the water level below 244 feet above sea level to provide storage for local runoff from winter rains. The height of the dam is 51 feet with a length of 650 feet. Similarly, to the Hodges Dam, the San Dieguito Dam is developing maintenance projects to repair the dam to maintain the structural integrity of the dam.





Images of the San Dieguito Dam

Reservoir Failure

Reservoir failure is the uncontrolled release of impounded water from a reservoir. Flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, vandalism, and terrorism can all cause a reservoir to fail. Seismic activity may also cause inundation by the action of a differential movement of the tank and the water within the tank, causing shearing or buckling of the tank.

Treated Water Storage Reservoir

The District has two existing treated storage reservoirs, the Larrick Reservoir with a capacity of 6.0 million gallons and at the R.E. Badger Filtration Plant Clearwell with a 13.0-million-gallon capacity. The Larrick Reservoir, located in Solana Beach, is both an above and below ground concrete structure constructed in 1965 that provides water storage and supply. The filtration plant and adjoining Clearwell reservoir was built in 1967 in Rancho Santa Fe and is an underground structure built of reinforced concrete.

Above Ground Water Storage Reservoirs

One of the more common failures for water storage tanks during an earthquake is the shearing of the connecting piping. Typically, the inlet, outlet, and overflow piping on water storage tanks are connected to flanged iron fittings that are then connected to underground flanged piping. This piping configuration is rigid and does not allow for motion of the piping during a seismic event. Unsynchronized motion between water storage tanks and piping can create large stresses and subsequent structural failure. During a moderate earthquake, water storage tanks without proper protective features can release the entire contents of a tank, which may cause unwanted secondary effects on the tank foundation and even surrounding property and population.





Image of failing water tank

During a seismic event, the tank itself is subjected to many different types of motion influenced by the size and shape of the tank, the use of anchors, impulsive and convective forces of the water contained in the tank, and the properties of the soil. These factors influence the tank motion, while ground motion has a linear effect on the underground piping. This differential in piping and tank motion during an earthquake has proven to be a key weakness in a typical configuration during seismic events of magnitudes credible in California.

A 1.0 million gallon above-ground circular steel washwater tank is located at the R.E. Badger Filtration Plant and is part of the water treatment process that provides water required to backwash filters. The washwater tank was constructed in 1968 and was identified in the District's 2012 Joint Facilities Master Plan for improvements for reliability during a seismic event.

3.6.2 Dam/Reservoir Failure Hazard History

Dam failures have occurred for a variety of reasons; the most common failure being overtopping. Other dams have failed due to specific shortcomings in the dam itself or an inadequate assessment of the surrounding geomorphologic characteristics. The first notable dam failure occurred in 1883 in Sierra County, while the most recent incident occurred in 2017 in Oroville, California. The greatest catastrophe relating to California dam

failures was William Mulholland's infamous St. Francis Dam, which failed in 1928 and resulted in a major disaster. Due to this failure and the exposure to potential risk to the general populace from a number of water storage dams in California, the Legislature in 1929 enacted legislation providing for supervision over non-federal dams in the State. Before the enactment of this legislation, either the State Engineer or the State Railroad Commission exercised State supervision over dams. This supervision was limited in scope and extended to less than half of the dams in the State. The statute enacted in 1929 provided for:

- examination and approval or repair of dams completed prior to the effective date of the statute, August 14, 1929;
- approval of plans and specifications, and supervision of construction of new dams, and of the enlargement, alteration, repair, or removal of existing dams; and
- supervision over maintenance and operation of all dams of jurisdictional size.

Overall, there have been at least 460 deaths from dam failures in California. A brief selection of these failures is outlined in Table 3.12.

Table 3.11: Selected Dam Failures/Incidents in California

Year Failed	Dam	Location	Cause of Failure/Deaths
1883	English	Sierra County	Dam Crumbles to foundations, decay of timber used
1892	Long Valley Creek	San Jacinto	Heavy rains, dam carried away by flood
1895	The Angels	Calaveras County	Undetermined during flood, poor foundation
1896	Vernon Heights	Oakland	Shallow foundation
1898	Snake Ravine	Stanislaus County	Poor compaction
1916	Sweetwater	San Diego	Dam collapse releasing 13 billion gallons of water
1925	Sheffield	Santa Barbara	Earthquake comprised foundation integrity

Year Failed	Dam	Location	Cause of Failure/Deaths
1928	St. Francis	Los Angeles County	Likely instability of underlying soil
1963	Baldwin Hills	Los Angeles	Leak through embankment turned into washout
1964	Hell Hole	Rubicon River	Failed during construction due to unprecedented rains
1965	Matilija	Ventura	Bad foundation and concrete disintegrating
1971	San Fernando	Los Angeles	Gate failure only resulting from earthquake
1995	Folsom Dam	Sacramento	Gate failure only – minor damage to dam and spillway
2017	Oroville	Oroville	Inundated spillways resulted in severe erosion

Source: Association of State Dam Safety Officials and various open sources

Hodges Dam

The Hodges Dam has overtopped more than any other reservoir in San Diego County. The following table provides a list of the spilling events of the Hodges Dam. This list is not considered to be comprehensive and only includes larger spill events.

Table 3.12: Hodges Dam Spill Events

Year	Volume Spilled (acre-feet)
1922	89,900
1927	147,800
1937	129,000
1941	156,900
1978	46,700
1980	248,600
1983	175,500
1993	129,300

Year	Volume Spilled (acre-feet)
1995	136,600
2005	67,700
2011	16,000

Source: Project Clean Water's San Dieguito Watershed Management Plan

2017 Oroville Dam Crisis



On February 7, 2017, the service and emergency spillways of the Oroville Dam were inundated by heavy rainfall which resulted in unexpected severe erosion due to high uplift forces beneath the slab foundation. According to a report prepared by an independent forensic team assembled by the Department of Water Resources (DWR), the spillway failed as the result of "Inherent vulnerabilities in the spillway design and as-constructed conditions, and subsequent chute slab deterioration" as well as "Poor spillway foundation conditions in some locations." Fearing the failure of the spillways and rising Oroville Lake could result in a larger dam failure and massive flooding, local responders called for more than 180,000 people to be evacuated. Eventually, the rain subsided, and repair teams were able to control water flows which prevented a much larger disaster. According to a statement made by DWR representative Erin Mellon, repair costs were estimated to exceed $660 million. Some more recent estimates report repair costs have already exceeded $870 million.

Reservoir Failure

The degree of flood impact is dependent upon topography, vegetation, duration, and intensity of rainfall with consequent storm water runoff. In order to determine the severity of above ground storage tank damage, the American Lifelines Alliance developed a database of water storage tanks, which included classification by tank type and configuration, peak ground acceleration experienced within the earthquake, and tank damage. This database is utilized to predict the damage to a reservoir by type of reservoir and predicted earthquake

Event	No. of Tanks	PGA Range (g)	Average PGA (g)
1933 Long Beach	49		0.17
1952 Kern County	24		0.19
1964 Alaska	39	0.20 to 0.30	0.22
1971 San Fernando	27	0.20 to 1.20	0.51
1972 Managua	1	0.50	0.50
1975 Ferndale	1	0.30	0.30
1978 Miyagi-ken-ogi	1	0.28	0.28
1979 Imperial Valley	24	0.24 to 0.49	0.24
1980 Ferndale	1	0.25	0.25
1980 Greenville	1	0.25	0.25
1983 Coalinga	48	0.20 to 0.62	0.49
1984 Morgan Hill	12	0.25 to 0.50	0.30
1985 Chile	5	0.25	0.25
1986 Adak	3	0.20	0.20
1987 New Zealand	11	0.30 to 0.50	0.42
1987 Whittier	3	0.17	0.17
1989 Loma Prieta	141	0.11 to 0.54	0.16
1989 Loma Prieta (Low g)	1,670	0.03 to 0.10	0.06
1991 Costa Rica	38	0.35	0.35
1992 Landers	33	0.10 to 0.56	0.30
1994 Northridge	70	0.30 to 1.00	0.63
Total (excl. low g)	**532**	**0.10 to 1.20**	**0.32**

magnitude. The figure above illustrates historical earthquakes and the associated number of tanks evaluated.

3.6.3 Dam/ Reservoir Failure Hazard Probability, Frequency, and Magnitude

Based on the local history events of flooding in San Diego County, it can be concluded that the District could be impacted. In addition, a dam failure threat to the District is considered moderately high. This is a low probability incident with high consequences. The probability and frequency of dam failure are determined based upon preventive maintenance of the dams. Preventive maintenance and inspections must be conducted to minimize the potential for catastrophic failure.

As noted in Section 3.6.2, dam and reservoir failures have the potential to send large volumes of water into populated areas causing casualties and extensive building damage to the dam or reservoir itself as well as nearby structures. Furthermore, flooding disrupts local plants and wildlife which can only be repaired over time.

Dams in San Diego County are closely monitored to ensure dam stability and integrity. The California Department of Water Resources is entrusted with supervision and inspections over non-federal dams in the State. Dams under jurisdiction are artificial barriers, together with appurtenant works, which are 25 feet or more in height or have an impounding capacity of 50 acre-feet or more. Any artificial barrier not in excess of six feet in height, regardless of storage capacity, or that has a storage capacity not in excess of fifteen acre-feet, regardless of height, is not considered jurisdictional. The figures on the following pages provide the dam failure inundation maps for the San Dieguito and Lake Hodges Dams in the District and for Southern California.

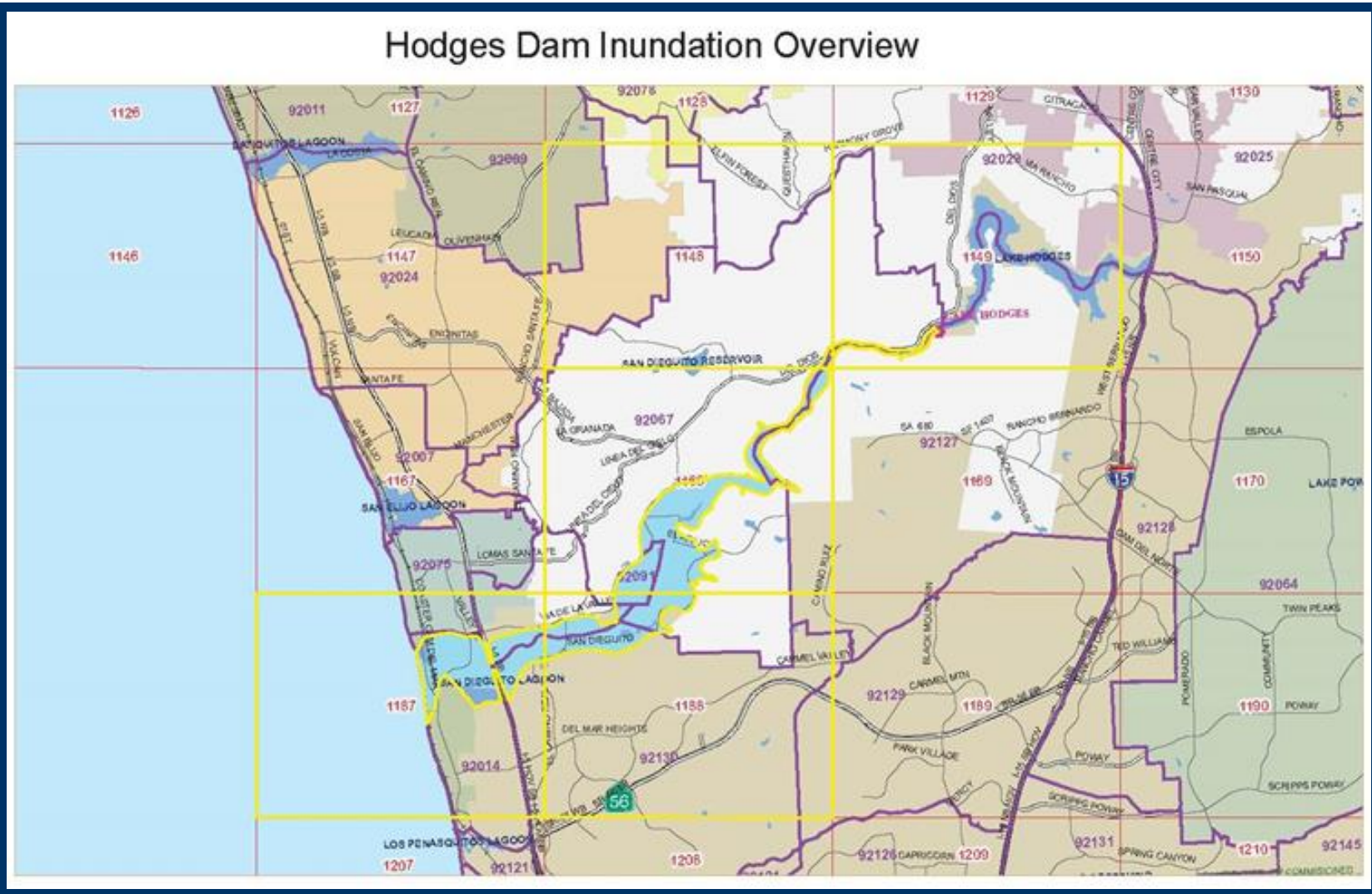


Figure 3.6: Lake Hodges Dam Failure Inundation Area Map

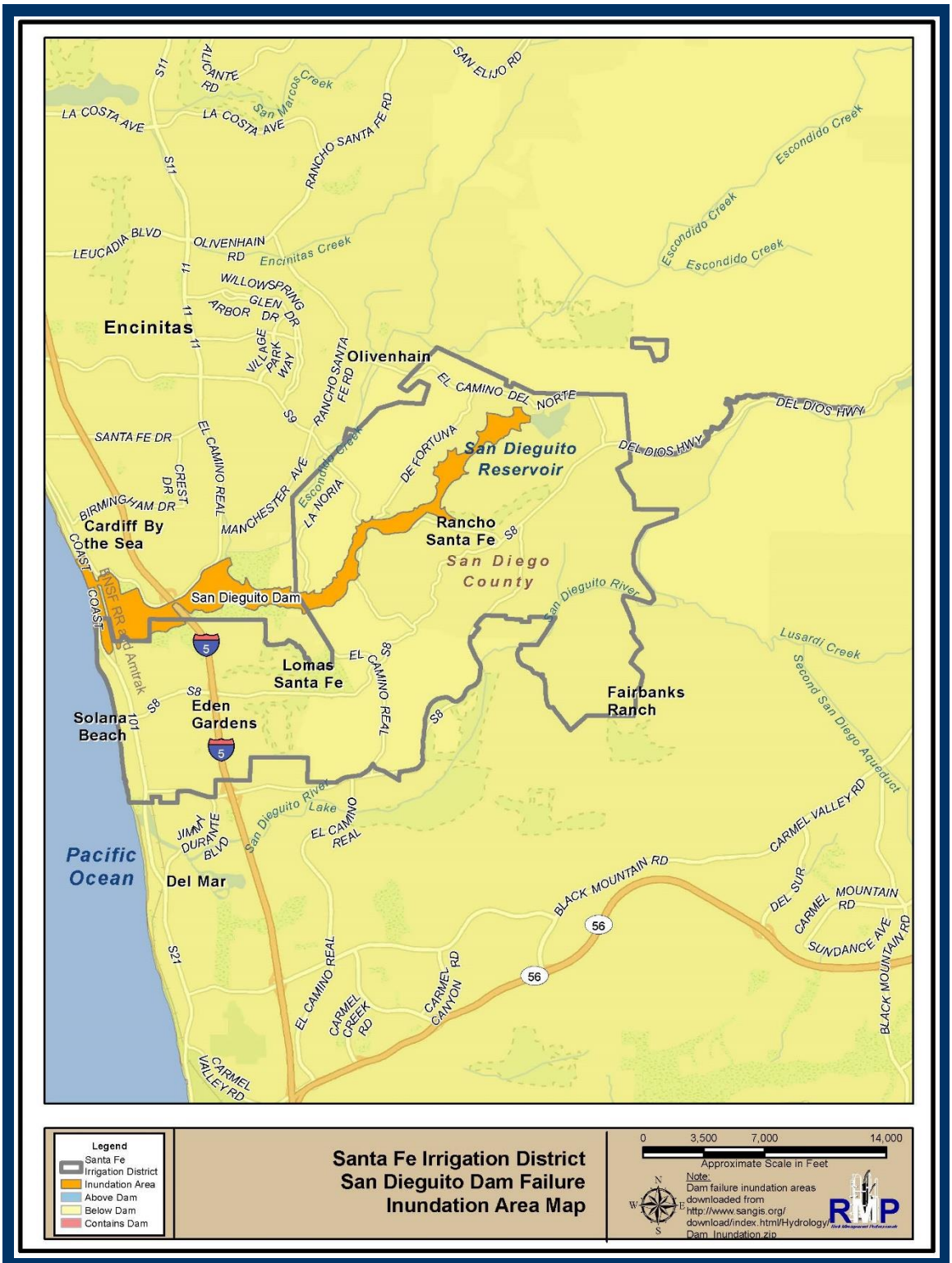


Figure 3.7: San Dieguito Dam Failure Inundation Area Map

Reservoir Failure

The probability of storage tank damage is evaluated utilizing a site-specific fragility curve, which correlates the type of damage (minor leaks, pipe shearing, elephant foot buckling, complete loss of contents, etc.) with the magnitude of the earthquake. For storage tanks, fragility curves are based on the probabilistic combination of failure modes using Boolean expressions to describe the relationship of each failure mode to the overall damage state. The Boolean approach involves evaluation of the probability of each component reaching or exceeding different failure modes, as defined by the damage states. These evaluations produce damage state probabilities at various levels of ground motion. The particular damage states defined in HAZUS include the following:

Table 3.13: Storage Tank Damage

Damage State	Factor	Description
1 – None	0.00	Tank suffers no considerable damage.
2 – Slight	0.20	Tank suffers minor damage without loss of contents or functionality. Minor damage to the tank roof due to water sloshing, minor cracks in concrete tanks, or localized wrinkles in steel tanks.
3 – Moderate	0.40	Tank is considerably damaged, but only minor loss of contents. Elephant foot buckling for steel tanks without loss of contents, or moderate cracking of concrete tanks with minor loss of contents.
4 – Extensive	0.80	Tank is severely damaged with loss of functionality. Elephant foot buckling for steel tanks with loss of contents, stretching of bars for wood tanks, or shearing of wall for concrete tanks.
5 – Complete	1.00	Tank collapses with complete loss of contents.

Source: HAZUS-MH MR4 Technical Manual

In addition, Figure 3.9 provides the reservoir locations for the District

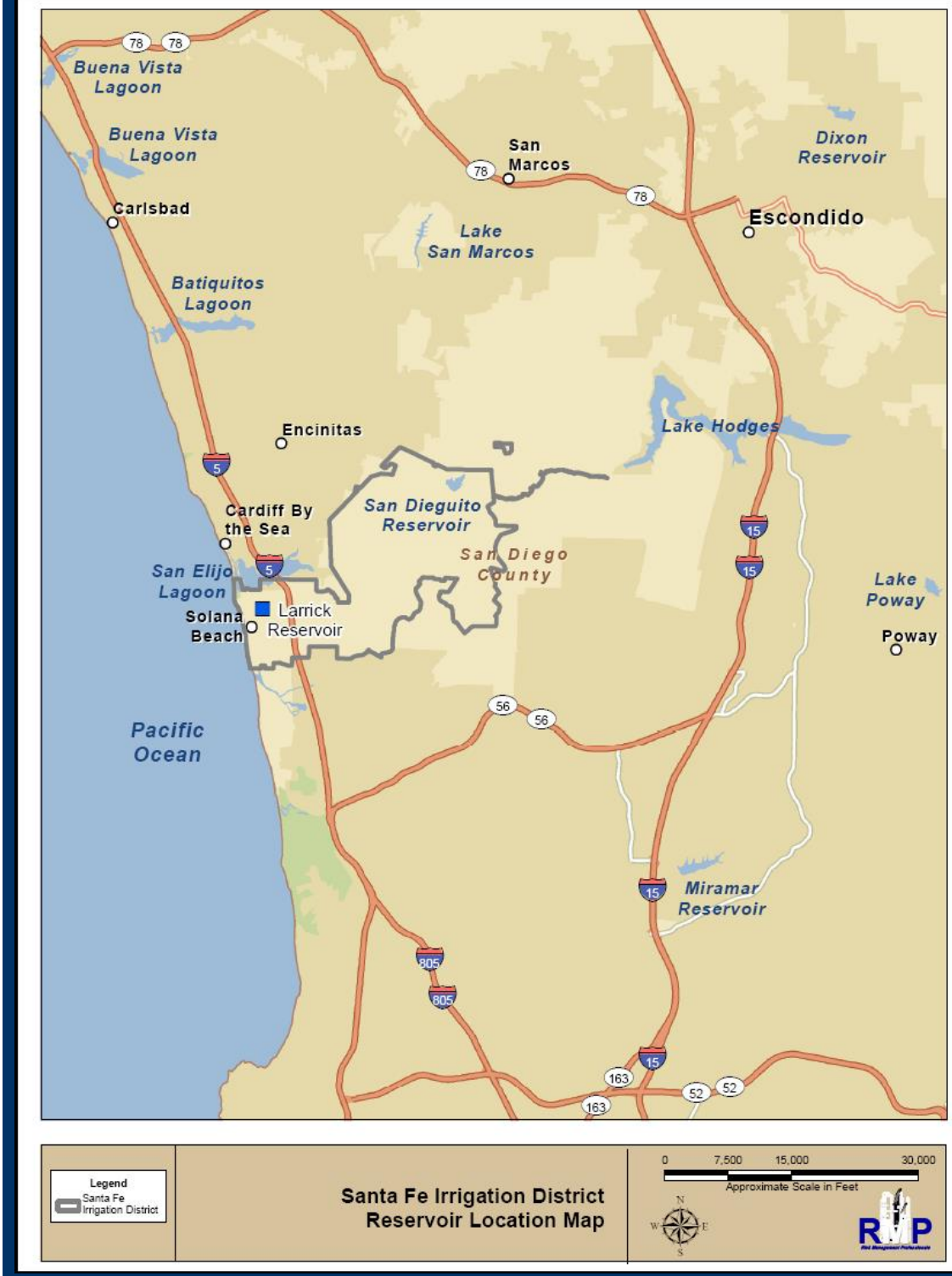
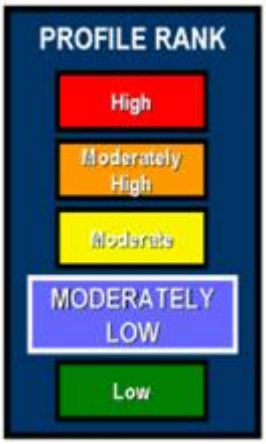


Figure 3.8: District Reservoir Location Map

3.7 Hazardous Materials Release/Pipeline Failure Hazard Profile

Hazardous Materials Release/Pipeline Failure Risk Assessment Summary

Risk Rank: Moderately Low

Probability/ Frequency:	Rare event – occurs less than once every 50 years	
Consequence/ Severity:	Moderate building damage, lifeline loss (less than 24 hours), severe injury or disability	
Vulnerability:	Localized damage area, minor secondary impacts, delayed hazard onset	
Hazard Risk Rank Score:	12	
Hazard Type	Anthropogenic Non-Intentional	

3.7.1 Hazardous Material Release/Pipeline Failure Hazard Information and Background

Hazardous Material Release

Hazardous materials include hundreds of substances that can potentially pose a significant risk to the general population if released. These substances may be highly toxic, reactive, corrosive, flammable, radioactive or infectious. They are present in nearly every community in the United States, where they may be manufactured, used, stored, transported, or disposed. Because of their nearly ubiquitous presence, there are hundreds of hazardous material release events annually that contaminate air, soil, and groundwater resources, potentially triggering millions of dollars in clean-up costs, human and wildlife injuries, and occasionally cause human deaths.

Accidents, which result in chemical clouds or release of hazardous materials into public water or sewer systems, may affect outlying neighborhoods or the community at large. Depending upon the scale of the release, large segments of the residential and the business populations may need to be evacuated quickly for extended periods of time. Effective emergency planning with regard to hazardous materials, therefore, requires the concentrated efforts of the Fire and Police Departments as well as other public safety officials and private organizations, such as the Red Cross. Hazardous material releases may occur from any of the following:

Table 3.14: Types of Hazardous Material Incidents

Fixed-Site	Includes all releases involving the production and manufacturing, handling, and storage of a hazardous product at a single facility as well as any releases that may occur at a designated hazardous waste disposal site.
Intentional Spills and Releases	Includes all criminal acts and acts of terrorism in which a hazardous material is used to intentionally cause injuries and/or fatalities, damage the environment and/or property, or advance a political or social agenda. Weapons of Mass Destruction (WMD) will be discussed in further detail in the Terrorism section of this document.

In response to concerns over the environmental and safety hazards posed by the storage and handling of toxic chemicals, Congress passed the Emergency Planning and Community Right to Know Act (EPCRA) in 1986. To reduce the likelihood of hazardous material releases, EPCRA established specific requirements on federal, state, and local governments, Indian tribes, and industry to plan for hazardous materials emergencies. EPCRA's Community Right-to-Know provisions help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. States and communities working with facilities can use the information to improve chemical safety and protect public health and the environment. Under EPCRA, hazardous materials must be reported to the Environmental Protection Agency (EPA), even if they do not result in human exposure. Hazardous material releases may include the following:

- Air emissions (e.g., pressure relief valves, smokestacks, broken pipes, water, or ground emissions with vapors)
- Discharges into bodies of water (e.g., outflows to sewers, spills on land, water runoff, contaminated groundwater)

- Discharges onto land
- Solid waste disposals in onsite landfills
- Transfer of wastewater to public sewage plants
- Transfers of waste to offsite facilities for treatment or storage

In addition to accidental human-caused hazardous material events, natural hazards may cause the release of hazardous materials and complicate response activities. The impact of earthquakes on fixed facilities may be particularly damaging due to the impairment of the physical integrity or even failure of containment facilities. The threat of any hazardous material event may be magnified due to restricted access, reduced fire suppression and spill containment, and even complete cut-off of response personnel and equipment. In addition, the risk of terrorism involving hazardous materials is considered a major threat due to the location of hazardous material facilities and transport routes throughout communities and the frequently limited anti-terrorism security at these facilities.

In recognition of the dangers associated with keeping hazardous substances, the California State legislature has enacted several laws regulating the use and transport of identified hazardous materials. In particular, Chapter 6.95 of the Health and Safety Code requires all businesses using these materials to inform local government agencies of the types and quantities of materials stored on site. This disclosure enables emergency response agencies to respond quickly and appropriately to accidents involving dangerous substances. Chapter 6.95 of the California Health and Safety Code, and Title 19 of the California Code of Regulation, describes the requirements for chemical disclosure, business emergency plans, and community right to know programs. According to these state requirements, a business that uses or handles hazardous materials in amounts equal to or greater than 55 gallons, 500 pounds or 200 cubic feet at any one time must prepare a business emergency plan and chemical inventory. The inventory must be updated annually, and the business plan every two years. The chapter also has incorporated certain requirements from Federal SARA Title III for chemicals designated as acutely hazardous.

Pipeline Failure

Pipeline transport is an economic method for transporting large quantities of oil or natural gas over land. Where possible, pipelines are built above the surface; however, in more developed, urban, or environmentally sensitive areas they are buried underground. The oil and natural gas infrastructure is utilized to provide resources for national defense, heating and cooling homes, generating power for business, and providing fuel.

Government regulations require that buried fuel pipelines must be protected from corrosion. Typically, corrosion control is by use of pipeline coating in conjunction with cathodic protection. Natural gas can explode when mixed with air in certain concentrations and ignited by a spark or flame. The National Transportation Safety Board has documented cases where natural gas from ruptured pipelines resulted in flash fires and explosions, causing fatalities and property damage.

3.7.2 Hazardous Material Release/Pipeline Failure Hazard History

According to the Pipeline and Hazardous Materials Safety Administration, there has been an average of 640 reported pipeline incidents each year for the past twenty years, resulting in a total 14 deaths, 57 injuries, and over $508,910,000 in property damage.

There are a variety of causes of natural gas pipeline system failure events. The most common cause of pipeline failure is corrosion of the pipeline. Corrosion weakens the structural integrity of the pipeline and makes it more susceptible to rupture and failure. Another common cause of pipeline failure is accidental rupture at a construction site. Many natural gas lines buried underground are accidentally ruptured during excavation. Other sources of failure include natural forces such as earthquakes, equipment failure, operations failure, and materials or weld failures, as occurred in the well-known 2010 San Bruno pipeline explosion.

2010 San Bruno Pipeline Explosion



On September 9, 2010, a 30-inch steel natural gas transmission pipeline owned by Pacific Gas and Electric (PG&E) ruptured in a residential neighborhood in San Bruno, California. The rupture released approximately 47.6 million standard cubic feet of natural gas. The released gas then ignited, resulting in an explosion and fire that killed 8, injured 60, and forced the evacuation of many more people. The fire also caused substantial property damage, destroying 38 homes, and damaging 70 homes. The rupture created a crater 72 feet long by 26 feet wide in the middle of the street. The ruptured pipe segment was 28 feet long, weighed approximately 3,000 pounds, and was found 100 feet from the crater.

An investigation was immediately conducted by the National Transportation Safety Board (NTSB). A review of PG&E records revealed that the pipeline had been labeled in PG&E drawings as seamless API 5L Grade X42 pipe. However, upon examination of the ruptured pipe segment, the NTSB found that it was actually constructed of smaller segments of pipe of unknown origin welded together. The NTSB concluded that the poorly welded pipe section had a visible seam weld flaw that grew over time. As a result, the pipe was not as strong as the listed API 5L Grade X42 steel pipe and ruptured under increased pressure during electrical maintenance at the Milpitas Terminal.

3.7.3 Hazardous Materials Release/Pipeline Failure Hazard Probability, Frequency, and Magnitude

Since the District utilizes chlorine gas and aqueous ammonia for disinfection in the water distribution system, there is an increased risk for hazardous materials releases impacting the service area, however, there have been no major releases.

It is important to note that hazardous material emergencies also occur during transportation and all major highways are susceptible to releases of toxic and flammable chemicals. While there is currently no mechanism to assign a probability of a fixed site or transportation hazardous material emergency, it is important to consider a relatively high likelihood of occurrence and conduct planning and training accordingly.

The District is located about 20 miles north of San Diego and within close proximity to Interstate 5 freeway, which cuts through the District through the City of Solana Beach. Due to the volume of traffic and the nature of the materials transported, there is a heightened risk of a hazardous material leak or spill within the service area. The ongoing use and transportation of hazardous materials through the District pose constant and real threats to the safety of the community. An accidental release of a hazardous substance into the environment has the potential to cause localized or widespread upset.

Figure 3.10 on the following page depicts the locations of the hazardous material facilities located within the Santa Fe Irrigation District.

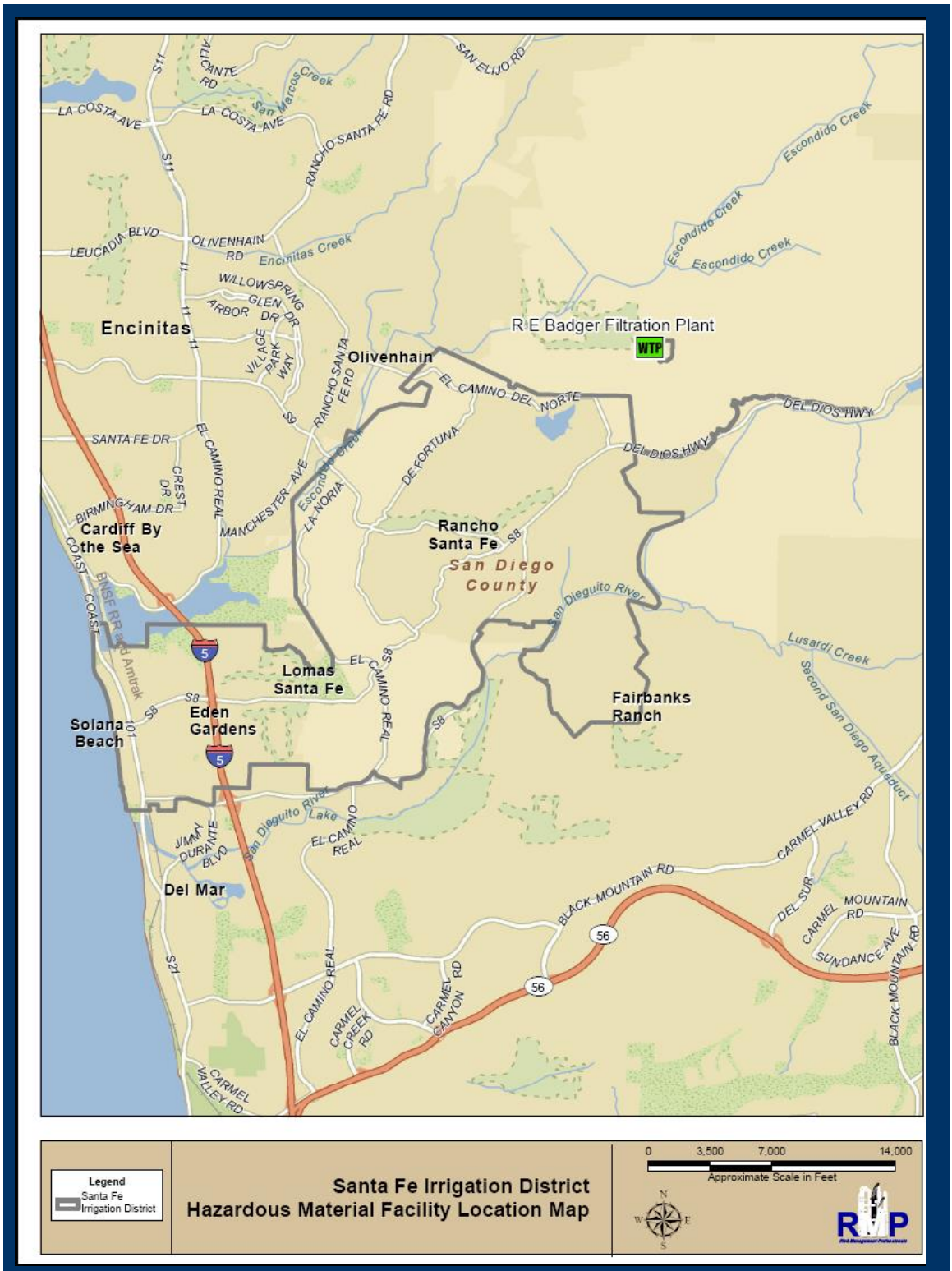
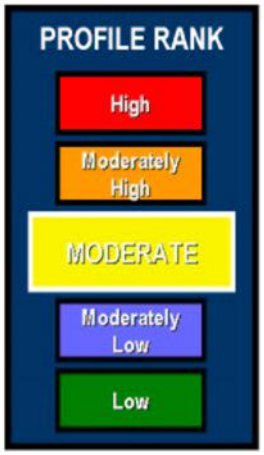


Figure 3.9: District Hazardous Material Facility Location Map

Pipeline Failure Probability

Although there is no generalized pipeline failure probability (failure is dependent upon specific pipeline construction material, joint type, soil, diameter, length, etc.), the existence of natural gas and petroleum pipelines throughout the District service area indicates the potential for a pipeline failure incident. One of the most common sources of pipeline incidents occurs from construction equipment rupturing or penetrating buried lines. Maintaining pipeline integrity (including replacing corroded pipelines), maintaining accurate piping maps, and ensuring adequate personnel training for construction and excavation in pipeline areas are important to prevent the occurrence of significant pipeline failures.

3.8 Terrorism/Adversarial Human-Caused Event Hazard Profile

Terrorism/ Adversarial Human-Caused Event Risk Assessment Summary		
Risk Rank: Moderate		
Probability/ Frequency:	Infrequent event – occurs between once every 8 years and once every 50 years (inclusive)	
Consequence/ Severity:	Moderate building damage, lifetime loss (less than 24 hours), severe injury or disability	
Vulnerability:	Localized damage area, minor secondary impacts, delayed hazard onset	
Hazard Risk Rank Score:	24	
Hazard Type	Anthropogenic Intentional	

3.8.1 Adversarial/Human-Caused Event Hazard Information and Background

An adversarial/human-caused event can be described as the unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of a political or social objective. This term is closely linked to the word terrorism and may be used interchangeably in the sections below.

A weapon of mass destruction (WMD) is a type of weapon that can bring significant harm to a large number of people or structures. Examples of WMD include nuclear, radiological, biological, or chemical agents. Aside from attacking local targets, terrorists might also use WMD to inflict harm on a large population.

The Federal Bureau of Investigation (FBI) has categorized two types of terrorism in the United States.

International Terrorism involves terrorist activity committed by groups or individuals who are foreign-based and/or directed by countries or groups outside the U.S., or whose activities transcend national boundaries.

Domestic Terrorism involves groups or individuals whose terrorist activities are directed at elements of our government or population without foreign direction.

Well-known international terrorist groups include Islamic Fundamentalist groups, such as Islamic State in Iraq and Syria (ISIS); al-Qaeda, European terrorists, including the Red Brigade in Italy, Spain's Euskadi Ta Askatasuna (ETA), and the Japanese Red Army; separatist groups, such as Sierra Lumenoso, and the "Shining Path" in Peru. Add to these a host of narco-terrorists, such as the Medellin and Cali drug cartels.

In the U.S., a number of animal rights activists; environmentalist groups; white supremacists, such as the League of Aryan nations; and groups including the Covenant, Sword and Arm of the Lord, New World Order, and skinheads have been responsible for acts of terrorism on U.S. soil. Added to these are groups like the Klu Klux Klan; survivalists, such as the Freemen in Montana; and doomsday cults, such as David Koresh in Waco, Texas, and Jim Jones in Guyana.

There are a number of methods a terrorist may use to carry out their objective, including attacks of a chemical, biological, radiological, nuclear, explosive, and cyber nature. In addition, terrorists conduct hijackings, assassinations, armed assaults, kidnappings/hostage taking, arson fires, sabotage of critical infrastructures such as utilities and transportation, and the dissemination of confidential or otherwise sensitive information for the planning of terrorist attacks.

Chemical

Chemical agents involve the use of chemical compounds to kill or seriously injure victims. There are numerous kinds of chemical weapons, and their effectiveness is determined by a number of factors, including age, purity, weather conditions, wind direction, and means of dissemination.

Biological

Biological agents include microbes, such as bacteria or viruses, and toxins derived from plants or animals that can produce illness or death. Illegal facilities that manufacture these substances are difficult to detect because they employ fermentation technology commonly used in the production of legitimate products such as antibiotics, vaccines, and consumables.

Radiological and Nuclear

Radiological or a nuclear adversarial event is the use of radioactive materials and/or nuclear explosives, as well as any violent actions against nuclear facilities by individuals or groups, to inflict harm on a population and advance political or social objectives. Sources of radiological material including nuclear fuel cycle waste, medical and dental equipment, military weaponry, and machines used in private industry.

Explosive

The impact of a bombing depends largely on the type, size, and placement of the device used. Additionally, a WMD in combination with an explosive device expands lethality, physical damage, and economic disruption. The use of an explosive device can also inflict significant disruption of society through destruction of critical infrastructure and widespread fear amongst the target population.

Cyber

A cyber adversarial event is a premeditated, politically motivated attack against information, computer systems, computer programs, and data which results in violence against noncombatant targets by sub-national groups or clandestine agents. Cyber terrorists can be domestic or international. Classification of being a cyber-terrorist depends on if the terrorist relies on cyber terrorism to further their cause or uses it in addition to conventional terrorism.

Additional Methods

Additional methods for adversarial events include hijackings, kidnappings, and the taking of hostages; armed assaults and mass shootings; assassinations of public figures; sabotage of transportation systems and utility infrastructure; the dissemination of confidential information that would aid terrorist organizations when planning an attack; arson fires; and many other means of disrupting normal society or endangering lives and property.

3.8.2 Adversarial/Human-Caused Event Hazard History



The U.S. has proven to be a high priority target for both domestic and international adversarial/ human-caused events. Acts of terror have become increasingly alarming in their magnitude in recent years. Examples of this include the bombing of the Alfred P. Murrah Federal Building in Oklahoma City and the attacks of September 11, 2001, on the World Trade

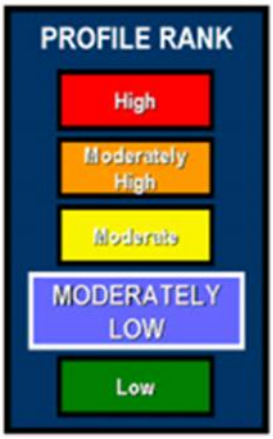
Center complex and the Pentagon. Not all attacks, however, are at this level of intensity. The U.S. has also been subject to small scale attacks in the past such as the bombing at the Boston Marathon in 2013 and the Las Vegas shooting in 2017. Specifically, the District has not been directly impacted by terrorism events in the past.

3.8.3 Adversarial/Human-Caused Event Hazard Probability, Frequency, and Magnitude

While there has not been a large-scale event within its service area, the District recognizes the potential for a terrorism event to impact the service area. Given current escalating terrorism trends, the threat of a terrorist event within the U.S. is a credible possibility and the Steering Committee ranked the probability of terrorism accordingly during the Hazard Identification Workshop. Although the District does not have any identified hard targets within the service area, the potential threat exists throughout the service area due to its proximity to the City of San Diego, nearby international airports, and other identified targets.

Additionally, the District completed a Security Vulnerability Assessment to comply with the Bioterrorism Act of 2002. The Security Vulnerability Assessment evaluated the District's vulnerability to malevolent attacks, including terrorism and contamination, and developed recommendations to protect against malevolent attacks. However, because of the security sensitive nature of the information, the terrorism risk assessment results are not repeated as part of the Hazard Mitigation Plan.

3.9 Drought Hazard Profile

Drought Risk Assessment Summary		
Risk Rank: Moderately Low		
Probability/ Frequency:	Regular event - occurs between once a year and once every 7 years	
Consequence/ Severity:	No damage	
Vulnerability:	Localized damage area, minor secondary impacts, delayed hazard onset	
Hazard Risk Rank Score:	9	
Hazard Type	Hydrological	

3.9.1 Drought Hazard Information and Background

A drought or an extreme dry periodic climate is an extended period where water availability falls below the statistical requirements for a region. Drought is not a purely physical phenomenon, but rather an interplay between natural water availability and human demands for water supply. The precise definition of drought is made complex owing to political considerations, but there are generally four types of conditions that are referred to as drought:

- **Meteorological drought** is brought about when there is a prolonged period with less than average precipitation.
- **Agricultural drought** is brought about when there is insufficient moisture for average crop or range production. This condition can arise, even in times of average precipitation, owing to soil conditions or agricultural techniques.
- **Hydrologic drought** is brought about when the water reserves available in sources such as aquifers, lakes, and reservoirs falls below the statistical

average. This condition can arise, even in times of average (or above average) precipitation, when increased usage of water diminishes the reserves.

- **Socioeconomic drought** associates the supply and demand of water 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.

Due to the extensive nature of water supply infrastructure – reservoirs, groundwater basins, and inter-regional conveyance facilities – mitigation for the effect of short-term dry periods is implicit for most systems. Defining when a drought begins is a function of drought impacts to water users. Hydrologic conditions constituting a drought for water users in one location may not constitute a drought for water users elsewhere, or for water users having a different water supply. Individual water suppliers may use criteria such as rainfall/runoff, amount of water in storage, or expected supply from a water wholesaler to define their water supply conditions.

Drought is a gradual phenomenon. Although droughts are sometimes characterized as emergencies, they differ from typical emergency events. Most natural disasters, such as floods or wildland fires, occur relatively rapidly and afford little time for preparing for disaster response. Droughts occur slowly, over a multiyear period. There is no universal definition of when a drought begins or ends. Impacts of drought are typically felt first by those most reliant on annual rainfall – ranchers engaged in dryland grazing, rural residents relying on wells in low-yield rock formations, or small water systems lacking a reliable source. Drought impacts increase with the length of a drought, as carry-over supplies in reservoirs are depleted and water levels in groundwater basins decline.

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 wildland fires may increase. Severe droughts may result in the loss of agricultural crops and forest products, undernourished wildlife and livestock, lower land values, and raise unemployment.

3.9.2 Drought History

According to the U.S. Drought Monitor map for California, the District is in the Moderate Drought Zone. This point is illustrated in Figure 3.11. Over the past century, many of the droughts experienced in the U.S. affected vegetation, food supply and livelihood for tens of thousands of families. This, in turn, created the need for water conservation and water management efforts across the country including California.

For example, the Dust Bowl was an extended period of severe drought in the 1930s which affected Oklahoma and parts of Texas, New Mexico, Colorado, and Kansas. Over the course of a decade, the region experienced four of the driest calendar years since 1895. Topsoil erosion and strong winds resulted in large dust storms. Reduced vegetation severely impacted the farming-reliant economy forcing tens of thousands of families to relocate in search of better economic condition. Various dam and reservoir projects to allow for a more reliable water supply for the public were constructed as a result of this historic drought.

The California drought of 1976 to 1977 is another example of severe drought conditions. By the end of the "wet season" in 1976, California reservoirs were depleted and melting snow from the Sierra snowpack was minimal. The following year was marked as one of the driest years on record. Out of the 58 counties in California, 47 of them declared a local drought emergency, making them eligible for relief money at both State and Federal levels. The drought hit farmers especially hard, with many experiencing economic losses in every stage of food production and supply. This drought marked the beginning of an extensive water conservation movement across California that has continued even through times of abundance. As a result, farmers have switched to water efficient crops and reduced the aggressive pumping of groundwater.

In 2012, California experienced drought conditions it had not seen in 1,200 years according to a study completed by the University of Minnesota and Woods Hole Oceanographic Institution in Massachusetts. On January 17 of that year, California State Governor, Jerry Brown, declared a drought state of emergency. As of February 14, 2017, more than 20 million California residents has been affected according to the United States Geological Survey, including those in the District's service area. While precipitation was at record lows, the drought was exacerbated by record warm periods as well. 2014 was notably the warmest year for the state on record while 2013 was the third warmest. In response, Governor Brown issued a series of executive orders to encourage long-term water savings while drought conditions persist. Due to an increase in precipitation through the end of 2017, drought conditions in the District's service area were significantly reduced. However, years later, in 2022, majority of the state was classified as being in either severe or extreme drought conditions according to the U.S. Drought Monitor. Governor Newsom responded by proclaiming a state of emergency and announcing several executive actions aimed at promoting long-term water conservation. A network of atmospheric rivers was observed over the state from December 2022 to April 2023. This ended the drought for the majority of the state and brought trillions of gallons of water to

the area. After bringing significant rainfall to California in August 2023, Tropical Storm Hilary put an end to the state's drought. In the past five years, no federal declaration for a drought disaster in the region has been issued. However, the state of California declared a state of emergency multiple times most recently in 2021 in response to drought conditions. Figure 3.11 illustrates the current state of drought in California and is provided by the United States Drought Monitor.

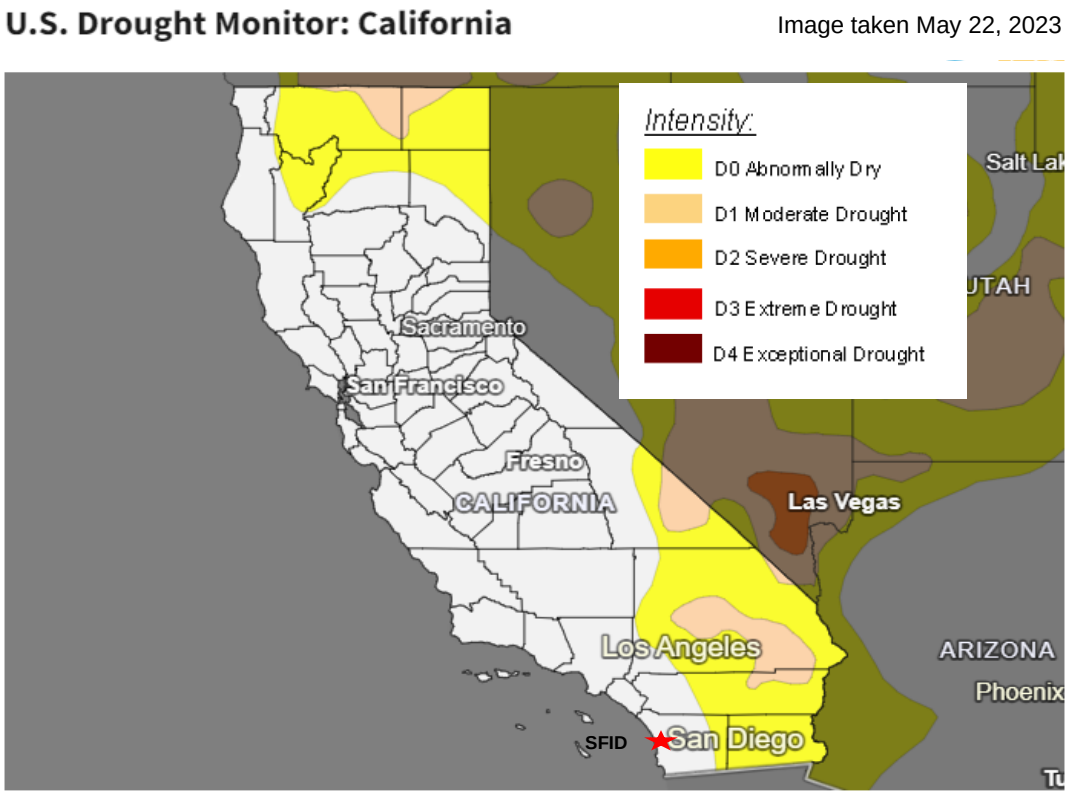


Figure 3:10: California Drought Monitor Map

3.9.3 Drought Probability, Frequency, and Magnitude

San Diego County is a semi-arid region and local water resources are scarce. The region is dependent upon imported water supplies provided by SDCWA. As a result, weather, and other conditions in other portions of the state and southwestern United States affect the availability of water for use in San Diego County. Taking all this into consideration, it is likely the District will continue to experience water shortages and drought events.

The entire service area of the District service area is equally at risk of drought hazards, and may experience shortages due to drought conditions, regulatory restrictions enacted upon imported supplies, and other factors. The District's 2015 Urban Water Management Plan (UWMP) includes water conservation as a necessary and effective component of its programs to provide a reliable water supply to meet the needs of the public within its service area. The District's UWMP also includes a contingency analysis of actions to be taken in response to water supply shortages. In the event of a drought, the District can implement several levels of response policies, dependent upon the severity of the drought.

Drought and Climate Change

Increased population and exploitation of fossil fuels during the past century has led to longer and more prevalent droughts in many parts of the U.S. The global warming phenomenon has led to increased rainfall instead of snowfall in many regions resulting in increased flooding. This, combined with earlier and rapid melting of snow, has led to fluctuation in water availability and resulted in increased floods in wet regions and drought in dry regions. As Southern California temperatures rise and water sources are depleted, the potential for droughts in California, including the District's service area, are expected to continue to increase in frequency. In addition to increased rainfall, it is anticipated that climate change will increase the average temperature throughout the region, as well as bring about extended periods of dry weather. It is expected that the District's entire service area will be affected by these increasing periods of dry conditions. Not only will dry spells persist for extended periods, but they will additionally gradually increase in intensity as the temperatures throughout the region rise. Members of the cities of Solano Beach and Rancho Santa Fe may face increased water rates and would be more likely to be vulnerable to a wildfire event due to an decrease in precipitation and dry spells that can cause larger surface areas of land that is vulnerable to a wildfire.

As mentioned in Section 3.11, District personnel would recognize decreased water supply and decreased precipitation, common impacts of climate change, as a drought scenario. As mitigation activities focused on water supply reliability are indifferent to the root cause

of water shortage, the Steering Committee has chosen to blend the applicable impacts of climate change with its drought mitigation efforts. All mitigation actions for drought described in Chapter 4 also consider the impacts of climate change.

Impacts to Vulnerable Populations/Assets

As stated by the California Department of Water Resources, the state is entering another period of drought, and populations that are housed in special facilities in the District might be affected to a greater degree than others. Dispersed throughout the service area are the numerous medical clinics catering to the elderly, the physically and cognitively challenged, along with early childhood education facilities. These facilities include Coastal Breeze Assisted Living and Memorial Care, Scripps Medical Center, Le Port Montessori Solana Beach, and Skyline Elementary. In the event of a drought, these groups of the elderly, young, and those with limited physical or cognitive capacity may feel the effects of a drought to a higher extent. However, since these facilities are spread out throughout the region, there is no way for the District to know which of these is more likely to be impacted by the drought. It is important to note an exceptional drought may lead to restricted water use for residents in the service area. If increased water rates or other costs were imposed, the vulnerable communities mentioned above may have less access to financial resources and might experience the effects of a drought more severely. When faced with inaccessibility to water owing to rising expenses, however, water retailers have existing initiatives in place to ensure access to water for all community members who require assistance. Consequently, the District can assume that the sensitive population is equally vulnerable to the effects of a drought since droughts are regional hazards expected to impact the entire service area. However, to improve resiliency to the residents throughout the service area, the District has proposed mitigation strategy 2023.HMP.07 to expand outreach through public forums to encourage participation in water conscious government rebates and other resources to manage water access. A detailed description of the proposed mitigation action can be found in Table 4.2. It should be noted that the emergency plans for the Cities and County will supply additional water resources and take sensitive populations into account when responding to drought circumstances.

3.10 Power Failure Hazard Profile

Power Failure Accident Risk Assessment Summary		
Risk Rank: Low		
Probability/ Frequency:	Regular event – occurs between once a year and once every 7 years	
Consequence/ Severity:	No damage	
Vulnerability:	No physical damage, no secondary impacts	
Hazard Risk Rank Score:	3	
Hazard Type	Anthropogenic Non-Intentional	

3.10.1 Power Failure Hazard Information and Background

A power outage is the loss of the electricity supply to an area. In addition to natural hazards, power failure can result from a defect in a power station, damage to a power line or other part of the distribution system, a short circuit, or overloading of electricity mains.

A power outage may be referred to as a blackout if power is lost completely, or as a brownout if some power supply is retained, but the voltage level is below the minimum level specified for the system, and a short circuit indicates a loss of power for a short amount of time (usually seconds). Some brownouts, called voltage reductions, are made intentionally to prevent a full power outage.

The absence of electrical power at District facilities for extended periods can, in some areas, preclude water deliveries where pumping is necessary.

3.10.2 Power Failure History

California Energy Crisis

The 2000-2001 California Electricity Crisis brought to light many critical issues surrounding the state's power generation and distribution system, including its dependency on out-of-state resources. Although California has implemented effective energy conservation programs, the state continues to experience both population growth and weather cycles that contribute to a heavy demand for power. The 2000 and 2001 blackouts occurred due to losses in transmission or generation and/or extremely severe temperatures that lead to heavy electric power consumption.

2011 Southwest Blackout

In September of 2011, five separate power grids serving nearly 7 million people in southern California, western Arizona, and parts of Mexico went out in the span of 11 minutes. The power outage, termed the 2011 Southwest Blackout, was the largest power failure in California history and lasted over twelve hours.

Affected metropolitan areas were crippled from the loss of traffic signals; as a result, trains stopped running and freeways experienced extreme congestion. Public gas stations were also unable to pump fuel, leaving many stranded vehicles. The power outage also caused several sewer pumping stations to fail, resulting in contaminated beaches and potentially unsafe water supplies. Restaurants and grocery stores also suffered large losses from spoiled food.

3.10.3 Power Failure Probability, Frequency, and Magnitude

Currently, there is no mechanism to calculate the probability of a power failure, without evaluating the failure as a cascade effect from natural hazards (i.e., earthquakes). However, California has implemented numerous conservation measures to ensure an adequate power supply.

Additionally, in order to evaluate the damage inflicted by a power outage the Federal Emergency Management Agency (FEMA) has assigned economic values to the loss of electric power. Table 3.17 summarizes the loss estimates per capita per day.

It should be noted that all parts of the District's service area are vulnerable to power outages.

Table 3.15: Economic Impacts of Loss of Electric Power

Category	Estimated Economic Impact
Reduced regional economic activity[1]	$87
Impacts on Residential Customers • Direct economic losses • Disruption economic impact • Total Best estimate	 $30 to $35 $63 to 85 $101
Total economic impacts	**$188**

Note: Values are per capita per day

[1] This value of reduced regional economic activity is based on national economic data. If desired, more detailed estimates could be made for specific metropolitan areas using NAICS data in the economic census referenced above.

3.11 Climate Change

With the release of the California Adaptation Planning Guide (APG) in March 2015, the District aimed to include the effects of climate change in the Hazard Mitigation Plan update. As identified in the "Understanding Regional Characteristics" portion of the APG, the District is located in the South Coastal Region of California. As a result, the Steering Committee considered the following climate change impacts as recommended by the APG:

- Increased Temperatures
- Reduced Precipitation
- Sea Level Rise
- Reduced Tourism
- Reduced Water Supply
- Wildfire Risk
- Public Health – Heat and Air Quality
- Coastal Erosion

The Steering Committee engaged in a discussion to determine which impacts posed a viable threat to the District. While some impacts clearly applied, others required additional research. Studies were conducted to look at recorded trends for sea level rise, wildfire, and regional temperature increases. The result of the study was the following list of perceived, feasible impacts that might affect the District over the next 5 to 10 years:

- Increased Temperatures
- Reduced Precipitation
- Reduced Water Supply
- Wildfire Risk

After reviewing the results of each of these impacts, the Steering Committee decided to include hazards in the Plan update that represented how the impacts would be felt by the District. For example, increased temperatures and reduced precipitation would be recognized as a drought. Additionally, increased temperatures and reduced precipitation might result in a wildfire. Therefore, the Steering Committee identified Drought and Wildfire as perceived hazards. Any information regarding the effects of these impacts on the District will be found under the hazard profiles listed above. Additionally, mitigation strategies that apply to these impacts will be classified under Drought and Wildfire in the mitigation actions identified in Chapter 4.

The service area's infrastructure reaches close to the shore, meaning that sea level rise could impact Solana Beach. However, the service area would not feel the impacts severely as their infrastructure is underground. Additionally, the area is already built up and even though there are open spaces, the expectation that vulnerability may increase due to the area being in a fire zone would not increase. There are feasible limits on how many people the service area can house, and the service area is limited by its size. Although there are significant open spaces, they areas are private properties. Due to limits on large influxes of people to move in, it is unlikely populations will increase in any major way. Furthermore, the area should not see a large impact from climate change in the next 5 years since the effects of climate change are a long-range issue.

3.12 Asset Inventory

§201.6(c)(2)(ii)(A): [The plan **should** describe vulnerability in terms of] the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area

A critical step required to complete the Risk Assessment is to develop a detailed asset inventory and document potential asset damages due to each identified natural hazard. The calculated loss estimates were based on the values determined during the initial asset inventory. In order to produce accurate loss estimates, the District developed a comprehensive inventory of all assets, including asset locations.

In order to develop loss estimates, specific values were assigned to the critical District facilities in the asset inventory. The following tables summarize the assigned values, as well as the sources utilized as the basis for the values including the following:

- FEMA's "Multi-hazard Loss Estimation Methodology, Earthquake Model, HAZUS MR4"
- FEMA's guidance document entitled "What is a Benefit? - Guidance on Benefit-Cost Analysis of Hazard Mitigation Projects, Draft. Revision 2.0"
- Santa Fe Irrigation District Asset Management Master Plan Asset Valuation 2018

3.12.1 Loss of Function Values

In order to provide a mechanism for evaluating the importance of lifelines and critical services, the following table was used to identify per capita value for loss of water service. Based upon the population in the District service area, the following values were assigned:

Table 3.16: Loss of Function Values – Utilities and Lifelines

Loss of Potable Water Service	Cost of Complete Loss of Service	Cost of Water Unsafe for Drinking
Reduced Regional Economic Activity1	$35	$8.75
Impacts on Residential Customers	$68	$34
Total economic impact (all hazards)	**$103**	**$43**

Note: Values are per capita per day
Source: What is a Benefit? Guidance on Benefit-Cost Analysis of Hazard Mitigation Projects Revision 2.0

Contents Value Percentages

When assessing the potential losses, the value of the contents of the buildings was included in the analysis. Table 3.26 from FEMA's guidance provides a list of facility categories and the associated contents value percentages allocated:

Table 3.17: Contents Value Percentages

Occupancy Class	Contents Value %
Government – General Services	100
Government – Emergency Response	150
Education – Schools/Libraries	100
Education – Colleges/Universities	150
Industrial – Food/Drugs/Chemicals	150

Source: Multi-hazard Loss Estimation Methodology, Earthquake Model, HAZUS MR4

3.12.2 Future Developments

Currently, there are no planned developments for new future buildings within the District; however, the hazard maps and loss estimates are dynamic, and the calculations will be updated to account for future developments as the potential arises. The hazard maps will also be used as a tool to pre-identify areas that are not conducive for construction.

Table 3.18: Asset Inventory Summary

Type	Name	Address	TOTAL Replacement Value
Building	Administration Office/ District Yard	5920 Linea del Cielo Rancho Santa Fe, CA 92067	$46,727,696.00
Reservoir	Larrick Reservoir	440 Glenmont Drive Solana Beach, CA 92075	$9,704,174.00
Pump Station	Larrick Pump Station	440 Glenmont Drive Solana Beach, CA 92075	$1,635,469.00
Water Facilities	Valves (2,855)	Various Locations	$24,283,216.00
Water Facilities	Pressure Reducing Stations (34)	Various Locations	$21,050,827.00
Water Facilities	Customer Water Services (7,130)	Various Locations	$31,527,177.00
Pipelines	Pipelines	Throughout Service Area	$340,349,353.00
***Reservoir**	Lake Hodges Floating Weather Station	Via Valle Vista Escondido, CA 92029	$186,911.00
***Dam**	Lake Hodges Raw Water Flume	Via Valle Vista Escondido, CA 92029	$7,476,431.00
***Dam**	San Dieguito Reservoir Dam	6339 El Camino del Norte Rancho Santa Fe, CA	$11,988,072.00
***Pump Station**	San Dieguito Reservoir Pump Station	El Camino del Norte Rancho Santa Fe, CA	$8,177,347.00
***Pump Station**	Cielo Raw Pump Station	8204 Del Dios Highway, #A Rancho Santa Fe, CA 92127	$3,214,679.00
***Water Facilities**	R. E. Badger Filtration Plant	18535 Aliso Canyon Road Rancho Santa Fe, CA 92091	$104,407,196.00
		Subtotal	**$610,728,548.00**

Note: Assets denoted with a * are joint assets. The values given are the SFID share of each asset.
Note: Values are based on a 2018 insurance survey. Inflation rates were applied for each year through October 2022 to represent estimated 2022 values

3.13 Loss Estimates

§201.6(c)(2)(ii)(B): [The plan **should** describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate

3.13.1 Loss Assessment Calculations

The Steering Committee reviewed each asset category and assigned a potential percentage of damage expected due to each identified hazard. In addition, if there were identified water service interruptions the loss of function values was also included. The tables of the following pages identify each asset category, name, total value, and the percent damage/damage value for each asset. The damages for each asset are totaled for each hazard to obtain the overall loss estimate for each hazard.

Table 3.19: Vulnerability Assessment Calculations - Wildfire through Dam/Reservoir Failure

Santa Fe Irrigation District Vulnerability Assessment Calculations			Wildfire		Earthquake		Flood		Dam/ Reservoir Failure	
Type	**Name**	**TOTAL**	**% Damage**	**Loss Estimate**	**% Damage**	**Loss Estimate**	**% Damage**	**Loss Estimate**	**% Damage**	**Loss Estimate**
Building	Administration Office and District Yard	$46,727,696.00	3%	$1,401,830.88	50%	$23,363,848.00	3%	$1,401,830.88	0%	$0.00
Reservoir	Larrick Reservoir	$9,704,174.00	1%	$97,041.74	25%	$2,426,043.50	3%	$291,125.22	100%	$9,704,174.00
Pump Station	Larrick Pump Station	$1,635,469.00	1%	$16,354.69	25%	$408,867.25	3%	$49,064.07	5%	$81,773.45
Water Facilities	Valves (2,855)	$24,283,216.00	1%	$242,832.16	8%	$1,821,241.20	3%	$728,496.48	10%	$2,428,321.60
Water Facilities	Pressure Reducing Stations (34)	$21,050,827.00	10%	$2,105,082.70	8%	$1,684,066.16	3%	$631,524.81	10%	$2,105,082.70
Water Facilities	Customer Water Services (7,130)	$31,527,177.00	10%	$3,152,717.70	5%	$1,576,358.85	3%	$945,815.31	5%	$1,576,358.85
Pipelines	Pipelines	$340,349,353.00	30%	$102,104,805.90	80%	$272,279,482.40	3%	$10,210,480.59	10%	$34,034,935.30
*Reservoir	Lake Hodges Floating Weather Station	$186,911.00	0%	$0.00	0%	$0.00	0%	$0.00	100%	$186,911.00
*Dam	Lake Hodges Raw Water Flume	$7,476,431.00	5%	$373,821.55	20%	$1,495,286.20	0%	$0.00	30%	$2,242,929.30
*Dam	San Dieguito Reservoir Dam	$11,988,072.00	0%	$0.00	10%	$1,198,807.20	0%	$0.00	100%	$11,988,072.00
*Pump Station	San Dieguito Reservoir Pump Station	$8,177,347.00	5%	$408,867.35	15%	$1,226,602.05	3%	$245,320.41	100%	$8,177,347.00
*Pump Station	Cielo Raw Pump Station	$3,214,679.00	10%	$321,467.90	20%	$642,935.80	3%	$96,440.37	25%	$803,669.75
*Water Facilities	R. E. Badger Filtration Plant	$104,407,196.00	10%	$10,440,719.60	70%	$73,085,037.20	3%	$3,132,215.88	8%	$8,352,575.68
Water Service		$3,174,000.00	50%	$1,587,000.00	80%	$2,539,200.00	1%	$31,740.00	33%	$1,047,420.00
			Wildfire	$122,252,542.17	Earthquake	$383,747,775.81	Flood	$17,764,054.02	Dam/ Reservoir Failure	$82,729,570.63

Table 3.20: Vulnerability Assessment Calculations – Disease Outbreak through Power Failure

Santa Fe Irrigation District Vulnerability Assessment Calculations			Disease Outbreak		Hazardous Material Release/ Natural and/or Liquid Gas Pipeline Failure		Terrorism/ Adversarial Human-Caused Events		Drought		Power Failure	
Type	**Name**	**TOTAL**	**% Damage**	**Loss Estimate**	**% Damage**	**Loss Estimate**	**% Damage**	**Loss Estimate**	**% Damage**	**Loss Estimate**	**% Damage**	**Loss Estimate**
Building	Administration Office and District Yard	$46,727,696.00	0%	$0.00	2%	$934,553.92	5%	$2,336,384.80	0%	$0.00	0%	$0.00
Reservoir	Larrick Reservoir	$9,704,174.00	0%	$0.00	0%	$0.00	25%	$2,426,043.50	0%	$0.00	0%	$0.00
Pump Station	Larrick Pump Station	$1,635,469.00	0%	$0.00	0%	$0.00	5%	$81,773.45	0%	$0.00	0%	$0.00
Water Facilities	Valves (2,855)	$24,283,216.00	0%	$0.00	0%	$0.00	5%	$1,214,160.80	0%	$0.00	0%	$0.00
Water Facilities	Pressure Reducing Stations (34)	$21,050,827.00	0%	$0.00	0%	$0.00	5%	$1,052,541.35	0%	$0.00	0%	$0.00
Water Facilities	Customer Water Services (7,130)	$31,527,177.00	0%	$0.00	0%	$0.00	5%	$1,576,358.85	0%	$0.00	0%	$0.00
Pipelines	Pipelines	$340,349,353.00	0%	$0.00	1%	$3,403,493.53	5%	$17,017,467.65	0%	$0.00	0%	$0.00
*Reservoir	Lake Hodges Floating Weather Station	$186,911.00	0%	$0.00	0%	$0.00	5%	$9,345.55	0%	$0.00	0%	$0.00
*Dam	Lake Hodges Raw Water Flume	$7,476,431.00	0%	$0.00	0%	$0.00	5%	$373,821.55	0%	$0.00	0%	$0.00
*Dam	San Dieguito Reservoir Dam	$11,988,072.00	0%	$0.00	0%	$0.00	25%	$2,997,018.00	0%	$0.00	0%	$0.00
*Pump Station	San Dieguito Reservoir Pump Station	$8,177,347.00	0%	$0.00	0%	$0.00	5%	$408,867.35	0%	$0.00	0%	$0.00
*Pump Station	Cielo Raw Pump Station	$3,214,679.00	0%	$0.00	5%	$160,733.95	5%	$160,733.95	0%	$0.00	0%	$0.00
*Water Facilities	R. E. Badger Filtration Plant	$104,407,196.00	0%	$0.00	25%	$26,101,799.00	25%	$26,101,799.00	0%	$0.00	0%	$0.00
Water Service		$3,174,000.00	1%	$31,740.00	1%	$31,740.00	5%	$158,700.00	1%	$31,740.00	1%	$31,740.00
			Disease Outbreak	$31,740.00	HazMat Release et al	$30,632,320.40	Terrorism/ Adversarial Human-Caused Events	$55,919,857.80	Drought	$31,740.00	Power Failure	$31,740.00

Table 3.21 summarizes the loss estimates for each hazard:

Table 3.21: Loss Estimate Summary

Hazard	Total Losses
Earthquake	$383,748,000
Wildfire	$122,253,000
Dam/Reservoir Failure	$82,730,000
Terrorism/Adversarial Human-Caused Events	$55,920,000
Hazardous Material Release/ Natural and/or Liquid Gas Pipeline Failure	$30,632,000
Flood	$17,764,000
Drought	$32,000
Disease Outbreak	$32,000
Power Failure	$32,000

4 MITIGATION STRATEGIES

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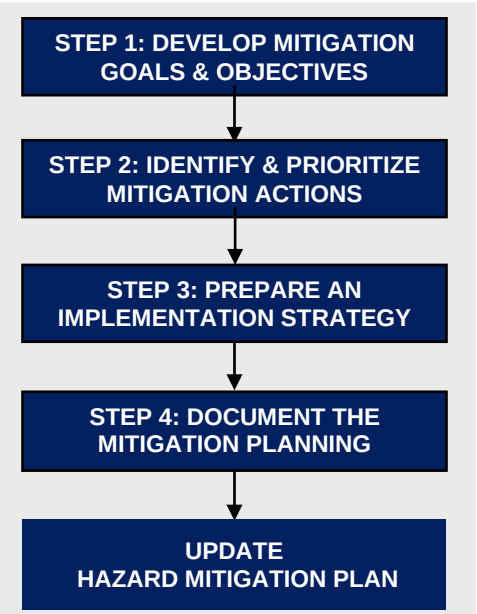
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4.1 Mitigation Goals and Objectives



In order to structure goals and objectives that produce appropriate mitigation actions, the hazard profiles and loss estimates were thoroughly reviewed to identify patterns in the location of potential hazard events and the vulnerability of the infrastructure identified within those locations. This information was used to develop clear goals to mitigate the effects of the identified hazard events.

The mitigation goals provide guidelines for developing mitigation actions which, in turn, provide prioritized hazard reduction. For the purpose of characterizing long-term hazard reduction targets and the enhancement of current mitigation capabilities, the mitigation goals included in this plan are based on:

- Previous goals identified in the 2018 HMP;
- Findings of the Risk Assessment, and
- Input from the Steering Committee.

§201.6(c)(3)(i): [The hazard mitigation strategy **shall** include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Table 4.1 on the following page includes the updated Plan goals and corresponding mitigation objectives. These objectives were developed and reviewed by the Steering Committee using knowledge of the service area (including high-hazard areas and sensitive populations), review of past efforts, and findings of the Risk Assessment.

Table 4.1: Overall Plan Goals and Strategies

GOAL 1: Protect Life and Property
• **Objective 1.1:** Implement activities that assist in protecting lives by making infrastructure, critical facilities, and other property more resistant to losses from hazards.

- **Objective 1.2:** Improve hazard assessment information to make recommendations for encouraging preventative measures for existing and new developments in areas vulnerable to natural and man-made hazards
- **Objective 1.3:** Develop and implement policies to promote business/economic resiliency during hazard events.
- **Objective 1.4:** Develop policies/mutual aid agreement as well as implement improvement projects to protect critical equipment and infrastructure in order to promote water service resilience for residence and fire suppression.

GOAL 2: Promote Public Awareness and Outreach

- **Objective 2.1:** Enhance educational and outreach programs to increase public awareness of the risks associated with hazards.
- **Objective 2.2:** Provide information on tools, partnership opportunities, financial assistance, and other resources to assist in implementing mitigation activities.

GOAL 3: Preserve the Environment

- **Objective 3.1:** Expand District environmental policies to more fully capture environmental concerns for new and existing developments.

GOAL 4: Encourage Regional, Inter-Agency Involvement with Hazard Mitigation.

- **Objective 4.1**: Maintain cooperative efforts with other agencies to enhance multi-agency planning, educational initiatives, and resource allocation.

GOAL 5: Increase the Capacity of Emergency Operations Functionality

- **Objective 5.1:** Strengthen emergency operations by increasing collaboration and coordination among cooperators, nonprofit organizations, businesses, and industry within and around the service area.
- **Objective 5.2:** Coordinate and integrate hazard mitigation activities, where appropriate, with emergency operations plans and procedures.
- **Objective 5.3:** Implement system improvements to improve water service resiliency to support fire suppression and emergency operations.

4.2 Identification of Mitigation Recommendations

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

§201.6(c)(3)(iv): For multi-jurisdictional plans, there **must** be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Mitigation actions are administrative and/or engineering project recommendations to reduce the District's vulnerability to the identified hazards. Management, Engineering, Operations, and Maintenance staff were required in the development of actions and projects that are designed to mitigate the impact of identified hazards and solve problems cost-effectively, as well as ensure consistency with the District's long-term mitigation goals and capital improvements. During the second Steering Committee meeting, a team-based approach was used to brainstorm mitigation projects based on the identified hazards and associated loss. In addition, the Federal Emergency Management Agency's (FEMA) Local Mitigation Planning Handbook and the California Adaptation Planning Guide were used to identify actions to mitigate the effects of climate change.

The evaluation and prioritization of the mitigation actions was used as an aid to produce a list of recommended mitigation projects to incorporate into the mitigation plan. Each of the mitigation recommendations listed on in Table 4.2 fell into one or more of the following standard categories:

- Prevention – planning and zoning, building codes, capital improvement programs, open space preservation, and storm water management
- Property Protection – acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass
- Personnel Education and Awareness – outreach projects, real estate disclosure, hazard information centers, and education programs
- Natural Resource Protection – sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation
- Emergency Services – warning systems, emergency response services, and protection of critical facilities

- Structural Projects – dams, levees, floodwalls, seawalls, retaining walls, and safe rooms

Please note the descriptions for each of these categories are standardized and may not apply specifically to the District. Table 4.2 provides an overview of the mitigation action, and other relevant information, in no specific order. Following the identification of the mitigation action, a Cost-Benefit Review was conducted in order to determine a prioritization of the items. Section 4.4 contains more information on the Cost-Benefit Review and the prioritization of the projects.

The list of mitigation actions in this plan is representative of the mitigation actions that were developed during the second Steering Committee Meeting. During this process, the Steering Committee focused on identifying potential vulnerabilities within the service area. If no vulnerability was identified, no mitigation actions were developed. As part of the brainstorming process, the Committee discussed all vulnerabilities that were present within the District and developed at least one mitigative action to reduce the vulnerability to that identified hazard. All considered actions have been included in this plan, with none being omitted or ruled out from implementation during the planning process.

Table 4.2: Mitigation Action Identification

Mitigation Activity	Hazards Mitigated	Mitigation Action Category	Corresponding Plan Goals & Strategies	Responsible Departments	Resources	Estimated Project Cost	Timeframe	Protects New Buildings	Protects Existing Buildings
2023.HMP.01 - Develop a Business Continuity Plan, utilizing the hazard profile information from the Hazard Mitigation Plan, to enhance economic resiliency and water service capabilities for sensitive populations following a hazard event.	All-Hazard	Prevention	Objective 1.3	Administration	Staff Time, General	Staff Time\ $20,000\ Associated Additional Costs	Short	Y	Y
2023.HMP.02 - Develop secondary emergency entrance points for critical facilities to allow better access for first responders; improving emergency management. *This action will improve evacuation capabilities and personal protection. This might provide additional access for first responders which will protect people. By improving emergency response, this will allow fires at and around the facilities to be put out more efficiently, making the facility more resilient to wildfire hazards.*	Wildfire	Property Protection\ Emergency Services	Goal 5	Operations\ Engineering	Staff Time, Grant Funding	$125,000\ location	Long	N	Y
2023.HMP.03 - Conduct a seismic assessment and implement structural improvements at the Larrick Reservoir accordingly. *Specific studies on seismic movement will display the possible impacts on infrastructure and will help the District understand how it affects not just the members of the public in the service area, but the sensitive populations as well.*	Earthquake	Property Protection/ Structural Project	Objective 1.1, Objective 1.2	Engineering	Capital Improvements, Grant Funding	$2,500,000	Long	N	Y
2023.HMP.04 – Evaluate hazard vulnerability and implement structural improvement projects as necessary for district facilities. This action should also include considerations for business network system protection.	Earthquake\ Flooding\ Wildfire\ Dam Failure	Property Protection\ Structural Project	Objective 1.1, Objective 1.2	Engineering\ IS	Capital Improvements, Grant Funding	$1,500,000	Long	N	Y
2023.HMP.05 – Relocate Business Network Systems equipment to mitigate identified hazards.	Earthquake\ Flooding\ Wildfire\ Dam Failure	Prevention\ Property Protection	Objective 1.1	IT Department\ Engineering Department	Capital Improvements, Grant Funding	$100,000	Long	N	Y

Mitigation Activity	Hazards Mitigated	Mitigation Action Category	Corresponding Plan Goals & Strategies	Responsible Departments	Resources	Estimated Project Cost	Timeframe	Protects New Buildings	Protects Existing Buildings
2023.HMP.06 – Conduct an evaluation of security features at all critical facilities for system adequacy and implement security upgrades (e.g., fencing, cameras, sensors, etc.), as necessary.	Terrorism\ Adversarial\ Human-Caused Events	Emergency Services\ Property Protection	Objective 1.2, Goal 5	Administration\ Operations	Staff Time, General Fund	Evaluation free through DHS. Project costs will vary depending on evaluation results.	Medium	Y	Y
2023.HMP.07 – Expand presence in public forums, ensuring outreach to sensitive populations, to encourage participation in water conscious government rebates and other resources such as customer portal access to personally manage water access.	Drought	Public Education & Awareness	Goal 2	Administration	Staff Time, General Fund	Staff Time	Short	N	N
2023.HMP.08 – Implement notification drills in accordance with Process Safety Management requirements.	HazMat\ Gas	Emergency Services	Goal 4	Administration & Joint Facilities	Staff Time	Staff Time	Medium	Y	Y
2023.HMP.09 - Review and update the District's environmental policies to identify resources for natural system information and enhance environmental considerations for new projects.	All-Hazard	Natural Resource Protection	Objective 3.2	Engineering	Staff Time	Staff Time	Medium	Y	N
2023.HMP.10 – Improve mutual aid agreement with the fire department to prioritize the protection of the water filtration plant to improve resiliency of water services for fire protection. *This action is intended to enhance the strategy with the fire department to improve the water service reliability to better serve the public and sensitive populations in the event of a wildfire.*	Wildfire	Emergency Services\ Natural Resource Protection	Goal 5	Administration	Staff Time	Staff Time	Short	Y	Y
2023.HMP.11 – Replace the backup generator for the administration building/corporate yard. Ensure new generator(s) meets increasing power demands and regulatory requirements.	Power Failure	Emergency Services\ Natural Resource Protection	Goal 1, Goal 5	Engineering Department	Capital Improvement Project, Grant Funding	$250,000 per unit	Long	N	Y
2023.HMP.12 – Enhance backup power capability for business network system.	Power Failure	Emergency Services	Goal 1, Goal 5	IT Department	General Funding	$50,000 per unit	Medium	N	N

Notes: Value provided by Steering Committee or taken from the Capital Improvements Plan
Note: Timeframe definitions are as follows.

a) Short: Task to be completed within 1-2 years
b) Medium Task to be completed within 3-5 years
c) Long: Task to be completed beyond the 5-year planning period

4.3 National Flood Insurance Program Compliance

§201.6(c)(3)(ii): [The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

The National Flood Insurance Program (NFIP) is a Federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the Federal Government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the Federal Government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods.

The District is not a flood plain manager and relies on local cities and San Diego County's flood plain managers. Therefore, the District is not eligible for NFIP participation. However, Table 4.3 presents the participation of the cities within the District's service area.

Table 4.3: Santa Fe Irrigation District NFIP Participation

CID	Community Name	Init. FHBM Identified	Init. FIRM Identified	Curr. Eff. Map Date	Reg-Emer. Date	Tribal
060725	City of Solana Beach	-	06/03/88	12/20/19	09/19/89	No
060284	San Diego County	07/19/77	06/15/84	03/22/22	06/15/84	No

Flood Recommendations/Repetitive Loss Properties

There were no properties identified as having repetitive losses or assets impacted by regular flooding. District facilities are robust and damage is only expected to impact electrical components at facilities below grade. However, the District identified several recommendations mitigating flood hazards in the Mitigation Action Identification table. Specifically, actions HMP.2023.04 and HMP.2023.05 are designed to minimize losses to critical District facilities from flooding.

4.4 Prioritization of Mitigation Recommendations

§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.

A simplified Benefit-Cost Review was applied in order to prioritize the mitigation recommendations for implementation. The priority for implementing mitigation recommendations depends upon the overall cost effectiveness of the recommendation, when considering monetary and non-monetary costs and benefits associated with each action. Additionally, the following questions were considered when developing the Benefit-Cost Review:

- How many people will benefit from the action?
- How large an area is impacted?
- How critical are the facilities that benefit from the action?
- Environmentally, does it make sense to do this project for the overall community?

Table 4.4 provides a detailed benefit-cost review for each mitigation recommendation, as well as a relative priority rank (High, Medium, and Low) based upon the judgment of the Steering Committee. The general category guidelines are listed below:

- High – Benefits are perceived to exceed costs without further study or evaluation
- Medium – Benefits are perceived to exceed costs, but may require further study or evaluation prior to implementation
- Low – Benefits and costs evaluation requires additional evaluation prior to implementation

It should be noted that values for costs (cons) are estimates only.

Table 4.4: Mitigation Action Prioritization: Benefit-Cost Review

Mitigation Activity	Benefit (Pros)	Costs (Cons)	Priority
2023.HMP.01 - Develop a Business Continuity Plan, utilizing the hazard profile information from the Hazard Mitigation Plan, to enhance economic resiliency following a hazard event.	• Reduced loss of Public Services • Decreased Economic Impacts • Avoided Personnel Injury • Improved Emergency Capabilities	• Staff Time (Planning & Training) • $15,000 in Additional Associated Costs • $50,000 in Consultant Support	Medium
2023.HMP.02 - Develop secondary emergency entrance points for critical facilities to allow better access for first responders; improving emergency management.	• Improved Emergency Management • Improved Recovery • Reduced Physical Damages and Costs • Avoided Injury • Improved Coordination with Local Emergency Services • Operational Resiliency	• $500,000 per Location in Construction, Design, Environmental Costs • Staff Time • Potential Easement Acquisition • Public Opposition	High

Mitigation Activity	Benefit (Pros)	Costs (Cons)	Priority
2023.HMP.03 - Conduct a seismic assessment and implement structural improvements at the Larrick Reservoir accordingly.	• Avoided Physical Injury • Avoided Physical Damages • Improved Water Service Resiliency • Improved Emergency Services Through Fire Suppression Water Source Support • Improved Structural Reliability • Continued Compliance with Federal/State Water Standards • Extended Asset Life	• $2,500,000 in Evaluation, Design, Construction, and Other Associated Project Costs • Staff Time	Medium
2023.HMP.04 – Evaluate hazard vulnerability and implement structural improvement projects as necessary for district facilities. This action should also include considerations for business network system protection.	• Improved Overall District Resiliency • Avoided Physical Damages • Avoided Injury/Death • Avoided Loss of Function Costs • Reduced Network/SCADA Outages and Repair Time	• $1,500,000 per Identified Project in Implementation Costs • $50,000 per Evaluation	Medium

Mitigation Activity	Benefit (Pros)	Costs (Cons)	Priority
2023.HMP.05 – Relocate Business Network System equipment to mitigate identified hazards.	• Improved Overall District Resiliency • Reduced Network/SCADA Outages and Repair Time • Reduced Physical Damages and Costs • Operational Resiliency	• $100,000 in Equipment relocation •	Medium
2023.HMP.06 – Conduct an evaluation of security features at all critical facilities for system adequacy and implement security upgrades (e.g., fencing, cameras, sensors, etc.), as necessary.	• Improved Staff/Facility Security • Avoided Casualties • Reduced Insurance Costs	• Project Costs (varied depending on evaluation results) • Potential Public Opposition	High
2023.HMP.07 – Expand presence in public forums to encourage participation in water conscious government rebates and other resources such as customer portal access to personally manage water access.	• Improved Public Awareness & Education • Avoided Injury • Safe and Reliable Water Service • State Regulatory Compliance (Water Board) • Improved Transparency	• Staff Time	Medium

Mitigation Activity	Benefit (Pros)	Costs (Cons)	Priority
2023.HMP.08 – Implement notification drills in accordance with PSM requirements.	• Enhanced Employee Safety & Awareness • Improved Planning Capabilities • Federal Regulatory Compliance (OSHA PSM)	• Staff Time	Medium
2023.HMP.09 - Review and update SFID environmental policies to identify resources for natural system information and enhance environmental considerations for new projects.	• Improved Awareness • Reduced Environmental Impact for New Developments • Reduction in Project Costs • Avoided Wildlife Disturbances • Protection of Natural Systems • Decreased Public Opposition	• Staff Time • Information Release Restrictions • Consultant Support Costs • GIS Consultant Costs	Low

Mitigation Activity	Benefit (Pros)	Costs (Cons)	Priority
2023.HMP.10 – Improve mutual aid agreement with the fire department to prioritize the protection of the Water Filtration Plant to improve resiliency of water services for fire protection.	• Avoided Injury/Casualty • Avoided Physical Damages • Reduce Operational Interruptions • Enhanced Employee Safety • Improved Water Service Resiliency • Improved Emergency Services Through Fire Suppression Water Source Support • Reduced Response Time to Emergency Events	• Staff Time	High
2023.HMP.11 – Replace the backup generator for the administration building/corporate yard. Ensure new generator(s) meet increasing power demands and regulatory requirements.	• Reduce Operational Interruptions • Reduced loss of Public Services • Decreased Economic Impacts • Improved Emergency Capabilities • Improved Emergency Management • Improved Recovery	• $250,000 per unit	Medium

Mitigation Activity	Benefit (Pros)	Costs (Cons)	Priority
2023.HMP.12 – Enhance backup power capability for business network system.	• Reduce Operational Interruptions • Reduced loss of Public Services • Decreased Economic Impacts • Improved Emergency Capabilities • Improved Emergency Management • Improved Recovery • Reduced Physical Damages and Costs	• Unit Costs • Staff Time	Medium

4.5 Implementation Strategy

Mitigation Actions classified as high-priority mitigation actions provide the most significant vulnerability reduction, as related to cost and probability, and are typically implemented before lower ranked improvements. The District, however, may find under some circumstances that a recommendation classified as a low-priority mitigation actions may need to be implemented before a higher priority recommendation. The priority levels associated with each improvement are indicated on the "Mitigation Action Prioritization: Benefit-Cost Review" table (Table 4.4) in the previous section.

2018 Hazard Mitigation Plan

The Project Team reviewed the mitigation strategies and actions from the 2018 HMP. The 2018 Plan outlined mitigation strategies scheduled for completion. Several of the actions contained in the Plan were on-going and District staff were able to implement them over the last 5 years to make the District less vulnerable to the identified natural hazards. However, these goals were generally part of the District's normal operations.

There was, however, measurable progress for some specific mitigation actions outlined in the 2018 Plan. Implementation of mitigation objectives along with existing planning mechanisms are described on page 5-6 of this plan. Several of the Mitigation Strategies from the 2018 Plan have been carried through into this update albeit modified. Table 4.5 provides some of the mitigation strategies from the 2018 Plan and their correlation to the current Plan.

Table 4.5: Ongoing Mitigation Strategies

2013 HMP Mitigation Strategies	Correlated Current Mitigation Strategies	Completed
2018.HMP.01 - Develop a Business Continuity Plan, utilizing the hazard profile information from the Hazard Mitigation Plan, to enhance economic resiliency following a hazard event.	2023.HMP.01 - Develop a Business Continuity Plan, utilizing the hazard profile information from the Hazard Mitigation Plan, to enhance economic resiliency following a hazard event.	Yes/Ongoing
2018.HMP.02 - Integrate hazard profiles from the Hazard Mitigation Plan into emergency situational awareness section of the District's various emergency Plans and develop exercises and drills based off identified vulnerabilities. *The District was able to use the Hazard Mitigation Plan to verify that they had procedures and responses in place and used it as a tool to ensure that the plans covered likely scenarios. As a result, it was assumed that the District would be more resilient to the identified hazards.*	This action was completed and was therefore removed from the plan. The District includes scenarios determined in the Hazard Mitigation Plan into their annual training and tabletop exercises. As a result of this action, an Emergency Action Plan was developed for possible dam failure at the San Dieguito Dam.	Yes
2018.HMP.03 - Develop secondary emergency entrance points for critical facilities to allow better access for first responders; improving emergency management.	2023.HMP.03 - Develop secondary emergency entrance points for critical facilities to allow better access for first responders; improving emergency management.	Ongoing

	The District has begun the development of implementing a secondary road for emergency response at the Water Filtration Plant which may be accessible soon as a dirt road path. Project is not set to be completed for a few years	
2018.HMP.04 – Purchase and install fire monitoring systems at critical facilities to increase wildfire detection.	This action was removed from the plan as it was determined to no longer align with the ideals and focus of the District.	No
2018.HMP.06 - Retrofit the Clearwell in accordance with the completed seismic assessment. *The conception of this action displayed the impact of seismic movement on this facility and better prepares the District for water vulnerability.*	This action was completed and was therefore removed from the plan.	Yes
2018.HMP.07 - Retrofit the Washwater Tank in accordance with the completed seismic assessment. *The conception of this action displayed the impact of seismic movement on this facility and better prepares the District for water vulnerability.*	This action was completed and was therefore removed from the plan.	Yes
2018.HMP.08 - Conduct a seismic assessment and implement structural improvements at the Larrick Reservoir accordingly.	2023.HMP.08 - Conduct a seismic assessment and implement structural improvements at the Larrick Reservoir accordingly.	Ongoing

	This action was determined to be currently ongoing and an NOI has been requested by the District.	
2018.HMP.09 - Conduct seismic evaluations and implement structural improvement projects as necessary for critical facilities. This action should also include considerations for business network system protection.	2023.HMP.09 – Evaluate hazard vulnerability and implement structural improvement projects as necessary for district facilities. This action should also include considerations for business network system protection.	Ongoing
2018.HMP.10 – Secure sufficient emergency backup power equipment for the Cielo Raw Water Pump Station.	This action was determined not viable due to the Cielo Raw Water Pump Station to be out of service for the next three years as a result of no local water. This action was therefore removed from the plan.	No
2018.HMP.11 – Conduct an evaluation of security features at all critical facilities for system adequacy and implement security upgrades (e.g., fencing, cameras, sensors, etc.), as necessary.	2023.HMP.11 – Conduct an evaluation of security features at all critical facilities for system adequacy and implement security upgrades (e.g., fencing, cameras, sensors, etc.), as necessary. The District considered this action to be a continuous project.	Ongoing
2018.HMP.12 - Develop educational videos to post online to provide water conservation information and highlight vulnerability to local hazards.	This action was completed and therefore removed from the plan. The District includes educational videos regarding water conservation on their website and participate in water fairs in response to this action.	Yes

This action addressed how the general public and sensitive populations will have better opportunities to be prepared in the event of a local hazard event.		
2018.HMP.13 - Set up presence in public forums to encourage participation in water conscious government rebates and other resources. *With the expansion of the public outreach campaign, it is expected that mitigation information is more available than it was previously. It is assumed that sensitive populations will have the opportunity to be better prepared in the event of a hazardous event.*	2023.HMP.07 - Expand presence in public forums to encourage participation in water conscious government rebates and other resources such as customer portal access to personally manage water access. The District aims to expand on their success of the 2018 action which was completed by including public forums on their website as well as their increased participation of water fairs.	Yes
2018.HMP.14 - Improve signage for vendor transportation to highlight potential on-site roadway hazards.	The District that this action was no longer viable and was removed from the plan	No
2018.HMP.15 - Coordinate with local utilities to develop maps that demonstrate the relative locations of SFID assets with liquid/gas pipelines and implement upgrades to allow isolation and bypass as appropriate	This action was removed from the plan as it was determined to no longer align with the ideals and focus of the District.	No
2018.HMP.16 - Increase participation in inter-agency emergency exercises and drills.	This action was removed from the plan as it was determined to no longer align with the ideals and focus of the District.	No

2018.HMP.17 - Review and update SFID environmental policies to identify resources for natural system information and enhance environmental considerations for new projects.	2023.HMP.09 - Review and update District environmental policies to identify resources for natural system information and enhance environmental considerations for new projects.	No

5 PLAN MAINTENANCE

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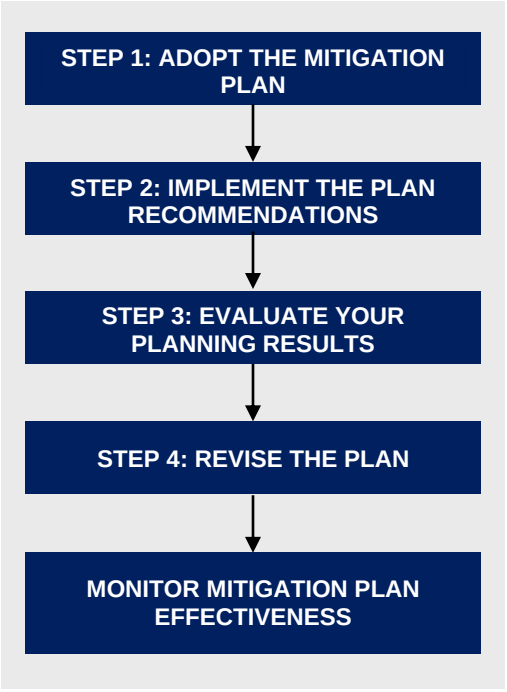
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5.1 Mitigation Progress Monitoring

The Mitigation Strategies report in the Hazard Mitigation Plan (HMP) identifies mitigation actions that have been prioritized based on the loss estimates and the probability of each hazard, which will typically be implemented according to the priority rank. To thoroughly track hazard mitigation status, the Santa Fe Irrigation District (District) must continuously monitor and document the progress of the implementation of the mitigation actions. Though mitigation actions may be delegated to different departments within the District, the Safety Coordinator will have the responsibility of monitoring overall progress.



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

To facilitate this monitoring process, Table 5.1: "Mitigation Action Implementation" was developed to provide a mechanism for monitoring the overall implementation progress. The table is designed to monitor mitigation actions according to project managers, project status, and project milestones and is located on the following pages.

Table 5.1: Mitigation Action Implementation

Action ID	Recommendation Description	Responsible Department	Implementation Timeframe	Status	Details/Status Summary
HMP.2023.01	Develop a Business Continuity Plan, utilizing the hazard profile information from the Hazard Mitigation Plan, to enhance economic resiliency and water service capabilities for sensitive populations following a hazard event.	Administration	Short	Open	
HMP.2023.02	Develop secondary emergency entrance points for critical facilities to allow better access for first responders; improving emergency management.	Operations\ Engineering	Long	Open	
HMP.2023.03	Conduct a seismic assessment and implement structural improvements at the Larrick Reservoir accordingly.	Engineering	Long	Open	
HMP.2023.04	Evaluate hazard vulnerability and implement structural improvement projects as necessary for district facilities. This action should also include considerations for business network system protection.	Engineering\ IS	Long	Open	

Action ID	Recommendation Description	Responsible Department	Implementation Timeframe	Status	Details/Status Summary
HMP.2023.05	Relocate Business Network Systems equipment to mitigate identified hazards.	IT Department\ Engineering Department	Long	Open	
HMP.2023.06	Conduct an evaluation of security features at all critical facilities for system adequacy and implement security upgrades (e.g., fencing, cameras, sensors, etc.), as necessary.	Administration\ Operations	Medium	Open	
HMP.2023.07	Expand presence in public forums, ensuring outreach to sensitive populations, to encourage participation in water conscious government rebates and other resources such as customer portal access to personally manage water access.	Administration	Short	Open	
HMP.2023.08	Implement notification drills in accordance with Process Safety Management requirements.	Administration & Joint Facilities	Medium	Open	

Action ID	Recommendation Description	Responsible Department	Implementation Timeframe	Status	Details/Status Summary
HMP.2023.09	Review and update the District's environmental policies to identify resources for natural system information and enhance environmental considerations for new projects.	Engineering	Medium	Open	
HMP.2023.10	Improve mutual aid agreement with the fire department to prioritize the protection of the water filtration plant to improve resiliency of water services for fire protection.	Administration	Short	Open	
HMP.2023.11	Replace the backup generator for the administration building/corporate yard. Ensure new generator(s) meets increasing power demands and regulatory requirements.	Engineering Department	Long	Open	
HMP.2023.12	Enhance backup power capability for business network system.	IT Department	Medium	Open	

5.2 Planning Mechanisms

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

5.2.1 Incorporation of the Mitigation Strategy into Planning Mechanisms

The District maintains the following processes to incorporate HMP mitigation strategies into planning mechanisms. The following resources were identified by the Steering Committee as being most inherent to District operations and most likely to be avenues for the first steps in hazard mitigation implementation. A list of identified resources are described in Tables 5.2 through 5.6 later in this section.

Public Outreach Department

The Public Outreach Department is responsible for providing information and conservation tips to the community. The Department will use its presence on social media platforms, including Facebook, Twitter, and Instagram, to begin providing hazard-related information to the general public. In addition, Public Outreach Department representatives will post the HMP on the District website to enable members of the public to review and provide feedback regarding mitigation objectives and strategies. Feedback from the community can be incorporated on an ongoing basis, during the annual review, or during the five-year update of the Plan through any of these mediums.

District Board of Directors

The Board of Directors is responsible for approving projects and programs on a District-wide level. By providing mitigation planning concepts to the Board of Directors, mitigation actions and concepts will be incorporated into relevant planning efforts.

Office of the General Manager

The Office of the General Manager provides leadership in the management of the District and execution of District policies. The General Manager serves as the District's chief executive officer and oversees the day-to-day operations of the District's departments. The General Manger will can expand integration of hazard mitigation with the planning, direction, and management of District operations.

Engineering Department

The Engineering Departments oversee the Capital Improvement Program, Water Resources Management, Development Services, and Property Management, and Geographic Information System. Through these programs, the District can incorporate key mitigation actions.

Operations Department

This department operates and maintains the District's own distribution systems and the joint owned water treatment plant and raw water pump stations, including the pipelines, meters, valves, pressure reducing stations, and cathodic protection systems. The department also performs emergency and routine repairs to pipelines, installs new services, is responsible for the District's Cross Connection Control Program, oversees compliance of Recycled Water Use sites, operates the District's pump station and reservoir, water treatment at the R.E. Badger Filtration Plant, collects distribution system water quality samples, and oversees maintenance of Joint Facilities and District buildings, grounds, vehicles, and equipment. The Operations Department can expand implementation of hazard mitigation projects on an ongoing basis into the District's infrastructure.

5.2.2 Available Planning Mechanisms for Mitigation

The District uses the following local planning mechanisms for incorporating the mitigation requirements of the Plan:

Administrative Code

The District's Administrative Code provides for the organizational structure of the District, the duties and powers of the Board of Directors, the duties and powers of the management and staff, and the policies in use by the District. As required, policies and procedures related to specific hazard mitigation requirements can be adopted by the Board of Directors and incorporated into the Administrative Code.

Urban Water Management Plan

The District is responsible for updating and incorporating mitigation actions and concepts into an Urban Water Management Plan (UWMP). The Plan is updated every five years to identify future water supply and demands in order to ensure adequate water supplies to meeting demands under a range of water supply conditions. The UWMP was updated in 2021, with its next revision scheduled within the next five years. Action Items from the

Hazard Mitigation Plan will be reviewed during the next scheduled update and incorporated, as applicable

Asset Management Master Plan & Joint Facilities Master Plan

The District completed a comprehensive Asset Management Master Plan (AMMP) in 2009 and a Joint Facilities Mast Plan (JFMP) in 2012. Engineering mitigation projects are included within the AMMP and JFMP. Projects already included within each Plan are reviewed for mitigation improvements.

Annual Budgeting

Each year, as part of the budgeting process, the District evaluates the 10-year Capital Improvement Program and proposed projects for both distribution and joint facilities. Hazard mitigation projects will be reviewed and incorporated as required and allowable within the proposed budget.

Recycled Water Master Plan

The Santa Fe Irrigation District 2005 Recycled Water Master Plan develops a strategic framework for expanding the District's distribution of recycled water. This Plan defines recycled water goals and identifies potential recycled water supplies and demands in order to meet those recycled milestones.

San Dieguito Dam Condition Assessment Report

The Dam Condition Assessment Report summarizes the current condition of the San Dieguito Dam and provides recommendations to ensure the ongoing integrity of the Dam. Relevant information from the Report has been incorporated into the Hazard Mitigation Plan, and mitigation actions from the Hazard Mitigation Plan may be incorporated into the Report during the next revision.

Resource Tables

This section serves as a high-level capability assessment of the District's resources through which hazard mitigation objectives may be achieved. The following subsections attempt to document the Regulatory, Administrative/Technical, Fiscal, Grant funding, and Outreach/Partnerships resources available to the District.

Regulatory Resources

Table 5.2: Regulatory Tools Table

Regulatory Tool	Comments
Asset Management Master Plan & Joint Facilities Master Plan	The asset management plan lays out potential and planned improvements for District facilities and may be used to incorporate structural improvement project to improve resiliency.
Urban Water Management Plan	The Plan outlines forecasts for drought probability and magnitude while expanding upon awareness of drought hazard vulnerability.
Security Vulnerability Assessment	The Plan outline potential vulnerabilities for security breaches and makes recommendations for improvement in order to mitigation potential adversarial events.
Capital Improvement Plan	The plan outlines proposed efforts for capital projects and programs needed to carry out the goals and objectives of the District; including those regarding hazard mitigation.

Administrative/Technical Resources

Table 5.3: Administrative/Technical Tools Table

Administrative/Technical Tool	Personnel/Resources
Board of Directors	The Board of Directors can review and approve mitigation proposal for implementations
Safety Coordinator	The Safety Coordinator is responsible for emergency preparedness and hazard mitigation planning. This is the position which is ultimately responsible for promoting implementation of hazard mitigation objectives.
Administration	Administration is a multi-faceted resource. The District may utilize experts in its many departments for mitigation activity implementation

Fiscal Resources

Table 5.4: Fiscal Tools table

Fiscal Tool	Available
General Fund	Yes, with Board approval
Capital Improvement Plan	Yes, with Board approval

Grant Funding

Table 5.5: Grant Funding Tools Table

Grant Funding Tool	Agency	Purpose	Contact
Pre-Disaster Mitigation Program (PDM)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To provide funding for States, and communities for cost-effective hazard mitigation activities which complement a comprehensive hazard mitigation program and reduce injuries, loss of life, and damage and deconstruction of property.	FEMA 500 C. Street, SW Washington, DC 20472 Phone: (202) 646-4621 www.fema.gov
Hazard Mitigation Grant Program	U.S. Department of Homeland Security, Federal Emergency Management Agency	To prevent future losses of lives property due to disasters; to implement State of local hazard mitigation plans; to enable mitigation measures to be implemented during immediate recovery from a disaster; and to provide funding for previously identified mitigation measures to benefit the disaster area.	FEMA 500 C Street S.W. Washington, DC 20472 Phone (202) 646-4621 www.fema.gov
Flood Mitigation Assistance (FMA)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To help States and communities plan and carry out activities designed to reduce the risk of flood damage to structures insurable under the NFIP.	FEMA 500 C Street S.W. Washington, DC 20472 Phone (202) 646-4621 www.fema.gov
Emergency Management Performance Grants (EMPG)	U. S. Department of Homeland Security; Federal Emergency Management Agency	To encourage the development of comprehensive emergency management at the State and local level and to improve	FEMA 500 C Street S.W. Washington, DC 20472 Phone (202) 646-4621

		emergency management planning, preparedness, mitigation, response, and recovery capabilities.	www.fema.gov
Community Development Grant Program (CDBG)	U.S. Department of Housing and Urban Development	To develop viable urban communities by providing decent housing and a suitable living environment. Principally for low-to-moderate income individuals.	HUD 451 7th Street, S. W. Washington, DC 20410-7000 Phone: (202) 708-3587 www.hud.gov
Public Assistance Program (PA)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To provide supplemental assistance to States, local governments, and certain private nonprofit organizations to alleviate suffering and hardship resulting from major disasters or emergencies declared by the President. Under Section 406, Public Assistance funds may be used to mitigate the impact of future disasters.	FEMA 500 C Street S.W. Washington, DC 20472 Phone (202) 646-4621 www.fema.gov
Emergency Watershed Protection	U.S. Department of Agriculture, Natural Resource Conservation Service	To provide emergency technical and financial assistance to install or repair structures that reduce runoff and prevent soil erosion to safeguard life and property.	NRCS PO BOX 2890 Washington, DC 20013 Phone: (202) 720-3527 www.nrcs.usda.gov
Disaster Mitigation and Technical Assistance Grants	U.S. Department of Commerce, Economic Development Administration	To help States and localities to develop and /or implement a variety of disaster mitigation strategies.	EDA Herbert C. Hoover Building Washington, DC 20230 Phone: (800) 345-1222 www.eda.gov

Watershed Surveys and Planning	U.S. Department of Agriculture, Natural Resource Conservation Service	To provide planning assistance to Federal, State, and local agencies for the development of coordination water and related land resources programs in watersheds and river basins	NRCS PO Box 2890 Washington, DC 20013 Phone: (202) 720-3527 www.nrcs.usda.gov
National Earthquake Hazards Reduction Program (NEHRP)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To mitigate earthquake losses that can occur in many parts of the nation providing earth science data and assessments essential for warning of imminent damaging earthquakes, land-use planning, engineering design, and emergency preparedness decisions.	FEMA 500 C Street S.W. Washington, DC 20472 Phone (202) 646-4621 www.fema.gov
Engineering for Natural Hazards	National Science Foundation	Supports fundamental research that advances knowledge for understanding and mitigating the impact of natural hazards on constructed civil infrastructure	National Science Foundation Phone: (703) 292-7024 https://www.nsf.gov
Pre-Disaster Mitigation Program (PDM)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To provide funding for States, and communities for cost-effective hazard mitigation activities which complement a comprehensive hazard mitigation program and reduce injuries, loss of life, and damage and deconstruction of property.	FEMA 500 C. Street, SW Washington, DC 20472 Phone: (202) 646-4621 www.fema.gov

Outreach and Partnerships Resources

Table 5.6: Outreach and Partnerships Tools Table

Outreach/Partnership Tools	Comments
District Website	The District website is an open forum for providing hazard information and for accepting ongoing comments from the public. The website will likely be the main avenue for maintaining an open dialogue with the public for hazard mitigation throughout the planning period.
Public Outreach	The District holds several educational opportunities throughout the year. Public outreach will be able to be expanded to include a broader spectrum of hazard-specific information to improve hazard awareness.
Mutual Aid Agreements	As part of expanding its resilience to the impacts of hazard events, the District intends to review its current mutual aid agreements, identify gaps, and secure new agreements to expand it available mutual resources.

Progress for Mitigation Incorporation

The sections above demonstrate the many resources available to the District for successful mitigation action implementation. Some of these resources have already proven their usefulness through successful action implementation over the last planning period. Using administrative resources, the District successfully updated its emergency preparedness planning and situational awareness based on the information provided in the 2018 Hazard Mitigation Plan as suggested by Mitigation Action 2018.HMP.02. Additionally, as called for in 2018.HMP.12 and 2018.HMP.13 public outreach was expanded by the public outreach department to post videos and online content in public social forums to provide education and access to resources for the community to better prepare the community for the impacts of potential hazard events.

The Emergency Response Plan was updated to include actions for hazard events. When the District went to update the Emergency Response Plan, they looked at the 2018 Hazard Mitigation Plan and verified they had procedures and response actions which they were

able to use as a tool to ensure that the Emergency Plan covered likely scenarios. As a result, it is assumed that the District will be more resilient to hazards due to the actions identified in previous plans.

Building of Existing Capabilities

As part of the Plan update, potential improvements to the District's existing capabilities were discussed. The District is cognizant of the need to continually evaluate its efforts and take an active role in promoting resiliency within the District's service area. The District currently utilizes the Safety Coordinator to train its staff and the Public Outreach Department to reach out to the community regarding preventative and preparedness strategies for hazard events. The Capital Improvement Program (CIP) directs funding to improve infrastructure and the District continually searches for grant opportunities to allow the District to accomplish additional improvements that address hazard mitigation efforts for public facilities. In addition to the District's current efforts, the following is a list of potential new initiatives that would improve the District's ability to promote resiliency.

- **Regulatory/Fiscal:** Enhance the CIP proposal procedure to include a Mitigation/Resiliency element to be considered for each project proposal. The intent is to consider how each CIP project might contribute to mitigation efforts, citing the HMP when proposed projects align with hazard mitigation planning efforts.
- **Administrative:** Expand the programs provided by the Safety Coordinator to provide specialized natural disaster training and safety for District personnel and the public, as appropriate.
- **Grant Funding:** Expand search for grant funding specifically to assist with aging infrastructure improvements, energy efficiency, and facility upgrades.
- **Outreach/Education:** Engage local community commissions and committees and increase volunteer opportunities to work with the public to gain community participation in resiliency efforts and voluntary resilience projects for privately-owned properties.

5.3 Periodic Assessment Requirements

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

Mitigation planning is an ongoing process and, as such, the Hazard Mitigation Plan should be treated as a living document that must grow and adapt in order to keep pace with changes within the District. Continuing from the 2018 Hazard Mitigation Plan, an annual assessment will be completed to document any changes in site hazards (e.g., updated FIRM maps, contemporary seismic studies, etc.) or the installation and purchase of new equipment (e.g., back-up generators, emergency response equipment, etc.) to ensure they do not have any major effects on District's hazard vulnerabilities that would impact the conclusions or actions associated with the Hazard Mitigation Plan. In addition, these reviews will track the progress of proposed mitigation actions and the incorporation of mitigation planning in other District planning documents. As needed, these reviews can be used to promote mitigation action with the District or alter mitigation strategies within the plan, as appropriate.

Prior to the fifth year of the revision cycle, these annual observations and assessments will be reviewed to determine what changes should be implemented in the required Hazard Mitigation Plan Update and what progress can be documented. The results of the annual evaluations will be folded back into each phase of the planning process and should yield decisions on how to update each section of the Plan.

The Safety Coordinator has the responsibility of implementing these annual and five-year requirements. During the annual review, if any updates are deemed minor, then the Safety Coordinator will perform the updates. However, if major updates are required, then the Steering Committee will reconvene to discuss the effects on the Plan and take it to the Board of Directors and the public for input. For the fifth-year revision, the entire Steering Committee will reconvene to use their expertise to update the Plan in its entirety. Each of the annual assessments will be utilized as an opportunity to evaluate the progress of hazard mitigation action implementation. In addition, the Safety Coordinator will assess the situations of sensitive populations every year to determine if updates need to be made. If progress has been made during the annual review, the Safety Coordinator will update the public by posting it on the District website as well as through notifications posted on the water bill. As stated above, the Safety Coordinator will be responsible for reviewing the mitigation actions annually, determining which have the potential to be accomplished over the next year, and encouraging implementation with the proper departments.

If the Plan is not meeting its goals, the Safety Coordinator will document the shortcomings, suggest modifications, and implement changes to the plan as appropriate.

In addition to these periodic requirements, any significant modification to the District's facilities should be considered with respect to a possible impact on the HMP. All Steering Committee members are responsible for providing updates for the Safety Coordinator as necessary. As noted in the following section, the completed HMP will be available on the District's website to allow the public to continue to be involved during these periodic reviews.

5.4 Update Requirements

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

§201.6(c)(4)(iii): [The plan maintenance process **shall** include a] discussion on how the community will continue public participation in the plan maintenance process.

The Emergency Management and Assistance regulations (44 CFR Part 201) state that it is the responsibility of local agencies (i.e., the District) to "at a minimum, review and, update the local mitigation plan every five years from date of plan approval to continue program eligibility". The evaluation procedures listed below will provide insight into the major changes that need to be included in the five-year update and resubmission to FEMA:

- Annual HMP review with respect to changes in hazard vulnerability (e.g., additional hazards identified, natural hazard events, etc.)
- Annual HMP review with respect to development of new facilities
- Five-year comprehensive update to address the findings of the annual reviews
- Re-submittal of the updated HMP to California Governor's Office of Emergency Services (Cal OES)/FEMA

Additionally, the risk assessment portion of the plan will be reviewed to determine if the information should be updated or modified. Each department responsible for the various implementation actions will report on:

- Status of their projects
- Implementation processes
- Any difficulties encountered

- How coordination efforts are proceeding
- Which strategies should be revised

5.4.1 Plan Update

The District's last HMP was last updated in 2018. During the first Steering Committee meeting of the Plan goals were reviewed for consistency and applicability to the District, along with the goals from the State and San Diego County HMPs. One of the main objectives of the review process was to update regional goals to make them more relevant to the District currently. Table 5.7 illustrates that no changes were made to the overall Goals of the Plan.

Table 5.7: Plan Goal Update Summary

2018 Plan Goals	Current Plan Goals
Protect Life and Property	Protect Life and Property
Promote Public Awareness and Outreach	Promote Public Awareness and Outreach
Preserve the Environment	Preserve the Environment
Encourage Regional, Inter-Agency Involvement with Hazard Mitigation.	Encourage Regional, Inter-Agency Involvement with Hazard Mitigation.
Increase the Capacity of Emergency Operations Functionality	Increase the Capacity of Emergency Operations Functionality

Although the District did not make changes to the Plan goals, distinctions were made in the objectives which support these goals. A full list of Plan objectives can be found in Chapter 4. Some of those distinctions included a thoughtful discussion about the role the District plays in regional emergency response efforts. As a special district, the District does not take responsibility for public safety, rather the focus is on emergency water service for fire suppression and life preservation. Therefore, objectives were rewritten to focus on collaboration with local authorities and system redundancies to improve water service resiliency during emergency events. Additionally, although not present in the documentation, the Steering Committee held a discussion regarding how marginalized groups and sensitive populations might be served better through hazard mitigation activities. The result of the discussion was a consensus that water service is provided equally to users throughout the service area. With the exception of water bills, where policies already exist to support families who struggle to afford water service, the District could not provide water service any way that was more equitable than it already does. As such, language regarding equity were not included in the overall Plan goals and objectives.

5.4.2 Continued Public Involvement

The approved and finished HMP will be placed on the District website to encourage continued public participation and feedback. A feedback option will be present on the website, enabling users to leave comments that will be included when appropriate. The District will bring up the topics that need to be covered in the HMP update with members of the Steering Committee once more when modifications to the HMP are necessary. Whenever there are updates to the plan, the website will be used to advertise and publicize requests for participation.

The goal of public outreach is to solicit public involvement, especially those representing vulnerable populations, in the hazard mitigation planning. This includes determining which hazards impact the District and discussing ways to mitigate those hazards and improve resiliency within the community. The public was encouraged to participate in the hazard mitigation process through the participation in a Steering Committee meeting during the current Plan update. Although there were no volunteers, the District will continue to solicit regularly for public comment through the website to support future planning and when deciding which mitigation action to implement.

A GLOSSARY

The following subsections include definition and information with support the conclusions made in Chapter 3: Risk Assessment.

A1: Glossary

Active fault - For implementation of Alquist-Priolo Earthquake Fault Zoning Act (APEFZA) requirements, an active fault is one that shows evidence of, or is suspected of having experienced surface displacement within the last 11,000 years. APEFZA classification is designed for land use management of surface rupture hazards. A more general definition (National Academy of Science, 1988), states "a fault that on the basis of historical, seismological, or geological evidence has the finite probability of producing an earthquake" (see potentially active fault).

Aftershocks - Minor earthquakes following a greater one and originating at or near the same place.

Asset - Any man-made or natural feature that has value, including, but not limited to people, buildings, infrastructure like bridges, roads, and sewer and water systems; lifelines like electricity and communication resources; or environmental, cultural, or recreational features like parks, dunes, wetlands, or landmarks.

A zone - Under the National Flood Insurance Program, area subject to inundation by the 100-year flood where wave action does not occur or where waves are less than 3 feet high, designated Zone A, AE, A1-A30, A0, AH, or AR on a Flood Insurance Rate Map (FIRM).

Base flood - Flood that has a 1 percent probability of being equaled or exceeded in any given year. Also known as the 100-year flood.

Bedrock - The solid rock that underlies loose material, such as soil, sand, clay, or gravel.

Contour - A line of equal ground elevation on a topographic (contour) map.

Critical facility - Facilities that are critical to the health and welfare of the population and that are especially important following hazard events. Critical facilities include, but are not limited to, shelters, police and fire stations, and hospitals.

Debris - (Seismic) The scattered remains of something broken or destroyed; ruins; rubble; fragments. (Flooding, Coastal) Solid objects or masses carried by or floating on the surface of moving water.

Debris flow - A saturated, rapidly moving saturated earth flow with 50 percent rock fragments coarser than 2 mm in size which can occur on natural and graded slopes.

Duration - The amount of time a hazard event lasts.

Earthquake - Vibratory motion propagating within the Earth or along its surface caused by the abrupt release of strain from elastically deformed rock by displacement along a fault.

Epicenter - The point at the Earth's surface directly above where an earthquake originated.

Erosion - Under the National Flood Insurance Program, the process of the gradual wearing away of landmasses. In general, erosion involves the detachment and movement of soil and rock fragments, during a flood or storm or over a period of years, through the action of wind, water, or other geologic processes.

Essential facility - Elements that are important to ensure a full recovery of a community or state following a hazard event. These would include: government functions, major employers, banks, schools, and certain commercial establishments, such as grocery stores, hardware stores, and gas stations.

Extent - The size of an area affected by a hazard or hazard event.

Fault - A fracture in the continuity of a rock formation caused by a shifting or dislodging of the earth's crust, in which adjacent surfaces are differentially displaced parallel to the plane of fracture.

Fault slip rate - The average long-term movement of a fault (measured in cm/year or mm/year) as determined from geologic evidence.

Federal Emergency Management Agency (FEMA) - Independent agency created in 1978 to provide a single point of accountability for all Federal activities related to disaster mitigation and emergency preparedness, response and recovery.

Flash flood - A flood event occurring with little or no warning where water levels rise at an extremely fast rate.

Flood - A general and temporary condition of partial or complete inundation of normally dry land areas from (1) the overflow of inland or tidal waters, (2) the unusual and rapid

accumulation or runoff of surface waters from any source, or (3) mudflows or the sudden collapse of shoreline land.

Floodplain - Any land area, including watercourse, susceptible to partial or complete inundation by water from any source.

Frequency - A measure of how often events of a particular magnitude are expected to occur. Frequency describes how often a hazard of a specific magnitude, duration, and/or extent typically occurs, on average. Statistically, a hazard with a 100-year recurrence interval is expected to occur once every 100 years on average, and would have a 1 percent chance – its probability – of happening in any given year. The reliability of this information varies depending on the kind of hazard being considered.

Geographic Information Systems (GIS) - A computer software application that relates physical features on the Earth to a database to be used for mapping and analysis.

Ground motion - The vibration or shaking of the ground during an earthquake. When a fault ruptures, seismic waves radiate, causing the ground to vibrate. The severity of the vibration increases with the amount of energy released and decreases with distance from the causative fault or epicenter, but soft soils can further amplify ground motions.

Ground rupture - Displacement of the earth's surface as a result of fault movement associated with an earthquake.

Hailstorm – Storm associated with spherical balls of ice. Hail is a product of thunderstorms or intense showers. It is generally white and translucent, consisting of liquid or snow particles encased with layers of ice. Hail is formed within the higher reaches of a well-developed thunderstorm. When hailstones become too heavy to be caught in an updraft back into the clouds of the thunderstorm (hailstones can be caught in numerous updrafts adding a coating of ice to the original frozen droplet of rain each time), they fall as hail and a hailstorm ensues.

Hazard - A source of potential danger or adverse condition. Hazards in this how to series will include naturally occurring events such as floods, earthquakes, tornadoes, tsunami, coastal storms, landslides, and wildfires that strike populated areas. A natural event is a hazard when it has the potential to harm people or property.

Hazard event - A specific occurrence of a particular type of hazard.

Hazard identification - The process of identifying hazards that threaten an area.

Hazard mitigation - Sustained actions taken to reduce or eliminate long-term risk from hazards and their effects.

Hazard Mitigation Grant Program (HMGP) – Authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, HMGP is administered by FEMA and provides grants to states, tribes, and local governments to implement hazard mitigation actions after a major disaster declaration. The purpose of the program is to reduce the loss of life and property due to disasters and to enable mitigation activities to be implemented as a community recovers from a disaster.

Hazard Mitigation Plan – A collaborative document in which hazards affecting the community are identified, vulnerability to hazards assessed, and consensus reached on how to minimize or eliminate the effects of these hazards.

Hazard profile - A description of the physical characteristics of hazards and a determination of various descriptors including magnitude, duration, frequency, probability, and extent. In most cases, a community can most easily use these descriptors when they are recorded and displayed as maps.

Hazardous Material Facilities – Facilities housing industrial and hazardous materials, such as corrosives, explosives, flammable materials, radioactive materials, and toxins.

HAZUS (Hazards U.S.) - A GIS-based nationally standardized earthquake loss estimation tool developed by FEMA.

Hurricane - An intense tropical cyclone, formed in the atmosphere over warm ocean areas, in which wind speeds reach 74-miles-per-hour or more and blow in a large spiral around a relatively calm center or "eye." Hurricanes develop over the north Atlantic Ocean, northeast Pacific Ocean, or the south Pacific Ocean east of 160°E longitude. Hurricane circulation is counter-clockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.

Hydrology - The science of dealing with the waters of the earth. A flood discharge is developed by a hydrologic study.

Infrastructure - Refers to the public services of a community that have a direct impact on the quality of life. Infrastructure includes communication technology such as phone lines or Internet access, vital services such as public water supplies and sewer treatment facilities, and includes an area's transportation system such as airports, heliports; highways, bridges, tunnels, roadbeds, overpasses, railways, bridges, rail yards, depots; and waterways, canals, locks, seaports, ferries, harbors, drydocks, piers and regional dams.

Landslide - A general term covering a wide variety of mass-movement landforms and processes involving the downslope transport, under gravitational influence, of soil and rock material en masse.

Liquefaction - Changing of soils (unconsolidated alluvium) from a solid state to weaker state unable to support structures; where the material behaves similar to a liquid as a consequence of earthquake shaking. The transformation of cohesionless soils from a solid or liquid state as a result of increased pore pressure and reduced effective stress.

Magnitude - A measure of the strength of a hazard event. The magnitude (also referred to as severity) of a given hazard event is usually determined using technical measures specific to the hazard.

Mitigation plan - A systematic evaluation of the nature and extent of vulnerability to the effects of natural hazards typically present in the state and includes a description of actions to minimize future vulnerability to hazards.

Nor'easter - An extra-tropical cyclone producing gale-force winds and precipitation in the form of heavy snow or rain.

Peak Ground Acceleration (PGA) - The greatest amplitude of acceleration measured for a single frequency on an earthquake accelerogram. The maximum horizontal ground motion generated by an earthquake. The measure of this motion is the acceleration of gravity (equal to 32 feet per second squared, or 980 centimeter per second squared), and generally expressed as a percentage of gravity.

Potentially active fault - A fault showing evidence of movement within the last 1.6 million years (750,000 years according to the U.S. Geological Survey) but before about 11,000 years ago, and that is capable of generating damaging earthquakes.

Probability - A statistical measure of the likelihood that a hazard event will occur.

Replacement value - The cost of rebuilding a structure. This is usually expressed in terms of cost per square foot and reflects the present-day cost of labor and materials to construct a building of a particular size, type and quality.

Retrofit - Any change made to an existing structure to reduce or eliminate damage to that structure from flooding, erosion, high winds, earthquakes, or other hazards

Richter scale - A numerical scale of earthquake magnitude devised by seismologist C.F. Richter in 1935. Seismologists no longer use this magnitude scale because of limitations in how it measures large earthquakes and prefer instead to use moment magnitude as a measure of the energy released during an earthquake.

Risk - The estimated impact that a hazard would have on people, services, facilities, and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate, or low likelihood of sustaining damage above a particular threshold due to a specific type of hazard event. It also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.

Seismicity - Describes the likelihood of an area being subject to earthquakes.

Tectonic plate - Torsionally rigid, thin segments of the earth's lithosphere that may be assumed to move horizontally and adjoin other plates. It is the friction between plate boundaries that cause seismic activity.

Topographic - Characterizes maps that show natural features and indicate the physical shape of the land using contour lines. These maps may also include manmade features.

Tornado - A violently rotating column of air extending from a thunderstorm to the ground.

Tsunami - Great sea wave produced by a submarine earthquake, landslide, or volcanic eruption.

Vulnerability - Describes how exposed or susceptible to damage an asset is. Vulnerability depends on an asset's construction, contents, and the economic value of its functions. Like indirect damages, the vulnerability of one element of the community is often related to the vulnerability of another. For example, many businesses depend on uninterrupted electrical power – if an electric substation is flooded, it will affect not only the substation itself, but a number of businesses as well. Often, indirect effects can be much more widespread and damaging than direct ones.

Vulnerability assessment - The extent of injury and damage that may result from a hazard event of a given intensity in a given area. The vulnerability assessment should address impacts of hazard events on the existing and future built environment.

Wildfire - An uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures.

Zone - A geographical area shown on a Flood Insurance Rate Map.

100-year flood – A flood that has a 1-percent chance of being equaled or exceeded in any given year. This flood event is also referred to as the base flood. The term "100-year flood" can be misleading; it is not the flood that will occur once every 100 years. Rather, it is the flood elevation that has a 1- percent chance of being equaled or exceeded each year. Therefore, the 100-year flood could occur more than once in a relatively short period of time. The 100-year flood, which is the standard used by most federal and state

agencies, is used by the National Flood Insurance Program (NFIP) as the standard for floodplain management to determine the need for flood insurance.

500-year flood – A flood that has a 0.2-percent chance of being equaled or exceeded in any one year.

B REGULATIONS

The Disaster Mitigation Act of 2000 (P.L. 106-390) facilitates a new and revitalized approach to mitigation planning. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repealing the previous mitigation planning provisions (Section 409) and replacing them with a new set of mitigation plan requirements (Section 322). This new section emphasizes the need for state, Tribal, and local entities to closely coordinate mitigation planning and implementation efforts. The following pages provide a description of the Disaster Mitigation Act of 2000, as well as the Interim Final Rule for mitigation planning.

DISASTER MITIGATION ACT OF 2000

Public Law 106–390
106th Congress

An Act

Oct. 30, 2000
[H.R. 707]

To amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act to authorize a program for predisaster mitigation, to streamline the administration of disaster relief, to control the Federal costs of disaster assistance, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Disaster Mitigation Act of 2000.

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

42 USC 5121 note.

(a) SHORT TITLE.—This Act may be cited as the "Disaster Mitigation Act of 2000".

(b) TABLE OF CONTENTS.—The table of contents of this Act is as follows:

Sec. 1. Short title; table of contents.

TITLE I—PREDISASTER HAZARD MITIGATION

Sec. 101. Findings and purpose.
Sec. 102. Predisaster hazard mitigation.
Sec. 103. Interagency task force.
Sec. 104. Mitigation planning; minimum standards for public and private structures.

TITLE II—STREAMLINING AND COST REDUCTION

Sec. 201. Technical amendments.
Sec. 202. Management costs.
Sec. 203. Public notice, comment, and consultation requirements.
Sec. 204. State administration of hazard mitigation grant program.
Sec. 205. Assistance to repair, restore, reconstruct, or replace damaged facilities.
Sec. 206. Federal assistance to individuals and households.
Sec. 207. Community disaster loans.
Sec. 208. Report on State management of small disasters initiative.
Sec. 209. Study regarding cost reduction.

TITLE III—MISCELLANEOUS

Sec. 301. Technical correction of short title.
Sec. 302. Definitions.
Sec. 303. Fire management assistance.
Sec. 304. Disaster grant closeout procedures.
Sec. 305. Public safety officer benefits for certain Federal and State employees.
Sec. 306. Buy American.
Sec. 307. Treatment of certain real property.
Sec. 308. Study of participation by Indian tribes in emergency management.

TITLE I—PREDISASTER HAZARD MITIGATION

42 USC 5133 note.

SEC. 101. FINDINGS AND PURPOSE.

(a) FINDINGS.—Congress finds that—

(1) natural disasters, including earthquakes, tsunamis, tornadoes, hurricanes, flooding, and wildfires, pose great danger to human life and to property throughout the United States;

(2) greater emphasis needs to be placed on—

(A) identifying and assessing the risks to States and local governments (including Indian tribes) from natural disasters;

(B) implementing adequate measures to reduce losses from natural disasters; and

(C) ensuring that the critical services and facilities of communities will continue to function after a natural disaster;

(3) expenditures for postdisaster assistance are increasing without commensurate reductions in the likelihood of future losses from natural disasters;

(4) in the expenditure of Federal funds under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.), high priority should be given to mitigation of hazards at the local level; and

(5) with a unified effort of economic incentives, awareness and education, technical assistance, and demonstrated Federal support, States and local governments (including Indian tribes) will be able to—

(A) form effective community-based partnerships for hazard mitigation purposes;

(B) implement effective hazard mitigation measures that reduce the potential damage from natural disasters;

(C) ensure continued functionality of critical services;

(D) leverage additional non-Federal resources in meeting natural disaster resistance goals; and

(E) make commitments to long-term hazard mitigation efforts to be applied to new and existing structures.

(b) PURPOSE.—The purpose of this title is to establish a national disaster hazard mitigation program—

(1) to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters; and

(2) to provide a source of predisaster hazard mitigation funding that will assist States and local governments (including Indian tribes) in implementing effective hazard mitigation measures that are designed to ensure the continued functionality of critical services and facilities after a natural disaster.

SEC. 102. PREDISASTER HAZARD MITIGATION.

(a) IN GENERAL.—Title II of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5131 et seq.) is amended by adding at the end the following:

"SEC. 203. PREDISASTER HAZARD MITIGATION.

President. 42 USC 5133.

"(a) DEFINITION OF SMALL IMPOVERISHED COMMUNITY.—In this section, the term 'small impoverished community' means a community of 3,000 or fewer individuals that is economically disadvantaged, as determined by the State in which the community is located and based on criteria established by the President.

"(b) ESTABLISHMENT OF PROGRAM.—The President may establish a program to provide technical and financial assistance to States and local governments to assist in the implementation of

predisaster hazard mitigation measures that are cost-effective and are designed to reduce injuries, loss of life, and damage and destruction of property, including damage to critical services and facilities under the jurisdiction of the States or local governments.

"(c) APPROVAL BY PRESIDENT.—If the President determines that a State or local government has identified natural disaster hazards in areas under its jurisdiction and has demonstrated the ability to form effective public-private natural disaster hazard mitigation partnerships, the President, using amounts in the National Predisaster Mitigation Fund established under subsection (i) (referred to in this section as the 'Fund'), may provide technical and financial assistance to the State or local government to be used in accordance with subsection (e).

"(d) STATE RECOMMENDATIONS.—

"(1) IN GENERAL.—

"(A) RECOMMENDATIONS.—The Governor of each State may recommend to the President not fewer than five local governments to receive assistance under this section.

"(B) DEADLINE FOR SUBMISSION.—The recommendations under subparagraph (A) shall be submitted to the President not later than October 1, 2001, and each October 1st thereafter or such later date in the year as the President may establish.

"(C) CRITERIA.—In making recommendations under subparagraph (A), a Governor shall consider the criteria specified in subsection (g).

"(2) USE.—

President.

"(A) IN GENERAL.—Except as provided in subparagraph (B), in providing assistance to local governments under this section, the President shall select from local governments recommended by the Governors under this subsection.

"(B) EXTRAORDINARY CIRCUMSTANCES.—In providing assistance to local governments under this section, the President may select a local government that has not been recommended by a Governor under this subsection if the President determines that extraordinary circumstances justify the selection and that making the selection will further the purpose of this section.

"(3) EFFECT OF FAILURE TO NOMINATE.—If a Governor of a State fails to submit recommendations under this subsection in a timely manner, the President may select, subject to the criteria specified in subsection (g), any local governments of the State to receive assistance under this section.

"(e) USES OF TECHNICAL AND FINANCIAL ASSISTANCE.—

"(1) IN GENERAL.—Technical and financial assistance provided under this section—

"(A) shall be used by States and local governments principally to implement predisaster hazard mitigation measures that are cost-effective and are described in proposals approved by the President under this section; and

"(B) may be used—

"(i) to support effective public-private natural disaster hazard mitigation partnerships;

"(ii) to improve the assessment of a community's vulnerability to natural hazards; or

"(iii) to establish hazard mitigation priorities, and an appropriate hazard mitigation plan, for a community.

"(2) DISSEMINATION.—A State or local government may use not more than 10 percent of the financial assistance received by the State or local government under this section for a fiscal year to fund activities to disseminate information regarding cost-effective mitigation technologies.

"(f) ALLOCATION OF FUNDS.—The amount of financial assistance made available to a State (including amounts made available to local governments of the State) under this section for a fiscal year—

"(1) shall be not less than the lesser of—

"(A) $500,000; or

"(B) the amount that is equal to 1.0 percent of the total funds appropriated to carry out this section for the fiscal year;

"(2) shall not exceed 15 percent of the total funds described in paragraph (1)(B); and

"(3) shall be subject to the criteria specified in subsection (g).

"(g) CRITERIA FOR ASSISTANCE AWARDS.—In determining whether to provide technical and financial assistance to a State or local government under this section, the President shall take into account—

"(1) the extent and nature of the hazards to be mitigated;

"(2) the degree of commitment of the State or local government to reduce damages from future natural disasters;

"(3) the degree of commitment by the State or local government to support ongoing non-Federal support for the hazard mitigation measures to be carried out using the technical and financial assistance;

"(4) the extent to which the hazard mitigation measures to be carried out using the technical and financial assistance contribute to the mitigation goals and priorities established by the State;

"(5) the extent to which the technical and financial assistance is consistent with other assistance provided under this Act;

"(6) the extent to which prioritized, cost-effective mitigation activities that produce meaningful and definable outcomes are clearly identified;

"(7) if the State or local government has submitted a mitigation plan under section 322, the extent to which the activities identified under paragraph (6) are consistent with the mitigation plan;

"(8) the opportunity to fund activities that maximize net benefits to society;

"(9) the extent to which assistance will fund mitigation activities in small impoverished communities; and

"(10) such other criteria as the President establishes in consultation with State and local governments. President.

"(h) FEDERAL SHARE.—

"(1) IN GENERAL.—Financial assistance provided under this section may contribute up to 75 percent of the total cost of mitigation activities approved by the President.

"(2) SMALL IMPOVERISHED COMMUNITIES.—Notwithstanding paragraph (1), the President may contribute up to 90 percent of the total cost of a mitigation activity carried out in a small impoverished community.

"(i) NATIONAL PREDISASTER MITIGATION FUND.—

"(1) ESTABLISHMENT.—The President may establish in the Treasury of the United States a fund to be known as the 'National Predisaster Mitigation Fund', to be used in carrying out this section.

"(2) TRANSFERS TO FUND.—There shall be deposited in the Fund—

"(A) amounts appropriated to carry out this section, which shall remain available until expended; and

"(B) sums available from gifts, bequests, or donations of services or property received by the President for the purpose of predisaster hazard mitigation.

"(3) EXPENDITURES FROM FUND.—Upon request by the President, the Secretary of the Treasury shall transfer from the Fund to the President such amounts as the President determines are necessary to provide technical and financial assistance under this section.

"(4) INVESTMENT OF AMOUNTS.—

"(A) IN GENERAL.—The Secretary of the Treasury shall invest such portion of the Fund as is not, in the judgment of the Secretary of the Treasury, required to meet current withdrawals. Investments may be made only in interest-bearing obligations of the United States.

"(B) ACQUISITION OF OBLIGATIONS.—For the purpose of investments under subparagraph (A), obligations may be acquired—

"(i) on original issue at the issue price; or

"(ii) by purchase of outstanding obligations at the market price.

"(C) SALE OF OBLIGATIONS.—Any obligation acquired by the Fund may be sold by the Secretary of the Treasury at the market price.

"(D) CREDITS TO FUND.—The interest on, and the proceeds from the sale or redemption of, any obligations held in the Fund shall be credited to and form a part of the Fund.

"(E) TRANSFERS OF AMOUNTS.—

"(i) IN GENERAL.—The amounts required to be transferred to the Fund under this subsection shall be transferred at least monthly from the general fund of the Treasury to the Fund on the basis of estimates made by the Secretary of the Treasury.

"(ii) ADJUSTMENTS.—Proper adjustment shall be made in amounts subsequently transferred to the extent prior estimates were in excess of or less than the amounts required to be transferred.

"(j) LIMITATION ON TOTAL AMOUNT OF FINANCIAL ASSISTANCE.—The President shall not provide financial assistance under this section in an amount greater than the amount available in the Fund.

"(k) MULTIHAZARD ADVISORY MAPS.—

"(1) DEFINITION OF MULTIHAZARD ADVISORY MAP.—In this subsection, the term 'multihazard advisory map' means a map

on which hazard data concerning each type of natural disaster is identified simultaneously for the purpose of showing areas of hazard overlap.

"(2) DEVELOPMENT OF MAPS.—In consultation with States, local governments, and appropriate Federal agencies, the President shall develop multihazard advisory maps for areas, in not fewer than five States, that are subject to commonly recurring natural hazards (including flooding, hurricanes and severe winds, and seismic events). President.

"(3) USE OF TECHNOLOGY.—In developing multihazard advisory maps under this subsection, the President shall use, to the maximum extent practicable, the most cost-effective and efficient technology available.

"(4) USE OF MAPS.—

"(A) ADVISORY NATURE.—The multihazard advisory maps shall be considered to be advisory and shall not require the development of any new policy by, or impose any new policy on, any government or private entity.

"(B) AVAILABILITY OF MAPS.—The multihazard advisory maps shall be made available to the appropriate State and local governments for the purposes of—

"(i) informing the general public about the risks of natural hazards in the areas described in paragraph (2);

"(ii) supporting the activities described in subsection (e); and

"(iii) other public uses.

"(l) REPORT ON FEDERAL AND STATE ADMINISTRATION.—Not later than 18 months after the date of the enactment of this section, the President, in consultation with State and local governments, shall submit to Congress a report evaluating efforts to implement this section and recommending a process for transferring greater authority and responsibility for administering the assistance program established under this section to capable States. Deadline.

"(m) TERMINATION OF AUTHORITY.—The authority provided by this section terminates December 31, 2003.".

(b) CONFORMING AMENDMENT.—Title II of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5131 et seq.) is amended by striking the title heading and inserting the following:

"TITLE II—DISASTER PREPAREDNESS AND MITIGATION ASSISTANCE".

SEC. 103. INTERAGENCY TASK FORCE.

Title II of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5131 et seq.) (as amended by section 102(a)) is amended by adding at the end the following:

"SEC. 204. INTERAGENCY TASK FORCE. 42 USC 5134.

"(a) IN GENERAL.—The President shall establish a Federal interagency task force for the purpose of coordinating the implementation of predisaster hazard mitigation programs administered by the Federal Government.

"(b) CHAIRPERSON.—The Director of the Federal Emergency Management Agency shall serve as the chairperson of the task force.

"(c) MEMBERSHIP.—The membership of the task force shall include representatives of—

"(1) relevant Federal agencies;

"(2) State and local government organizations (including Indian tribes); and

"(3) the American Red Cross.".

SEC. 104. MITIGATION PLANNING; MINIMUM STANDARDS FOR PUBLIC AND PRIVATE STRUCTURES.

(a) IN GENERAL.—Title III of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5141 et seq.) is amended by adding at the end the following:

42 USC 5165.

"SEC. 322. MITIGATION PLANNING.

"(a) REQUIREMENT OF MITIGATION PLAN.—As a condition of receipt of an increased Federal share for hazard mitigation measures under subsection (e), a State, local, or tribal government shall develop and submit for approval to the President a mitigation plan that outlines processes for identifying the natural hazards, risks, and vulnerabilities of the area under the jurisdiction of the government.

"(b) LOCAL AND TRIBAL PLANS.—Each mitigation plan developed by a local or tribal government shall—

"(1) describe actions to mitigate hazards, risks, and vulnerabilities identified under the plan; and

"(2) establish a strategy to implement those actions.

"(c) STATE PLANS.—The State process of development of a mitigation plan under this section shall—

"(1) identify the natural hazards, risks, and vulnerabilities of areas in the State;

"(2) support development of local mitigation plans;

"(3) provide for technical assistance to local and tribal governments for mitigation planning; and

"(4) identify and prioritize mitigation actions that the State will support, as resources become available.

"(d) FUNDING.—

"(1) IN GENERAL.—Federal contributions under section 404 may be used to fund the development and updating of mitigation plans under this section.

"(2) MAXIMUM FEDERAL CONTRIBUTION.—With respect to any mitigation plan, a State, local, or tribal government may use an amount of Federal contributions under section 404 not to exceed 7 percent of the amount of such contributions available to the government as of a date determined by the government.

"(e) INCREASED FEDERAL SHARE FOR HAZARD MITIGATION MEASURES.—

"(1) IN GENERAL.—If, at the time of the declaration of a major disaster, a State has in effect an approved mitigation plan under this section, the President may increase to 20 percent, with respect to the major disaster, the maximum percentage specified in the last sentence of section 404(a).

President.

"(2) FACTORS FOR CONSIDERATION.—In determining whether to increase the maximum percentage under paragraph (1), the President shall consider whether the State has established—

"(A) eligibility criteria for property acquisition and other types of mitigation measures;

"(B) requirements for cost effectiveness that are related to the eligibility criteria;

"(C) a system of priorities that is related to the eligibility criteria; and

"(D) a process by which an assessment of the effectiveness of a mitigation action may be carried out after the mitigation action is complete.

"SEC. 323. MINIMUM STANDARDS FOR PUBLIC AND PRIVATE STRUCTURES. 42 USC 5165a.

"(a) IN GENERAL.—As a condition of receipt of a disaster loan or grant under this Act—

"(1) the recipient shall carry out any repair or construction to be financed with the loan or grant in accordance with applicable standards of safety, decency, and sanitation and in conformity with applicable codes, specifications, and standards; and

"(2) the President may require safe land use and construction practices, after adequate consultation with appropriate State and local government officials.

"(b) EVIDENCE OF COMPLIANCE.—A recipient of a disaster loan or grant under this Act shall provide such evidence of compliance with this section as the President may require by regulation.".

(b) LOSSES FROM STRAIGHT LINE WINDS.—The President shall increase the maximum percentage specified in the last sentence of section 404(a) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5170c(a)) from 15 percent to 20 percent with respect to any major disaster that is in the State of Minnesota and for which assistance is being provided as of the date of the enactment of this Act, except that additional assistance provided under this subsection shall not exceed $6,000,000. The mitigation measures assisted under this subsection shall be related to losses in the State of Minnesota from straight line winds. President.

(c) CONFORMING AMENDMENTS.—

(1) Section 404(a) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5170c(a)) is amended—

(A) in the second sentence, by striking "section 409" and inserting "section 322"; and

(B) in the third sentence, by striking "The total" and inserting "Subject to section 322, the total".

(2) Section 409 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5176) is repealed.

TITLE II—STREAMLINING AND COST REDUCTION

SEC. 201. TECHNICAL AMENDMENTS.

Section 311 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5154) is amended in subsections (a)(1), (b), and (c) by striking "section 803 of the Public Works and Economic Development Act of 1965" each place it appears

and inserting "section 209(c)(2) of the Public Works and Economic Development Act of 1965 (42 U.S.C. 3149(c)(2))".

SEC. 202. MANAGEMENT COSTS.

(a) IN GENERAL.—Title III of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5141 et seq.) (as amended by section 104(a)) is amended by adding at the end the following:

42 USC 5165b.

"SEC. 324. MANAGEMENT COSTS.

"(a) DEFINITION OF MANAGEMENT COST.—In this section, the term 'management cost' includes any indirect cost, any administrative expense, and any other expense not directly chargeable to a specific project under a major disaster, emergency, or disaster preparedness or mitigation activity or measure.

Regulations.

"(b) ESTABLISHMENT OF MANAGEMENT COST RATES.—Notwithstanding any other provision of law (including any administrative rule or guidance), the President shall by regulation establish management cost rates, for grantees and subgrantees, that shall be used to determine contributions under this Act for management costs.

Deadline.

"(c) REVIEW.—The President shall review the management cost rates established under subsection (b) not later than 3 years after the date of establishment of the rates and periodically thereafter.".

42 USC 5165b note.

(b) APPLICABILITY.—

(1) IN GENERAL.—Subject to paragraph (2), subsections (a) and (b) of section 324 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (as added by subsection (a)) shall apply to major disasters declared under that Act on or after the date of the enactment of this Act.

(2) INTERIM AUTHORITY.—Until the date on which the President establishes the management cost rates under section 324 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (as added by subsection (a)), section 406(f) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172(f)) (as in effect on the day before the date of the enactment of this Act) shall be used to establish management cost rates.

SEC. 203. PUBLIC NOTICE, COMMENT, AND CONSULTATION REQUIREMENTS.

Title III of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5141 et seq.) (as amended by section 202(a)) is amended by adding at the end the following:

42 USC 5165c.

"SEC. 325. PUBLIC NOTICE, COMMENT, AND CONSULTATION REQUIREMENTS.

"(a) PUBLIC NOTICE AND COMMENT CONCERNING NEW OR MODIFIED POLICIES.—

President.

"(1) IN GENERAL.—The President shall provide for public notice and opportunity for comment before adopting any new or modified policy that—

"(A) governs implementation of the public assistance program administered by the Federal Emergency Management Agency under this Act; and

"(B) could result in a significant reduction of assistance under the program.

"(2) APPLICATION.—Any policy adopted under paragraph (1) shall apply only to a major disaster or emergency declared on or after the date on which the policy is adopted.

"(b) CONSULTATION CONCERNING INTERIM POLICIES.—

"(1) IN GENERAL.—Before adopting any interim policy under the public assistance program to address specific conditions that relate to a major disaster or emergency that has been declared under this Act, the President, to the maximum extent practicable, shall solicit the views and recommendations of grantees and subgrantees with respect to the major disaster or emergency concerning the potential interim policy, if the interim policy is likely—

"(A) to result in a significant reduction of assistance to applicants for the assistance with respect to the major disaster or emergency; or

"(B) to change the terms of a written agreement to which the Federal Government is a party concerning the declaration of the major disaster or emergency.

"(2) NO LEGAL RIGHT OF ACTION.—Nothing in this subsection confers a legal right of action on any party.

"(c) PUBLIC ACCESS.—The President shall promote public access to policies governing the implementation of the public assistance program.". President.

SEC. 204. STATE ADMINISTRATION OF HAZARD MITIGATION GRANT PROGRAM.

Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5170c) is amended by adding at the end the following:

"(c) PROGRAM ADMINISTRATION BY STATES.—

"(1) IN GENERAL.—A State desiring to administer the hazard mitigation grant program established by this section with respect to hazard mitigation assistance in the State may submit to the President an application for the delegation of the authority to administer the program.

"(2) CRITERIA.—The President, in consultation and coordination with States and local governments, shall establish criteria for the approval of applications submitted under paragraph (1). The criteria shall include, at a minimum—

"(A) the demonstrated ability of the State to manage the grant program under this section;

"(B) there being in effect an approved mitigation plan under section 322; and

"(C) a demonstrated commitment to mitigation activities.

"(3) APPROVAL.—The President shall approve an application submitted under paragraph (1) that meets the criteria established under paragraph (2). President.

"(4) WITHDRAWAL OF APPROVAL.—If, after approving an application of a State submitted under paragraph (1), the President determines that the State is not administering the hazard mitigation grant program established by this section in a manner satisfactory to the President, the President shall withdraw the approval.

"(5) AUDITS.—The President shall provide for periodic audits of the hazard mitigation grant programs administered by States under this subsection.". President.

SEC. 205. ASSISTANCE TO REPAIR, RESTORE, RECONSTRUCT, OR REPLACE DAMAGED FACILITIES.

(a) CONTRIBUTIONS.—Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172) is amended by striking subsection (a) and inserting the following:

"(a) CONTRIBUTIONS.—

"(1) IN GENERAL.—The President may make contributions—

"(A) to a State or local government for the repair, restoration, reconstruction, or replacement of a public facility damaged or destroyed by a major disaster and for associated expenses incurred by the government; and

"(B) subject to paragraph (3), to a person that owns or operates a private nonprofit facility damaged or destroyed by a major disaster for the repair, restoration, reconstruction, or replacement of the facility and for associated expenses incurred by the person.

"(2) ASSOCIATED EXPENSES.—For the purposes of this section, associated expenses shall include—

"(A) the costs of mobilizing and employing the National Guard for performance of eligible work;

"(B) the costs of using prison labor to perform eligible work, including wages actually paid, transportation to a worksite, and extraordinary costs of guards, food, and lodging; and

"(C) base and overtime wages for the employees and extra hires of a State, local government, or person described in paragraph (1) that perform eligible work, plus fringe benefits on such wages to the extent that such benefits were being paid before the major disaster.

"(3) CONDITIONS FOR ASSISTANCE TO PRIVATE NONPROFIT FACILITIES.—

"(A) IN GENERAL.—The President may make contributions to a private nonprofit facility under paragraph (1)(B) only if—

"(i) the facility provides critical services (as defined by the President) in the event of a major disaster; or

"(ii) the owner or operator of the facility—

"(I) has applied for a disaster loan under section 7(b) of the Small Business Act (15 U.S.C. 636(b)); and

"(II)(aa) has been determined to be ineligible for such a loan; or

"(bb) has obtained such a loan in the maximum amount for which the Small Business Administration determines the facility is eligible.

"(B) DEFINITION OF CRITICAL SERVICES.—In this paragraph, the term 'critical services' includes power, water (including water provided by an irrigation organization or facility), sewer, wastewater treatment, communications, and emergency medical care.

"(4) NOTIFICATION TO CONGRESS.—Before making any contribution under this section in an amount greater than $20,000,000, the President shall notify—

"(A) the Committee on Environment and Public Works of the Senate;

"(B) the Committee on Transportation and Infrastructure of the House of Representatives;

"(C) the Committee on Appropriations of the Senate; and

"(D) the Committee on Appropriations of the House of Representatives.".

(b) FEDERAL SHARE.—Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172) is amended by striking subsection (b) and inserting the following:

"(b) FEDERAL SHARE.—

"(1) MINIMUM FEDERAL SHARE.—Except as provided in paragraph (2), the Federal share of assistance under this section shall be not less than 75 percent of the eligible cost of repair, restoration, reconstruction, or replacement carried out under this section.

"(2) REDUCED FEDERAL SHARE.—The President shall promulgate regulations to reduce the Federal share of assistance under this section to not less than 25 percent in the case of the repair, restoration, reconstruction, or replacement of any eligible public facility or private nonprofit facility following an event associated with a major disaster— President. Regulations.

"(A) that has been damaged, on more than one occasion within the preceding 10-year period, by the same type of event; and

"(B) the owner of which has failed to implement appropriate mitigation measures to address the hazard that caused the damage to the facility.".

(c) LARGE IN-LIEU CONTRIBUTIONS.—Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172) is amended by striking subsection (c) and inserting the following:

"(c) LARGE IN-LIEU CONTRIBUTIONS.—

"(1) FOR PUBLIC FACILITIES.—

"(A) IN GENERAL.—In any case in which a State or local government determines that the public welfare would not best be served by repairing, restoring, reconstructing, or replacing any public facility owned or controlled by the State or local government, the State or local government may elect to receive, in lieu of a contribution under subsection (a)(1)(A), a contribution in an amount equal to 75 percent of the Federal share of the Federal estimate of the cost of repairing, restoring, reconstructing, or replacing the facility and of management expenses.

"(B) AREAS WITH UNSTABLE SOIL.—In any case in which a State or local government determines that the public welfare would not best be served by repairing, restoring, reconstructing, or replacing any public facility owned or controlled by the State or local government because soil instability in the disaster area makes repair, restoration, reconstruction, or replacement infeasible, the State or local government may elect to receive, in lieu of a contribution under subsection (a)(1)(A), a contribution in an amount equal to 90 percent of the Federal share of the Federal estimate of the cost of repairing, restoring, reconstructing, or replacing the facility and of management expenses.

"(C) USE OF FUNDS.—Funds contributed to a State or local government under this paragraph may be used—

"(i) to repair, restore, or expand other selected public facilities;

"(ii) to construct new facilities; or

"(iii) to fund hazard mitigation measures that the State or local government determines to be necessary to meet a need for governmental services and functions in the area affected by the major disaster.

"(D) LIMITATIONS.—Funds made available to a State or local government under this paragraph may not be used for—

"(i) any public facility located in a regulatory floodway (as defined in section 59.1 of title 44, Code of Federal Regulations (or a successor regulation)); or

"(ii) any uninsured public facility located in a special flood hazard area identified by the Director of the Federal Emergency Management Agency under the National Flood Insurance Act of 1968 (42 U.S.C. 4001 et seq.).

"(2) FOR PRIVATE NONPROFIT FACILITIES.—

"(A) IN GENERAL.—In any case in which a person that owns or operates a private nonprofit facility determines that the public welfare would not best be served by repairing, restoring, reconstructing, or replacing the facility, the person may elect to receive, in lieu of a contribution under subsection (a)(1)(B), a contribution in an amount equal to 75 percent of the Federal share of the Federal estimate of the cost of repairing, restoring, reconstructing, or replacing the facility and of management expenses.

"(B) USE OF FUNDS.—Funds contributed to a person under this paragraph may be used—

"(i) to repair, restore, or expand other selected private nonprofit facilities owned or operated by the person;

"(ii) to construct new private nonprofit facilities to be owned or operated by the person; or

"(iii) to fund hazard mitigation measures that the person determines to be necessary to meet a need for the person's services and functions in the area affected by the major disaster.

"(C) LIMITATIONS.—Funds made available to a person under this paragraph may not be used for—

"(i) any private nonprofit facility located in a regulatory floodway (as defined in section 59.1 of title 44, Code of Federal Regulations (or a successor regulation)); or

"(ii) any uninsured private nonprofit facility located in a special flood hazard area identified by the Director of the Federal Emergency Management Agency under the National Flood Insurance Act of 1968 (42 U.S.C. 4001 et seq.).".

(d) ELIGIBLE COST.—

(1) IN GENERAL.—Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172) is amended by striking subsection (e) and inserting the following:

"(e) ELIGIBLE COST.—

"(1) DETERMINATION.—

"(A) IN GENERAL.—For the purposes of this section, the President shall estimate the eligible cost of repairing, restoring, reconstructing, or replacing a public facility or private nonprofit facility—

"(i) on the basis of the design of the facility as the facility existed immediately before the major disaster; and

"(ii) in conformity with codes, specifications, and standards (including floodplain management and hazard mitigation criteria required by the President or under the Coastal Barrier Resources Act (16 U.S.C. 3501 et seq.)) applicable at the time at which the disaster occurred.

"(B) COST ESTIMATION PROCEDURES.—

"(i) IN GENERAL.—Subject to paragraph (2), the President shall use the cost estimation procedures established under paragraph (3) to determine the eligible cost under this subsection.

"(ii) APPLICABILITY.—The procedures specified in this paragraph and paragraph (2) shall apply only to projects the eligible cost of which is equal to or greater than the amount specified in section 422.

"(2) MODIFICATION OF ELIGIBLE COST.—

"(A) ACTUAL COST GREATER THAN CEILING PERCENTAGE OF ESTIMATED COST.—In any case in which the actual cost of repairing, restoring, reconstructing, or replacing a facility under this section is greater than the ceiling percentage established under paragraph (3) of the cost estimated under paragraph (1), the President may determine that the eligible cost includes a portion of the actual cost of the repair, restoration, reconstruction, or replacement that exceeds the cost estimated under paragraph (1).

"(B) ACTUAL COST LESS THAN ESTIMATED COST.—

"(i) GREATER THAN OR EQUAL TO FLOOR PERCENTAGE OF ESTIMATED COST.—In any case in which the actual cost of repairing, restoring, reconstructing, or replacing a facility under this section is less than 100 percent of the cost estimated under paragraph (1), but is greater than or equal to the floor percentage established under paragraph (3) of the cost estimated under paragraph (1), the State or local government or person receiving funds under this section shall use the excess funds to carry out cost-effective activities that reduce the risk of future damage, hardship, or suffering from a major disaster.

"(ii) LESS THAN FLOOR PERCENTAGE OF ESTIMATED COST.—In any case in which the actual cost of repairing, restoring, reconstructing, or replacing a facility under this section is less than the floor percentage established under paragraph (3) of the cost estimated under paragraph (1), the State or local government or person receiving assistance under this section shall reimburse the President in the amount of the difference.

"(C) NO EFFECT ON APPEALS PROCESS.—Nothing in this paragraph affects any right of appeal under section 423.

"(3) EXPERT PANEL.—

"(A) ESTABLISHMENT.—Not later than 18 months after the date of the enactment of this paragraph, the President, acting through the Director of the Federal Emergency Management Agency, shall establish an expert panel, which shall include representatives from the construction industry and State and local government.

"(B) DUTIES.—The expert panel shall develop recommendations concerning—

"(i) procedures for estimating the cost of repairing, restoring, reconstructing, or replacing a facility consistent with industry practices; and

"(ii) the ceiling and floor percentages referred to in paragraph (2).

President. "(C) REGULATIONS.—Taking into account the recommendations of the expert panel under subparagraph (B), the President shall promulgate regulations that establish—

"(i) cost estimation procedures described in subparagraph (B)(i); and

"(ii) the ceiling and floor percentages referred to in paragraph (2).

Deadline. "(D) REVIEW BY PRESIDENT.—Not later than 2 years after the date of promulgation of regulations under subparagraph (C) and periodically thereafter, the President shall review the cost estimation procedures and the ceiling and floor percentages established under this paragraph.

Deadline. "(E) REPORT TO CONGRESS.—Not later than 1 year after the date of promulgation of regulations under subparagraph (C), 3 years after that date, and at the end of each 2-year period thereafter, the expert panel shall submit to Congress a report on the appropriateness of the cost estimation procedures.

"(4) SPECIAL RULE.—In any case in which the facility being repaired, restored, reconstructed, or replaced under this section was under construction on the date of the major disaster, the cost of repairing, restoring, reconstructing, or replacing the facility shall include, for the purposes of this section, only those costs that, under the contract for the construction, are the owner's responsibility and not the contractor's responsibility.".

42 USC 5172 note. (2) EFFECTIVE DATE.—The amendment made by paragraph (1) takes effect on the date of the enactment of this Act and applies to funds appropriated after the date of the enactment of this Act, except that paragraph (1) of section 406(e) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (as amended by paragraph (1)) takes effect on the date on which the cost estimation procedures established under paragraph (3) of that section take effect.

(e) CONFORMING AMENDMENT.—Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172) is amended by striking subsection (f).

SEC. 206. FEDERAL ASSISTANCE TO INDIVIDUALS AND HOUSEHOLDS.

(a) IN GENERAL.—Section 408 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5174) is amended to read as follows:

"SEC. 408. FEDERAL ASSISTANCE TO INDIVIDUALS AND HOUSEHOLDS.

"(a) IN GENERAL.—

"(1) PROVISION OF ASSISTANCE.—In accordance with this section, the President, in consultation with the Governor of a State, may provide financial assistance, and, if necessary, direct services, to individuals and households in the State who, as a direct result of a major disaster, have necessary expenses and serious needs in cases in which the individuals and households are unable to meet such expenses or needs through other means.

"(2) RELATIONSHIP TO OTHER ASSISTANCE.—Under paragraph (1), an individual or household shall not be denied assistance under paragraph (1), (3), or (4) of subsection (c) solely on the basis that the individual or household has not applied for or received any loan or other financial assistance from the Small Business Administration or any other Federal agency.

"(b) HOUSING ASSISTANCE.—

"(1) ELIGIBILITY.—The President may provide financial or other assistance under this section to individuals and households to respond to the disaster-related housing needs of individuals and households who are displaced from their predisaster primary residences or whose predisaster primary residences are rendered uninhabitable as a result of damage caused by a major disaster.

"(2) DETERMINATION OF APPROPRIATE TYPES OF ASSISTANCE.—

"(A) IN GENERAL.—The President shall determine appropriate types of housing assistance to be provided under this section to individuals and households described in subsection (a)(1) based on considerations of cost effectiveness, convenience to the individuals and households, and such other factors as the President may consider appropriate. President.

"(B) MULTIPLE TYPES OF ASSISTANCE.—One or more types of housing assistance may be made available under this section, based on the suitability and availability of the types of assistance, to meet the needs of individuals and households in the particular disaster situation.

"(c) TYPES OF HOUSING ASSISTANCE.—

"(1) TEMPORARY HOUSING.—

"(A) FINANCIAL ASSISTANCE.—

"(i) IN GENERAL.—The President may provide financial assistance to individuals or households to rent alternate housing accommodations, existing rental units, manufactured housing, recreational vehicles, or other readily fabricated dwellings.

"(ii) AMOUNT.—The amount of assistance under clause (i) shall be based on the fair market rent for the accommodation provided plus the cost of any transportation, utility hookups, or unit installation not provided directly by the President.

"(B) DIRECT ASSISTANCE.—

"(i) IN GENERAL.—The President may provide temporary housing units, acquired by purchase or lease, directly to individuals or households who, because of a lack of available housing resources, would be unable

to make use of the assistance provided under subparagraph (A).

"(ii) PERIOD OF ASSISTANCE.—The President may not provide direct assistance under clause (i) with respect to a major disaster after the end of the 18-month period beginning on the date of the declaration of the major disaster by the President, except that the President may extend that period if the President determines that due to extraordinary circumstances an extension would be in the public interest.

"(iii) COLLECTION OF RENTAL CHARGES.—After the end of the 18-month period referred to in clause (ii), the President may charge fair market rent for each temporary housing unit provided.

"(2) REPAIRS.—

"(A) IN GENERAL.—The President may provide financial assistance for—

"(i) the repair of owner-occupied private residences, utilities, and residential infrastructure (such as a private access route) damaged by a major disaster to a safe and sanitary living or functioning condition; and

"(ii) eligible hazard mitigation measures that reduce the likelihood of future damage to such residences, utilities, or infrastructure.

"(B) RELATIONSHIP TO OTHER ASSISTANCE.—A recipient of assistance provided under this paragraph shall not be required to show that the assistance can be met through other means, except insurance proceeds.

"(C) MAXIMUM AMOUNT OF ASSISTANCE.—The amount of assistance provided to a household under this paragraph shall not exceed $5,000, as adjusted annually to reflect changes in the Consumer Price Index for All Urban Consumers published by the Department of Labor.

"(3) REPLACEMENT.—

"(A) IN GENERAL.—The President may provide financial assistance for the replacement of owner-occupied private residences damaged by a major disaster.

"(B) MAXIMUM AMOUNT OF ASSISTANCE.—The amount of assistance provided to a household under this paragraph shall not exceed $10,000, as adjusted annually to reflect changes in the Consumer Price Index for All Urban Consumers published by the Department of Labor.

"(C) APPLICABILITY OF FLOOD INSURANCE REQUIREMENT.—With respect to assistance provided under this paragraph, the President may not waive any provision of Federal law requiring the purchase of flood insurance as a condition of the receipt of Federal disaster assistance.

"(4) PERMANENT HOUSING CONSTRUCTION.—The President may provide financial assistance or direct assistance to individuals or households to construct permanent housing in insular areas outside the continental United States and in other remote locations in cases in which—

"(A) no alternative housing resources are available; and

"(B) the types of temporary housing assistance described in paragraph (1) are unavailable, infeasible, or not cost-effective.

"(d) TERMS AND CONDITIONS RELATING TO HOUSING ASSISTANCE.—

"(1) SITES.—

"(A) IN GENERAL.—Any readily fabricated dwelling provided under this section shall, whenever practicable, be located on a site that—

"(i) is complete with utilities; and

"(ii) is provided by the State or local government, by the owner of the site, or by the occupant who was displaced by the major disaster.

"(B) SITES PROVIDED BY THE PRESIDENT.—A readily fabricated dwelling may be located on a site provided by the President if the President determines that such a site would be more economical or accessible.

"(2) DISPOSAL OF UNITS.—

"(A) SALE TO OCCUPANTS.—

"(i) IN GENERAL.—Notwithstanding any other provision of law, a temporary housing unit purchased under this section by the President for the purpose of housing disaster victims may be sold directly to the individual or household who is occupying the unit if the individual or household lacks permanent housing.

"(ii) SALE PRICE.—A sale of a temporary housing unit under clause (i) shall be at a price that is fair and equitable.

"(iii) DEPOSIT OF PROCEEDS.—Notwithstanding any other provision of law, the proceeds of a sale under clause (i) shall be deposited in the appropriate Disaster Relief Fund account.

"(iv) HAZARD AND FLOOD INSURANCE.—A sale of a temporary housing unit under clause (i) shall be made on the condition that the individual or household purchasing the housing unit agrees to obtain and maintain hazard and flood insurance on the housing unit.

"(v) USE OF GSA SERVICES.—The President may use the services of the General Services Administration to accomplish a sale under clause (i).

"(B) OTHER METHODS OF DISPOSAL.—If not disposed of under subparagraph (A), a temporary housing unit purchased under this section by the President for the purpose of housing disaster victims—

"(i) may be sold to any person; or

"(ii) may be sold, transferred, donated, or otherwise made available directly to a State or other governmental entity or to a voluntary organization for the sole purpose of providing temporary housing to disaster victims in major disasters and emergencies if, as a condition of the sale, transfer, or donation, the State, other governmental agency, or voluntary organization agrees—

"(I) to comply with the nondiscrimination provisions of section 308; and

"(II) to obtain and maintain hazard and flood insurance on the housing unit.

"(e) FINANCIAL ASSISTANCE TO ADDRESS OTHER NEEDS.—

"(1) MEDICAL, DENTAL, AND FUNERAL EXPENSES.—The President, in consultation with the Governor of a State, may provide financial assistance under this section to an individual or household in the State who is adversely affected by a major disaster to meet disaster-related medical, dental, and funeral expenses.

"(2) PERSONAL PROPERTY, TRANSPORTATION, AND OTHER EXPENSES.—The President, in consultation with the Governor of a State, may provide financial assistance under this section to an individual or household described in paragraph (1) to address personal property, transportation, and other necessary expenses or serious needs resulting from the major disaster.

"(f) STATE ROLE.—

"(1) FINANCIAL ASSISTANCE TO ADDRESS OTHER NEEDS.—

"(A) GRANT TO STATE.—Subject to subsection (g), a Governor may request a grant from the President to provide financial assistance to individuals and households in the State under subsection (e).

"(B) ADMINISTRATIVE COSTS.—A State that receives a grant under subparagraph (A) may expend not more than 5 percent of the amount of the grant for the administrative costs of providing financial assistance to individuals and households in the State under subsection (e).

"(2) ACCESS TO RECORDS.—In providing assistance to individuals and households under this section, the President shall provide for the substantial and ongoing involvement of the States in which the individuals and households are located, including by providing to the States access to the electronic records of individuals and households receiving assistance under this section in order for the States to make available any additional State and local assistance to the individuals and households.

"(g) COST SHARING.—

"(1) FEDERAL SHARE.—Except as provided in paragraph (2), the Federal share of the costs eligible to be paid using assistance provided under this section shall be 100 percent.

"(2) FINANCIAL ASSISTANCE TO ADDRESS OTHER NEEDS.—In the case of financial assistance provided under subsection (e)—

"(A) the Federal share shall be 75 percent; and

"(B) the non-Federal share shall be paid from funds made available by the State.

"(h) MAXIMUM AMOUNT OF ASSISTANCE.—

"(1) IN GENERAL.—No individual or household shall receive financial assistance greater than $25,000 under this section with respect to a single major disaster.

"(2) ADJUSTMENT OF LIMIT.—The limit established under paragraph (1) shall be adjusted annually to reflect changes in the Consumer Price Index for All Urban Consumers published by the Department of Labor.

President. "(i) RULES AND REGULATIONS.—The President shall prescribe rules and regulations to carry out this section, including criteria, standards, and procedures for determining eligibility for assistance.".

(b) CONFORMING AMENDMENT.—Section 502(a)(6) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5192(a)(6)) is amended by striking "temporary housing".

(c) ELIMINATION OF INDIVIDUAL AND FAMILY GRANT PROGRAMS.—Section 411 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5178) is repealed.

(d) EFFECTIVE DATE.—The amendments made by this section take effect 18 months after the date of the enactment of this Act. 42 USC 5174 note.

SEC. 207. COMMUNITY DISASTER LOANS.

Section 417 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5184) is amended—

(1) by striking "(a) The President" and inserting the following:

"(a) IN GENERAL.—The President";

(2) by striking "The amount" and inserting the following:

"(b) AMOUNT.—The amount";

(3) by striking "Repayment" and inserting the following:

"(c) REPAYMENT.—

"(1) CANCELLATION.—Repayment";

(4) by striking "(b) Any loans" and inserting the following:

"(d) EFFECT ON OTHER ASSISTANCE.—Any loans";

(5) in subsection (b) (as designated by paragraph (2))—

(A) by striking "and shall" and inserting "shall"; and

(B) by inserting before the period at the end the following: ", and shall not exceed $5,000,000"; and

(6) in subsection (c) (as designated by paragraph (3)), by adding at the end the following:

"(2) CONDITION ON CONTINUING ELIGIBILITY.—A local government shall not be eligible for further assistance under this section during any period in which the local government is in arrears with respect to a required repayment of a loan under this section.".

SEC. 208. REPORT ON STATE MANAGEMENT OF SMALL DISASTERS INITIATIVE. 42 USC 5121 note.

Not later than 3 years after the date of the enactment of this Act, the President shall submit to Congress a report describing the results of the State Management of Small Disasters Initiative, including— Deadline.

(1) identification of any administrative or financial benefits of the initiative; and

(2) recommendations concerning the conditions, if any, under which States should be allowed the option to administer parts of the assistance program under section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5172).

SEC. 209. STUDY REGARDING COST REDUCTION. 42 USC 5121 note.

Not later than 3 years after the date of the enactment of this Act, the Director of the Congressional Budget Office shall complete a study estimating the reduction in Federal disaster assistance that has resulted and is likely to result from the enactment of this Act. Deadline.

TITLE III—MISCELLANEOUS

SEC. 301. TECHNICAL CORRECTION OF SHORT TITLE.

The first section of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 note) is amended to read as follows:

"SECTION 1. SHORT TITLE.

"This Act may be cited as the 'Robert T. Stafford Disaster Relief and Emergency Assistance Act'.".

SEC. 302. DEFINITIONS.

Section 102 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5122) is amended—

(1) in each of paragraphs (3) and (4), by striking "the Northern" and all that follows through "Pacific Islands" and inserting "and the Commonwealth of the Northern Mariana Islands";

(2) by striking paragraph (6) and inserting the following:

"(6) LOCAL GOVERNMENT.—The term 'local government' means—

"(A) a county, municipality, city, town, township, local public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government;

"(B) an Indian tribe or authorized tribal organization, or Alaska Native village or organization; and

"(C) a rural community, unincorporated town or village, or other public entity, for which an application for assistance is made by a State or political subdivision of a State."; and

(3) in paragraph (9), by inserting "irrigation," after "utility,".

SEC. 303. FIRE MANAGEMENT ASSISTANCE.

(a) IN GENERAL.—Section 420 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5187) is amended to read as follows:

"SEC. 420. FIRE MANAGEMENT ASSISTANCE.

"(a) IN GENERAL.—The President is authorized to provide assistance, including grants, equipment, supplies, and personnel, to any State or local government for the mitigation, management, and control of any fire on public or private forest land or grassland that threatens such destruction as would constitute a major disaster.

President.

"(b) COORDINATION WITH STATE AND TRIBAL DEPARTMENTS OF FORESTRY.—In providing assistance under this section, the President shall coordinate with State and tribal departments of forestry.

"(c) ESSENTIAL ASSISTANCE.—In providing assistance under this section, the President may use the authority provided under section 403.

"(d) RULES AND REGULATIONS.—The President shall prescribe such rules and regulations as are necessary to carry out this section.". President.

(b) EFFECTIVE DATE.—The amendment made by subsection (a) takes effect 1 year after the date of the enactment of this Act. 42 USC 5187 note.

SEC. 304. DISASTER GRANT CLOSEOUT PROCEDURES. 42 USC 5205.

Title VII of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5101 et seq.) is amended by adding at the end the following:

"SEC. 705. DISASTER GRANT CLOSEOUT PROCEDURES.

"(a) STATUTE OF LIMITATIONS.—

"(1) IN GENERAL.—Except as provided in paragraph (2), no administrative action to recover any payment made to a State or local government for disaster or emergency assistance under this Act shall be initiated in any forum after the date that is 3 years after the date of transmission of the final expenditure report for the disaster or emergency.

"(2) FRAUD EXCEPTION.—The limitation under paragraph (1) shall apply unless there is evidence of civil or criminal fraud.

"(b) REBUTTAL OF PRESUMPTION OF RECORD MAINTENANCE.—

"(1) IN GENERAL.—In any dispute arising under this section after the date that is 3 years after the date of transmission of the final expenditure report for the disaster or emergency, there shall be a presumption that accounting records were maintained that adequately identify the source and application of funds provided for financially assisted activities.

"(2) AFFIRMATIVE EVIDENCE.—The presumption described in paragraph (1) may be rebutted only on production of affirmative evidence that the State or local government did not maintain documentation described in that paragraph.

"(3) INABILITY TO PRODUCE DOCUMENTATION.—The inability of the Federal, State, or local government to produce source documentation supporting expenditure reports later than 3 years after the date of transmission of the final expenditure report shall not constitute evidence to rebut the presumption described in paragraph (1).

"(4) RIGHT OF ACCESS.—The period during which the Federal, State, or local government has the right to access source documentation shall not be limited to the required 3-year retention period referred to in paragraph (3), but shall last as long as the records are maintained.

"(c) BINDING NATURE OF GRANT REQUIREMENTS.—A State or local government shall not be liable for reimbursement or any other penalty for any payment made under this Act if—

"(1) the payment was authorized by an approved agreement specifying the costs;

"(2) the costs were reasonable; and

"(3) the purpose of the grant was accomplished.".

SEC. 305. PUBLIC SAFETY OFFICER BENEFITS FOR CERTAIN FEDERAL AND STATE EMPLOYEES.

(a) IN GENERAL.—Section 1204 of the Omnibus Crime Control and Safe Streets Act of 1968 (42 U.S.C. 3796b) is amended by striking paragraph (7) and inserting the following:

"(7) 'public safety officer' means—

"(A) an individual serving a public agency in an official capacity, with or without compensation, as a law enforcement officer, as a firefighter, or as a member of a rescue squad or ambulance crew;

"(B) an employee of the Federal Emergency Management Agency who is performing official duties of the Agency in an area, if those official duties—

"(i) are related to a major disaster or emergency that has been, or is later, declared to exist with respect to the area under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.); and

"(ii) are determined by the Director of the Federal Emergency Management Agency to be hazardous duties; or

"(C) an employee of a State, local, or tribal emergency management or civil defense agency who is performing official duties in cooperation with the Federal Emergency Management Agency in an area, if those official duties—

"(i) are related to a major disaster or emergency that has been, or is later, declared to exist with respect to the area under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.); and

"(ii) are determined by the head of the agency to be hazardous duties.".

42 USC 3796b note.

(b) EFFECTIVE DATE.—The amendment made by subsection (a) applies only to employees described in subparagraphs (B) and (C) of section 1204(7) of the Omnibus Crime Control and Safe Streets Act of 1968 (as amended by subsection (a)) who are injured or who die in the line of duty on or after the date of the enactment of this Act.

42 USC 5206.

SEC. 306. BUY AMERICAN.

(a) COMPLIANCE WITH BUY AMERICAN ACT.—No funds authorized to be appropriated under this Act or any amendment made by this Act may be expended by an entity unless the entity, in expending the funds, complies with the Buy American Act (41 U.S.C. 10a et seq.).

(b) DEBARMENT OF PERSONS CONVICTED OF FRAUDULENT USE OF "MADE IN AMERICA" LABELS.—

Deadline.

(1) IN GENERAL.—If the Director of the Federal Emergency Management Agency determines that a person has been convicted of intentionally affixing a label bearing a "Made in America" inscription to any product sold in or shipped to the United States that is not made in America, the Director shall determine, not later than 90 days after determining that the person has been so convicted, whether the person should be debarred from contracting under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.).

(2) DEFINITION OF DEBAR.—In this subsection, the term "debar" has the meaning given the term in section 2393(c) of title 10, United States Code.

SEC. 307. TREATMENT OF CERTAIN REAL PROPERTY.

(a) IN GENERAL.—Notwithstanding the National Flood Insurance Act of 1968 (42 U.S.C. 4001 et seq.), the Flood Disaster

Protection Act of 1973 (42 U.S.C. 4002 et seq.), or any other provision of law, or any flood risk zone identified, delineated, or established under any such law (by flood insurance rate map or otherwise), the real property described in subsection (b) shall not be considered to be, or to have been, located in any area having special flood hazards (including any floodway or floodplain).

(b) REAL PROPERTY.—The real property described in this subsection is all land and improvements on the land located in the Maple Terrace Subdivisions in the City of Sycamore, DeKalb County, Illinois, including—

(1) Maple Terrace Phase I;
(2) Maple Terrace Phase II;
(3) Maple Terrace Phase III Unit 1;
(4) Maple Terrace Phase III Unit 2;
(5) Maple Terrace Phase III Unit 3;
(6) Maple Terrace Phase IV Unit 1;
(7) Maple Terrace Phase IV Unit 2; and
(8) Maple Terrace Phase IV Unit 3.

(c) REVISION OF FLOOD INSURANCE RATE LOT MAPS.—As soon as practicable after the date of the enactment of this Act, the Director of the Federal Emergency Management Agency shall revise the appropriate flood insurance rate lot maps of the agency to reflect the treatment under subsection (a) of the real property described in subsection (b).

SEC. 308. STUDY OF PARTICIPATION BY INDIAN TRIBES IN EMERGENCY MANAGEMENT.

42 USC 5121 note.

(a) DEFINITION OF INDIAN TRIBE.—In this section, the term "Indian tribe" has the meaning given the term in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b).

(b) STUDY.—

(1) IN GENERAL.—The Director of the Federal Emergency Management Agency shall conduct a study of participation by Indian tribes in emergency management.

(2) REQUIRED ELEMENTS.—The study shall—

(A) survey participation by Indian tribes in training, predisaster and postdisaster mitigation, disaster preparedness, and disaster recovery programs at the Federal and State levels; and

(B) review and assess the capacity of Indian tribes to participate in cost-shared emergency management programs and to participate in the management of the programs.

(3) CONSULTATION.—In conducting the study, the Director shall consult with Indian tribes.

(c) REPORT.—Not later than 1 year after the date of the enactment of this Act, the Director shall submit a report on the study under subsection (b) to— Deadline.

(1) the Committee on Environment and Public Works of the Senate;

(2) the Committee on Transportation and Infrastructure of the House of Representatives;

(3) the Committee on Appropriations of the Senate; and

(4) the Committee on Appropriations of the House of Representatives.

Approved October 30, 2000.

LEGISLATIVE HISTORY—H.R. 707 (S. 1691):

HOUSE REPORTS: No. 106–40 (Comm. on Transportation and Infrastructure).
SENATE REPORTS: No. 106–295 accompanying S. 1691 (Comm. on Environment and Public Works).
CONGRESSIONAL RECORD:
Vol. 145 (1999): Mar. 4, considered and passed House.
Vol. 146 (2000): July 19, considered and passed Senate, amended.
Oct. 3, House concurred in Senate amendment with an amendment.
Oct. 5, Senate concurred in House amendment with an amendment.
Oct. 10, House concurred in Senate amendment.

○



Federal Register

Tuesday,

February 26, 2002

Part III

Federal Emergency Management Agency

44 CFR Parts 201 and 206

Hazard Mitigation Planning and Hazard Mitigation Grant Program; Interim Final Rule

FEDERAL EMERGENCY MANAGEMENT AGENCY

44 CFR Parts 201 and 206

RIN 3067–AD22

Hazard Mitigation Planning and Hazard Mitigation Grant Program

AGENCY: Federal Emergency Management Agency.

ACTION: Interim final rule.

SUMMARY: This rule addresses State mitigation planning, identifies new local mitigation planning requirements, authorizes Hazard Mitigation Grant Program (HMGP) funds for planning activities, and increases the amount of HMGP funds available to States that develop a comprehensive, enhanced mitigation plan. This rule also requires that repairs or construction funded by a disaster loan or grant must be carried out in accordance with applicable standards and says that FEMA may require safe land use and construction practices as a condition of grantees receiving disaster assistance under the Stafford Act.

DATES: *Effective Date:* February 26, 2002.

Comment Date: We will accept written comments through April 29, 2002.

ADDRESSES: Please send written comments to the Rules Docket Clerk, Office of the General Counsel, Federal Emergency Management Agency, 500 C Street, SW., room 840, Washington, DC 20472, (facsimile) 202–646–4536, or (email) *rules@fema.gov.*

FOR FURTHER INFORMATION CONTACT: Margaret E. Lawless, Federal Insurance and Mitigation Administration, Federal Emergency Management Agency, 500 C Street, SW., Washington, DC, 20472, 202–646–3027, (facsimile) 202–646–3104, or (email) *margaret.lawless@fema.gov.*

SUPPLEMENTARY INFORMATION:

Introduction

Throughout the preamble and the rule the terms ''we'', ''our'' and ''us'' refer to FEMA.

Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act or the Act), 42 U.S.C. 5165, enacted under § 104 the Disaster Mitigation Act of 2000, (DMA 2000) P.L. 106–390, provides new and revitalized approaches to mitigation planning. This section: (1) Continues the requirement for a Standard State Mitigation plan as a condition of disaster assistance; (2) provides for States to receive an increased percentage of HMGP funds (from 15 to 20 percent of the total estimated eligible Federal assistance) if, at the time of the declaration of a major disaster, they have in effect a FEMA-approved Enhanced State Mitigation Plan that meets the factors listed in this rule; (3) establishes a new requirement for local mitigation plans; and (4) authorizes up to 7 percent of the HMGP funds available to a State to be used for development of State, tribal, and local mitigation plans. We will give Indian tribal governments the opportunity to fulfill the requirements of § 322 either as a grantee or a subgrantee. An Indian tribal government may choose to apply for HMGP funding directly to us and would then serve as a grantee, meeting the State level responsibilities, or it may apply through the State, meeting the local government or subgrantee responsibilities.

Section 322, in concert with other sections of the Act, provides a significant opportunity to reduce the Nation's disaster losses through mitigation planning. In addition, implementation of planned, pre-identified, cost-effective mitigation measures will streamline the disaster recovery process. The Act provides a framework for linking pre- and post-disaster mitigation planning and initiatives with public and private interests to ensure an integrated, comprehensive approach to disaster loss reduction. The language in the Act, taken as a whole, emphasizes the importance of strong State and local planning processes and comprehensive program management at the State level. The new planning criteria also support State administration of the HMGP, and contemplate a significant State commitment to mitigation activities, comprehensive State mitigation planning, and strong program management.

The planning process also provides a link between State and local mitigation programs. Both State level and local plans should address strategies for incorporating post-disaster early mitigation implementation strategies and sustainable recovery actions. We also recognize that governments are involved in a range of planning activities and that mitigation plans may be linked to or reference hazardous materials and other non-natural hazard plans. Improved mitigation planning will result in a better understanding of risks and vulnerabilities, as well as to expedite implementation of measures and activities to reduce those risks, both pre- and post-disaster.

Section 409 of the Stafford Act, 42 U.S.C. 5176, which required mitigation plans and the use of minimum codes and standards, was repealed by the DMA 2000. These issues are now addressed in two separate sections of the law: mitigation planning is in section 322 of the Act, and minimum codes and standards are in section 323 of the Act. We previously implemented section 409 through 44 CFR Part 206, Subpart M. Since current law now distinguishes the planning from the codes and standards in separate sections, we will address them in different sections of the CFR. We address the new planning regulations in Part 201 to reflect the broader relevance of planning to all FEMA mitigation programs, while the minimum standards remain in Part 206, Federal Disaster Assistance, Subpart M. The regulations implementing the Hazard Mitigation Grant Program are in Part 206, Subpart N. This rule also contains changes to Subpart N, to reflect the new planning criteria identified in section 322 of the Act.

The administration is considering changes to FEMA's mitigation programs in the President's Budget for FY 2003. However, States and localities still would be required to have plans in effect, which meet the minimum requirements under this rule, as a condition of receiving mitigation assistance after November 1, 2003.

Implementation Strategy. States must have an approved hazard mitigation plan in order to receive Stafford Act assistance, excluding assistance provided pursuant to emergency provisions. These regulations provide criteria for the new two-tiered State mitigation plan process: Standard State Mitigation Plans, which allow a State to receive HMGP funding based on 15 percent of the total estimated eligible Stafford Act disaster assistance, and Enhanced State Mitigation Plans, which allow a State to receive HMGP funds based on 20 percent of the total estimated eligible Stafford Act disaster assistance. Enhanced State Mitigation Plans must demonstrate that the State has developed a comprehensive mitigation program, that it effectively uses available mitigation funding, and that it is capable of managing the increased funding. All State Mitigations Plans must be reviewed, revised, and re-approved by FEMA every three years. An important requirement of the legislation is that we must approve a completed enhanced plan *before* a disaster declaration, in order for the State to be eligible for the increased funding.

We will no longer require States to revise their mitigation plan after every disaster declaration, as under former

section 409 of the Act, 42 U.S.C. 5176. We recommend, however, that States consider revising their plan if a disaster or other circumstances significantly affect its mitigation priorities. States with existing mitigation plans, approved under former section 409, will continue to be eligible for the 15 percent HMGP funding until November 1, 2003, when all State mitigation plans must meet the requirements of these regulations. If State plans are not revised and approved to meet the Standard State Mitigation Plan requirements by that time, they will be ineligible for Stafford Act assistance, excluding emergency assistance.

Indian tribal governments may choose to apply directly to us for HMGP funding, and would therefore be responsible for having an approved State level mitigation plan, and would act as the grantee. If an Indian tribal government chooses to apply for HMGP grants through the State, they would be responsible for having an approved local level mitigation plan, and would serve as a subgrantee accountable to the State as grantee.

This rule also establishes local planning criteria so that these jurisdictions can actively begin the hazard mitigation planning process. This requirement is to encourage the development of comprehensive mitigation plans before disaster events. Section 322 requires local governments to have an approved local mitigation plan to be eligible to receive an HMGP project grant; however, this requirement will not fully take effect until November 1, 2003. FEMA Regional Directors may grant an exception to this requirement in extenuating circumstances. Until November 1, 2003, local governments will be able to receive HMGP project grant funds and may prepare a mitigation plan concurrently with implementation of their project grant. We anticipate that the Predisaster Mitigation program authorized by section 203 of the Act, 42 U.S.C. 5133, will also support this local mitigation planning by making funds available for the development of comprehensive local mitigation plans. Managing States that we approve under new criteria established under section 404 of the Act, 42 U.S.C. 5170c(c), as amended by section 204 of DMA 2000 will have approval authority for local mitigation plans. This provision does not apply to States that we approved under the Managing State program in effect before enactment of DMA 2000.

Our goal is for State and local governments to develop comprehensive and integrated plans that are coordinated through appropriate State, local, and regional agencies, as well as non-governmental interest groups. To the extent feasible and practicable, we would also like to consolidate the planning requirements for different FEMA mitigation programs. This will ensure that one local plan will meet the minimum requirements for all of the different FEMA mitigation programs, such as the Flood Mitigation Assistance Program (authorized by sections 553 and 554 of the National Flood Insurance Reform Act of 1994, 42 U.S.C. 4104c and 42 U.S.C. 4104d), the Community Rating System (authorized by section 541 of the National Flood Insurance Reform Act of 1994, 42 U.S.C. 4022), the Pre-Disaster Mitigation Program (authorized by section 203 of the Stafford Act), the Hazard Mitigation Grant Program (authorized by section 404 of the Stafford Act), and the mitigation activities that are based upon the provisions of section 323 and subsections 406(b) and (e) of the Stafford Act. The mitigation plans may also serve to integrate documents and plans produced under other emergency management programs. State level plans should identify overall goals and priorities, incorporating the more specific local risk assessments, when available, and including projects identified through the local planning process.

Under section 322(d), up to 7 percent of the available HMGP funds may now be used for planning, and we encourage States to use these funds for local plan development. In a memorandum to FEMA Regional Directors dated December 21, 2000, we announced that this provision of section 322 was effective for disasters declared on or after October 30, 2000, the date on which the Disaster Mitigation Act of 2000 became law. Regional Directors are encouraging States to make these funds immediately available to local and Indian tribal governments, although the funds can be used for plan development and review at the State level as well.

As discussed earlier in this Supplementary Information, subsection 323(a) of the Stafford Act, 42 U.S.C. 5166(a), requires as a precondition to receiving disaster assistance under the Act that State and local governments, as well as eligible private nonprofit entities, must agree to carry out repair and reconstruction activities ''in accordance with applicable standards of safety, decency, and sanitation and in conformity with applicable codes, specifications, and standards.'' In addition, that subsection authorizes the President (FEMA, by virtue of Executive Order 12148, as amended) to ''require safe land use and construction practices, after adequate consultation with appropriate State and local officials'' in the course of the use of Federal disaster assistance by eligible applicants to repair and restore disaster-damaged facilities.

At the same time that we implement the planning mandates of section 322 of the Stafford Act, we are also implementing the Minimum Standards for Public and Private Structures provision of section 323 of the Act. This rule appears at Subpart M of Part 206 of Title 44 of the Code of Federal Regulations. As mentioned earlier, the section 322 planning regulations are in Part 201, while Part 206, Subpart M includes only the minimum codes and standards regulations mandated in § 323. The rule to implement § 323 of the Act reinforces the link between pre-disaster planning, building and construction standards, and post-disaster reconstruction efforts.

We encourage comments on this interim final rule, and we will make every effort to involve all interested parties prior to the development of the Final Rule.

Justification for Interim Final Rule

In general, FEMA publishes a rule for public comment before issuing a final rule, under the Administrative Procedure Act, 5 U.S.C. 533 and 44 CFR 1.12. The Administrative Procedure Act, however, provides an exception from that general rule where the agency for good cause finds the procedures for comment and response contrary to public interest. Section 322 of the Stafford Act allows States to receive increased post-disaster grant funding for projects designed to reduce future disaster losses. States will only be eligible for these increased funds if they have a FEMA-approved Enhanced State Mitigation Plan.

This interim final rule provides the criteria for development and approval of these plans, as well as criteria for local mitigation plans required by this legislation. In order for State and local governments to be positioned to receive these mitigation funds as soon as possible, these regulations must be in effect. The public benefit of this rule will be to assist States and communities assess their risks and identify activities to strengthen the larger community and the built environment in order to become less susceptible to disasters. Planning serves as the vital foundation to saving lives and protecting properties, having integrated plans in place can serve to both streamline recovery efforts and lessen potential future damages. Therefore, we believe it is contrary to the public interest to delay

the benefits of this rule. In accordance with the Administrative Procedure Act, 5 U.S.C. 553(d)(3), we find that there is good cause for the interim final rule to take effect immediately upon publication in the **Federal Register** in order to meet the needs of States and communities by identifying criteria for mitigation plans in order to reduce risks nationwide, establish criteria for minimum codes and standards in post-disaster reconstruction, and to allow States to adjust their mitigation plans to receive the increase in mitigation funding.

In addition, we believe that, under the circumstances, delaying the effective date of this rule until after the comment period would not further the public interest. Prior to this rulemaking, FEMA hosted a meeting where interested parties provided comments and suggestions on how we could implement these planning requirements. Participants in this meeting included representatives from the National Emergency Management Association, the Association of State Floodplain Managers, the National Governors' Association, the International Association of Emergency Managers, the National Association of Development Organizations, the American Public Works Association, the National League of Cities, the National Association of Counties, the National Conference of State Legislatures, the International City/County Management Association, and the Bureau of Indian Affairs. We took comments and suggestions provided at this meeting into account in developing this interim final rule. Therefore, we find that prior notice and comment on this rule would not further the public interest. We actively encourage and solicit comments on this interim final rule from interested parties, and we will consider them in preparing the final rule. For these reasons, we believe we have good cause to publish an interim final rule.

National Environmental Policy Act

44 CFR 10.8(d)(2)(ii) excludes this rule from the preparation of an environmental assessment or environmental impact statement, where the rule relates to actions that qualify for categorical exclusion under 44 CFR 10.8(d)(2)(iii), such as the development of plans under this section.

Executive Order 12866, Regulatory Planning and Review

We have prepared and reviewed this rule under the provisions of E.O. 12866, Regulatory Planning and Review. Under Executive Order 12866, 58 FR 51735, October 4, 1993, a significant regulatory action is subject to OMB review and the requirements of the Executive Order. The Executive Order defines ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

The purpose of this rule is to implement section 322 of the Stafford Act which addresses mitigation planning at the State, tribal, and local levels, identifies new local planning requirements, allows Hazard Mitigation Grant Program (HMGP) funds for planning activities, and increases the amount of HMGP funds available to States that develop a comprehensive, enhanced mitigation plan. The rule identifies local mitigation planning requirements before approval of project grants, and requires our approval of an Enhanced State Mitigation plan as a condition for increased mitigation funding. The rule also implements section 323 of the Stafford Act, which requires that repairs or construction funded by disaster loans or grants must comply with applicable standards and safe land use and construction practices. As such the rule itself will not have an effect on the economy of more than $100,000,000.

Therefore, this rule is a significant regulatory action and is not an economically significant rule under Executive Order 12866. The Office of Management and Budget (OMB) has reviewed this rule under Executive Order 12866.

Executive Order 12898, Environmental Justice

Under Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 FR 7629, February 16, 1994, we incorporate environmental justice into our policies and programs. The Executive Order requires each Federal agency to conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that those programs, policies, and activities do not have the effect of excluding persons from participation in our programs, denying persons the benefits of our programs, or subjecting persons to discrimination because of their race, color, or national origin.

No action that we can anticipate under the final rule will have a disproportionately high or adverse human health and environmental effect on any segment of the population. Section 322 focuses specifically on mitigation planning to: Identify the natural hazards, risks, and vulnerabilities of areas in States, localities, and tribal areas; support development of local mitigation plans; provide for technical assistance to local and tribal governments for mitigation planning; and identify and prioritize mitigation actions that the State will support, as resources become available. Section 323 requires compliance with applicable codes and standards in repair and construction, and use of safe land use and construction standards. Accordingly, the requirements of Executive Order 12898 do not apply to this interim final rule.

Paperwork Reduction Act of 1995

As required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) and concurrent with the publication of this interim final rule, we have submitted a request for review and approval of a new collection of information, which is contained in this interim final rule. Under the Paperwork Reduction Act of 1995, a person may not be penalized for failing to comply with an information collection that does not display a currently valid Office of Management and Budget (OMB) control number. The request was submitted to OMB for approval under the emergency processing procedures in OMB regulation 5 CFR 1320.1. OMB has approved this collection of information for use through August 31, 2002, under OMB Number 3067–0297.

We expect to follow this emergency request with a request for OMB approval to continue the use of the collection of information for a term of three years. The request will be processed under OMB's normal clearance procedures in accordance with provisions of OMB regulation 5 CFR 1320.10. To help us with the timely processing of the emergency and normal clearance submissions to OMB, we invite the general public to comment on the collection of information. This notice and request for comments complies with the provisions of the Paperwork

Reduction Act of 1995 (44 U.S.C. 3506(c)(2)(A)).

Collection of Information

Title: State/Local/Tribal Hazard Mitigation Plans under Section 322 of the Disaster Mitigation Act of 2000.

Abstract: Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistant Act, as amended by Section 104 of the Disaster Mitigation Act of 2000, provides new and revitalized approaches to mitigation planning. To obtain Federal assistance, new planning provisions require that each state, local, and tribal government prepare a hazard mitigation plan to include sections that describe the planning process, an assessment of the risks, a mitigation strategy, and identification of the plan maintenance and updating process. The Act provides a framework for linking pre- and post-disaster mitigation planning and initiatives with public and private interests to ensure an integrated, comprehensive approach to disaster loss reduction. Under Section 322 there is a two-tiered State mitigation plan process. State mitigation plans must be reviewed, revised, and submitted to us every 3 years.

(1) A *Standard State Mitigation Plan* must be approved by us in order for States to be eligible to receive Hazard Mitigation Grant Program (HGMP) funding based on 15 percent of the total estimated eligible Federal disaster assistance. This plan demonstrates the State's goals, priorities, and commitment to reduce risks from natural hazards and serves as a guide for State and local decision makers as they commit resources to reducing the effects of natural hazards.

(2) An *Enhanced State Mitigation Plan* must be approved by us for a State to be eligible to receive HMGP funds based on 20 percent of the total estimated eligible Federal disaster assistance. This plan must be approved by us within the 3 years prior to the current major disaster declaration. It must demonstrate that a State has developed a comprehensive mitigation program, is effectively using available mitigation funding, and is capable of managing the increased funding.

To be eligible to receive HMGP project grants, *local governments* must develop Local Mitigation Plans that include a risk assessment and mitigation strategy to reduce potential losses and target resources. Plans must be reviewed, revised, and submitted to us for approval every 5 years.

To receive HMGP project grants, *tribal governments* may apply as a grantee or subgrantee, and will be required to meet the planning requirements of a State or local government.

Estimated Total Annual Burden:

Type of collection/forms	No. of respondents	Hours per response	Annual burden hours
Update state or tribal mitigation plans (standard state mitigation plans)	18	320	5,760
State review of local plans	500 local plans	8	4,000
States develop Enhanced State Mitigation Plans	7	100	700
Local or tribal governments develop mitigation plans	500 local plans	300	150,000
Total burden			160,460

Comments: We are soliciting written comments to: (a) Evaluate whether the proposed data collection is necessary for the proper performance of the agency, including whether the information shall have practical utility; (b) evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information; (c) obtain recommendations to enhance the quality, utility, and clarity of the information to be collected; and (d) evaluate the extent to which automated, electronic, mechanical, or other technological collection techniques may further reduce the respondents' burden. FEMA will accept comments through April 29, 2002.

Addressee: Interested persons should submit written comments to Muriel B. Anderson, Chief, Records Management Section, Program Services and Systems Branch, Facilities Management and Services Division, Administration and Resource Planning Directorate, Federal Emergency Management Agency, 500 C Street, Street, SW., Washington, DC 20472.

FOR FURTHER INFORMATION CONTACT: You may obtain copies of the OMB paperwork clearance package by contacting Ms. Anderson at (202) 646–2625 (voice), (202) 646–3347 (facsimile), or by e-mail at *muriel.anderson@fema.gov.*

Executive Order 13132, Federalism

Executive Order 13132, Federalism, dated August 4, 1999, sets forth principles and criteria that agencies must adhere to in formulating and implementing policies that have federalism implications, that is, regulations that have substantial direct effects on the States, or on the distribution of power and responsibilities among the various levels of government. Federal agencies must closely examine the statutory authority supporting any action that would limit the policymaking discretion of the States, and to the extent practicable, must consult with State and local officials before implementing any such action.

We have reviewed this rule under E.O.13132 and have concluded that the rule does not have federalism implications as defined by the Executive Order. We have determined that the rule does not significantly affect the rights, roles, and responsibilities of States, and involves no preemption of State law nor does it limit State policymaking discretion.

However, we have consulted with State and local officials. In order to assist us in the development of this rule, we hosted a meeting to allow interested parties an opportunity to provide their perspectives on the legislation and options for implementation of § 322. Stakeholders who attended the meeting included representatives from the National Emergency Management Association, the Association of State Floodplain Managers, the National Governors' Association, the International Association of Emergency Managers, the National Association of Development Organizations, the American Public Works Association, the National League of Cities, the National Association of Counties, the National Conference of State Legislatures, the International City/County Management Association, and the Bureau of Indian Affairs. We received valuable input from all parties at the meeting, which we took into account in the development of this rule. Additionally, we actively encourage and solicit comments on this interim final rule from interested parties, and we will

consider them in preparing the final rule.

Executive Order 13175, Consultation and Coordination With Indian Tribal Governments

We have reviewed this interim final rule under Executive Order 13175, which became effective on February 6, 2001. Under the Hazard Mitigation Grant Program (HMGP), Indian tribal governments will have the option to apply for grants directly to us and to serve as ''grantee'', carrying out ''State'' roles. If they choose this option, tribal governments may submit either a State-level Standard Mitigation Plan for the 15 percent HMGP funding or a State-level Enhanced Mitigation Plan for 20 percent HMGP funding. In either case, Indian tribal governments would be able to spend up to 7 percent of those funds on planning. Before developing this rule, we met with representatives from State and local governments and the Bureau of Indian Affairs, to discuss the new planning opportunities and requirements of § 322 of the Stafford Act. We received valuable input from all parties, which helped us to develop this interim final rule.

In reviewing the interim final rule, we find that it does not have ''tribal implications'' as defined in Executive Order 13175 because it will not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes. Moreover, the interim final rule does not impose substantial direct compliance costs on tribal governments, nor does it preempt tribal law, impair treaty rights or limit the self-governing powers of tribal governments.

Congressional Review of Agency Rulemaking

We have sent this interim final rule to the Congress and to the General Accounting Office under the Congressional Review of Agency Rulemaking Act, Public Law 104–121. The rule is a not ''major rule'' within the meaning of that Act. It is an administrative action in support of normal day-to-day mitigation planning activities required by section 322 and compliance under section 323 of the Stafford Act, as enacted in DMA 2000.

The rule will not result in a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions. It will not have ''significant adverse effects'' on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises. This final rule is subject to the information collection requirements of the Paperwork Reduction Act, and OMB has assigned Control No. 3067–0297. The rule is not an unfunded Federal mandate within the meaning of the Unfunded Mandates Reform Act of 1995, Public Law 104–4, and any enforceable duties that we impose are a condition of Federal assistance or a duty arising from participation in a voluntary Federal program.

List of Subjects in 44 CFR Part 201 and Part 206

Administrative practice and procedure, Disaster assistance, Grant programs, Mitigation planning, Reporting and recordkeeping requirements.

Accordingly, Amend 44 CFR, Subchapter D—Disaster Assistance, as follows:

1. Add Part 201 to read as follows:

PART 201—MITIGATION PLANNING

Sec.
201.1 Purpose.
201.2 Definitions.
201.3 Responsibilities.
201.4 Standard State Mitigation Plans.
201.5 Enhanced State Mitigation Plans.
201.6 Local Mitigation Plans.

Authority: Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121–5206; Reorganization Plan No. 3 of 1978, 43 FR 41943, 3 CFR, 1978 Comp., p. 329; E.O. 12127, 44 FR 19367, 3 CFR, 1979 Comp., p. 376; E.O. 12148, 44 FR 43239, 3 CFR, 1979 Comp., p. 412; and E.O. 12673, 54 FR 12571, 3 CFR, 1989 Comp., p. 214.

§ 201.1 Purpose.

(a) The purpose of this part is to provide information on the polices and procedures for mitigation planning as required by the provisions of section 322 of the Stafford Act, 42 U.S.C. 5165.

(b) The purpose of mitigation planning is for State, local, and Indian tribal governments to identify the natural hazards that impact them, to identify actions and activities to reduce any losses from those hazards, and to establish a coordinated process to implement the plan, taking advantage of a wide range of resources.

§ 201.2 Definitions.

Grantee means the government to which a grant is awarded, which is accountable for the use of the funds provided. The grantee is the entire legal entity even if only a particular component of the entity is designated in the grant award document. Generally, the State is the grantee. However, after a declaration, an Indian tribal government may choose to be a grantee, or may act as a subgrantee under the State. An Indian tribal government acting as grantee will assume the responsibilities of a ''state'', as described in this part, for the purposes of administering the grant.

Hazard mitigation means any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards.

Hazard Mitigation Grant Program means the program authorized under section 404 of the Stafford Act, 42 U.S.C 5170c and implemented at 44 CFR Part 206, Subpart N, which authorizes funding for certain mitigation measures identified through the evaluation of natural hazards conducted under section 322 of the Stafford Act 42 U.S.C 5165.

Indian tribal government means any Federally recognized governing body of an Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of Interior acknowledges to exist as an Indian tribe under the Federally Recognized Tribe List Act of 1994, 25 U.S.C. 479a. This does not include Alaska Native corporations, the ownership of which is vested in private individuals.

Local government is any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.

Managing State means a State to which FEMA has delegated the authority to administer and manage the HMGP under the criteria established by FEMA pursuant to 42 U.S.C. 5170c(c). FEMA may also delegate authority to tribal governments to administer and manage the HMGP as a Managing State.

Regional Director is a director of a regional office of FEMA, or his/her designated representative.

Small and impoverished communities means a community of 3,000 or fewer individuals that is identified by the State as a rural community, and is not a remote area within the corporate boundaries of a larger city; is economically disadvantaged, by having an average per capita annual income of residents not exceeding 80 percent of national, per capita income, based on

best available data; the local unemployment rate exceeds by one percentage point or more, the most recently reported, average yearly national unemployment rate; and any other factors identified in the State Plan in which the community is located.

The Stafford Act refers to the Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93–288, as amended (42 U.S.C. 5121–5206).

State is any State of the United States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

State Hazard Mitigation Officer is the official representative of State government who is the primary point of contact with FEMA, other Federal agencies, and local governments in mitigation planning and implementation of mitigation programs and activities required under the Stafford Act.

Subgrantee means the government or other legal entity to which a subgrant is awarded and which is accountable to the grantee for the use of the funds provided. Subgrantees can be a State agency, local government, private non-profit organizations, or Indian tribal government. Indian tribal governments acting as a subgrantee are accountable to the State grantee.

§ 201.3 Responsibilities.

(a) *General.* This section identifies the key responsibilities of FEMA, States, and local/tribal governments in carrying out section 322 of the Stafford Act, 42 U.S.C. 5165.

(b) *FEMA.* The key responsibilities of the Regional Director are to:

(1) Oversee all FEMA related pre- and post-disaster hazard mitigation programs and activities;

(2) Provide technical assistance and training to State, local, and Indian tribal governments regarding the mitigation planning process;

(3) Review and approve all Standard and Enhanced State Mitigation Plans;

(4) Review and approve all local mitigation plans, unless that authority has been delegated to the State in accordance with § 201.6(d);

(5) Conduct reviews, at least once every three years, of State mitigation activities, plans, and programs to ensure that mitigation commitments are fulfilled, and when necessary, take action, including recovery of funds or denial of future funds, if mitigation commitments are not fulfilled.

(c) *State.* The key responsibilities of the State are to coordinate all State and local activities relating to hazard evaluation and mitigation and to:

(1) Prepare and submit to FEMA a Standard State Mitigation Plan following the criteria established in § 201.4 as a condition of receiving Stafford Act assistance (except emergency assistance).

(2) In order to be considered for the 20 percent HMGP funding, prepare and submit an Enhanced State Mitigation Plan in accordance with § 201.5, which must be reviewed and updated, if necessary, every three years from the date of the approval of the previous plan.

(3) At a minimum, review and, if necessary, update the Standard State Mitigation Plan by November 1, 2003 and every three years from the date of the approval of the previous plan in order to continue program eligibility.

(4) Make available the use of up to the 7 percent of HMGP funding for planning in accordance with § 206.434.

(5) Provide technical assistance and training to local governments to assist them in applying for HMGP planning grants, and in developing local mitigation plans.

(6) For Managing States that have been approved under the criteria established by FEMA pursuant to 42 U.S.C. 5170c(c), review and approve local mitigation plans in accordance with § 201.6(d).

(d) *Local governments.* The key responsibilities of local governments are to:

(1) Prepare and adopt a jurisdiction-wide natural hazard mitigation plan as a condition of receiving project grant funds under the HMGP, in accordance with § 201.6.

(2) At a minimum, review and, if necessary, update the local mitigation plan every five years from date of plan approval to continue program eligibility.

(e) *Indian tribal governments.* Indian tribal governments will be given the option of applying directly to us for Hazard Mitigation Grant Program funding, or they may choose to apply through the State. If they apply directly to us, they will assume the responsibilities of the State, or grantee, and if they apply through the State, they will assume the responsibilities of the local government, or subgrantee.

§ 201.4 Standard State Mitigation Plans.

(a) *Plan requirement.* By November 1, 2003, States must have an approved Standard State Mitigation plan meeting the requirements of this section, in order to receive assistance under the Stafford Act, although assistance authorized under disasters declared prior to November 1, 2003 will continue to be made available. In any case, emergency assistance provided under 42 U.S.C. 5170a, 5170b, 5173, 5174, 5177, 5179, 5180, 5182, 5183, 5184, 5192 will not be affected. The mitigation plan is the demonstration of the State's commitment to reduce risks from natural hazards and serves as a guide for State decision makers as they commit resources to reducing the effects of natural hazards. States may choose to include the requirements of the HMGP Administrative Plan in their mitigation plan.

(b) *Planning process.* An effective planning process is essential in developing and maintaining a good plan. The mitigation planning process should include coordination with other State agencies, appropriate Federal agencies, interested groups, and be integrated to the extent possible with other ongoing State planning efforts as well as other FEMA mitigation programs and initiatives.

(c) *Plan content.* To be effective the plan must include the following elements:

(1) Description of the *planning process* used to develop the plan, including how it was prepared, who was involved in the process, and how other agencies participated.

(2) *Risk assessments* that provide the factual basis for activities proposed in the strategy portion of the mitigation plan. Statewide risk assessments must characterize and analyze natural hazards and risks to provide a statewide overview. This overview will allow the State to compare potential losses throughout the State and to determine their priorities for implementing mitigation measures under the strategy, and to prioritize jurisdictions for receiving technical and financial support in developing more detailed local risk and vulnerability assessments. The risk assessment shall include the following:

(i) An overview of the type and location of all natural hazards that can affect the State, including information on previous occurrences of hazard events, as well as the probability of future hazard events, using maps where appropriate;

(ii) An overview and analysis of the State's vulnerability to the hazards described in this paragraph (c)(2), based on estimates provided in local risk assessments as well as the State risk assessment. The State shall describe vulnerability in terms of the jurisdictions most threatened by the identified hazards, and most vulnerable to damage and loss associated with hazard events. State owned critical or operated facilities located in the

identified hazard areas shall also be addressed;

(iii) An overview and analysis of potential losses to the identified vulnerable structures, based on estimates provided in local risk assessments as well as the State risk assessment. The State shall estimate the potential dollar losses to State owned or operated buildings, infrastructure, and critical facilities located in the identified hazard areas.

(3) A *Mitigation Strategy* that provides the State's blueprint for reducing the losses identified in the risk assessment. This section shall include:

(i) A description of State goals to guide the selection of activities to mitigate and reduce potential losses.

(ii) A discussion of the State's pre- and post-disaster hazard management policies, programs, and capabilities to mitigate the hazards in the area, including: an evaluation of State laws, regulations, policies, and programs related to hazard mitigation as well as to development in hazard-prone areas; a discussion of State funding capabilities for hazard mitigation projects; and a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.

(iii) An identification, evaluation, and prioritization of cost-effective, environmentally sound, and technically feasible mitigation actions and activities the State is considering and an explanation of how each activity contributes to the overall mitigation strategy. This section should be linked to local plans, where specific local actions and projects are identified.

(iv) Identification of current and potential sources of Federal, State, local, or private funding to implement mitigation activities.

(4) A section on the *Coordination of Local Mitigation Planning* that includes the following:

(i) A description of the State process to support, through funding and technical assistance, the development of local mitigation plans.

(ii) A description of the State process and timeframe by which the local plans will be reviewed, coordinated, and linked to the State Mitigation Plan.

(iii) Criteria for prioritizing communities and local jurisdictions that would receive planning and project grants under available funding programs, which should include consideration for communities with the highest risks, repetitive loss properties, and most intense development pressures. Further, that for non-planning grants, a principal criterion for prioritizing grants shall be the extent to which benefits are maximized according to a cost benefit review of proposed projects and their associated costs.

(5) A *Plan Maintenance Process* that includes:

(i) An established method and schedule for monitoring, evaluating, and updating the plan.

(ii) A system for monitoring implementation of mitigation measures and project closeouts.

(iii) A system for reviewing progress on achieving goals as well as activities and projects identified in the Mitigation Strategy.

(6) A *Plan Adoption Process.* The plan must be formally adopted by the State prior to submittal to us for final review and approval.

(7) *Assurances.* The plan must include assurances that the State will comply with all applicable Federal statutes and regulations in effect with respect to the periods for which it receives grant funding, in compliance with 44 CFR 13.11(c). The State will amend its plan whenever necessary to reflect changes in State or Federal laws and statutes as required in 44 CFR 13.11(d).

(d) *Review and updates.* Plan must be reviewed and revised to reflect changes in development, progress in statewide mitigation efforts, and changes in priorities and resubmitted for approval to the appropriate Regional Director every three years. The Regional review will be completed within 45 days after receipt from the State, whenever possible. We also encourage a State to review its plan in the post-disaster timeframe to reflect changing priorities, but it is not required.

§ 201.5 Enhanced State Mitigation Plans.

(a) A State with a FEMA approved Enhanced State Mitigation Plan at the time of a disaster declaration is eligible to receive increased funds under the HMGP, based on twenty percent of the total estimated eligible Stafford Act disaster assistance. The Enhanced State Mitigation Plan must demonstrate that a State has developed a comprehensive mitigation program, that the State effectively uses available mitigation funding, and that it is capable of managing the increased funding. In order for the State to be eligible for the 20 percent HMGP funding, FEMA must have approved the plan within three years prior to the disaster declaration.

(b) Enhanced State Mitigation Plans must include all elements of the Standard State Mitigation Plan identified in § 201.4, as well as document the following:

(1) Demonstration that the plan is integrated to the extent practicable with other State and/or regional planning initiatives (comprehensive, growth management, economic development, capital improvement, land development, and/or emergency management plans) and FEMA mitigation programs and initiatives that provide guidance to State and regional agencies.

(2) Documentation of the State's project implementation capability, identifying and demonstrating the ability to implement the plan, including:

(i) Established eligibility criteria for multi-hazard mitigation measures.

(ii) A system to determine the cost effectiveness of mitigation measures, consistent with OMB Circular A–94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs, and to rank the measures according to the State's eligibility criteria.

(iii) Demonstration that the State has the capability to effectively manage the HMGP as well as other mitigation grant programs, including a record of the following:

(A) Meeting HMGP and other mitigation grant application timeframes and submitting complete, technically feasible, and eligible project applications with appropriate supporting documentation;

(B) Preparing and submitting accurate environmental reviews and benefit-cost analyses;

(C) Submitting complete and accurate quarterly progress and financial reports on time; and

(D) Completing HMGP and other mitigation grant projects within established performance periods, including financial reconciliation.

(iv) A system and strategy by which the State will conduct an assessment of the completed mitigation actions and include a record of the effectiveness (actual cost avoidance) of each mitigation action.

(3) Demonstration that the State effectively uses existing mitigation programs to achieve its mitigation goals.

(4) Demonstration that the State is committed to a comprehensive state mitigation program, which might include any of the following:

(i) A commitment to support local mitigation planning by providing workshops and training, State planning grants, or coordinated capability development of local officials, including Emergency Management and Floodplain Management certifications.

(ii) A statewide program of hazard mitigation through the development of legislative initiatives, mitigation councils, formation of public/private

partnerships, and/or other executive actions that promote hazard mitigation.

(iii) The State provides a portion of the non-Federal match for HMGP and/or other mitigation projects.

(iv) To the extent allowed by State law, the State requires or encourages local governments to use a current version of a nationally applicable model building code or standard that addresses natural hazards as a basis for design and construction of State sponsored mitigation projects.

(v) A comprehensive, multi-year plan to mitigate the risks posed to existing buildings that have been identified as necessary for post-disaster response and recovery operations.

(vi) A comprehensive description of how the State integrates mitigation into its post-disaster recovery operations.

(c) *Review and updates.* (1) A State must review and revise its plan to reflect changes in development, progress in statewide mitigation efforts, and changes in priorities, and resubmit it for approval to the appropriate Regional Director every three years. The Regional review will be completed within 45 days after receipt from the State, whenever possible.

(2) In order for a State to be eligible for the 20 percent HMGP funding, the Enhanced State Mitigation plan must be approved by FEMA within the three years prior to the current major disaster declaration.

§ 201.6 Local Mitigation Plans.

The local mitigation plan is the representation of the jurisdiction's commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards. Local plans will also serve as the basis for the State to provide technical assistance and to prioritize project funding.

(a) *Plan requirement.* (1) For disasters declared after November 1, 2003, a local government must have a mitigation plan approved pursuant to this section in order to receive HMGP project grants. Until November 1, 2003, local mitigation plans may be developed concurrent with the implementation of the project grant.

(2) Regional Directors may grant an exception to the plan requirement in extraordinary circumstances, such as in a small and impoverished community, when justification is provided. In these cases, a plan will be completed within 12 months of the award of the project grant. If a plan is not provided within this timeframe, the project grant will be terminated, and any costs incurred after notice of grant's termination will not be reimbursed by FEMA.

(3) Multi-jurisdictional plans (e.g. watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan. State-wide plans will not be accepted as multi-jurisdictional plans.

(b) *Planning process.* An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

(c) *Plan content.* The plan shall include the following:

(1) 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.

(2) A *risk assessment* that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment shall include:

(i) A description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

(ii) A description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. The plan should describe vulnerability in terms of:

(A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;

(B) An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate;

(C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

(iii) For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

(3) *A mitigation strategy* that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section shall include:

(i) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

(ii) A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

(iii) An action plan describing how the actions identified in paragraph (c)(2)(ii) of this section 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.

(iv) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

(4) A *plan maintenance process* that includes:

(i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

(ii) A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

(iii) Discussion on how the community will continue public participation in the plan maintenance process.

(5) *Documentation* 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). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

(d) *Plan review.* (1) Plans must be submitted to the State Hazard Mitigation Officer for initial review and coordination. The State will then send the plan to the appropriate FEMA Regional Office for formal review and approval.

(2) The Regional review will be completed within 45 days after receipt from the State, whenever possible.

(3) Plans must be reviewed, revised if appropriate, and resubmitted for approval within five years in order to continue to be eligible for HMGP project grant funding.

(4) Managing States that have been approved under the criteria established by FEMA pursuant to 42 U.S.C. 5170c(c) will be delegated approval authority for local mitigation plans, and the review will be based on the criteria in this part. Managing States will review the plans within 45 days of receipt of the plans, whenever possible, and provide a copy of the approved plans to the Regional Office.

PART 206—FEDERAL DISASTER ASSISTANCE FOR DISASTERS DECLARED ON OR AFTER NOVEMBER 23, 1988

2. The authority citation for part 206 is revised to read as follows:

Authority: Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121–5206; Reorganization Plan No. 3 of 1978, 43 FR 41943, 3 CFR, 1978 Comp., p. 329; E.O. 12127, 44 FR 19367, 3 CFR, 1979 Comp., p. 376; E.O. 12148, 44 FR 43239, 3 CFR, 1979 Comp., p. 412; and E.O. 12673, 54 FR 12571, 3 CFR, 1989 Comp., p. 214.

2a. Revise Part 206, Subpart M to read as follows:

Subpart M—Minimum Standards

Sec.
206.400 General.
206.401 Local standards.
206.402 Compliance.

§ 206.400 General.

(a) As a condition of the receipt of any disaster assistance under the Stafford Act, the applicant shall carry out any repair or construction to be financed with the disaster assistance in accordance with applicable standards of safety, decency, and sanitation and in conformity with applicable codes, specifications and standards.

(b) Applicable codes, specifications, and standards shall include any disaster resistant building code that meets the minimum requirements of the National Flood Insurance Program (NFIP) as well as being substantially equivalent to the recommended provisions of the National Earthquake Hazards Reduction Program (NEHRP). In addition, the applicant shall comply with any requirements necessary in regards to Executive Order 11988, Floodplain Management, Executive Order 12699, Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction, and any other applicable Executive orders.

(c) In situations where there are no locally applicable standards of safety, decency and sanitation, or where there are no applicable local codes, specifications and standards governing repair or construction activities, or where the Regional Director determines that otherwise applicable codes, specifications, and standards are inadequate, then the Regional Director may, after consultation with appropriate State and local officials, require the use of nationally applicable codes, specifications, and standards, as well as safe land use and construction practices in the course of repair or construction activities.

(d) The mitigation planning process that is mandated by section 322 of the Stafford Act and 44 CFR part 201 can assist State and local governments in determining where codes, specifications, and standards are inadequate, and may need to be upgraded.

§ 206.401 Local standards.

The cost of repairing or constructing a facility in conformity with minimum codes, specifications and standards may be eligible for reimbursement under section 406 of the Stafford Act, as long as such codes, specifications and standards meet the criteria that are listed at 44 CFR 206.226(b).

§ 206.402 Compliance.

A recipient of disaster assistance under the Stafford Act must document for the Regional Director its compliance with this subpart following the completion of any repair or construction activities.

Subpart N—Hazard Mitigation Grant Program

3. Revise § 206.431 to read as follows:

§ 206.431 Definitions.

Activity means any mitigation measure, project, or action proposed to reduce risk of future damage, hardship, loss or suffering from disasters.

Applicant means a State agency, local government, Indian tribal government, or eligible private nonprofit organization, submitting an application to the grantee for assistance under the HMGP.

Enhanced State Mitigation Plan is the hazard mitigation plan approved under 44 CFR part 201 as a condition of receiving increased funding under the HMGP.

Grant application means the request to FEMA for HMGP funding, as outlined in § 206.436, by a State or tribal government that will act as grantee.

Grant award means total of Federal and non-Federal contributions to complete the approved scope of work.

Grantee means the government to which a grant is awarded and which is accountable for the use of the funds provided. The grantee is the entire legal entity even if only a particular component of the entity is designated in the grant award document. Generally, the State is the grantee. However, an Indian tribal government may choose to be a grantee, or it may act as a subgrantee under the State. An Indian tribal government acting as a grantee will assume the responsibilities of a ''state'', under this subpart, for the purposes of administering the grant.

Indian tribal government means any Federally recognized governing body of an Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of Interior acknowledges to exist as an Indian tribe under the Federally Recognized Tribe List Act of 1994, 25 U.S.C. 479a. This does not include Alaska Native corporations, the ownership of which is vested in private individuals.

Local Mitigation Plan is the hazard mitigation plan required of a local or Indian tribal government acting as a subgrantee as a condition of receiving a project subgrant under the HMGP as outlined in 44 CFR 201.6.

Standard State Mitigation Plan is the hazard mitigation plan approved under 44 CFR part 201, as a condition of receiving Stafford Act assistance as outlined in § 201.4.

State Administrative Plan for the Hazard Mitigation Grant Program means the plan developed by the State to describe the procedures for administration of the HMGP.

Subgrant means an award of financial assistance under a grant by a grantee to an eligible subgrantee.

Subgrant application means the request to the grantee for HMGP funding by the eligible subgrantee, as outlined in § 206.436.

Subgrantee means the government or other legal entity to which a subgrant is awarded and which is accountable to the grantee for the use of the funds provided. Subgrantees can be a State agency, local government, private non-profit organizations, or Indian tribal government as outlined in § 206.433.

Indian tribal governments acting as a subgrantee are accountable to the State grantee.

4. Revise § 206.432(b) to read as follows:

§ 206.432 Federal grant assistance.

* * * * *

(b) *Amounts of assistance.* The total of Federal assistance under this subpart shall not exceed either 15 or 20 percent of the total estimated Federal assistance (excluding administrative costs) provided for a major disaster under 42 U.S.C. 5170b, 5172, 5173, 5174, 5177, 5178, 5183, and 5201 as follows:

(1) *Fifteen (15) percent.* Effective November 1, 2003, a State with an approved Standard State Mitigation Plan, which meets the requirements outlined in 44 CFR 201.4, shall be eligible for assistance under the HMGP not to exceed 15 percent of the total estimated Federal assistance described in this paragraph. Until that date, existing, approved State Mitigation Plans will be accepted.

(2) *Twenty (20) percent.* A State with an approved Enhanced State Mitigation Plan, in effect prior to the disaster declaration, which meets the requirements outlined in 44 CFR 201.5 shall be eligible for assistance under the HMGP not to exceed 20 percent of the total estimated Federal assistance described in this paragraph.

(3) The estimates of Federal assistance under this paragraph (b) shall be based on the Regional Director's estimate of all eligible costs, actual grants, and appropriate mission assignments.

* * * * *

5. Section 206.434 is amended by redesignating paragraphs (b) through (g) as paragraphs (c) through (h), respectively; adding a new paragraph (b); revising redesignated paragraphs (c) introductory text and (c)(1); and revising redesignated paragraph (d) to read as follows:

§ 206.434 Eligibility.

* * * * *

(b) *Plan requirement.* (1) For all disasters declared on or after November 1, 2003, local and tribal government applicants for subgrants, must have an approved local mitigation plan in accordance with 44 CFR 201.6 prior to receipt of HMGP subgrant funding. Until November 1, 2003, local mitigation plans may be developed concurrent with the implementation of subgrants.

(2) Regional Directors may grant an exception to this requirement in extraordinary circumstances, such as in a small and impoverished community when justification is provided. In these cases, a plan will be completed within 12 months of the award of the project grant. If a plan is not provided within this timeframe, the project grant will be terminated, and any costs incurred after notice of grant's termination will not be reimbursed by FEMA.

(c) *Minimum project criteria.* To be eligible for the Hazard Mitigation Grant Program, a project must:

(1) Be in conformance with the State Mitigation Plan and Local Mitigation Plan approved under 44 CFR part 201;

* * * * *

(d) *Eligible activities.* (1) *Planning.* Up to 7% of the State's HMGP grant may be used to develop State, tribal and/or local mitigation plans to meet the planning criteria outlined in 44 CFR part 201.

(2) *Types of projects.* Projects may be of any nature that will result in protection to public or private property. Eligible projects include, but are not limited to:

(i) Structural hazard control or protection projects;

(ii) Construction activities that will result in protection from hazards;

(iii) Retrofitting of facilities;

(iv) Property acquisition or relocation, as defined in paragraph (e) of this section;

(v) Development of State or local mitigation standards;

(vi) Development of comprehensive mitigation programs with implementation as an essential component;

(vii) Development or improvement of warning systems.

* * * * *

6. Revise § 206.435(a) to read as follows:

§ 206.435 Project identificaiton and selection criteria.

(a) *Identification.* It is the State's responsibility to identify and select eligible hazard mitigation projects. All funded projects must be consistent with the State Mitigation Plan. Hazard Mitigation projects shall be identified and prioritized through the State, Indian tribal, and local planning process.

* * * * *

7. Revise § 206.436 to read as follows:

§ 206.436 Application procedures.

(a) *General.* This section describes the procedures to be used by the grantee in submitting an application for HMGP funding. Under the HMGP, the State or Indian tribal government is the grantee and is responsible for processing subgrants to applicants in accordance with 44 CFR part 13 and this part 206. Subgrantees are accountable to the grantee.

(b) *Governor's Authorized Representative.* The Governor's Authorized Representative serves as the grant administrator for all funds provided under the Hazard Mitigation Grant Program. The Governor's Authorized Representative's responsibilities as they pertain to procedures outlined in this section include providing technical advice and assistance to eligible subgrantees, and ensuring that all potential applicants are aware of assistance available and submission of those documents necessary for grant award.

(c) *Hazard mitigation application.* Upon identification of mitigation measures, the State (Governor's Authorized Representative) will submit its Hazard Mitigation Grant Program application to the FEMA Regional Director. The application will identify one or more mitigation measures for which funding is requested. The application must include a Standard Form (SF) 424, Application for Federal Assistance, SF 424D, Assurances for Construction Programs, if appropriate, and an narrative statement. The narrative statement will contain any pertinent project management information not included in the State's administrative plan for Hazard Mitigation. The narrative statement will also serve to identify the specific mitigation measures for which funding is requested. Information required for each mitigation measure shall include the following:

(1) Name of the subgrantee, if any;

(2) State or local contact for the measure;

(3) Location of the project;

(4) Description of the measure;

(5) Cost estimate for the measure;

(6) Analysis of the measure's cost-effectiveness and substantial risk reduction, consistent with § 206.434(c);

(7) Work schedule;

(8) Justification for selection;

(9) Alternatives considered;

(10) Environmental information consistent with 44 CFR part 9, Floodplain Management and Protection of Wetlands, and 44 CFR part 10, Environmental Considerations.

(d) *Application submission time limit.* The State's application may be amended as the State identifies and selects local project applications to be funded. The State must submit all local HMGP applications and funding requests for the purpose of identifying new projects to the Regional Director within 12 months of the date of disaster declaration.

(e) *Extensions.* The State may request the Regional Director to extend the application time limit by 30 to 90 day

increments, not to exceed a total of 180 days. The grantee must include a justification in its request.

(f) *FEMA approval.* The application and supplement(s) will be submitted to the FEMA Regional Director for approval. FEMA has final approval authority for funding of all projects.

(g) *Indian tribal grantees.* Indian tribal governments may submit a SF 424 directly to the Regional Director.

Subpart H—Public Assistance Eligibility

* * * * *

8. Revise § 206.220 to read as follows:

§ 206.220 General.

This subpart provides policies and procedures for determinations of eligibility of applicants for public assistance, eligibility of work, and eligibility of costs for assistance under sections 402, 403, 406, 407, 418, 419, 421(d), 502, and 503 of the Stafford Act. Assistance under this subpart must also conform to requirements of 44 CFR part 201, Mitigation Planning, and 44 CFR part 206, subparts G—Public Assistance Project Administration, I—Public Assistance Insurance Requirements, J—Coastal Barrier Resources Act, and M—Minimum Standards. Regulations under 44 CFR part 9—Floodplain Management and 44 CFR part 10—Environmental Considerations, also apply to this assistance.

9. Section 206.226 is amended by redesignating paragraphs

(b) through (j) as paragraphs (c) through (k), respectively; adding a new paragraph (b); and revising redesignated paragraph (g)(5) to read as follows:

§ 206.226 Restoration of damaged facilities.

* * * * *

(b) *Mitigation planning.* In order to receive assistance under this section, as of November 1, 2003, the State must have in place a FEMA approved State Mitigation Plan in accordance with 44 CFR part 201.

* * * * *

(g) * * *

(5) If relocation of a facility is not feasible or cost effective, the Regional Director shall disapprove Federal funding for the original location when he/she determines in accordance with 44 CFR parts 9, 10, 201, or subpart M of this part 206, that restoration in the original location is not allowed. In such cases, an alternative project may be applied for.

* * * * *

Dated: February 19, 2002.

Michael D. Brown,

General Counsel.

[FR Doc. 02–4321 Filed 2–25–02; 8:45 am]

BILLING CODE 6718–05–P

Hazard Mitigation Assistance Unified Guidance

Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program

July 12, 2013

FEMA

Federal Emergency Management Agency
Department of Homeland Security
500 C Street, S.W.
Washington, DC 20472

Titles of Opportunities:

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM) Program
- Flood Mitigation Assistance (FMA)

Funding Opportunity Numbers:

The Catalog of Federal Domestic Assistance (CFDA) numbers for the three Hazard Mitigation Assistance (HMA) programs are:

- 97.039 Hazard Mitigation Grant Program (HMGP)
- 97.047 Pre-Disaster Mitigation (PDM) Program
- 97.029 Flood Mitigation Assistance (FMA)

Federal Agency Name:

U.S. Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA)

Announcement Type:

Initial

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PART I. FUNDING OPPORTUNITY DESCRIPTION

Part I of the Hazard Mitigation Assistance (HMA) Unified Guidance introduces the three HMA programs and outlines the organization of the document.

The U.S. Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA) HMA programs present a critical opportunity to reduce the risk to individuals and property from natural hazards while simultaneously reducing reliance on Federal disaster funds. On March 30, 2011, the President signed Presidential Policy Directive 8: National Preparedness (PPD-8), and the National Mitigation Framework was finalized in May 2013. The National Mitigation Framework comprises seven core capabilities, including Threats and Hazard Identification, Risk and Disaster Resilience Assessment, Planning, Community Resilience, Public Information and Warning, Long-term Vulnerability Reduction, and Operational Coordination. HMA programs provide funding for eligible activities that are consistent with the National Mitigation Framework's Long-term Vulnerability Reduction capability. HMA programs reduce community vulnerability to disasters and their effects, promote individual and community safety and resilience, and promote community vitality after an incident. Furthermore, HMA programs reduce response and recovery resource requirements in the wake of a disaster or incident, which results in a safer community that is less reliant on external financial assistance.

Hazard mitigation is any sustained action taken to reduce or eliminate long-term risk to people and property from natural hazards and their effects. This definition distinguishes actions that have a long-term impact from those that are more closely associated with immediate preparedness, response, and recovery activities. Hazard mitigation is the only phase of emergency management specifically dedicated to breaking the cycle of damage, reconstruction, and repeated damage. Accordingly, States, Territories, Indian Tribal governments, and communities are encouraged to take advantage of funding that HMA programs provide in both the pre- and post-disaster timelines.

Together, these programs provide significant opportunities to reduce or eliminate potential losses to State, Indian Tribal government, and local assets through hazard mitigation planning and project grant funding. Each HMA program was authorized by separate legislative action, and as such, each program differs slightly in scope and intent.

The Hazard Mitigation Grant Program (HMGP) provides funds to States, Territories, Indian Tribal governments, local governments, and eligible private non-profits (PNPs) following a Presidential major disaster declaration. The Pre-Disaster Mitigation (PDM) Program and Flood Mitigation Assistance (FMA) programs provide funds annually to States, Territories, Indian Tribal governments, and local governments. Although the statutory origins of the programs

differ, both share the common goal of reducing the risk of loss of life and property due to natural hazards.

This guidance applies to HMGP funds available for disasters declared on or after the date of publication. The guidance in this document is subject to change based on new laws or regulations enacted after publication. This guidance is applicable to the PDM and FMA programs; the application cycles are announced via http://www.grants.gov/. For additional information, please contact FEMA.

State, Territory, or Indian Tribal governments are eligible Applicants for HMA programs. The Applicant is responsible for soliciting subapplications from eligible subapplicants, assisting in the preparation of them, and submitting eligible, complete applications to FEMA in priority order. HMA grant funds are awarded to Applicants. When funding is awarded, the Applicant then becomes the "Grantee" and is accountable for the use of the funds, responsible for administering the grant, and responsible for complying with program requirements and other applicable Federal, State, Territorial, and Indian Tribal laws and regulations. As the Grantee, the Applicant is also responsible for financial management of the program and overseeing all approved projects. In general, the "subapplicant" is a State-level agency, Indian Tribal government, local government, or other eligible entity that submits a subapplication for FEMA assistance to the Applicant. If HMA funding is awarded, the subapplicant becomes the "subgrantee" and is responsible for managing the subgrant and complying with program requirements and other applicable Federal, State, Territorial, Indian Tribal, and local laws and regulations. An Indian Tribal government may participate as either the Applicant/Grantee or the subapplicant/subgrantee (see Part IV, A). For **HMGP**, "subapplicant" has the same meaning given to the term "Applicant" in the HMGP regulations at Title 44 of the Code of Federal Regulations (CFR) Part 206.431.

A. Authorization and Appropriation

HMGP is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (the Stafford Act), Title 42, U.S. Code (U.S.C.) 5170c. The key purpose of HMGP is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. HMGP is available, when authorized under a Presidential major disaster declaration, in the areas of the State requested by the Governor. Indian Tribal governments may also submit a request for a major disaster declaration within their impacted area. The amount of HMGP funding available to the Applicant is based upon the estimated total of Federal assistance, subject to the sliding scale formula outlined in 44 CFR Section 206.432(b) that FEMA provides for disaster recovery under the Presidential major disaster declaration. The formula provides for up to 15 percent of the first $2 billion of estimated aggregate amounts of disaster assistance, up to 10 percent for amounts between $2 billion and $10 billion, and up to 7.5 percent for amounts between $10 billion and $35.333 billion. For States with enhanced

plans, the eligible assistance is up to 20 percent for estimated aggregate amounts of disaster assistance not to exceed $35.333 billion.

The **PDM** Program is authorized by Section 203 of the Stafford Act, 42 U.S.C. 5133. The PDM Program is designed to assist States, Territories, Indian Tribal governments, and local communities to implement a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on Federal funding in future disasters.

The **FMA** program is authorized by Section 1366 of the National Flood Insurance Act of 1968, as amended (NFIA), 42 U.S.C. 4104c, with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP).

The National Flood Insurance Fund (NFIF) provides the funding for the FMA program. The PDM and FMA programs are subject to the availability of appropriation funding, as well as any program-specific directive or restriction made with respect to such funds.

More information about each program can be found on the FEMA HMA Web site at https://www.fema.gov/hazard-mitigation-assistance.

B. Additional Program Information

This guidance consolidates the common requirements for all HMA programs and explains the unique elements of the programs in individual sections. Additionally, it provides information for Federal, State, Indian Tribal, and local officials on how to apply for HMA funding for a proposed mitigation activity.

The organization of this HMA Unified Guidance provides clarity and ease of use by presenting information common to all programs in general order of the grant life cycle. As a result, closely related topics may be presented in different sections of the guidance. This guidance is organized in the following manner:

- Part I, Funding Opportunity Description, introduces the HMA programs;
- Part II, Frontloading HMA Program Eligibility Requirements, provides general information to facilitate project scoping and the overall decision-making process;
- Part III, Award Information, provides information about available funding and application deadlines;
- Part IV, Eligibility Information, provides information about eligible Applicants and subapplicants, cost-sharing requirements, and other program requirements;
- Part V, Application and Submission Information, provides information regarding application development including funding restrictions;

- Part VI, Application Review Information, summarizes the FEMA review and selection process;
- Part VII, Award Administration Information, highlights grants management requirements from the time an award is made through closeout;
- Part VIII, FEMA Contacts, provides Regional and State contact information;
- Part IX, Additional Program Guidance, provides information that is unique to each program; and
- Part X, Appendices, includes acronyms, a glossary, additional resources, and referenced regulations and statutes.
- Additional guidance for particular activity types is provided as an Addendum to this guidance. This additional guidance provides information specific to property acquisition and structure demolition or relocation, wildfire mitigation, safe room construction, mitigation reconstruction, and structure elevation projects.

B.1 Programmatic Changes

Although many of the specific requirements of each program remain the same, significant revisions to programmatic requirements included in this HMA Unified Guidance are:

- Per the Sandy Recovery Improvement Act of 2013 (SRIA), Indian Tribal governments can submit a request for a major disaster declaration within their impacted areas;
- A new Part II has been created to outline the importance of "frontloading" HMA program requirements in the project scoping and development process;
- The Biggert-Waters Flood Insurance Reform Act of 2012 eliminated the Repetitive Flood Claims and Severe Repetitive Loss programs and made the following significant changes to the FMA program:
  - The definitions of repetitive loss and severe repetitive loss properties have been modified (Part IX, C.1);
  - There is no longer a State cap of $10 million or a community cap of $3.3 million for any 5-year period;
  - There is no longer a limit on in-kind contributions for the non-Federal cost share (previously limited to one-half of the non-Federal share);
  - Mitigation reconstruction is an eligible activity;
  - Cost-share requirements have changed to allow more Federal funds for properties with repetitive flood claims and severe repetitive loss properties (Part IV, B);

- The development or update of mitigation plans shall not exceed $50,000 Federal share to any Applicant or $25,000 Federal share to any subapplicant (Part V, E.3); and
- There is no longer a restriction that a planning grant can only be awarded not more than once every 5 years to a State or community.

- For Duplication of Benefits (DOB), HMA does not require that property owners seek assistance from other sources (with the exception of insurance);
- However, other assistance anticipated or received must be reported (Part IV, C.4). A Privacy Act notice is required to be provided to homeowners participating in mitigation projects;
- For **HMGP**, the purchase and installation of stand-alone generators are eligible under regular HMGP funding if they protect a critical facility and meet all other program eligibility criteria (Part IV, D.1.1);
- For **HMGP** and the **PDM Program,** generators and/or related equipment purchases (e.g., generator hook-ups) that are not stand-alone are considered eligible when the generator and related equipment directly relates to the hazard being mitigated and is part of a more comprehensive project (Part IV, D.1.1);
- For non-structural retrofits, the elevation of utilities is an eligible activity (Part IV, D.1.1);
- FEMA Policy 104-008-01, "Hazard Mitigation Assistance for Wind Retrofit Projects for Existing Residential Buildings" dated November 16, 2012, has been incorporated (Part IV, D.1.1). With the release of this HMA Unified Guidance, the policy has been superseded;
- A mitigation planning subgrant award can result in a mitigation plan adopted by the jurisdiction(s) and approved by FEMA or it can also include planning-related activities as outlined in 44 CFR Parts 201 and 206 (Part IV, D.1.2);
- FEMA Mitigation Planning Memorandum (MT-PL) #2 "Guidance For FEMA Regional Directors Regarding "Extraordinary Circumstances" under which an HMGP Project Grant may be awarded to Local Jurisdictions without an Approved Local Mitigation Plan" dated October 28, 2005, has been incorporated. With the release of this HMA Unified Guidance, the memo has been superseded;
- For **PDM** and **FMA** project subgrants, the Region may apply extraordinary circumstances, when justification is provided, with concurrence received from FEMA Headquarters (Risk Reduction and Risk Analysis Divisions) prior to granting an exception (Part IV, D.5);
- For the PDM Program, the Federal share to update a hazard mitigation plan has been reduced to $300,000 (Part V, E.2);
- Applications must contain minimal information in order for FEMA to be able to make a general eligibility determination (Part V, G.2);

- Applications or subapplications submitted to FEMA that do not contain the minimal eligibility criteria are subject to immediate denial (Part V, G.2);
- Greatest Savings to the Fund (GSTF) extends to properties under HMA (Part V, I);
- An expedited cost-effectiveness methodology (substantial damage waiver) is available for property acquisition projects when certain conditions are met under all HMA programs; this was previously limited to HMGP (Part V, I);
- FEMA Policy 108-024-01, "Consideration of Environmental Benefits in the Evaluation of Acquisition Projects under the Hazard Mitigation Assistance (HMA) Programs" dated June 18, 2013, has been incorporated (Part V, I). With the release of this HMA Unified Guidance, this policy has been incorporated;
- Green open space and riparian area benefits can now be included in the project benefit cost ratio (BCR) once the project BCR reaches 0.75 or greater. The inclusion of environmental benefits in the project BCR is limited to acquisition-related activities;
- FEMA recommends several HMA efficiencies to facilitate FEMA review and approval (Part VI, A.5);
- FEMA provides timelines for Applicants to comply with requests for information (RFI) (Part VI, B.2.1);
- FEMA clarifies the consideration of additional information in support of a subapplication (Part VI, B.5);
- FEMA clarifies that requests for Scope of Work Changes must address the need for the change through a revised scope, schedule, and budget (Part VII, B.2);
- FEMA clarifies when prior FEMA approval is needed for a budget change (Part VII, B.3);
- With the publication of this HMA Unified Guidance, the Period of Performance (POP) for the programs begins with the opening of the application period and ends no later than 36 months from the close of the application period. All requests to extend the grant POP beyond 12 months from the original grant POP termination date must be approved by FEMA Headquarters (Part VII, B.4);
- FEMA may elect to provide funding for certain projects in incremental amounts (Strategic Funds Management [SFM]) (Part VII, B.5.1);
- The Grantee must notify FEMA of each property for which settlement was completed in that quarter (Part VII, C.2);
- The HMGP final lock-in will be established 12 months after date of declaration. The final lock-in amount may be greater than or less than the previous calculations. Because the lock-in estimate is subject to change, FEMA will not obligate more than 75 percent of any estimate prior to the calculation of the final lock-in without concurrence of the Regional Administrator or Federal Coordinating Officer with Disaster Recovery Manager

Authority and the Office of Chief Financial Officer (Part IX, A.3);

- With the release of this guidance, Section 1104 of the SRIA is incorporated as Advance Assistance in (Part IX, A.9);
- Advance Assistance can be used to accelerate the implementation of the HMGP. Applicants may use Advance Assistance to develop mitigation strategies and obtain data to prioritize, select, and develop complete HMGP applications in a timely manner (Part IX, A.9);
- For acquisition projects, clarifications were made regarding the purchase of vacant land, land already owned by an eligible entity, and outstanding tax liens (Addendum, Part A);
- FEMA will make a determination on the open space compatibility of access to a subsurface resource (e.g., mineral rights) on a case-by-case basis (Addendum, Part A);
- Acquisitions in Coastal Barrier Resource System (CBRS) units and Other Protected Areas (OPAs) are eligible under all HMA programs if the projects are otherwise eligible under the requirements in the 44 CFR and this guidance (Addendum, Part A);
- FEMA clarifies that the relevant event may vary under the HMA programs; however, pre-market value or current market value can be used at the Applicant's discretion for all HMA programs (Addendum, Part A);
- In accordance with Section 203(a)(1) of the Uniform Relocation Assistance and Real Property Acquisition Policies Act, the replacement housing allowance for homeowners may increase from $22,500 to $31,000 on October 1, 2014 (Addendum, Part A);
- With the release of this HMA Unified Guidance, certified clean is defined as a letter from the appropriate local, State, Indian Tribal, or Federal entity determining that no further remedial action is required to protect human health or the environment (Addendum, Part A);
- FEMA Policy MRR-2-08-1, "Wildfire Mitigation Policy for the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) Program," dated September 8, 2008, has been incorporated. With the release of this HMA Unified Guidance, this policy has now been superseded (Addendum, Part B);
- FEMA urges communities to implement wildfire projects using the materials and technologies that are in accordance with the International Code Council, FEMA, U.S. Fire Administration, and the National Fire Protection Association (NFPA) Firewise recommendations, whenever applicable (Addendum, Part B);
- For wildfire projects, the application will include a narrative statement acknowledging the information required in the final operations and maintenance plan. The final operations and maintenance plans must be submitted to FEMA prior to project closeout (Addendum, Part B);

- FEMA Interim Policy MRR-2-09-1, "Hazard Mitigation Assistance for Safe Rooms," dated April 30, 2009, and FEMA Memorandum, subject "Waiver of Two Provisions of Mitigation Interim Policy MRR-2-09-1, "Hazard Mitigation Assistance for Safe Rooms," dated February 07, 2012, have been incorporated. With the release of this HMA Unified Guidance both policies are now superseded (Addendum, Part C);
- For safe room projects, costs associated with the acquisition of land for a community safe room are eligible costs (Addendum, Part C);
- For safe room projects, FEMA will review final operations and maintenance plans during project closeout (Addendum, Part C); and
- For safe room projects, costs associated with fire suppression sprinklers and heating, ventilation, and air-conditioning (HVAC) systems are an eligible cost (Addendum, Part C).

PART II. FRONTLOADING HMA PROGRAM ELIGIBILITY REQUIREMENTS

Part II provides general information on the importance of "frontloading" HMA Program eligibility requirements in the project scoping and the overall decision-making process. Project scoping and project development are two of the earliest steps in the overall project lifecycle (see Figure 1) and can have a significant impact on the course an application or subapplication takes through the HMA grant process.

Project scoping (as shown in Figure 2) is the process by which subapplicants develop effective mitigation alternatives based on a defined set of requirements that meet the stated purpose and need of the proposed project. Applicants are encouraged to include representatives of the whole community in planning and scoping the project to gain broad community participation and support.

The scoping process includes the identification and evaluation of technical feasibility, cost review, cost-effectiveness, and environmental and cultural resource considerations. Based on potential impacts to environmental and cultural resources, there may be a legal requirement to alter the project. The process results in the development of a preferred project alternative that is then documented through the preparation of the application or subapplication. Applicants and subapplicants should consider the whole range of program requirements at the beginning stages of project development. The incorporation of these considerations into the scoping process can increase the efficiency of program review and ensure that all HMA program requirements are addressed.

Figure 1: Overall Project Lifecycle

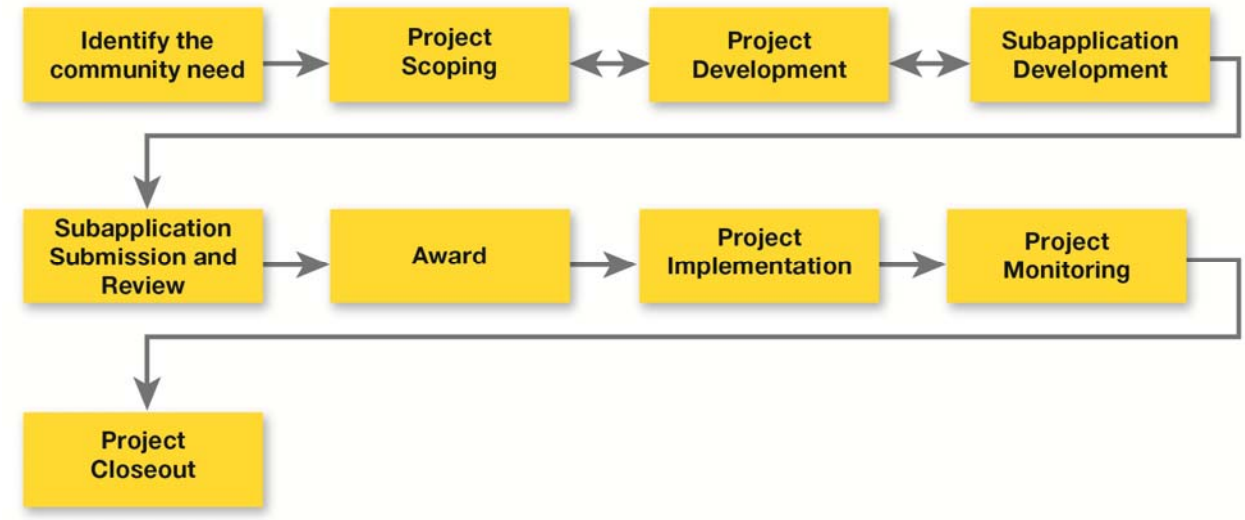
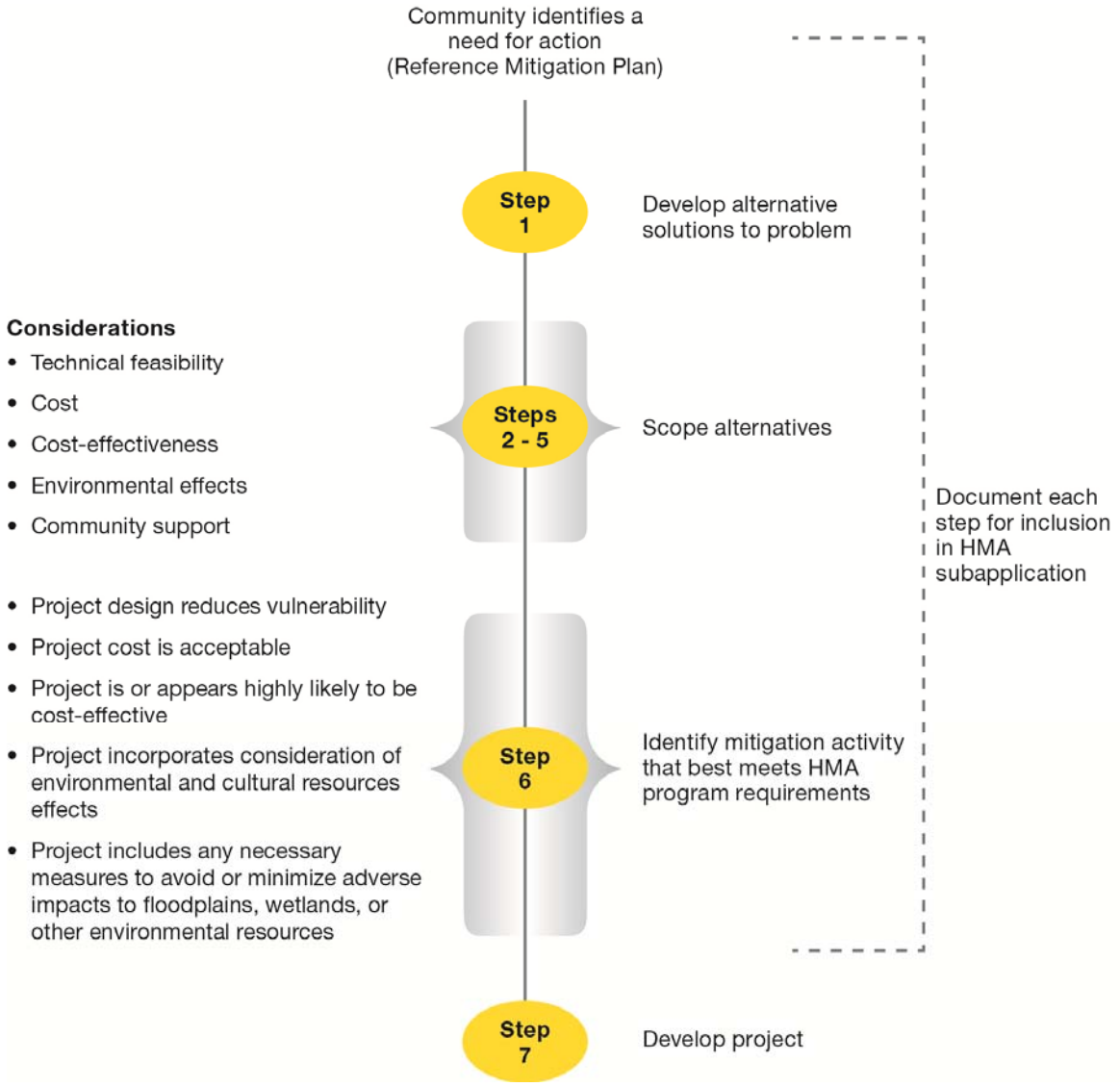


Figure 2: General Steps in Project Scoping Process



Addressing the following HMA program requirements at the earliest stage possible in the decision-making process is important because it can lead to enhanced project scoping as well as development and prevent delays later:

- Mitigation Planning;
- Technical Feasibility and Effectiveness;
- Floodplain Management and Protection of Wetlands;
- Environmental Planning and Historic Preservation Review and Compliance;
- Cost-Effectiveness; and
- Cost Review.

"Frontloading" of these requirements at the earliest point in the decision-making process increases the efficacy of the overall HMA Program. It also reduces the need for RFIs, which may result in quicker selections of projects for further review or approval. Additionally, early consideration of Advance Assistance, SFM, project monitoring, and project closeout in the decision-making process can facilitate the scoping and development of viable projects.

A. Mitigation Planning

Reviewing and incorporating information from the State, Indian Tribal, or local mitigation plan can help an Applicant or subapplicant facilitate the development of mitigation project alternatives. Linking the existing mitigation plan to project scoping can support the Applicant and the subapplicant in selecting the most appropriate mitigation activity that best addresses the identified hazard(s) while taking into account community priorities. In particular, the mitigation strategy section of the plan identifies a range of specific mitigation activities that can reduce vulnerability and includes information on the process that was used to identify, prioritize, and implement the range of mitigation actions considered. Another resource that may be useful in developing mitigation alternatives is the "Mitigation Ideas" guide available from the FEMA Library (see http://www.fema.gov/library/viewRecord.do?id=6938). It is important to reference the mitigation plan as potential project alternatives may have been considered during the planning process. If these alternatives were not considered during the mitigation planning process, please include this information in the next mitigation plan update. For more information on hazard mitigation planning, see Part IV, D.1.2 (eligible activities), Part V, H.2 (scope of work), Part V, H.5.2 (cost estimate), or Part X, C (additional resources).

B. Technical Feasibility and Effectiveness

Mitigation projects submitted for the HMA grants must be both feasible and effective at mitigating the risks of the hazard for which the project was designed. The feasibility of the project is demonstrated through conformance with accepted engineering practices, established codes, standards, modeling techniques, or best practices. Effective mitigation measures funded under HMA should provide a long-term or permanent solution. Consideration of technical feasibility and effectiveness during the project scoping process facilitates project development. For more information on technical feasibility and effectiveness, see Part VI, A.3 (application review criteria), Part IV, D.4 (eligibility program requirements), or Part V, J (documentation).

C. Floodplain Management and Protection of Wetlands

HMA programs and grants must conform to 44 CFR Part 9, which incorporates the requirements of Executive Order (EO) 11988 (*Floodplain Management*) and EO 11990 (*Protection of Wetlands*). All proposed actions should be reviewed to determine if they are in the floodplain or a wetland. Any actions located in the 100-year floodplain (500-year for critical actions), or adversely increasing the base flood or adversely affecting a wetland, trigger the requirement to

complete the 8-step decision-making process outlined in 44 CFR Section 9.6, see Part X, Appendix J. As part of that process, FEMA must consider alternative locations to determine whether the floodplain or wetland is the only practicable location for that action. If the floodplain or wetland is the only practicable location, FEMA must avoid or must minimize adverse impacts to the floodplain or wetland. For more information on floodplain management and the protection of wetlands, see Part IV, D.6.1 (general program requirements) and Part X, Appendix J (8-Step Decision Making Process for Floodplain Management Considerations).

D. Environmental Planning and Historic Preservation Review and Compliance

HMA programs and grants must comply with all environmental and historic preservation (EHP) laws and with 44 CFR Part 10, which may include identifying alternate locations and, as necessary, modifying the project. See the EHP Checklist in Part X, Appendix I. Completion of this list is not a substitute for environmental compliance. The front-loading of EHP into the decision-making process allows for development of mitigation measures that reduce or eliminate the proposed project's impact to the human environment; see Figure 3 for an overview of frontloading the EHP and National Environmental Policy Act (NEPA) process. Moreover, compliance with all environmental laws and regulations is a condition of the grant. Two key considerations are whether the proposed project is located in an area that has endangered or threatened species or critical habitat and whether the proposed project might impact historic or cultural resources. If the project could result in adverse impacts to those resources, it might be necessary to change the scope of the project to avoid those impacts or incorporate mitigation measures to minimize the impacts to those resources. To determine whether any EHP issues may be associated with the proposed project, Applicants should review FEMA's HMA EHP Resources At-a-Glance Guide, located at http://www.fema.gov/library/viewRecord.do?id=6976. For more information on EHP, see Part IV, D.6 (general program requirements), Part V, K (documentation), and Part VI, A.4 (application review).

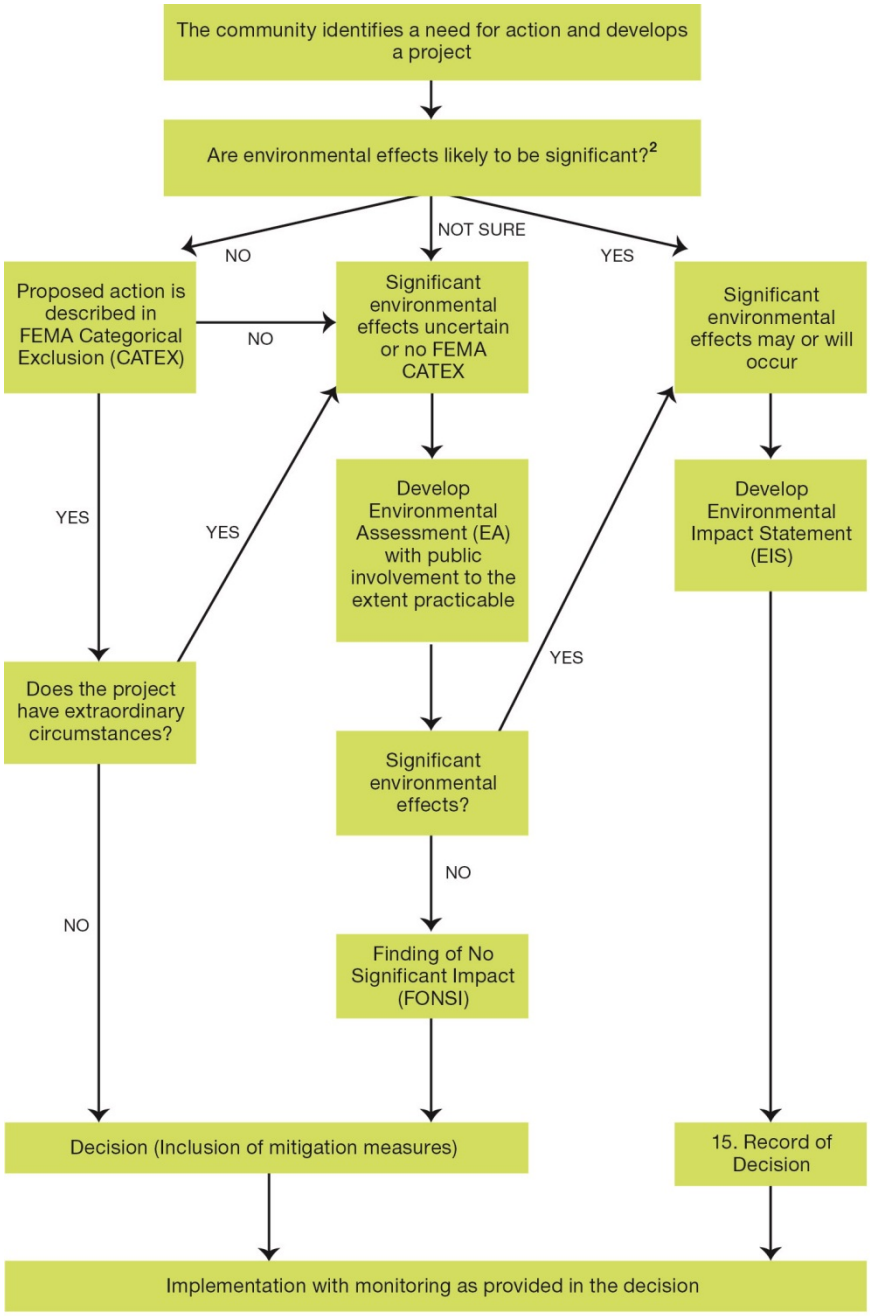
E. Cost-effectiveness

Mitigation activities are required by statute and regulation to be cost-effective or be in the interest of the NFIF. Consideration of the cost-effectiveness requirement at the earliest possible stage of the decision-making process can facilitate project scoping and improve project design. For more information on cost-effectiveness, see Part IV, D.3 (general program requirements) and Part V, I (documentation).

F. Cost Review

All costs included in the subapplication should be reviewed to ensure that they are necessary, reasonable, and allocable consistent with the provisions of Office of Management and Budget (OMB) Circular A-87 and 2 CFR Part 225, Cost Principles for State, Local, and Indian Tribal

Figure 3: Frontloading EHP Considerations and the NEPA Process



Note: 1. *Significant new circumstances or information relevant to environmental concerns or substantial changes in the proposed action that are relevant to environmental concerns may necessitate preparation of a supplemental EIS following either the draft or final EIS or the Record of Decision (CEQ NEPA Regulations, 40 C.F.R. § 1502.9(c).*

2. [2]*Are other environmental and historical preservation laws/EOs triggered by this action? (e.g., ESA, MTBA, EO 11988, EO 1990, CAA, RCRA, CBRA, etc.) If so, coordinate with appropriate agencies as necessary.*

3. *Figure adapted from "A Citizen's Guide to the NEPA" by the Council on Environmental Quality*

Governments. Conducting this cost review at the earliest possible stage allows for improved project scoping and facilitates project development, which facilitates FEMA project review.

G. Project Development

Project scoping is not a separate, stand-alone process from project development. It can be considered the initial stage of project development, during which the details of mitigation activities are evaluated and developed. State, Local, and Indian Tribal governments that actively participate in and document their project scoping process put themselves in a greater position for success during project development. The information gathered in the scoping process serves as the basis for the development of a more detailed and robust technical design, cost, and environmental compliance components of the mitigation activity.

During the project development process, the subapplicant may encounter project considerations such as technical feasibility, cost-effectiveness, and EHP that necessitate the refinement or adjustment of the mitigation activity. When these situations are encountered, the reason for the refinement or re-scoping should be fully documented and included with the subapplication.

H. Advance Assistance

Section 1104 of the SRIA authorizes the use of Advance Assistance to accelerate the implementation of the HMGP. Applicants may use Advance Assistance to develop mitigation strategies and obtain data to prioritize, select, and develop complete HMGP applications in a timely manner. Using Advance Assistance can help Applicants develop eligible and complete applications that include a feasible project budget and an appropriate project milestone. See Part IX, A.9 for additional information on Advance Assistance.

ADVANCE ASSISTANCE

Advance Assistance can be used to develop mitigation strategies and obtain data to prioritize, select, and develop complete HMGP applications. Consideration of Advance Assistance early in the decision-making process can help facilitate the development of a viable project, as well as project administration.

I. Strategic Funds Management

FEMA has implemented SFM. SFM, or incremental funding, is the concept of fiscal program management designed to provide funds as they are needed to implement approved HMGP activities. Through SFM, Applicant recovery and preparedness, communication and partnership, and the overall fiscal accuracy are expected to be improved. Considering SFM early in the decision-making process can help facilitate the development of a feasible project budget and

STRATEGIC FUNDS MANAGEMENT

SFM is a fiscal management approach designed to provide funds to the Grantee as needed to implement approved HMGP activities.

appropriate project milestones. At the beginning of an SFM project, FEMA and the State will work together to develop a work schedule.

See Part VII, B.5.1 for additional information on SFM.

J. Project Monitoring

After a grant or subgrant is awarded, the Grantee and subgrantee are required to monitor and evaluate the progress of the mitigation activity in accordance with the:

- Approved original scope of work (SOW) and budget;
- Administrative requirements of 44 CFR Part 13; and
- Any applicable State requirements.

Sound project monitoring improves the efficiency of the project implementation process and the obligation of funds process. The satisfactory use of quarterly reporting facilitates project management and allows the Grantee, subgrantee, and FEMA to monitor obligations and any unliquidated funds. For additional information on project monitoring (reporting requirements) see Part VII, C.

K. Closeout

Upon project completion, the Grantee and subgrantee are required to closeout the subgrant or grant in accordance 44 CFR Section 13.50 (Closeout). The project file should document that the:

- Approved SOW was fully implemented;
- All obligated funds were liquidated and in a manner consistent with the approved SOW;
- All environmental compliance measures or mitigations were implemented;
- The project was implemented in a manner consistent with the grant or subgrant agreement;
- Grantees submitted the required quarterly financial and performance reports; and
- The grant and subgrant were closed out in accordance with the provisions outlined in Part VII, C and D (subgrant and grant closeout).

For more information on closeout, see Part VII, D.

PART III. AWARD INFORMATION

Funding under HMA programs is subject to the availability of appropriations (as well as any directive or restriction made with respect to such funds in the law) and, for HMGP, to the amount of FEMA disaster recovery assistance under the Presidential major disaster declaration.

For additional information about available funding for HMGP, see Part IX, A.3; for the PDM Program, see Part IX, B.1; and for FMA, see Part IX, C.

PART IV. ELIGIBILITY INFORMATION

Part IV identifies common eligibility requirements for all HMA programs, such as eligible Applicants and subapplicants, cost-sharing requirements, restrictions on the use of HMA funds, activities that are eligible for HMA funding, and other program requirements. Additional program-specific requirements are found in Part IX of this guidance. Additional project-specific requirements can be found in the Addendum to this guidance. To be eligible for funding, Applicants and subapplicants must apply for funds as described in this guidance.

A. Eligible Applicants

Entities eligible to apply for HMA grants include the emergency management agency or a similar office of the 50 States (e.g., the office that has primary emergency management or floodplain management responsibility), the District of Columbia, American Samoa, Guam, the U.S. Virgin Islands, Puerto Rico, the Northern Mariana Islands, and Indian Tribal governments. Each State, Territory, Commonwealth, or Indian Tribal government shall designate one agency to serve as the Applicant for each HMA program. For the definition of the term Indian Tribal government refer to 44 CFR Section 206.431.

An Indian Tribal government may have the option to apply for HMA grants through the State as a subapplicant or directly to FEMA as an Applicant. The option for an Indian Tribal government to apply directly to FEMA reflects FEMA recognition that Indian Tribal governments are sovereign nations and share a government-to-government relationship with the United States. This choice is independent of a designation under other FEMA grants and programs, but is not available on a project-by-project basis within a single grant program. If an Indian Tribal government chooses to apply directly to FEMA and is awarded the grant, it bears the full responsibility of a Grantee for the purposes of administering the grant. For plan requirements relevant to the options to apply as a subapplicant or an Applicant, see Part IV, D.5.1.

A.1 Eligible Subapplicants

All interested subapplicants must apply to the Applicant. Table 1 identifies, in general, eligible subapplicants. For specific details regarding eligible subapplicants, refer to 44 CFR Section 206.434(a) for HMGP and 44 CFR Section 79.6(a) for FMA. For HMGP and the PDM Program, see 44 CFR Section 206.2(a)(16) for a definition of local governments.

Individuals and businesses are not eligible to apply for HMA funds; however, an eligible Applicant or subapplicant may apply for funding on behalf of individuals and businesses. For additional information about the eligibility of PNPs for HMGP, see Part IX, A.5.

Table 1: Eligible Subapplicants

Entity	HMGP	PDM	FMA
State agencies	√	√	√
Indian Tribal governments	√	√	√
Local governments/communities	√	√	√
Private non-profit organizations (PNPs)	√		

B. Cost Sharing

Under the HMA programs, the total cost to implement approved mitigation activities is generally funded by a combination of Federal and non-Federal sources. Both the Federal and the non-Federal cost shares must be for eligible costs used in direct support of the approved activities under this guidance and the grant award. Contributions of cash, third-party in-kind services, materials, or any combination thereof, may be accepted as part of the non-Federal cost share.

FEMA administers cost-sharing requirements consistent with 44 CFR Section 13.24 and 2 CFR Section 215.23. To meet cost-sharing requirements, the non-Federal contributions must be reasonable, allowable, allocable, and necessary under the grant program and must comply with all Federal requirements and regulations.

In general, HMA funds may be used to pay up to 75 percent of the eligible activity costs. The remaining 25 percent of eligible activity costs are derived from non-Federal sources. Exceptions to the 75 percent Federal and 25 percent non-Federal share (see Table 2) are as follows:

- **PDM Program** – Small impoverished communities may be eligible for up to a 90 percent Federal cost share. For information about small impoverished communities, see Part IX, B.2.
- **FMA**
  - FEMA may contribute up to 100 percent Federal cost share for severe repetitive loss properties or the expected savings to the NFIF for acquisition or relocation activities (the GSTF value for property acquisition may be offered to the property owner if the project is not cost-effective using pre-event or current market value);
  - FEMA may contribute up to 90 percent Federal cost share for repetitive loss properties; and
  - FEMA may contribute up to 75 percent Federal cost share for NFIP-insured properties.
- **Insular areas, including American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands** – FEMA automatically waives the non-Federal cost share when the non-Federal cost share for the entire grant is under $200,000, not an individual subgrant. If the non-Federal cost share for the entire grant is $200,000 or

greater, FEMA may waive all or part of the cost share, such a waiver is usually consistent with that provided for Public Assistance under the disaster declaration. If FEMA does not waive the cost share, the insular area must pay the entire cost-share amount, not only the amount over $200,000.

Cost-share requirements also extend to management costs with the following exceptions:

- For **HMGP**, available HMGP management costs are calculated as a percentage of the Federal funds provided. There is no additional cost-share requirement for management costs.
- Under the **PDM Program**, only Indian Tribal Grantees meeting the definition of a small impoverished community are eligible for a non-Federal cost share of 10 percent for management costs.

See Part IX, A.7 for further information about HMGP cost-share requirements and Part V, E.4 for further information on funding restrictions for management costs.

HMA Federal funds, or funds used to meet HMA cost-share requirements, may not be used as a cost share for other Federal funds, for lobbying, or intervention in Federal regulatory or adjudicatory proceedings.

Table 2: Cost-Share Requirements

Programs	Mitigation Activity (Percent of Federal / Non-Federal Share)	Grantee Management Costs (Percent of Federal / Non-Federal Share)	Subgrantee Management Costs (Percent of Federal / Non-Federal Share)
HMGP	75/25	100/0	–/–(1)
PDM	75/25	75/25	75/25
PDM – subgrantee is small impoverished community	90/10	75/25	90/10
PDM – Tribal Grantee is small impoverished community	90/10	90/10	90/10
FMA – insured properties and planning grants	75/25	75/25	75/25
FMA – repetitive loss property(2)	90/10	90/10	90/10
FMA – severe repetitive loss property(2)	100/0	100/0	100/0

(1) Subapplicants should consult their State Hazard Mitigation Officer (SHMO) for the amount or percentage of HMGP subgrantee management cost funding their State has determined to be passed through to subgrantees.

(2) To be eligible for an increased Federal cost share a FEMA-approved State or Tribal (Standard or Enhanced) Mitigation Plan that addresses repetitive loss properties must be in effect at the time of grant award, and the property that is being submitted for consideration must be a repetitive loss property.

B.1 Federal Funds Allowed to Be Used as Non-Federal Cost Share

In general, the non-Federal cost-share requirement may not be met with funds from other Federal agencies; however, authorizing statutes explicitly allow some Federal funds to be used as a cost share for other Federal grants. Federal funds that are used to meet a non-Federal cost-share requirement must meet the purpose and eligibility requirements of both the Federal source program and the HMA grant program.

B.2 Increased Cost of Compliance as Non-Federal Cost Share

The NFIP Increased Cost of Compliance (ICC) claim payment from a flood event may be used to contribute to the non-Federal cost-share requirements so long as the claim is made within the timelines allowed by the NFIP. ICC payments can only be used for costs that are eligible for ICC benefits; for example, ICC cannot pay for property acquisition, but can pay for structure demolition or relocation. In addition, Federal funds cannot be provided where ICC funds are available; if the ICC payment exceeds the required non-Federal share, the Federal funding award will be reduced to the difference between the cost of the activity and the ICC payment.

If an ICC payment is being used as a subapplicant's non-Federal cost share, the NFIP policyholder must assign the claim to the subapplicant. However, only that part of the ICC benefit that pertains to the property can be assigned to the subapplicant. The NFIP policyholder can only assign the ICC benefit to the subapplicant; in no case can the policyholder assign the ICC benefit to another individual. Steps for the assignment of ICC coverage are available at http://www.fema.gov/national-flood-insurance-program/steps-assignment-coverage-d-increased-cost-compliance-coverage.

C. Restrictions

C.1 Non-Discrimination Compliance

In accordance with Section 308 of the Stafford Act and Title VI of the 1964 Civil Rights Act, all HMA programs are administered in an equitable and impartial manner, without discrimination on the grounds of race, color, religion, nationality, sex, age, disability, English proficiency, or economic status. In addition, Federal assistance distributed by State and local governments is to be implemented in compliance with all applicable laws.

Applicants and subapplicants must ensure that no discrimination is practiced. Applicants and subapplicants must consider fairness, equity, and equal access when prioritizing and selecting project subapplications to submit with their grant application. Subapplicants also must ensure fairness and equal access to property owners and individuals that benefit from mitigation activities.

C.2 Conflict of Interest

Applicants and subapplicants must avoid conflicts of interest. Subapplicants must comply with the procurement guidelines at 44 CFR Section 13.36, which require subapplicants to avoid situations in which local officials with oversight authority might benefit financially from the grant disbursement. Applicants must comply with guidelines for awarding and administering subgrants as stated in 44 CFR Section 13.37.

C.3 Duplication of Programs

FEMA will not provide assistance for activities for which it determines the primary or more specific authority lies with another Federal agency or program. Other programs and authorities should be examined before applying for HMA funding. HMA funds are not intended to be used as a substitute for other available program authorities. Available program authorities include other FEMA programs (e.g., Individual Assistance and Public Assistance) and programs under other Federal agencies, such as the U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, and the Natural Resources Conservation Service. FEMA may disallow or recoup amounts that duplicate other authorities.

For additional information about Duplication of Programs for wildfire mitigation projects, see Addendum, Part B.2.

C.4 Duplication of Benefits

HMA funds cannot duplicate funds received by or available to Applicants or subapplicants from other sources for the same purpose. Examples of other sources include insurance claims, other assistance programs (including previous project or planning grants and subgrants from HMA programs), legal awards, or other benefits associated with properties or damage that are subject of litigation.

DUPLICATION OF BENEFITS

DOB is used to describe assistance that is from more than one source and that is used for the same purpose or activity. The purpose may apply to the entire project or only part of it.

DOB may apply when assistance for the same purpose:

- Has been received
- Will be received
- Is reasonably available from another source, such as insurance or legal settlements due to the property owners

Because the availability of other sources of mitigation grant or loan assistance is subject to available information and the means of each individual Applicant, HMA does not require that property owners seek assistance from other sources (with the exception of insurance). However, it is the responsibility of the property owner to report other benefits received, any applications for other assistance, the availability of insurance proceeds, or the potential for other compensation, such as from pending legal claims for damages, relating to the property.

Where the property owner has an insurance policy covering any loss to the property that relates to the proposed HMA project, the means are available for receiving compensation for a loss or, in the case of ICC, assistance toward a mitigation project. FEMA will generally require that the property owner file a claim prior to the receipt of HMA funds.

Information regarding other assistance received by properties in HMA projects may be shared under 5 U.S.C. 552a (b) of the Privacy Act of 1974. Uses may include sharing with custodians of property records, such as other Federal or other governmental agencies, insurance companies, or any public or private entity, for the purposes of ensuring that the property has not received money that is duplicative of any possible HMA grants received. When obtaining information from property owners about other sources of assistance, a Privacy Act statement must be distributed to each owner. For more information about the process of verifying potential duplication, access the HMA Tool for Identifying Duplication of Benefits at http://www.fema.gov/library/viewRecord.do?id=6815 and for a copy of the Privacy Act statement (see Appendix F of that document).

For additional information on DOB for property acquisition and structure demolition or relocation projects, see Addendum Part A.11.4.

D. General Program Requirements

D.1 Eligible Activities

To be eligible, activities must meet all requirements referenced in this guidance. Eligible activities for HMA fall into the following categories:

- Mitigation projects (all HMA programs);
- Hazard mitigation planning (all HMA programs); and
- Management costs (all HMA programs).

Table 3 summarizes eligible activities that may be funded by the HMA programs. Detailed descriptions of these activities follow the table in Part IV, D.1.1, D.1.2, and D.1.3.

The following activities are not eligible as stand-alone activities but are eligible when included as a functional component of eligible mitigation activities:

- For the **PDM Program,** generators and/or related equipment purchases (e.g., generator hook-ups),when the generator directly relates to the hazards being mitigated and is part of a larger project;
- Real property or easements purchases required for the completion of an eligible mitigation project; and
- Studies that are integral to the development and implementation of mitigation project, including hydrologic and hydraulic, engineering, or drainage studies.

Table 3: Eligible Activities by Program

Eligible Activities	HMGP	PDM	FMA
1. Mitigation Projects	√	√	√
Property Acquisition and Structure Demolition	√	√	√
Property Acquisition and Structure Relocation	√	√	√
Structure Elevation	√	√	√
Mitigation Reconstruction			√
Dry Floodproofing of Historic Residential Structures	√	√	√
Dry Floodproofing of Non-residential Structures	√	√	√
Minor Localized Flood Reduction Projects	√	√	√
Structural Retrofitting of Existing Buildings	√	√	
Non-structural Retrofitting of Existing Buildings and Facilities	√	√	√
Safe Room Construction	√	√	
Wind Retrofit for One- and Two-Family Residences	√	√	
Infrastructure Retrofit	√	√	√
Soil Stabilization	√	√	√
Wildfire Mitigation	√	√	
Post-Disaster Code Enforcement	√		
Generators	√	√	
5 Percent Initiative Projects	√		
Advance Assistance	√		
2. Hazard Mitigation Planning	√	√	√
3. Management Costs	√	√	√

Additional information regarding eligible projects for HMGP is included in Part IX, A.8 and A.9; and for FMA, see Part IX, C.1.

Costs for eligible activities must be reasonable, allowable, allocable, and necessary as required by 2 CFR Part 225, Cost Principles for State, Local, and Indian Tribal Governments, 44 CFR Section 13.22, applicable program regulations, and this guidance.

D.1.1 Mitigation Projects

This section briefly describes the mitigation projects eligible under one or more of the three HMA programs. Table 3 summarizes the eligibility of the following project types for each program:

- **Property Acquisition and Structure Demolition –** The voluntary acquisition of an existing at-risk structure and, typically, the underlying land, and conversion of the land to

open space through the demolition of the structure. The property must be deed-restricted in perpetuity to open space uses to restore and/or conserve the natural floodplain functions. For property acquisition and structure demolition projects, see Addendum, Part A.

- **Property Acquisition and Structure Relocation –** The voluntary physical relocation of an existing structure to an area outside of a hazard-prone area, such as the Special Flood Hazard Area (SFHA) or a regulatory erosion zone and, typically, the acquisition of the underlying land. Relocation must conform to all applicable State and local regulations. The property must be deed-restricted in perpetuity to open space uses to restore and/or conserve the natural floodplain functions. For property acquisition and structure relocation projects, see Addendum, Part A.
- **Structure Elevation –** Physically raising and/or retrofitting an existing structure to the Base Flood Elevation (BFE) or higher if required by FEMA or local ordinance. Elevation may be achieved through a variety of methods, including elevating on continuous foundation walls; elevating on open foundations, such as piles, piers, posts, or columns; and elevating on fill. Foundations must be designed to properly address all loads and be appropriately connected to the floor structure above, and utilities must be properly elevated as well. FEMA encourages Applicants and subapplicants to design all structure elevation projects in accordance with the American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI) 24-05, *Flood Resistant Design and Construction*. For additional information about structure elevation projects, see Addendum, Part E.
- **Mitigation Reconstruction –** The construction of an improved, elevated building on the same site where an existing building and/or foundation has been partially or completely demolished or destroyed. Mitigation reconstruction is only permitted for structures outside of the regulatory floodway or coastal high hazard area (Zone V) as identified by the existing best available flood hazard data. Activities that result in the construction of new living space at or above the BFE will only be considered when consistent with the mitigation reconstruction requirements.
- **Dry Floodproofing –** Techniques applied to keep structures dry by sealing the structure to keep floodwaters out. For all dry floodproofing activities, FEMA encourages Applicants and subapplicants to design all dry floodproofing projects in accordance with ASCE/SEI 24-05.
  - **Dry Floodproofing of Historic Residential Structures** is permissible only when other techniques that would mitigate to the BFE would cause the structure to lose its status as a Historic Structure, as defined in 44 CFR Section 59.1.
  - **Dry Floodproofing of Non-residential Structures** must be performed in accordance with NFIP Technical Bulletin (TB) 3-93, *Non-Residential Floodproofing—*

Requirements and Certification, and the requirements pertaining to dry floodproofing of non-residential structures found in 44 CFR Sections 60.3(b)(5) and (c)(4).

- **Generators –** Generators are emergency equipment that provide a secondary source of power. Generators and related equipment (e.g., hook-ups) are eligible provided that they are cost-effective, contribute to a long-term solution to the problem they are intended to address, and meet other program eligibility criteria.

  – **PDM Program:** Generators and/or related equipment purchases (e.g., generator hook-ups) are eligible when the generator directly relates to the hazards being mitigated and is part of a larger project.

  – **HMGP:** A permanently installed generator that is a stand-alone project can be considered under regular HMGP funding if the generator protects a critical facility. Critical facilities may include police and fire stations, hospitals, and water and sewer treatment facilities. A generator that is a component of a larger project (e.g., elevation of a lift station) can also be funded under regular HMGP funding and the use of aggregation is permitted. Portable generators are eligible provided that they meet all HMGP requirements as described in 44 CFR Section 206.434. Stand-alone generator projects that cannot be determined cost-effective via standard HMA benefit-cost methodology may be eligible under the 5 Percent Initiative. See Part IX, A.10 for additional information about the 5 Percent Initiative.

  For additional information on generators please see the Frequently Asked Questions for Generators in Part X, Appendix G.

  HMA funds are not available as a substitute for emergency, temporary, or partial solutions under the Stafford Act Section 403, Essential Assistance (42 U.S.C. 5170b) and/or the Stafford Act, Title VI Emergency Preparedness (42 U.S.C. 5195).

GENERATORS

- Stand-alone generators and related equipment (e.g., generator hook-ups) are eligible under the 5 Percent Initiative.
- Stand-alone generators (including related equipment) are eligible for regular HMGP funding if the generator protects a critical facility and meets all other program eligibility criteria.
- Generators (including related equipment) that constitute a functional portion of an otherwise eligible mitigation measure are eligible for HMGP and PDM Program funding.
- Portable generators are eligible for HMGP regular funding and the 5 Percent Initiative if they meet all HMGP requirements as described in 44 CFR Section 206.434.

- **Minor Localized Flood Reduction Projects –** Projects to lessen the frequency or severity of flooding and decrease predicted flood damages, such as the installation or modification of culverts, and stormwater management activities, such as creating retention and detention basins. These projects must not duplicate the flood prevention activities of other Federal agencies and may not constitute a section of a larger flood control system.

- Under the FMA program, minor localized flood reduction projects should benefit NFIP-insured properties. Projects will be prioritized based on the number of NFIP insured properties included in the project. Projects that do not include NFIP-insured properties will not be considered for funding. Documentation must be provided in the subapplication to verify the NFIP insurance requirement, which includes flood insurance policy and property locator numbers as appropriate.

- **Structural Retrofitting of Existing Buildings –** Modifications to the structural elements of a building to reduce or eliminate the risk of future damage and to protect inhabitants. The structural elements of a building that are essential to protect to prevent damage include foundations, load-bearing walls, beams, columns, building envelope, structural floors and roofs, and the connections between these elements.

- **Non-structural Retrofitting of Existing Buildings and Facilities –** Modifications to the non-structural elements of a building or facility to reduce or eliminate the risk of future damage and to protect inhabitants. Non-structural retrofits may include bracing of building contents to prevent earthquake damage or the elevation of utilities.

- **Safe Room Construction –** Safe room construction projects are designed to provide immediate life-safety protection for people in public and private structures from tornado and severe wind events, including hurricanes. For HMA, the term "safe room" only applies to extreme wind (combined tornado and hurricane) residential, non-residential, and community safe rooms; tornado community safe rooms; and hurricane community safe rooms. This type of project includes retrofits of existing facilities or new safe room construction projects, and applies to both single and dual-use facilities. For additional information, see Addendum, Part C.

- **Wind retrofit projects –** Wind retrofit projects of one and two-family residential buildings must be designed in conformance with the design criteria found in the *Wind Retrofit Guide for Residential Buildings* (FEMA P-804) published December 2010. This document is available in the FEMA Library at http://www.fema.gov/library/viewRecord.do?id=4569.

- **Infrastructure Retrofit –** Measures to reduce risk to existing utility systems, roads, and bridges.

- **Soil Stabilization –** Projects to reduce risk to structures or infrastructure from erosion and landslides, including installing geotextiles, stabilizing sod, installing vegetative buffer strips, preserving mature vegetation, decreasing slope angles, and stabilizing with rip rap and other means of slope anchoring. These projects must not duplicate the activities of other Federal agencies.

- **Wildfire Mitigation** – Projects to mitigate at-risk structures and associated loss of life from the threat of future wildfire through:

- **Defensible Space for Wildfire –** Projects creating perimeters around homes, structures, and critical facilities through the removal or reduction of flammable vegetation. For additional information, see Addendum, Part B.3.1.
- **Application of Ignition-resistant Construction –** Projects that apply ignition-resistant techniques and/or non-combustible materials on new and existing homes, structures, and critical facilities. For additional information, see Addendum, Part B.3.2.
- **Hazardous Fuels Reduction –** Projects that remove vegetative fuels proximate to at-risk structures that, if ignited, pose significant threat to human life and property, especially critical facilities. For additional information, see Addendum, Part B.3.3.

- **Post-Disaster Code Enforcement –** Projects designed to support the post-disaster rebuilding effort by ensuring that sufficient expertise is on hand to ensure appropriate codes and standards, including NFIP local ordinance requirements, are used and enforced. For additional information, see Part IX, A.8.
- **Advance Assistance** – Section 1104 of the SRIA authorizes the use of Advance Assistance to accelerate the implementation of the Hazard Mitigation Grant Program (HMGP). Applicants may use Advance Assistance to develop mitigation strategies and obtain data to prioritize, select and develop complete HMGP applications in a timely manner. See Part IX, A.9 for additional information on Advance Assistance.
- **5 Percent Initiative Projects –** These projects, which are only available pursuant to an HMGP disaster, provide an opportunity to fund mitigation actions that are consistent with the goals and objectives of the State or Indian Tribal (Standard or Enhanced) and local mitigation plans and meet all HMGP program requirements, but for which it may be difficult to conduct a standard Benefit-Cost Analysis (BCA) to prove cost-effectiveness. For additional information, see Part IX, A.10.

D.1.2 Hazard Mitigation Planning

Mitigation plans are the foundation for effective hazard mitigation. A mitigation plan is a demonstration of the commitment to reduce risks from natural hazards and serves as a strategic guide for decision-makers as they commit resources.

MITIGATION PLANNING-RELATED ACTIVITIES

Planning activities can include assessing risk and updating the mitigation strategy to reflect current disaster recovery goals.

The mitigation planning process includes hazard identification and risk assessment leading to the development of a comprehensive mitigation strategy for reducing risks to life and property. The mitigation strategy section of the plan identifies a range of specific mitigation actions and projects being considered to reduce risks to new and existing buildings and infrastructure. This section includes an action plan describing how identified mitigation activities will be prioritized, implemented, and administered.

Planning activities funded under HMA are designed to develop State, Indian Tribal, and local mitigation plans that meet the planning requirements outlined in 44 CFR Part 201. A mitigation planning subgrant award must result in a mitigation plan adopted by the jurisdiction(s) and approved by FEMA or it must result in a planning related activity approved by FEMA (e.g., incorporating new data into the Risk Assessment, or updating the Mitigation Strategy to reflect current disaster recovery goals) consistent with the requirements in 44 CFR Parts 201 and 206.

For **FMA**, funds shall only be used to support the flood hazard portion of State, Indian Tribal, or local mitigation plans to meet the criteria specified in 44 CFR Part 201. Funds are only available to support these activities in communities participating in the NFIP.

For links to mitigation planning and risk assessment resources, see Part X, C.2.

D.1.2.1 Eligible Hazard Mitigation Planning-Related Activities

Eligible activities include but are not limited to:

- Update or enhance sections of the current FEMA-approved mitigation plan, such as:
  - Risk and vulnerability assessment based on new information, including supporting studies, such as economic analyses;
  - Mitigation strategy, specifically strengthening the linkage to mitigation action implementation, with emphasis on available HMA project grant funding; or
  - Incorporate climate adaptation, green building, or smart growth principles into the risk assessment and/or mitigation strategy.
- Integrate information from mitigation plans, specifically risk assessment or mitigation strategies, with other planning efforts, such as:
  - Disaster recovery strategy (pre- or post), preparedness, or response plans;
  - Comprehensive (e.g., land use, master) plans;
  - Capital improvement or economic development plans;
  - Resource management / conservation plans (i.e., storm water, open space); or
  - Other long-term community planning initiatives (i.e., transportation or housing).
- Building capability through delivery of technical assistance and training.
- Evaluation of adoption and/or implementation of ordinances that reduce risk and/or increase resilience.

D.1.2.2 Ineligible Hazard Mitigation Planning-Related Activities

The following is a list of activities considered ineligible as "stand alone" planning-related activities:

- Hazard identification or mapping and related equipment for the implementation of mitigation activities (eligible under 5 Percent Initiative);
- Geographic Information System (GIS) software, hardware, and data acquisition whose primary aim is mitigation (eligible under 5 Percent Initiative);
- Public awareness or education campaigns about mitigation (eligible under 5 Percent Initiative);
- Project scoping or development (also referred to as "project planning"), such as BCA, engineering feasibility studies, application development, construction design, or EHP data collection; and
- Activities not resulting in a clearly defined product or product(s).

D.1.3 Management Costs

Management costs are any indirect costs and administrative expenses that are reasonably incurred by a Grantee or subgrantee in administering a grant or subgrant award.

Eligible Applicant or subapplicant management cost activities may include:

- Solicitation, review, and processing of subapplications and subgrant awards;
- Subapplication development and technical assistance to subapplicants regarding feasibility and effectiveness, BCA, and EHP documentation;
- Geocoding mitigation projects identified for further review by FEMA;
- Delivery of technical assistance (e.g., plan reviews, planning workshops, training) to support the implementation of mitigation activities;
- Managing grants (e.g., quarterly reporting, closeout);
- Technical monitoring (e.g., site visits, technical meetings);
- Purchase of equipment, per diem and travel expenses, and professional development that is directly related to the implementation of HMA programs; and
- Staff salary costs directly related to performing the activities listed above.

Management costs are only awarded in conjunction with project or planning grants and subgrants. For more information regarding management costs for HMGP, see Part IX, A.4. For the **PDM Program and FMA**, FEMA may provide up to 25 percent of the Applicant's anticipated management costs, upon the award and final approval of the first subgrant. The remaining management costs will be obligated as additional subgrants are awarded.

D.2 Ineligible Activities

The following list provides examples of activities that are not eligible for HMA funding:

- Projects that do not reduce the risk to people, structures, or infrastructure;
- Projects that are dependent on a contingent action in order to be effective and/or feasible (i.e., not a stand-alone mitigation project that solves a problem independently or constitutes a functional portion of a solution);
- Projects with the sole purpose of open space acquisition of unimproved land;
- Projects for which actual physical work such as groundbreaking, demolition, or construction of a raised foundation has occurred prior to award or final approval. Projects for which demolition and debris removal related to structures proposed for acquisition or mitigation reconstruction has already occurred may be eligible when such activities were initiated or completed under the FEMA Public Assistance program to alleviate a health or safety hazard as a result of a disaster;
- Projects that involve land that is contaminated with hazardous waste;
- Projects for preparedness activities or temporary measures (e.g., sandbags, bladders, geotubes);
- Projects that create revolving loan funds;
- Activities required as a result of negligence or intentional actions, or those intended to remedy a code violation, or the reimbursement of legal obligations such as those imposed by a legal settlement, court order, or State law;
- FEMA may, at its discretion, choose not to fund projects subject to ongoing litigation if such litigation may affect eligibility of the project or may substantially delay implementation of the project;
- All projects located in a CBRS Unit or in OPAs, other than property acquisition and structure demolition or relocation projects for open space under HMA. For details on property acquisition and structure demolition or relocation projects for open space within a CBRS Unit or OPAs see Addendum, Part A.2;
- Activities on Federal lands or associated with facilities owned by another Federal entity;
- Major flood control projects related to the construction, demolition, or repair of dams, dikes, levees, floodwalls, seawalls, groins, jetties, breakwaters, and erosion projects related to beach nourishment or re-nourishment;
- Projects for hazardous fuels reduction in excess of 2 miles from structures;
- Projects that address unmet needs from a disaster that are not related to mitigation;

- Retrofitting facilities primarily used for religious purposes, such as places of worship (or other projects that solely benefit religious organizations). However, a place of worship may be included in a property acquisition and structure demolition or relocation project provided that the project benefits the entire community, such as when the whole neighborhood or community is being removed from the hazard area;
- Activities that only address manmade hazards;
- Projects that address, without an increase in the level of protection, operation, deferred or future maintenance, repairs, or replacement of existing structures, facilities, or infrastructure (e.g., dredging, debris removal, replacement of obsolete utility systems, bridges, and facility repair/rehabilitation);
- Projects for the purpose of:
  - Landscaping for ornamentation (e.g., trees, shrubs);
  - Site remediation of hazardous materials (with the exception eligible activities, such as the abatement of asbestos and/or lead-based paint and the removal of household hazardous wastes to an approved landfill);
  - Water quality infrastructure;
  - Projects that primarily address ecological or agricultural issues;
  - Forest management;
  - Prescribed burning or clear-cutting;
  - Creation and maintenance of fire breaks, access roads, or staging areas;
  - Irrigation systems;
- Studies not directly related to the design and implementation of a proposed mitigation project; and
- Preparedness measures and response equipment (e.g., response training, electronic evacuation road signs, interoperable communications equipment).

All projects must also comply with any additional project-specific guidance provided in the Addendum.

D.3 Cost-effectiveness

Mitigation program authorizing statutes (Flood Mitigation Assistance at 42 U.S.C. 4104c, Pre-Disaster Hazard Mitigation at 42 U.S.C. 5133, and Hazard Mitigation at 42 U.S.C. 5170c) require that FEMA provide funding for mitigation measures that are cost-effective or are in the interest of the NFIF. FEMA has specified minimum project criteria via regulation (44 CFR Part 79 and 44 CFR Section 206.434), including that Applicants must demonstrate mitigation projects are cost-effective. The determination of cost-effectiveness is performed in a variety of ways. It

is typically demonstrated by the calculation of a BCR, dividing total annualized project benefits by total annualized project cost. Projects where benefits exceed costs are generally considered cost-effective (see Part V, I and Part VI, A.2 for additional information).

D.4 Feasibility and Effectiveness

Mitigation projects funded by HMA must be both feasible and effective at mitigating the risks of the hazard(s) for which the project was designed. A project's feasibility is demonstrated through conformance with accepted engineering practices, established codes, standards, modeling techniques, or best practices. Effective mitigation measures funded under HMA provide a long-term or permanent solution to a risk from a natural hazard.

For additional information about the feasibility and effectiveness requirement for mitigation reconstruction projects, see the Addendum, Part D.3; for additional feasibility and effectiveness resources, see Part X, C.5.

D.5 Hazard Mitigation Plan Requirement

In accordance with 44 CFR Part 201, all Applicants for the **PDM Program** and **FMA** must have a FEMA-approved State or Tribal (Standard or Enhanced) Mitigation Plan by the application deadline and at the time of obligation of the grant funds. The only exception is for a subapplication for a State or Indian Tribal (Standard or Enhanced) Mitigation Plan. In addition, all subapplicants for the **PDM Program** and **FMA** mitigation projects must have a FEMA-approved local or Indian Tribal mitigation plan by the application deadline and at the time of obligation of grant funds. There is no local or Indian Tribal mitigation plan requirement for any HMA program for a planning subgrant.

EXTRAORDINARY CIRCUMSTANCES EXCEPTION

- **For HMGP** project subgrants, the Regional Administrator may grant an exception to a local or Indian Tribal mitigation plan requirement in extraordinary circumstances when justification is provided.
- **For the PDM Program and FMA** project subgrants, the Region may apply extraordinary circumstances when justification is provided and with concurrence from FEMA Headquarters (Risk Reduction and Risk Analysis Divisions) before granting an exception.

Applicants for **HMGP** funding must have a FEMA-approved State or Indian Tribal (Standard or Enhanced) Mitigation Plan at the time of the disaster declaration and at the time HMGP funding is obligated to the Grantee to receive an HMGP award. For **HMGP** project subgrants, the Regional Administrator may grant an exception to the local or Indian Tribal mitigation plan requirement in extraordinary circumstances, when justification is provided. If this exception is granted, a local or Indian Tribal mitigation plan must be approved by FEMA within 12 months of the award of the project subgrant to that community.

For **PDM** and **FMA** project subgrants, the Region may apply extraordinary circumstances when justification is provided and with concurrence from FEMA Headquarters (Risk Reduction and Risk Analysis Divisions) prior to granting an exception. If this exception is granted, a local or Indian Tribal mitigation plan must be approved by FEMA within 12 months of the award of the project subgrant to that community.

For **HMGP**, **the PDM Program**, and **FMA**, extraordinary circumstances exist when a determination is made by the Applicant and FEMA that the proposed project is consistent with the priorities and strategies identified in the State or Indian Tribal (Standard or Enhanced) Mitigation Plan and that the jurisdiction meets at least one of the criteria below. If the jurisdiction does not meet at least one of the following criteria, the Region must coordinate with FEMA Headquarters (Risk Reduction and Risk Analysis Divisions) for **HMGP** and coordinate and seek concurrence prior to granting an exception for the **PDM Program** and **FMA**:

- The jurisdiction meets the small impoverished community criteria (see Part IX, B.2);
- The jurisdiction has been determined to have had insufficient capacity due to lack of available funding, staffing, or other necessary expertise to satisfy the mitigation planning requirement prior to the current disaster or application deadline;
- The jurisdiction has been determined to have been at low risk from hazards due to low frequency of occurrence or minimal damages from previous occurrences due to sparse development;
- The jurisdiction experienced significant disruption from a declared disaster or another event that impacts its ability to complete the mitigation planning process prior to award or final approval of a project grant; and
- The jurisdiction does not have a mitigation plan for reasons beyond the control of the State, Indian Tribal or local community, such as Disaster Relief Fund (DRF) restrictions that delay FEMA from awarding project grants prior to the expiration of the local or Indian Tribal mitigation plan.

For **HMGP**, **the PDM Program**, and **FMA**, the Applicant must provide written justification that identifies the specific criteria from above or circumstance, explain why there is no longer an impediment to satisfying the mitigation planning requirement, and identify the specific actions or circumstances that eliminated the deficiency.

In determining whether to grant the exception, FEMA takes into consideration factors including whether an Applicant has prioritized its authorized HMA project assistance for use in those communities with an approved local or Indian Tribal mitigation plan, whether there are additional project funds available for award to a jurisdiction that does not have an approved local or Indian Tribal mitigation plan, and whether an Applicant has placed higher priority for grant funding on communities with higher risks. In all cases, a local or Indian Tribal mitigation plan must be completed and approved by FEMA within 12 months of the award. If a local or Indian

Tribal mitigation plan is not approved by FEMA within this timeline, the project subgrant will be terminated and any costs incurred after the notice of the subgrant's termination will not be reimbursed by FEMA.

When an HMGP project subgrant is awarded under extraordinary circumstances, the Grantee shall acknowledge in writing to the Regional Administrator that a plan will be completed within 12 months of the award of the project grant. The Grantee must provide a work plan for completing the local or tribal mitigation plan, including milestones and a timetable, to ensure that the jurisdiction will complete the plan in the required time. This requirement shall be incorporated into the grant award (both the planning and project subgrant agreements, if a planning subgrant is also awarded).

D.5.1 Indian Tribal Government Hazard Mitigation Plan Requirement

Indian Tribal governments with an approved Indian Tribal mitigation plan in accordance with 44 CFR Section 201.7 may apply for assistance from FEMA as a Grantee. In addition, if an Indian Tribal government with an approved Indian Tribal mitigation plan in accordance with 44 CFR Section 201.7 coordinates the review of their Indian Tribal mitigation plan with the State or another Indian Tribal government, it has the option to apply as a subapplicant through that State or Indian Tribal government, except as prohibited by State law.

D.5.2 Conformance with Hazard Mitigation Plans

Projects submitted for consideration for HMA funding must be consistent with the goals and objectives identified in the current, FEMA-approved State or Indian Tribal (Standard or Enhanced) Mitigation Plan and local or Indian Tribal mitigation plan for the jurisdiction in which the activity is located.

D.6 Environmental Planning and Historic Preservation Requirement

HMA programs, and grants awarded pursuant to these programs, must conform to 44 CFR Parts 9 and 10, and with all applicable EHP laws, implementing regulations, and EOs, such as the NEPA, the National Historic Preservation Act (NHPA), the Endangered Species Act (ESA), EO 11988 (*Floodplain Management*), EO 11990 (*Protection of Wetlands*), and EO 12898 (*Environmental Justice*). EHP requirements ensure appropriate consideration of reasonable alternatives, taking the project's impacts to the human environment into account in the decision-making process. The project, when completed, must comply with all applicable environmental laws and regulations as a condition of grant eligibility.

FEMA reviews the completeness of the responses to the questions in the EHP review section of the project subapplication and supporting documentation. For HMA project subapplications that do not include the required information for each property identified in the subapplication, there

may be a delay in identifying outstanding EHP compliance measures. Lack of the required information by the application deadline may prohibit FEMA from awarding a grant or subgrant.

FEMA has developed guidance to assist in completing the EHP information section of a project subapplication, including an eLearning Tool, online training, and information about historic preservation. For links to these EHP resources, see Part X, C.5.

D.6.1 Floodplain Management and Protection of Wetlands

As noted in Part IV D.6, all activities funded by HMA programs must conform to 44 CFR Part 9. Activities involving development will only be eligible for a grant if the Applicant demonstrates that there is no practicable alternative to such development in accordance with 44 CFR Section 9.9. In addition, **HMGP** funds cannot be used to fund new construction or Substantial Improvement in a floodway or new construction in a coastal high hazard zone. However, the costs to elevate or floodproof a damaged structure or facility are not included in determining whether the Substantial Improvement threshold is triggered.

For additional information see 44 CFR Section 9.11(d).

D.7 National Flood Insurance Program Eligibility Requirements

HMA eligibility is related to the NFIP as follows:

- **Subapplicant eligibility:** All subapplicants for **FMA** must currently be participating in the NFIP, and not withdrawn or suspended, to be eligible to apply for grant funds. Certain non-participating political subdivisions (i.e., regional flood control districts or county governments) may apply and act as subgrantees on behalf of the NFIP-participating community in areas where the political subdivision provides zoning and building code enforcement or planning and community development professional services for that community;
- **Project eligibility: HMGP** and **PDM** mitigation project subapplications for projects sited within an SFHA are eligible only if the jurisdiction in which the project is located is participating in the NFIP. There is no NFIP participation requirement for HMGP and PDM project subapplications for projects located outside of the SFHA;
- **Hazard mitigation planning eligibility:** There are no NFIP participation requirements for **HMGP** and **PDM** hazard mitigation planning subapplications; and
- **Property eligibility:** Properties included in a project subapplication for **FMA** funding must be NFIP insured at the time of the application submittal. Flood insurance must be maintained for the life of the structure.

D.7.1 Special Flood Hazard Area Requirements

For structures that remain in the SFHA after the implementation of the mitigation project, flood insurance must be maintained for the life of the structure to an amount at least equal to the project cost or to the maximum limit of coverage made available with respect to the particular property, whichever is less. The maximum limit of coverage made available is defined as the replacement cost value of the structure up to $250,000 for residential and $500,000 for non-residential. Insurance coverage on the property must be maintained during the life of the property regardless of transfer of ownership of such property.

The subgrantee (or property owner) must legally record, with the county or appropriate jurisdiction's land records, a notice that includes the name of the current property owner (including book/page reference to record of current title, if readily available), a legal description of the property, and the following notice of flood insurance requirements:

> This property has received Federal hazard mitigation assistance. Federal law requires that flood insurance coverage on this property must be maintained during the life of the property regardless of transfer of ownership of such property. Pursuant to 42 U.S.C. 5154a, failure to maintain flood insurance on this property may prohibit the owner from receiving Federal disaster assistance with respect to this property in the event of a flood disaster. The Property Owner is also required to maintain this property in accordance with the floodplain management criteria of 44 CFR Part 60.3 and City/County Ordinance.

Applicants/subapplicants receiving assistance for projects sited in an SFHA must ensure that these requirements are met by requesting that the participating property owner(s) sign an *Acknowledgement of Conditions for Mitigation of Property in an SFHA with FEMA Grant Funds* form and providing the form to FEMA prior to award or final approval. This form is available on the FEMA Web site at http://www.fema.gov/library/viewRecord.do?id=3592, or from the appropriate FEMA Regional Office (for Regional Office information, see Part VIII). Properties that do not meet these requirements will not be eligible to receive assistance under the HMA programs.

If an approved HMA project affects the accuracy of the applicable Flood Insurance Rate Map (FIRM), the subgrantee is responsible for ensuring that appropriate map amendments or revisions are made. Costs associated with map amendments may be identified in the cost estimate section of a subgrant application.

D.8 Statutory, Regulatory, and Other Requirements

Mitigation activities must adhere to all relevant statutes, regulations, and requirements, including:

- Sections 203 (PDM Program) and 404 (HMGP) of the Stafford Act;

- Section 1366 (FMA) of the NFIA;
- Section 322 of the Stafford Act (Mitigation Planning);
- Section 324 of the Stafford Act (Management Costs);
- NHPA;
- NEPA;
- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970;
- Floodplain Management and Protection of Wetlands (44 CFR Part 9);
- Environmental Considerations (44 CFR Part 10, NEPA, and ESA);
- Coastal Barriers Resources Act (CBRA; 44 CFR Part 206, Subpart J);
- Uniform Administrative Requirements for Grants and Cooperative Agreements to States and Local Governments (44 CFR Part 13);
- Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and other Non-Profit Organizations (2 CFR Part 215);
- Floodplain Management (44 CFR Part 60);
- Flood Mitigation Grants (44 CFR Part 79);
- Property Acquisition and Relocation for Open Space (44 CFR Part 80);
- Hazard Mitigation Planning (44 CFR Part 201);
- Hazard Mitigation Grant Program (44 CFR Part 206, Subpart N);
- Management Costs (44 CFR Part 207);
- Cost Principles for Educational Institutions (2 CFR Part 220, OMB Circular A-21); Cost Principles for State, Local, and Indian Tribal Governments (2 CFR Part 225, OMB Circular A-87); Cost Principles for Nonprofit Organizations (2 CFR Part 230, OMB Circular A-122);
- OMB Circular A-94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*;
- OMB Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*;
- Federal Acquisition Regulations (FAR) Subpart 31.2, Contracts with Commercial Organizations; and
- Other applicable Federal, State, Indian Tribal, and local laws, implementing regulations, and EOs (e.g., EO 11988, EO 11990).

PART V. APPLICATION AND SUBMISSION INFORMATION

Part V provides guidance on developing HMA applications or subapplications, and on related funding restrictions.

A. Address to Request Application Package

Applications for **HMGP** are processed through the National Emergency Management Information System (NEMIS). Applicants may use the Application Development Module of NEMIS to create project applications and submit them to the appropriate FEMA Region in digital format for the relevant disaster. For NEMIS Helpdesk resources, see Part X C.6.

Applications for the **PDM Program** and **FMA** are processed through the *e*Grants system. The *e*Grants system encompasses the entire grant application process and provides the means to electronically create, review, and submit a grant application to FEMA via the Internet. Applicants and subapplicants can access *e*Grants at https://portal.fema.gov/famsVuWeb/home.

The FEMA Technical Service desk phone number is 1 (877) 611-4700. For additional *e*Grants resources, see Part X C.6.

For more information about using NEMIS or *e*Grants, contact the appropriate FEMA Regional Office (see Part VIII).

B. Content and Form of Application

For **HMGP**, subapplication packages are available from eligible Applicants following Presidential major disaster declarations. The Applicant selects and prioritizes subapplications and submits them to FEMA. Applicants must submit an SF-424, Application for Federal Assistance, before HMGP funding can be obligated. The Applicant submits the subapplications both in digital format via NEMIS and in hard copy format.

Applications and subapplications for the **PDM Program** and **FMA** are submitted via the *e*Grants system. If a subapplicant does not use the *e*Grants system, the Applicant must enter the paper subapplication(s) into the *e*Grants system on the subapplicant's behalf. Blank applications that conform to the *e*Grants format are available for printing from the *e*Grants system and the FEMA Web site. Supporting documentation that cannot be electronically attached to the *e*Grants application (e.g., engineering drawings, photographs, and maps) must be submitted to the appropriate FEMA Regional Office. The entire application, including all paper documentation, must be received by the appropriate FEMA Regional Office no later than the application deadline.

C. Submission Dates and Times

HMGP submittal deadlines for applications are established based on the disaster declaration date. For submission of an application for HMGP, see Part IX, A.1 and A.6.

Completed applications for the **PDM Program** and **FMA** must be submitted to FEMA through *e*Grants. Application submission due dates and times are posted to the HMA Web site at https://www.fema.gov/hazard-mitigation-assistance. Subapplicants should consult the official designated point of contact (POC) for their Applicant for more information regarding the application process. For more information on FEMA and Applicant contacts, see Part VIII. For additional information on HMA application cycles either contact FEMA or go to http://www.grants.gov/.

D. Intergovernmental Review

It may be necessary to allow sufficient time for an intergovernmental review of an application as established by EOs 12372 and 12416 (*Intergovernmental Review of Federal Programs*). If an Applicant has chosen not to participate in the intergovernmental review process, the application may be sent directly to FEMA. Guidance on the intergovernmental review process, including the names and addresses of the single POCs as listed by OMB, is available at http://www.whitehouse.gov/omb/grants_spoc.

E. Funding Restrictions

HMA programs allow the funding of eligible costs for mitigation activities as outlined in Part IV, D.1. Subapplications that propose a Federal expenditure in excess of the Federal funding limit will not be considered for an award. For each program, additional funding restrictions apply as described below.

E.1 HMGP Funding Restrictions

- Up to 7 percent of the Grantee's HMGP ceiling may be used for mitigation planning activities in compliance with 44 CFR Section 201.3(c)(4).
- Up to 5 percent of the Grantee's HMGP ceiling may be used for mitigation measures that are difficult to evaluate against traditional program cost-effectiveness criteria (i.e., the 5 Percent Initiative).
- For Presidential major disaster declarations for tornadoes and high winds, an additional 5 percent of the Grantee's HMGP ceiling may be used to fund hazard mitigation measures (e.g., warning systems) to address the unique hazards posed by tornadoes.

For more information on the 5 Percent Initiative and the additional 5 percent for tornadoes, see Part IX, A.10.

E.2 PDM Program Funding Restrictions

- Up to $800,000 Federal share may be requested in a subapplication for a planning grant to develop a new hazard mitigation plan.
- Up to $300,000 Federal share may be requested in a subapplication for a planning grant to update a hazard mitigation plan.

MAXIMUM AMOUNTS OF MITIGATION PLANNING GRANTS

Under the PDM Program, the maximum mitigation planning grant is $800,000 for a new plan and $300,000 for an update.

Under FMA, the maximum individual planning grant is $50,000 for any Applicant and $25,000 for any subapplicant.

- Up to $3 million Federal share may be requested in a subapplication to implement a mitigation project.
- The cumulative Federal award for subapplications awarded during a single application cycle to any one Applicant shall not exceed 15 percent of the total appropriated PDM Program funds for that application cycle.

E.3 FMA Funding Restrictions

- Individual planning grants using FMA funds shall not exceed $50,000 to any Applicant or $25,000 to any subapplicant. FMA funds can only be used for the flood hazard component of a hazard mitigation plan that meets the planning criteria outlined in 44 CFR Part 201.

E.4 Management Costs Funding Restrictions

For **all HMA** programs, indirect costs may be included as a part of the management cost estimate shown in the application or subapplication.

For **HMGP** only: The Grantee may request a flat percentage rate (4.89 percent) of the projected eligible program costs for management costs. The Grantee is responsible for determining the amount, if any, of funds that will be passed through to the subgrantee(s) for their management costs. For further information on HMGP management costs, see Part IX, A.2.5 and A.4.

Applicants for the **PDM Program** and **FMA** may apply for a maximum of 10 percent of the total funds requested in their grant application budget (Federal and non-Federal shares) for management costs to support the project and planning subapplications included as part of their grant application. Applicants requesting Applicant management costs must submit a separate Management Costs subapplication in *e*Grants. This subapplication must be included in the overall grant application or the request will not be considered. Applicants who are not awarded grants funds for project or planning activities will not receive reimbursement for the corresponding costs incurred in developing and submitting applications.

Subapplicants for the **PDM Program** and **FMA** may apply for a maximum of 5 percent of the total funds requested in a subapplication for management costs. Subapplicants requesting management costs must include them in the project or planning subapplication for consideration as separate activities in the Mitigation Activity section of *e*Grants. Subapplicants who are not awarded subgrants for project or planning activities will not receive reimbursement for the corresponding costs incurred in developing and submitting subapplications.

F. Other Submission Requirements

F.1 Application Consideration under Multiple HMA Programs

FEMA will only consider applications and subapplications submitted to a specific HMA program. If an applicant would like to have a subapplication considered under multiple HMA programs, the applicant must submit that subapplication to each HMA program separately.

F.2 Pre-Award Costs

Costs incurred after the HMA application period has opened, but prior to the date of the grant award or final approval, are identified as pre-award costs. For **HMGP**, the opening of the application period is the date when HMGP is authorized, which is generally the date of declaration. The opening of the application period for the **PDM Program** and **FMA** is established annually by FEMA.

Pre-award costs directly related to developing the application or subapplication may be funded through HMA as funds are available. Such costs may have been incurred, for example, to develop a BCA, to gather EHP data, for preparing design specifications, or for workshops or meetings related to development and submission of HMA applications and subapplications. Costs associated with implementation of the activity but incurred prior to grant award or final approval are not eligible (projects initiated or completed prior to grant award or full approval of the project are not eligible). To be eligible for HMA funding, pre-award costs must be identified as separate line items in the cost estimate of the subapplication. Applicants and subapplicants may identify such pre-award costs as their non-Federal cost share. Applicants and subapplicants who are not awarded grants or subgrants will not receive reimbursement for the corresponding pre-award costs.

G. Applicant Guidance

G.1 General Applicant Guidance

FEMA will not direct the Applicant on how to submit its applications. The Applicant may submit a single application representing all subapplications or they may submit multiple applications. When submitting multiple subapplications, they should be ranked in priority order.

Before forwarding subapplications to FEMA, Applicants also should review subapplications to document that:

- The subapplicant has documented its capacity to manage the subgrant funds;
- The subapplicant has documented its capacity to complete the mitigation activity in the time specified;
- Non-Federal cost-share funds are or will be available for the project;
- The maintenance requirements have been sufficiently identified, and the subapplicant or another authorized entity has accepted the maintenance responsibility;
- The underlying cost-effectiveness data are accurate and complete; and
- All program- and project-specific requirements have been met and are documented as appropriate.

If the subapplication is considered to be deficient, the Applicant may revise or augment the subapplication in consultation with the subapplicant. Applicants must certify that they have evaluated the activities included in each subapplication and that activities will be implemented in accordance with 44 CFR Part 13 and other applicable program or activity type requirements.

G.2 Minimum Eligibility and Completeness Criteria

FEMA will no longer accept incomplete and placeholder project applications. Incomplete applications or subapplications delay project approval because they do not contain sufficient information for FEMA to make program eligibility determinations. Applications and subapplications submitted to FEMA must meet the minimal eligibility and completeness criteria as there is no method to determine eligibility without these data. These minimal eligibility criteria are required for all submittals including over-submittals and placeholder applications. Additional information may be requested during FEMA review. The following list is not all inclusive. For a more detailed checklist please see Part X, Appendix E for projects and Part X, Appendix H for plans.

MINIMUM ELIGIBILITY AND COMPLETENESS REQUIREMENTS

Applications and subapplications submitted to FEMA must meet the minimal eligibility and completeness criteria, as there is no method to determine eligibility without these data. For a detailed Eligibility and Completeness checklist please see Part X, Appendix E for projects and Part X, Appendix H for plans.

Unless otherwise noted, the following criteria apply to plans, management costs, and project subapplications and applications:

- Eligible Applicant;
- Meets all plan requirements per 44 CFR Parts 201 and 206;
- Provides a detailed SOW as described in Part V, H;

- Provides a work schedule of 3 years or less;
- If project is suitable for phased or incremental funding, the schedule reflects activities and timelines for each funding increment **(projects**);
- Budget/Match Source;
  - A detailed cost estimate/budget is provided that supports the SOW;
- Cost-effectiveness and Feasibility (**projects**);
  - Project includes a FEMA-approved BCA or FEMA-approved alternate cost-effectiveness documentation (see Part V, I for additional information);
  - The proposed activity is feasible and effective as demonstrated through conformance with accepted engineering practices, established codes, standards, modeling techniques, or best practices (see Part V, J for additional information);
- EHP;
  - Project includes information and documentation to demonstrate conformance with all applicable laws and regulations (e.g., NEPA and State Historic Preservation Act);
  - Project demonstrates that it minimizes harm to the environment and is the best alternative from a range of options considered (see Part V, K for additional information); and
- Assurances.

H. Scope of Work

The SOW identifies the eligible mitigation activity, as described in Part IV, D.1; describes what will be accomplished; and explains how the mitigation activity will be implemented. The mitigation activity must be described in sufficient detail to verify the cost estimate. All activities for which funding is requested must be identified in the SOW prior to the close of the application period.

H.1 Project Scope of Work

The project subapplication SOW provides detailed information about the project, as well as applicable references and supporting documentation. The SOW includes:

- **Purpose of the project** – The intended outcome or objectives of the project;
- **Clear, concise description of the proposed project** – Proposed conceptual design, means of implementation of the project, and responsible party for implementation;
- **Identification of properties to be mitigated** – All properties to be mitigated must be identified, including additional, alternate properties that may be substituted should one or

more of the other properties be withdrawn for eligibility or other reasons. In order for alternate properties to be properly considered in the event of a substitution, the same level of information for the alternate properties is required as is provided for the proposed properties;

- **Outcomes** – Proposed project accomplishments, problem(s) that the project will solve, parties that will directly or indirectly benefit from the project, and ways that the risks of damage or harm will be reduced;
- **Special project components** – New technologies that will be used during project implementation and how they are expected to provide the necessary results, and necessary laboratory tests or field-testing;
- **Other projects** – Other projects that are currently being implemented or expected to be implemented that will affect the proposed project;
- **Extraordinary Circumstances** – If this exception is used, a plan must be completed within 12 months of the award of the project grant, per Part IV, D.5 (Hazard Mitigation Plan Requirement); and
- **Latitude/Longitude and site photographs** – Subapplicants must identify the proposed project location on a map and provide the latitude/longitude and any relevant photographs including, but not limited to sides of the building, foundation, roof, both sides of the culvert, and the surrounding project area.

The required documentation depends upon the nature of the proposed project and may include: proposed schematics, drawings or sketches, photographs, maps, sections of hazard maps, a Flood Insurance Study, or a FIRM. Whenever possible, data used to document existing conditions must be obtained from recognized sources, such as Federal agencies, State agencies, and academic organizations. The references and/or supporting documentation from qualified and credible sources such as Professional Engineers or local government records should be included when using locally developed data. Deviations from standard procedures, methods, techniques, technical provisions of the applicable codes, or best practices must be thoroughly explained and documented. Subapplicants must identify the proposed project location on a map and provide any relevant photographs including, but not limited to, sides of the building, foundation, and roof (as appropriate).

H.2 Hazard Mitigation Planning Scope of Work

The hazard mitigation planning subapplication SOW must describe the development of a hazard mitigation plan or planning-related activity that is consistent with the requirements identified in 44 CFR Part 201.

For a hazard mitigation plan, the SOW must:

- Describe the proposed planning activity, including whether it will:

  - Result in a new or updated hazard mitigation plan that complies with the requirements identified in 44 CFR Part 201; or
  - Enhance an existing mitigation plan through a planning related activity that is consistent with 44 CFR Part 201.

- Identify the jurisdiction(s) or tribe(s) that will participate in developing the plan or the planning-related activity and describe the jurisdictions;
- Provide a statement on how the overall planning effort will be coordinated;
- Describe the process for plan development or the planning-related activity, clearly demonstrating what applicable regulatory requirements will be met. Document in detail the activities the jurisdiction(s) will complete to develop the plan or the planning related activity, including public involvement, identification of hazards, development of a comprehensive risk/vulnerability assessment, identification of mitigation goals and strategies, and plan implementation, and describe how these activities relate to the cost estimate; and
- For new or updated hazard mitigation plans, describe the plan adoption process for the jurisdiction(s) or tribe(s) to ensure sufficient time to complete the plan, as well as time for State and FEMA review and, if necessary, time to complete any required revisions and to formally adopt the plan.

Additionally, for an update to a hazard mitigation plan, the SOW must include the reasons for the update and describe the process for plan update, clearly demonstrating that applicable regulatory requirements will be met. Also, provide a statement on how the overall planning effort will be coordinated.

If available, the subapplication also should include a copy of the plan review document (i.e., review tool or crosswalk) from the FEMA approval of the previous plan.

For planning related activities, the SOW should describe the:

- Final product(s);
- Process and level of effort to develop the final product(s), including key milestones (such as meetings; data research, collection, and analysis; drafts; and outreach); and
- Process to incorporate the product(s) or results into the update of the next mitigation plan.

Applicants/subapplicants are advised to make use of already developed materials and to seek available resources when developing a new mitigation plan or updating a mitigation plan. For links to mitigation planning and risk assessment resources, see Part X, C.2.

H.3 Management Costs Scope of Work

For the Applicant management cost subapplication, the SOW must describe the activities and specific tasks related to developing subapplications, and implementing as well as closing subgrants. The SOW should state whether the work will be conducted by the Applicant's staff or by contractor staff.

H.4 Schedule

Subapplications should include a work schedule for all project tasks identified in the SOW, such as data collection, site survey, permitting and inspections, site preparation, and construction. The schedule should identify timelines for accomplishing significant milestones, including anticipated quarterly usage of Federal funds. Proposed schedules for individual subapplications should not exceed 36 months (see Part VII, B.4).

For planning subapplications, the work schedule must allow sufficient time for State and FEMA reviews; preparation of required revisions, if needed; formal adoption by the jurisdiction(s); and FEMA approval.

H.5 Cost Estimate

COST ESTIMATES

FEMA will accept cost estimates used to support budgets and BCAs if the Applicant or subapplicant certifies that the estimates are based on nationally published or local cost-estimating guides.

The cost estimate describes all of the subapplicant's anticipated costs associated with the SOW for the proposed mitigation activity. Cost estimates must include detailed estimates of various cost item categories, such as labor, materials, equipment, and subcontractor costs. No lump-sum estimates will be accepted. The cost estimate must identify the cost categories and value for which anticipated cash and third-party in-kind contributions will be used to meet the non-Federal cost share.

FEMA will accept cost estimates that the Applicant or subapplicant certifies were established using nationally published or local cost estimating guides to support the budget and BCA. The Applicant or subapplicant must include appropriate documentation in the application or subapplication that demonstrates a national published standard or local cost estimating guide was used. If a cost estimate is based on a contractor's bid or historic costs from another activity, detailed documentation must be provided. The applicant must document actual costs for eligible activities at closeout. Separate cost line items in a subapplication are required to ensure that cost thresholds are not exceeded. As applicable, the following line items must be listed separately in the budget:

- Pre-award costs;
- Subapplicant management costs for the PDM Program and FMA, and HMGP if the Grantee has agreed to pass through funds to the subgrantee; and

- Information dissemination costs (for the PDM Program).

Additionally, the cost estimate should indicate items for which the cost may change, such as a price quoted by a contractor that is only valid for 1 year. Neither contingency nor escalation costs are permitted as individual line items in the cost estimate.

H.5.1 Project Cost Estimate

In addition to the items described in Part V, H.5, the project cost estimate must include a line-item breakdown of all anticipated costs including, as applicable:

- Costs for anticipated environmental resource impact treatment or historic property treatment measures;
- Costs for engineering designs/specifications, including hydrologic and hydraulic studies/analyses required as an integral part of designing the project;
- Construction/demolition/relocation costs, such as survey, permitting, site preparation, and material/debris disposal costs; and
- All other costs required to implement the mitigation project, including any applicable project-type specific costs identified in the Addendum of this guidance.

For additional information about cost estimates for property acquisition and structure demolition or relocation projects, see Addendum, Parts A.5 and A.6; for wildfire mitigation projects, see Addendum, Part B.3; for safe room construction projects, see Addendum, Part C.3.4; for mitigation reconstruction see projects Addendum, Parts D.2 and D.5; and for structure elevation projects, see Addendum, Part E.3.

H.5.2 Hazard Mitigation Planning Cost Estimate

In addition to the items described in Part V, H.5, the hazard mitigation planning cost estimate must include a line-item breakdown of costs associated with all elements described in the SOW, such as:

- Meetings and public outreach, including the costs associated with what is necessary and reasonable;
- Data research and collection, including eligible mapping activities or risk assessment;
- Plan drafting, review, and final production;
- Information dissemination activities, including printing and advertising; and
- Professional development training, tuition, and travel for the purpose of carrying out the planning SOW.

H.5.3 Management Cost Estimate

Applicants and subapplicants requesting management costs should provide supporting documentation and include these costs as separate line items in the cost estimate portion of the application or subapplication.

A narrative must accompany a request for management costs. The narrative should describe the activities, personnel requirements, and other costs for which the Grantee and/or subgrantee will use management cost funding. It should provide information on how the funds will be expended and monitored and show that sufficient funds will be available for closeout.

For more information on HMGP management costs, see Part IX, A.4.

I. Cost-effectiveness

FEMA will only consider applications that use a FEMA-approved methodology to demonstrate cost-effectiveness. This is typically demonstrated by the calculation of a BCR. Projects for which benefits exceed costs are generally considered cost-effective. Benefits may include avoided damages, loss of function, and displacement.

FEMA provides BCA software that allows Applicants to calculate a project BCR. Written materials and training are also available. The FEMA BCA software utilizes the OMB Circular A-94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*. FEMA requires using approved BCA software (version 4.5.5 or greater) to help ensure that calculations are consistent with OMB Circular A-94. The current software is available at the FEMA Regional Office or from the BCA Technical Assistance Helpline.

If FEMA standard values are used, then no additional documentation is required. If non-standard values are used, then documentation is required. Documentation must be accurate and sufficiently detailed for the analysis to be validated. FEMA recommends that supporting documentation be obtained from credible sources, such as a Flood Insurance Study.

Data associated with the various methodologies for analyzing cost-effectiveness are available from the appropriate FEMA Regional Office (see Part VIII) or the BCA Technical Assistance Helpline.

I.1 Substantial Damage Waiver

An expedited cost-effectiveness methodology is available for property acquisition projects when certain conditions are met. Structures that are declared Substantially Damaged as a result of flooding and located in a riverine SFHA on a

SUBSTANTIAL DAMAGE WAIVER EXTENDED TO ALL HMA PROGRAMS

An expedited cost-effectiveness analysis methodology is available for property acquisition projects when certain conditions are met.

preliminary or effective FIRM are considered cost-effective for acquisition projects. If this methodology is used, the project application should include a certification that the structures meet these conditions.

I.2 Aggregation

An evaluation of the cost-effectiveness of a project should include all activities included within the SOW. This may include activities in multiple jurisdictions. It may also include combining benefits from multiple activities and multiple hazards, such as wind and flood, if it is a part of the same project.

AGGREGATION

It is appropriate to aggregate benefits from multiple activities and multiple jurisdictions if part of the same project.

I.3 5 Percent Initiative

For **5 Percent Initiative** subapplications for HMGP funding, a narrative description of the project's cost-effectiveness must be provided. For more information on the 5 Percent Initiative, see Part IX, A.10.

I.4 Pre-calculated Benefits (Safe rooms)

For **Safe Room Construction** projects, an expedited cost-effectiveness methodology is available that identifies the benefits associated with certain types of safe rooms (see Appendix F). If this methodology is used, the submitted project application should include a copy of the data relevant to the project location.

I.5 Greatest Savings to the Fund

FEMA also allows for the use of the GSTF data and methodology to demonstrate cost-effectiveness for properties included in mitigation projects under HMA. Subapplicants are not required to use this methodology when submitting projects for funding and may utilize the current applicable BCA version (4.5.5 or greater) methodology.

GREATEST SAVINGS TO THE FUND METHODOLOGY

GSTF can be used to demonstrate cost-effectiveness of a project under all HMA programs.

I.6 Environmental Benefits

FEMA has identified and quantified environmental benefits for mitigation activities. Incorporating environmental benefits into the overall quantification of benefits for acquisition-related activities supports

INCLUSION OF ENVIRONMENTAL BENEFITS INTO THE BCA TOOLKIT

Green open space and riparian benefits have been identified and quantified for acquisition projects. The BCR for an acquisition project must be 0.75 before the environmental benefit can be incorporated.

FIMA's mission of risk reduction, environmental compliance, and preservation of the natural and beneficial functions of the floodplain.

Specifically, FEMA developed economic values for green open space and riparian areas. FEMA will be incorporating the environmental benefits for green open space and riparian areas into the BCA toolkit for acquisition projects.

The economic value for green open space is $7,853 per acre per year. For riparian areas, the economic value is $37,493 per acre per year. When incorporating these values into FEMA's BCA, the yearly benefits accrue over the 100-year project useful life and are discounted at 7 percent per year to meet OMB requirements. Table 4 provides the green open space and riparian benefits per acre per year and per square foot.

Table 4: Green Open Space and Riparian Benefits

Land Use	Total Estimated Benefits (per acre per year)	Total Estimated Benefits[(1)] (per square foot)
Green Open Space	$7,853	$2.57
Riparian	$37,493	$12.29

[(1)] Projected for 100 years with 7 percent discount rate

For an acquisition project, the BCR for a project must be 0.75 before incorporating the environmental benefit. This ensures projects funded by HMA are primarily associated with risk reduction activities. Once a project's BCR reaches 0.75, the appropriate environmental benefit can be included for the individual properties.

I.7 Benefit-Cost Analysis Resources

Other methods to demonstrate cost-effectiveness may be used when they address a non-correctable flaw in the FEMA-approved methodologies or propose a new approach that is unavailable using current tools. New methodologies may be used only if FEMA approves the methodology before application submission. For more information on resources, see Part X, C.3.

BCA Helpline
Telephone: (855) 540-6744
Email: bchelpline@fema.dhs.gov

BCA Policies, Overview, and Software
http://www.fema.gov/benefit-cost-analysis

J. Feasibility and Effectiveness Documentation

FEMA will use the information provided in the subapplication, including the SOW, the cost estimate, and supporting documentation to determine the feasibility and effectiveness of the

proposed mitigation activity. FEMA accepts the engineering design for a project if a registered Professional Engineer (or other design professional) certifies that the design meets the appropriate code or industry design and construction standards. FEMA will accept the certified engineering design in lieu of a comprehensive technical feasibility review. If accepted codes/standards are used, no additional documentation is required. See Part X, Appendix D (Referenced Regulations, Statutes, Directives, and Guidance) for examples of codes and standards used for various projects types.

If an alternative design is proposed the application/subapplication should contain:

- Applicable building code/edition or engineering standard used;
- Level of protection provided by the proposed project and description of how the proposed activity will mitigate future losses;
- For the retrofit of existing buildings or infrastructure protection projects, an assessment of the vulnerabilities of the existing building;
- Any remaining risk to the structure after project implementation; and
- Proposed schematic drawings or designs (as applicable).

Project subapplications that do not include appropriate documentation to support the determination of feasibility and effectiveness may be removed from consideration. Upon request, FEMA will provide technical assistance regarding engineering documentation.

For structure elevation and dry floodproofing activities, a statement certifying that the project will be designed in conformance with ASCE/SEI 24-05 will assist in satisfying the feasibility and effectiveness requirement.

K. Environmental Planning and Historic Preservation Documentation

The Applicant and subapplicant should ensure that the project SOW takes into account all potential EHP compliance issues. When completing the subapplication, the Applicant/subapplicant must answer a series of EHP review questions and provide information about potential impacts on environmental resources and cultural resources (if applicable) in the project area. For additional information, see Part X, Appendix I (EHP Checklist) and Part X, Appendix J (8-Step Decision Making Process for Floodplain Considerations), and Part X, Appendix K (Section 106 Process under the National Historic Preservation Act).

If potential impacts are identified through the responses to these EHP review questions, the Applicant/subapplicant must provide additional information, (as applicable), such as:

- The property address, original date of construction, and two color photographs for any buildings, structures, objects, or manmade sites/landscapes features that are 50 years or

more in age. At least one of the two photographs provided of a building should be the front or primary façade showing the elevation;

- Any identified federally listed threatened or endangered species and/or designated critical habitat in the project area;
- Vegetation, including amount (area), type, and extent to be removed or affected;
- Identification of all surface waters in the project area regardless of drainage area, size, or perceived hazard level. Information about surface waters should include dimensions, proximity of the project activity to the water, and the expected and possible impacts of the project upon surface waters, if any; and
- A description of any adverse effects on low income or minority populations in the project area.

Applicants seeking to determine whether there are any EHP issues associated with the proposed project should consult the HMA EHP Resources At-a-Glance Guide, located at http://www.fema.gov/library/viewRecord.do?id=6976 and the HMA EHP at a Glance at http://www.fema.gov/library/viewRecord.do?id=5904. This Guide also provides key contacts, Web sites, and search engines to assist in early identification of EHP issues and to facilitate coordination with the appropriate State and Federal agencies.

If EHP issues are identified, the Applicant/subapplicant should initiate coordination with the relevant State and Federal agencies as early in the project planning stages as possible to address any potential EHP compliance issues associated with proposed projects. This coordination does not substitute, and shall not be interpreted to mean, that formal consultation has occurred between FEMA and the applicable resource agency.

Additional EHP compliance review activities may be necessary to facilitate project approval, such as environmental impact statements, environmental assessments, Phase I environmental site assessments, biological assessments, archeological or standing structures surveys and documentation, wetlands delineations, and air quality conformity analysis or determinations.

If FEMA or the Applicant/subapplicant identifies any potential impacts through the EHP review process described above, the following requirements must be completed before a grant award may be made:

- Evaluate any potential effects to environmental and historic resources and provide the required information and documentation to identify the impact on these resources;
- Complete an evaluation of alternatives to the proposed action that will avoid or minimize these impacts, including consideration of the environmental impact of taking no action;
- Complete any required consultation and/or coordination with the appropriate parties (e.g., the State Historic Preservation Officer, the U.S. Fish and Wildlife Service, the National

Marine Fisheries Service) to evaluate potential effects of the proposed project and to identify any measures necessary to avoid or minimize these effects;

- Demonstrate that the project will comply with all environmental laws and regulations; and
- Make certain that the costs of any measures to treat adverse effects are realistically reflected in the project budget estimate.

Applicants/Grantees may incur costs for significant EHP compliance review activities and/or EHP mitigation measures. FEMA will consider the following factors to determine whether to reimburse costs:

- Nature of the analysis or study required (e.g., environmental impact statement);
- Costs of EHP activities compared to project costs;
- Complexity of the proposed project; and
- Nature and extent of potential adverse impacts to environmental and/or historic resources.

Applicants should consider potential EHP costs during application development and submission and should seek to avoid activities that may negatively impact EHP resources.

FEMA may remove projects from consideration for full approval and/or funding when EHP compliance review activities are not progressing and the Applicant/Grantee has not dedicated resources and/or provided required documentation in a timely manner.

For additional information on required EHP documentation, see Part X, C.5.

PART VI. APPLICATION REVIEW INFORMATION

Part VI provides information about the review process so that Applicants and subapplicants can prepare applications that meet FEMA review criteria. During an application review, FEMA may request additional information or documentation from Applicants.

A. Review Criteria

While review processes vary somewhat among HMA programs, FEMA reviews all applications for:

- Application eligibility;
- Cost-effectiveness;
- Feasibility and effectiveness; and
- EHP compliance.

A.1 Application Review

FEMA will review all applications and subapplications for eligibility and completeness. Applications and subapplications that do not satisfy the eligibility and completeness requirements will not be funded. The eligibility and completeness requirements are outlined in Parts IV and V.

A.2 Cost-effectiveness Review

FEMA will review the documentation provided in support of the subapplication cost-effectiveness to validate the accuracy and credibility of data and ensure the appropriate use of the cost-effectiveness methodologies. Only subapplications meeting HMA cost-effectiveness requirements will be considered eligible.

A.3 Feasibility and Effectiveness Review

FEMA will use the information provided in the subapplication, including the SOW and project cost estimate sections, as well as any supporting documentation to determine the feasibility and effectiveness of the mitigation activity.

For project subapplications, FEMA will consider the following criteria in reviewing feasibility and effectiveness:

- Conformance to accepted engineering practices, established codes, standards, modeling techniques, or best practices, as well as work schedule;

- Effectiveness in mitigating the risks of the hazard(s); and
- Reasonableness of the cost estimate.

A.4 Environmental Planning and Historic Preservation Review

Applicants and subapplicants are required to provide information to support the FEMA EHP compliance review. FEMA, in consultation with appropriate Federal and State resource agencies, will use the information provided in the application/subapplication, including the SOW, project cost estimate, as well as any supporting documentation, to ensure compliance with EHP requirements.

As part of the EHP review process, FEMA will assess compliance with applicable requirements including NEPA, NHPA, ESA, CBRA, EO 11988 (*Floodplain Management*), EO 11990 (*Protection of Wetlands*), and EO 12898 (*Environmental Justice*). Funds will not be awarded, and the Applicant/subapplicant may not initiate the project, other than planning or preparatory work not involving construction or alteration of the land, until FEMA has completed this review and it is demonstrated that the project, when completed, will comply with all environmental laws and regulations.

A.5 HMA Efficiencies

FEMA accepts the engineering design for a project if a registered Professional Engineer (or other design professional) certifies that the design meets the appropriate code, or industry design and construction standards. FEMA will accept the certified engineering design in lieu of the FEMA comprehensive technical feasibility review. For example, if a registered Professional Engineer certifies that design of a community safe room project meets or exceeds FEMA P-361 standards for design and construction, FEMA will not perform a detailed design review to ensure compliance with the standard.

HMA EFFICIENCIES

FEMA provides opportunities to streamline application requirements by allowing Applicants to use:

- FEMA technical publications
- National standards and codes
- Design criteria such as ASCE criteria
- Pre-calculated benefits

Additionally, in the development of applications and subapplications, the following resources and approaches should be considered as they will promote efficiencies in FEMA review and approval.

A.5.1 Safe Room Projects

Applicants must document that the proposed safe room project is consistent with the requirements of FEMA P-320 or FEMA P-361. Applicants must use the expedited HMGP application for

PRE-CALCULATED BENEFITS FOR SAFE ROOMS UNDER HMGP

If the Applicant submits a residential safe room project with costs that are less than the pre-calculated benefit, then FEMA will consider the project to be cost effective.

Residential Safe Rooms to apply pre-calculated benefits under HMGP (see Part X, Appendix F). This pre-calculated benefit provides standardized benefits associated with residential safe rooms so that individual BCAs are not required as long as the project costs do not exceed the benefits.

A.5.2 Wind Retrofit Projects

FEMA P-804 provides design guidance for wind-retrofit projects on existing one- and two-family dwellings in coastal areas. Mitigation projects funded under HMGP and the PDM Program are required to be implemented in conformance with FEMA-804. If a subapplication complies with FEMA P-804, no additional technical information is required in the subapplication.

A.5.3 Certain Flood Mitigation Projects

FEMA recommends HMA flood mitigation projects be designed and constructed in conformance with the design criteria of ASCE/SEI 24-05 as a minimum standard. FEMA will consider a project application utilizing ASCE/SEI 24-05 as being consistent with HMA engineering feasibility and effectiveness requirements. Project applications that do not use ASCE/SEI 24-05 must submit documentation to demonstrate the project meets the engineering feasibility and effectiveness requirement.

B. Review and Selection Process

B.1 Technical Review

FEMA will conduct a technical review for all project subapplications that are forwarded from the initial FEMA review, for the following:

- Cost-effectiveness;
- Feasibility and effectiveness; and
- EHP compliance.

B.2 Requests for Information

FEMA may request additional information or documentation from Applicants to resolve outstanding administrative or procedural requirements. RFIs can take various forms, including email requests, documented telephone calls, or formal letters. Failure to provide requested information by the deadline identified in the request may result in denial, because eligibility cannot be determined. Technical assistance is available, if requested.

Comments may be provided by FEMA on subapplications determined ineligible so that subapplicants can modify their subapplication for resubmission in future grant cycles.

B.2.1 Request for Information Timelines

REQUEST FOR INFORMATION

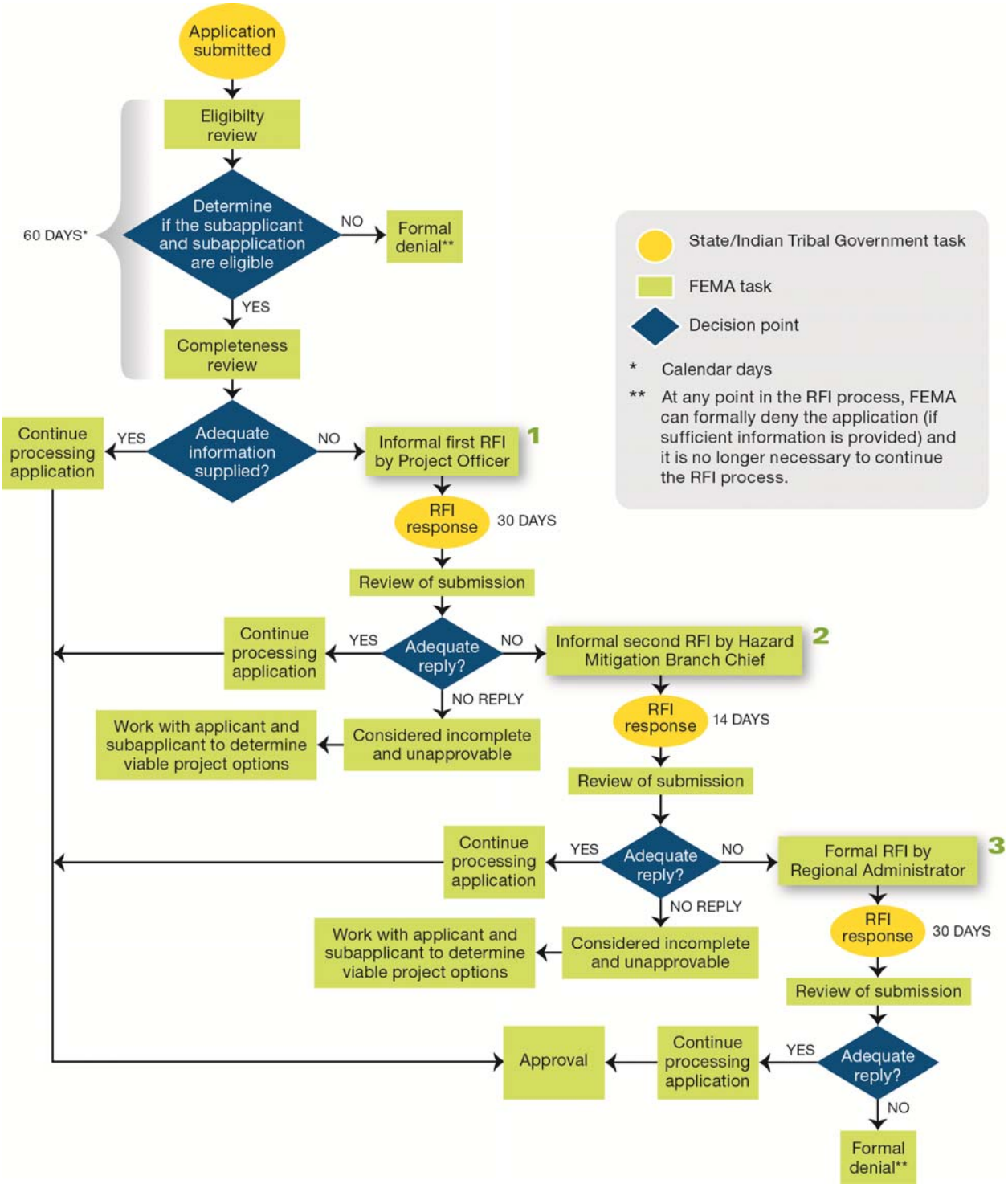
If a subapplication does not meet the administrative or procedural information requirements, FEMA may request additional information in the form of an RFI. If the Regional Administrator does not receive the requested information by the final deadline, the project will be denied.

Table 5 provides timelines for stepwise information requests and assistance offers. Figure 4 outlines the RFI process and assigned responsible party. The RFI process involves an eligibility review to determine if the subapplication and subapplicant are eligible, then a completeness review is conducted to determine if a complete subapplication was submitted. If the subapplication is determined to be incomplete, there are three steps FEMA will take to request further information from the subapplicant. At each step throughout the RFI process, FEMA will work with the Applicant and subapplicant to determine available options to develop a viable project. Some options include technical assistance from FEMA or implementing a phased project. If the requested information is not received by the Regional Administrator before the deadline, the project will be denied as FEMA will have no basis to make an eligibility determination. Upon receipt of the requested information and confirmation it adequately addresses the RFI, FEMA will proceed with making a determination of project eligibility.

Table 5: RFI Timelines

Request Format	Timeline
Informal – First Request	The Project Officer requests additional information. If the requested information is not received within 30 calendar days from the date of the request, FEMA will consider the application to be incomplete and not approvable. FEMA may provide technical assistance if requested, unless the HMA program is competitive. The Applicant may consider phasing the project if it is feasible to do so.
Informal – Second Request	The Hazard Mitigation Branch Chief requests additional information. If the requested information is not received within 14 calendar days from the date of the request, FEMA will consider the application to be incomplete and not approvable. FEMA may provide technical assistance if requested, unless the HMA program is competitive. FEMA, Grantee, and Applicant staff should meet to resolve any open items within the allotted timeframe, if necessary.
Formal	The Regional Administrator requests additional information and will document previous requests. If the requested information is not received within 30 calendar days from the date of the request, FEMA will consider the application to be incomplete and not approvable.
Formal	If the Regional Administrator does not receive the requested information within 30 calendar days, he or she will determine the requested project application be ineligible for funding under HMGP. The second formal letter is a denial.

Figure 4: RFI Flowchart



The Regional Administrator may choose to allow more time, with justification. FEMA encourages Applicants to coordinate early with the State or eligible Indian Tribal government to identify potential technical assistance. If technical data is not readily available, the subapplicant should coordinate with Grantee to determine whether the project should be phased in order to develop required data. States or Indian Tribal governments with Grantee status could contact the FEMA regional office to request technical assistance, relevant training or other needed support.

B.3 Selection

FEMA selects eligible subapplications based on priorities set by the Applicant or program priorities, if applicable. For more information for the PDM Program, see Part IX, B.5, for FMA, see Part IX, C.4.

B.4 Notification

For the **PDM Program** and **FMA**, during the review and selection process FEMA will notify Applicants as to whether subapplications have been identified for further review, determined eligible but will not be funded, or determined ineligible for funding. A determination of "identified for further review" is not notification or guarantee of an award.

FEMA will work with Applicants on subapplications identified for further review. Applicants will be notified of activities required, such as an EHP review; verification of subapplicant commitments; verification of hazard mitigation plan status; and of the date by which all required activities must be completed.

Comments may be provided by FEMA on subapplications determined ineligible so that subapplicants can modify their subapplication for resubmission in future grant cycles.

The PDM Program and FMA have specific ranking criteria in addition to those described in this part. For information about ranking criteria and on the review and selection process for the PDM Program, see Part IX, B.4; and FMA, see Part IX, C.4.

B.5 Reconsideration Process

For the FMA and PDM programs, FEMA will reconsider its determination of a subapplication evaluated on a competitive basis only when there is an indication of a substantive technical or procedural error by FEMA. Only information provided in the submitted subapplication is considered supporting documentation for the request for reconsideration. The amount of funding available for Applicant management costs will not be reconsidered.

FEMA may evaluate subapplications on a competitive basis when:

- Submitted subapplications exceed available funds;
- Law or regulation requires the administration of a competitive program; or

- Circumstances merit the administration of funds in a competitive manner.

Applicants must send requests for reconsideration based upon technical or procedural error to FEMA within the time specified in the notification letter to the Applicant. A FEMA decision to uphold or overturn a decision regarding a subapplication evaluated on a competitive basis is final.

B.5.1 Consideration of Additional Information

FEMA may, at its discretion, notify Applicants that it will consider additional information in support of a subapplication.

FEMA will accept supplemental or corrected data in support of a subapplication when:

- Submitted subapplications do not exhaust available program funds;
- Law or regulation do not require the administration of a competitive program; or
- When determined appropriate by the program office.

Instructions for submitting supplemental data will be provided within the FEMA notification letter, if applicable.

For information on appeal and administration of HMGP subapplications, see Part IX, A.11.

PART VII. AWARD ADMINISTRATION INFORMATION

Part VII describes how successful Applicants will receive award information. Additionally, this part describes administrative requirements from the time an award is made through closeout and the maintenance actions that must occur after an activity is complete.

A. Notice of Award

FEMA will provide an award package to the Applicant for successful subapplications. Subapplicants will receive notice of award from the Applicant.

Award packages for the **PDM Program** and **FMA** include an award letter, FEMA Form 76-10A, *Obligating Document for Awards/Amendments*, and Articles of Agreement, EHP, and/or other conditions that must be signed by the Applicant in *e*Grants and returned to FEMA for approval before funds can be obligated.

For **HMGP**, award packages for subgrants include an approval letter, an obligation document, and EHP and/or other conditions.

When the Applicant or subapplicant accepts an award, they are denoted as Grantee and subgrantee, respectively. The Grantee and subgrantee agree to abide by the grant award terms and conditions as set forth in the Articles of Agreement or the FEMA-State Agreement.

B. Administrative and National Policy Requirements

B.1 Cost-Share Documentation

Requirements for cash and third-party in-kind contributions can be found in 44 CFR Section 13.24. Third-party in-kind and cash contributions are only allowable for eligible program costs. The following documentation is required for cash and third-party in-kind contributions:

- Record of donor;
- Dates of donation;
- Rates for staffing, equipment or usage, supplies, etc.;
- Amounts of donation or value of donation; and
- Deposit slips for cash contributions.

Such documentation must be kept on file by the Grantee and subgrantee.

B.2 Scope of Work Changes

SCOPE CHANGE

Grantees and subgrantees must request FEMA's approval for a change in scope after the grant has been awarded. The change must be consistent with the intent of the program. Requests must be made in writing and demonstrate the need for a change.

In accordance with 44 CFR Section 13.30, Grantees must obtain FEMA's prior approval whenever there is a proposed SOW change. Requests for changes to the SOW after award are permissible as long as they are consistent with the intent of the program. Requests must be made in writing and demonstrate the need for the scope change. The request also should include a revised scope, schedule, and budget. Any SOW changes are subject to all programmatic requirements. All approvals will be at FEMA's discretion.

B.3 Budget Changes

BUDGET CHANGE

In limited cases, Grantees and subgrantees are permitted to make adjustments within the approved direct cost category to meet unanticipated requirements.

Grantees and subgrantees are permitted to rebudget within the approved direct cost budget to meet unanticipated requirements and may make limited program changes to the approved budget. For more information on direct cost categories, please see OMB Circular A-87 and 2 CFR Part 225, *Cost Principles for State, Local, and Indian Tribal Governments*. Unless expressly waived by FEMA, the following types of post-award changes to budgets will require the prior written approval of FEMA:

B.3.1 Non-construction Projects

- Non-construction subgrant adjustments of more than 10 percent in any direct cost categories; and
- Any changes that would result in additional funding to the grant.

B.3.2 Construction Projects

- All construction cost adjustments that lead to the need for additional funds.

When budget changes are made, all programmatic requirements continue to apply. Additional information regarding budget adjustments and revisions can be found in 44 CFR Section 13.30.

B.3.3 Cost Overruns and Underruns

A cost overrun or underrun can result from a scope, schedule, or budget change.

Grantees must notify FEMA prior to redirecting funds from an underrun to other approved subgrants for which an overrun has been requested. The subgrant must continue to meet programmatic eligibility requirements including cost share.

B.4 Program Period of Performance

The POP is the period during which the Grantee is expected to complete all grant activities and to incur costs. The POP for the Program begins with the opening of the application period and ends no later than 36 months from the close of the application period.

PERIOD OF PERFORMANCE

With the publication of this HMA Unified Guidance, the POP for the Program begins with opening of the application period and ends no later than 36 months from the close of the application period.

FEMA will not establish activity completion timelines for individual subgrants. Grantees are responsible for ensuring that all approved activities are completed by the end of the grant POP.

B.4.1 Extensions

Requests for extensions to a grant POP will be evaluated by FEMA but will not be approved automatically. The Regional Administrator can extend the POP for up to 12 months with justification. All requests to extend the grant POP beyond 12 months from the original grant POP end date must be approved by FEMA Headquarters.

All extension requests must be submitted to FEMA at least 60 days prior to the expiration of the grant POP and justifications must be submitted in writing. The justification must include:

- Verification that progress has been made as described in quarterly reports;
- Reason(s) for delay;
- Current status of the activity/activities;
- Current POP termination date and new projected completion date;
- Remaining available funds, both Federal and non-Federal;
- Budget outlining how remaining Federal and non-Federal funds will be expended; and
- Plan for completion, including updated schedule.

B.5 Requests for Advances and Reimbursements

The Grantee's responsibility of an HMA grant is to process requests for advances and reimbursements of funds. The Grantee should establish accounting procedures to disburse money to subgrantees in a timely manner and should provide to subgrantees a POC for information on requesting and receiving the funds, records that must be maintained, forms to be used, and timelines for requesting the funds.

For the **PDM Program** and **FMA**, Payment and Reporting System (PARS) is used to transfer funds between FEMA and Grantees. Grantees shall submit to FEMA a copy of the Standard Form (SF-425).

For **HMGP**, the Department of Health and Human Services, Division of Payment Management, Payment Management System, SMARTLINK, is used to transfer funds between FEMA and Grantees. Grantees shall submit to FEMA a copy of the SF-425.

B.5.1 Strategic Funds Management

In accordance with the needs of the Disaster Relief Fund as well as Grantee priorities and ability to execute the project in a timely manner, FEMA may elect to provide funding for certain projects in incremental amounts, including advance payments (Strategic Funds Management or SFM). SFM allows FEMA to schedule obligations to be available when the State is ready to execute an HMGP subgrant or components of the subgrant. SFM also allows for incremental obligations as needed within the 3-year POP requirements to support project activities as described in the project work schedule.

SFM does not allow funds to be advanced for an HMGP project that is not approved and eligible.

DIFFERENCE BETWEEN STRATEGIC FUNDS MANAGEMENT, PHASED PROJECTS, PRE-AWARD COSTS, AND ADVANCE ASSISTANCE

SFM is designed to provide incremental funding for eligible activities when the funds are required.

Phased projects are those that receive funding for only certain complex activities that are approved to allow the Applicant to develop a full work scope/data package to support the full project description.

Pre-award costs are eligible costs incurred by the Applicant in advance of receiving funds. These activities are reimbursed when the project is approved and funded.

Advance Assistance provides States and Indian Tribal governments with resources to develop mitigation strategies and obtain data to prioritize, select, and develop complete HMGP applications in a timely manner.

B.6 Program Income

FEMA encourages Grantees and subgrantees to generate program income to help defray program costs. Program income is gross income received by the Grantee or subgrantee directly generated by a grant-supported activity or earned only as a result of the grant during the grant POP. Program income may be derived from use or rental of real or personal property acquired with grant funds, and sale of commodities or items fabricated under the grant award. Subgrantees deduct this income from total project costs as specified in 44 CFR Section 13.25(g)(1). This income may not count towards the non-Federal cost share.

B.7 Federal Income Tax on Mitigation Project Funds

FEMA mitigation payments that benefit property owners through the mitigation of their structures are not subject to Federal income taxation. FEMA mitigation payments to acquire a property will be treated as an involuntary conversion for tax purposes. These tax relief measures

are effective for such payments made in all prior years. For more information, property owners should consult the Internal Revenue Service (IRS) office or a tax advisor.

B.8 Noncompliance

If a Grantee or subgrantee materially fails to comply with any term of an award, whether stated in a Federal statute or regulation, an assurance, a State Administrative Plan or application, a notice of award, or elsewhere, including in this guidance, FEMA may take one or more of the following actions, as appropriate:

- Temporarily withhold cash payments pending correction of the deficiency by the Grantee or subgrantee;
- Disallow (that is, deny both use of funds and matching credit for) all or part of the cost of the activity or action not in compliance;
- Wholly or partly suspend or terminate the current award for the Grantee's or subgrantee's HMA grant program(s);
- Withhold further awards for HMA grant program(s); or
- Take other remedies that may be legally available.

Additional details can be found in 44 CFR Section 13.43.

C. Reporting Requirements

Grantees and subgrantees must maintain records of work and expenditures. Grantees submit quarterly financial and performance reports to FEMA on January 30, April 30, July 30, and October 30. The first quarterly reports are due within 30 days of the end of the first Federal quarter following the initial grant award. FEMA may waive the initial reports. The Grantee shall submit quarterly financial status and performance reports thereafter until the grant ends. Failure to submit financial and performance reports to FEMA in a timely manner may result in an inability to access grant funds until proper reports are received by FEMA. Grantees are encouraged to contact FEMA should this occur.

The **PDM Program** and **FMA** quarterly reports can be submitted via *e*Grants. For **HMGP**, quarterly performance reports can be submitted via NEMIS or a hard copy to the Region. PDM Program and FMA quarterly financial reports must be submitted via PARS.

C.1 Federal Financial Reports

Grantees shall submit a quarterly Federal Financial Report (FFR). Obligations and expenditures must be reported on a quarterly basis through the FFR (SF-425), which is due to FEMA within 30 days of the end of each calendar quarter (e.g., for the quarter ending March 31, the FFR is due no later than April 30). A report must be submitted for every quarter of the POP, including

partial calendar quarters, as well as for periods where no grant activity occurs. Future awards and fund drawdowns may be withheld if these reports are delinquent. The final FFR is due 90 days after the end date of the POP.

OMB has directed that the FFR (SF-425) replace the use of the SF-269, SF-269A, SF-272, and SF-272A. The SF-425 consolidates the Federal Status Report and the Federal Cash Transaction Report into a single report. The SF-425 is intended to provide Federal agencies and grant recipients with a standard format and consistent reporting requirements.

Reporting periods and due dates:

- October 1 – December 31; Due January 30
- January 1 – March 31; Due April 30
- April 1 – June 30; Due July 30
- July 1 – September 30; Due October 30

FEMA may suspend drawdowns from SMARTLINK or PARS if quarterly financial reports are not submitted on time.

C.2 Performance Reports

The Grantee shall submit a quarterly performance report for each grant award. Performance reports should include:

- Reporting period, date of report, and Grantee POC name and contact information;
- Project identification information, including FEMA project number (including disaster number and declaration date for the HMGP), subgrantee, and project type using standard *e*Grants/NEMIS project type codes;
- Significant activities and developments that have occurred or have shown progress during the quarter, including a comparison of actual accomplishments to the work schedule objectives established in the subgrant;
- Percent completion and whether completion of work is on schedule; a discussion of any problems, delays, or adverse conditions that will impair the ability to meet the timelines stated in the subgrant; and anticipated completion date;
- Status of costs, including whether the costs are: (1) unchanged, (2) overrun, or (3) underrun. If there is a change in cost status, the report should include a narrative describing the change. Also, include amount dispersed to subgrantee by activity;
- A statement of whether a request to extend the grant POP is anticipated;
- Incremental funding amounts (SFM) and progress completed;

- For acquisition projects, the Grantee must notify FEMA on the current status of each property for which settlement was completed in that quarter; and
- FEMA may require additional information as needed to assess the progress of a grant.

FEMA may suspend drawdowns from SMARTLINK or PARS if quarterly performance reports are not submitted on time.

C.3 Final Reports

The Grantee shall submit a Final SF-425 and Performance Report no later than 90 days after the end date of the POP, per 44 CFR Section 13.50.

D. Closeout

D.1 Subgrant Closeout

Upon subgrant completion, the Grantee must ensure that:

- Each subgrant has been completed in compliance with the approved SOW. The Grantee must conduct a site visit or collect photographs for a project subgrant to ensure the approved SOW was completed;
- Each subgrant has been completed in compliance with all environmental mitigation conditions attached to it;
- Actual expenditures have been documented and are consistent with the SF-424A or SF-424C;
- All program income has been deducted from total project costs as specified in 44 CFR Section 13.25(g)(1);
- All project work was performed in accordance with all required permits and applicable building codes as modified or protected by the approved project;
- For projects involving an insurable facility, the required hazard insurance (e.g., NFIP) has been secured;
- Geospatial coordinates, in the form of latitude and longitude with an accuracy of +/- 20 meters (64 feet), have been provided for the project. For minor localized flood reduction, hazardous fuels reduction, and soil stabilization projects, an accurate recording of the official acreage, using open file formats geospatial files (i.e., shapefiles), has been submitted;
- For new or updated hazard mitigation plans, a final copy of the FEMA-approved and community-adopted plan has been submitted; and
- For planning related activities, the activity is consistent with 44 CFR Parts 201 or 206 (HMGP).

For project-specific requirements, see the Appendices and the Addendum to this HMA Unified Guidance. Grantees should close out subgrants as activities are completed. In addition, as cost underruns are identified, the Grantee should submit de-obligation requests to FEMA.

The subgrantee is required to keep records for at least 3 years from the date when the Grantee submits to FEMA the single or final expenditure report for the subgrantee in accordance with 42 U.S.C. 705 and 44 CFR Section 13.42.

For additional information about closeout for property acquisition and structure demolition or relocation projects, see Addendum, Parts A.13 and A.15. For additional information about closeout for mitigation reconstruction projects, see Addendum, Part D.9.

D.2 Grant Closeout

The Grantee has up to 90 days following the expiration of the grant POP to liquidate valid expenditures incurred during the POP. Cost underruns remaining after the post-POP liquidation period date must be reported to FEMA for de-obligation. The closeout process for the Grantee involves the following steps:

- The Grantee ensures all subgrants have been closed out as identified in Part VII, D.1;
- The Grantee reconciles/adjusts subgrant costs, ensures that non-Federal share costs are documented, and ensures that all costs submitted are eligible according to the FEMA-approved SOW;
- The Grantee receives and processes cost adjustments or returns unobligated funds to FEMA via SMARTLINK or PARS. Final payment is made to the Grantee;
- The Grantee submits a closeout letter to FEMA with supporting documentation, including:
  - Statement that SOW(s) has been completed as approved and all EHP requirements have been satisfied;
  - SF-425 (for PARS, the final SF-425 is also submitted via PARS);
  - SF-270, *Request for Advance or Reimbursement*, if applicable, or request for de-obligation of unused funds, if applicable;
  - FEMA Form 20-18, *Report on Government Property*, if applicable; and
- The Grantee notifies FEMA that the grant is ready for final closeout.

The Grantee must maintain the complete grant closeout records file for at least 3 years from the submission date of its single or last expenditure report in accordance with 44 CFR Section 13.42.

For **HMGP**, FEMA can track closeouts using the Project Closeout module in NEMIS.

D.2.1 Update of Repetitive Loss Database

Grantees with projects that mitigate a repetitive loss property, as identified by the NFIP, must update the NFIP Repetitive Loss Database as project activities are completed.

- For acquisition and demolition or relocation projects, Grantees must provide this update when there is no longer an insurable structure on the property; and
- For elevation, reconstruction, floodproofing, and minor flood control projects, Grantees must provide this update when the approved activity is complete or otherwise effective.

The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than $1,000 were paid by the NFIP within any rolling 10-year period since 1978. At least two of the claims must be more than 10 days apart but within 10 years of each other. A repetitive loss property may or may not be currently insured by the NFIP.

Please note this definition of repetitive loss property is different from the FMA definition of repetitive loss property located in Part IX, C.1.

To gain access to sensitive NFIP data, government officials are required to obtain a User Name and Password for access to Data Exchange, the Repetitive Loss Database that is managed by the NFIP Legacy Systems Contractor. Currently, only two access accounts are permitted per State and are reserved for the State Hazard Mitigation Officer (SHMO) and the State NFIP Coordinator or their designee. To obtain a User Name and Password for access to Data Exchange, send an email with your name, title, contact information, and the reason that access to Data Exchange is needed to FEMA. Once FEMA authorizes you for NFIP Legacy Systems access to Data Exchange, you will be notified via email.

To maintain accurate, up-to-date records for all repetitive loss properties mitigated as a result of HMA grant funds, FEMA requires that the Grantee submit FEMA Form AW-501, *NFIP Repetitive Loss Update Worksheet* (OMB 1660-0022). Form AW-501 must be submitted along with documentation supporting the change in the mitigated status of a structure (e.g., elevation certificate). This form must be submitted for each property mitigated with HMA grant funds prior to closeout. The AW-501 form and instructions for completing and submitting it can be found on the FEMA Web site: http://www.fema.gov/library/viewRecord.do?id=3244. Detailed AW-501 forms for individual repetitive loss properties can be obtained by accessing Data Exchange and selecting the link to AW-501 data after selecting to look up property by property locator or repetitive loss number.

States accessing NFIP data via the electronic systems (Data Exchange) are advised of, and must acknowledge, the sensitive nature of the information and the need to prevent the release of the data to unauthorized users. When the data is released to a local government by either the State or the appropriate FEMA Regional Office, the local government must be notified in writing that the records relating to individuals and individual properties are:

being made available through the FEMA routine use policy for the specific purposes of mitigation planning, research, analysis, and feasibility studies consistent with the NFIP and for uses that further the floodplain management and hazard mitigation goals of the States and FEMA.

PART VIII. FEMA CONTACTS

Part VIII identifies resources that may help Applicants and subapplicants request HMA funds.

If requested, FEMA will provide technical assistance to both Applicants and subapplicants regarding:

- General questions about the HMA programs;
- Specific questions about subapplications after the application period opens;
- Feasibility and effectiveness, cost-effectiveness, and EHP compliance during the application period; and
- The *e*Grants application processes.

For additional technical assistance resources, including HMA application and award resources, see Part X, C.7.

FEMA encourages Applicants and subapplicants to seek technical assistance early in the application period by contacting their appropriate FEMA Regional Office. Table 6 shows which States are served by each FEMA Region.

Contact information for FEMA Regional Offices is provided at http://www.fema.gov/regional-operations.

Contact information for each SHMO is provided at http://www.fema.gov/state-hazard-mitigation-officers.

Table 6: FEMA Regions

FEMA Region	Serving
I	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
II	New Jersey, New York, Puerto Rico, U.S. Virgin Islands
III	Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia
IV	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee
V	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
VI	Arkansas, Louisiana, New Mexico, Oklahoma, Texas
VII	Iowa, Kansas, Missouri, Nebraska
VIII	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming
IX	Arizona, California, Hawaii, Nevada, American Samoa, Guam, the Northern Mariana Islands
X	Alaska, Idaho, Oregon, Washington

PART IX. ADDITIONAL PROGRAM GUIDANCE

Part IX provides additional information applicable to assistance available under each particular HMA grant program. This section supplements the information provided in Parts I through VIII, and the unique project type guidance included in the Addendum. Part IX does not provide all of the information necessary to apply for funding through an HMA program and must be read in conjunction with other relevant sections of this guidance.

A. Hazard Mitigation Grant Program

Most of the information that an Applicant or subapplicant needs to apply for an HMGP award or that a Grantee or subgrantee needs to manage a HMGP award is provided in Parts I through VIII, and Part X. This section contains supplemental guidance specific to HMGP.

A.1 Grantee Request for HMGP Funds

HMGP is authorized through a Presidential major disaster declaration for activities that provide a beneficial impact to the disaster area. A Governor may request that HMGP funding be available throughout the State or only in specific jurisdictions. For information regarding the declaration process and authorization of HMGP, see 44 CFR Part 206, Subpart B, and seek assistance from the appropriate FEMA Regional Office.

The Governor's Authorized Representative (GAR) serves as the grant administrator for all funds provided under HMGP 44 CFR Section 206.438 (d). The GAR responsibilities include providing technical advice and assistance to eligible subapplicants and/or subgrantees and ensuring that all potential subapplicants are aware of available assistance for the submission of all documents necessary for grant award.

A.2 State Administrative Plan

The State Administrative Plan is a procedural guide that details how the Grantee will administer HMGP. Grantees must have a current Administrative Plan approved by FEMA before receiving HMGP funds. The State Administrative Plan may become an annex or chapter of the State's overall emergency response and operations plan or comprehensive mitigation program strategy. At a minimum, the State Administrative Plan must:

- Designate the State agency that will act as Grantee;
- Identify the SHMO;
- Identify staffing requirements and resources, including a procedure for expanding staff temporarily following a disaster, if necessary;

- Establish procedures to guide implementation activities, including Grantee management costs and distribution of subgrantee management costs; and
- Comply with 44 CFR Section 206.437.

A.2.1 Designation of Grantee and SHMO

Typically, the agency designated to act as Grantee manages the State responsibilities for Federal and State disaster assistance and is responsible for meeting the mitigation planning requirement. Although a single agency may administer the funding, the Governor may establish an interagency mitigation team to manage the State mitigation program.

The SHMO is typically responsible for managing the State's mitigation program, coordinating the mitigation team, and developing as well as implementing the hazard mitigation plan. States often rely on staff from the emergency management agency or other State agencies to augment the staff of the SHMO following a disaster.

A.2.2 Staffing Requirements and the Mitigation Team

The State Administrative Plan should identify the positions and minimum number of personnel needed to implement HMGP. Key positions may include clerical, administrative, and financial management staff; program specialists to support mitigation planning and the implementation of mitigation activities and to conduct BCAs; and environmental planners. However, the organizational structure of the staff should remain flexible as it may be augmented as needed with emergency management agency staff, staff from other State agencies, or temporary staff or contractors hired to administer HMGP effectively. The State Administrative Plan should include a procedure for expanding staff resources and using HMGP management costs.

The mitigation team may include representatives of agencies involved with emergency management, natural resources, floodplain management, environmental issues and historic and archeological preservation, soil conservation, transportation, planning and zoning, housing and economic development, building regulations, infrastructure regulations or construction, public information, insurance, regional and local government, academia, business, and non-profit organizations. With the varied backgrounds and specialized expertise of members, the team creates interagency, interdisciplinary insight regarding risks and potential solutions. The interagency aspect of the team can diffuse political pressure on the Grantee agency and increase the availability of resources. The mitigation team may support the Grantee agency by:

- Developing a comprehensive mitigation strategy;
- Supporting development and implementation of the State Mitigation Plan;
- Communicating with local governments regarding State mitigation priorities;
- Building public and business/industry support for mitigation initiatives;

- Reviewing, assigning priority, and recommending mitigation actions for implementation; and
- Seeking funding for implementation of mitigation measures.

A.2.3 Procedures to Guide Implementation Activities

The State Administrative Plan must establish procedures to:

- Identify and notify potential subapplicants of the availability of HMGP funding;
- Provide potential subapplicants information on the application process, program eligibility, and deadlines;
- Determine subapplicant eligibility;
- Provide information for environmental and floodplain management reviews in conformance with 44 CFR Parts 9 and 10;
- Process requests for advances of funds and reimbursements;
- Monitor and evaluate the progress and completion of funded mitigation activities;
- Review and approve cost overruns;
- Process appeals;
- Provide technical assistance as required to subgrantees;
- Comply with the administrative requirements of 44 CFR Parts 13 and 206;
- Comply with audit requirements of 44 CFR Section 13.26 and OMB Circular A-133; and
- Provide quarterly progress reports to FEMA on funded mitigation activities.

A.2.4 Sliding Scale

The maximum amount of HMGP funding available is calculated using a "sliding scale" formula based on a percentage of the estimated total Federal assistance under the Stafford Act, excluding administrative costs for each Presidential major disaster declaration. Applicants with a FEMA-approved State or Tribal Standard Mitigation Plan may receive:

- Up to 15 percent of the first $2 billion of the estimated aggregate amount of disaster assistance;
- Up to 10 percent for the next portion of the estimated aggregate amount more than $2 billion and up to $10 billion; and
- Up to 7.5 percent for the next portion of the estimated aggregate amount more than $10 billion and up to $35.333 billion.

Applicants with a FEMA-approved State or Indian Tribal Enhanced Mitigation Plan are eligible for HMGP funding not to exceed 20 percent of the estimated total Federal assistance under the Stafford Act, up to $35.333 billion of such assistance, excluding administrative costs authorized for the disaster.

A.2.5 Management Costs

The Grantee must amend its State Administrative Plan to include procedures for determining the reasonable amount or percentage of management costs that it will pass through to the subgrantee, as well as closeout and audit procedures before FEMA will obligate any management costs (see 44 CFR Sections 207.4(c) and 207.7(b)). The State will determine the amount, if any, of management costs it will pass through to the subgrantee. FEMA has not established any minimum for what constitutes a reasonable amount.

THE HMGP FINAL LOCK-IN

Because lock-in estimates are subject to change, FEMA will not obligate more than 75 percent of any estimate before the final lock-in is calculated.

Total State Management Cost (SMC) (4.89% of Total Available HMGP):

Prior to 12 Months:

FEMA obligates up to 75 percent of total HMGP funding separate from SMC

At 12 Months:

FEMA establishes the full HMGP ceiling amount

At 18 Months:

For a catastrophic disaster, the final lock-in amount may be adjusted upon

A.2.6 Submission and Approval Deadlines

A State may forward a new or updated State Administrative Plan to FEMA for approval at any time. A State should review and update their plan annually and must review and update it following a Presidential major disaster declaration if required to meet current policy guidance or changes to the administration of the program. If a review indicates that there will be no changes to the current State Administrative Plan, the Grantee should notify FEMA of this within 90 days of the disaster declaration.

A.3 HMGP Funding

FEMA will determine the funding it will make available for the HMGP by a lock-in, which will act as a ceiling for funds available to a Grantee, including its subgrantees. The level of HMGP funding available for a given disaster is based on a percentage of the estimated total Federal assistance under the Stafford Act, excluding administrative costs for each Presidential major disaster declaration, as described in 44 CFR Section 206.432(b) and Part III, A of this guidance.

An initial estimate will be provided within 35 days of the disaster declaration or soon thereafter, in conjunction with calculation of the preliminary lock-in amount(s) for management costs.

The 6-month estimate is no longer the floor or a guaranteed minimum funding for HMGP. The 12-month lock-in is the maximum amount available. Prior to 12 months, total obligations are

limited to not more than **75 percent** of any current estimate, without the concurrence of the Regional Administrator or Federal Coordinating Officer (FCO) with Disaster Recovery Manager authority and the Office of the Chief Financial Officer (OCFO).

FEMA will establish the HMGP funding ceiling for each disaster at 12 months after the disaster declaration. This amount, also known as the "lock-in" value for HMGP, is the maximum that FEMA can obligate for eligible HMGP activities. The OCFO will continue to provide HMGP estimates prior to 12 months; however, these estimates will not represent a minimum or floor amount.

In rare circumstances, when a catastrophic disaster has resulted in major fluctuations of projected disaster costs, FEMA may, at the request of the Grantee, conduct an additional review 18 months after the disaster declaration. If the resulting review shows that the amount of funds available for HMGP is different than previously calculated, the final lock-in amount will be adjusted accordingly.

The Grantee must justify in writing to the Regional Administrator any requests to change the amount of the lock-in or perform subsequent reviews. The Regional Administrator will recommend to the Chief Financial Officer whether to approve the change. Changes to the lock-in will not be made without the approval of the Chief Financial Officer. The Chief Financial Officer may change the amount of the lock-in if it is determined that the projections used to determine the lock-in were inaccurate to such a degree that the change to the lock-in would be material, or for other reasons in his or her discretion that may reasonably warrant such changes. The Chief Financial Officer will not make such changes without consultation with the Grantee and the Regional Administrator.

A.4 HMGP Management Costs

The amounts, allowable uses, and procedures for HMGP management costs are established in 44 CFR Part 207. Examples of allowable management costs are listed in Part IV, D.1.3. HMGP management costs will be provided at a rate of 4.89 percent of the HMGP ceiling. The Grantee, in its State Administrative Plan, will determine the amount, if any, of management costs it will pass through to the subgrantee (see Part IX, A.2.5). Management costs are provided outside of and separate from the HMGP ceiling amount. There is no additional cost-share requirement for HMGP management costs.

FEMA will establish the amount of funds that it will make available for management costs by a lock-in, which will act as a ceiling for management cost funds available to a Grantee, including its subgrantees. FEMA will determine, and provide to the Grantee, management cost lock-ins at 30 days (or soon thereafter), at 6 months, and at 12 months from the date of declaration, or upon the calculation of the final HMGP lock-in ceiling, whichever is later.

Upon receipt of the initial 30-day lock-in, Grantees may request that FEMA obligate 25 percent of the estimated lock-in amount(s) to the Grantee. No later than 120 days after the date of declaration, the Grantee must submit documentation to support costs and activities for which the projected lock-in for management cost funding will be used. In extraordinary circumstances, FEMA may approve a request by a Grantee to submit supporting documentation after 120 days.

FEMA will work with the Grantee to approve or reject the documentation submitted within 30 days of receipt. If the documentation is rejected, the Grantee will have 30 days to resubmit it for reconsideration and approval. FEMA will not obligate any additional management costs unless the Grantee's documentation is approved.

The documentation for management costs must include:

- A description of activities, personnel requirements, and other costs for which the Grantee will use the management cost funding provided under this part;
- The Grantee's plan for expending and monitoring the funds provided under this part and ensuring sufficient funds are budgeted for grant closeout; and
- An estimate of the percentage or amount of pass-through funds for management costs provided under this part that the Grantee will make available to subgrantees, and the basis, criteria, or formula for determining the subgrantee percentage or amount (e.g., number of projects, complexity of projects, etc.).

Upon receipt of the 6-month management costs lock-in, and if the Grantee can justify a bona fide need for additional management costs, the Grantee may submit a request to the Regional Administrator for an interim obligation. Any interim obligation must be approved by the Chief Financial Officer and will not exceed an amount equal to 10 percent of the 6-month lock-in amount, except in extraordinary circumstances.

The Grantee must justify in writing to the Regional Administrator any requests to change the amount of the lock-in or the cap, extend the time period before lock-in, or request an interim obligation of funding at the time of the 6-month lock-in adjustment. The Regional Administrator will recommend to the Chief Financial Officer whether to approve the extension, change, or interim obligation. Extensions, changes to the lock-in, or interim obligations will not be made without the approval of the Chief Financial Officer.

For additional information on HMGP management costs see 44 CFR Part 207.

A.5 Eligible Subapplicants

In addition to the eligible subapplicants described in Part IV, A.1, PNP organizations may act as the subapplicant for HMGP. PNP organizations or institutions that own or operate a PNP facility are defined in 44 CFR Section 206.221(e). Each subapplication from a PNP must include either:

- An effective ruling letter from the IRS granting tax exemption under Section 501(c), (d), or (e) of the Internal Revenue Code of 1954, as amended; or
- State certification, under State law, of non-profit status.

A qualified conservation organization, as defined at 44 CFR Section 80.3(h), is the only PNP organization eligible to apply for property acquisition and demolition or relocation projects.

A.6 Submission of HMGP Subapplications

The Grantee must submit all HMGP subapplications to FEMA within 12 months of the date of the disaster declaration. Upon written request and justification from the Grantee, FEMA may extend the application submission timeline in 30- to 90-day increments not to exceed a total extension of 180 days, in the event of extraordinary conditions. For additional information see 44 CFR Section 206.436. Additional time may be available based on meeting the criteria of the Stafford Act, Section 301. To qualify, the requestor must justify how the event for which the additional time is needed created the situation in which the Grantee cannot meet the regulatory administrative deadline.

Extensions beyond regulatory time limits will be considered on a case-by-case basis. Stafford Act Section 301 provides relief for the rare circumstance when the magnitude of the event for which the extension is requested prevents the Grantee from meeting program administrative requirements. The Grantee must make the request to the Flood Insurance and Mitigation Administration Associate Administrator by submitting through the Regional Administrator, or if there is a Joint Field Office submit through the FCO. The Regional Administrator or FCO will provide his or her comments or concurrence and forward the request. The maximum time available is 90 days. The request must describe the conditions that preclude the Grantee from meeting the administrative requirements and must include a summary of current status, planned actions to meet the extension, and any resources that may be required. FEMA will consider the request and will provide a decision within 30 days.

A.7 Grant Cost-share Requirements

HMGP grants are required to have at least a 25 percent non-Federal cost share.

The Grantee may choose to meet the cost-share requirement by ensuring a minimum 25 percent non-Federal share for the overall HMGP grant award, rather than on an individual activity basis. Grantees choosing this option should develop a cost-share strategy as part of their Administrative Plan for review and approval by FEMA.

If an Applicant chooses to fund individual projects with non-Federal cost shares below 25 percent, the Applicant must notify FEMA. If an Applicant intends to implement this approach, the State Administrative Plan must explain how the Applicant will:

- Apply this approach in a fair and impartial manner to all subapplications;

- Monitor the cost share for the overall grant throughout the POP; and
- Address any cost-share shortfalls that may occur during the POP and at closeout.

If, at closeout, the non-Federal cost share of the grant is less than 25 percent of the total amount, FEMA will recoup the amount of Federal funds needed to bring the cost share into compliance.

A.8 Post-Disaster Code Enforcement Projects

HMGP will fund extraordinary post-disaster code enforcement costs. Extraordinary needs associated with enforcing local building codes during post-disaster reconstruction may include the performance of building department functions, such as building inspections, and the performance of Substantial Damage determinations under the NFIP.

A post-disaster code enforcement project may be funded through HMGP if:

- The Grantee assesses existing building code and/or zoning and land use management regulations and determines that they adequately address the identified natural hazard risks. The Grantee determines that the local community has adopted a building code consistent with a recent edition of the International Code Series, conforms to State-model or State-mandated building codes, and, if the local community participates in the NFIP, has local floodplain management measures in place that meet the minimum requirements for participation in the NFIP;
- The Grantee evaluates the building department and determines that its organization, funding, and enforcement and inspection processes are sufficient to ensure proper enforcement of all applicable laws and ordinances during normal operations; and
- The Grantee evaluates the building department and identifies deficiencies, and the local community agrees to address any deficiencies identified in this evaluation as a condition of receiving the subgrant. This agreement can be a simple statement attached to the evaluation and should include an implementation schedule that is mutually satisfactory to the Grantee, the subgrantee, and FEMA. The agreement should include an acknowledgment by the subgrantee that failure to meet the agreed upon implementation schedule can result in the loss of all current and/or future building department assistance used to support post-disaster operations.

The State's assessment can be accomplished through various mechanisms. Any assessment should include a discussion of the community's compliance with the NFIP. Suggested approaches include (but are not limited to):

- Employing a mutual-aid agreement among communities to use other local building officials;
- Entering into a contractual agreement with a State or regional government entity that is well versed in building codes and proper administration of a building department;

- Entering into a contractual agreement with one of the model building code organizations;
- Employing building code experts temporarily;
- Deploying FEMA mitigation staff knowledgeable of building codes and proper building department administration. Former local building officials can often provide the requisite knowledge; or
- Requesting the Hazard Mitigation Technical Assistance Program.

HMGP funds only extraordinary post-disaster code enforcement costs. Extraordinary post-disaster code enforcement costs are the costs to ensure disaster-resistant codes are implemented during disaster reconstruction after normal costs of the building department are deducted. Costs might include staffing, equipment purchases, office rental, transportation, supplies, and similar expenses. Extraordinary costs equal disaster costs minus normal costs and cost of fees or fee waivers.

- Disaster costs can be determined by the payroll and office expenses during the period of assistance. If the subapplicant must purchase new equipment, only the equivalent rental cost of this equipment for the period of assistance is considered a disaster cost. The revenues generated by fees for inspections or permits, whether collected or not, must be deducted;
- Normal costs can be determined from a monthly average of payroll and office expenses during the most recent 12-month period that does not included Federal, State, or local disaster declarations; and
- If a community has already received Federal assistance for meeting emergency building inspection needs (such as determining habitability), these costs must be deducted in determining extraordinary costs.

A.9 Advance Assistance

Advance Assistance is authorized by the SRIA, which allows advancing up to 25 percent of the HMGP ceiling or $10 million to Applicants, whichever is less. The purpose of Advance Assistance is to provide States and Tribes resources to develop mitigation strategies and obtain data to prioritize, select, and develop complete HMGP applications in a timely manner. FEMA expects States and Tribes that receive Advance Assistance to submit complete project applications up to or over the HMGP ceiling by the application deadline.

ADVANCE ASSISTANCE

FEMA may provide up to 25 percent (with a limit of $10 million) of the amount of estimated HMGP costs to States and Indian Tribal governments in advance of incurring eligible costs.

FEMA expects States that receive Advance Assistance to submit complete project applications up to or over the available HMGP ceiling by the final HMGP project application deadline.

FEMA will continue to implement Advance Assistance on a pilot basis for any State or Indian Tribal government having a declaration with an open application period. Advance Assistance is not automatic. States and Tribes may request Advance Assistance by submitting an HMGP application form to the Regional Mitigation Division Director. The application must identify the proposed use of the funds, including costs in sufficient detail for each proposed activity and milestones for submitting completed HMGP applications to FEMA. Advance Assistance is subject to the HMGP cost-share requirements and SFM (i.e., FEMA will not obligate funds until the State has an immediate need for the funds). Advance Assistance is part of the HMGP ceiling amount.

States may use Advance Assistance for the following activities:

- Obtain staff or resources to develop a cost-share strategy and identify potential match funding;
- Evaluate facilities or areas to determine appropriate mitigation actions;
- Incorporate environmental considerations early into program decisions;
- Collect data for BCAs, environmental compliance and other program requirements;
- Scope and prioritize hazard mitigation projects (including State coordination of local projects) to incorporate sustainability, resilience, and renewable building concepts;
- Develop hazard mitigation projects, including engineering design and feasibility actions;
- Incorporate SFM principles into mitigation project work schedules and budgets that will facilitate compliance with the legislative requirement to expend obligated funds within 24 months;
- Conduct meetings, outreach, and coordination with potential subapplicants and community residents to identify potential participants for property acquisition and demolition or relocation projects;
- Conduct engineering design and feasibility studies for larger or complex community drainage projects or critical facility retrofits (such as for phased projects);
- Conduct hydrologic and hydraulic studies for unmapped flood zones or Approximate A Zone areas where communities propose to submit hazard mitigation projects;
- Perform professional cost estimation services to aid consistency in project budgeting across subapplications;
- Rectify data consistency needs for other project application categories, such as EHP, cost sharing mechanisms, and work schedules; and
- Complete necessary documents for deed restricting properties such as acknowledgement of voluntary participation, or Model Acknowledgement of Conditions for Mitigation of Property in a Special Flood Hazard Area with FEMA Grant Funds for property acquisition projects.

Requirements and Deliverables Associated with Advance Assistance and Resulting HMGP Applications may include:

- Documentation of Advance Assistance Accomplishments: Applicants must submit documentation to FEMA to support that they accomplished all activities listed in their Advance Assistance application.
- Submission of Projects up to the HMGP Ceiling: FEMA expects States that receive Advance Assistance to submit complete project applications up to or over the available HMGP ceiling by the final HMGP project application deadline.
- Accounting for Use of Advance Assistance Funds: For accounting and audit purposes, the State must submit sufficient financial detail to demonstrate that no costs claimed under Advance Assistance are duplicated in subsequent HMGP project applications or in State Management Cost budgets.
- Documentation of Environmental Considerations: The Applicant must document that effects to environmental and historic resources were considered early in the planning and project scoping processes. This requirement is in addition to ensuring environmental compliance.

For additional information on Advance Assistance, please see Appendix L, Advance Assistance Optional Application.

A.10 Phased Projects

In general, sufficient technical information is provided by the Applicant or subapplicant to allow FEMA to make an eligibility determination on a subapplication. The costs to obtain this information are generally eligible as pre-award costs (See Part V, F.2 for more information). However, in rare circumstances it is beyond the subapplicant's technical and financial resources to provide the complete technical information required for a full eligibility or environmental review of a complex project. The Applicant and FEMA may provide technical assistance to the subapplicant to develop this complete body of technical data by approving a subapplication to complete a Phase I design, engineering, environmental, or feasibility study. The Phase I study provides FEMA with a technical body of information mutually concurred on by the subapplicant, the Applicant, and FEMA to determine project eligibility. If the results of the Phase I review indicate that the project meets HMGP requirements, the project would then be eligible for funding for construction under a Phase II approval. Phase I study funding is part of the project's total estimated cost, and is subject to HMGP cost-share requirements.

The use of a Phase I study should be limited to complex projects that require technical or environmental data beyond the scope of that generally required for a typical HMGP project. The following provides guidelines and outlines the process for selecting projects for Phase I/Phase II project approval.

A.10.1 Pre-Screening Process

The project must meet the following pre-screening criteria for a conditional Phase I approval in the following sequence:

- State or Indian Tribal (Standard or Enhanced) Mitigation Plan – The proposed project must be in conformance with the State or Tribal (Standard or Enhanced) Mitigation Plan;
- Justification for Selection of the Proposed Project – Justification must be provided for the selection of the proposed solution after consideration of a range of options;
- Potential Cost-effectiveness – The project demonstrates potential cost-effectiveness based on a preliminary assessment of anticipated project benefits and cost. The subapplicant must be aware that this preliminary assessment is solely for the purpose of the Phase I pre-screening process and is not the final cost-effectiveness determination;
- EHP Review – Initial environmental review to identify major EHP compliance issues. The Phase I study is categorically excluded from NEPA review; and
- Hydrologic and Hydraulic or Other Relevant Technical Data – The subapplicant provides available hydrologic and hydraulic data based on existing models and other relevant technical data, as appropriate.

A.10.2 Phase I Conditional Approval

The Applicant and FEMA may approve projects meeting the above pre-screening requirements for technical assistance under a Phase I conditional approval. FEMA and the Applicant will coordinate closely to ensure mutual concurrence on all data and technical information as the Phase I technical review process proceeds. The sequence for the process is as follows:

- Hydrologic and Hydraulic or Other Relevant Technical Data – If appropriate, the Applicant and FEMA will review the hydrologic and hydraulic or other technical data provided by the subapplicant;
- Preliminary Engineering Design – Based upon the technical data, the subapplicant develops a preliminary engineering design and layout and cost estimates with ad-hoc technical assistance from the Applicant and FEMA;
- EO 11988 – If applicable, based upon the technical data and revised engineering design, the project must demonstrate compliance with floodplain management requirements under this EO. If a FIRM amendment or revision will be necessary, the Applicant and FEMA will provide the subapplicant with technical assistance to meet this requirement;
- Refinement of the Cost-Effectiveness Assessment – Based upon the revised design and cost estimates, the Applicant and FEMA will refine the preliminary assessment of cost-effectiveness conducted in the Phase I pre-screening process. This will result in a final

BCR to evaluate the project's cost-effectiveness, which will include all the project costs including Phase I; and

- EHP Review – The Applicant and FEMA will conduct a review of the revised project design to ensure EHP compliance. The project will meet EHP requirements before Phase II approval.

A.10.3 Phase II Approval-Construction Process

If the project is determined to be eligible, technically feasible, cost-effective, and compliant with EHP requirements under the Phase I technical review, the project may then be approved for construction under Phase II.

A.11 The 5 Percent Initiative

Some mitigation activities are difficult to evaluate using FEMA-approved cost-effectiveness methodologies. Up to 5 percent of the total HMGP funds may be set aside by the Grantee to pay for such activities. These funds are not eligible to be used in situations where the mitigation activities can be evaluated under FEMA-approved cost-effectiveness methodologies but do not meet the required BCA threshold.

To be eligible for the 5 Percent Initiative, activities must:

- Be difficult to evaluate against traditional program cost-effectiveness criteria;
- Comply with all applicable HMGP eligibility criteria as well as with Federal, State, and local laws and ordinances;
- Be consistent with the goals and objectives of the State or Indian Tribal (Standard or Enhanced) and local or Tribal mitigation plans; and
- Be submitted for review with a narrative that indicates that there is a reasonable expectation that future damage or loss of life or injury will be reduced or prevented by the activity.

Activities that might be funded under the 5 Percent Initiative include:

- The use, evaluation, and application of new, unproven mitigation techniques, technologies, methods, procedures, or products;
- Equipment and systems for the purpose of warning citizens of impending hazards;
- Purchase of generators or related equipment, such as generator hook-ups;
- Hazard identification or mapping and related equipment for the implementation of mitigation activities;
- GIS software, hardware, and data acquisition whose primary aim is mitigation;

- Public awareness or education campaigns about mitigation; and
- Evaluation of model building codes in support of future adoption and/or implementation.

A.11.1 Availability of Additional Funds for Tornado Mitigation

FEMA allows increasing the 5 Percent Initiative amount up to 10 percent for a Presidential major disaster declaration for tornadoes and high winds at the discretion of the Grantee. The increased initiative funding can be used for activities that address the unique hazards posed by tornadoes. To qualify for this funding, the Grantee must, in its State or Indian Tribal (Standard or Enhanced) Mitigation Plan, or other comprehensive plan, address warning of citizens (ensuring 90 percent coverage), further the safe room concept in construction or rehabilitation of residences or commercial structures, and address sheltering in mobile home parks. The plan, also, must explain how the Grantee will implement an ongoing public education program so that citizens are aware of warning systems and their meaning and the availability of in-home shelter designs. Similar information should be included in the subgrantee's local or Indian Tribal mitigation plan.

A.12 Appeal Process

An eligible subapplicant, subgrantee, or Grantee may appeal any FEMA determination regarding subapplications or applications submitted for funding under HMGP. FEMA will only consider appeals in writing that contain documentation that justifies the request for reconsideration. The appeal should specify the monetary figure in dispute and the provisions in Federal law, regulation, or policy with which the appellant believes the initial action was inconsistent.

Whether the appeal is originated by the Grantee or by a subapplicant/subgrantee, the appeal must be submitted in writing to the Regional Administrator by the Grantee. The Regional Administrator is the decision-maker on first appeals. If there is an appeal of the Regional Administrator's decision on any first appeal, the Assistant Administrator for Mitigation is the decision-maker for the second appeal. In some cases the appeal may involve highly technical issues. In these cases, FEMA may consult independent scientific or technical experts on the subject under appeal.

Appellants must make appeals within 60 days after receipt of a notice of the action that is being appealed. The Grantee must forward any appeal from a subapplicant/subgrantee with a written recommendation to the Regional Administrator within 60 days of receipt. Within 90 days following the receipt of an appeal, FEMA will notify the Grantee in writing of the disposition of the appeal or of the need for additional information.

If additional information is needed, FEMA will determine a date by which the information must be provided. Within 90 days following the receipt of the requested additional information (or 90 days after the information was due), FEMA will notify the Grantee in writing of the disposition of the appeal.

FEMA will provide its decision to the Grantee in writing. If the decision is to grant the appeal, the Regional Administrator will take the appropriate action.

Additional information regarding appeals can be found at 44 CFR Section 206.440.

B. Pre-Disaster Mitigation Program

Most of the information that an Applicant or subapplicant needs to apply for a PDM award or that a Grantee or subgrantee needs to manage a PDM award is provided in Parts I through VIII, and Part X. This section contains supplemental guidance specific to the PDM Program.

B.1 Allocation

FEMA will allocate funds for eligible projects to States and Territories consistent with applicable, statutory base and/or maximum allocations in the authorizing and appropriation laws. FEMA will administer the program as directed by Congress.

B.2 Small Impoverished Communities

Grants awarded to small impoverished communities may receive a Federal cost share of up to 90 percent of the total amount approved under the grant award to implement eligible approved activities in accordance with the Stafford Act. A small impoverished community must:

- Be a community of 3,000 or fewer individuals identified by the State as a rural community that is not a remote area within the corporate boundaries of a larger city;
- Be economically disadvantaged, with residents having an average per capita annual income not exceeding 80 percent of the national per capita income, based on best available data. For the most current information, go to http://www.bea.gov;
- Have a local unemployment rate that exceeds by 1 percentage point or more the most recently reported, average yearly national unemployment rate. For the most current information, go to http://www.bls.gov/eag/eag.us.htm; and
- Meet other criteria required by the Applicant in which the community is located.

Applicants must certify and provide documentation of the community status with the appropriate subapplication to justify the 90 percent cost share. If documentation is not submitted with the subapplication, FEMA will provide no more than the standard 75 percent of the total eligible costs.

B.3 Information Dissemination

Under the PDM Program, subapplicants may include eligible information dissemination activities in their project or planning subapplication. Eligible information dissemination activities include public awareness and education (brochures, workshops, videos, etc.) that directly relate to the eligible mitigation activity proposed in the subapplication. Information dissemination activities are limited to a maximum of 10 percent of the total cost of a subapplication.

B.4 Applicant Ranking of Subapplications

Applicants must rank each subapplication included in their grant application in order of their priority for funding. Each subapplication must be assigned a unique rank in *e*Grants. Applicants must provide an explanation for the rank given to each subapplication and demonstrate how it is consistent with their State or Tribal (Standard or Enhanced) Mitigation Plan.

B.5 Selection

FEMA will identify subapplications for further review based on Applicant rank. FEMA may identify a subapplication for further review out of rank order based on considerations such as program priorities, available funds, and policy factors.

FEMA will notify Applicants whose subapplications are identified for further review; however, this notification and conducting FEMA-requested pre-award activities are not considered notification or guarantee of a grant award.

C. Flood Mitigation Assistance Program

Most of the information that an Applicant or subapplicant needs to apply for an FMA award or that a Grantee or subgrantee needs to manage an FMA award is provided in Parts I through VII, and Part IX. This section contains supplemental guidance specific to FMA.

C.1 Eligible Properties

Properties included in a project subapplication for FMA funding must be NFIP-insured at the time of the application submittal. Flood insurance must be maintained through completion of the mitigation activity and for the life of the structure.

Residential or non-residential properties currently insured with the NFIP are eligible to receive FMA funds. In order to receive an increased Federal cost share, properties must meet one of the definitions below (consistent with the legislative changes made in the Biggert-Waters Flood Insurance Reform Act of 2012):

- **A severe repetitive loss property** is a structure that:
  - (a) Is covered under a contract for flood insurance made available under the NFIP; and
  - (b) Has incurred flood related damage –
    - (i) For which 4 or more separate claims payments have been made under flood insurance coverage with the amount of each such claim exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or
    - (ii) For which at least 2 separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.
- **A repetitive loss property is** a structure covered by a contract for flood insurance made available under the NFIP that:
  - (a) Has incurred flood-related damage on 2 occasions, in which the cost of the repair, on the average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and
  - (b) At the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.

C.2 Repetitive Loss Strategy

To be eligible for an increased Federal cost share, a FEMA-approved State or Tribal (Standard or Enhanced) Mitigation Plan that addresses repetitive loss properties must be in effect at the time of grant award and the property that is being submitted for consideration must be a repetitive loss property. Guidance on addressing repetitive loss properties can be found in the *State Multi-Hazard Mitigation Planning Guidance* and in 44 CFR Section 201.4(c)(3)(v). The Repetitive

Loss Strategy must identify the specific actions the State has taken to reduce the number of repetitive loss properties, which must include severe repetitive loss properties, and specify how the State intends to reduce the number of such repetitive loss properties. In addition, the hazard mitigation plan must describe the State's strategy to ensure that local jurisdictions with severe repetitive loss properties take actions to reduce the number of these properties, including the development of local or Tribal mitigation plans. For information about the Repetitive Loss Database, see Part VII, D.2.1.

C.3 Cost Sharing

Consistent with the legislative changes made in the Biggert-Waters Flood Insurance Reform Act of 2012, cost-share availability under the FMA program depends on the type of properties included in the grant. For example, severe repetitive loss properties may receive up to 100 percent Federal funding and repetitive loss properties may receive up to 90 percent.

- In the case of mitigation activities to severe repetitive loss structures:
  - FEMA may contribute up to 100 percent Federal funding of all eligible costs, if the activities are technically feasible and cost-effective; or
  - The expected savings to the NFIF from expected avoided damages through acquisition or relocation activities, if the activities will eliminate future payments from the NFIF for severe repetitive loss structures through an acquisition or relocation activity.
- In the case of mitigation activities to repetitive loss structures, FEMA may contribute up to 90 percent Federal funding of all eligible costs.
- In the case of all other mitigation activities, FEMA may contribute up to 75 percent Federal funding of all eligible costs.

Structures with varying cost-share requirements can be submitted in one application. Applicants must provide documentation in the project application showing how the final cost share was derived. The final cost share will be entered into the *e*Grants system and documentation showing how the final cost share was derived must be attached to the application.

C.4 Applicant Ranking of Subapplications

Applicants must rank each subapplication included in their grant application in order of priority for funding. Each subapplication must be assigned a unique rank in *e*Grants. Applicants must provide an explanation for the rank given to each subapplication and demonstrate how it is consistent with their State or Tribal (Standard or Enhanced) Mitigation Plan.

C.5 Selection

FEMA will identify subapplications for further review based on a number of criteria, including but not limited to: savings to the NFIF, applicant rank, and property status (e.g., repetitive loss

property, severe repetitive loss property). FEMA also may identify a subapplication for further review out of rank order based on considerations such as program priorities, available funds, and other factors.

FEMA will notify Applicants whose subapplications are identified for further review; however, this notification and conducting FEMA-requested pre-award activities are not considered notification or guarantee of a grant award.

PART X. APPENDICES

A. Acronyms

ABFE	Advisory Base Flood Elevation
ADA	Americans with Disabilities Act
ADR	Alternative Dispute Resolution
ASCE	American Society of Civil Engineers
BCA	Benefit-Cost Analysis
BCR	Benefit-Cost Ratio
BFE	Base Flood Elevation
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CBRA	Coastal Barrier Resource Act
CBRS	Coastal Barrier Resource System
CDBG	Community Development Block Grant
CFDA	Catalog of Federal Domestic Assistance
CFR	Code of Federal Regulations
CRS	Community Rating System
DHS	Department of Homeland Security
DOB	Duplication of Benefits
DOI	Department of the Interior
DOP	Duplication of Programs
DOT	Department of Transportation
*e*Grants	Electronic Grants
EHP	Environmental Planning and Historic Preservation
EO	Executive Order
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration

FIMA	Flood Insurance and Mitigation Administration
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FMA	Flood Mitigation Assistance
FY	Fiscal Year
GAR	Governor's Authorized Representative
GIS	Geographic Information System
GSTF	Greatest Savings to the Fund
Hazus	Hazards United States
HMA	Hazard Mitigation Assistance
HMGP	Hazard Mitigation Grant Program
HUD	U.S. Department of Housing and Urban Development
HVAC	Heating, Ventilation, and Air Conditioning
IBC	International Building Code
ICC	Increased Cost of Compliance
IRS	Internal Revenue Service
ITP	Independent Third Party
NAP	Non-Insured Crop Disaster Assistance Program
NEMIS	National Emergency Management Information System
NEPA	National Environmental Policy Act
NFIA	National Flood Insurance Act
NFIF	National Flood Insurance Fund
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRCS	Natural Resources Conservation Service
O&M	Operations and Maintenance
OMB	Office of Management and Budget
OPA	Otherwise Protected Area
PARS	Payment and Reporting System

PDM	Pre-Disaster Mitigation
PNP	Private Non-profit
POC	Point of Contact
POP	Period of Performance
SBA	Small Business Administration
SEI	Structural Engineering Institute
SF	Standard Form
SFHA	Special Flood Hazard Area
SFM	Strategic Funds Management
SHMO	State Hazard Mitigation Officer
SOW	Scope of Work
SRIA	Sandy Recovery Improvement Act of 2013
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act
TB	Technical Bulletin
URA	Uniform Relocation Assistance and Real Property Acquisition Act of 1970
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USFA	U.S. Fire Administration
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WUI	Wildland-Urban Interface Area

B. Glossary

Applicant: The entity, such as a State, Territory, or Indian Tribal government, applying to FEMA for a grant that will be accountable for the use of the funds. Once grant funds are awarded, the Applicant becomes the "Grantee."

Base Flood: A flood having a 1 percent chance of being equaled or exceeded in any given year.

Base Flood Elevation (BFE): The elevation shown on the Flood Insurance Rate Map (FIRM) for Zones AE, AH, A1–A30, AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO, V1–V30, and VE that indicates the water surface elevation resulting from a flood that has a 1 percent chance of equaling or exceeding that level in any given year.

Benefit-Cost Analysis (BCA): A quantitative procedure that assesses the cost-effectiveness of a hazard mitigation measure by taking a long-term view of avoided future damages as compared to the cost of a project.

Benefit-Cost Ratio (BCR): A numerical expression of the cost-effectiveness of a project calculated as the net present value of total project benefits divided by the net present value of total project costs.

Biomass: Biological material derived from living, or recently living organisms.

Building: A structure with two or more outside rigid walls and a fully secured roof that is affixed to a permanent site; a manufactured home or a mobile home without wheels, built on a chassis and affixed to a permanent foundation, that is regulated under the community's floodplain management and building ordinances or laws. "Building" does not mean a gas or liquid storage tank or a recreational vehicle, park trailer, or other similar vehicle.

Clean-site certification: A letter from the appropriate local, State, Indian Tribal, or Federal entity determining that no further remedial action is required to protect human health or the environment.

Coastal Barrier Resource System (CBRS): A geographic unit designated to serve as a protective barrier against forces of wind and tidal action caused by coastal storms and serving as habitat for aquatic species. Congress restricted Federal spending and assistance for development-related activities within CBRS units to protect them from further development. Federal flood insurance is unavailable in these areas. CBRS units are identified on FEMA FIRMs.

Coastal High Hazard Area: An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources.

Combustible material: Any material that, in the form in which it is used and under the conditions anticipated, will ignite and burn or will add appreciable heat to an ambient fire.

Community Rating System (CRS): A program developed by FEMA to provide incentives for those communities in the NFIP that have gone beyond the minimum floodplain management requirements to develop extra measures to provide protection from flooding.

Cost-effectiveness: Determined by a systematic quantitative method for comparing the costs of alternative means of achieving the same stream of benefits for a given objective. The benefits in the context of hazard mitigation are avoided future damages and losses. Cost-effectiveness is determined by performing a BCA.

Cost share: The portion of the costs of a federally assisted project or program not borne by the Federal Government.

Defensible space: An area that is either natural or manmade, where material capable of allowing a fire to spread unchecked has been treated, cleared, or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire-suppression operations to occur.

Dwelling: A building designed for use as a residence for no more than four families or a single-family unit in a building under a condominium form of ownership.

Elevated Building: A building that has no basement and a lowest floor that is elevated to or above the BFE by foundation walls, shear walls, posts, piers, pilings, or columns. Solid perimeter foundations walls are not an acceptable means of elevating buildings in Zones V and VE.

Environmental Benefits: Environmental benefits are direct or indirect contributions that ecosystems make to the environment and human populations. For FEMA BCA, certain types of environmental benefits may be realized when homes are removed and land is returned to open space uses. Benefits may include flood hazard reduction; an increase in recreation and tourism; enhanced aesthetic value; and improved erosion control, air quality, and water filtration.

Equipment: Tangible, nonexpendable, personal property having a useful life of more than 1 year and an acquisition cost of $5,000 or more per unit. A Grantee may use its own definition of equipment provided such definition would at least include all equipment defined above.

Federal Agency: Any department, independent establishment, Government corporation, or other agency of the executive branch of the Federal Government, including the U.S. Postal Service, but not the American National Red Cross.

Federal Cognizant Agency: The Federal agency responsible for reviewing, negotiating, and approving cost allocation plans or indirect cost proposals developed on behalf of all Federal agencies. The OMB publishes a list of Federal Cognizant Agencies.

Firebreak: a strip of cleared land that provides a gap in vegetation or other combustible material that is expected to slow or stop the progress of a wildfire.

Fire-proofing: Removal or treatment of fuels to reduce the danger of fires igniting or spreading. (e.g., fire-proofing roadsides, campsites, structural timber).

Fire-resistant material: Material that has a property that prevents or retards the passage of excessive heat, hot gases, or flames under conditions of use.

Fire retardant: A chemical applied to lumber or other wood products to slow combustion and flame spread.

Fire Severity Zone: Three concentric zones around a building used to determine the most effective design for defensible space.

Flammability: The relative ease with which fuels ignite and burn regardless of the quantity of the fuels.

Flood Insurance Rate Map (FIRM): Official map of a community on which FEMA has delineated both the special hazard areas and the risk premium zones applicable to the community.

Floodplain: Any land area that FEMA has determined has at least a 1 percent chance in any given year of being inundated by floodwaters from any source.

Floodplain Management: The operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to, emergency preparedness plans, flood control works, and floodplain management regulations.

Floodway: The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Communities regulate development in these floodways to ensure that there are no increases in upstream flood elevations.

Freeboard: Freeboard is a factor of safety usually expressed in feet above a flood level for purposes of floodplain management. "Freeboard" tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed.

Fuel break: A natural or manmade change in fuel characteristics that affects fire behavior so that fires burning into them can be more readily controlled.

Fuel condition: Relative flammability of fuel as determined by fuel type and environmental conditions.

Governor's Authorized Representative (GAR): The individual, designated by the Governor, who serves as the grant administrator for all funds provided under HMGP; the person empowered by the Governor to execute, on behalf of the State, all necessary documents for disaster assistance.

Grant: An award of financial assistance for a specified purpose by the Federal government to an eligible Grantee.

Grantee: The entity, such as a State, Territory, or Indian Tribal government to which a grant is awarded and that is accountable for the use of the funds provided. The Grantee is the entire legal entity even if only a particular component of the entity is designated in the grant award document.

Green Open Space: Green open space is land that does not directly touch a natural body of water, such as a river, lake, stream, creek, or coastal body of water.

Hazardous fuels reduction: An area strategically located in relation to predicted fire hazard and occurrence where the vegetation has been permanently modified or replaced so that fires burning into it can be more easily controlled (e.g., vegetation management activities).

Hazard mitigation planning: A process used by governments to identify risks, assess vulnerabilities, and develop long-term strategies for protecting people and property from the effects of future natural hazard events.

HMGP Lock-In Ceiling: The level of HMGP funding available to a Grantee for a particular Presidential major disaster declaration.

Identified for Further Review: Subapplications identified for further review contain sufficient information for a preliminary determination of cost-effectiveness and feasibility. In certain instances, FEMA may work with Applicants to confirm cost-effectiveness and feasibility. Identification for further review is not a notification of award.

Ignition-resistant construction: Construction standards based on use of fire-resistant materials, non-combustible materials, and 1-hour fire-rated assemblies.

Increased Cost of Compliance: Coverage for expenses a property owner must incur, above and beyond the cost to repair the physical damage the structure actually sustained from a flooding event, to comply with mitigation requirements of State or local floodplain management ordinances or laws; acceptable mitigation measures are structure elevation, dry floodproofing, structure relocation, structure demolition, or any combination thereof.

Indian Tribal Government: A federally recognized governing body of an Indian or Alaska Native Tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian Tribe under the Federally Recognized Tribe List Act of 1994, 25 U.S.C. 479a. This does not include Alaska Native corporations, the ownership of which is vested in private individuals.

Indirect cost: Cost that is incurred by a Grantee for a common or joint purpose benefitting more than one cost objective that is not readily assignable to the cost objectives specifically benefited.

Indirect cost rate: Percentage established by a Federal department or agency for a Grantee to use in computing the dollar amount it charges to the grant to reimburse itself for indirect costs incurred in doing the work of the grant activity.

Management costs: Any indirect costs, administrative expenses, and any other expenses not directly chargeable to a specific project that are reasonably incurred by a Grantee or subgrantee in administering and managing a grant or subgrant award. For HMGP, management cost funding is provided outside of Federal assistance limits defined at 44 CFR Section 206.432(b).

Manufactured (Mobile) home: A structure, transportable in one or more sections that is built on a permanent chassis and designed for use with or without a permanent foundation when attached to the required utilities.

Mitigation: Any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event.

Mitigation activity: A mitigation measure, project, plan, or action proposed to reduce risk of future damage, hardship, loss, or suffering from disasters. The term "measure" is used interchangeably with the term "project" in this program.

National Flood Insurance Program (NFIP): Provides the availability of flood insurance in exchange for the adoption of a minimum local floodplain management ordinance that regulates new and Substantially Improved development in identified flood hazard areas.

Non-combustible material: Material of which no part will ignite and burn when subjected to fire, such as any material conforming to ASTM E 136.

Nonflammable: Material unlikely to burn when exposed to flame under most conditions.

Non-Federal funds: Financial resources provided by sources other than the Federal Government. The term does not included funds provided to a State or local government through a Federal grant unless the authorizing statute for that grant explicitly allows the funds to be used as cost share for other Federal grants.

Non-Residential structure: Includes, but is not limited to small business concerns, places of worship, schools, farm buildings (including grain bins and silos), pool houses, clubhouses, recreational buildings, mercantile structures, agricultural and industrial structures, warehouses, hotels and motels with normal room rentals for less than 6 months' duration, and nursing homes.

Office of Environmental Planning and Historic Preservation: Integrates the protection and enhancement of environmental, historic, and cultural resources into the FEMA mission and FEMA programs and activities; ensures that FEMA activities and programs related to disaster response and recovery, hazard mitigation, and emergency preparedness comply with Federal environmental and historic preservation (EHP) laws and Executive orders; and provides EHP technical assistance to FEMA staff, local, State, and Federal partners, and Grantees and subgrantees.

Otherwise Protected Areas (OPAs): Designation created by the Coastal Barrier Improvement Act. Flood insurance is restricted in OPAs even though they are not in the CBRS and may receive other forms of Federal assistance. OPAs are identified on FEMA FIRMs.

Period of Performance (POP): The period of time during which the Grantee is expected to complete the grant activities and to incur and expend approved funds.

Pile burning: Piling removed vegetation into manageable piles and burning the individual piles during safe and approved burning conditions.

Post-FIRM Building: A building for which construction or Substantial Improvement occurred after December 31, 1974, or on or after the effective date of an initial FIRM, whichever is later.

Practicable: An action that is capable of being done within existing constraints. The test of what is practicable depends upon the situation and includes consideration of all pertinent factors, such as environment, cost, and technology.

Pre-FIRM Building: A building for which construction or Substantial Improvement occurred on or before December 31, 1974, or before the effective date of an initial FIRM.

Prescribed burning: The deliberate and managed use of fire ignited by management actions to meet specific fuels management objectives.

Presidential Major Disaster: Any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought) or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under the Stafford Act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

Private non-profit (PNP): Any non-governmental agency or entity that currently has: (i) an effective ruling letter from the Internal Revenue Service granting tax exemption under section 501(c), (d), or (e) of the Internal Revenue Code of 1954; or (ii) satisfactory evidence from the State that the organization or entity is a non-profit one organized or doing business under State law.

Project: Any mitigation measure or action proposed to reduce risk of future damage, hardship, loss, or suffering from disasters.

Public Assistance: Supplementary Federal assistance provided under the Stafford Act to State and local governments or certain PNP organizations other than assistance for the direct benefit of individuals and families. For further information, see 44 CFR Part 206, Subparts G and H. Fire Management Assistance Grants under section 420 of the Stafford Act are also considered Public Assistance.

Replacement cost value: The cost to replace property with materials of like kind and quality, without any deduction for depreciation.

Riparian Area: The land that directly abuts a natural body of water, such as a river, lake, stream, creek, or coastal body of water.

Slash: The accumulation of vegetative materials such as tops, limbs, branches, brush, and miscellaneous residue results from forest management activities such as thinning, pruning, timber harvesting, and wildfire hazard mitigation.

Special Flood Hazard Area (SFHA): The land in the floodplain within a community subject to a 1 percent or greater chance of flooding in any given year. An area having special flood, mudflow, or flood-related erosion hazards, and shown on a Flood Hazard Boundary Map or a FIRM as Zone A, AO, A1–A30, AE, A99, AH, AR, AR/A, AR/AE, AR/AH, AR/AO, AR/A1–A30, V1–V30, VE, or V.

State Hazard Mitigation Officer (SHMO): The representative of a State government who is the primary point of contact with FEMA, other Federal agencies, and local units of government in the planning and implementation of pre- and post-disaster mitigation activities.

Structural fire protection: The protection of homes or other buildings from wildland fire.

Subapplicant: The entity, such as a community/local government, Tribal government, or PNP, that submits a subapplication for FEMA assistance to the Applicant. Once funding is awarded, the subapplicant becomes the "subgrantee."

Subgrant: An award of financial assistance under a grant by a Grantee to an eligible subgrantee.

Subgrantee: The entity, such as a community/local government, Tribal government, or PNP to which a subgrant is awarded and who is accountable to the Grantee for the use of the funds provided.

Substantial Damage: Damage of any origin sustained by a building whereby the cost of restoring the building to its before-damaged condition would equal or exceed 50 percent of the market value of the building before the damage occurred.

Wildfire: An uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures.

Wildland-Urban Interface Area: That geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels.

All terms not listed above are used consistent with the term definitions used in 44 CFR unless otherwise specified.

C. Additional Resources

Description	Web Link or Contact Information
1. NFIP Resources	
National Flood Insurance Program	http://www.floodsmart.gov
Floodplain Management	http://www.fema.gov/national-flood-insurance-program
Map Service Center	http://msc.fema.gov Telephone: (877) FEMA-MAP (336-2627)
FIRMs	http://www.fema.gov/national-flood-insurance-program-1/flood-insurance-rate-map-firm
ABFEs	Mississippi: http://www.fema.gov/news-release/abfes-are-best-resources-mississippians-rebuilding-now Louisiana: http://www.fema.gov/news-release/2006/02/06/post-katrina-policy-building-elevations
Flood Insurance Studies	http://www.fema.gov/national-flood-insurance-program-2/flood-insurance-study-fis
FEMA Form AW-501	http://www.fema.gov/national-flood-insurance-program-1/mitigated-properties-updates
2. Mitigation Planning and Risk Assessment Resources	
Hazard Mitigation Planning Overview	http://www.fema.gov/hazard-mitigation-planning-overview
Local Mitigation Planning Handbook (FR302-094-1)	http://www.fema.gov/library/viewRecord.do?id=7209
Local Mitigation Plan Review Guide	http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=4859
Mitigation Planning Guidance	http://www.fema.gov/mitigation-planning-laws-regulations-guidance
Mitigation Planning Policies	http://www.fema.gov/mitigation-planning-laws-regulations-guidance
Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards	http://www.fema.gov/library/viewRecord.do?id=6938
Integrating Hazard Mitigation Into Local Planning: Case Studies and Tools for Community Officials	http://www.fema.gov/library/viewRecord.do?id=7130
Mitigation Planning How-To Guides (FEMA)	http://www.fema.gov/hazard-mitigation-planning-resources
Hazard Mitigation Planning Risk Assessment	http://www.fema.gov/hazard-mitigation-planning-risk-assessment
IS-318: Mitigation Planning for Local and Tribal Communities	http://training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=is-318
IS-328: Plan Review for Local Mitigation Plans	http://training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=IS-328
Hazus	http://www.fema.gov/hazus
USGS National Map	http://nationalmap.gov/
USGS Natural Hazards Gateway	http://www.usgs.gov/natural_hazards/

Description	Web Link or Contact Information
3. Benefit-Cost Analysis Resources	
BCA Software and Helpline	Telephone: (866) 222-3580 Email: bchelpline@dhs.gov
BCA Overview	http://www.fema.gov/benefit-cost-analysis
BCA Policies	http://www.fema.gov/benefit-cost-analysis
4. Feasibility and Effectiveness Resources	
Engineering Helpline	Telephone: (866) 222-3580 Email: enghelpline@dhs.gov
Engineering Case Studies	http://www.fema.gov/grant-applicant-resources
Property Acquisition Projects	http://www.fema.gov/library/viewRecord.do?id=1861
Structure Elevation Projects	http://www.fema.gov/library/viewRecord.do?id=1862
Minor Localized Flood Reduction Projects	http://www.fema.gov/library/viewRecord.do?id=1863
Non-Structural Seismic Retrofit	http://www.fema.gov/library/viewRecord.do?id=1865
Structural Seismic Retrofit	http://www.fema.gov/library/viewRecord.do?id=1866
Wind Shutters	http://www.fema.gov/library/viewRecord.do?id=1864
5. EHP Resources	
EHP Program	http://www.fema.gov/environmental-planning-and-historic-preservation-program
EHP Helpline	Telephone: (866) 222-3580 Email: ehhelpline@dhs.gov
EHP Guidance	http://www.fema.gov/environmental-planning-and-historic-preservation-program/environmental-historic-preservation-1
EHP eLearning Tool	http://www.fema.gov/environmental-planning-and-historic-preservation-program/elearning-tool-fema-grant-applicants-45
EHP Policies	http://www.fema.gov/hazard-mitigation-assistance-policy
EHP Training	http://training.fema.gov/EMIWeb/IS/IS253a.asp
National Register of Historic Places	http://www.nps.gov/history/nr/
6. *e*Grants and NEMIS (HMGP) Resources	
FEMA Enterprise Service Desk – for HMGP (NEMIS-MT) issues	Telephone: (888) HLP-FEMA (1-888-457-3362) Email: fema-enterprise-service-desk@fema.dhs.gov
FEMA Enterprise Service Desk – eGrants issues	Telephone: (877) 611-4700
eGrants Resources Web site	http://www.fema.gov/mitigation-egrants-system
eGrants Applicant Quick Reference Guide	http://www.fema.gov/library/viewRecord.do?id=3266
eGrants Subapplicant Quick Reference Guide	http://www.fema.gov/library/viewRecord.do?id=3267
eGrants System for Grant Applicants online course (IS-31)	http://training.fema.gov/EMIWeb/IS/is31a.asp
eGrants System for Subgrant Applicants online course (IS-30)	http://training.fema.gov/EMIWeb/IS/is30a.asp

Description	Web Link or Contact Information
eGrants Internal System online course (IS-32)	http://training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=is-32
MT eGrants Internal Quick Reference Guide	http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=5885
NEMIS-MT Frequently Asked Questions:	http://www.fema.gov/hazard-mitigation-grant-program/national-emergency-management-information-system-mitigation-module http://www.fema.gov/library/viewRecord.do?id=4913
NEMIS-MT User Manual	http://www.fema.gov/library/viewRecord.do?id=4909
7. HMA Application and Award Resources	
HMA Overview	http://www.fema.gov/hazard-mitigation-assistance
HMA Helpline	Telephone: (866) 222-3580 Email: hmagrantshelpline@dhs.gov
HMA Policies	http://www.fema.gov/hazard-mitigation-assistance-policy
8. Acquisition Project Resources	
Model Deed Restriction	http://www.fema.gov/library/viewRecord.do?id=6327
Model Acknowledgement of Conditions for Mitigation in Special Flood Hazard Area	http://www.fema.gov/library/viewRecord.do?id=3592
Model Statement of Assurances	http://www.fema.gov/library/viewRecord.do?id=6365
Notice of Voluntary Interest	http://www.fema.gov/library/viewRecord.do?id=3595 http://www.fema.gov/library/viewRecord.do?id=3596
Statement of Voluntary Participation	http://www.fema.gov/library/viewRecord.do?id=3333
9. Mitigation Reconstruction References	
• ASCE/SEI 24-05, *Flood Resistant Design and Construction*, January 2006 • ASCE/SEI 7-05, *Minimum Design Loads for Buildings and Other Structures*, 2005 • *International Building Code* (IBC), 2006 edition • International Code Council, *Reducing Flood Losses Through the International Codes,* 3rd Edition, 2008 • FEMA P-55, *Coastal Construction Manual*, 4th Edition, August 2011 • FEMA P-424, *Design Guide for Improving School Safety in Earthquakes, Floods and High Winds*, December 2010 • FEMA 489, *Mitigation Assessment Team Report: Hurricane Ivan in Alabama and Florida,* August 2005 • FEMA P-499, *Home Builder's Guide to Coastal Construction Technical Fact Sheet Series*, December 2010 • FEMA 543, *Design Guide for Improving Critical Facility Safety from Flooding and High Winds*, January 2007 • FEMA 549, *Mitigation Assessment Team Report: Hurricane Katrina in the Gulf Coast*, July 2006 • FEMA 550, *Recommended Residential Construction for Coastal Areas: Building on Strong and Safe Foundations*, 2nd Edition, December 2009 • FEMA 551, *Selecting Appropriate Mitigation Measures for Floodprone Structures*, March 2007 • FEMA 577, *Design Guide for Improving Hospital Safety in Earthquakes, Floods, and High Winds: Providing Protection to People and Buildings*, June 2007	

Description	Web Link or Contact Information
10. Structure Elevation References	
• ASCE/SEI 24-05, *Flood Resistant Design and Construction*, January 2006 • FEMA P-55, *Coastal Construction Manual,* 4th Edition, August 2011 • FEMA P-259, *Engineering Principles and Practices of Retrofitting Floodprone Residential Structures*, 3rd Edition, January 2012 • FEMA P-312, *Homeowners Guide to Retrofitting*, 2nd Edition, December 2009 • FEMA 347, *Above the Flood: Elevating Your Flood Prone House*, May 2000 • FEMA P-499, *Home Builder's Guide to Coastal Construction Technical Fact Sheet Series*, December 2010 • FEMA Technical Bulletin TB-1, *Openings in Foundation Walls and Walls of Enclosures*, 2008 • FEMA Technical Bulletin TB-5, *Free-of-Obstruction Requirements,* 2008 • FEMA Technical Bulletin TB-9, *Design and Construction Guidance for Breakaway Walls*, 2008 • FEMA Form 81-31, NFIP Elevation Certificate, February 2013	

D. Referenced Regulations, Statutes, Directives, and Guidance

Reference	Description	Web Link
REGULATIONS		
2 CFR Part 215, Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations (OMB Circular A-110)	This part contains Office of Management and Budget (OMB) guidance to Federal agencies on the administration of grants to and agreements with institutions of higher education, hospitals, and other non-profit organizations. The guidance sets forth standards for obtaining consistency and uniformity in the agencies' administration of those grants and agreements.	http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=/ecfrbrowse/Title02/2cfr215_main_02.tpl
2 CFR Part 220, Cost Principles For Educational Institutions (OMB Circular A-21)	Establishes principles for determining costs applicable to grants, contracts, and other agreements with educational institutions.	http://www.whitehouse.gov/omb/circulars_a021_2004
2 CFR Part 225, Cost Principles for State, Local, and Indian Tribal Governments (OMB Circular A-87)	Establishes principles and standards for determining costs for Federal awards carried out through grants, cost reimbursement contracts, and other agreements with State and local governments and federally recognized Indian Tribal governments.	http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title02/2cfr225_main_02.tpl
2 CFR Part 230, Cost Principles for Non-Profit Organizations (OMB Circular A-122)	Establishes principles for determining costs of grants, contracts and other agreements with non-profit organizations.	http://www.whitehouse.gov/omb/circulars_a122_2004
26 CFR Section 1.170A-14, Qualified Conservation Contributions	Discusses deductions allowable for charitable contributions of interests in properties.	http://www.ecfr.gov/cgi-bin/retrieveECFR?gp=13&SID=7e3a7c14f52556f38d469032c58a4507&ty=HTML&h=L&r=SECTION&n=26y3.0.1.1.1.0.2.19
40 CFR Part 312, Innocent Landowners, Standards for Conducting All Appropriate Inquiries	Provide standards and practices for "all appropriate inquiries" for the purposes of the Comprehensive Environmental Response, Compensation, and Liability Act sections 101(35)(B)(i)(I) and 101(35)(B)(ii) and (iii).	http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=/ecfrbrowse/Title40/40cfr312_main_02.tpl
44 CFR Part 9, Floodplain Management and Protection of Wetlands	Sets forth policy, procedure, and responsibilities to implement and enforce Executive Order (EO) 11988, *Floodplain Management*, and EO 11990, *Protection of Wetlands*.	http://www.gpo.gov/fdsys/pkg/CFR-2008-title44-vol1/xml/CFR-2008-title44-vol1-part9.xml
44 CFR Part 10, Environmental Considerations	FEMA procedures for implementing the National Environmental Policy Act (NEPA). Provides policy and procedures to enable FEMA officials to account for environmental considerations when authorizing/approving major actions that have a significant impact on the environment.	http://www.gpo.gov/fdsys/pkg/CFR-2008-title44-vol1/xml/CFR-2008-title44-vol1-part10.xml
44 CFR Part 13, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments	Establishes uniform administrative rules for Federal grants and cooperative agreements and subgrants to State, local, and Indian Tribal governments.	http://www.gpo.gov/fdsys/pkg/CFR-2008-title44-vol1/xml/CFR-2008-title44-vol1-part13.xml

Reference	Description	Web Link
44 CFR Section 59.1, General Provisions, Definitions	Defines terms used in the Emergency Management and Assistance Federal Regulations	http://www.gpo.gov/fdsys/pkg/CFR-2008-title44-vol1/xml/CFR-2008-title44-vol1-part59.xml
44 CFR Part 60, Criteria for Land Management and Use	Contains regulations for sale of flood insurance; criteria to determine the adequacy of a community's floodplain management regulations; and the minimum standards for the adoption of floodplain management regulations in flood-prone areas.	http://www.gpo.gov/fdsys/pkg/CFR-2008-title44-vol1/xml/CFR-2008-title44-vol1-part60.xml
44 CFR Sections 60.3(b)(5) and (c)(4), Criteria for Land Management and Use and Floodplain Management Criteria for Floodprone Areas	Regulations regarding obtaining the elevation of residential and non-residential structures.	http://www.gpo.gov/fdsys/pkg/CFR-2008-title44-vol1/xml/CFR-2008-title44-vol1-part60.xml#seqnum60.3
44 CFR Part 79, Flood Mitigation Grants	Prescribes actions, procedures, and requirements for the administration the Flood Mitigation Assistance grant programs.	http://www.gpo.gov/fdsys/pkg/CFR-2008-title44-vol1/xml/CFR-2008-title44-vol1-part79.xml
44 CFR Part 80, Property Acquisition and Relocation for Open Space	Provides actions, procedures, and requirements for the administration of FEMA mitigation assistance for projects to acquire property for open space purposes under all Hazard Mitigation Assistance programs.	http://www.gpo.gov/fdsys/pkg/CFR-2008-title44-vol1/xml/CFR-2008-title44-vol1-part80.xml
44 CFR Part 201, Mitigation Planning	Provides information on requirements and procedures for mitigation planning as required by the Stafford Act.	http://www.gpo.gov/fdsys/pkg/CFR-2008-title44-vol1/xml/CFR-2008-title44-vol1-part201.xml
44 CFR Part 206, Federal Disaster Assistance for Disasters Declared On or After November 23, 1988	Prescribes policies and procedures for implementing the sections of Public Law 93-288 (the Stafford Act) that are delegated to the director of FEMA, including the administration of the Hazard Mitigation Grant Program (HMGP).	http://www.gpo.gov/fdsys/pkg/CFR-2008-title44-vol1/xml/CFR-2008-title44-vol1-part206.xml
44 CFR Part 207, Management Costs	Implements section 324, Management Costs, of the Stafford Act, providing actions, procedures, and policies for HMGP management costs.	http://www.gpo.gov/fdsys/pkg/CFR-2008-title44-vol1/xml/CFR-2008-title44-vol1-part207.xml
49 CFR Part 24, Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs	Promulgates rules to ensure that owners of real property displaced or acquired by Federal or federally assisted programs are treated fairly, consistently, and equitably, and that agencies who implement these regulations do so efficiently and cost effectively.	http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr;rgn=div5;view=text;node=49%3A1.0.1.1.18;idno=49;sid=4c3367f93b8162bf6daaf0a88fe20a0e;cc=ecfr
49 CFR Part 29, Governmentwide Debarment and Suspension (Nonprocurement)	This part adopts a government-wide system of debarment and suspension for nonprocurement activities.	http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=/ecfrbrowse/Title49/49cfr29_main_02.tpl
Federal Acquisition Regulations (FAR) Subpart 31.2	The FAR codifies and publishes uniform policies and procedures for acquisition by all executive agencies. Subpart 31.2 refers to Contracts with Commercial Organizations.	http://www.acquisition.gov/far/
Internal Revenue Code of 1954, as amended, Sections 170(h) (3) and (4)	Provides definitions for qualified conservation organizations and conservation purpose, including specific information regarding historic structure certification.	http://www.law.cornell.edu/uscode/text/26/170

Reference	Description	Web Link
Internal Revenue Code of 1954, as amended, Sections 501(c), (d), and (e)	Provides criteria for tax-exempt organizations.	http://www.law.cornell.edu/uscode/text/26/501
National Flood Insurance Program (NFIP) Technical Bulletin 3-93, *Non-Residential Floodproofing – Requirements and Certification*	Provides guidance on the NFIP regulations concerning watertight construction and the required certification for floodproofed non-residential buildings in Zones A, AE, A1–A30, AR, AO, and AH whose lowest floors are below the Base Flood Elevation.	http://www.fema.gov/library/viewRecord.do?id=1716
STATUTES		
Immigration and Nationality Act	Provides a definition for the term "national of the United States."	http://www.uscis.gov/portal/site/uscis/menuitem.eb1d4c2a3e5b9ac89243c6a7543f6d1a/?vgnextoid=f3829c7755cb9010VgnVCM10000045f3d6a1RCRD&vgnextchannel=f3829c7755cb9010VgnVCM10000045f3d6a1RCRD
Appalachian Regional Commission Funds, 40 U.S.C. 14321(a)(3), Grants and other assistance	Provides information on the authority of the Appalachian Regional Commission to make grants for administrative expenses and lists what those expenses may and may not include. Also provides information on what the local development district's contributions should be.	http://www.arc.gov/about/USCodeTitle40SubtitleIV.asp#14321
Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004 (Public Law 108-264), Part 102	A bill to amend the National Flood Insurance Act of 1968 to reduce losses to properties for which repetitive flood insurance claim payments have been made.	http://www.gpo.gov/fdsys/pkg/PLAW-108publ264/pdf/PLAW-108publ264.pdf
Biggert-Waters Flood Insurance Reform Act. P.L. 112-141 July 6, 2012	Flood Insurance Reform and Modernization Act that proposed changes to Mitigation Assistance Grants related to Flood Mitigation.	http://www.gpo.gov/fdsys/pkg/PLAW-112publ141/pdf/PLAW-112publ141.pdf
Civil Rights Act of 1964, 42 U.S.C. 2000d et seq., Title VI of the Civil Rights Act	Prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving Federal financial assistance.	http://www.justice.gov/crt/about/cor/coord/titlevi.php
Coastal Barrier Resources Act (Public Law 97-348; 16 U.S.C. 3501 et seq.)	Designated various undeveloped coastal barrier islands, depicted by specific maps, for inclusion in the Coastal Barrier Resource System. Areas so designated were made ineligible for direct or indirect Federal financial assistance that might support development, including flood insurance, except for emergency life-saving activities.	http://uscode.house.gov/download/pls/16c55.txt
Endangered Species Act (Public Law 93-205; 16 U.S.C. 1531–1544)	Prohibits Federal agencies from funding actions that would jeopardize the continued existence of endangered or threatened species or adversely modify critical habitat.	http://epw.senate.gov/esa73.pdf
Federal Crop Insurance Act, as amended, 7 U.S.C. 1501 et seq.	Promotes the national welfare by improving the economic stability of agriculture through a sound system of crop insurance.	http://www.agriculturelaw.com/links/cropins/statute.htm

Reference	Description	Web Link
National Environmental Policy Act (NEPA) (Public Law 91–190; 42 U.S.C. 4321 and 4331–4335)	Declares a national policy that encourages productive and enjoyable harmony between man and his environment; promotes efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; enriches the understanding of the ecological systems and natural resources important to the Nation; and establishes a Council on Environmental Quality.	http://www.nps.gov/history/local-law/FHPL_NtlEnvirnPolcy.pdf
National Flood Insurance Act of 1968, as amended, 42 U.S.C. 4001 et seq.	The National Flood Insurance Act of 1968 created the Federal Insurance Administration and made flood insurance available for the first time. The Flood Disaster Protection Act of 1973 made the purchase of flood insurance mandatory for the protection of property located in the Special Flood Hazard Area.	http://www.fema.gov/library/viewRecord.do?id=2216
National Flood Insurance Reform Act of 1994 (Public Law 103-325)	Amended the Flood Disaster Protection Act of 1973, providing tools to make the NFIP more effective in achieving its goals of reducing the risk of flood damage to properties and reducing Federal expenditures for uninsured properties that are damaged by floods.	http://www.fema.gov/library/viewRecord.do?id=2217
National Historic Preservation Act (Public Law 89-665; 16 U.S.C. 470 et seq.)	Establishes a program for the preservation of historic and prehistoric resources deemed important to our understanding of prehistory and U.S. history and created the National Register of Historic Places.	http://www.achp.gov/docs/nhpa%202008-final.pdf
National Register of Historic Places	The official list of the Nation's historic places worthy of preservation. It is part of a national program to support public and private efforts to identify, evaluate, and protect our historic and archeological resources.	http://www.nps.gov/history/nr/
Non-Insured Crop Disaster Assistance Program, 7 U.S.C. 7333	Provides financial assistance to producers of non-insurable crops when low yields, loss of inventory, or prevented planting occur due to natural disasters.	http://www.fsa.usda.gov/FSA/newsReleases?area=newsroom&subject=landing&topic=pfs&newstype=prfactsheet&type=detail&item=pf_20110830_distr_en_nap.html
Privacy Act of 1974 (5 U.S.C. 552a)	Regulates the collection, maintenance, use, and dissemination of personal information by Federal executive branch agencies.	http://www.justice.gov/opcl/privstat.htm
Public Health and Welfare, 42 U.S.C. 5133, Pre-Disaster Hazard Mitigation	Authorizes the Pre-Disaster Mitigation program.	http://www.law.cornell.edu/uscode/uscode42/usc_sec_42_00005133----000-.html
Public Health and Welfare, 42 U.S.C. 5154 (a), Insurance	Contains information on compliance with certain regulations and maintaining insurance in regard to Applicants and subapplicants requesting assistance to repair, restore, or replace damaged facilities under this code.	http://www.law.cornell.edu/uscode/uscode42/usc_sec_42_00005154----000-.html
Refugee Education Assistance Act of 1980, (Public Law 96-422) Part 501(e)	Allows the President to exercise authorities over Cuban and Haitian immigrants identical to the authorities exercised in the Immigration and Nationality Act, 8 U.S.C. 1158.	http://www.ssa.gov/OP_Home/comp2/F096-422.html

Reference	Description	Web Link
Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121 et seq.	Constitutes the statutory authority for most Federal disaster response activities, especially as they pertain to FEMA and FEMA programs.	http://www.fema.gov/pdf/about/stafford_act.pdf
Secure Rural Schools and Community Self-Determination Act of 2000, 16 U.S.C. 500	Contains information regarding payment and evaluation of receipts to State or Territory for schools and roads, moneys received, projections of revenues, and estimated payments.	http://www.govtrack.us/data/us/bills.text/106/h/h2389.pdf
Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (Public Law 91-646)	Ensures that people whose real property is acquired, or who move as a result of projects receiving Federal funds, will be treated fairly and equitably and will receive assistance in moving from the property they occupy.	http://uscode.house.gov/download/pls/42c61.txt
DIRECTIVES		
EO 11988, *Floodplain Management*	Requires Federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.	http://www.fema.gov/plan/ehp/ehplaws/eo11988.shtm
EO 11990, *Protection of Wetlands*	Requires Federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided.	http://www.fema.gov/environmental-planning-and-historic-preservation-program/executive-order-11990-protection-wetlands
EO 12898, *Environmental Justice for Low-Income and Minority Populations*	Directs Federal agencies "to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations in the United States."	http://www.fema.gov/environmental-planning-and-historic-preservation-program/executive-order-12898-environmental-justice
EO 12372, July 14, 1982, *Intergovernmental Review of Federal Programs*	Fosters an intergovernmental partnership and strengthens federalism by relying on State and local processes for State and local coordination and review of proposed Federal financial assistance.	http://www.archives.gov/federal-register/codification/executive-order/12372.html
EO 12416, April 8, 1983, *Intergovernmental Review of Federal Programs*	Amends Section 8 of EO 12372 regarding the content of the Director of the Office of Management and Budget's report and to whom the report is submitted.	http://www.archives.gov/federal-register/codification/executive-order/12372.html
EO 12699, January 5, 1990, *Seismic Safety of Federal and Federally assisted or Regulated New Building Construction*	Requires that each Federal agency responsible for the design and construction of each new Federal building shall ensure that the building is designed and constructed in accord with appropriate seismic design and construction standards.	http://www.wbdg.org/ccb/FED/FMEO/eo12699.pdf
GUIDANCE		
FEMA P-85, *Protecting Manufactured Homes from Floods and Other Hazards* (2nd Edition, November 2009)	Provides a best practices approach in reducing damages from natural hazards to assist in protecting manufactured homes from floods and other hazards.	http://www.fema.gov/library/viewRecord.do?id=1577

Reference	Description	Web Link
FEMA 317, Property Acquisition Handbook for Local Communities (October 1998)	A "how to" guide to help communities work through one specific hazard mitigation alternative known as property acquisition (also referred to as "buyout").	http://www.fema.gov/library/viewRecord.do?id=1654
FEMA P-320, *Taking Shelter from the Storm: Building a Safe Room for Your Home or Small Business* (3rd Edition, August 2008)	Guide to help homeowners decide if they should build a shelter in their house; provides various shelter designs that can be given to a contractor/builder.	http://www.fema.gov/plan/prevent/saferoom/fema320.shtm
FEMA P-361, *Design and Construction Guidance for Community Safe Rooms* (2nd Edition, August 2008)	A guidance manual for engineers, architects, building officials, and prospective shelter owners that presents important information about the design and construction of residential and community safe rooms that protect people during tornado and hurricane events.	http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=1657
FEMA P-424, *Design Guide for Improving School Safety in Earthquakes, Floods, and High Winds* (December 2010)	This manual is intended to provide guidance for the protection of school buildings from natural disasters. This volume concentrates on grade schools, K-12. FEMA P-424 covers earthquakes, floods, and high winds. Its intended audience is design professionals and school officials involved in the technical and financial decisions of school construction, repair, and renovations.	http://www.fema.gov/library/viewRecord.do?id=1986
FEMA 489, *Mitigation Assessment Team Report: Hurricane Ivan in Alabama and Florida* (August 2005)	Summarizes the observations, conclusions, and recommendations that resulted from post-disaster assessments sponsored by FEMA in response to Florida's 2004 hurricane season.	http://www.fema.gov/library/viewRecord.do?id=1569
FEMA P-499, *Home Builder's Guide to Coastal Construction Technical Fact Sheet Series* (December 2010)	Presents information aimed at improving the performance of buildings subject to flood and wind forces in coastal environments.	http://www.fema.gov/technology-transfer/home-builders-guide-coastal-construction-technical-fact-sheet-series-fema-p-499
FEMA 543, *Design Guide for Improving Critical Facility Safety from Flooding and High Winds: Providing Protection for People and Buildings* (January 2007)	Provides building professionals and decision-makers with information and guidelines for implementing a variety of mitigation measures to reduce the vulnerability to damage and disruption of operations during severe flooding and high-wind events. It concentrates on critical facilities (hospitals, schools, fire and police stations, and emergency operation centers).	http://www.fema.gov/library/viewRecord.do?id=2441
FEMA 549, *Mitigation Assessment Team Report: Hurricane Katrina in the Gulf Coast* (July 2006)	Evaluates and assesses damage from the hurricane and provides observations, conclusions, and recommendations on the performance of buildings and other structures impacted by wind and flood forces.	http://www.fema.gov/library/viewRecord.do?id=1857
FEMA P-55, *Coastal Construction Manual*, (4th Edition, August 2011)	Provides a comprehensive approach to sensible development in coastal areas based on guidance from over 200 experts in building science, coastal hazard mitigation, and building codes and regulatory requirements.	http://www.fema.gov/library/viewRecord.do?id=1671

Reference	Description	Web Link
FEMA P-550, *Recommended Residential Construction for Coastal Areas: Building on Strong and Safe Foundations* (2nd Edition, December 2009)	Provides recommended designs and guidance for rebuilding homes destroyed by hurricanes in the Gulf Coast. The manual also provides guidance in designing and building less vulnerable new homes that reduce the risk to life and property.	http://www.fema.gov/library/viewRecord.do?id=1853
FEMA 551, *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007)	This manual is intended to provide guidance to community officials for developing mitigation projects that reduce or eliminate identified risks for floodprone structures.	http://www.fema.gov/library/viewRecord.do?id=2737
FEMA 577, *Design Guide for Improving Hospital Safety in Earthquakes, Floods, and High Winds: Providing Protection to People and Buildings* (June 2007)	The intent of the Design Guide is to provide its audience with state-of-the-art knowledge on the variety of vulnerabilities faced by hospitals exposed to earthquakes, flooding, and high-winds risks, as well as the best ways to mitigate the risk of damage and disruption of hospital operations caused by these events.	http://www.fema.gov/library/viewRecord.do?id=2739
FEMA P-804, *Wind Retrofit Guide for Residential Buildings* (December 2010)	The purpose of this Guide is to provide guidance on how to improve the wind resistance of existing residential buildings. The content of this document should serve as guidance on retrofitting existing buildings for improved performance during high-wind events in all coastal regions.	http://www.fema.gov/library/viewRecord.do?id=4569
Mitigation Planning Guidance	This guidance provides information on preparing and updating mitigation plans in compliance with the mitigation planning regulations found at 44 CFR Part 201.	http://www.fema.gov/mitigation-planning-laws-regulations-guidance
Mitigation Planning How-To Guides (FEMA)	The guides focus on initiating and maintaining a planning process that will result in safer communities and are applicable to jurisdictions of all sizes and all resource and capability levels.	http://www.fema.gov/hazard-mitigation-planning-resources
Uniform Standards of Professional Appraisal Practice (2012–2013)	The generally accepted standards for professional appraisal practice in North America. Standards are included for real estate, personal property, business, and mass appraisal.	http://www.USPAP.org
Hazard Mitigation Assistance Tool for Identifying Duplication of Benefits (January 2013)	This guide provides instruction on what constitutes Duplication of Benefits in the use of Hazard Mitigation Assistance funds for property mitigation. It gives direction regarding verification processes and actions that can be taken to ensure that Duplication of Benefits does not occur.	http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=6815
OTHER RESOURCES		
Government-to-Government Relations with American Indian and Alaska Native Tribal Governments. January 12, 1999 (*Federal Register* vol. 64 no. 7)	Guides FEMA interactions with American Indian and Alaska Native Tribal governments.	http://www.gpo.gov/fdsys/pkg/FR-1999-01-12/html/99-642.htm

Reference	Description	Web Link
OMB Circular A-94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs* (October 29, 1992)	Specifies certain discount rates that will be updated annually when the interest rate and inflation assumptions in the budget are changed.	http://www.whitehouse.gov/omb/circulars/a094/a094.html
OMB Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations* (revised June 27, 2003 and June 26, 2007)	Sets forth standards for obtaining consistency and uniformity among Federal agencies for the audit of States, local governments, and non-profit organizations expending Federal awards.	http://www.whitehouse.gov/sites/default/files/omb/assets/a133/a133_revised_2007.pdf
ASCE/SEI 24-05, *Flood Resistant Design and Construction* (2006)	Provides minimum requirements for flood-resistant design and construction of structures located in flood hazard areas.	https://secure.asce.org/files/estore/5419/40818_40818.pdf
ASCE/SEI 7-05, *Minimum Design Loads for Buildings and Other Structures* (2005)	Provides requirements for general structural design and includes means for determining dead, live, soil, flood, wind, snow, rain, atmospheric ice, and earthquake loads, and their combinations that are suitable for inclusion in building codes and other documents.	https://secure.asce.org/files/estore/896/40809_40809.pdf
ASTM International Standard E1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (2005)	Defines good commercial and customary practices for conducting an environmental site assessment of a parcel of commercial real estate.	http://www.astm.org/Standards/E1527.htm
ASTM International Standard E2247-08, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process for Forestland or Rural Property* (2008)	This practice is intended for use on a voluntary basis by parties who wish to assess the environmental condition of forestland or rural property of 120 acres or greater taking into account commonly known and reasonably ascertainable information.	http://www.astm.org/Standards/E2247.htm
International Building Code (International Code Council)	The scope of this code covers all buildings except three-story, and one- and two-family dwellings and townhomes. This comprehensive code features time-tested safety concepts, structural, and fire and life-safety provisions covering means of egress, interior finish requirements, comprehensive roof provisions, seismic engineering provisions, innovative construction technology, occupancy classifications, and the latest industry standards in material design.	http://publicecodes.cyberregs.com/icod/ibc/index.htm
International Code Council, *International Wildland-Urban Interface Code* (2012)	Contains provisions addressing fire spread, accessibility, defensible space, water supply, and more for buildings constructed near wildland areas.	http://publicecodes.cyberregs.com/icod/iwuic/2012/index.htm

Reference	Description	Web Link
International Code Council, *Reducing Flood Losses through the International Codes* (3rd Edition, 2008)	This guide is intended to help community officials decide how to integrate the 2006 edition of the International Codes (I-Codes) into their current floodplain development and regulatory processes in order to meet the requirements to participate in the NFIP.	http://www.fema.gov/library/viewRecord.do?id=2094
International Residential Code for One- and Two-Family Dwellings (International Code Council)	A comprehensive code for homebuilding that brings together all building, plumbing, mechanical and electrical provisions for one- and two-family residences.	http://publicecodes.cyberregs.com/icod/irc/index.htm
National Fire Protection Association (NFPA) 225, *Model Manufactured Home Installation Standard* (2009 Edition)	Includes updated criteria covering the anchoring of the home and protection against seismic events, floods, and wind. Rules apply to single- and multi-section units.	http://www.nfpa.org/catalog/product.asp?pid=22509
NFPA 703, *Standard for Fire-Retardant Treated Wood and Fire-Retardant Coatings for Building Materials*	Provides enforcers, engineers, and architects with the industry's most advanced criteria for defining and identifying fire retardant-treated wood and fire-retardant coatings for building materials.	http://www.nfpa.org/catalog/product.asp?pid=70312
NFPA 914, *Code for Fire Protection of Historic Structures*	Intended to improve or upgrade the fire protection features in a wide range of historic buildings, and address ongoing operations as well as renovation and restoration projects.	http://www.nfpa.org/catalog/product.asp?pid=91410
NFPA 1141, *Standard for Fire Protection Infrastructure for Land Development in Suburban and Rural Areas*	Provides recommendations for planning and installing fire protection infrastructure for new developments in a community.	http://www.nfpa.org/catalog/product.asp?pid=114112
NFPA 1144, *Standard for Reducing Structure Ignition Hazards for Land Development in Suburban and Rural Areas*	Covers minimum design, construction, and landscaping elements for structures in the wildland/urban interface.	http://www.nfpa.org/cataloghttp://dnrc.mt.gov/forestry/Fire/Prevention/documents/WUIrewrite/NFPA1144.pdf/
NFPA 5000 Code, *Building Construction and Safety Code* (2012 Edition)	Combines regulations controlling design, construction, quality of materials, use and occupancy, location, and maintenance of buildings and structures, with fire and life-safety requirements found in NFPA codes and standards.	http://www.nfpa.org/catalog/product.asp?pid=500012
Firewise Communities	A multi-agency effort designed to reach beyond the fire service by involving homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire—before a fire starts.	http://www.firewise.org/
U.S. Department of Commerce, Bureau of Economic Analysis	Produces economic account statistics that enable government and business decision-makers, researchers, and the American public to follow and understand the performance of the Nation's economy.	http://www.bea.gov

Reference	Description	Web Link
U.S. Bureau of Labor and Statistics	An independent national statistical agency that collects, processes, analyzes, and disseminates essential statistical data to the American public, the U.S. Congress, other Federal agencies, State and local governments, business, and labor.	http://stats.bls.gov

E. Eligibility and Completeness Review Checklist for Project Subapplications

Applications submitted to FEMA that do not contain at least the basic components listed below may be immediately denied because there is no method to determine eligibility without this data. Additional information may be requested during FEMA review. This information is required for all submittals, including potential substitutions.

Application Component	Yes	No	Comment
General			
Documentation included in the subapplication?			
Is this a phased project?			
Technical Assistance Needed? Subapplicant is encouraged to contact the State (Applicant) to request application development assistance. FEMA resources may be available but will only be provided if requested by the Applicant.			
Applicants			
Eligible Applicant is identified (State or local government; eligible Private, non-profit organization; or Indian Tribal government)			
Applicant participates in the National Flood Insurance Program			
Plan Requirement			
Project conforms with State Mitigation Plan per 44 CFR Part 201			
Project conforms with Local Mitigation Plan per 44 CFR Part 201			
Project conforms with Indian Tribal Mitigation Plan per 44 CFR Part 201			
Scope of Work			
SOW describes the proposed solution			
Alternatives considered as part of the decision-making process			
Project includes photographs of each structure and general project area			
Project includes appropriate maps that orient the reviewer to the entire project area			
Latitude and longitude are provided for each structure			
SOW justifies the proposed solution as the best option over a range of alternatives			
Project site is clearly identified using maps, GPS coordinates, or other means			
Project addresses a repetitive problem or a significant risk to public health			

Application Component	Yes	No	Comment
Project solves a problem independently or constitutes a functional portion of a solution			
Schedule			
A work schedule of 3 years or less is provided			
Budget/Match Source			
A cost estimate/budget is provided that supports the SOW			
If project requires phased or incremental funding, the budget reflects amounts estimated for each funding increment			
Non-Federal cost shares and match sources are identified			
Project should identify potential Duplication of Benefits such as Insurance, Small Business Administration loans if information is available during project development			
Cost-effectiveness and Feasibility			
Project includes a benefit-cost analysis, or alternate cost-effectiveness documentation, such as Substantial Damage verification, and located in a riverine floodplain; or a narrative supporting cost-effectiveness and request for consideration under 5 percent HMGP discretionary funding			
Project includes technical information to support proposed action. For example, level of protection for drainage projects, engineering data to support proposed seismic retrofits, and population data to support safe room placement and size. Elevations are technically feasible.			
Environmental and Historic Preservation			
Project includes information and documentation to demonstrate conformance with 44 CFR Part 9.6 and Part 10			
Project demonstrates that it minimizes harm to the environment			
Project includes construction date for each structure			
Project includes all available information relating to known historic, archaeological, or environmentally sensitive areas (e.g., critical Coastal Barrier Resources Act or Otherwise Protected Area)			
All appropriate Federal, State, and local agencies have been consulted			
Project includes environmental coordination letters or contact information to obtain required coordination information			
Assurances			
FEMA Form 20-16A, Assurances Non-Construction Programs			
FEMA Form 20-16B, Assurances Construction Programs			
FEMA Form 20-16C, Certifications Regarding Lobbying, etc.			

Application Component	Yes	No	Comment
SF-LLL, Disclosure of Lobbying Activities			
Considers long-term changes to the area it proposes to protect and has manageable future maintenance and modification requirements			
Acquisition Demolition / Relocation Information			
Project confirms compliance with timelines and all other criteria set forth in 44 CFR Part 80 requirements			
Project includes Voluntary Participation Documentation for each property			
Documentation (if needed) that the property owner is National of United States or qualified alien			
For properties that are to be relocated, will the structure be relocated outside of the Special Flood Hazard Area?			
Elevation Information			
Project identifies the Base Flood Elevation or Advisory Base Flood Elevation			
Project includes finished floor elevation (Elevation certificate is preferred)			
Project includes proposed elevation height of the structure			
Designed and Implemented consistent with ASCE/SEI 24-05			
Safe Room Information			
Project includes population size and basis			
Designed and implemented consistent with FEMA P-320 or FEMA P-361			
Wind Retrofit Information			
Project includes proposed level of protection			
Designed and implemented consistent with P-804			
Drainage Information			
Project includes initial technical information to support size, costs and local permitting requirements			

F. Safe Room Application Using Pre-Calculated Benefits

Expedited HMGP Application for Residential Safe Rooms

- The State must have an approved State Administrative Plan and State Hazard Mitigation Plan prior to grant award.
- If a local jurisdiction is the subapplicant, they must have an approved local mitigation plan in place (or receive an Extraordinary Circumstances exception) prior to grant award.
- Each safe room included in this project must meet the criteria of FEMA P-320, *Taking Shelter From the Storm, Building a Safe Room For your Home or Small Business*, or FEMA P-361, *Design and Construction Guidance for Community Safe Rooms*.
- Safe rooms cannot be placed in floodways, velocity zones, Coastal A Zones, or areas subject to coastal storm surge inundation associated with a Category 5 hurricane.
- If a residential safe room is sited in a Special Flood Hazard Area, the structure must be insured for Flood Damage, and a deed notice must be conveyed to retain this requirement.
- This project conforms with applicable Hazard Mitigation Grant Program eligibility criteria for all projects.
- Applicant may request approval for pre-award costs. Implementation costs incurred prior to grant award are not eligible for reimbursement.

State (Grantee) Information

Disaster number: _____

Eligible subapplicant: _____ State or local government _____ Private non-profit entity

Does the project conform to the State/local mitigation plan? _____ Yes _____ No

Applicant Information

Project Title: Residential Safe Room Construction/Installation

Applicant _____

Federal Information Processing Standard (FIPS) Code _____

Federal Tax ID Number (if required) _____

Data Universal Numbering System (DUNS) Number _____

Community NFIP Status: Participating Community ID # _____

In Good Standing _____ Non-participating _____ CRS _____

Legislative District(s) _____

Application prepared by:

Name _____

Title _____

Address _____

City/State/Zip _____

Telephone _____ Email _____

Applicant Agent* _____

Title _____

Address _____

City/State/Zip _____

Telephone_____ Email_____

* Individual authorized to sign financial and legal documents on behalf of the Applicant

Project Information

1. History of hazards and description of the vulnerability to be mitigated

   Sample language:
   This project is being submitted in response to the recent, severe weather and tornado activity nationwide. It is the intent of the State and affected local jurisdictions to support the placement and availability of safe rooms as a means of providing life-safety level protection for our citizens.

2. Scope/description: Project includes population size and basis

   Sample language:
   This project proposes to fund the purchase, construction/installation, and verification of 150 residential safe rooms. These safe rooms will be constructed and installed to meet FEMA P-320 or FEMA P-361 design and construction criteria, prior to reimbursement by the Applicant to the property owner; the safe rooms will be verified by a qualified professional to meet FEMA P-320 standards. Prior to closeout, all property-specific data will be provided for entry into NEMIS in order to capture full information for each mitigated property.

3. Project Useful Life: (30 years).

4. Property and Structure Information
   - Address, including geo-location
   - Floodplain map and flood zone information
   - Structure age
   - Photographs

- Proposed action:
  - Safe room placed inside structure (no ground disturbance)
  - Safe room placed above/below ground outside the structure (ground disturbance)
- Additional information if identified by FEMA/State/Applicant

Environmental and Historic Preservation Compliance

Each site must be reviewed to determine compliance with environmental and historic preservation compliance requirements and to prepare necessary documentation. FEMA's *Programmatic Environmental Assessment for Hazard Mitigation Safe Room Construction* (June 2011) provides efficiencies for completing the environmental review for this project.

NOTE: FEMA may enter into agreements or other negotiated arrangements with the respective State Historic Preservation Officers and Indian Tribes to allow for expedited review in accordance with Section 106 of the National Historic Preservation Act.

Describe alternatives considered for this project:

Sample language:

Alternative 1 – Do nothing. This alternative will not result in substantial risk reduction and will leave many citizens exposed to future tornado and high-wind damages, including loss of life.

Alternative 2 – Community safe room or evacuation. Tornadoes do not allow for sufficient time to relocate household members to an off-site facility, and evacuation is not viable as travel in severe weather exposes evacuees to another set of risks and hazards with little certainty that they can reach safe haven.

Project Implementation Narrative

Briefly describe the Applicant's process for selecting and prioritizing participants; describe any limits to funding, the proposed project management actions to be taken during implementation and any variations from standard quarterly reporting; and provide a list (or form) to be submitted by property owners to validate eligible costs.

Sample language:

- *This project limits the amount reimbursable to property owner to up to 50 percent of the cost of the safe room, not to exceed $3,500* ***OR*** *This project limits the amount of each safe room to$7,000 (or other value).*
- *Participants were prioritized based on damaged areas and dates costs were incurred.*
- *Participants will be accepted as long as funds are available. Over submittals will be considered if additional funds become available.*
- *Quarterly reports will include current totals of completed, verified sites and associated costs for each completed site.*

- *Applicant reserves the right to expand this project as long as the application period is open.*
- *Site verification form will be provided for each site location (Attachment 2).*

Project Work Schedule (not to exceed 3 years)

Sample:

0–6 months: Initiate outreach-marketing; identify participants

3–12 months: Verify FEMA P-320 or FEMA P-361 criteria and all program eligibility requirements have been met for known sites.

12 months (prior to application period closing): Revise project if necessary to include more participants.

12–30 months: Provide quarterly progress reports indicating volume of completed verified actions; complete project implementation.

30–36 months: Collect all closeout data and complete data dissemination to local emergency medical services.

Cost-effectiveness Review

Sample language:

A cost-effectiveness evaluation has been performed for residential safe rooms in the (State of _____ / County of _____) and produced benefits as reflected on Table 1. These benefits are based on general sampling statewide and are based on 3 persons per household served by each safe room.

Options for capturing additional benefits: If the benefits listed in Table 1 are not sufficient to produce a ratio greater than 1:1 for this project, additional benefits may be obtained by increasing household population, where appropriate, verifying the structure type (manufactured housing produces more benefits than standard construction), and/or using a more specific local valuation that may include higher benefits based on specific risk. Technical support is available if needed.

Budget/Funding Information

Sample budget:

Cost Item	Quantity	Est. Cost Each	Total Est. Cost	Est. Fed Share	Estimated Match Share
Data Collection	150	$100	$15,000	$15,000	—
Material/Construction	150	$5,000	$750,000	$525,000[(1)]	$225,000
Project Management	150	$200	$30,000	$30,000	—
Inspection Certification	150	$200	$30,000	$30,000	—
Design/Engineering Review	150	$200	$30,000	30,000	—

Cost Item	Quantity	Est. Cost Each	Total Est. Cost	Est. Fed Share	Estimated Match Share
Verification/Closeout	150	$100	$15,000	$15,000	—
Outreach	—	—	$15,000	$15,000	—
Data Dissemination(2)	—	—	$15,000	$15,000	—
Grand Total	NA	NA	$900,000	$675,000	$225,000

NOTES:

Line items for Data Collection, Project Management, Design, and Outreach could be phased. This would allow limited fund release to identify participants and collect data to complete required environmental and historic preservation reviews.

General-cost line items are samples, not all costs may be required; amounts are variable. Additional line items may be included as necessary. These values are based on historical submittals and averages.

(1) This example limits reimbursement to property owner to $3,500.

(2) With property owner authorization, provide safe room geo-data to local emergency medical services in usable format.

All Federal Share Obligations of $1,000,000 or More Must Complete the Large Project Notification Process Prior to Approval

Aggregate Benefits By State (Abridged List)			
Alabama	$13,336.96	Nebraska	$9,921.78
Arkansas	$16,717.85	North Carolina	$5,723.26
Georgia	$5,290.98	Ohio	$11,469.38
Illinois	$13,685.72	Oklahoma	$18,366.36
Iowa	$14,962.87	Pennsylvania	$4,065.90
Indiana	$18,126.34	South Carolina	$6,139.38
Kansas	$14,005.75	South Dakota	$5,230.17
Kentucky	$13,554.96	Tennessee	$13,579.58
Louisiana	$9,921.94	Texas	$5,421.32
Michigan	$6,522.49	Virginia	$3,936.05
Missouri	$15,654.96	West Virginia	$4,973.50
Mississippi	$20,067.64	Wisconsin	$9,025.48
Minnesota	$7,092.39		

Final Documentation and Certification Variable by State/Region (FEMA/State/Applicant may include additional items)

- Property Owner Name
- Property Address, including geo-location for Safe Room
- Verification of FEMA P-320 or FEMA P-361 criteria
- Installation Inspection
- Conforms to Categorical Exclusion or Environmental Assessment
- Conforms to Local Floodplain Ordinance (if applicable)
- Flood Insurance Deed Tag (if applicable)
- Final Cost list
- Property owner permission to distribute GEO-location to local emergency medical services (optional)

G. Generator FAQ

Eligibility of Generators under the Hazard Mitigation Grant Program

General Eligibility and Application Development

1. How does the information in this guidance differ from current practice?

This Hazard Mitigation Assistance (HMA) Guidance establishes that the purchase and installation of generators for the protection of critical facilities is an eligible, stand-alone project type under the Hazard Mitigation Grant Program (HMGP) and is no longer limited only to the 5 Percent Initiative. Generators that constitute a functional portion of an otherwise eligible mitigation solution (critical or not) remain eligible.

2. Are generators still eligible under the 5 Percent Initiative?

Yes. If there is insufficient data to evaluate a generator project using a standard, HMA-approved Benefit-Cost Analysis (BCA) method, the project may be eligible under the 5 Percent Initiative, as described in current HMA Unified Guidance. To perform this evaluation, a narrative description of the project's cost-effectiveness must be provided in lieu of a BCA. However, when data is available to perform a standard, HMA-approved BCA, the standard method must be used.

3. Are eligible critical facilities limited to those listed in this guidance?

No. The critical facilities listed in this guidance are not exhaustive. Eligible critical facilities are generally meant to include, but not be limited to, facilities such as hospitals, fire stations, police stations, and water and waste water treatment plants.

4. Must the generator be permanently installed in, or anchored to, the critical facility, or can it be portable?

Generators for a single facility or building should be permanently installed on site. Portable generators are eligible provided that they meet all HMGP requirements as described in **44 CFR Section 206.434, Eligibility**. The Applicant must ensure that the generator will be in place to protect the facility functions specified in the project application. The Application should describe relevant transport, hook up, and fuel supply and storage requirements at multiple facilities and how these will be executed if the generator is portable.

5. Is the purchase of generators for residential structures an eligible activity?

No. The purchase of a generator for the singular purpose of maintaining power for a single residential structure is not an eligible activity.

6. If a generator is required by code, is the purchase of a generator for these facilities eligible?

Yes, provided that the generator project meets all HMGP requirements as described in **44 CFR Section 206.434, Eligibility.**

7. What size generator is appropriate for a facility?

This will vary by facility and usage. It is not always necessary for the generator to support facility operations to their full capacity, but it should be sized appropriately to ensure the facility is able to provide uninterrupted critical functions in the event of future power outages.

8. Is there a National Emergency Management Information System (NEMIS) code for generators as a stand-alone project type?

Yes. The new NEMIS code for stand-alone generator projects is **601.2 – Generator Regular**. The NEMIS code for generator projects as part of the 5 percent discretionary allowance is **601.1 – Generator.**

Cost-effectiveness

9. Will FEMA develop a separate BCA module for generators?

No. A separate module is not necessary to perform the analysis. The Damage Frequency Assessment (DFA) module is able to perform this analysis for multiple hazards and project types. If you experience problems using the DFA module, contact the BC helpline at bchelpline@fema.dhs.gov.

10. What are the key elements of a BCA for generator projects?

Key inputs required are:

a. Project Useful Life: According to **OMB Circular A-76, *Performance of Commercial Activities,*** the useful life for generators or generator sets is 19 years. This value can be used as the default useful life value when performing the BCA. It may be altered based on manufacturer warranty or other documentation that can demonstrate that the generator may be able to provide service for longer than 19 years. Analysts should use the 19-year project useful life first.

b. Project Costs: The cost of generators varies by size, installation, and purpose. The generator's size and specifications should be reasonable, appropriate, and necessary to continuing critical functions of the facility. The exact costs for generators, installation, and components should be provided by the subapplicant and included in the costs when performing the BCA.

c. Facility and Value of Service: Analysis for facilities for potable water, waste water, police stations, fire stations, and hospitals can be quickly performed using FEMA's BCA toolkit and the DFA module, which provides service values for these facilities. To use these values, the analyst will need some information regarding the population served by the facility. For example, if a generator is to be installed at a waste water treatment plant, the analyst will need to know how many customers are served by the facility, as well as how many days the facility was not able to operate because of power failure. These values can typically be obtained from the facility manager and can be provided on official letterhead for documentation purposes.

d. Recurrence Determination: Recurrence information used in the analysis may vary by location or by cause of power failure, such as wind or flood. See FAQ #17 for additional information.

e. Other Benefits: Other benefits (or costs avoided) may be included if they are addressed by the generator project.

11. What information is needed to perform a BCA for generator projects?

Information needed for performing the BCA will vary by facility. However, the following inputs are **required** to run the BCA module:

11.1 For **all BCAs** performed, the subapplicant must provide the following:

a. The total project cost

b. Useful life (19 years for generators)

c. Estimated yearly maintenance costs

d. The frequency of the event used in analysis that would cause a power failure demonstrating the need for a backup power source (generator)

e. The number of days that service was affected (without power)

To calculate the value of services (benefits to society), the following inputs **must** be included for each specified facility type:

11.2 For Water or Waste Water Services:

a. The number of customers affected by the power outage at the treatment plants

11.3 For Hospitals

a. The number of people served by the hospital

b. The distance in miles between the hospital being analyzed and the hospital that would treat these people in the event the hospital was inoperative

c. The number of people normally served by the alternate hospital

11.4 For Police Stations

a. The type of station (metropolitan, city, or rural)

b. The number of people served by the police station

c. The number of officers that work at the station and would serve the same area if the station were shut down as a result of a disaster

11.5 For Fire Stations

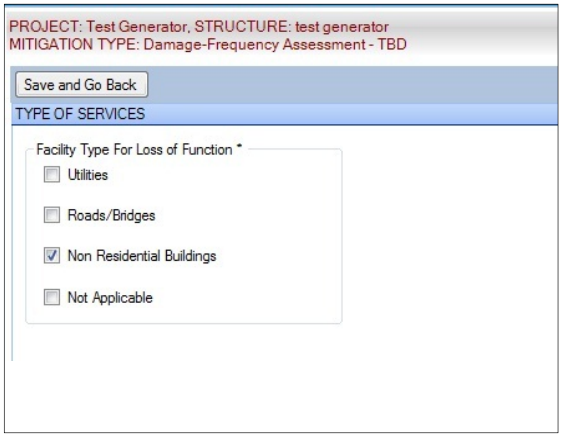
a. The number of people served by the station

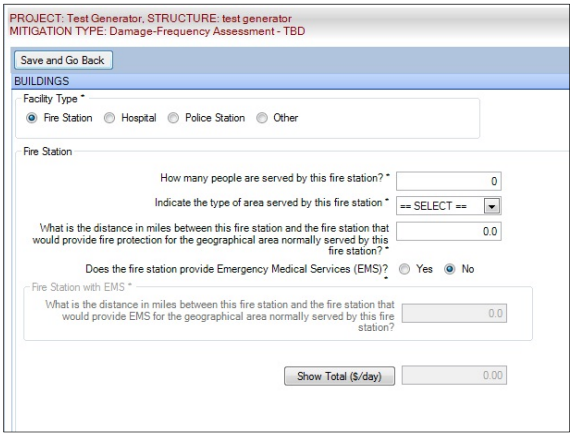
b. The type of area served by the fire station (urban, suburban, rural, wilderness)

c. The distance in miles to the nearest fire station that would provide protection for the area normally served by the fire station affected

d. Does the fire station provide emergency medical services?

Value of service for hospitals, police, and fire stations are in the DFA module by selecting Non Residential Buildings for the Facility Type for Loss of Function in the DFA modules as shown in the screen shots below.





12. Are the benefits limited to damages avoided to the facility?

No, benefits are not limited to just damages avoided. The value of service for critical facilities can be used to demonstrate cost-effectiveness. The value of services for critical infrastructure and facilities are included in the BCA toolkit, which is available at http://www.fema.gov/benefit-cost-analysis. All costs associated with power failure that would be mitigated by a generator should be considered.

Additional losses can be included in the BCA if those losses are a direct result of interrupted power service that a generator would have mitigated. For waste water treatment plants, additional costs are sometimes required to bring the facility back to operating status after an extended power failure. This may include removal of sludge in equipment or additional man hours needed to bring the facility back to operational status. Those additional costs can be included above and beyond the value of service costs if a generator would have prevented those additional costs.

13. Can an Applicant consider multiple hazards in the BCA?

Yes. Multiple hazards may disrupt power supply. The Applicant will need to provide the frequency of each hazard used in its analysis.

14. How does an Applicant develop the return interval for an event requiring the use of a generator?

The recurrence interval used in the analysis will depend on the hazard that caused or will cause the facility to lose power. For example, in the New York City metropolitan area, winds of 85 miles per hour could equate to a 25-year recurrence interval. For other hazards, such as extreme snow fall, information about prior snow fall totals could be validated to estimate the recurrence interval. Recurrence interval data can be obtained from a number of sources, such as the National Weather Service for rainfall and ice storms and the U.S. Geological Survey for floods. If three or more past

events resulted in power failure, the DFA module can calculate the recurrence interval based on the years of the events. Question #17 provides some useful tools to assist in frequency determination.

Generally, two events are required to perform the analysis. Applicants/subapplicants are encouraged to provide as much historical damage information as they can. Projects submitted with one frequency will be considered acceptable.

15. In the case of a water treatment plant, is the cost of providing temporary water or other emergency protective measures considered a future cost avoided?

Yes. If the generator will negate the need for temporary water in the future, then those costs should be included in the analysis.

16. Are environmental benefits included in the BCA?

To the extent they can be captured and justified, environmental costs associated with raw sewage discharge can be included in the BCA for waste water treatment plants. FEMA does not have a default value for these associated costs, and these costs will vary by location. The Applicant/ subapplicant should include all reasonable costs that will be mitigated by having a backup generator installed at a facility.

17. What resources are available to determine recurrence interval values?

Recurrence intervals may be determined by using some of the tools provided below:

- If the facility lost power as a result of wind damage to power lines feeding the facility, the analyst can utilize the Advanced Technology Council Wind Speed tool available at http://www.atcouncil.org/windspeed/index.php to determine the frequency of the coastal wind event.
- If power outages are attributed to flooding, recurrence information for the flooding event should be used in the analysis. The National Weather Services provides the Precipitation Frequency Data Server at http://hdsc.nws.noaa.gov/hdsc/pfds/, which can be utilized to establish a frequency for various precipitation events.
- U.S. Geological Survey stream gauge data can also be used to extrapolate frequency information for flood events, details of which can be found in the *Supplement to the Benefit-Cost Analysis Reference Guide* in the FEMA library at http://www.fema.gov/library/viewRecord.do?id=4830.
- National Snow and Ice Data Center (National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, National Science Foundation) at http://nsidc.org/data/search/data-search.html.
- Insurance claims, BureauNet information, damage repair records, data from the State/local agency, or local government Newspaper accounts citing credible sources (other than homeowner accounts) could be used in conjunction with the DFA module's unknown frequency calculator. Using this method may require more time as three events are required for analysis.

18. How should emergency operations centers (EOCs) be evaluated for inclusion in the BCA toolkit?

Finding the value (in loss of service terms) of a State Emergency Operation Center to prove cost-effectiveness of a generator project is difficult. FEMA will allow reasonable and justified "loss of service" costs for State and local EOCs that are identified by the Grantee to be entered into the DFA module to evaluate cost-effectiveness of an EOC generator project. Another or additional option is to investigate the costs of remobilizing an EOC to an alternate / continuity of operations location that could be avoided should the EOC be supplied with an uninterruptible power source such as a generator.

Scenarios

Different power failure scenarios at various facilities are outlined below. For analysis purposes, each facility was reviewed using 4 days of loss of service due to power failure at the 25-year recurrence. The 25-year recurrence interval for the test cases is based on observed wind speeds and the frequency was extrapolated using the Advanced Technology Council Wind Speed tool for the New York metropolitan area. Other project locations should use the appropriate recurrence intervals for the hazard being mitigated. Analysis was performed using the DFA module in the BCA Toolkit.

The scenarios are for demonstration purposes only. Dollar amounts and frequency intervals were chosen for comparison purposes only. Analysts should use the appropriate values for the facility being examined. For those performing the analysis, assistance is available through the benefit-cost helpline at bchelpline@fema.dhs.gov or at 1-855-540-6744. The helpline is not allowed to perform or review analyses but can provide answers to specific questions regarding methodologies.

When performing the BCA, inputs used in the module should be documented, as with all analysis. Documentation sources may include, but are not limited to, correspondence with facility or site managers, data available from the county or facility Web site, information from other government Web sites, media releases, engineering analysis, and letters from the facility manager. Discussion of data documentation is available in the BCA training materials available on FEMA.gov. There are no special or extraordinary data documentation requirements for this project type.

Scenario 1: The Purchase and Installation of a Generator at an Urban Police Station

Assumptions:

- The police station has 119 officers who serve up to 27,000 residents
- The police station loses power and the efficiency of the police station drops to 50 percent (assumes 50 percent of the force are working out of other facilities or within the community)
- The power is not fully restored for 4 days
- The project useful life for the generator is 19 years
- The project cost is $50,000

Benefit-Cost Ratio:

- The resulting benefit-cost ratio (BCR) is 1.23

Scenario 2: The Purchase and Installation of a Generator at an Urban Fire Station

Assumptions:

- The fire station has 119 firefighters who serve up to 27,000 residents
- The fire station loses power and the efficiency of the fire station drops to 50 percent
- The power is not fully restored for 4 days
- The project useful life for the generator is 19 years
- The project cost is $50,000

Benefit-Cost Ratio:

- The resulting BCR is 0.80

Scenario 3: The Purchase and Installation of a Generator at an Urban Hospital

Assumptions:

- The hospital serves up to 27,000 residents
- The power is not fully restored for 4 days
- The project useful life for the generator is 19 years
- The project cost is $200,000

Benefit-Cost Ratio:

- The resulting BCR is 1.0

Scenario 4: The Purchase and Installation of a Generator at a Rural Area Water Treatment Plant (Potable Water)

Assumptions:

- The water treatment plant serves up to 15,000 customers
- The plant loses power for 3 days
- A 100-year recurrence interval is used
- The project cost is $200,000

Benefit-Cost Ratio

- The resulting BCR is 1.05

Scenario 5: The Purchase and Installation of a Generator at an Urban Area Waste Water Treatment Plant

Assumptions:

- The waste water treatment plant serves up to 500,000 residents
- The waste water treatment plant loses power and there is no service
- The power is not fully restored for 4 days
- The project useful life for the generator is 19 years
- The project cost is $1,500,000

Benefit-Cost Ratio:

- The resulting BCR is 24.8

H. Eligibility and Completeness Review Checklist for Planning Subapplications

Applications submitted to FEMA that do not contain at least the basic components listed below may be immediately denied because there is no method to determine eligibility without this data. Additional information may be requested during FEMA review. This information is required for all submittals, including potential substitutions.

Application Component	Yes	No	Comments
General			
Documentation included in the subapplication?			
Technical Assistance Needed? Subapplicant is encouraged to contact the State (Applicant) to request application development assistance. FEMA resources may be available but will only be provided if requested by the Applicant.			
Applicants			
Applicant included management costs for delivery of technical assistance for mitigation planning (e.g., plan reviews, planning workshops, training)			
Scope of Work (SOW)			
Proposed planning activity is consistent with 44 CFR Part 201			
Proposed planning activity is described, including whether it will result in a new or updated hazard mitigation plan (including public involvement, identification of hazards, development of a comprehensive risk/vulnerability assessment, identification of mitigation goals and strategies, and plan implementation) or enhance an existing mitigation plan through a planning-related activity			
Participating jurisdiction(s) are identified and described			
A statement is provided on how the overall planning effort will be coordinated			
SOW is consistent with work schedule and cost estimate (describes entire planning process)			
For mitigation plan updates, the SOW describes the process that each jurisdiction will complete to review each section of the previous plan and address gaps, as needed; new information (including hazard, land use, and development trends); how the previous plan was implemented; and what process will be used			
Copy of the plan review document (i.e., review tool or crosswalk) from the FEMA approval of the previous plan is included, if available/applicable			

Application Component	Yes	No	Comments
Schedule			
Work schedule of 3 years or less is provided and allows sufficient time for State and FEMA reviews; preparation of required revisions, if needed; formal adoption by the jurisdiction(s); and FEMA approval			
Cost Estimate			
Cost estimate supports the SOW and is reasonable for the jurisdictions participating			
Assurances			
FEMA Form 20-16A, Assurances Non-Construction Programs			
FEMA Form 20-16C, Certifications Regarding Lobbying, etc.			
SF-LLL, Disclosure of Lobbying Activities			

I. EHP Checklist

"Yes" indicates that the environmental regulation or statute may apply to your project.

Environmental Regulation or Statute		Yes	No
National Historic Preservation Act			
1.A	Would the proposed project affect, or is the proposed project in close proximity to, any buildings or structures 50 years or more in age?		
1.B	Will the proposed project involve disturbance of ground?		
Endangered Species Act and Wildlife Coordination Act			
2.A	Are federally listed or endangered species, or their critical habitat, present in or near the project area and, if so, which species are present?		
2.B	Will the proposed project remove or affect vegetation?		
2.C	Is the proposed project in or near (within 200 feet), or likely to affect, any type of waterbody or body of water?		
Clean Water Act, Rivers and Harbors Act			
3.A	Will the proposed project involve dredging or disposal of dredged material, excavation, the addition of fill material, or result in any modification to water bodies or wetlands designated as "waters of the United States" as identified by the U.S. Army Corps of Engineers or on the National Wetland Inventory?		
Executive Order 11988 (Protection of Floodplains) and Executive Order 11990 (Protection of Wetlands)			
4.A	Does a Flood Insurance Rate Map, Flood Hazard Boundary Map, hydrological study, or some other source indicate that the project is located in, or will affect, a 100-year floodplain, a 500-year floodplain (if a critical facility), an identified regulatory floodway, or an area prone to flooding?		
4.B	Is the proposed project located in, or will it affect, a wetland as listed in the National Wetland Inventory?		
4.C	Will the proposed project alter a watercourse, water flow patterns, or a drainage way, regardless of its floodplain designation?		
4.D	Is the proposed project located in, or will it affect, a floodplain or wetland? If yes, the 8-step process summarized in Appendix J must be completed.		
Coastal Zone Management Act			
5.A	Is the proposed project located in the State's designated coastal zone?		
Farmland Protection Policy Act			
6.A	Will the proposed project convert more than 5 acres of "prime or unique" farmland outside city limits to a non-agricultural use?		
Resource Conservation Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act			
7.A	Is there reason to suspect there are contaminants from a current or past use on the property associated with the proposed project?		
7.B	Are there are any studies, investigations, or enforcement actions related to the property associated with the proposed project?		
7.C	Will any project construction or operation activities involve the use of hazardous or toxic materials?		

Environmental Regulation or Statute		Yes	No
7.D	Are any of the current or past land uses of the property associated with the proposed project or are any of the adjacent properties associated with hazardous or toxic materials?		
Executive Order 12898 (Environmental Justice for Low Income and Minority Populations)			
8.A	Are there any low-income or minority populations in the project's area of effect or adjacent to the project area?		
Other Environmental/Historic Preservation Laws (including applicable State laws) or Issues			
9.A	Are other environmental/historic preservation requirements associated with this project?		
9.B	Are any controversial issues associated with this project?		
9.C	Have any public meetings been conducted, or public comment solicited, on the proposed project?		

J. 8-Step Decision Making Process for Floodplain Management Considerations

Step 1. Determine whether the proposed action is located in a wetland and/or the 100-year floodplain (500-year floodplain for critical actions) and whether it has the potential to affect or be affected by a floodplain or wetland (see 44 CFR Section 9.7).

Step 2. Notify the public at the earliest possible time of the intent to carry out an action in a floodplain or wetland, and involve the affected and interested public in the decision-making process (see 44 CFR Section 9.8).

Step 3. Identify and evaluate practicable alternatives to locating the proposed action in a floodplain or wetland (including alternative sites, actions, and the "no action" option) (see 44 CFR Section 9.9). If a practicable alternative exists outside the floodplain or wetland, FEMA must locate the action at the alternative site.

Step 4. Identify the potential direct and indirect impacts associated with the occupancy or modification of floodplains and wetlands and the potential direct and indirect support of floodplain and wetland development that could result from the proposed action (see 44 CFR Section 9.10).

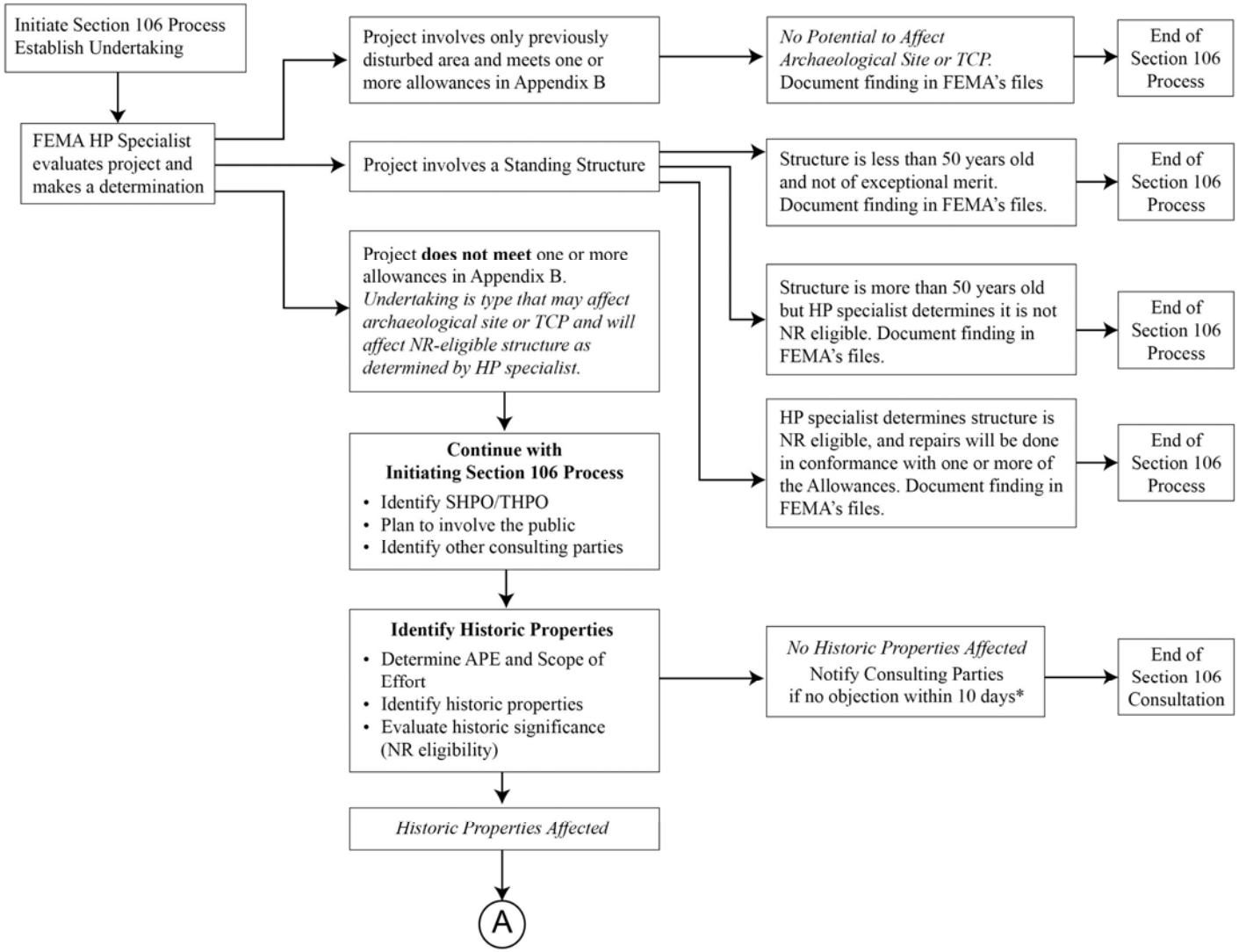
Step 5. Minimize the potential adverse impacts and support to or within floodplains and wetlands to be identified under Step 4, restore and preserve the natural and beneficial values served by floodplains, and preserve and enhance the natural and beneficial values served by wetlands (see 44 CFR Section 9.11).

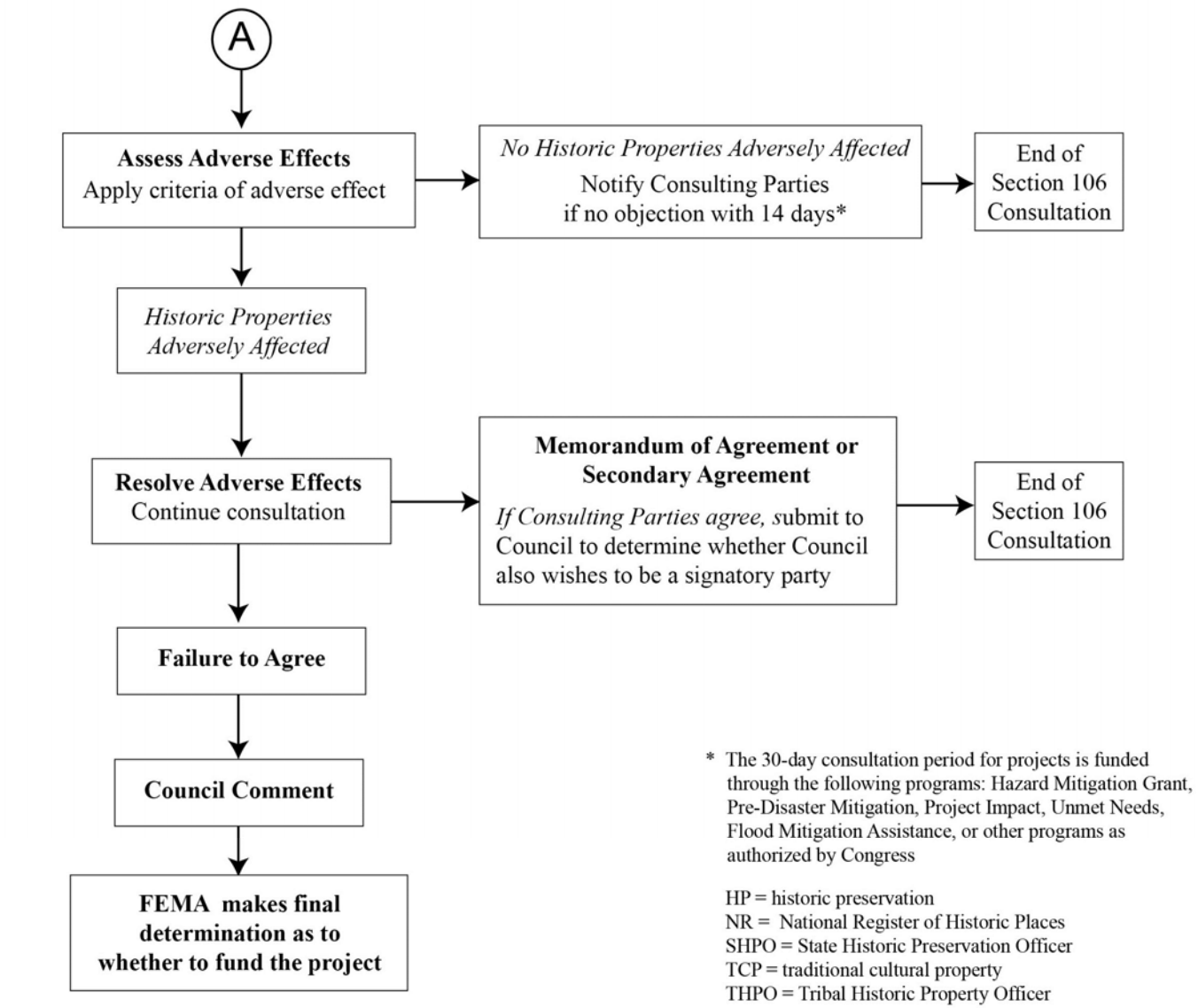
Step 6. Reevaluate the proposed action to determine first, if it is still practicable in light of its exposure to flood hazards, the extent to which it will aggravate the hazards to others, and its potential to disrupt floodplain and wetland values, and second, if alternatives preliminarily rejected at Step 3 are practicable in light of the information gained in Steps 4 and 5. FEMA shall not act in a floodplain or wetland unless it is the only practicable location (see 44 CFR Section 9.9).

Step 7. Prepare and provide the public with a finding and public explanation of any final decision that the floodplain or wetland is the only practicable alternative (see 44 CFR Section 9.12).

Step 8. Review the implementation and post-implementation phases of the proposed action to ensure that the requirements stated in 44 CFR Section 9.11 are fully implemented. Oversight responsibility shall be integrated into existing processes.

K. Section 106 Process under the National Historic Preservation Act





* The 30-day consultation period for projects is funded through the following programs: Hazard Mitigation Grant, Pre-Disaster Mitigation, Project Impact, Unmet Needs, Flood Mitigation Assistance, or other programs as authorized by Congress

HP = historic preservation
NR = National Register of Historic Places
SHPO = State Historic Preservation Officer
TCP = traditional cultural property
THPO = Tribal Historic Property Officer

L. Application for Advance Assistance

Hazard Mitigation Grant Program (HMGP) Advance Assistance Pilot Optional Application

The State of _____ requests $_____ in Advance Assistance[1] for DR_____ pursuant to Section 1104 of the Sandy Recovery and Improvement Act (SRIA) of 2013 to accelerate implementation of the Hazard Mitigation Grant Program (HMGP). The State will use Advance Assistance to develop mitigation strategies and obtain data to prioritize, select and develop complete HMGP applications in a timely manner, as described in the Project Description (Work Scope) below.

Disaster and Project Number _____

Project Title: Advance Funding Request

Applicant _____

Federal Information Processing Standard (FIPS) Code _____

Applicant's Agent and Contact Information _____

_____

Project Description (Work Scope)

List proposed activities, estimated costs and deliverables. (See Advance Assistance Frequently Asked Questions for list of eligible activities).

Activity	Estimated Cost	Deliverable
1.		
2.		
3.		
(Etc.)		

Work Schedule

Following is a schedule of proposed milestones by quarter for all major activities by which the State proposes to monitor progress for Advance Assistance:

[1]States may apply for up to 25 percent of the estimated total HMGP grant amount or $10 million, whichever is less.

Q1 (First Quarter Following Initial Approval)

Activity	Milestone	Deliverables
1.		
2.		
3.		
(Etc.)		

Budget Information

Total Estimated Cost (Federal and non-Federal cost) _____

Total Federal Cost _____

Line Item Budget

The State may request that FEMA obligate Advance Assistance funds incrementally, based on when the State needs the funds. Please list the obligation schedule by activity below.

Activity	Initial Amount Requested	Second Amount Requested	Third Amount Requested	Total Requested
1,				
2,				
3.				
(Etc.)				

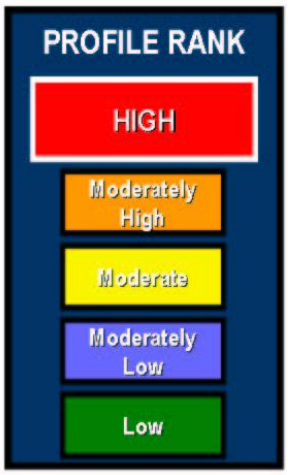
Additional Information Section

Provide any relevant information or explanation.

C HAZARD ANALYSIS

The hazard identification and ranking was obtained primarily from the Santa Fe Irrigation District (District) Hazard Identification Exercise. The Hazard Identification Exercise was conducted as a participatory Steering Committee exercise to identify the potential hazards within the District's service area. The Hazard Identification Exercise was facilitated using an interactive spreadsheet that asked specific questions on potential hazards and then rated them accordingly. These questions guided the team in the correct facilitation and application of the program. The following information summarizes the Hazard Identification Exercise risk ranking results, including the descriptions of each hazard factor, and provides the specific descriptor choices for each risk factor and description. Additionally, a risk ranking matrix is provided to designate the overall ranking score and categorization of each hazard.

Hazard Identification and Risk Ranking



Each hazard profile included a profile ranking of the hazard (ranging from low risk to high risk). The Steering Committee determined this initial profile ranking based on all of the hazard identification and profile research summarized and group discussion and evaluation of all of the data, including numerical rankings (1-5) of the following criteria:

- **Consequence/Severity** – How wide spread is the impact area?
- **Secondary Effects** – Could the event trigger another event and separate response?
- **Probability/Frequency** – Historical view of how often this type of event occurs locally and projected recurrence intervals.
- **Warning/Onset** – Advance warning of the event, or none.
- **Duration** – Length of elapsed time where response resources are active.
- **Recovery** – Length of time until lives and property return to normal.

Table C.1: Risk Factors for Hazard Identification

Risk Factor	Description	Descriptors	Value
Probability/ Frequency	Prediction of how often a hazard will occur in the future	Infeasible event - not applicable due to geographic location characteristics	0
		Rare event - occurs less than once every 50 years	1
		Infrequent event - occurs between once every 8 years and once every 50 years (inclusive)	2
		Regular event - occurs between once a year and once every 7 years	3
		Frequent event - occurs more than once a year	4
Consequence/ Severity	Physical Damage - structures and lifelines Economic Impact – loss of function for power, water, sanitation, roads, etc.	No damage	1
		Minor/slight damage to buildings and structures, no loss of lifelines	2
		Moderate building damage, minor loss of lifelines (less than 12 hours)	3
		Moderate building damage, lifeline loss (less than 24 hours)	4
		Extensive building damage, widespread loss of lifelines (water, gas, electricity, sanitation, roads), loss of life	5
Vulnerability	Impact Area - area impacted by a hazard event Secondary Impacts - Capability of triggering additional hazards Onset - Time between initial recognition and when the hazard begins to impact the community	No physical damage, no secondary impacts	1
		Localized damage area	2
		Localized damage area, minor secondary impacts, delayed hazard onset	3
		Moderate damage area, moderate secondary impacts, moderate warning time	4
		Widespread damage area, significant secondary impacts, no warning time	5

Each profile includes a ranking of the hazard. The hazard rankings were determined by assigning each hazard the appropriate risk factors as described above. The risk factors were then used with a hazard ranking matrix to determine the final hazard score. The following table provides the matrix used for determining each hazard's score.

Table C.2: Risk Ranking Matrix

Probability/Frequency Description	Risk Ranking Matrix						
Rare Event: Occurs less than once every 50 years	**Probability/Frequency**		**Consequence/Severity**				
	Value	**1**	**1**	**2**	**3**	**4**	**5**
	Vulnerability	**1**	1	2	3	4	5
		2	2	4	6	8	10
		3	3	6	9	12	15
		4	4	8	12	16	20
		5	5	10	15	20	25
Infrequent Event: Occurs between once every 8 years and once every 50 years (inclusive)	**Probability/Frequency**		**Consequence/Severity**				
	Value	**2**	**1**	**2**	**3**	**4**	**5**
	Vulnerability	**1**	2	4	6	8	10
		2	4	8	12	16	20
		3	6	12	18	24	30
		4	8	16	24	32	40
		5	10	20	30	40	50
Regular Event: Occurs between once a year and once every 7 years	**Probability/Frequency**		**Consequence/Severity**				
	Value	**3**	**1**	**2**	**3**	**4**	**5**
	Vulnerability	**1**	3	6	9	12	15
		2	6	12	18	24	30
		3	9	18	27	36	45
		4	12	24	36	48	60
		5	15	30	45	60	75
Frequent Event: Occurs more than once a year	**Probability/Frequency**		**Consequence/Severity**				
	Value	**4**	**1**	**2**	**3**	**4**	**5**
	Vulnerability	**1**	4	8	12	16	20
		2	8	16	24	32	40
		3	12	24	36	48	60
		4	16	32	48	64	80
		5	20	40	60	80	100

The hazard scores from the Hazard Ranking Matrix were compared to the hazard rank criteria to finally categorize each hazard with a hazard ranking. The table below provides the value determinations for each hazard ranking.

Table C.3: Risk Rank Categorization

High Hazard	**50 to 100**
Moderately High Hazard	**25 to 49**
Moderate Hazard	**15 to 24**
Moderately Low Hazard	**5 to 14**
Low Hazard	**1 to 4**

The hazard ranking worksheets are provided in the following pages.

Hazard Identification and Risk Ranking

Wildfire

Rank Factors	Hazard Factor Description	Rank
Probability	Regular event - occurs between once a year and once every 7 years	3
Consequence	Extensive building damage, widespread loss of lifelines (water, gas, electricity, sanitation, roads), loss of life	4
Vulnerability	Moderate damage area, moderate secondary impacts, moderate warning time	4
Risk	High	**48**
Comments	Witch Creek burned through treatment plant site, no interruption of water service. Power (2.5 days) (SDG&E implemented upgrade) sand communications down (5 days). Required District to import treated water. 2 Diesel back-up generators 600kw. Meters melted and hydrant damage. Watershed impacts, reduction in water quality and contaminated runoff. Smart meters are plastic and more vulnerable to fire event. - 100 AMI (Advanced Meter infrastructure) - any meter that is 1in or below is smart meter - makes up 80% of meter population.	

Earthquake

Rank Factors	Hazard Factor Description	Rank
Probability	Infrequent event - occurs between once every 8 years and once every 50 years (inclusive)	2
Vulnerability	Moderate building damage, lifeline loss (less than 24 hours), severe injury or disability	3
Consequence	Widespread damage area, significant secondary impacts, no warning time	5
Risk	Moderately High	**30**
Comments	Consider Tsunami as a secondary event. 1940s San Dieguito reservoir buckling and cracking. Conducted a retrofit.	

Severe Storm/Flood

Rank Factors	Hazard Factor Description	Rank
Probability	Frequent event - occurs more than once a year	4
Consequence	Minor/slight damage to buildings and structures, no loss of lifelines, first aid injury and no disability	2
Vulnerability	Localized damage area, minor secondary impacts, delayed hazard onset	3
Risk	Moderate	**24**
Comments	Includes cold winter winds & Santa Ana winds, La Orilla Road two pressure stations and a transmission main, subject to flooding. Flooding at the yard. San Dieguito river. Community Services District (by San Dieguito) (San Diego pump station next to the lake) SSOs contamination of the lake hodges.	

Dam/ Reservoir Failure

Rank Factors	Hazard Factor Description	Rank
Probability	Rare event - occurs less than once every 50 years	1
Consequence	Extensive building damage, widespread loss of lifelines (water, gas, electricity, sanitation, roads), loss of life	5
Vulnerability	Moderate damage area, moderate secondary impacts, moderate warning time	4
Risk	Moderate	**20**
Comments	Dam Safety Hazard Analysis completed (vulnerability at the outlet to the pump station). Dam inundation study for both Hodges and San Dieguito. Hodges failure can potentially damage the main transmission feeding Fairbanks Ranch at bridge crossing and loss of local water supply to southern customers. San Dieguito failure results in downstream flooding, wash out La Orilla, property damage, loss of water supply, main transmission line failure.	

Hazardous Material Release/ Pipeline Failure

Rank Factors	Hazard Factor Description	Rank
Probability	Rare event - occurs less than once every 50 years	1
Consequence	Extensive building damage, widespread loss of lifelines (water, gas, electricity, sanitation, roads), loss of life	4
Vulnerability	Localized damage area, minor secondary impacts, delayed hazard onset	3
Risk	Moderately Low	**12**
Comments	Mitigation factors in place making a full release highly unlikely - impacted were reduced.Terrorism removed. NGPF added. Copper wire stolen, people charging gates, stealing hydrants, minor vandalism issues. Robust security system for hazardous materials. Vulnerability - loss of critical business information/data (laptops with critical facility information). 30" pipeline runs parallel to the coast highway, next to transmission lines. Pipeline next to the plant that is next to the transmission mains. Jet fuel line next through the District service area to Miramar.	

Terrorism/ Adversarial Human-Caused Events

Rank Factors	Hazard Factor Description	Rank
Probability	Rare event - occurs less than once every 50 years	2
Consequence	Extensive building damage, widespread loss of lifelines (water, gas, electricity, sanitation, roads), loss of life	4
Vulnerability	Localized damage area, minor secondary impacts, delayed hazard onset	3
Risk	Moderately Low	**24**
Comments		

Drought

Rank Factors	Hazard Factor Description	Rank
Probability	Regular event - occurs between once a year and once every 7 years	3
Consequence	No damage	1
Vulnerability	Localized damage area, minor secondary impacts, delayed hazard onset	3
Risk	Moderately Low	**9**
Comments	9 months of stored water. Loss of water service unlikely. Vulnerability averaged high area and long delayed hazard onset. Increased conservation and decreased revenue. Potential rate increases.	

Power Failure

Rank Factors	Hazard Factor Description	Rank
Probability	Regular event - occurs between once a year and once every 7 years	3
Consequence	No damage	1
Vulnerability	No physical damage, no secondary impacts	1
Risk	Low	**3**
Comments		

D PUBLIC PARTICIPATION & PLANNING PROCESS DOCUMENTATION

To include valuable input from the community in the development of a Hazard Mitigation Plan (HMP), the Santa Fe Irrigation District (District) solicited public participation during plan development and once a draft was completed. Hardcopy flyers were displayed on the message board located in the lobby of the District's administration building to invite the public to attend a workshop aimed to provide the public with insight into the planning process and provide comment on the update. No members of the public attended the Public Meeting held on May 1, 2023

Upon completion of the initial draft HMP, the Plan was posted on the District's website initiating a period of public comment. In addition to taking comments electronically through the District website to allow the public to bring their suggestions directly to the Planning Team. No members of the public came forward either to participate in a Steering Committee meeting, the public meeting, or provided comments electronically though the District website.

The following sections provide additional information and supporting documentation about the planning process implemented by the Steering Committee to update the Hazard Mitigation Plan. For descriptions of the content of each Steering Committee meeting, please refer to Chapter 1.

Steering Committee Meeting #1

SFID - HMP Update
#1 Steering Committee Meeting

Name	Agency
Nicholas Isabell	SFID
David Harris	SFID
CHRIS BOZIR	SFID
Tim Bailey	SFID
Matt Rentler	SDWD
Roman Kogan	SFID
Guillermo Preciado	SFID
Tim Schuette	OMWD
Teresa Penunuri	SFID

SANTA FE IRRIGATION DISTRICT

HAZARD MITIGATION PLAN UPDATE

Ryan Bray

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MEETING AGENDA

- Project Overview and Background
- Steering Committee Goals
- Risk Assessment Background
- Hazard Identification and Ranking

PROJECT OVERVIEW

DISASTER MITIGATION ACTION OF 2000

- Revitalized Federal Planning Requirements
  - State and Local Hazard Mitigation Plans
  - Plans must be updated every five years

- Federal Grant Funding Eligibility
  - Hazard Mitigation Grant Program (HMGP)
  - Pre-Disaster Mitigation Program (PDM)

- Disaster Mitigation Act of 2000 is intended to facilitate cooperation between state and local authorities on risk reduction measures and to expedite funding allocation

PUBLIC PROCESS

DMA 2000 Stresses Public Participation:

- An open public involvement process that is comprehensive, continuous and starts early
- Coordination with neighboring communities and various interest groups in Plan development



CLIMATE CHANGE

- California Adaptation Planning Guide (APG) released Spring 2020
- APG released in response to several Executive Orders encouraging research of and response to climate change
- SFID is located in the South Coast Region. The District should consider some of the following hazards
  - Increased Temperatures
  - Reduced Precipitation
  - Sea Level Rise
  - Wildfire Risk
  - Public Health (heat and air quality)



STEERING COMMITTEE GOALS

- Review existing Plan for implementation
- Review the list of potential hazards and add additional hazards for the revision
- Determine the hazard impacts throughout the District
- Interface with partner agencies to determine existing mitigation measures
- Develop possible approaches to projects which will reduce the impacts
- Prioritize mitigation projects for implementation

RISK ASSESSMENT METHODOLOGY

RISK ASSESSMENT METHODOLOGY

- Risk Assessment provides the foundation for the mitigation planning process, which is focused on identifying and prioritizing actions to reduce risk to hazards
- FEMA recommended steps for conducting a risk assessment
  - Describe Hazards
  - Identify Community Assets
  - Analyze Risks
  - Summarize Vulnerability
- Risk Management Professionals incorporates each of these steps into the Plan update process and has acquired CalOES and FEMA approval using this methodology many times.

RISK ASSESSMENT – POTENTIAL HAZARDS

Hazards From the Previous Plan

- Wildfire
- Earthquake
- Severe Storm/Flood
- Dam/Reservoir Failure
- Hazardous Materials Release/Pipeline Failure
- Terrorism/ Adversarial Events
- Drought
- Power Failure

RISK ASSESSMENT – POTENTIAL HAZARDS

HAZARDS RESULTING FROM CLIMATE CHANGE

- Increased Temperatures
- Reduced Precipitation
- Sea Level Rise
- Reduced Tourism
- Reduced Water Supply
- Wildfire Risk
- Public Health (heat and air quality)
- Coastal Erosion

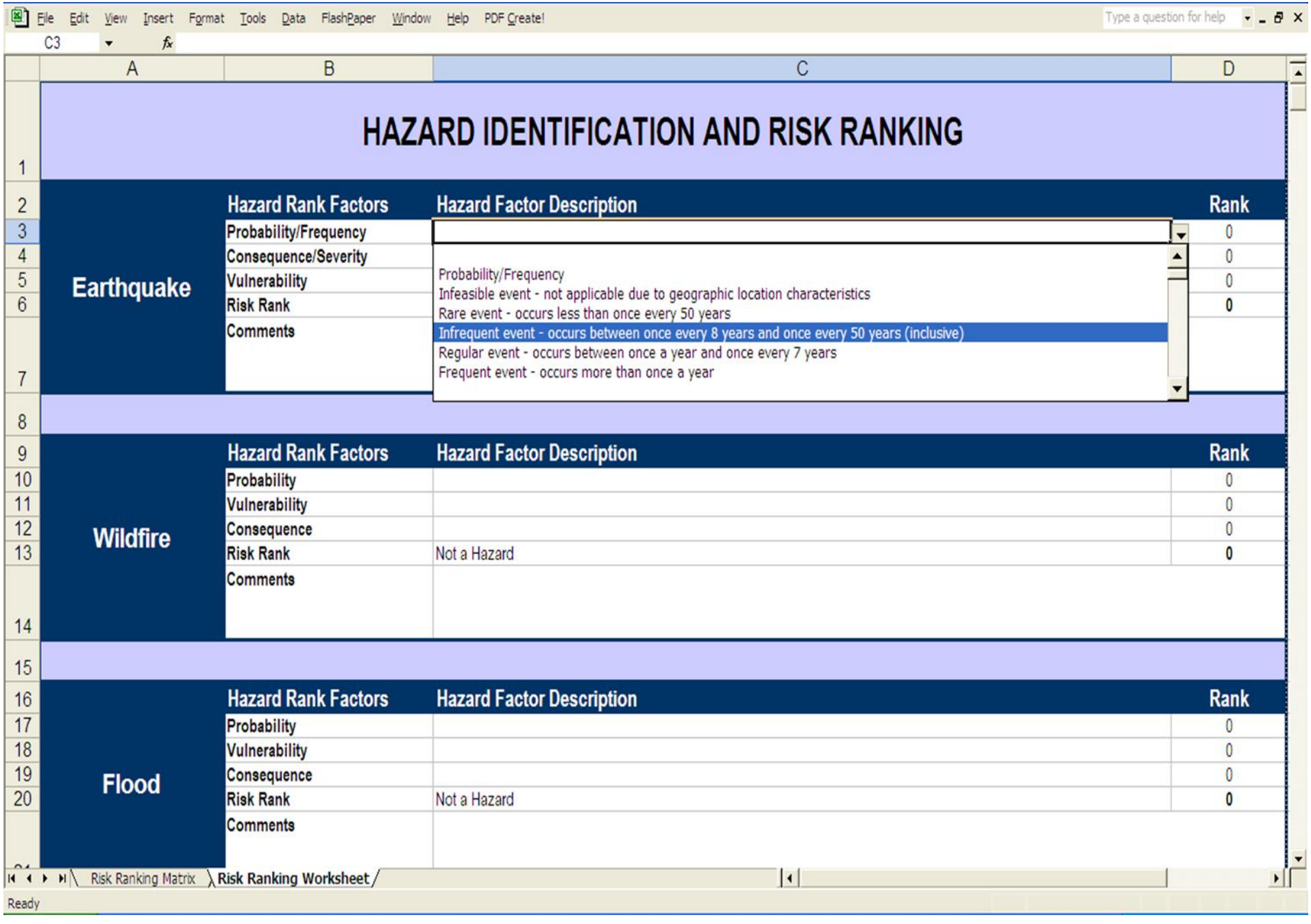


RISK RANK METHODOLOGY

- The risk ranking is facilitated using an automated interactive spreadsheet program that asks specific questions on potential hazards and then assigns a relative value to each potential hazard accordingly.

- The result of the workshop will be a ranked list of hazards to be studied in detail in the Hazard Mitigation Plan.




File Edit View Insert Format Tools Data FlashPaper Window Help PDF Create!
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C3
HAZARD IDENTIFICATION AND RISK RANKING
Earthquake
Hazard Rank Factors
Hazard Factor Description
Rank
Probability/Frequency
Consequence/Severity
Vulnerability
Risk Rank
Comments
0
0
0
0
Probability/Frequency
Infeasible event - not applicable due to geographic location characteristics
Rare event - occurs less than once every 50 years
Infrequent event - occurs between once every 8 years and once every 50 years (inclusive)
Regular event - occurs between once a year and once every 7 years
Frequent event - occurs more than once a year
Wildfire
Hazard Rank Factors
Hazard Factor Description
Rank
Probability
Vulnerability
Consequence
Risk Rank
Comments
0
0
0
0
Not a Hazard
Flood
Hazard Rank Factors
Hazard Factor Description
Rank
Probability
Vulnerability
Consequence
Risk Rank
Comments
0
0
0
0
Not a Hazard
Risk Ranking Matrix
Risk Ranking Worksheet
Ready

RISK RANKING – PROBABILITY/FREQUENCY

- **Recurrence Interval –** Prediction of how often a hazard will occur in the future, including projected return intervals

Probability/Frequency Rank Descriptors	Rank
Infeasible event - not applicable due to geographic location characteristics	0
Rare event - occurs less than once every 50 years	1
Infrequent event - occurs between once every 8 years and once every 50 years (inclusive)	2
Regular event - occurs between once a year and once every 7 years	3
Frequent event - occurs more than once a year	4

RISK RANKING – CONSEQUENCE/SEVERITY

Physical Damage – Structures and lifelines

Economic Impact – Loss of power, water, sanitation, roads, etc…

Probability/Frequency Rank Descriptors	Rank
No damage	1
Minor/slight damage to buildings and structures, no loss of lifelines, first aid injury and no disability	2
Moderate building damage, minor loss of lifelines (less than 12 hours), lost time injury but no disability	3
Moderate building damage, lifeline loss (less than 24 hours), severe injury or disability	4
Extensive building damage, widespread loss of lifelines (water, gas, electricity, sanitation, roads), loss of life	5

RISK RANKING - VULNERABILITY

- **Impact Area** – Area impacted by a hazard event
  Secondary Impacts – Capability of triggering additional hazards
  Onset - Period between initial recognition of an approaching hazard and when the hazard begins to impact the community

Vulnerability Rank Descriptors	Rank
No physical damage, no secondary impacts	1
Localized damage area	2
Localized damage area, minor secondary impacts, delayed hazard onset	3
Moderate damage area, moderate secondary impacts, moderate warning time	4
Widespread damage area, significant secondary impacts, no warning time	5

RISK RANKING - MATRIX

Probability/Frequency Description	Risk Ranking Matrix
Rare Event: Occurs less than once every 50 years	Probability/Frequency Value = 1; Consequence/Severity (1–5) × Vulnerability (1–5)
Infrequent Event: Occurs between once every 8 years and once every 50 years (inclusive)	Probability/Frequency Value = 2; Consequence/Severity (1–5) × Vulnerability (1–5)
Regular Event: Occurs between once a year and once every 7 years	Probability/Frequency Value = 3; Consequence/Severity (1–5) × Vulnerability (1–5)
Frequent Event: Occurs more than once a year	Probability/Frequency Value = 4; Consequence/Severity (1–5) × Vulnerability (1–5)

Probability/Frequency Value = 1	Consequence/Severity 1	2	3	4	5
Vulnerability 1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25

Probability/Frequency Value = 2	Consequence/Severity 1	2	3	4	5
Vulnerability 1	2	4	6	8	10
2	4	8	12	16	20
3	6	12	18	24	30
4	8	16	24	32	40
5	10	20	30	40	50

Probability/Frequency Value = 3	Consequence/Severity 1	2	3	4	5
Vulnerability 1	3	6	9	12	15
2	6	12	18	24	30
3	9	18	27	36	45
4	12	24	36	48	60
5	15	30	45	60	75

Probability/Frequency Value = 4	Consequence/Severity 1	2	3	4	5
Vulnerability 1	4	8	12	16	20
2	8	16	24	32	40
3	12	24	36	48	60
4	16	32	48	64	80
5	20	40	60	80	100

RISK RANK CATEGORIZATION

Risk Rank Equation

Risk = Probability x Consequence x Vulnerability

Risk Rank Categorization	
High Hazard	50 to 100
Moderately High Hazard	25 to 49
Moderate Hazard	15 to 24
Moderately Low Hazard	5 to 14
Low Hazard	1 to 4

GOALS AND OBJECTIVES

GOALS AND OBJECTIONS

- Review Previous HMP Goals and Objectives
- Engage in discussions to review and develop Goals and Objectives specific to the needs of the District
- Align Goals and Objectives with State and County goals

QUESTIONS?

Ryan Bray

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Steering Committee Meeting #2

Santa Fe Irrigation District
HAZARD MITIGATION PLAN-
Steering Committee Meeting #2

September 13, 2021

Name	Company	Position	Email Address	Phone #
David Harris	SFID	Maint. Supervisor	dharris@sfidwater.org	858-395-9516
Rocky Hughes	SFID	Safety Officer	rhughes@sfidwater.org	858 602-6686
Christina Olson	SDWD	Senior Engineer	colson@sdwd.org	760.633.2792
Tim Schuette	OMWD	SRCA	tschuette@olivenhain.com	442 888 0836
Roma Kogan	SFID	IT	rkogan@sfidwater.org	760-504-9990
Brian Slattery	RSFFPD	Deputy Chief	slattery@rsf-fire.org	(858)527-9586
~~DAVE McQUEAD~~	~~RSF FIRE~~	~~FIRE CHIEF~~	~~mcqueadrsf-fire.org~~	(858) 775-7602
MARISSA POTTER	SFID	Engineering Mgr	mpotter@sfidwater.org	858 227 5792

Name	Company	Position	Email Address	Phone #
Teresa Penunuri	SFID	Public Comms	tpenunuri@sfidwater.org	8-227-5799

SANTA FE IRRIGATION DISTRICT

HAZARD MITIGATION PLAN UPDATE

STEERING COMMITTEE MEETING #2

Ryan Bray

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MEETING AGENDA

- Review Hazard Ranking
- Review Mitigation Goals and Objectives
- Develop Potential Mitigation Projects
- Discuss next steps of the update process

HAZARD RANKING REVIEW

HAZARD RANKING SUMMARY

Hazard Rank	Score
High	
Wildfire	48
Earthquake	30
Moderately High	
Moderate	
Severe Storm/Flood	24
Terrorism/ Adversarial Events	24
Dam/Reservoir Failure	20
Disease Outbreak	18
Moderately Low	
Hazardous Material Release/Pipeline Failure	12
Drought	9
Low	
Power Failure	3

MITIGATION GOALS AND OBJECTIVES REVIEW

OVERALL PLAN GOALS

- Protect Life and Property
- Promote Public Awareness and Outreach
- Preserve the Environment
- Encourage Regional, Inter-Agency Involvement with Hazard Mitigation
- Increase the Capacity of Emergency Operations Functionality

NEXT STEPS…

ASSET INVENTORY

Review Asset Inventory

- Types and number of existing and future buildings
- Infrastructure
- Critical Facilities

Loss Estimates

- Review each asset category and assign potential percentage of damage expected due to each identified hazard

QUESTIONS?

Ryan Bray

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Steering Committee Meeting #3

SANTA FE IRRIGATION DISTRICT HAZARD MITIGATION PLAN

STEERING COMMITTEE #3

Ryan Bray
Kevin Cardoza
Risk Management Professionals, Inc.
(949) 282-0123
(877) 532-0806
www.RMPCorp.com



Discussion Topics

- Validate Asset Inventory List
- Complete Vulnerability Assessment (Loss Estimate Calculations)
  - Assign estimated percent damage to each asset from the identified hazards



ASSET INVENTORY AND VULNERABILITY ASSESSMENT

- Validate Asset Inventory
- Conduct Vulnerability Assessment (Loss Estimates)

ASSET INVENTORY

- Validate Asset Inventory
  - Types and number of existing and future buildings
  - Infrastructure
  - Critical Facilities

Asset Inventory Summary – Santa Fe Irrigation District			
Type	**Name**	**Address**	**TOTAL**
Building	Santa Fe Irrigation Administration Office and District Yard	5920 Linea del Cielo Rancho Santa Fe, CA	$46,727,696
Reservoir	Larrick Reservoir	440 Glenmont Dr. Solana Beach, CA	$9,704,174

VULNERABILITY ASSESSMENT ESTIMATES

- Review each asset and assign potential percentage of damage expected due to each identified hazard

Santa Fe Irrigation District Vulnerability Assessment Calculations			Wildfire		Earthquake	
Type	Name	TOTAL	% Damage	Loss Estimate	% Damage	Loss Estimate
Building	Santa Fe Irrigation Administration Office and District Yard	$46,727,696.00	10%	$4,672,769.60	50%	$23,363,848.00
Reservoir	Larrick Reservoir	$9,704,174.00	1%	$97,041.74	25%	$2,426,043.50

NEXT STEPS…

MITIGATION ACTION WORKSHEET

Develop Mitigation Actions

- Summarize mitigation project specifications
- Identify project goal categories
- Capital Improvements

Action Categories

- Prevention
- Property Protection
- Public Awareness
- Natural Resource Protection
- Emergency Services
- Structural Projects

CONTACT INFORMATION

Ryan Bray

Senior Technical Consultant

Ryan.Bray@RMPCorp.com

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Steering Committee Meeting #4

Santa Fe Irrigation District
HAZARD MITIGATION PLAN-
Steering Committee Meeting #4

January 15, 2023

Name	Company	Position	Email Address	Phone #
Tim Bailey	SFID	Treatment Manager	Tbailey@sfidwater.org	760-908-6545
Rocky Hughes	SFID	SAFETY COORD.	rhughes@sfidwater.org	858 602-6685
Memo Preciado	SFID	Preventive Maint Coordinator	mpreciado@sfidwater.org	858-756-2424
Roma Kogan	SFID	IT Admin	rkogan@sfidwater.org	760-504-9990
Hanna Dodd	SFID	SENIOR ENGINEER	hdodd@sfidwater.org	

Santa Fe Irrigation District Hazard Mitigation Plan

Steering Committee #4

Ryan Bray
Kevin Cardoza

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Discussion Topics

- Review Mitigation Goals and Objectives
- Develop Potential Mitigation Projects
- Discuss Next Steps

HAZARD RANKING REVIEW

Hazard Ranking Summary

Hazard Rank	Score
High	
Wildfire	48
Earthquake	30
Moderately High	
Moderate	
Severe Storm/Flood	24
Terrorism/ Adversarial Events	24
Dam/Reservoir Failure	20
Disease Outbreak	18
Moderately Low	
Hazardous Material Release/Pipeline Failure	12
Drought	9
Low	
Power Failure	3

MITIGATION GOALS & OBJECTIVES REVIEW

COMMUNITY SAMPLE PROFILE

- Protect Life and Property
- Promote Public Awareness and Outreach
- Preserve the Environment
- Encourage Regional, Inter-Agency Involvement with Hazard Mitigation
- Increase the Capacity of Emergency Operations Functionality

IDENTIFY POTENTIAL MITIGATION ACTIONS

Mitigation action Categories

- Prevention
- Property Protection
- Public Education and Awareness
- Natural Resource Protection
- Emergency Services
- Structural Projects

Wildfire Fire Example Mitigation Projects



- Community Awareness
- Fire-safe Practices for Structures and Landscaping
- Enhancement of Fire-Suppression Capabilities
- Fire Risk Mapping

Earthquake Example Mitigation Projects



- Building Retrofits
- Anchor Electrical Transformers
- Install Expansion Joints
- Reinforce Well Shaft or Install Submersible Pump
- Restrain Pipes
- Improve Pipe Materials
- Install Tank Anchors
- Install Friction Dampers on Elevated Tanks

Transportation Accident Example Mitigation Projects



- Enhancement of Emergency Response Teams
- Airport/Freeway/Rail Site Buffering
- Contingency and Emergency Planning

Flood/Dam Failure Example Mitigation Projects



- Acquisition, Relocation, & Elevation Projects
- Dry-Floodproofing (e.g., plastic sheeting)
- Wet-Floodproofing (e.g., water resistant materials)
- Stormwater Management Ordinances or Amendments
- Floodplain Ordinances or Amendments
- Storm Drainage System Improvements
- Structural Flood Control Measures (e.g., levees, dams, floodwalls) Inundation Zone Mapping
- Preparedness and Response Plans
- Notification Systems
- Structural Storage Tank Reservoir Improvements

Adversarial Event Example Mitigation Projects



- Emergency Plans
- Emergency Response Teams
- Security
- Training

Pipeline Failure/ Hazmat Release Example Mitigation Projects



- Emergency Plans
- Transportation
- Disposal
- Emergency Response Teams
- Industrial Site Buffering
- Pipeline Location and Design
- Digging Hotlines
- Contingency Planning
- Improvements to Maps and Records

Drought Example Mitigation Projects



- Water Use Ordinances
- Contingency Plans
- Emergency Water Distribution and Storage Systems
- Water Conservation Education
- System Retrofits
- Leak Detection Programs

NEXT STEPS…

Next Steering Committee meeting

- The Next Steering Committee meeting will consist of a Benefit-Cost Review of the identified Mitigation Actions:

CONTACT INFORMATION

Ryan Bray

Senior Technical Consultant

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From: Rocky Hughes

Sent: Friday, August 11, 2023 3:10 PM

To: maryam@rsfassociation.org

Subject: Santa Fe Irrigation District Local Hazard Mitigation Plan 5-Year Update

The Sante Fe Irrigation District is currently in the process of updating its Hazard Mitigation Plan, which allows the District to apply for grant funds to improve resiliency throughout its service area. As part of the update process, the Federal Emergency Management Agency has requested us to query organizations such as yours to help better understand vulnerability to hazards and the steps that may be taken to reduce the impact of hazard events based on your stakeholders specific needs.

Attached is the current draft of the District's Hazard Mitigation Plan & knowing that your time is valuable and our plan is long, you can find the already-identified proposed actions in Table 4.2 of Chapter 4 and a list of identified hazards in Table 3.4 in Chapter 3, which are critical to determine how we could enhance the ability for the Santa Fe Irrigation District to respond to your stakeholders during an emergency event.

If you should have any comments or questions, please email me or provide any input by close of business on August 17, 2023.

Kind regards,

Rocky Hughes

From: Rocky Hughes
To: director@chambersb.com
Subject: Santa Fe Irrigation District Local Hazard Mitigation Plan Update
Date: Friday, August 11, 2023 3:12:56 PM
Attachments: 202.SFID.LHMP.Draft.6.23.2023.pdf

The Sante Fe Irrigation District is currently in the process of updating its Hazard Mitigation Plan, which allows the District to apply for grant funds to improve resiliency throughout its service area. As part of the update process, the Federal Emergency Management Agency has requested us to query organizations such as yours to help better understand vulnerability to hazards and the steps that may be taken to reduce the impact of hazard events based on your stakeholders specific needs.

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If you should have any comments or questions, please email me or provide any input by close of business on August 17, 2023.

Kind Regards,

Rocky Hughes