Hazard Mitigation Assistance Division Year in Review

Calendar Year 2020

FEMA

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Table of Contents

Who We Are and What We Do 1

1. Who We Are 1
2. What We Do 1

HMA Program Highlights 2

1.1. Hazard Mitigation Grant Program 2
1.2. Hazard Mitigation Grant Program Post Fire 4
1.3. Flood Mitigation Assistance Grant Program 7
1.4. Building Resilient Infrastructure and Communities Grant Program 9
1.5. Pre-Disaster Mitigation Grant Program 10
1.6. Supporting Public Assistance Mitigation 12

Expansion of Tools, Resources, and Capabilities 14

1. FEMA GO 14
2. FEMA App 14
3. Readily Accessible Program Support Materials 15
4. Webinars 16
5. Training 17

Stakeholder Relationships 18

1. External Stakeholder Working Group 18
2. Federal Inter-Agency Coordination 18
3. External Stakeholder Coordination 18

Looking Ahead 20

Mitigation Success Stories 21

1. Strengthening Puerto Rico Electric Power Authority Facilities with Hazard Mitigation Grant Program Funds 21
2. Pathways to Mitigation Success and Community Resilience 22
3. Pontilly Neighborhood Stormwater Network Project 23

4. Acquiring Flood-Damaged Properties in Iowa 24
5. FEMA Helps Fund Dam Removal as Part of Innovative Public-Private Partnership 24
6. California Counties Adopt a Seismic Retrofit Program 26
7. Lyon Creek Flood Mitigation Project 27

Who We Are and What We Do

1. Who We Are

The Hazard Mitigation Assistance (HMA) Division is part of the Federal Emergency Management Agency (FEMA) Federal Insurance and Mitigation Administration (FIMA) Mitigation Directorate. We have nearly 350 dedicated staff across the country who work closely with federal partners and support state, local, tribal, and territorial (SLTT) governments to reduce nationwide vulnerability to disasters and natural hazards. Our **vision** is to be a driver for community resilience through partnerships and mitigation investments, while our **mission** is to design, build, and nurture high-performing teams that promote and deliver risk reduction programs.

2. What We Do

Hazard mitigation is any action taken to reduce or eliminate long-term risk to people and property from natural disasters and hazards. This includes measures ranging from building safely within a floodplain, removing homes from high hazard areas, and engineering buildings and other infrastructure to withstand earthquakes, to name only a few examples. Hazard mitigation projects have one key theme in common: they can significantly reduce the impact of disasters and natural hazards on lives and communities.

The HMA Division oversees the delivery of the following grant programs that provide SLTTs with mitigation funding: the Hazard Mitigation Grant Program (HMGP), Hazard Mitigation Grant Program Post Fire (HMGP Post Fire), Flood Mitigation Assistance (FMA) grant program, and the new Building Resilient Infrastructure and Communities (BRIC) grant program, which replaced the Pre-Disaster Mitigation (PDM) grant program beginning fiscal year 2020 (FY 2020). In addition, HMA continues to enhance coordination with FEMA's Public Assistance (PA) Division, which supports communities' recovery from major disasters by providing mitigation funding opportunities to restore and strengthen public infrastructure. All of these funding opportunities are helping to build a more resilient nation.

HMA Program Highlights

Overview

This has been a very busy year for the Hazard Mitigation Assistance (HMA) Division. For the first time in American history, all 50 states, federally recognized tribes, territories, and the District of Columbia have been approved for disaster declarations due to the coronavirus pandemic. As a result, we were met with the challenge of leveraging technology to the greatest extent possible to deliver the agency's grant programs while preserving the safety of the workforce and disaster survivors.

In coordination with our regional staff, the HMA Division met those challenges head on, approving 1,884 HMA grants totaling over $884 million in funding. Combined with the mitigation funding available through Public Assistance, the number is more than $1.31 billion.

The HMA Division remains committed to the Federal Insurance and Mitigation Administration's mission to reduce disaster suffering and deliver our programs with equity to increase resilience of all communities.

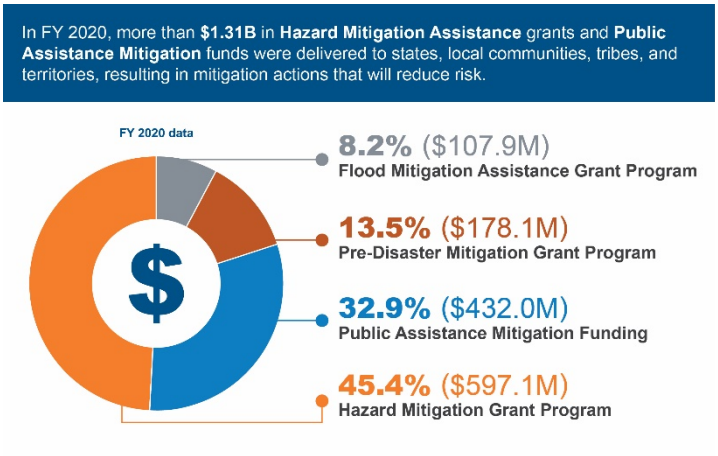


Figure 1. This chart details the amount of funding that was awarded by the HMA Division and Public Assistance Mitigation in fiscal year 2020 (FY 2020), broken down by program.

1.1. Hazard Mitigation Grant Program

The Hazard Mitigation Grant Program (HMGP) provides funding to SLTT governments so they can rebuild in a way that reduces, or mitigates, future disaster losses in their communities. This grant funding is available after a presidentially declared disaster. In fiscal year 2020 (FY 2020), the HMGP program delivered nearly $600 million in post-disaster funding to acquire properties prone to flooding, complete critical utility and infrastructure projects, and build safe rooms that can withstand high winds from disasters such as hurricanes and tornadoes, just to name a few. Below is the breakdown of the distribution of funding by 26 different project types since the inception of the HMGP program in 1989.

HMGP Funding by Subapplication Type

Funding by Subapplication Type

Acquisitions	$2,656,631,911
Flood Control	$1,610,944,362
Utility and Infrastructure Protection	$1,602,783,641
Safe Room/Wind Shelter	$1,096,533,416
Seismic Retrofit	$865,331,638
Mitigation Reconstruction	$858,168,994
Wind Retrofit	$729,708,664
Management Costs and Technical Assistance	$506,211,566
Generators	$503,133,929
Elevations	$396,561,095
Miscellaneous	$393,561,085
Mitigation Planning	$279,549,064
Other	$170,230,766
Warning Systems	$161,850,280
Acquisition/Elevation Mix	$122,622,406
Education and Awareness	$88,326,097
Codes and Standards	$59,694,818
Other Equipment	$58,702,513
Wildfire Mitigation	$51,659,842
Shoreline Stabilization	$49,508,927
Advanced Assistance	$49,385,555
Feasibility, Engineering and Design Studies	$42,469,611
Relocations	$35,622,622
Floodproofing	$31,430,368
Landslide Stabilization	$31,258,980
Tsunami Protection	$805,401

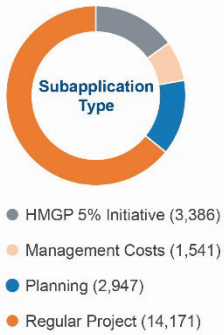


Figure 2. This table details the amount of funding that has been obligated by HMGP since its inception, broken down by subapplication type. The two accompanying charts show the distribution of funds within each subapplication type and the status of each subapplication.

HMGP Highlights

Number of Projects	22,045
Number of Properties	148,219
Number of Final Properties	123,698
Federal Share Obligated	$12,453,065,834
Avg. Cost Share Percentage	74%

Figure 3. This table shows topline HMGP data since the program's inception, including the number of projects and properties that have received HMGP funding, the federal share of funding that has been obligated, and the average cost share percentage per project.

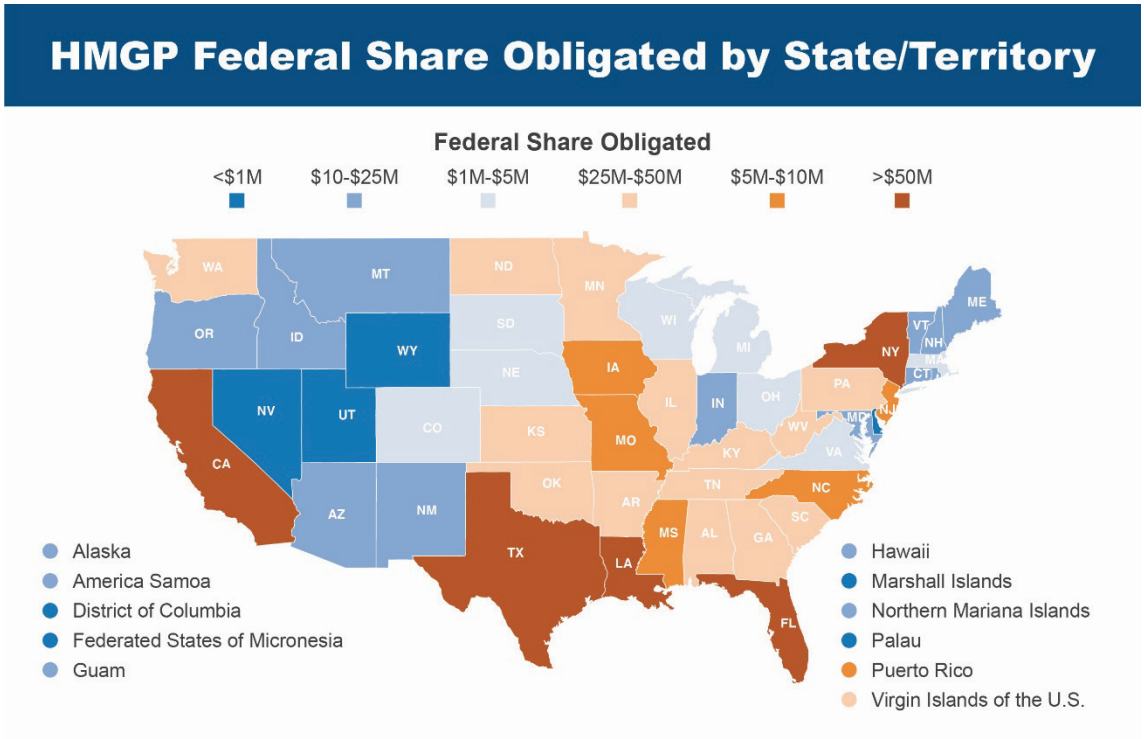


Figure 4. This graph details the federal share of HMGP funding that has been obligated since the program's inception for each state and territory.

Priorities for 2020 include "HMGP Forward," an initiative that is working to improve and strengthen the program and continually measure and improve performance metrics. Activities under this initiative include maintaining a database that tracks the length of time it takes to complete a mitigation project (Period of Performance) and the number of requests to extend the application period (Application Extension Requests). HMGP also continues to prioritize improving the management of grants and closeout performance, decreasing the backlog of aging grants to less than 1% in 2020. As a result, grant timelines tracking and management and the overall health of HMGP are significantly improved. Finally, "The Open Space Data Project" enables FEMA regional offices and states to more easily maintain spatial data and ensures that acquired properties are maintained as open space in perpetuity, as required by regulation.

1.2. Hazard Mitigation Grant Program Post Fire

The Hazard Mitigation Grant Program Post Fire (HMGP Post Fire) provides funds for areas affected by fires that have received assistance under Fire Mitigation Assistance Grant (FMAG) declarations. Before HMGP Post Fire, the program provided funding for wildfires under the FMAG-HMGP program.

In FY 2020, the HMGP Post Fire program delivered 85 awards to 12 states totaling $50 million, substantially reducing the risk of future damage, hardship, loss, or suffering from wildfire and its secondary effects, such as erosion, slope failure, debris flow, and flooding.

HMGP Post Fire Highlights
Awards: 85 awards for 12 states
Total Funding: $50 million
Eligible States: California, Nevada, Florida, Oklahoma, Colorado, Wyoming, Hawaii, Washington, Montana, Utah, Arizona, and Oregon

Figure 5. This table shows FY 2020 highlights for HMGP Post Fire, including the number of awards, the amount of funding obligated, and states that received funding.

This was a historic year for wildfires, resulting in a 466% increase over last year's total awards.[1] Since the passage of the Disaster Recovery Reform Act of 2018 (DRRA), the legislation that established HMGP Post Fire, there have been 106 FMAG events with a total of $62 million in available funding. The program remains focused on reducing complexity for applicants with the creation of jobs aids, fillable applications, and streamlining mitigation measures.

HMGP Fire Grant Programs Highlights	
Number of Projects	210
Number of Properties	317
Number of Final Properties	79
Federal Share Obligated	$38,585,596
Avg. Cost Share Percentage	80%

Figure 6. This table shows FY 2020 topline data for HMGP Fire Grant Programs, including the number of projects and properties that received funding, the federal share of funding that was obligated, and the average cost share percentage per project.

[1] Fifteen awards and $8 million in funding in FY 2019 compared to 85 awards and $50 million in funding in FY 2020.

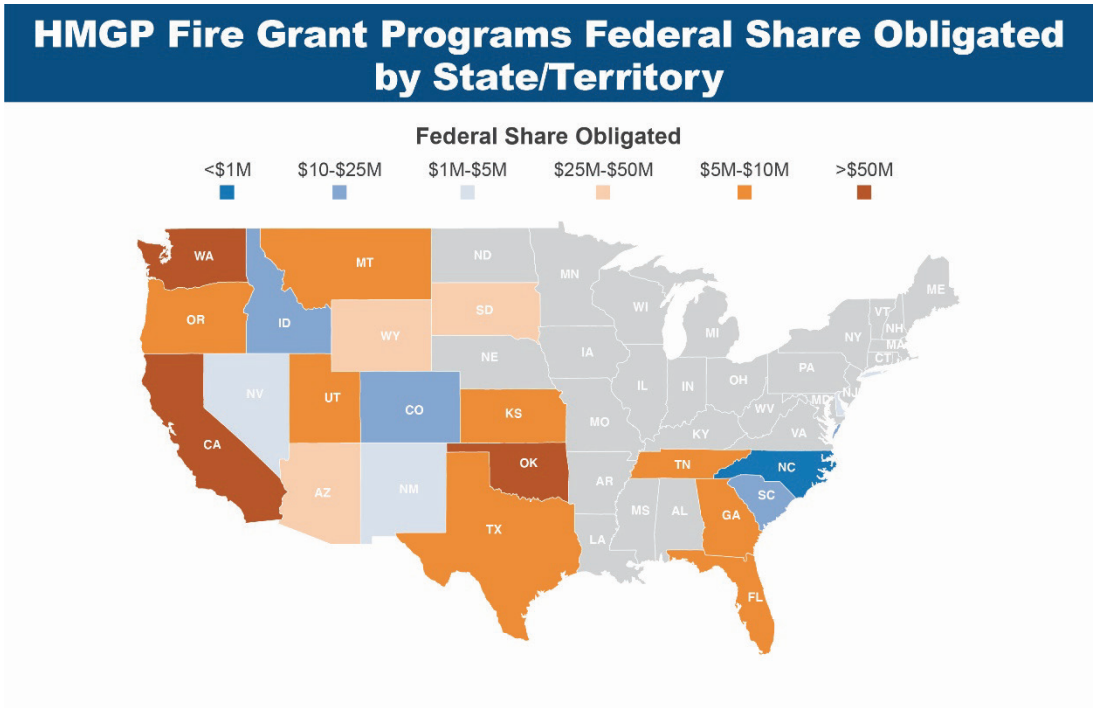
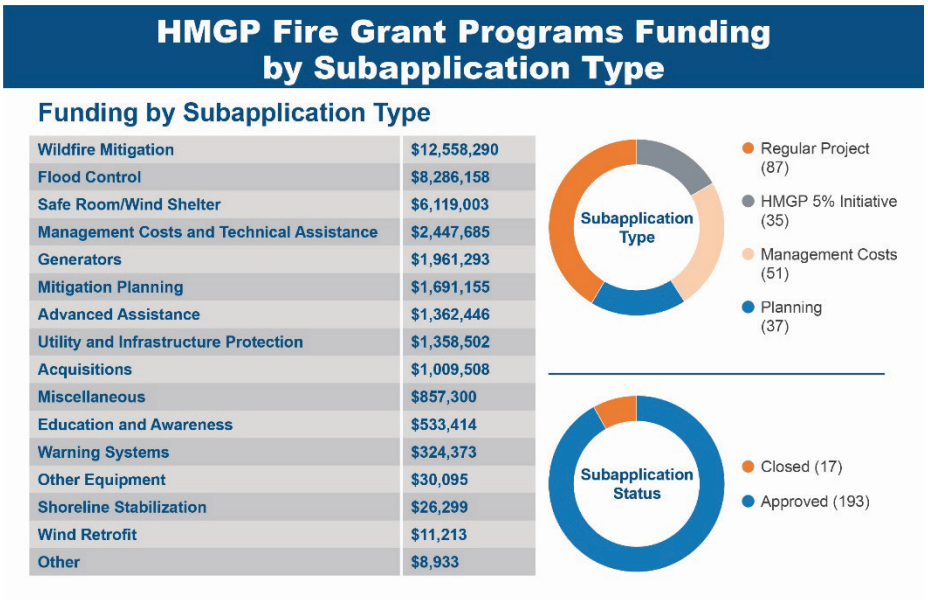


Figure 7. This graph details the federal share of funding for HMGP Fire Grant Programs that was obligated in FY 2020 for each state and territory.



Wildfire Mitigation	$12,558,290
Flood Control	$8,286,158
Safe Room/Wind Shelter	$6,119,003
Management Costs and Technical Assistance	$2,447,685
Generators	$1,961,293
Mitigation Planning	$1,691,155
Advanced Assistance	$1,362,446
Utility and Infrastructure Protection	$1,358,502
Acquisitions	$1,009,508
Miscellaneous	$857,300
Education and Awareness	$533,414
Warning Systems	$324,373
Other Equipment	$30,095
Shoreline Stabilization	$26,299
Wind Retrofit	$11,213
Other	$8,933

Figure 8. This table details the amount of funding for HMGP Fire Grant Programs that was obligated in FY 2020, broken down by subapplication type. The two accompanying charts show the distribution of funds within each subapplication type and the status of each subapplication.

1.3. Flood Mitigation Assistance Grant Program

The Flood Mitigation Assistance (FMA) grant program funds mitigation activities in states and local communities that reduce or eliminate the risk of repetitive flood damage to buildings insured by the National Flood Insurance Program (NFIP).

This year was another historic year for the FMA program: $200 million was made available for funding, which is the second-highest total after the $210 million made available in fiscal year 2019. FEMA was able to identify funding for mitigation projects from prior grant cycles that were not completed or that were closed under budget. Also included in this amount is at least $126 million for individual flood mitigation projects to mitigate the 48,000 repetitively flood-damaged properties nationwide.

FMA Grant Program Highlights	
Number of Projects	2,910
Number of Properties	8,026
Number of Final Properties	7,752
Federal Share Obligated	$1,348,447,845
Avg. Cost Share Percentage	80%

Figure 9. This table shows topline FMA data since the program's inception, including the number of projects and properties that have received FMA funding, the federal share of funding that has been obligated, and the average cost share percentage per project.

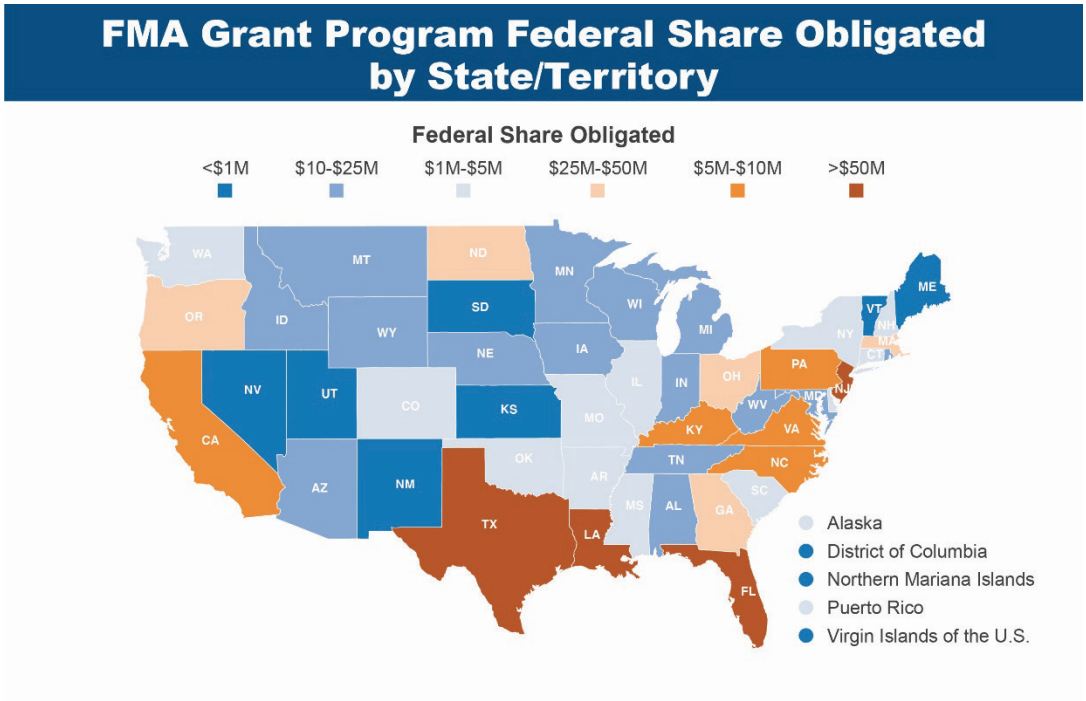
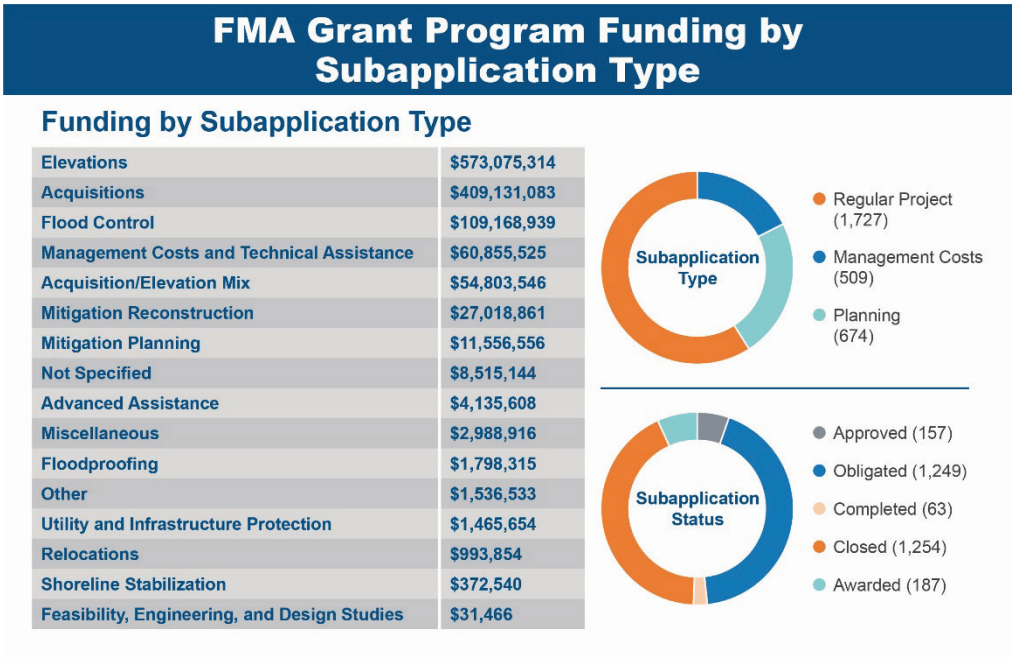


Figure 10. This graph details the federal share of FMA funding that has been obligated since the program's inception for each state and territory.



Funding by Subapplication Type

Elevations	$573,075,314
Acquisitions	$409,131,083
Flood Control	$109,168,939
Management Costs and Technical Assistance	$60,855,525
Acquisition/Elevation Mix	$54,803,546
Mitigation Reconstruction	$27,018,861
Mitigation Planning	$11,556,556
Not Specified	$8,515,144
Advanced Assistance	$4,135,608
Miscellaneous	$2,988,916
Floodproofing	$1,798,315
Other	$1,536,533
Utility and Infrastructure Protection	$1,465,654
Relocations	$993,854
Shoreline Stabilization	$372,540
Feasibility, Engineering, and Design Studies	$31,466

Figure 11. This table details the amount of funding that has been obligated by FMA since its inception, broken down by subapplication type. The two accompanying charts show the distribution of funds within each subapplication type and the status of each subapplication.

The growing demand for FMA is driving the program to more quickly deliver hazard mitigation. The NFIP portfolio includes approximately 38,000 Severe Repetitive Loss (SRL) properties in the country that have amassed over $9.9 billion in NFIP claim payments; SRL growth alone averages roughly 2,000 properties annually. Further, FMA receives on average approximately $300-400 million in project applications, which is typically two to three times the amount in application requests as compared to available funding. In response, FEMA is exploring initiatives so that it can quickly mitigate repetitive loss properties through flood disaster event program delivery, streamlining contracting vehicles, leveraging partnerships, and building shelf-ready mitigation projects.

In 2020, FEMA also began sharing SRL and Repetitive Loss (RL) property data "on-demand" with State Hazard Mitigation Officers (SHMOs) and State Floodplain Managers rather than on a one-time annual basis. The increased accessibility to the data allows states to target mitigation projects year-round, begin developing applications in anticipation of the opening of the FMA application period, and better prepare to apply for federal assistance after a disaster under HMGP. FEMA continues to work at making this information available to local communities that are developing subapplications for the FMA program and to better enable submission of successful projects through program engagement opportunities. Based on feedback FEMA received surrounding costs for application development, FEMA included development of mitigation projects addressing individual property flooding of NFIP-insured RL and SRL properties for FY 2020 FMA Project Scoping. The program continues to engage with stakeholders to improve design and delivery of the FMA program.

1.4. Building Resilient Infrastructure and Communities Grant Program

This year, the new Building Resilient Infrastructure and Communities (BRIC) grant program reached a major milestone — implementation. BRIC, authorized by Section 1234 of the DRRA, represents the most significant FEMA mitigation grant program change in the last two decades. BRIC replaces the existing Pre-Disaster Mitigation (PDM) grant program and supports SLTTs as they undertake hazard mitigation projects to reduce the risks they face from disasters and natural hazards and provide proactive investments in community resilience.

Designing and implementing a new grant program is no small undertaking. FEMA realized BRIC would only be successful if it reflects the needs of our partners. In 2019, FEMA undertook a comprehensive stakeholder engagement effort, including webinars and one-on-one conversations, to learn from stakeholders the challenges they face in implementing mitigation projects and to solicit recommendations for how BRIC can be responsive to the complex resilience needs at all levels of government. This year, HMA synthesized partner input in the Summary of Stakeholder Feedback report, which laid the foundation for subsequent partner and stakeholder engagement.

This summer, to prepare applicants and subapplicants for the opening of the application period, FEMA hosted a webinar series to educate stakeholders on all aspects of BRIC and to enhance public awareness and understanding of the new program. Hundreds of participants joined each session, with representation from all 50 states as well as Guam, the Northern Mariana Islands, and Puerto Rico. Additionally, FEMA published the FY 2020 Notice of Funding Opportunity (NOFO) for BRIC in

August. The BRIC NOFO received significant positive attention from stakeholders as they gained insight into how BRIC will transform the way we move mitigation forward. FEMA also developed BRIC Program Support Materials (PSMs) and offered webinars with live Q&A that cover topics such as capability- and capacity-building, Direct Technical Assistance, and the national competition criteria, which place an emphasis on projects that mitigate risk to infrastructure and community lifelines.

With the implementation of BRIC, FEMA doubled the amount of funding over last year's funding for the PDM program, which was $250 million, to a record-breaking $500 million. This is because BRIC is not funded on an annual appropriation from Congress; rather, it is based on a 6% set-aside of the assistance FEMA provides under major declared disasters. The BRIC program priorities are to encourage public infrastructure projects, increase communities' capacity and capability to conduct mitigation activities through public-private partnerships, incentivize the adoption and enforcement of modern building codes, and promote projects that incorporate nature-based solutions.

1.5. Pre-Disaster Mitigation Grant Program

The Pre-Disaster Mitigation (PDM) grant program was designed to assist SLTTs with reducing overall risk to the population and structures from future hazard events, while also reducing reliance on federal funding in future disasters.

Though replaced by the BRIC program for new funding beginning in FY 2020, FEMA made its final grant selections for the PDM grant program this year and continues to provide resources to assist SLTTs for awards issued prior to 2019.

PDM Grant Program Highlights	
Number of Projects	4,382
Number of Properties	6,482
Number of Final Properties	6,473
Federal Share Obligated	$1,183,323,154
Avg. Cost Share Percentage	75%

Figure 12. This table shows topline PDM data since the program's inception, including the number of projects and properties that have received PDM funding, the federal share of funding that has been obligated, and the average cost share percentage per project.

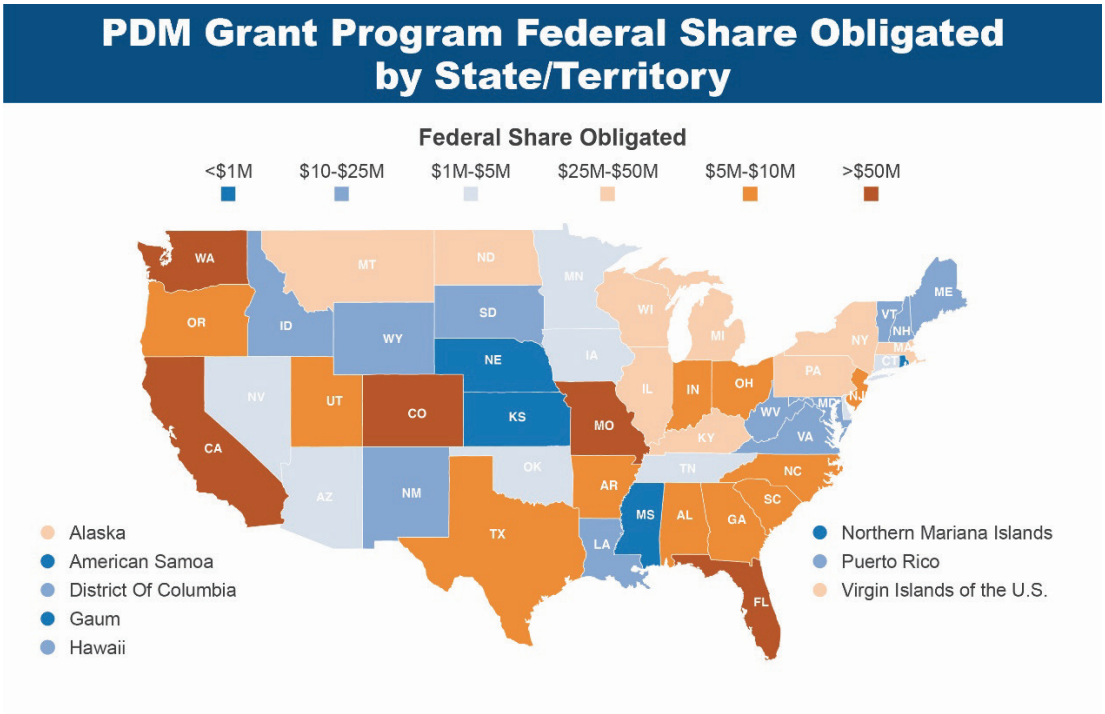
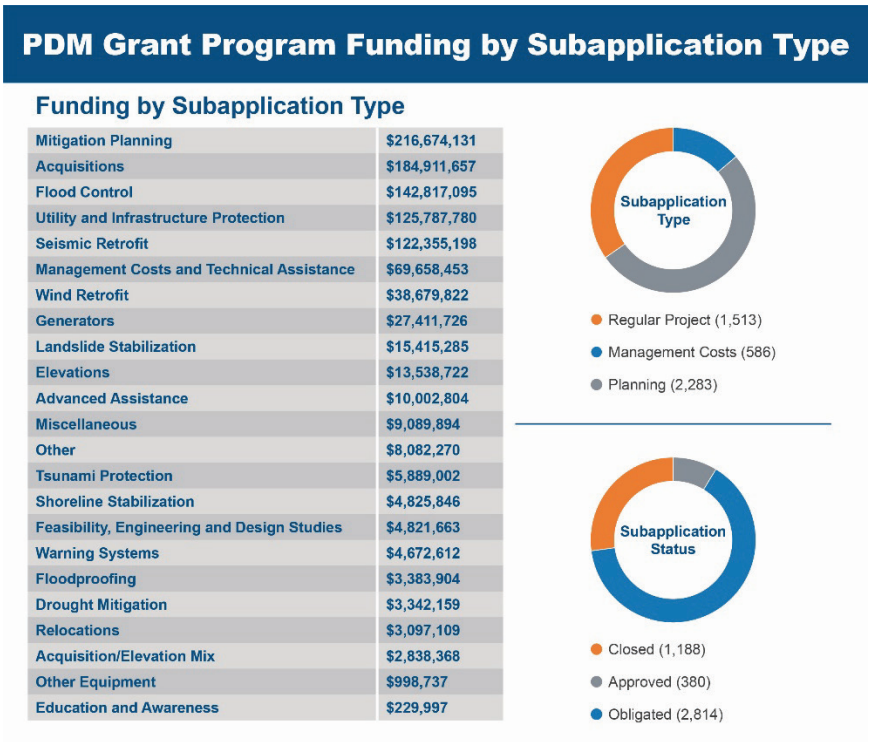


Figure 13. This graph details the federal share of PDM funding that has been obligated since the program's inception for each state and territory.



Mitigation Planning	$216,674,131
Acquisitions	$184,911,657
Flood Control	$142,817,095
Utility and Infrastructure Protection	$125,787,780
Seismic Retrofit	$122,355,198
Management Costs and Technical Assistance	$69,658,453
Wind Retrofit	$38,679,822
Generators	$27,411,726
Landslide Stabilization	$15,415,285
Elevations	$13,538,722
Advanced Assistance	$10,002,804
Miscellaneous	$9,089,894
Other	$8,082,270
Tsunami Protection	$5,889,002
Shoreline Stabilization	$4,825,846
Feasibility, Engineering and Design Studies	$4,821,663
Warning Systems	$4,672,612
Floodproofing	$3,383,904
Drought Mitigation	$3,342,159
Relocations	$3,097,109
Acquisition/Elevation Mix	$2,838,368
Other Equipment	$998,737
Education and Awareness	$229,997

Figure 14. This table details the amount of funding that has been obligated by PDM since its inception, broken down by subapplication type. The two accompanying charts show the distribution of funds within each subapplication type and the status of each subapplication.

The 20th Anniversary of the Disaster Mitigation Act of 2000 and Hazard Mitigation Grants

This year marked the 20th anniversary of the Disaster Mitigation Act of 2000. This law amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act). With the passage of this legislation, Congress officially recognized that disaster protection starts with a mitigation plan. For SLTTs, a FEMA-approved mitigation plan became a pre-requisite for certain FEMA assistance.

The law also authorized the PDM grant program. Over the last 18 years, PDM has provided more than $1.1 billion in funding to build stronger, more resilient communities. It supported SLTTs as they plan for and take action to reduce risk before disasters hit. This program has since been replaced by the new BRIC grant program.

1.6. Supporting Public Assistance Mitigation

The HMA Division continues to support the Public Assistance (PA) Program and its investment of $360 million in PA funds for mitigation and the obligation of over 4,300 PA permanent work projects with mitigation in 2020. If applicants qualify for repairs through FEMA's PA Program, they may also be eligible for additional funding through the PA Mitigation program to prevent or reduce loss of function for public services and help avoid repetitive damage from disasters. The PA Mitigation programs provide funding for activities such as replacing drainage structures with larger structures, elevating equipment, dry floodproofing buildings, and constructing floodwalls to retain floodwater that protect infrastructure. For a complete list of eligible activities, see the *Public Assistance Program and Policy Guide Appendix J*. In 2020, the HMA Division conducted activities that included the delivery of a training course called PA Mitigation Policy Review and Hazard Mitigation Proposal Development to improve knowledge of PA Mitigation. We also took steps to increase the number and capacity of field staff who support PA Mitigation with a focus in coastal communities to support educating their stakeholders' knowledge and capability. The goal is to build partnerships and mitigation champions in the field to highlight all of FEMA's mitigation programs and make those resource more accessible to those coastal communities.

DRRA Implementation

All 13 provisions of the Disaster Recovery Reform Act (DRRA) that drive risk reduction, build capacity for communities, and impact HMA programs and policy are now implemented. Most notable was the launch of the new BRIC program, which made available $500 million in pre-disaster mitigation funds for FY 2020.

The DRRA represents the most comprehensive Emergency Management reform since the Post-Katrina Emergency Management Reform Act in 2006. Many of the reforms included in the DRRA acknowledge the shared responsibility across all levels of government for disaster preparedness, response, recovery, and mitigation.

For more information on the DRRA, visit https://www.fema.gov/disasters/disaster-recovery-reform-act-2018.

Expansion of Tools, Resources, and Capabilities

1. FEMA GO

FEMA Grants Outcomes (FEMA GO) is the new grants management system for submitting, approving, and managing FEMA grants, including the Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance (FMA) grant programs beginning fiscal year 2020 (FY 2020).

FEMA GO Resources supporting the launch of FY 2020 BRIC and FMA grant application period are designed with grant applicants and subapplicants in mind. Whether applying for BRIC or FMA Grants, eligible states, local communities, tribes, and territories (SLTTs) can find tailored tools and guidance.

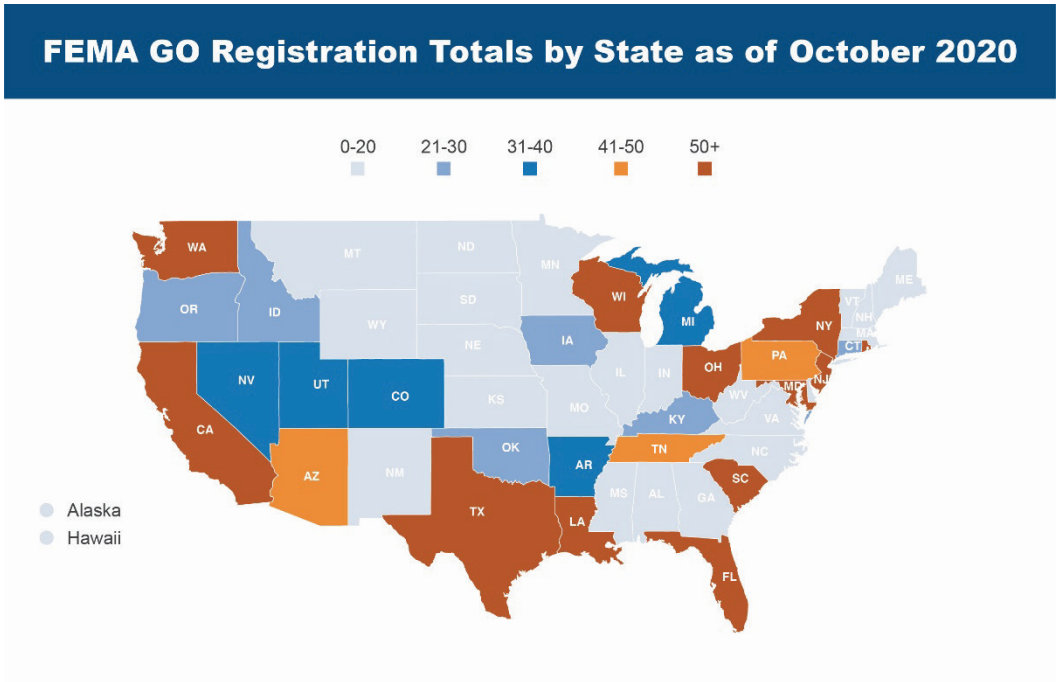
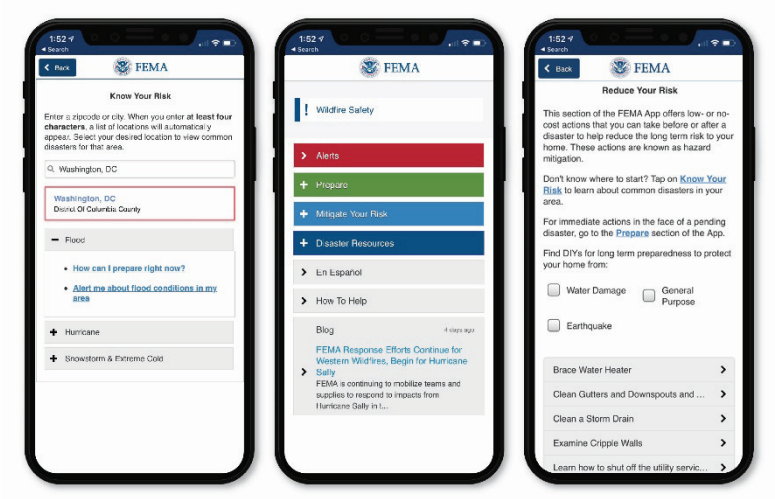


Figure 15. This graph details the number of FEMA GO registrations by state as of Oct. 2020.

2. FEMA App

During 2020, FEMA introduced a supplemental mitigation feature that makes the FEMA mobile application even more robust and helpful for its users. The new feature, “Mitigate Your Risk,” helps users understand and reduce their risk to natural hazards with low- or no-cost do-it-yourself (DIY) mitigation activities.

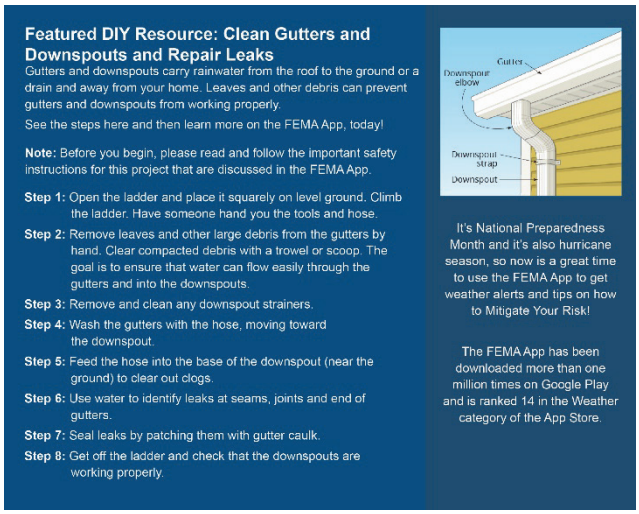
Using the FEMA app and the "Mitigate Your Risk" section, users can better understand their unique, localized risks and what they can do to protect themselves before a disaster. By entering a zip code or city name, mobile app users discover which types of risks are common for their localized area, learn tips for how to prepare for an impending disaster, and sign up to receive severe weather, environmental, and other public hazard alerts for up to five locations. Further, the app allows for sorting low- or no-cost actions that users can take to reduce long-term risks to homes and businesses. DIY mitigation activities — currently included under the categories of Water Damage, General Purpose, and Earthquakes — provide step-by-step instructions on a variety of activities, such as how to:



Screenshots of FEMA app's "Mitigate Your Risk" feature on smartphone

- Brace a water heater,
- Prevent mold from growing and spreading,
- Secure furniture and other household items, and
- Clean storm drains.

FEMA will continue to update the "Mitigate Your Risk" app section. In the months ahead, the app will include mitigation actions for wildfires and high winds.



Example of DIY resource in FEMA app

3. Readily Accessible Program Support Materials

The Hazard Mitigation Assistance (HMA) Division develops and maintains a robust library of educational materials to ensure stakeholders are proficient in all HMA grant programs and changes to policies and the programs. Featured content in 2020 include:

- Strengthening Medical Lifelines with Hazard Mitigation: Funding from the Hazard Mitigation Grant Program (HMGP) may be used broadly by SLTTs for health care, medical, public health, and other critical facilities. This fact sheet identifies flexibilities SLTTs should consider for projects that can be implemented to enhance resilience to these important facilities.

- BRIC Program Support Materials: Provide important information on various activities under the new grant program to support building codes, partnerships, project scoping, nature-based solutions, and more.

- The Mitigation Action Portfolio: A resource to introduce stakeholders to the BRIC grant program and the array of eligible hazard mitigation activities that can benefit stakeholders.

- FMA Program Support Materials: Provide important information on various activities under the grant program to support project scoping, community flood mitigation projects, geospatial file requirements, and more.

Nature Based Solutions

FEMA's nature-based solutions guide — *Building Community Resilience with Nature-Based Solutions: A Guide for Local Communities* — helps communities identify and engage the staff and resources that can play a role in building resilience with nature-based solutions. The guide provides background information on nature-based solutions, presents the business case, and provides practical advice for planning and implementation.

4. Webinars

The HMA Division hosts a number of webinars to keep stakeholders engaged and informed.

- **BRIC Summer Engagement Series** – FEMA subject matter experts and partners came together in July 2020 to discuss key elements of the newly developed BRIC program. The webinars for each of the five sessions are recorded and posted on FEMA's YouTube channel.

- **Notice of Funding Opportunity Series** – In August, webinars provided applicants and subapplicants an overview of the FMA and BRIC grant programs, details about the agency's funding priorities, and common pre-disaster hazard mitigation grant application errors and how to avoid them in FMA and BRIC applications. A few of the webinars were recorded and posted online.

- **Office Hours** – Over the course of seven engagements in the fall of 2020, applicants and subapplicants had an opportunity to ask FEMA subject matter experts their technical questions to support the successful submission of applications for FY 2020 BRIC and FMA grant cycles.

- **HMA Cost Share** – HMA program subject matter experts discussed what applicants and subapplicants can do to meet their non-federal cost share to fund mitigation projects. The webinar is posted online.

- **Residential Property Mitigation** – In this webinar, FEMA subject matter experts discuss how residential property mitigation is eligible for funding under the HMGP, BRIC, and FMA grant programs. The webinar is posted online.

5. Training

This year, the HMA Division formed a section dedicated to supporting the training needs of internal and external partners throughout their HMA learning journey by strengthening their knowledge, skills, and capabilities. The training section formed a National Training Group of HMA subject matter experts from each of the 10 FEMA regional offices, launched new training offerings to meet emerging needs, and established a dataset of national HMA training activities and course offerings that were delivered to various stakeholders nationwide between 2018 and 2020. In the future, this data will serve as a baseline measurement in order to identify opportunities for expanded course offerings and program growth.

For additional information about training, contact the HMA Training Team at fema-hazardmitigationassistance-training@fema.dhs.gov.

Stakeholder Relationships

1. External Stakeholder Working Group

Feb. 2020: Members of the ESWG gathered during the first quarter meeting in Terrebonne Parish, La. to see first-hand the many innovative ways coastal communities mitigate against flooding.

Each year, the External Stakeholder Working Group (ESWG) identifies topics of interest for state, local, tribal, and territorial (SLTT) stakeholders in order to engage in deep dive thinking and problem solving. The group's work aligns with FEMA's higher-level priorities and strategic plan. In 2020, ESWG members made impressive strides in problem solving for topics such as supporting the grants process for local communities and tribes, Public Assistance Mitigation, and acquisitions, producing tangible outcomes that will assist FEMA in better serving stakeholders.

Since 2016, the ESWG has been a venue for stakeholder collaboration at all levels. The ESWG promotes a network of skilled and knowledgeable mitigators who each bring to the table valuable expertise and experiences. Members range from State Floodplain Manager Planners and Emergency Management Directors, FEMA regional participants, Tribal Land Planners, and State Hazard Mitigation Officers.

2. Federal Inter-Agency Coordination

The Hazard Mitigation Assistance (HMA) Division coordinated with other federal agencies, such as the U.S. Department of Energy, the U.S. Department of Housing and Urban Development, the U.S. Department of Agriculture, the U.S. Department of the Interior, and the U.S. Environmental Protection Agency to co-deliver webinars, share ideas, provide input on specific agency initiatives, analyze data, and strategize on the best way to inform mitigation priorities. This all supports the agency's mission to build a culture of preparedness for a more resilient nation.

3. External Stakeholder Coordination

The HMA Division coordinates with a variety of external stakeholders, including national associations, advocacy groups, congressional groups, states and state associations, and academia.

Partners for 2020 webinars included the BuildStrong Coalition, the International Code Council (ICC), the Association of State Floodplain Managers (ASFPM), The Nature Conservancy, and the Smart Cities Council.

Looking Ahead

Over the course of the next year, the Hazard Mitigation Assistance (HMA) Division will continue to refine our strategy in support of FEMA's vision for a prepared and resilient nation.

Across all grant programs, the HMA Division seeks to streamline the process for attracting accurate and more complete application submissions necessary to secure funding, as well as to expedite the close-out process following an award announcement. In year two of the Building Resilient Infrastructure and Communities (BRIC) grant program, the HMA Division will use feedback from the inaugural application cycle to further improve the process. We plan to continue the communications cadence from last year, offering informational webinars that address items such as the Notice of Funding Opportunity and how to avoid application pitfalls.

The Safeguarding Tomorrow through Ongoing Risk Mitigation Act, or STORM Act, was signed into law on Jan. 1, 2021. The revolving loan fund for mitigation presents an opportunity for FEMA to continue advancing mitigation nationwide. During this next year, we will leverage relationships with our federal partners to understand how their revolving loan programs are set up and identify key takeaways to inform implementation of the STORM Act and the future of mitigation at FEMA.

We will also continue to build upon the strong relationship between FEMA headquarters and its regional offices. Through regular collaboration, we can share information and knowledge, create awareness around tools and resources, and find answers to questions. Together, we continue to build a culture of preparedness.

Mitigation Success Stories

1. Strengthening Puerto Rico Electric Power Authority Facilities with Hazard Mitigation Grant Program Funds

Puerto Rico is no stranger to the effects of hurricanes and other major storm systems, including power outages. To help improve infrastructure on the island, FEMA, in coordination with the Puerto Rico Central Office for Recovery, Reconstruction and Resilience, obligated more than $26.2 million in funds to the Puerto Rico Electric Power Authority (PREPA). Funded by the Hazard Mitigation Grant Program, this $26.2 million grant will be split between two projects: the engineering and design of a new combined cycle generation plant at the Palo Seco Energy Plant, and the acquisition and installation of 11 gas turbines in five additional PREPA facilities.

More than $13.5 million in grant funds will go toward the design of the generation plant at Palo Seco, which will help reduce economic losses by cutting down the recovery time after power outages. Currently, this facility, located in Toa Baja, has an operational capacity of approximately 343 megawatts. The work to be completed is expected to increase the capacity to more than 700 megawatts, which will benefit 1.5 million customers across the island. The new plant will allow for dual fuel capacity by using natural gas as the primary fuel and diesel fuel as the secondary source. This mitigation action will increase the level of protection during emergencies by providing resiliency, reliability, redundancy, efficiency, and cleaner fuel. The project will enhance the overall stability of the northern electrical grid of Puerto Rico.

Meanwhile, $12.7 million will fund the installation of eleven back-up generating gas turbines at PREPA plants in Vega Baja, Daguao, Yabucoa, Jobos, and Palo Seco. These turbines will help start up the larger generating units after a total loss of power to improve redundancy and resiliency of the existing electrical grid during emergencies. This will improve the ability to rapidly recover generating capacity during emergencies, reduce the average number of impact days from 60 to five, and will aid in the protection of life and property. The turbines will provide power for telecommunications, water treatment plants, hospitals, and other critical infrastructure throughout the island.

After this initial design phase, additional funding for construction costs may become available for both projects. To date, HMGP has funded over $52 million for Puerto Rico's resiliency after Hurricanes Irma and Maria.

COR3 Executive Director Ottmar Chavez

"Our electrical power system has suffered significant damage from the natural events we have experienced. With the federal allocations for the reconstruction of the Island and with the funds

assigned for hazard mitigation we will be able to develop a system that can withstand or suffer less damage in case of future disasters."

2. Pathways to Mitigation Success and Community Resilience

In spring 2020, the Federal Insurance and Mitigation Administration (FIMA) and Regional Mitigation Division Directors identified a financial gap facing state, local, tribal, and territorial (SLTT) stakeholders as the coronavirus pandemic ravaged response capacities and capabilities across the nation. FEMA had already been working on ways to close this funding gap, but the pandemic compounded the issue.

In Region 5, Mitigation Division Director Mary Beth Caruso and her team hammered out what became known as the "Strategic Partnerships for More Resilient Communities" webinar series. This series complemented the Building Resilient Infrastructure and Communities (BRIC) series of webinars to introduce the new grant program. It also took seriously BRIC's priority to build partnerships with a variety of stakeholders.

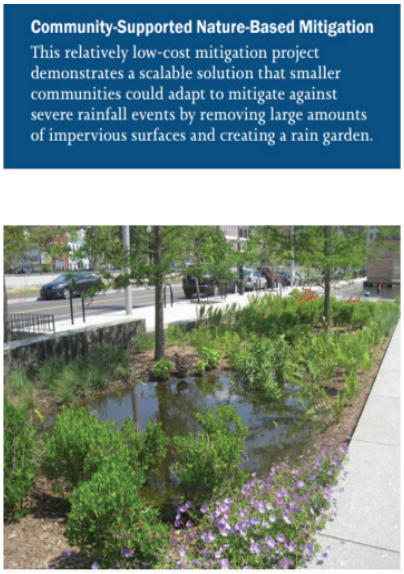
Region 5 has a diverse set of communities, from large cities to very small townships, and many of the communities do not have the resources, expertise, or capabilities to address flooding hazards through long-term mitigation actions, particularly with strapped budgets from the pandemic. This need fueled the premise of a webinar series that would share partnership possibilities and best practices directly to interested mitigation partners. The webinars include multiple points of views and advice about how to address risks and become more resilient, and they bring local and state partners together to advise about challenges and pathways to success.

The first Strategic Partners Webinar centered around the Increased Cost of Compliance (ICC) benefit offered under the National Flood Insurance Program's Standard Flood Insurance Policy. This benefit provides policyholders with up to $30,000 for the increased cost to bring their building into compliance with their most current floodplain management requirements. Policyholders can assign their benefit to the community as a cost-share for Hazard Mitigation Assistance (HMA) projects. More than 60 stakeholders learned about the insurance benefit program on the August webinar.

In September 2020, the Strategic Partnerships for More Resilient Communities delivered U.S. Department of Housing and Urban Development Community Development Block Grants (CDBG) expertise to Region 5 state partners and stakeholders. It had been more than 10 years since HMA incorporated CDBG-Disaster Recovery program funding into HMA grant projects in the region. It was a perfect time for a refresher for project reviewers and project managers about this funding resource that loses its federal identity for grant cost-share purposes.

The November webinar featured mitigation and economic sustainability actions through green infrastructure. Attendees learned how communities can engage their neighborhood homeowners

and city businesses to fund projects that reduce flood risk while at the same time invest in economic stability of neighborhoods. For instance, the city of Cuyahoga Falls, Ohio utilized HMGP funds to acquire and transform the land that became the Cuyahoga Falls Rain Garden.



The Cuyahoga Falls Rain Garden is featured in FEMA's 2020 Mitigation Action Portfolio.

These types of partnerships are just the beginning and may ultimately play a significant role in accomplishing long-term, sustainable hazard mitigation.

3. Pontilly Neighborhood Stormwater Network Project

New Orleans is vulnerable to flooding during yearly heavy rainstorm events, most notably during Hurricane Katrina in 2005. To help lessen the negative impact of storms, New Orleans has been implementing various mitigation techniques across the city, including green infrastructure strategies.

In 2008, residents of Pontilly, a combination of two neighborhoods historically divided by the Dwyer Canal (Pontchartrain Park to the north and Gentilly Woods to the south) approached the New Orleans Redevelopment Authority (NORA) about coming up with a solution to persistent flooding. The existing drainage system and stormwater pipes can only accommodate for a two-year flood event, and excavating and replacing the existing piping system was not an option due to expense and intrusion.

The resulting Pontilly Neighborhood Stormwater Network Project combines improvements to the Dwyer Canal with a network of interventions along streets, in alleyways, and within vacant lots designed to slow and store stormwater. NORA applied for and was awarded an HMGP grant for $15,533,000 to fund the project. Together with the Sewerage and Water Board of New Orleans and the Department of Public Works, NORA coordinated the design and construction of the Pontilly Neighborhood Stormwater Network. The federal grant covers the majority of construction cost and activities related to stormwater infrastructure, including street basins, green alleyways, Dwyer Canal

enhancements, stormwater lot and parks, and the addition of urban bioswales. The bioswales, once completed, will feature native vegetation that can thrive in Louisiana's subtropical climate.

Construction on the Pontilly Neighborhood Stormwater Network began in 2019 and is 80% complete as of Sept. 2020. When implemented, these strategies reduce the burden on the drainage system, slow land subsidence, and improve water quality. This project will not only reduce flood risk for residents but will also beautify green spaces and connect the neighborhoods.

4. Acquiring Flood-Damaged Properties in Iowa

Between March 12 and March 13, 2019, a strong storm system brought warming temperatures, high winds, and one to two inches of rain to Iowa. This rainfall, coupled with significant snow melt and increased runoff due to frozen soil, resulted in widespread flooding across the region for weeks following the storm. The flooding also caused ice flow to damage levees and bridges across the state — in fact, every levee along the Missouri River in Iowa was compromised. More than 50 counties statewide issued disaster declarations due to flooding, and a major disaster declaration was issued on March 23, 2019.

Aerial view of the historic flooding in Scott County, Iowa

Following the devastating flooding, the state implemented a massive property buyout program in communities such as the City of Hamburg, Mills County, Pacific Junction, and Freemont County, which were inundated with flood waters ranging from two to nine feet for 60-90 days due to multiple levee breaches along the Missouri River. The state was awarded more than $31.7 million in Hazard Mitigation Grant Program (HMGP) and Public Assistance Mitigation funding for the acquisition and demolition of substantially damaged properties. In all, an estimated 400 properties were acquired through this effort.

Together with the state of Iowa and other federal agencies, FEMA worked tirelessly to support disaster operations and recovery. While the ongoing COVID-19 pandemic resulted in mandatory closures, temporary unemployment across the state, and limited access and communication, state mitigation staff were able to help with the project application process to secure funding. Recovery efforts for this disaster remain the state's priority.

5. FEMA Helps Fund Dam Removal as Part of Innovative Public-Private Partnership

Built in 1904, Rattlesnake Creek Dam was an integral part of the water supply for the City of Missoula, Mont. until 1983, when it was rendered inoperable due to drinking water concerns. Now

more than a century old, the dam is no longer in use and is a potential hazard to its environment and local community. Without its removal, FEMA estimates Rattlesnake Creek Dam could cause more than $6 million in damage if it failed.

To tackle a project this large, the City formed a partnership with external organizations, such as Trout Unlimited, the Watershed Education Network, and the Montana Department of Fish, Wildlife and Parks. They've worked together over the past several years to prepare the dam for its removal, and the public-private partnership successfully applied for several grants from private companies including Patagonia, NorthWestern Energy, and FEMA. In addition to the safety and security benefits stemming from the removal of the dam and all infrastructure, the floodplain and streambank restoration will increase flood storage and provide fish and wildlife habitat.

Region 8 Mitigation Division Director Jeanine Petterson

"It's important to identify opportunities where partnerships can really strengthen local communities. We hope others see the potential and the power of public-private relationships, and that we can serve as an example to remove other aged dams and keep communities safe."

FEMA's HMGP is funding more than $700,000 of the project that will go to the removal of the dam and the restoration and re-stabilization of the site. The FEMA grant provides 75% of the needed funding to remove the dam, and the partnership has secured the remaining allocations. Removal of the dam began in spring 2020 and is expected to be completed by June 2021.

Before and after removal of Rattlesnake Creek Dam in Missoula, Mont.

Rattlesnake Creek Dam is just one example out of hundreds of other barriers that pose potential risks to local communities. According to the Association of State Dam Safety Officials, 70% of dams will be past their 50-year life spans by 2025. With the help of the University of California, Davis Center for Community and Citizen Science, the Rattlesnake Creek Dam partnership will be turned into a model for future restoration efforts throughout the Western United States. The Center works to build capacity for local groups to monitor watersheds before, during, and after dam removal through a grant from the Open Rivers Fund. The Rattlesnake Creek Dam removal will be highlighted

as a successful example in their final report to help others with watershed restorations.

6. California Counties Adopt a Seismic Retrofit Program

California's Earthquake Authority (CEA) estimates that more than 1.2 million older houses in high-seismic-hazard areas throughout California are especially vulnerable to earthquakes because of their construction types — amounting to nearly a $3 billion challenge.

In 2014, a 6.0 magnitude earthquake struck Napa, Calif., damaging many wood-framed homes that would have benefited from a cost-effective retrofit such as bolting. Bolting a home to its foundation and bracing cripple walls reduces the likelihood the home will slide or topple off its foundation during an earthquake. The Earthquake Brace + Bolt (EBB) program addresses this specific seismic structural vulnerability, helping homeowners lessen the potential for damage to their houses during an earthquake. A residential seismic retrofit strengthens an existing older home, making it more resistant to earthquakes. Further, retrofits must adhere to the California Existing Building Code, Chapter 24, Title 10, Chapter A3 as adopted.

Damaged house in Northridge, California following 2014 Napa earthquake

A significant retrofit project is currently underway in as many as 23 California counties, located in areas with some of the highest seismic risk in the state of California. This project includes $3,000 grants for qualifying homeowners to help cover the cost of a code-compliant seismic retrofit of the house. At this time, there is not another code-compliant seismic retrofit alternative available. Currently, EBB has a program underway with FEMA's HMGP grants DR-4308 and DR-4344 to retrofit approximately 8,000 homes in 133 areas and 355 zip codes statewide.

Crawl space before and after retrofit

Under these FEMA grants, 4,289 seismic retrofits of California homes in high-risk areas have been completed as of Feb. 9, 2021, supporting the state's readiness efforts to prepare for, respond to, and recover from earthquakes.

7. Lyon Creek Flood Mitigation Project

The City of Lake Forest Park is located just north of Seattle, Wash. Residents and businesses experienced frequent flooding when heavy rain caused Lyon Creek to overflow into and around the city's primary shopping center, community facilities and onto a four-lane state highway. A major flood in Dec. 2007 caused more than $4 million in damage and impacted the delivery of critical public safety services when the city's fire station was isolated by flooding. These negative impacts prompted the city to explore solutions to mitigate flood risk.

Aerial view of the Lyon Creek restoration site along State Route 522 and the Lake Forest Park Town Center

In 2012, the City of Lake Forest presented FEMA with plans for a flood reduction and floodplain restoration project. The Lyon Creek Mitigation Project aimed to restore the creek and increase the natural flood storage capacity. Beyond reducing flooding in this area, the city improved fish and animal habitats along Lyon Creek in this urban setting. The project benefited the community and environment in numerous ways by:

- Protecting 20+ homes, a fire station, State Route 522, and the Town Center from the 1% annual-chance flood;
- Reducing flood insurance premiums for affected homes;
- Improving fish habitats by removing barriers to fish passage and installing woody debris in the stream channel; and
- Re-establishing the floodplain and enhancing wetlands in two public parks.

FEMA contributed $3 million toward the total cost of this flood reduction project through a Pre-Disaster Mitigation (PDM) grant. Additional funding was supplied by the Washington Department of Transportation, King County Flood Control District, and the Washington Department of Commerce.

Example of restored floodplain and enhanced wetlands