

# Florida Defense Community Resiliency, Sustainability and Mission Assurance Project Inventory

Fall 2022



PREPARED FOR  
Enterprise Florida, Inc.





**Florida Defense Community  
Resiliency, Sustainability  
and Mission Assurance  
Project Inventory**

# Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>3</b>
<b>STAKEHOLDERS .....</b>	<b>4</b>
RESILIENCY POLICY AND STATUTES SUMMARY .....	6
MILITARY COMMUNITY RESILIENCE ASSESSMENT SUMMARY .....	6
RESILIENCY FUNDING SUMMARY .....	6
RECOMMENDATIONS SUMMARY .....	6
<b>INTRODUCTION.....</b>	<b>8</b>
WHAT IS A MILITARY INSTALLATION RESILIENCY, SUSTAINABILITY, AND MISSION ASSURANCE PROJECT INVENTORY? .....	8
WHY PREPARE A MILITARY INSTALLATION RESILIENCY, SUSTAINABILITY, AND MISSION ASSURANCE PROJECT INVENTORY? .....	8
STAKEHOLDERS.....	9
PROJECT INVENTORY STUDY AREA.....	10
<b>METHODOLOGY.....</b>	<b>11</b>
RESEARCH APPROACH.....	11
DATA COLLECTION.....	11
FINDINGS AND RECOMMENDATIONS .....	11
<b>RESILIENCY LEGISLATION &amp; POLICY .....</b>	<b>12</b>
WHAT IS FLORIDA DOING?.....	12
FLORIDA RESILIENCY POLICY AND STATUTES.....	13
WHAT ARE OTHERS DOING?.....	16
WHY DOES IT MATTER? .....	20
<b>MILITARY-COMMUNITY RESILIENCE ASSESSMENT.....</b>	<b>21</b>
<b>RECOMMENDATIONS .....</b>	<b>27</b>
LEGISLATION AND POLICY STREAMLINE AND CONSOLIDATION.....	27
EXECUTIVE OFFICE OF THE GOVERNOR’S RESILIENCE OFFICE INITIATIVES .....	27
DEVELOP AND INITIATE RESILIENCY WORKING GROUP(S) .....	28
UPDATE EXISTING PLANS.....	28
ALIGN LOCAL MITIGATION STRATEGIES (LMS) WITH CAPITAL IMPROVEMENT PLANS (CIP) .....	28
IMPLEMENT RESILIENCE OFFICER/RESILIENCE LIAISON .....	29
RESILIENCY GRANT DEVELOPMENT/WRITING RESOURCES.....	29
UPDATE PROJECT INVENTORY ANNUALLY .....	29
ESTABLISH A SYSTEM FOR RESILIENCE MEASUREMENT .....	29
STRATEGICALLY ALIGN DECENTRALIZED PROGRAMS .....	30
<b>APPENDIX A .....</b>	<b>31</b>
COMPENDIUM OF PROGRAMS AND MECHANISMS FOR FUNDING RESILIENCE.....	31
FDC RESILIENCY PROJECT INVENTORY.....	84
FDC COMMUNITY VULNERABILITY ASSESSMENT .....	111
FEMA NATIONAL RISK INDEX REPORT .....	114

# Executive Summary

In response to Enterprise Florida, Inc. (EFI) request for proposals, Matrix Design Group, Inc. presents the Florida Defense Community Resiliency, Sustainability, and Mission Assurance Project Inventory for EFI, Florida-based installations, and the communities that surround them. Matrix is committed to increasing the military value of Florida's installations by developing strategies and objectives that improve installation and community resilience and make the state more competitive for DoD basing decisions.

Matrix reviewed nearly 3,000 projects across the State of Florida relating to all sectors of resiliency. These projects came from the 2022 Florida State Budget, County Local Mitigation Strategies, local community representatives, installation Community Planning and Liaison Officer (CPLO), and various stakeholders across Florida's Defense Communities. Matrix then compiled and prioritized a final list of over 100 key projects with an estimated at cost of nearly \$840M. This living library of resiliency requirements is intended to ensure that military communities, along with the state, are able to successfully pursue and improve Florida's resiliency posture.

## What is a Military Installation Resiliency, Sustainability, and Mission Assurance Project Inventory?

The goal of this Military Installation Resiliency, Sustainability, and Mission Assurance Project Inventory is to provide critical information and recommendations that enable communities to make informed decisions related to resiliency and to work in partnership with the appropriate agencies to respond to, address, and mitigate activities that are either impairing or may impair installation missions. The Department of Defense (DoD) Instruction 4170.11 [1] defines energy resilience as "the ability to prepare for and recover from energy disruptions that impact mission assurance on military installations." Closely related, "military installation resilience is defined as the capability of a military installation to avoid, prepare for, minimize the effect of, adapt to, and recover from extreme weather events, or from anticipated or unanticipated changes in environmental conditions, that do, or have the potential to, adversely affect the military installation or essential transportation, logistical, or other necessary resources outside of the military installation that are necessary in order to maintain, improve, or rapidly reestablish installation mission assurance and mission-essential functions." Ultimately, the project's outcome provides communities the opportunity to increase the military value of their installations by preserving military missions.

In order to fulfill the requirements of this study, Matrix employed the tenets of the DoD Energy Program from an "all hazards" perspective and integrated the pillars of expanding supply, reducing demand, and adapting future forces and technologies throughout this effort. Matrix developed a set of mission critical requirements with options that provide a framework for decision-making to implement the recommendations of this study. The study aligns solutions to prioritize the critical needs of the communities and the installations.

## Why Prepare a Military Installation Resiliency, Sustainability, and Mission Assurance Project Inventory?

Collaboration and joint planning among military installations, local communities, agencies, and other stakeholders should occur to protect the long-term viability of existing and future military missions. Working together also enhances the health of community economies, industries, and infrastructure systems and decreases the likelihood of incompatible use/development. Recognizing the symbiotic relationship that should exist between installations and adjacent communities, the Office of Local Defense Community Cooperation (OLDCC) implemented the Installation Resiliency Authority to mitigate existing and future conflicts and enhance communication and coordination among all affected stakeholders. The program enables states and local governments to assist installations in

optimizing their mission and sustaining operations, while enhancing the long-term readiness and military value of the power projection platform.

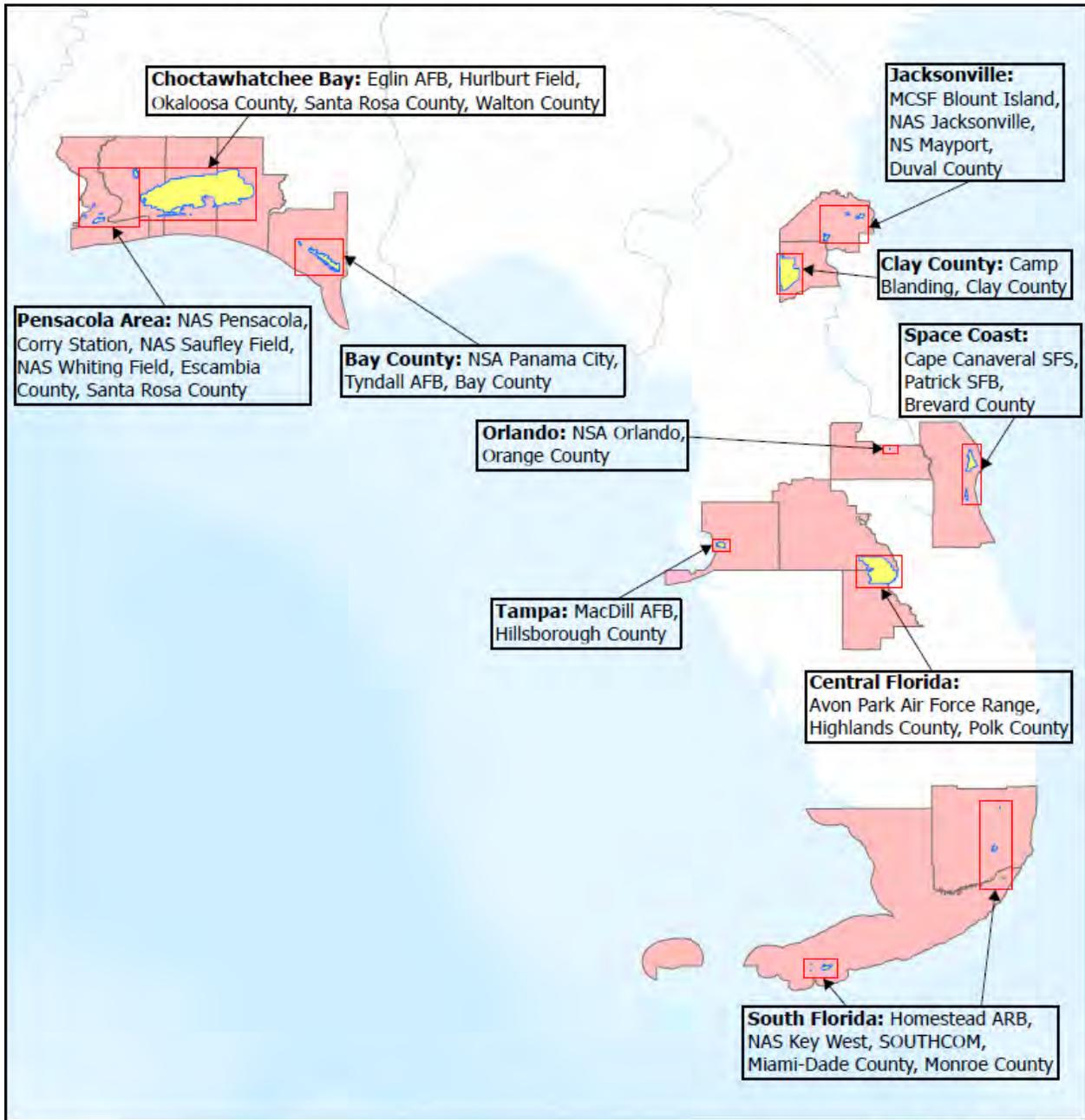
It is no surprise that climate change, rising sea-levels, and other resiliency concerns have emerged as major factors affecting the long-term viability of Florida military installations and the communities around them. If the Florida Defense Support Task Force (FDSTF) is going to be successful in executing their mission of protecting and growing military missions throughout the state, addressing resiliency concerns must be a top priority. There are already several initiatives underway to address resiliency challenges at specific installations. Military Installation Resiliency (MIR) studies and compatible use plans have been completed and implemented, Energy Savings Performance Contracts (ESPC) and other contracting mechanisms are being utilized to improve energy resiliency and security, and other creative community partnerships are being pursued to address challenges.

However, to date, there has not been a holistic look at military installation resiliency across the state. A macro level analysis was necessary to identify best practices, prioritize investments, and provide a deliberate roadmap to mitigating the challenges facing Florida communities and installations. The final report also details where resources should be focused in the short-, mid-, and long-term to achieve the greatest results.

## Stakeholders

A foundational step in any planning process is the identification of stakeholders. Informing and involving interested parties early in the project is instrumental in identifying common and conflicting interests to address and resolve through the development of integrated strategies. Stakeholders include individuals, groups, organizations, and government entities interested in, affected by, or influencing the outcome of the project. Stakeholders identified for the Florida Defense Community Resiliency, Sustainability, and Mission Assurance Project Inventory were divided into the following ten defense community regions with major installations:

- Bay County
  - NSA Panama City
  - Tyndall AFB
- Central Florida
  - Avon Park Air Force Range
- Clay County
  - Camp Blanding JTC
- Jacksonville
  - MCSF Blount Island
  - NAS Jacksonville
  - NS Mayport
- Choctawhatchee Bay
  - Eglin AFB
  - Hurlburt Field
- Orlando
  - NSA Orlando
- Pensacola Area
  - Corry Station
  - NAS Pensacola
  - NAS Saufley Field
  - NAS Whiting Field
- Space Coast
  - Cape Canaveral SFS
  - Patrick SFB
- South Florida
  - Homestead ARB
  - NAS Key West
  - SOUTHCOM
- Tampa
  - MacDill AFB



Sources: TIGER, 2021. DoD, 2021.

**Legend**

- Study Area
- Military Installation
- Study Area County



Florida Defense Community Project Map

## Resiliency Policy and Statutes Summary

Much of the current Florida resiliency policy (separate from Emergency Management and Hazard Mitigation) focuses on coastal and inland resiliency aimed towards addressing sea level rise and flooding. However, resiliency can encompass many other categories across various types of communities. It is also vital to discuss the resiliency of critical infrastructure, facilities, and systems across the state as these play a major role responding to challenges across the hazard spectrum. Understandably, many coastal and major watershed regions tend to focus on the risk of flood and sea level rise. Although important, an intense focus on a single aspect of resiliency may result in missed opportunities to address other shortfalls and mitigate or protect against hazards, both natural and manmade. Ultimately, applying broad resiliency principles and policies across military communities will ensure strong and sustainable communities that provide mission assurance for the many military installations across the State of Florida.

## Military Community Resilience Assessment Summary

Matrix utilized publicly available information to identify and assess the impacts of natural and manmade threats to the study area. The main report used to validate existing state hazard and vulnerability data was the FEMA National Risk Index Report. The National Index is an online mapping application that visualizes natural hazard risk metrics based on 18 natural hazards, expected annual losses from natural hazards, social vulnerability, and community resilience. This tool was designed and built by FEMA in close collaboration with various stakeholders and partners in academia; local, state, and federal government, and private industry.

## Resiliency Funding Summary

Appendix A catalogs federal, state, and non-governmental programs and funding mechanisms with potential to finance and support efforts to enhance infrastructure resilience and security.

The purpose is to support state, local, tribal, and territorial communities, as well private sector owners and operators of infrastructure assets with their efforts to improve the security and resilience of their communities and infrastructure systems. Some of these funding opportunities are temporary or are not available annually. Due to the evolving nature of funding opportunities this list, while extensive, is not exhaustive.

## Recommendations Summary

Florida has led the way in establishing a Chief Resilience Officer (CRO) and dedicated Resilience Office at the state level, providing a prime example to other states that it is critical to have well established, resourced, and informed resilience teams to ensure successful resilience programs. Upon completion of this study, Matrix Design Group developed a list of recommendations to provide a path forward in improving the resiliency of Florida military installations and communities. Companion documents with recommended projects and potential infrastructure resiliency funding sources are also included.

Below is a summary of the most critical action items:

- Legislation and Policy Streamline and Consolidation
  - Consolidate all resiliency guidance, reports, studies and documents in a single central location at the appropriate level, agency, office, or organization.
- Executive Office of the Governor's Resilience Office Initiatives
  - Create, communicate, and implement a resiliency vision for the State of Florida that can be applied at all levels of government from state agencies to the municipal level

- Establish a point of contact within each agency who has the authority to work directly with the CRO. This will most likely be the Resilience Officer/Liaison that is discussed in a subsequent recommendation.
- Develop and implement a statewide resiliency communication plan to ensure all CROs, resilience offices and POCs remain informed.
- Develop and Initiate Resiliency Working Groups
  - Establish regularly scheduled meetings/updates with appropriate resilience POCs to stay apprised of progress and emerging issues.
- Update Existing Plans
  - It is critical to ensure all plans relating to resiliency, specifically project lists and statuses, are updated on a regular basis. Examples of plans that should be updated regularly include:
    - Joint Land Use and Compatibility Studies
    - Emergency Operations Plans
    - Hazard Mitigation Plans
    - Capital Improvement Plans
    - Infrastructure Restoration Plans
    - Local Mitigation Strategies
- Align Local Mitigation Strategies (LMS) and Capital Improvement Plans (CIP)
  - Utilize resiliency working groups to review all LMS and CIP projects to ensure priorities are aligned, all relevant projects are captured, and to enable the effective allocation of resources.
- Implement Resilience Officer/Liaison
  - All relevant agencies establish a resilience officer position (or similar) to interface with the state level Chief Resilience Officer. This may require additional funding from the appropriate level to create new positions.
- Establish and Fund Resilience Grant Development/Writing Resources
  - Ensure appropriate resources and personnel are allocated for grant and funding opportunity monitoring and writing. This could be a locally funded position or outsourced effort. This position will ensure that all available grants are identified and applied for on the correct timelines to give the best possible opportunity to earn funding.
- Update Resiliency and Sustainability Database annually
  - Update and build upon the attached project inventory on an annual basis. Maintaining a pipeline of executable projects helps position communities to exploit funding and financing opportunities that arise, such as federal economic-stimulus or recovery funds.
- Establish a system for Resilience Measurement
  - Develop key metrics for all components of resiliency and commit to long-term and periodic reassessment/realignment.
- Strategically Align Decentralized Programs
  - Explore how these efforts overlap; elevate mitigation, and adaptation agendas simultaneously (i.e., ensuring that the 2018 Florida Enhanced Hazard Mitigation Plan and 2018 Florida Adaptation Planning Guidebook provide an integrated approach to issues across the resilience and mitigation spectrums)
  - Work across agencies and organizations to execute an effective resilience program at all levels under the guidance of the State's CRO.

# Introduction

## What is a Military Installation Resiliency, Sustainability, and Mission Assurance Project Inventory?

The goal of this Military Installation Resiliency, Sustainability, and Mission Assurance Project Inventory is to provide critical information and recommendations that enable communities to make informed decisions related to resiliency and to work in partnership with the appropriate agencies to respond to, address, and mitigate activities that are either impairing or may impair installation missions. The Department of Defense (DoD) Instruction 4170.11 [1] defines energy resilience as "the ability to prepare for and recover from energy disruptions that impact mission assurance on military installations." Closely related, "military installation resilience is defined as the capability of a military installation to avoid, prepare for, minimize the effect of, adapt to, and recover from extreme weather events, or from anticipated or unanticipated changes in environmental conditions, that do, or have the potential to, adversely affect the military installation or essential transportation, logistical, or other necessary resources outside of the military installation that are necessary in order to maintain, improve, or rapidly reestablish installation mission assurance and mission-essential functions." Ultimately, the project's outcome provides communities the opportunity to increase the military value of their installations by preserving military missions.

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## Why Prepare a Military Installation Resiliency, Sustainability, and Mission Assurance Project Inventory?

Collaboration and joint planning among military installations, local communities, agencies, and other stakeholders should occur to protect the long-term viability of existing and future military missions. Working together also enhances the health of community economies, industries, and infrastructure systems and decreases the likelihood of incompatible use/development. Recognizing the symbiotic relationship that should exist between installations and adjacent communities, the Office of Local Defense Community Cooperation (OLDCC) implemented the Installation Resiliency Authority in to mitigate existing and future conflicts and enhance communication and coordination among all affected stakeholders. The program enables state and local governments to assist installations in optimizing their missions and sustaining operations, while enhancing the long-term readiness and military value of the power projection platform.

It is no surprise that climate change, rising sea-levels, and other resiliency concerns have emerged as major factors affecting the long-term viability of Florida military installations and the communities around them. If the Florida Defense Support Task Force (FDSTF) is going to be successful in executing their mission of protecting and growing military missions throughout the state, addressing resiliency concerns must be a top priority. There are already several initiatives underway to address resiliency challenges at specific installations. Military Installation Resiliency (MIR) studies and compatible use plans have been completed and implemented. Energy Savings Performance Contracts (ESPC) and other contracting mechanisms are being utilized to improve energy resiliency and security, and other creative community partnerships are being pursued to address site specific challenges.

However, to date, there has not been a holistic look at military installation resiliency across the entire state. A macro level analysis was necessary to identify best practices, prioritize investments, and provide a deliberate roadmap to mitigating the challenges facing Florida communities and installations. The final report also details where resources should be focused in the short-, mid-, and long-term to achieve the greatest results.

## Stakeholders

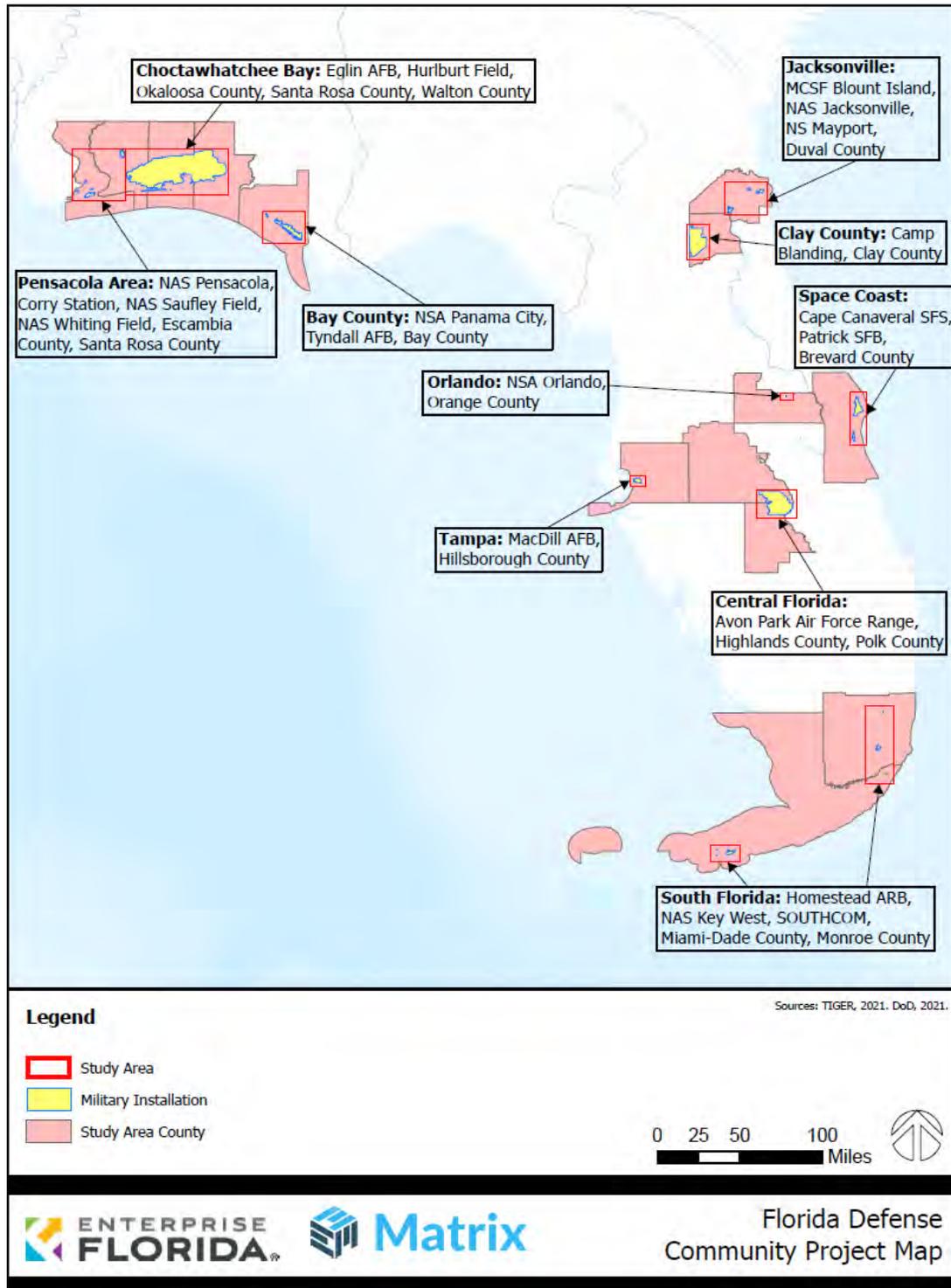
To achieve Military Installation Resiliency goals and objectives, the study process included a stakeholder program that provided a variety of opportunities for interested parties to contribute to its development.

A foundational step in any planning process is the identification of stakeholders. Informing and involving interested parties early in the project is instrumental in identifying common and conflicting interests to address and resolve through the development of integrated strategies. Stakeholders include individuals, groups, organizations, and government entities interested in, affected by, or influencing the outcome of the project. Stakeholders identified for the Florida Defense Community Resiliency, Sustainability, and Mission Assurance Project Inventory included, but were divided into the following ten defense community regions with included, but were not limited to major installations:

- Bay County
  - NSA Panama City
  - Tyndall AFB
- Central Florida
  - Avon Park Air Force Range
- Clay County
  - Camp Blanding JTC
- Jacksonville
  - MCSF Blount Island
  - NAS Jacksonville
  - NS Mayport
- Choctawhatchee Bay
  - Eglin AFB
  - Hurlburt Field
- Orlando
  - NSA Orlando
- Pensacola
  - NAS Pensacola
  - Corry Station
  - NAS Saufley Field
  - NAS Whiting Field
- Space Coast
  - Cape Canaveral SFS
  - Patrick SFB
- South Florida
  - Homestead ARB
  - NAS Key West
  - SOUTHCOM
- Tampa
  - MacDill AFB

## Project Inventory Study Area

The study area for this project includes 21 military installations across the state of Florida encompassing all branches of the DoD. In order to efficiently analyze each installation and its surrounding communities, the Matrix research team divided the state into ten distinct areas. The figure below shows the ten project areas, respective counties, and the associated installations within each area.



# Methodology

## Research Approach

The nature of this project led Matrix to utilize a more qualitative research method through gathering existing legislature, plans, and studies rather than a quantitative, numerically based approach. The concept of resiliency can be measured in many different ways; however, for this report it is beneficial to focus on collecting and analyzing existing information in the categories of resiliency legislation and policy, existing funding opportunities, and planned, programmed or conceptual projects within each of the ten project areas. Research for this project is approached through the four key objectives of every Matrix resiliency review or compatibility study: 1) partnership, 2) stakeholder and public involvement; 3) data driven solutions, and 4) focus on implementation. This approach will ensure that the final product will provide FDSTF the groundwork to improve the military value of Florida's Installations, increase resiliency in the surrounding communities, and be something they will be built upon for years to come.

## Data Collection

Data collection and research efforts focused on the following key areas: 1) resiliency legislation and policy across Florida as well notable programs across the United States, 2) resiliency funding programs and opportunities, and finally 3) resiliency projects. Matrix began this process through a project kick-off workshop to establish open lines of communication with all stakeholders and to better understand issues and perspectives from the ground level. The kick-off meeting established a baseline request for information which included the following:

- Joint Land Use and Compatibility Studies
- Emergency Operations Plans
- Hazard Mitigation Plans
- Capital Improvement Plans
- Infrastructure Restoration Plans
- Transportation Studies

Additional entities that were highlighted as being key for individual stakeholders to involve when deemed necessary were power, water, wastewater, gas and communications providers as well as any key local agencies and/or developers. These agencies all play critical roles in resiliency across each community and military installation. Also, Matrix project team members met virtually with the Florida Chief Resilience Officer to gain insight to current and future plans for resiliency programs and funding across the state.

Information was also gathered from web-based research throughout the public domain. Key documents, such as many of the Local Mitigation Strategies, were available on their respective County websites. Many documents regarding legislature, policy, and other existing state level resiliency programs were obtained through federal, state, local agency, and private organizations websites. Matrix project team members also attended the three-day Florida Coastal Resilience Workshop in March 2022. This workshop, presented by Florida Silver Jackets, provided key insight to current resilience programs and future plans within the area of coastal storms and sea level rise.

## Findings and Recommendations

For both resiliency legislation and policy as well as funding programs, Matrix reviewed what Florida is currently utilizing and offering and compared it to other standout resiliency programs and policies across the United States. Best practices from other states and programs were captured to help identify how Florida can improve as well as any recommendations and next steps that Florida should consider to address existing gaps or shortfalls.

# Resiliency Legislation & Policy

## What is Florida Doing?

Much of the current Florida resiliency policy (separate from Emergency Management and Hazard Mitigation) focuses on coastal and inland resiliency against sea level rise and flooding. Because resiliency can encompass many categories across various types of communities, it is particularly important to discuss the resiliency of critical infrastructure, facilities, and systems across the state as these play a major role in the success when responding to any challenge that may be faced across the hazard spectrum. Many coastal and major watershed regions tend to focus on the risk of flood and sea level rise. While important, an intense focus in one facet of resiliency may result in missed opportunities to address shortfalls to protect and mitigate against other types of hazards both natural and manmade. Ultimately, applying broad resiliency principles and policy across military communities will ensure strong and sustainable communities that will support mission assurance for the many military installations across the State of Florida.

From a high-level view, Florida has conducted many studies and completed numerous plans around concepts key to resiliency; however, these efforts appear to be siloed. While these efforts are improving key resiliency across the state, there is no overarching resiliency framework to outline resiliency efforts and optimize funding resources and opportunities. A few examples of previous studies and plans are below:



On May 3<sup>rd</sup>, 2022 Governor DeSantis signed into law [CS/HB 7053](#) which established F.S. 14.2031 creating the Statewide Office of Resilience within the Executive Office of the Governor. The bill also provides the following key items:

- Appointment of a Chief Resilience Officer (CRO)
- Creation of F.S. 339.157; requiring the Department of Transportation to develop a resilience action plan by June 30, 2023
- Completion of a statewide flood vulnerability and sea level rise data set (by July 1, 2023) sufficient to conduct a statewide vulnerability assessment (by July 1, 2024). This task will fall under DEP through the Resilient Florida Program.

Across the US, only 16 states currently have CROs. The earliest CRO was created in Virginia in 2014. With the most recent addition of a CRO occurring in South Carolina in 2021. Florida appointed a permanent Chief Resilience Officer in November 2021 following a two-year gap in the position.

When other states established a CRO position, the executive order or legislation sometimes included a charge for the CRO to develop, implement and maintain a statewide (or regional) resilience plan. According to a report developed by the Environmental Defense Fund (EDF), the plan program should be rooted in defensible data and will outline programs and policies for adoption to protect the people and property of the state from damage and destruction from climate related events and natural disasters.

The EDF's "Instituting Resilience: Recommendations for Governors and Legislators on Establishing and Supporting Chief Resilience Officers," [Report](#) is a great resource to see how other states have, and continue to approach instituting resilience efforts.

## Florida Resiliency Policy and Statutes

### ***Florida Administrative Code (F.A.C.) 27P-22.005 Local Mitigation Strategy***

This F.A.C. outlines the critical components of Local Mitigation Strategies (LMS) that are developed across Florida. A few key components of this statute are that an LMS should include a completed hazard assessment, a list of approved projects in order of priority (to included costs and funding sources), and GIS maps that depict hazard areas, project locations, critical facilities, and repetitive loss structures.

### ***Florida Peril of Flood Statute, Section 163.3178(2)(f), F.S.***

This statute was adopted in 2015 and requires inclusion of a development component in the Coastal Management Element of the Comprehensive Plan. It is intended to eliminate inappropriate and unsafe development when opportunities arise. The goal is to reduce losses due to flooding and claims made under flood insurance policies issued in Florida. A few key requirements within the Peril of Flood Statute are below:

- Include development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas, which result from high-tide events, storm surge, flash floods, stormwater runoff and the related impacts of sea-level rise.
- Encourage the use of best practices development and redevelopment principles, strategies and engineering solutions that will result in the removal of coastal real property from flood zone designations established by the Federal Emergency Management Agency (FEMA).
- Identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in Florida.
- Be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.
- Require that any construction activities seaward of the coastal construction control lines established pursuant to section 161.053, F.S., be consistent with chapter 161.
- Encourage local governments to participate in the National Flood Insurance Program Community Rating System administered by FEMA to achieve flood insurance premium discounts for their residents.

Approximately 70% compliance has been reached statewide as of April 2022 (Florida Coastal Resilience Workshop).

### ***Public Financing of Construction Projects, Section 161.551 F.S.***

Public Financing of Construction Projects prohibits state-financed constructors from commencing construction of certain structures in coastal areas after a specified date without first taking certain steps regarding a sea level impact projection study; requires the Department of Environmental Protection to develop by rule a standard for such studies; providing that such rule operates prospectively on projects that have not yet commenced as of the finalization of the rule, etc. SLIP (Sea Level Impact Projection) report must be completed prior to construction. Effective July 1, 2021 with enforcement beginning July 1, 2022.

### ***Florida Resilient Coastlines Program, Section 380.093 F.S.***

Through the Florida Resilient Coastlines Program, DEP continues its efforts to help ensure collaboration among Florida's coastal communities and to offer technical assistance and funding to coastal communities dealing with increasingly complex flooding, erosion and habitat shifts.

Local communities can assess vulnerabilities to projected increases in coastal flooding and erosion and can develop strategies to make affected areas more resilient. Protecting and strengthening natural infrastructure also can help. Coral reefs, mangroves, oyster reefs and marshes are our first lines of defense. DEP's Office of Resilience and Coastal Protection is committed to helping prepare Florida's communities and habitats for changes resulting from sea level rise by:

- Providing funding and technical assistance to prepare Florida's coastal communities.
- Continuing to promote and ensure a coordinated approach to sea level rise planning among state, regional and local agencies.

"The Legislature recognizes that the state is particularly vulnerable to adverse impacts from flooding resulting from increases in frequency and duration of rainfall events, storm surge from more frequent and severe weather systems, and sea level rise. Such adverse impacts pose economic, social, environmental, and public health and safety challenges to the state. To address these challenges most effectively, funding should be allocated in a manner that prioritizes addressing the most significant risks."

### ***Statewide Flooding and Sea Level Rise Resilience Plan***

- 163.3178(2)(f); vulnerability assessments that identify or address risks of flooding and sea level rise
- 380.093-(3)(c): A vulnerability assessment conducted pursuant to paragraph (b) must encompass the entire county or municipality; include all critical assets owned or maintained by the grant applicant; and use the most recent publicly available Digital Elevation Model and generally accepted analysis and modeling techniques.
- 380.093-(3)(d)3: b. At least two local sea level rise scenarios, which must include the 2017 NOAA intermediate-low and intermediate-high sea level rise projections. c. At least two planning horizons that include horizons for the years 2040 and 2070

### ***Resiliency Energy Environment Florida (REEF) Programs, Section 163.08, F.S***

In chapter 2008-227, Laws of Florida, the Legislature amended the energy goal of the state comprehensive plan to provide, in part, that the state shall reduce its energy requirements through enhanced conservation and efficiency measures in all end-use sectors and reduce atmospheric carbon dioxide by promoting an increased use of renewable energy resources. That act also declared it the public policy of the state to play a leading role in developing and instituting energy

management programs that promote energy conservation, energy security, and the reduction of greenhouse gases.

### ***Florida Department of Transportation (FDOT)***

Effective as of April 27, 2020, the Florida Department of Transportation has enacted the following resilience policy:

- It is the policy of the Florida Department of Transportation to consider resiliency of the State's transportation system to support the safety, mobility, quality of life, and economic prosperity of Florida and preserve the quality of our environment and communities. Resiliency includes the ability of the transportation system to adapt to changing conditions and prepare for, withstand, and recover from disruption.
- The Department will continue to identify risks, particularly related to sea level rise, flooding, and storms; assess potential impacts; and employ strategies to avoid, mitigate, or eliminate impacts.
- The Department recognizes that shocks and stresses vary throughout the State, and on-going multidisciplinary efforts by other agencies are important considerations. The Department will collaborate with the appropriate agencies and organizations for information sharing and alignment of resiliency strategies.
- This policy will be implemented through the Department's long-range and modal plans; work program; asset management plans; research efforts; and internal manuals, tools, guidelines, procedures, and related documents, guiding planning, programming, project development, design, construction, operations, and maintenance.

Additionally, Section 339.157, F.S., requires FDOT to complete a Resilience Action Plan by June 30, 2023. The goals of the Resilience Action Plan are to:

- Recommend strategies to enhance infrastructure and operational resilience
- Recommend design changes for existing and new facilities
- Enhance partnerships to address multijurisdictional resilience needs

The Resilience Action Plan requires FDOT to complete a vulnerability assessment on the State Highway System and, considering current and future conditions, identify commensurate design and construction strategies, and update other project development processes, manuals, or guidance. The Resilience Action Plan also requires FDOT to identify resiliency projects.

## What are others doing?

The concept of resiliency, along with both Chief Resiliency Officers and Resiliency Offices has only been implemented since around 2013. These are still relatively new as far as streamlined government operations are concerned. However, given the increase in disasters across the United States, there has been strong growth in both of the aforementioned resiliency tools across the nation. While, the State of Florida is off to a strong start with its resiliency program, especially with the official appointment of a Chief Resiliency Officer in May of 2022, it is still important to look at programs across the country to ensure the State of Florida is able to get the most out its current program and effectively update and adjust its program as necessary. To accomplish this, states policies and practices were reviewed for best practices and benchmarks that could be integrated into Florida's program.

### *North Carolina*

After Hurricane Florence inflicted damage estimated at \$17B. Legislation was passed to create the North Carolina Office of Recovery and Resiliency (NCORR) under the Emergency Management of the state's Department of Public Safety. The state then shortly followed with the appointment of its first CRO in May of 2019. Below is an excerpt from the current legislation summarizing the functions of NCORR:

NCORR shall support resiliency in the State by carrying out the following functions and activities:

- Bring resilience expertise to disaster recovery and hazard mitigation programs administered by the Department of Public Safety.
- Serve as North Carolina's lead State agency for the coordination of resilience efforts across State agencies, The University of North Carolina, and other stakeholders to maximize efficient planning, design, and implementation of activities that improve recovery and resilience.
- Provide support and technical assistance to build the capacity of State agencies, local governments, nonprofits, and businesses in North Carolina to initiate resiliency planning, identify and prioritize resilient projects and practices, implement resiliency strategies, and evaluate program effectiveness.
- Execute multiyear recovery and resiliency projects.
- Administer funds provided by the Community Development Block Grant Disaster Recovery program pursuant to subsection (c) of this section.
- Provide general disaster recovery coordination and public information, citizen outreach, and application case management.
- Audit, finance, comply with, and report on disaster recovery funds and program and construction management services.
- Contract for services from vendors specializing in housing, construction, and project management services.
- Develop and administer a grant program for financially distressed local governments to assist with recovery and resiliency capacity.
- Provide technical assistance to local governments.

<https://www.ncleg.gov/Sessions/2021/Bills/House/PDF/H500v2.pdf>

## South Carolina

In September 2020, South Carolina through a bipartisan effort passed legislation to move the Disaster Recovery Office from the Department of Administration to the Governor's Office to be led by an appointed CRO. This requires the CRO to develop, implement, and maintain a strategic Statewide Resilience Plan which takes into account the economic impact of best available projections related to the current and future risk of extreme weather events in this State including, but not limited to, the impact on forestry, agriculture, water, and other natural resources, food systems, zoning, wildlife, hunting, infrastructure, economic productivity and security, education, and public health.

Of note within the South Carolina policy, each local comprehensive plan requires a resiliency component that considers:

*the impacts of flooding, high water, and natural hazards on individuals, communities, institutions, businesses, economic development, public infrastructure and facilities, and public health, safety and welfare. This element includes an inventory of existing resiliency conditions, promotes resilient planning, design and development, and is coordinated with adjacent and relevant jurisdictions and agencies. For the purposes of this item, 'adjacent and relevant jurisdictions and agencies' means those counties, municipalities, public service districts, school districts, public and private utilities, transportation agencies, and other public entities that are affected by or have planning authority over the public project. For the purposes of this item, 'coordination' means written notification by the local planning commission or its staff to adjacent and relevant jurisdictions and agencies of the proposed projects and the opportunity for adjacent and relevant jurisdictions and agencies to provide comment to the planning commission or its staff concerning the proposed projects. Failure of the planning commission or its staff to identify or notify an adjacent or relevant jurisdiction or agency does not invalidate the local comprehensive plan and does not give rise to a civil cause of action. This element shall be developed in coordination with all preceding elements and integrated into the goals and strategies of each of the other plan elements.*

<https://www.scstatehouse.gov/code/t48c062.php#:~:text=SECTION%2048%2D62%2D10.,Relief%20and%20Resilience%20Reserve%20Fund.>

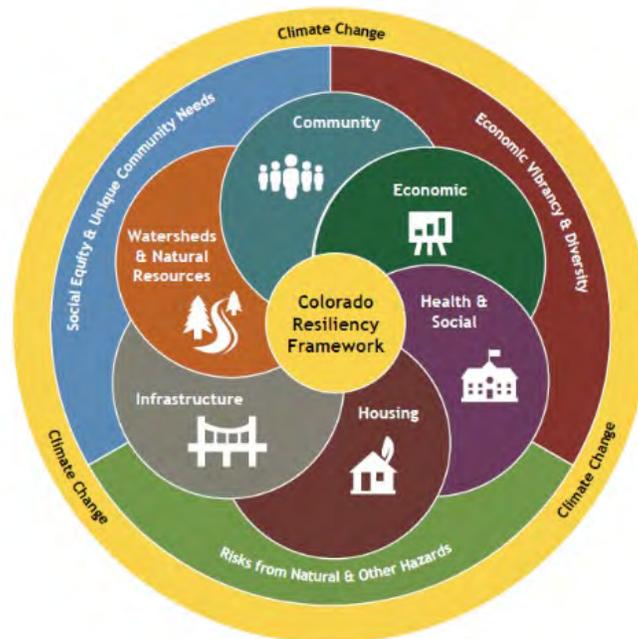
## Colorado

The Colorado Resiliency Office was created through State statute, and its obligations are set forth in Colorado Revised Statute 24-32-122, which lays out the following responsibilities:

- Develop a plan to improve coordination among state agencies and local jurisdictions to support community and economic recovery efforts and to address risk and vulnerability reduction;
- Provide technical assistance to local governments for the implementation of resilience planning, including resilience frameworks, vulnerability profiles, risk-reduction plans, and economic development strategies;
- Provide technical assistance to state agencies for the implementation of resilience policies and procedures and to institutionalize resilience practices across departments and agencies;

- Provide technical assistance to local governments and state agencies to secure additional resources and investment to implement resilience solutions;
- Integrate resilience criteria into existing competitive grant programs;
- Provide policy advocacy to shape federal resilience efforts;
- Develop metrics and targets to measure the short- and long-term success of resilience efforts and actions; and
- Support long-term community recovery efforts and resource navigation after a disaster.

The Colorado Resiliency Office uses the following definition for resiliency; *“resiliency means the ability of communities to rebound, positively adapt to, or thrive amidst changing conditions or challenges, including human-caused and natural disasters, and to maintain quality of life, healthy growth, durable systems, economic vitality, and conservation of resources for present and future generations.”* The graphic below is a depiction of the Colorado Resiliency Framework showing how various sectors of the state play into the overall level of resilience.



Additionally, the Colorado Resiliency Playbook provides the following outline for the purpose of effective resiliency policy:

Resiliency policies are critical tools for coordinating and advancing resiliency efforts at the agency level. A formalized resiliency policy:

- demonstrates leadership support and shows agency-wide commitment for resiliency initiatives;
- applies the State’s definition of resiliency as it relates to the agency’s mission and operations;
- defines roles and responsibilities for accomplishing goals related to resiliency and builds accountability and ownership;

- supports investment in resiliency initiatives; and
- provides direction to staff at all levels of the organization on how resiliency principles will be incorporated into the agency's operations.

## ***California***

In 2015, California Senate Bill 246 directed the formation of the Integrated Climate Adaptation and Resilience Program. The Program has two components: the State Adaptation Clearinghouse and the Technical Advisory Council (TAC). The State Adaptation Clearinghouse is a centralized source of information and resources to assist decision makers at the state, regional, and local levels when planning for and implementing climate adaptation projects to promote resiliency across California.

The Technical Advisory Council brings together local government, practitioners, scientists, and community leaders to help coordinate activities that better prepare California for the impacts of a changing climate. (TAC members bring expertise in the intersection of climate change and the sector-based areas outlined in [SB 246 PRC 71358\(b\)](#).) The TAC supports the California Office of Planning and Research in its goal to facilitate coordination among state, regional and local adaptation and resiliency efforts, with a focus on opportunities to support local implementation actions that improve the quality of life for present and future generations.

To Further the goals of the approved bill, Executive Order B-30-15 was signed directing State agencies to integrate climate change into all planning and investment to include that of current and future climate conditions in infrastructure investment. This led to the development of [Planning and Investing for a Resilient California, A Guidebook for State Agencies](#).

## ***United States Climate Alliance***

[The United States Climate Alliance](#) was formed on June 1<sup>st</sup>, 2017, by a group of governors across the country. Since its formation, the 25 governor, bipartisan alliance has worked to build actions and create a roadmap for national policy makers to find success across the climate and resilience spectrum. It is important to note that the USCA focuses heavily on resiliency policy ranging from environmental and economic to infrastructure and energy.

The year 2020 produced 22 “billion-dollar disasters” caused by weather events across the U.S. which resulted in \$95 billion in cumulative damage, and shattered previous records. In response the US Climate Alliance said “States must move swiftly to build their resilience to these and other climate impacts. In doing so, they can save billions of dollars and make America’s communities more vibrant, healthy and prosperous.”

In response the perils of 2021, the USCA created a playbook to assist state governments in executing an effective resilience agenda. [The 2021 Governors’ Climate Resilience Playbook](#) outlines 12 foundational steps to set and achieve an effective state-level climate resilience agenda. While an earlier version of the playbook outlined what states should do to further the climate resilience agenda, the 2021 Playbook is a useful resilience program application guide

## Why does it matter?

The concepts and definitions surrounding resiliency and their application to at all levels of government vary widely across the United States. Resiliency can incorporate climate, infrastructure, economic, social and many more sectors depending on the intended outcome of a program.

The first key takeaway is that establishing your organizations definition of resilience is critical to the overall outcome of any program. Once this definition is adopted or created, it is crucial to have awareness of and assess the various threats to resiliency across the intended program area so that appropriate planning and action items can be completed to create a successful and effective resilience policy or program.

Secondly, a resiliency program can vary from being extremely broad to very narrow in its goals or objectives. It is important to take stock of critical areas within the organization to determine the most effective way to structure and operate any resilience program to ensure effectiveness.

Finally, resiliency programs and policies are ever changing and evolving as natural disasters occur, the economy changes, and technology advancements are made to ensure our country, states, and communities are safeguarded to the best of our abilities within all facets of resiliency models.

Resiliency programs and policy can be formed an adapted at any level of government to meet the needs of current and future situations, but must be implemented cohesively across the state to ensure the highest priorities are addressed first, and resources are optimized.

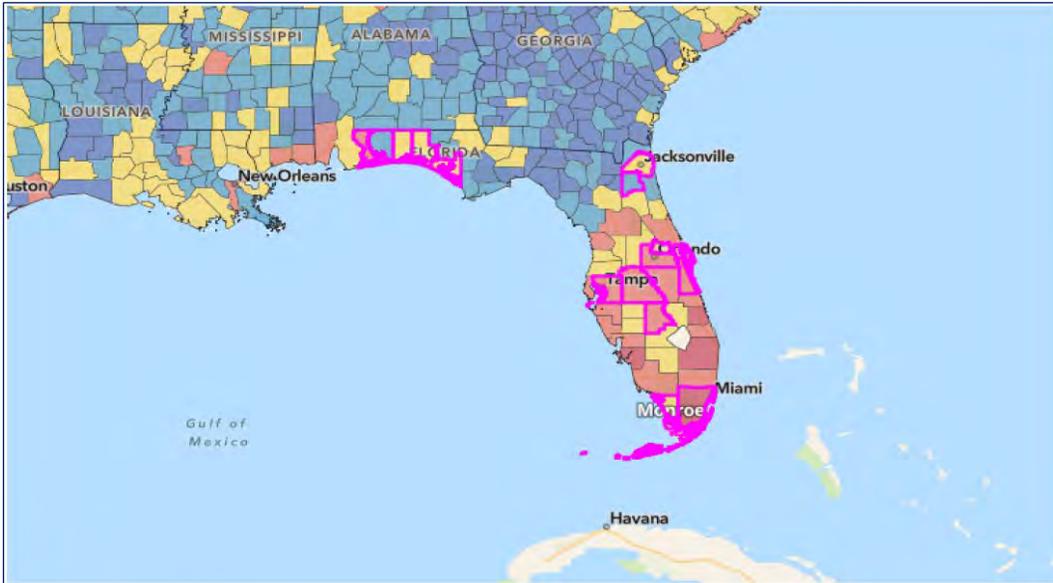
# Military-Community Resilience Assessment

Matrix utilized publicly available information to identify and assess the impacts of natural and manmade threats to the study area. The main report used to validate existing state hazard and vulnerability data, which is explained further below, was the FEMA National Risk Index Report. Additionally, Matrix categorized each resiliency project in the inventory by identifying the vulnerability to the three main hazard categories as designated by FEMA:

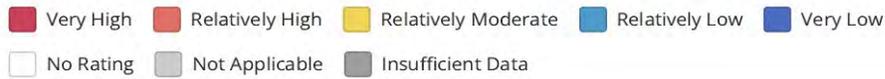
TYPES OF HAZARDS		
<p><b>Natural</b></p> <p>These events are emergencies caused by forces extraneous to man in elements of the natural environment. Natural hazards cannot be managed and are often interrelated. Natural hazards can occur and cause no damage to humans or the built environment; however, when a hazard and development intersect, significant damage to the built environment occurs, causing a natural disaster.</p>	<p><b>Technological</b></p> <p>These events are emergencies that involve materials created by man and that pose a unique hazard to the general public and environment. The jurisdiction needs to consider events that are caused by accident (e.g., mechanical failure, system or process breakdowns) or result from an emergency caused by another hazard (e.g., flood, storm) or are caused intentionally.</p>	<p><b>Adversarial or Human Caused</b></p> <p>These are disasters created by man, either intentionally or by accident. Examples of such hazards are acts of terrorism, school violence, and cyber events.</p>

**FEMA National Risk Index** - The National Index is an online mapping application that visualizes natural hazard risk metrics based on 18 natural hazards, expected annual losses from natural hazards, social vulnerability, and community resilience. This tool was designed and built by FEMA in close collaboration with various stakeholders and partners in academia; local, state and federal government; and private industry. The attached chart shows the Risk Index levels for the 18 hazards in the Counties associated with each project area. The Risk Index rates each hazard from "Very High" to "Insufficient data." We compiled this data from the full FEMA report that was generated which is available in the appendices of this report. The 18 Hazards assessed in the FEMA NRI report are below:

- Avalanche
- Coastal Flooding
- Cold Wave
- Drought
- Earthquake
- Hail
- Heatwave
- Hurricane
- Ice Storm
- Landslide
- Lightning
- Riverine Flooding
- Strong Wind
- Tornado
- Tsunami
- Volcanic Activity
- Wildfire
- Winter Weather



**Risk Index Legend**



The FEMA National Risk Index Report also provides a ranking of each selected county and its overall Risk Index. Below is the overall risk ranking for the counties in this study:

Rank	Community	State	Rating	Score	0	100
1	Miami-Dade County	FL	Very High	63.93		100
2	Highlands County	FL	Relatively High	33.37		100
3	Brevard County	FL	Relatively High	30.22		100
4	Polk County	FL	Relatively High	28.92		100
5	Orange County	FL	Relatively High	27.71		100
6	Escambia County	FL	Relatively High	27.16		100
7	Hillsborough County	FL	Relatively High	26.18		100
8	Bay County	FL	Relatively Moderate	22.61		100
9	Duval County	FL	Relatively Moderate	21.16		100
10	Seminole County	FL	Relatively Moderate	20.26		100
11	Monroe County	FL	Relatively Moderate	17.53		100
12	Walton County	FL	Relatively Moderate	14.37		100
13	Okaloosa County	FL	Relatively Moderate	13.61		100
14	Clay County	FL	Relatively Low	11.54		100
15	Santa Rosa County	FL	Relatively Low	9.21		100

**2018 Florida Enhanced State Hazard Mitigation** - This chart (see appendices) was developed from data found in the Risk Assessment section of the 2018 Florida ESHMP and includes assessments of 17 different hazards. This report uses slightly different nomenclature for some of the hazards and uses a different rating scale from "High Risk" to "Not Identified." The hazards assessed in the Florida ESHMP are below:

- Flood
- Freeze
- Dam Failure
- Erosion
- Hurricane/Tropical Storm
- Sinkholes
- Tornado
- Landslides
- Severe Storm
- Seismic Events
- Wildfire
- Terrorism
- Drought
- Technological Incidents
- Extreme Heat
- Mass Migration
- Winter Storm

Below are snapshots of both Matrix generated assessments. Full versions of each are available in the appendix and attached this report.

County	FEMA National Risk Index Hazard																	
	Avalanche	Coastal Flooding	Cold Wave	Drought	Earthquake	Hail	Heat Wave	Hurricane	Ice Storm	Landslide	Lightning	Riverine Flooding	Strong Wind	Tornado	Tsunami	Volcanic Activity	Wildfire	Winter Weather
<b>Bay County:</b> (DICK PENSACOLA CITY, TYNDALL)																		
Bay	N/A	Relatively Low	NR	Relatively High	Relatively Low	Relatively Low	Relatively High	N/A	Relatively Low	Relatively High	Relatively High	Relatively Low	Relatively High	N/A	N/A	Relatively Low	Relatively Low	
<b>Central Florida:</b> (ORANGE COUNTY)																		
Polk	N/A	N/A	Relatively High	Relatively High	Relatively High	NR	Relatively High	N/A	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	N/A	N/A	Relatively High	NR	
<b>Clay County:</b> (CAMP BLANDING)																		
Clay	N/A	Relatively Low	Relatively Low	Relatively Low	Relatively Low	NR	Relatively Low	N/A	Relatively Low	Relatively Low	Relatively Low	Relatively Low	Relatively Low	N/A	N/A	Relatively Low	NR	
<b>Jacksonville:</b> (BLOUNT, JACKSONVILLE, MAYPORT)																		
Duval	N/A	Relatively Moderate	Relatively Low	Relatively Low	Relatively Low	NR	Relatively Moderate	Med. Low	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	N/A	Relatively Moderate	NR	
<b>Choctawhatchee Bay:</b> (EGLIN, HURLBURT)																		
Okaloosa	N/A	Relatively Low	NR	Relatively Low	Relatively Low	NR	Relatively Low	Med. Low	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	N/A	N/A	Relatively Low	Relatively Low	
Santa Rosa	N/A	Relatively Low	NR	Relatively Low	Relatively Low	NR	Relatively Low	Med. Low	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	N/A	N/A	Relatively Low	Relatively Low	
Walton	N/A	Relatively Low	NR	Relatively Moderate	Relatively Low	NR	Relatively Low	Med. Low	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	N/A	N/A	Relatively Low	Relatively Low	
<b>Orlando:</b> (NSA ORLANDO)																		
Orange	N/A	Relatively Low	Relatively High	Relatively High	Relatively High	NR	Relatively High	N/A	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	N/A	N/A	Relatively Low	NR	
Seminole	N/A	Relatively Low	Relatively High	Relatively High	Relatively High	NR	Relatively High	N/A	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	N/A	N/A	Relatively Moderate	NR	
<b>Pensacola Area:</b> (PENSACOLA, CORRY, SAUFLEY, WHITING)																		
Escambia	N/A	Relatively Low	NR	Relatively Low	Relatively Low	NR	Relatively Low	Med. Low	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	N/A	N/A	Relatively Moderate	Relatively Low	
Santa Rosa	N/A	Relatively Low	NR	Relatively Low	Relatively Low	NR	Relatively Low	Med. Low	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	N/A	N/A	Relatively Moderate	Relatively Low	
<b>Space Coast:</b> (CAPE CANAVERAL, PATRICK)																		
Brevard	N/A	Relatively High	Relatively High	Relatively High	Relatively Low	NR	Relatively High	N/A	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	N/A	Relatively High	NR	
<b>South Florida:</b> (HOMESTEAD, KEY WEST, SOUTHCOM)																		
Miami Dade	N/A	Relatively High	Relatively High	Relatively High	Relatively High	NR	Relatively High	N/A	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	N/A	N/A	Relatively High	NR	
Monroe	N/A	Relatively Moderate	NR	Relatively Low	Relatively Low	NR	Relatively Low	N/A	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	N/A	N/A	Relatively Low	NR	
<b>Tampa:</b> (MACDILL)																		
Hillsborough	N/A	Relatively Moderate	Relatively High	Relatively High	Relatively Low	NR	Relatively High	N/A	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	N/A	N/A	Relatively Moderate	NR	

County	Florida Enhanced State Hazard Mitigation Program Hazard																
	Flood	Freeze	Dam Failure	Hurricane/Tropical Storm	Tornado	Severe Storm	Wildfire	Drought	Extreme Heat	Winter Storm	Erosion	Sinkholes	Landslides	Seismic Events	Terrorism	Technological Incidents	Mass Migration
<b>Polk</b>	High	Low	Med High	High	High	High	Med High	Med	High	High	High	High	High	High	High	High	Med
<b>Clay County:</b> (CAMP BLANDING)																	
Clay	High	Med	Med	High	High	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med
<b>Jacksonville:</b> (BLOUNT, JACKSONVILLE, MAYPORT)																	
Duval	High	High	Low	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
<b>Choctawhatchee Bay:</b> (EGLIN, HURLBURT)																	
Okaloosa	Med High	Med	Med	Med High	Med High	High	High	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med
Santa Rosa	High	High	High	High	High	High	High	Med	Med	Med High	Med High	High	High	High	High	High	High
Walton	High	High	High	High	High	Med	Low	Low	Low	Low	High	High	High	High	High	High	High
<b>Orlando:</b> (NSA ORLANDO)																	
Orange	High	High	High	High	High	High	High	High	High	Med	Med	Med	Med	Med	Med	Med	Med
Seminole	High	High	High	High	High	High	High	High	High	Low	Low	Low	Low	Low	Low	Low	Low
<b>Pensacola Area:</b> (PENSACOLA, CORRY, SAUFLEY, WHITING)																	
Escambia	High	Low	High	Med High	High	Med	Med	Med	Med	Low	Low	Low	Low	Low	Low	Low	Low
Santa Rosa	High	High	High	High	High	High	Med	Med	Med High	Med High	High	High	High	High	High	High	High
<b>Space Coast:</b> (CAPE CANAVERAL, PATRICK)																	
Brevard	High	Low	High	High	High	Med High	Med	Low	Low	Med High	Med High	High	High	High	High	High	High
<b>South Florida:</b> (HOMESTEAD, KEY WEST, SOUTHCOM)																	
Miami Dade	High	High	High	High	High	High	High	High	High	Med	Med	Med	Med	Med	Med	Med	Med
Monroe	High	Med High	High	High	High	Med High	Low	Low	Low	Low	High	High	High	High	High	High	High
<b>Tampa:</b> (MACDILL)																	
Hillsborough	High	Med	Med High	High	High	High	Low	Low	Low	Low	Low	Low	Low	Med	Low	Med	Low

# Resiliency Funding Programs and Opportunities

## What is Florida Doing?

### **GENERAL SOURCES OF INFORMATION**

- Office of Resilience and Coastal Protection Funding Opportunities: The office has a multi-faceted approach to resilience, including coral reef protection; preservation of coastal and aquatic management areas; beach and inlet management; and the implementation of ecosystem restoration projects to prepare Florida's coastal communities and state-managed lands for the effects of sea level rise, coastal flooding, erosion and storms.  
<https://floridadep.gov/rcp/florida-resilient-coastlines-program/content/resilience-and-coastal-protection-project-funding>
- Resilient Florida Program's State and Federal Resilience Resources:  
<https://floridadep.gov/rcp/resilient-florida-program/content/resilient-florida-program-resilience-resources>

### **PROGRAMS/FUNDING OPPORTUNITIES/AWARDS**

#### **Department of Environmental Protection (DEP)**

Protecting Florida Together webportal: <https://protectingfloridatogether.gov/state-action/grants-submissions>

#### ***Resilient Florida Program Grant Awards (Implementation)***

Governor Ron DeSantis announced the award of grants totaling over \$404 million for 113 environmental resilience projects across the state through the Resilient Florida Grant Program, which will help prepare coastal and inland communities for the adverse impacts of flooding and storm surge. The Governor was joined by House Speaker Chris Sprowls, Florida Department of Environmental Protection (DEP) Secretary Shawn Hamilton, Chief Resilience Officer (CRO) Dr. Wes Brooks, and other stakeholders to make the announcement.

The list of projects awarded can be found [here](#).

#### ***Resilient Florida Program Grant Awards (Planning)***

Governor Ron DeSantis announced the award of grants totaling nearly \$20 million in state funds (FY 2021-22) for the Resilient Florida Program Planning Grants. This funding will support 98 awards to develop or update comprehensive vulnerability assessments in inland and coastal communities.

## ***2022-2023 Statewide Flooding and Sea Level Rise Resilience Plan***

Governor Ron DeSantis was joined by Florida Department of Environmental Protection (DEP) Secretary Shawn Hamilton, Chief Resilience Officer Dr. Wes Brooks, and other stakeholders to announce another milestone in Florida's efforts to protect Florida's coastal and inland communities with the state's first ever Statewide Flooding Resilience Plan. Governor Desantis proposed 76 projects totaling over \$270 million across the state of Florida, which will be matched by local investments as part of a three-year plan to address community identified vulnerabilities.

The list of projects awarded can be found [here](#).

### ***Regional Resilience Entity Projects***

The department provided funding for the following purposes to regional entities that are established by general purpose local governments and whose responsibilities include planning for the resilience needs of communities and coordinating intergovernmental solutions to mitigate adverse impacts of flooding and sea level rise:

- Providing technical assistance to counties and municipalities.
- Coordinating multijurisdictional vulnerability assessments.
- Developing project proposals to be submitted for inclusion in the Statewide Flooding and Sea Level Rise Resilience Plan.

The list of projects awarded can be found [here](#).

## **Department of Economic Opportunity (DEO)**

### ***Rebuild Florida Mitigation General Infrastructure Program***

Announced on January 28<sup>th</sup>, 2022, the Florida Department of Economic Opportunity initiated this program to enhance community infrastructure, support the environment, and mitigate against damage from future storms.

Funding awarded today will have impacts across South Florida and will fund multiple infrastructure projects that will support storm readiness and community resilience. Communities receiving funding are:

[Jan 13 2022 Panama City Project](#)

[Jan 28 2022 Funded Projects](#)

[Feb 8 2022 Funded Projects](#)

[Feb 11 2022 Funded Projects](#)

Rebuild Florida is administered by DEO and allows local governments to develop large-scale infrastructure projects that aid communities in making them more resilient against future disasters.

Rebuild Florida uses federal funding for Florida's long-term recovery efforts from the devastating impacts of natural disasters. The Department is the Governor-designated state authority responsible for administering all U.S. Department of Housing and Urban Development (HUD) long-term recovery funds awarded to the state.

Through the Rebuild Florida Mitigation General Infrastructure Program, over \$370 million has been given to communities across the state to support efforts to harden infrastructure against future storm damage.

### ***Defense Infrastructure Grant Program***

The Defense Infrastructure Grant Program supports local infrastructure projects deemed to have an impact on the military value of installations within the state. Infrastructure projects to be funded under this program include those related to encroachment, transportation, and access to military installations, utilities, communications, housing, environment, and security. The following are projects that were awarded funding as of June 1st, 2022:

- Clay County Development Authority (\$500,000) – to modernize outdated and substandard marshalling and maintenance facilities at Camp Blanding Joint Training Center to ensure deploying equipment is fully mission capable and to enable the installation to perform deployment and redeployment operations.
- City of Jacksonville (\$500,000) – to jointly acquire restrictive use easements of properties in the Military Influence Zone at Naval Air Station Jacksonville.
- Santa Rosa County Board of County Commissioners (\$483,000) – to continue restrictive-use easement property purchases around Naval Air Station (NAS) Whiting Field to ensure operational sustainability.
- City of Tampa (\$117,000) – to complete road improvements that will reduce traffic congestion for vehicles entering MacDill Air Force Base and improve traffic flow, reduce commute times, improve delivery schedules, and reduce emissions.

### ***Defense Reinvestment Program***

The Defense Reinvestment Grant Program provides support to community-based activities that protect existing military installations. These grants are awarded to applicants that represent a local government with a military installation that could be adversely affected by federal actions. The following are projects that were awarded funding as of June 1st, 2022:

- Bay Defense Alliance (\$125,000) – to continue Hurricane Michael rebuilding efforts and assist Tyndall Air Force Base and Naval Support Activity Panama City with community support and partnerships as the base implements new aircraft programs.
- Greater Pensacola Chamber of Commerce (\$125,000) – to partner with the West Florida Defense Alliance to develop relationships with local contractors and community organizations to streamline contract execution, whereby increasing the number of defense-related jobs in the region.
- One Okaloosa Economic Development Council (\$125,000) – to perform community-based activities to sustain existing military installations and diversify a defense-dependent community.

- Santa Rosa Board of County Commissioners (\$120,000) – to assess 5G services and implementation, as well as to establish a resiliency scorecard for military-community initiatives that enhance and protect military missions.
- Clay County Economic Development Corporation (\$118,000) – to leverage funds in order to create major job centers for high-wage job creation to diversify the defense dependent community and protect Camp Blanding as a vital community asset.
- Orlando Economic Partnership (\$107,800) – to support growth of the modeling and simulation industry in the Central Florida Region, which is made up of military, educational, and business leaders.
- Economic Development Commission of Florida’s Space Coast (\$79,200) – to increase outreach efforts by directly supporting the Hiring Our Heroes program, Vet Florida SkillBridge program, and Space Coast Salutes our Military website engagement.

## What are others doing (See Appendix A)

This funding compendium catalogs federal, state, and non-governmental programs and funding mechanisms with potential to finance and support efforts to enhance infrastructure resilience and security.

# Recommendations

## Legislation and Policy Streamline and Consolidation

Legislation and policy lay the foundation for successful resilience programs at all levels of government. While Florida has some strong legislation and policy regarding resilience, some aspects are stove piped in single organizations with a very specific focus, such as coastal resiliency against sea level rise. Moving forward, it will be critical that resilience policies address and are applicable to all sectors and levels of government. Specific tasks to aid in executing this recommendation are:

- Consolidate all resiliency guidance, reports, studies and documents in one central location at each appropriate level and agency, office, or organization.
- Ensure all new and revised policies concerning resilience are applied to all sectors and not hyper-focused on single areas of concern. Currently, Florida statutes focus heavily on flooding and sea level rise.
- Develop and apply a definition for resilience that applies to all sectors and can be used in the formulation of future legislation and policy.

## Executive Office of the Governor’s Resilience Office Initiatives

Florida has led the way in establishing a Chief Resilience Officer and dedicated Resilience Office at the state level. It is critical to have well established, resourced, and informed resilience teams at the state level to ensure successful resilience programs. Specific tasks to ensure continued success in this area are:

- Create and implement a common resiliency vision for the State of Florida resiliency that can be applied at all levels.
- Coordinate with local governments and resilience personnel to ensure all needs are being identified and assist with execution of resilience planning and projects where appropriate.

- Create and implement a central dashboard/website for state level resilience resources and guidance
- Ensure the Florida Resilience Office continues to provide technical advice and support to other resilience programs as necessary.
- Establish a point of contact within each agency and empower them to coordinate directly with the CRO, who serves as the “hub” of state resilience efforts.
- Develop and implement a statewide resilience communication plan to ensure all CROs, Resilience Offices, and POCs remain informed. Establish a community of practice to enable CROs to learn from one another, share best practices, discuss new tools, and advocate for matters of shared interest.
- Codify offices of responsibility, POCs, best practices, goals, key timelines/dates, etc.

### Develop and Initiate Resiliency Working Group(s)

One key aspect of other state resiliency programs is the use of advisory groups to streamline efforts and increase the effectiveness of resilience programs at all levels of government. Specific tasks to undertake in establishing such groups:

- Assess current level of involvement of key resiliency personnel (who, how often, formality of role, etc.).
- Establish working groups that include military installation personnel, Emergency Management Offices, Public Works Divisions, Emergency Response Officials, and any other offices/personnel deemed critical to this effort
- Ensure products/information provide accurate analysis of resilience needs and future goals (i.e., Local Mitigation Strategies and Capital Improvement Plans, etc.)
- Establish regularly scheduled meetings/updates with facilitate communication and maintain visibility of program goals, projects, and emerging issues

### Update Existing Plans

Several plans reviewed during this study are outdated and do not represent the current needs of their respective communities. Local Mitigation Strategies in particular are in need of review and updating, to enable the success of resilience programs, it is critical that all plans, project lists, and program statuses are updated on a regular basis. Examples of plans that should be updated regularly include:

- Joint Land Use and Compatibility Studies
- Emergency Operations Plans
- Hazard Mitigation Plans
- Capital Improvement Plans
- Infrastructure Restoration Plans
- Local Mitigation Strategies

### Align Local Mitigation Strategies (LMS) with Capital Improvement Plans (CIP)

Local Mitigation Strategies and Capital Improvement Plans are vital to ensuring resilience of critical infrastructure across all sectors. However, project lists contained within each often overlap or do not capture all requirements. To ensure plan alignment in the future, the state should:

- Utilize resiliency working groups to review LMS and CIP projects and ensure priorities are aligned and all relevant requirements are documented to enable the effective and efficient allocation of resources

- Ensure projects lists and funding statuses are accurate and updated regularly to ensure readiness to capitalize on funding opportunities and timely execution of critical requirements

### **Implement Resilience Officer/Resilience Liaison**

Many offices at various levels of government throughout the State of Florida have already appointed Resilience Officers. However, for statewide resilience programs to be effective it will be essential for all relevant departments and agencies to follow suit and establish resilience officer or liaison position. Doing so will facilitate the flow of information, improve coordination with the state level Chief Resilience Officer, and ensure goals and objectives set forth at the state and local levels are communicated and properly resourced.

- Identify offices, departments, and agencies that require resilience officer/liaison position and determine ability to influence/direct action
- Develop roles, responsibilities, and expectations for resilience officer/liaison positions and identify POC/organization responsible for managing and coordinating with resilience officers/liaisons
- Issue guidance to relevant departments and agencies regarding appointment of resilience officers
- Establish formal communication methods and schedule with resilience officers

### **Resiliency Grant Development/Writing resources**

While it may not be feasible at all levels of the government or within all organizations, it is important to ensure appropriate resources and personnel are allocated to identifying and applying for grants and other funding opportunities. Grants that address all sectors of resiliency are becoming more common in the public sector and are valuable resources in meeting organizational resilience goals.

- Identify current processes and resources dedicated to identifying and applying for funding of resilience projects
- Determine offices and organizations best suited and appropriately staffed for dedicated/concentrated pursuit of grants and other funding opportunities

### **Update Project Inventory Annually**

Update and build upon the attached project inventory on an annual basis. Maintaining a pipeline of projects that are ready to execute positions communities to seize funding opportunities that may arise, such as federal economic-stimulus or recovery funds.

- Identify requirements that are “ready for funding” – typically 100% design and not previously/partially funded.
- Ensure older requirements have been reviewed and update based on current risk profiles and challenges.
- Provide funding and technical resources to assist local governments, private developers, community organizations, and non-profit organizations in the planning and design of resilience projects.

### **Establish a System for Resilience Measurement**

Develop robust metrics to measure and track all aspects of community and infrastructure resilience. Historically, some states have focused primarily on climate indicators and vulnerability indices to understand conditions and risks in their communities. Doing so can help prioritize investments in line with the greatest risks, monitor the progress of resilience programs, and evaluate the effectiveness of investments.

- Identify current metrics/indices used to assess resilience
- Research methods and best practices used to measure resilience, project status, and program effectiveness by other states, communities, agencies, government entities
- Ensure metrics address all aspects of resilience: risk, adaptive capacity, status of resilience actions/projects, etc.

### **Strategically Align Decentralized Programs**

Recognizing that Florida will not centralize all resilience programs under the Resilience Office, it is critical that agencies and organizations that have resilience components are aligned with a common strategic vision that originates with guidance from the Florida CRO. While the goals and intentions of resilience and mitigation programs are similar, it is not uncommon to have separate organizations and agencies working to increase resilience and improve mitigation measures and strategies. This can lead to unnecessary competition for critical resources. Moving forward it will be important to create opportunities and avenues to explore the integration of these sectors, elevating mitigation and resilience agendas simultaneously by strategic alignment of decentralized programs.

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**Appendix A**

**Compendium of Programs and  
Mechanisms for Funding Resilience**

**Federal, State, and  
Nongovernmental Organizations**

## Summary

This compendium catalogs federal, state, and non-governmental programs and funding mechanisms with potential to finance and support efforts to enhance infrastructure resilience and security.

The purpose of this compendium is to support state, local, tribal, and territorial communities, as well private sector owners and operators of infrastructure assets with their efforts to improve thesecurity and resilience of their communities and infrastructure systems. Note that some funding opportunities are temporary or are not available annually. Due to the evolving nature of funding opportunities, this list is not exhaustive.

## Federal Programs

### U.S. Department of Agriculture

#### ***Water & Environmental Grant and Loan Funding (UDSA 1.0)***

##### **Website**

<https://www.rd.usda.gov/programs-services/water-environmental-programs>

##### **Type of Financing**

Grants and Loans

##### **Critical Infrastructure Sector**

Water and Wastewater

##### **Overview**

Through Rural Utilities Service Water and Environmental Programs (WEP), rural communities obtain the technical assistance and financing necessary to develop drinking water and waste disposal systems. Safe drinking water and sanitary waste disposal systems are vital not only to public health, but also to the economic vitality of rural America. Rural Development is a leader in helping rural America improve the quality of life and increase the economic opportunities for rural people.

WEP provides funding for the construction of water and waste facilities in rural communities and is proud to be the only Federal program exclusively focused on rural water and waste infrastructure needs of rural communities with populations of 10,000 or less. WEP also provides funding to organizations that provide technical assistance and training to rural communities in relation to their water and waste activities. WEP is administered through National Office staff in Washington, DC, and a network of field staff in each State.

### Centers for Disease Control

#### ***Public Health Emergency Preparedness Cooperative Agreements (CDC 1.0)***

##### **Website**

<http://www.cdc.gov/phpr/archive.htm>

**Type of Financing**

Cooperative Agreement Funding

**Critical Infrastructure Sector**

Healthcare and Public Health

**Overview**

The Public Health Emergency Preparedness (PHEP) provides funding for public health departments across the nation to upgrade their ability to effectively respond to a range of public health threats, including infectious diseases, natural disasters, and biological, chemical, nuclear, and radiological events.

**U.S. Department of Commerce*****Economic Development Agency (EDA) Economic Development Grants (USDC 1.0)*****Website**

<https://www.eda.gov/funding-opportunities/>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

N/A

**Overview**

Assists eligible recipients in developing economic development plans and studies designed to build capacity and guide the economic prosperity and resiliency of an area or region.

**Eligibility**

State governments, Private institutions of higher education, Nonprofits having a 501(c)(3) status with the IRS, other than institutions of higher education, County governments, Nonprofits that do not have a 501(c)(3) status with the IRS, other than institutions of higher education, Public and State controlled institutions of higher education, Special district governments, Others (see text field entitled "Additional Information on Eligibility" for clarification), Native American tribal organizations (other than Federally recognized tribal governments), City or township governments, Native American tribal governments (Federally recognized).

***Economic Development Agency (EDA) Planning Program and Local Technical Assistance Program (USDC 1.1)*****Website**

<https://www.eda.gov/funding-opportunities/>

**Type of Financing**

Cooperative Agreement Grant

**Critical Infrastructure Sector**

N/A

**Overview**

To provide investments supporting construction, non-construction, technical assistance, and revolving loan fund projects under EDA's Planning and Local Technical Assistance programs. Under the Planning program EDA assists eligible recipients in creating regional economic development plans designed to build capacity and guide the economic prosperity and resiliency of an area or region.

**Eligibility**

Special district governments, Native American tribal governments (Federally recognized), Public and State controlled institutions of higher education, City or township governments, Others (see text field entitled "Additional Information on Eligibility" for clarification), Nonprofits having a 501(c)(3) status with the IRS, other than institutions of higher education, Private institutions of higher education, County governments, Nonprofits that do not have a 501(c)(3) status with the IRS, other than institutions of higher education, State governments.

***NOAA Regional Coastal Resilience Grants (USDC 1.2)*****Website**

<https://www.coast.noaa.gov/resilience-grant/>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

N/A

**Overview**

To aid coastal communities address increasing risks from extreme weather through competitive grant awards. Awards are made for project proposals that advance resilience strategies, often through land and ocean use planning, disaster preparedness projects, environmental restoration, hazard mitigation planning, or other regional, state, or community planning efforts.

**Eligibility**

Eligible applicants include nonprofit organizations, institutions of higher education, regional organizations, private entities, and local, state, and tribal governments. Typical award amounts will range from \$250,000 to \$1 million for projects lasting up to three years. Cost-sharing through cash or in-kind contributions is expected. Projects must be located in one or more of the 35 U.S. coastal states or territories.

***NOAA Coastal and Estuarine Land Conservation Program (USDC 1.3)*****Website**

<https://coast.noaa.gov/czm/landconservation/>

**Type of Financing**

Matching Funds

**Critical Infrastructure Sector**

N/A

**Overview**

Provides matching funds to state and local governments to purchase threatened coastal and estuarine lands or obtain conservation easements.

**Eligibility**

State and local governments. To be considered, the land must be important ecologically or possess other coastal conservation values, such as historic features, scenic views, E5 or recreational opportunities.

***NOAA Coastal Ecosystem Resiliency Grants Program (USDC 1.4)*****Website**

<http://www.habitat.noaa.gov/funding/coastalresiliencyprojects.html>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

N/A

**Overview**

Investing in habitat restoration and ecosystem resiliency projects provides sustainable and lasting benefits that reduce risks posed to coastal communities from extreme weather events, changing environmental conditions, and known or potential climate change impacts.

***Public Safety Communications Research Division Grants (USDC 1.5)*****Website**

<https://www.nist.gov/ctl/pscr/funding-opportunities/grants-and-cooperative-agreements>

**Type of Financing**

Grants, Cooperative Agreements

**Critical Infrastructure Sector**

Emergency Communications

**Overview**

SCR works with public safety agencies, academic researchers, and industry partners in both technology and human/social areas, and system developers to support our mission and accelerate the advancement of public safety communications technologies. PSCR leverages Financial Assistance Awards in the form of grants and cooperative agreements to stimulate critical R&D, advanced engineering, and product development in key technology focus areas.

Official announcements for all open opportunities are made available on grants.gov. Application evaluation procedures are described on each individual notice of funding opportunity (NOFO).

**Eligibility**

Varies by funding opportunity

**Corporation for National and Community Service*****AmeriCorps State and National Grants (CNCS 1.0)*****Website**

<https://www.nationalservice.gov/build-your-capacity/grants/ASNgrants>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

N/A

**Overview**

Grant funding for disaster services - improving community resiliency through disasterpreparation, response, recovery, and mitigation.

**Eligibility**

The following Non-Federal entities who have DUNS numbers and are registered in System forAward Management (SAM) are eligible to apply: Indian Tribes, Institutions of higher education,Local governments, Nonprofit organizations, States.

**U.S. Department of Defense*****Defense Access Roads (DOD 1.0)*****Website**

<https://highways.dot.gov/federal-lands/programs/defense#>

**Type of Financing**

There is no regular appropriation of money available for the DAR program. Military Construction (MILCON) funds are specifically budgeted, authorized and appropriated for eligible DAR projects. Since 1957 the DAR program has averaged \$20 million per year.

**Critical Infrastructure Sector**

Transportation/National Defense

**Overview**

The Defense Access Road (DAR) Program provides a means for the military to pay their share of the cost of public highway improvements necessary to mitigate an unusual impact of a defense activity. An unusual impact could be a significant increase in personnel at a military installation, relocation of an access gate, or the deployment of an oversized or overweight military vehicle or transporter unit. The DAR program is jointly administered by the FHWA and

SDDC. The Federal Lands Highway Office administers the program for FHWA and the Transportation Engineering Agency administers the program for SDDC. The roles and responsibilities of each agency are defined in regulations located in 23 CFR 660E.

### **Eligibility**

To initiate a DAR project, the local military installation identifies the access or mobility needs and brings these deficiencies to the attention of the Military Surface Deployment and Distribution Command (SDDC). The SDDC reviews the requirement and makes a preliminary eligibility determination. If it appears eligible, the SDDC requests the FHWA to prepare an engineering evaluation to identify the cost and scope of the needs. The FHWA forwards the evaluation and recommendations to the SDDC. The SDDC then submits its determination of eligibility and its recommended DOD share of the improvements to the Commander, SDDC, with the recommendation that the roadway be certified as important for the national defense. Once certified by the Commander, SDDC, the roads become eligible for DOD funding. The DAR Program does not provide for maintenance of roadways funded by the program, except for maintaining the structural capacity of designated gravel roads that support the Minuteman Program. Air Force operations and maintenance funds are used for this maintenance program.

### ***Defense Community Infrastructure Program (DCIP) (DOD 1.1)***

#### **Website**

<https://oldcc.gov/defense-community-infrastructure-program-dcip>

#### **Type of Financing**

Grant

#### **Critical Infrastructure Sector**

Multi

#### **Overview**

The Defense Community Infrastructure Program (DCIP) is designed to address deficiencies in community infrastructure, supportive of a military installation, in order to enhance military value, installation resilience, and military family quality of life. DCIP is authorized under Public Law 115-232 Section 2861. The program authorizes the Secretary of Defense to make grants, conclude cooperative agreements, and supplement funds available under other Federal programs in support of the program.

#### **Eligibility**

For information on SAM and Grants.gov registration, please see [OLDCC Competitive Proposal Instructions](#).

### ***Defense Manufacturing Community Support Program (DMCSP) (DOD 1.2)***

#### **Website**

<https://oldcc.gov/defense-manufacturing-community-support-program>

#### **Type of Financing**

Grant

## **Critical Infrastructure Sector**

Multi

### **Overview**

The DMCSPP is designed to support long-term community investments that strengthen national security innovation and expand the capabilities of the defense manufacturing industrial ecosystem. This includes long-term investment in critical skills, facilities, workforce development, research and development, and small business support in order to strengthen the national security innovation base.

### **Eligibility**

During open competition periods, the general application process is as follows:

1. Consortium must apply for and receive designation as a Defense Manufacturing Community.
2. Upon receiving the above designation, you will be invited to submit a grant application for funding.

## ***Intergovernmental Affairs (IGA) Program (DOD1.3)***

### **Website**

<https://oldcc.gov/our-programs/intergovernmental-affairs-program>

### **Type of Financing**

Multi

## **Critical Infrastructure Sector**

Multi

### **Overview**

OLDCC's Intergovernmental Affairs (IGA) program is the foundation for the success of all our activities. The IGA program leverages, integrates, and amplifies the goals and activities of each OLDCC's programs to ensure defense priorities benefit from the synergy created by a diverse and crosscutting set of stakeholders. For instance, the Economic Adjustment Committee coordinates all our Federal partners on economic, workforce, manufacturing, environmental, and infrastructure challenges and opportunities to better the National Defense Strategy.

The IGA program also works with governors, mayors, state legislators, county officials, and governmental associations to identify challenges on the ground and implement strategies that best meet the specific needs in their state and region. There is rarely a "one size fits all" approach of how to support military bases, missions, and the defense industrial base. IGA works with our elected, public, and private sector partners across the nation to identify what they can do to support evolving national security imperatives.

### **Eligibility**

The IGA program also works with governors, mayors, state legislators, county officials, and governmental associations to identify challenges on the ground and implement strategies that best meet the specific needs in their state and region. There is rarely a "one size fits all" approach of how to support military bases, missions, and the defense industrial base. IGA

works with our elected, public, and private sector partners across the nation to identify what they can do to support evolving national security imperatives.

***Office of Local Defense Community Cooperation (OLDCC) Construction Program (DOD 1.4)***

**Website**

<https://oldcc.gov/our-programs/construction>

**Type of Financing**

Multi

**Critical Infrastructure Sector**

Multi

**Overview**

The Construction program enables states and communities to undertake necessary investments in public services and infrastructure to support the readiness and lethality of installations, as well as to provide safe places for services members and their families to live, work, and play. Current efforts support the management of civilian activities to absorb announced mission growth and investments in infrastructure such as the renovation of public schools on military installations, improvement of roads to medical facilities, and outside-the-fence investments in infrastructure.

Program lines include mission growth assistance, Public Schools on Military Installations (PSMI), transportation infrastructure improvements associated with medical facilities, and civilian infrastructure on the Territory of Guam.

**Eligibility**

**Mission Growth**

Projects are need-based connected to documented mission growth that meets or exceeds certain criteria outlined in 10 USC Section 2391(b)(2) and CFDA 12.618.

**Public Schools on Military Installations (PSMI)**

Local education authorities are invited to apply based upon their placement on a prioritized listing and availability of funds.

**Transportation Infrastructure Improvements Associated with Medical Facilities**

Projects were competitively selected from proposals supporting eligible military medical facilities. No new projects are anticipated at this time.

**Civilian Infrastructure on the Territory of Guam**

Projects were evaluated and recommended through a multi-agency Economic Adjustment Committee report, following the Navy's review of the basing actions under the National Environmental Policy Act, as amended

***Readiness and Environmental Protection Integration (REPI) Program (DOD 1.5)***

**Website**

<https://www.repi.mil/Resilience/>

**Type of Financing**

Grant

## **Critical Infrastructure Sector**

### Natural Infrastructure

#### **Overview**

The REPI Program preserves military missions by limiting or alleviating encroachment threats that could adversely affect Department of Defense (DoD) installations including incompatible development, endangered species restrictions, and habitat loss. However, climate change and extreme weather events, ranging from severe flooding to catastrophic wildfire, are an increasingly concerning encroachment impact and threaten DoD training lands, infrastructure, and public safety. To protect installation and range operations from predicted or unanticipated changes in environmental conditions, the REPI program is now able to fund off-base natural infrastructure projects, also known as REPI Resilience Projects, in addition to more traditional REPI projects.

#### **Eligibility**

REPI Program funds can satisfy the match or cost-sharing requirement for any resilience or conservation program of any federal agency. Granted under 10 U.S.C. § 2684a(h), REPI installations and partners can leverage this authority to improve installation resilience and ensure military readiness through interagency coordination.

## **U.S. Department of Energy**

### ***Smart Grid Investment Grants (DOE 1.0)***

#### **Website**

[https://www.smartgrid.gov/recovery\\_act/overview/smart\\_grid\\_investment\\_grant\\_program.html](https://www.smartgrid.gov/recovery_act/overview/smart_grid_investment_grant_program.html)

#### **Type of Financing**

Grant/Matching Funds

## **Critical Infrastructure Sector**

### Energy

#### **Overview**

To accelerate the modernization of the nation's electric transmission and distribution systems. The program targets electric providers across the nation with plans to upgrade their systems—through a merit-based, competitive solicitation.

#### **Eligibility**

Applications are being sought that apply "smart" technology to: appliances and electrical equipment, electricity distribution and transmission systems, and homes, offices and industrial facilities.

### ***State Energy Program (DOE 1.1)***

#### **Website**

<https://www.energy.gov/eere/wipo/state-energy-program-guidance>

## **Type of Financing**

Grant

## **Critical Infrastructure Sector**

Energy

### **Overview**

For more than 30 years, the U.S. Department of Energy's (DOE) State Energy Program (SEP) has provided funding and technical assistance to states, U.S. territories, and the District of Columbia. State Energy Offices use SEP funds to develop state plans that advance energy solutions through regional networks, strategic energy planning, executive orders, legislation and local ordinances, management of local retrofits, and land-use plans.

[https://www.energy.gov/sites/prod/files/2021/01/f82/SEP-Program-Notice-21-01\\_PY21-Application-Instructions.pdf](https://www.energy.gov/sites/prod/files/2021/01/f82/SEP-Program-Notice-21-01_PY21-Application-Instructions.pdf)

## **U.S. Department of Transportation**

### ***Congestion Mitigation and Air Quality Improvement Program (DOT 1.0)***

#### **Website**

[www.fhwa.dot.gov/federalaid/guide/guide\\_current.cfm#c08](http://www.fhwa.dot.gov/federalaid/guide/guide_current.cfm#c08)

## **Type of Financing**

Federal Fund Apportionment

## **Critical Infrastructure Sector**

Transportation Systems

### **Overview**

Flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas).

### **Eligibility**

Funds may be used for a transportation project or program that is likely to contribute to the attainment or maintenance of a national ambient air quality standard, with a high level of effectiveness in reducing air pollution, and that is included in the metropolitan planning organization's (MPO's) current transportation plan and transportation improvement program (TIP) or the current state transportation improvement program (STIP) in areas without an MPO.

### ***FHA Surface Transportation Block Grant Program (DOT 1.1)***

#### **Website**

<https://www.fhwa.dot.gov/fastact/factsheets/stbqfs.cfm>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

Transportation Systems

**Overview**

Funding for highway and transit infrastructure construction and rehabilitation, highway operational improvements such as hazard elimination, bicycle and pedestrian transportation infrastructure, transportation planning, highway and transit research and development and technology transfer programs, and capital and operating costs for traffic monitoring, management, and control facilities and programs, including advanced truck stop electrificationsystems.

***Infrastructure for Rebuilding America (INFRA) Grant (DOT 1.2)*****Website**

<https://www.transportation.gov/buildamerica/financing/infra-grants/infrastructure-rebuilding-america>

**Type of Financing**

Discretionary Grant Program

**Critical Infrastructure Sector**

Transportation Systems

**Overview**

These grants advance the Administration's priorities of rebuilding America's infrastructure and creating jobs by funding highway and rail projects of regional and national economic significance that position America to win the 21<sup>st</sup> century.

**Eligibility**

INFRA grants were selected based on several criteria. In addition to prioritizing projects that would improve local economies, create jobs, and meet all statutory requirements, for the first time in USDOT's history, grants were considered by how they would address climate change, environmental justice, and racial equity.

Eligible applicants for INFRA grants are:

- a State or group of States;
- a metropolitan planning organization that serves an urbanized area (as defined by the Bureau of the Census) with a population of more than 200,000 individuals;
- a unit of local government or group of local governments;
- a political subdivision of a State or local government;
- a special purpose district or public authority with a transportation function, including a port authority;
- a Federal land management agency that applies jointly with a State or group of States;
- a tribal government or a consortium of tribal governments; or

- a multi-State or multijurisdictional group of public entities.

### ***Interstate Maintenance (IM) Program (DOT 1.3)***

#### **Website**

<https://www.fhwa.dot.gov/safetealu/factsheets/im.htm>

#### **Type of Financing**

Formula Funding

#### **Critical Infrastructure Sector**

Transportation Systems

#### **Overview**

Provides formula funding for Interstate resurfacing, restoration, rehabilitation, and reconstruction; the reconstruction or new construction of bridges, interchanges, and crossings; capital costs related to operational, safety, traffic management, or intelligent transportation systems improvements; and preventive maintenance.

#### **Eligibility**

Projects on routes on the Interstate System, except those added under 23 USC 103(c)(4)(A) that were not previously designated future Interstate under former 23 UCS 139(b), as well as any segments that become part of the Interstate System under Section 1105(e)(5) of ISTEA are eligible for fund

### ***The Highway Bridge Program (DOT 1.4)***

#### **Website**

<https://www.fhwa.dot.gov/safetealu/factsheets/bridge.htm>

#### **Type of Financing**

Formula Funding

#### **Critical Infrastructure Sector**

Transportation Systems

#### **Overview**

Provides formula funding to states to improve structurally deficient and functionally obsolete highway bridges on public roads.

#### **Eligibility**

Eligible activities are expanded to include systematic preventative maintenance on Federal-aid and non-Federal-aid highway systems. States may carry out projects for the installation of scour countermeasures or systematic preventative maintenance without regard to whether the bridge is eligible for rehabilitation or replacement.

### ***The Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grant (DOT 1.5)***

**Website**

<https://www.transportation.gov/RAISEgrants/about>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

Transportation Systems

**Overview**

The Rebuilding American Infrastructure with Sustainability and Equity, or RAISE Discretionary Grant program, provides a unique opportunity for the DOT to invest in road, rail, transit and port projects that promise to achieve national objectives. Previously known as the Better Utilizing Investments to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants, Congress has dedicated nearly \$9.9 billion for thirteen rounds of National Infrastructure Investments to fund projects that have a significant local or regional impact.

**Eligibility**

Eligible Applicants for RAISE grants are State, local and tribal governments, including U.S. territories, transit agencies, port authorities, metropolitan planning organizations (MPOs), and other political subdivisions of State or local governments.

Multiple States or jurisdictions may submit a joint application and must identify a lead applicant as the primary point of contact, and identify the primary recipient of the award. Joint applications must include a description of the roles and responsibilities of each applicant.

***Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants (DOT 1.6)*****Website**

<https://www.transportation.gov/tiger>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

Transportation Systems

**Overview**

Competitive grant program that supports innovative transportation projects, including multi-modal and multi-jurisdictional projects, which are difficult to fund through traditional federal programs.

**Eligibility**

Applicants must detail the benefits their project would deliver for five long-term outcomes: safety, economic competitiveness, state of good repair, quality of life and environmental sustainability. DOT also evaluates projects on innovation, partnerships, project readiness, benefit cost analysis, and cost share.

### ***FHWA Emergency Relief Program (DOT 1.7)***

#### **Website**

<http://www.fhwa.dot.gov/programadmin/erelief.cfm>

#### **Critical Infrastructure Sector**

Transportation Systems

#### **Overview**

A special program from the Highway Trust Fund for the repair or reconstruction of Federal-aid highways and roads on Federal lands which have suffered serious damage as a result of (1) natural disasters or (2) catastrophic failures from an external cause.

#### **Eligibility**

It is the responsibility of individual States to request ER funds for assistance in the cost of necessary repair of Federal-aid highways damaged by natural disasters or catastrophic failures.

### ***FTA Public Transportation Emergency Relief Program (DOT 1.8)***

#### **Website**

<https://www.transit.dot.gov/funding/grant-programs/emergency-relief-program/emergency-relief-program>

#### **Critical Infrastructure Sector**

Transportation Systems

#### **Overview**

Helps states and public transportation systems pay for protecting, repairing, and/or replacing equipment and facilities that may suffer or have suffered serious damage as a result of an emergency, including natural disasters such as floods, hurricanes, and tornadoes.

#### **Eligibility**

States and transit agencies that are affected by a declared emergency or disaster.

### ***Rail Line Relocation & Improvement Capital Grant Program (RLR) (DOT 1.9)***

#### **Website**

<https://www.fra.dot.gov/Page/P0090>

#### **Type of Financing**

Loan/Loan Guarantee

#### **Critical Infrastructure Sector**

Transportation Systems

**Overview**

Provides loans and loan guarantees to develop or rehabilitate railroad infrastructure. Eligible borrowers include state and local governments, government sponsored corporations, and joint ventures that include a railroad, and limited option freight shippers who intend to construct a railroad.

**Eligibility**

Only States, political subdivisions of States (such as a city or county), and the District of Columbia are eligible for grants under the program. Grants may only be awarded for construction projects that improve the route or structure of a rail line and: 1) are carried out for the purpose of mitigating the adverse effects of rail traffic on safety, motor vehicle traffic flow, community quality of life, or economic development; or 2) involve a lateral or vertical relocation of any portion of the rail line

**U.S. Economic Development Administration*****Coronavirus Aid, Relief and Economic Security (CARES) Act (EDA 1.0)*****Website**

<https://eda.gov/cares/>

**Type of Financing**

Grant/Revolving Loan Fund

**Critical Infrastructure Sector**

Multi

**Overview**

The Coronavirus Aid, Relief, and Economic Security (CARES) Act provides the Economic Development Administration (EDA) with \$1.5 billion for economic development assistance programs to help communities prevent, prepare for, and respond to coronavirus.

**Eligibility**

EDA CARES Act funding is available to state and local governmental entities, institutions of higher education, not for-profit entities, and federally recognized tribes.

***Public Works and Economic Adjustment Assistance Programs (PWEAA) (EDA 1.1)*****Website**

<https://www.eda.gov/pdf/about/Public-Works-Program-1-Pager.pdf>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

Multi

**Overview**

EDA's Public Works program helps distressed communities revitalize, expand, and upgrade their physical infrastructure. This program enables communities to attract new industry;

encourage business expansion; diversify local economies; and generate or retain long-term, private-sector jobs and investment through the acquisition or development of land and infrastructure improvements needed for the successful establishment or expansion of industrial or commercial enterprises.

***American Rescue Plan Act Economic Adjustment Assistance (ARPA EAA) (EDA 1.2)***

**Website**

<https://www.grants.gov/web/grants/view-opportunity.html?oppld=334743>

**Type of Financing**

Cooperative Agreement Grant

**Critical Infrastructure Sector**

Multi

**Overview**

EDA's ARPA EAA NOFO is designed to provide a wide-range of financial assistance to communities and regions as they respond to, and recover from, the economic impacts of the coronavirus pandemic, including long-term recovery and resilience to future economic disasters. Under this announcement, EDA solicits applications under the authority of the Economic Adjustment Assistance (EAA) program, which is flexible and responsive to the economic development needs and priorities of local and regional stakeholders. This is the broadest NOFO EDA is publishing under ARPA and any eligible applicant from any EDA Region may apply. EDA expects to fund a number of projects under this NOFO that support communities negatively impacted by the downturn in the coal economy, supporting transitioning away from coal.

EDA anticipates funding approximately 300 non-construction and construction projects that cost between approximately \$500,000 and \$5,000,000 with this appropriation, though EDA will consider applications above and below these amounts.

**Eligibility**

Private institutions of higher education, special district governments, public and state controlled institutions of higher education, state governments, Native American tribal governments, County governments, city or township governments, 501(c)(3) nonprofits other than institutions of higher education.

## U.S. Environmental Protection Agency

### *The Clean Water State Revolving Fund (CWSRF) (EPA 1.0)*

#### Website

<https://www.epa.gov/cwsrf>

#### Type of Financing

Multiple

#### Critical Infrastructure Sector

Water and Wastewater Systems

#### Overview

The CWSRF was created by the 1987 amendments to the Clean Water Act (CWA) as a financial assistance program for a wide range of water infrastructure projects, under [33 U.S. Code §1383](#). The program is a powerful partnership between EPA and the states that replaced EPA's Construction Grants program. States have the flexibility to fund a range of projects that address their highest priority water quality needs. The program was amended in 2014 by the Water Resources Reform and Development Act.

Using a combination of federal and state funds, state CWSRF programs provide loans to eligible recipients to:

- construct municipal wastewater facilities,
- control nonpoint sources of pollution,
- build decentralized wastewater treatment systems,
- create green infrastructure projects,
- protect estuaries, and
- fund other water quality projects.

#### Eligibility

Eligible Projects include: Construction of publicly owned treatment works, Nonpoint source, National estuary program projects, Decentralized wastewater treatment systems, Stormwater, Water conservation, efficiency, and reuse, Watershed pilot projects, Energy efficiency, Water reuse, Security measures at publicly owned treatment works, Technical assistance.

### *Water Infrastructure Finance and Innovation Act (WIFIA) Loans (EPA 1.1)*

#### Website

<https://www.epa.gov/wifia/learn-about-wifia-program#overview>

#### Type of Financing

Credit Financing

#### Critical Infrastructure Sector

Water and Wastewater Systems

#### Overview

A federal credit program administered by EPA for eligible water and wastewater infrastructure projects

### ***The Drinking Water State Revolving Fund (DWSRF) (EPA 1.2)***

**Website**

<https://www.epa.gov/dwsrf>

**Type of Financing**

Credit Financing

**Critical Infrastructure Sector**

Water and Wastewater Systems

**Overview**

A federal credit program administered by EPA for eligible drinking water treatment and distribution projects.

**Eligibility**

Eligible Projects include: Treatment; Transmission and distribution; Source; Storage; Consolidation; Creation of new systems.

### ***EPA Smart Growth Grants (EPA 1.3)***

**Website**

<https://www.epa.gov/smartgrowth/epa-smart-growth-grants-and-other-funding>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

N/A

**Overview**

Funding to support activities that improve the quality of development and protect human health and the environment.

### ***Urban Waters Small Grants (EPA 1.4)***

**Website**

<https://www.epa.gov/urbanwaters/urban-waters-small-grants>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

Water and Wastewater Systems

**Overview**

Helps protect and restore urban waters, improve water quality, and support community revitalization and other local priorities.

**Eligibility**

In general, projects should meet the following four program objectives: 1) Address local waterquality issues related to urban runoff pollution; 2) Provide additional community benefits; 3) Actively engage underserved communities; and 4) Foster partnership.

**319 Grant Program for States and Territories (EPA 1.5)****Website**

<https://www.epa.gov/nps/319-grant-program-states-and-territories>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

N/A

**Overview**

States, territories and tribes receive grant money that supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects and monitoring to assess the success of specific nonpoint source implementation projects.

**Eligibility**

If a state's funding plan is consistent with grant eligibility requirements and procedures, EPA then awards the funds to the state.

**Wetland Program Development Grants (EPA 1.6)****Website**

<https://www.epa.gov/wetlands/wetland-program-development-grants>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

Water and Wastewater Systems

**Overview**

Provides funding to projects that promote the coordination and acceleration of research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution.

**Eligibility**

States, tribes, local governments, interstate associations, and intertribal consortia are eligible to apply for the Regional WPDG Request for Proposals (RFPs). Nonprofits, interstate associations and intertribal consortia are eligible to apply for the National WPDG RFPs.

## **Brownfields Grant Funding (EPA 1.7)**

### **Website**

<https://www.epa.gov/brownfields/types-brownfields-grant-funding>

### **Type of Financing**

Grants

### **Critical Infrastructure Sector**

N/A

### **Overview**

- **Assessment Grants:** Assessment grants provide funding for a grant recipient to inventory, characterize, assess, and conduct planning and community involvement related to brownfield sites.
- **Revolving Loan Fund Grants:** The purpose of revolving loan fund grants is to enable states, political subdivisions, and Indian tribes to make low interest loans to carryout cleanup activities at brownfields properties.
- **Cleanup Grants:** Cleanup grants provide funding for a grant recipient to carry out cleanup activities at brownfield sites.
- **Area-Wide Planning Grants (AWP):** Grant funding to communities to research, plan and develop implementation strategies for an area affected by one or more brownfields. Developing an area-wide plan will inform the assessment, cleanup and reuse of brownfields properties and promote area-wide revitalization.
- **Environmental Workforce Development and Job Training Grants (EWDJT):** Environmental workforce development and job training grants are designed to provide funding to eligible entities, including nonprofit organizations, to recruit, train, and place predominantly low-income and minority, unemployed and under-employed residents of solid and hazardous waste-impacted communities with the skills needed to secure full-time, sustainable employment in the environmental field and in the assessment and cleanup work taking place in their communities.
- **Multi-Purpose Pilot Grants:** In FY2010, EPA piloted a new grant program that will provide a single grant to an eligible entity for both assessment and cleanup work at a specific brownfield site owned by the applicant.
- **Training, Research, and Technical Assistance Grants:** Training, research, and technical assistance grants provide funding to eligible organizations to provide training, research, and technical assistance to facilitate brownfields revitalization.

### ***Water Infrastructure Improvements for the Nation Act (WIIN ACT) Grants (EPA 1.8)***

#### **Website**

<https://www.epa.gov/dwcapacity/water-infrastructure-improvements-nation-act-wiin-act-grant-programs>

#### **Type of Financing**

Grant

#### **Critical Infrastructure Sector**

Water Systems

#### **Overview**

The 2016 [Water Infrastructure Improvements for the Nation Act \(WIIN Act\)](#) addresses, supports, and improves America's drinking water infrastructure. Included in the WIIN Act are three new drinking water grants that promote public health and the protection of the environment.

### **U.S. Department of Homeland Security**

#### ***Building Resilient Infrastructure and Communities (BRIC) Grants (DHS 1.0)***

#### **Website**

<https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities>

#### **Type of Financing**

Grant

#### **Critical Infrastructure Sector**

N/A

#### **Overview**

The Federal Emergency Management Agency (FEMA) makes federal funds available through the new Building Resilient Infrastructures and Communities (BRIC) grant program to states, local communities, tribes and territories (SLTTs) for pre-disaster mitigation activities. BRIC is a new FEMA pre-disaster hazard mitigation program that replaces the existing Pre-Disaster Mitigation (PDM) program. The Disaster Recovery Reform Act, Section 1234; amended Section 203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) and authorizes BRIC. The BRIC priorities are to:

- incentivize public infrastructure projects;
- incentivize projects that mitigate risk to one or more lifelines;
- incentivize projects that incorporate nature-based solutions;
- and, incentivize adoption and enforcement of modern building codes.

#### **Eligibility**

State, local, tribal, and territorial government

## ***FEMA Homeland Security Grant Program (HSGP) (DHS 1.1)***

### **Website**

<https://www.fema.gov/homeland-security-grant-program>

### **Type of Financing**

Grant

### **Overview**

Provide a primary funding mechanism for building and sustaining national preparedness capabilities. HSGP is comprised of three interconnected grant programs: 1) State Homeland Security Program (SHSP) 2) Urban Area Security Initiative (UASI) 3) Operation Stonegarden (OPSG). Together, these grant programs fund a range of preparedness activities, including planning, organization, equipment purchase, training, exercises, and management and administration.

## ***FEMA Public Assistance Grant Program: Local, State, Tribal and Private Non-Profit (DHS 1.2)***

### **Website**

<https://www.fema.gov/public-assistance-local-state-tribal-and-non-profit>

### **Type of Financing**

Grant

### **Overview**

Provides federal assistance in the form of grants to state, tribal, and local governments and certain private nonprofit organizations following a Presidential disaster declaration so that communities can quickly respond to and recover from major disasters or emergencies. Through the program, FEMA provides supplemental federal disaster grant assistance for debris removal, life-saving emergency protective measures, and the repair, replacement, or restoration of disaster-damaged publicly owned facilities, and the facilities of certain private non-profit organizations.

### **Eligibility**

The federal share of assistance is not less than 75 percent of the eligible cost. The Recipient (usually the state) determines how the non-federal share (up to 25 percent) is split with the subrecipients (eligible applicants).

## ***FEMA Tribal Homeland Security Grant (DHS 1.3)***

### **Website**

<https://www.fema.gov/tribal-homeland-security-grant-program>

### **Type of Financing**

Grant

**Overview**

This program provides funding to eligible Federally- recognized tribes to strengthen their capacity to prevent, protect against, mitigate, respond to, and recover from potential terrorist attacks and other hazards. Grants are awarded based on eligibility and effectiveness, the latter of which is determined by a peer review process.

**Eligibility**

“Directly eligible tribes” as defined in 6 U.S.C. § 601(4)

***FEMA Hazard Mitigation Grant Program (DHS 1.4)*****Website**

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

**Type of Financing**

Grant

**Critical Infrastructure Sector**

Emergency Services

**Overview**

The purpose of the HMGP program is to help communities implement hazard mitigation measures following a Presidential major disaster declaration. HMGP funds can be used for a variety of infrastructure projects as well as planning activities.

**Eligibility**

Consistent with requirements in 44 CFR Parts 201 and 206, a mitigation planning subaward must result in a mitigation plan adopted by the jurisdiction(s) and approved by FEMA, or it must result in a mitigation planning-related activity (eligible under HMGP only) approved by FEMA.

***FEMA Flood Mitigation Assistance Grant Program (DHS 1.5)*****Website**

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

**Type of Financing**

Grant

**Critical Infrastructure Sector**

Emergency Services

**Overview**

FMA provides funding to States, Territories, federally-recognized tribes and local communities for projects and planning that reduces or eliminates long-term risk of flood damage to structures insured under the NFIP.

**Eligibility**

States, Territories, Federally-recognized tribes, Local governments

## ***FEMA Preparedness (Non-Disaster) Grants (DHS 1.6)***

### **Website**

<https://www.fema.gov/non-disaster-grants-management-system>

### **Type of Financing**

Grant

### **Critical Infrastructure Sector**

Emergency Services

### **Overview**

Provides state and local governments with preparedness program funding to enhance the capacity of responders to prevent, respond to, and recover from a weapons of mass destruction terrorism incident involving chemical, biological, radiological, nuclear, and explosive devices and cyber-attacks.

## ***FEMA Transit Security Grant Program (DHS 1.7)***

### **Website**

<https://www.fema.gov/transit-security-grant-program>

### **Type of Financing**

Grant

### **Critical Infrastructure Sector**

Transportation Systems

### **Overview**

Provides funds to owners and operators of transit systems to protect and increase the resilience of critical surface transportation infrastructure and the traveling public from acts of terrorism.

### **Eligibility**

Eligible transit agencies are determined based on daily unlinked passenger trips (ridership) and transit systems that serve historically eligible Urban Area Security Initiative (UASI) jurisdictions.

***FEMA Emergency Management Performance Grant (EMPG) Program (DHS 1.8)***

**Website**

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

**Type of Financing**

Grant

**Critical Infrastructure Sector**

Emergency Services

**Overview**

Provides grant funding to states to assist state, local, territorial, and tribal governments in preparing for all hazards, as authorized by the Stafford Act.

**Eligibility**

All 56 States and territories, as well as the Republic of the Marshall Islands and the Federated States of Micronesia, are eligible for FY 2016 EMPG Program funds.

***FEMA Assistance to Firefighters Grant (DHS 1.9)***

**Website**

<https://www.fema.gov/welcome-assistance-firefighters-grant-program>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

Emergency Services

**Overview**

To enhance the safety of the public and firefighters with respect to fire-related hazards by providing direct financial assistance for critically needed resources to equip and train emergency personnel to recognized standards, enhance operations efficiencies, foster interoperability, and support community resilience.

***FEMA Community Disaster Loan Program (DHS 1.10)***

**Website**

<https://www.fema.gov/community-disaster-loan-program>

**Type of Financing**

Direct Loans

**Critical Infrastructure Sector**

Emergency Services

**Overview**

To provide funds to any eligible jurisdiction in a designated disaster area that has suffered a substantial loss of tax and other revenue.

**Eligibility**

local governments who have suffered a substantial loss (greater than 5%) of tax and other revenues as a result of a major disaster, and which can demonstrate a need for federal financial assistance in order to perform its governmental functions.

***FEMA Port Security Grant Program (DHS 1.11)*****Website**

<https://www.fema.gov/port-security-grant-program>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

Transportation Systems

**Overview**

Supports the building, sustainment, and delivery of core capabilities essential to achieving the National Preparedness Goal (the Goal) of a secure and resilient Nation.

***CISA Emergency Communications Grant Guidance (DHS 1.12)*****Website**

<https://www.cisa.gov/publication/emergency-communications-grant-guidance-documents>

**Type of Financing**

Grant Guidance

**Critical Infrastructure Sector**

Communications, Emergency Services

**Overview**

CISA provides a series of guidance documents providing recommendations for developing and maintaining interoperable emergency communications systems. This guidance can be used to inform grant applications for any grant program which provides funding for emergency communications systems.

***High Hazard Potential Dam Grant Program (DHS 1.13)*****Website**

<https://www.fema.gov/emergency-managers/risk-management/dam-safety/rehabilitation-high-hazard-potential-dams>

**Type of Financing**

Grants

**Critical Infrastructure Sector**

Dams

**Overview**

The High Hazard Potential Dam Grant (HHPD) awards provide technical, planning, design and construction assistance in the form of grants for rehabilitation of eligible high hazard potential dams.

**Eligibility**

A state or territory with an enacted dam safety program, the State Administrative Agency, or an equivalent state agency, is eligible for the grant.

***SAFECOM Emergency Communication Grants (DHS 1.14)*****Website**

[https://www.cisa.gov/sites/default/files/publications/FY%202021%20SAFECOM%20Guidance\\_Final\\_508.pdf](https://www.cisa.gov/sites/default/files/publications/FY%202021%20SAFECOM%20Guidance_Final_508.pdf)

**Type of Financing**

Grants and loans

**Critical Infrastructure Sector**

Emergency Communications

**Overview**

The SAFECOM Guidance is designed to promote and align with the national vision established in the NECP. CISA published a second update to the NECP in September 2019 that builds upon revisions made in 2014, while also positioning the NECP to maintain relevance into the future. Updates to the NECP goals and objectives aim to enhance emergency communications capabilities at all levels of government in coordination with the private sector, nongovernmental organizations, and communities across the Nation. The plan's success relies on the whole community embracing the NECP goals and objectives, and most importantly implementing them. Critical components for advancing emergency communications fall under three national priorities:

- Enhance effective governance across partners with a stake in emergency communications, embracing a shared responsibility of the whole community from traditional emergency responders and supporting entities to the citizens served
- Address interoperability challenges posed by rapid technology advancements and increased information sharing, ensuring the most critical information gets to the right people at the right time
- Build resilient and secure emergency communications systems to reduce cybersecurity threats and vulnerabilities

**Eligibility**

Varies by funding opportunity

## U.S. Department of Health and Human Services

### *Disaster Assistance for State Units on Aging (SUAs) (DHHS 1.0)*

#### **Website**

<https://acl.gov/grants/disaster-assistance-state-units-aging-suas-and-tribal-organizations-national-disasters-1>

#### **Critical Infrastructure Sector**

Healthcare and Public Health

#### **Overview**

Provide disaster relief funds to those SUAs and tribal organizations that are currently receiving a grant under Title VI of the Older Americans Act.

### *Hospital Preparedness Program (DHHS 1.1)*

#### **Website**

<http://www.phe.gov/Preparedness/planning/hpp/Pages/funding.aspx>

#### **Type of Financing**

Grants and Cooperative Agreements

#### **Critical Infrastructure Sector**

Healthcare and Public Health

#### **Overview**

The Hospital Preparedness Program (HPP) provides leadership and funding through grants and cooperative agreements to States, territories, and eligible municipalities. The grants are provided to improve surge capacity and enhance community and hospital preparedness for public health emergencies.

## U.S. Department of Housing and Urban Development

### *Community Development Block Grant Program (CDBG) (HUD 1.0)*

#### **Website**

[https://www.hud.gov/program\\_offices/comm\\_planning/communitydevelopment](https://www.hud.gov/program_offices/comm_planning/communitydevelopment)

#### **Type of Financing**

Grant

#### **Critical Infrastructure Sector**

N/A

#### **Overview**

Provides communities with resources to address a wide range of unique community development needs including neighborhood stabilization and disaster recovery assistance.

**Eligibility**

Over a 1, 2, or 3-year period, as selected by the grantee, not less than 70 percent of CDBG funds must be used for activities that benefit low- and moderate-income persons. In addition, each activity must meet one of the following national objectives for the program: benefit low- and moderate-income persons, prevention or elimination of slums or blight, or address community development needs having a particular urgency because existing conditions pose a serious and immediate threat to the health or welfare of the community for which other funding is not available.

***Rural Housing & Economic Development (RHED) (HUD 1.1)*****Website**

<https://www.hudexchange.info/programs/rhed/>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

N/A

**Overview**

This grant program funds activities to build capacity at the state and local level and economic development in rural areas.

**Eligibility**

Rural nonprofits, community development corporations (CDCs), state housing finance agencies (HFAs), state community and/or economic development agencies, and federally recognized Indian tribes.

## U.S. Department of Treasury

### **Capital Projects Fund (DOTrs 1.0)**

#### **Website**

<https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/capital-projects-fund>

#### **Type of Financing**

Grant

#### **Critical Infrastructure Sector**

Broadband/Digital Connectivity/Multi-purpose Community Facility

#### **Overview**

The COVID-19 public health emergency revealed and continues to reinforce our understanding that communities without access to high-quality modern infrastructure, including broadband, face impediments to fully participating in aspects of daily life, such as remote work, telehealth, and distance learning. Treasury is launching the Capital Projects Fund to allow recipients to invest in capital assets that meet communities' critical needs in the short- and long-term, with a key emphasis on making funding available for broadband infrastructure. The Capital Projects Fund aims to:

- Directly support recovery from the COVID-19 public health emergency by strengthening and improving the infrastructure necessary for participation in work, education, and health monitoring that will last beyond the pandemic.
- Enable investments in capital assets designed to address inequities in access to critical services.
- Contribute to the Administration's goal of providing every American with the modern infrastructure necessary to access critical services, including a high-quality and affordable broadband internet connection.

#### **Eligibility**

For a capital project to be an eligible use of Capital Projects Fund grant funds, it must meet all of the following criteria:

1. The capital project invests in capital assets designed to directly enable work, education, and health monitoring.
2. The capital project is designed to address a critical need that resulted from or was made apparent or exacerbated by the COVID-19 public health emergency.
3. The capital project is designed to address a critical need of the community to be served by it.

The following capital projects are identified in the Capital Projects Fund Guidance as being eligible uses of Capital Projects Fund grant funding:

- **Broadband Infrastructure Projects:** the construction and deployment of broadband infrastructure designed to deliver service that reliably meets or exceeds symmetrical speeds of 100Mbps so that communities have future-proof infrastructure to serve their long-term needs.
- **Digital Connectivity Technology Projects:** the purchase or installation of devices and equipment, such as laptops, tablets, desktop personal computers, and public Wi-Fi equipment, to facilitate broadband internet access for communities where affordability is a barrier to broadband adoption and use.

- Multi-Purpose Community Facility Projects: the construction or improvement of buildings designed to jointly and directly enable work, education, and health monitoring located in communities with critical need for the project.

### ***Coronavirus State and Local Fiscal Recovery Funds (DOTrs 1.1)***

#### **Website**

<https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/state-and-local-fiscal-recovery-funds>

#### **Type of Financing**

Federal Funding

#### **Critical Infrastructure Sector**

Water/Sewer/Broadband

#### **Overview**

The Coronavirus State and Local Fiscal Recovery Funds provide substantial flexibility for each government to meet local needs—including support for households, small businesses, impacted industries, essential workers, and the communities hardest hit by the crisis. These funds can also be used to make necessary investments in water, sewer, and broadband infrastructure.

- **Invest in water, sewer, and broadband infrastructure**, making necessary investments to improve access to clean drinking water, support vital wastewater and stormwater infrastructure, and to expand access to broadband internet.

#### **Eligibility**

Treasury will distribute funds to eligible state, territorial, metropolitan city, county, and Tribal governments.

Eligible local governments that are classified as non-entitlement units of local government should expect to receive this funding through their applicable state government. Jurisdictions classified as non-entitlement units of local government are not eligible to receive this funding directly from Treasury and should not request funding through the Treasury Submission Portal.

## **National Science Foundation**

### ***Decision, Risk, and Management Sciences Program (DRMS) (NSF 1.0)***

#### **Website**

[http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5423&org=SES](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5423&org=SES)

#### **Overview**

Provides funding to support scientific research directed at increasing the understanding and effectiveness of decision making by individuals, groups, organizations, and society.

### ***Engineering for Natural Hazards (ENH) Program (NSF 1.1)***

#### **Website**

[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505177](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505177)

**Overview**

The Engineering for Natural Hazards (ENH) program supports fundamental research that advances knowledge for understanding and mitigating the impact of natural hazards on constructed civil infrastructure.

**U.S. Small Business Administration*****Disaster Loans (SBA 1.0)*****Website**

<https://www.sba.gov/page/disaster-loan-applications>

**Type of Financing**

Direct Loans

**Critical Infrastructure Sector**

Emergency Services

**Overview**

Loans for home and personal, physical small businesses, and economic injury in Presidential declared disaster areas.

**Eligibility**

Located in a declared disaster area.

**U.S. Department of the Interior*****The Hurricane Sandy Coastal Resiliency Competitive Grant Program (DOI 1.0)*****Website**

<http://www.nfwf.org/hurricanesandy/Pages/home.aspx>

**Type of Financing**

Competitive Grant

**Critical Infrastructure****Sector Overview**

Administered by the NFWF, the program supports projects that reduce communities' vulnerability to the growing risks from coastal storms, sea level rise, flooding, erosion and associated threats through strengthening natural ecosystems that also benefit fish and wildlife.

***Bureau of Reclamation’s WaterSMART Drought Response Program (DOI 1.1)***

**Website**

<http://www.usbr.gov/drought/>

**Type of Financing**

Competitive Funding

**Critical Infrastructure Sector**

N/A

**Overview**

Funding to develop a new drought contingency plan or to update an existing plan. Funding for drought resiliency projects that will build long-term resiliency into drought planning and mitigate impacts caused by drought.

**Eligibility**

Reclamation will fund drought resiliency projects that will help communities prepare for and respond to drought.

***U.S. Fish and Wildlife Service Coastal Impact Assistance Program (DOI 1.2)***

**Website**

<https://wsfrprograms.fws.gov/subpages/grantprograms/ciap/ciap.htm>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

N/A

**Overview**

Grant funding to conserve, restore or protect coastal areas including wetlands; mitigation of damage to fish, wildlife, or natural resources; planning assistance and the administrative costs of complying with these objectives; implementation of a federally-approved marine, coastal, or comprehensive conservation management plan; and mitigation of the impact of outer Continental Shelf activities through funding of onshore infrastructure projects and public service needs.

**Eligibility**

States eligible for CIAP funding are: Alabama, Alaska, California, Louisiana, Mississippi, and Texas. Also eligible to apply for and receive CIAP funds are 67 coastal political subdivisions in the six states

***U.S. Fish and Wildlife Service Coastal Wetlands Conservation Grant Program (DOI 1.3)***

**Website**

<https://www.fws.gov/coastal/coastalgrants/>

**Type of Financing**

Matching Grant

**Critical Infrastructure Sector**

N/A

**Overview**

Provides matching grants to states for acquisition, restoration, management or enhancement of coastal wetlands.

**Eligibility**

States receiving funds are California, Georgia, Massachusetts, New Hampshire, New Jersey, Maine, North Carolina, Texas, Washington and Wisconsin.

**U.S. Geological Survey**

***Earthquake Hazards Program (USGS 1.0)***

**Website**

<http://earthquake.usgs.gov/research/external/>

**Type of Financing**

Competitive Grant

**Critical Infrastructure Sector**

N/A

**Overview**

Provides grants and cooperative agreements to support research in earthquake hazards, the physics of earthquakes, earthquake occurrence, and earthquake safety policy.

## U.S. Department of Agriculture

### ***NRCS Agricultural Management Assistance Program (USDA 1.0)***

#### **Website**

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/ama/>

#### **Type of Financing**

Technical and Financial Assistance

#### **Critical Infrastructure Sector**

Food and Agriculture

#### **Overview**

Producers receive conservation technical and financial assistance to construct or improve watermanagement or irrigation structures, plant trees for windbreaks or, in order to improve water quality and mitigate risk, diversify their operation and conservation practices including soil erosion control, integrated pest management or transition to organic farming.

#### **Eligibility**

AMA is available in 16 states where participation in the Federal Crop Insurance Program is historically low: Connecticut, Delaware, Hawaii, Maine, Maryland, Massachusetts, Nevada, NewHampshire, New Jersey, New York, Pennsylvania, Rhode Island, Utah, Vermont, West Virginia, and Wyoming.

### ***Strategic Economic and Community Development (USDA 1.1)***

#### **Website**

<https://www.rd.usda.gov/programs-services/strategic-economic-and-community-development>

#### **Critical Infrastructure Sector**

N/A

#### **Overview**

Provides priority to projects that support strategic economic and community development plansthrough the alignment of resources with long-range and multi-jurisdictional challenges and needs by leveraging federal, state, local, or private funding.

#### **Eligibility**

To be eligible for SECD, a project must: Be eligible for the underlying program, be carried outsolely in a rural area, and support a multi-jurisdictional strategic economic community development plan.

### ***Rural Energy for America Program Renewable Energy Systems & Energy EfficiencyImprovement Loans & Grants (USDA 1.2)***

#### **Website**

<https://www.rd.usda.gov/programs-services/rural-energy-america-program-renewable-energy- systems-energy-efficiency>

**Type of Financing**

Guaranteed Loans/Grant Funding

**Critical Infrastructure Sector**

Food and Agriculture

**Overview**

Provides guaranteed loan financing and grant funding to agricultural producers and rural small businesses for renewable energy systems or to make energy efficiency improvements.

**Eligibility**

Agricultural producers with at least 50% of gross income coming from agricultural operations, and small businesses in eligible rural areas.

***Emergency Community Water Assistance Grants (ECWAG) (USDA 1.3)*****Website**

[https://www.rd.usda.gov/files/rdECWAG\\_Feb2014.pdf](https://www.rd.usda.gov/files/rdECWAG_Feb2014.pdf)

**Type of Financing**

Grant

**Critical Infrastructure Sector**

Water and Wastewater Systems

**Overview**

Helps eligible rural communities recover from or prepare for emergencies that result in a decline in capacity to provide safe, reliable drinking water for households and businesses.

**Eligibility**

Eligible applicants include most State and local governmental entities, nonprofit organizations and federally recognized Tribes. Privately owned wells are not eligible. Projects must be located in rural areas and towns up with 10,000 or fewer people and with a median household income less than \$62,883.

***Emergency Watershed Protection Program (USDA 1.4)*****Website**

[https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb1045263.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045263.pdf)

**Type of Financing**

Financial and Technical Assistance

**Critical Infrastructure Sector**

Water and Wastewater Systems/Emergency Management

**Overview**

Can help communities address watershed impairments that pose imminent threats to lives and property.

**Eligibility**

Public and private landowners are eligible for assistance but must be represented by a project sponsor. Sponsors include legal subdivisions of the State, such as a city, county, general improvement district, conservation district, or any Native American tribe or tribal organization as defined in section 4 of the Self-Determination and Education Assistance Act.

***The Emergency Watershed Protection - Floodplain Easement Program (EWP-FPE) (USDA 1.5)*****Website**

[https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/landscape/ewpp/?cid=nrcs143\\_008216](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/landscape/ewpp/?cid=nrcs143_008216)

**Critical Infrastructure Sector**

Water and Wastewater Systems

**Overview**

Provides an alternative measure to traditional EWP recovery, where it is determined that acquiring an easement in lieu of recovery measures is the more economical and prudent approach to reducing a threat to life or property.

***Community Facilities Direct Loan & Grant Program (USDA 1.6)*****Website**

<https://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program>

**Type of Financing**

Loan and Grant Funding

**Critical Infrastructure Sector**

N/A

**Overview**

Provides affordable funding to develop essential community facilities in rural areas.

**Eligibility**

Rural areas including cities, villages, townships and towns including Federally Recognized Tribal Lands with no more than 20,000 residents according to the latest U.S. Census Data are eligible for this program.

## State Programs

### Alabama

#### PROGRAMS/FUNDING OPPORTUNITIES

- **Alabama Transportation Rehabilitation and Improvement Program-II (ATRIP-II) (AL 1.0):** The purpose of this program is to rehabilitate and improve transportation infrastructure by funding projects of local interest, proposed by one or more local governments, related to the state-maintained highway system. Projects may include local roads and bridges essential to such projects. The program's goal is to address critical needs projects across the state to rehabilitate and improve the in-place facilities and in some cases provide new facilities at locations throughout the state. The program's focus is an emphasis on the public safety, economic growth, and stability of the state and its roads and bridges. <https://www.dot.state.al.us/atrip2/>

### Arizona

#### GENERAL SOURCES OF INFORMATION

- **Arizona Finance Authority (AFA) (AZ 1.0):** The AFA's water and public infrastructure financing authorities provide communities the opportunity to make smart investments through low-cost financing and incentives. <http://www.azcommerce.com/financing/water-and-public-infrastructure-financing>

### Connecticut

#### PROGRAMS/FUNDING OPPORTUNITIES

- **Connecticut Institute for Resilience & Climate Adaptation (CIRCA) (CT 1.0)**
  - Municipal Resilience Grant Program: <http://circa.uconn.edu/funds-muni/>
  - Matching Funds Program: <http://circa.uconn.edu/funds/>

### Georgia

#### PROGRAMS/FUNDING OPPORTUNITIES

- **The Georgia Environmental Finance Authority (GA 1.0):** The Water Resources Division supports the development of water, sewer and solid waste infrastructure projects, which help protect the environment, facilitate economic development, accommodate population growth and safeguard public health. <http://gefa.georgia.gov/water-resources>
- **The Georgia Transportation Infrastructure Bank (GA 1.1):** provides financial assistance for transportation projects that improve mobility, sustain development and enhance communities throughout the state and is managed by the State Road and Tollway Authority (SRTA). <http://www.georgiatolls.com/gtib/>

## Illinois

### PROGRAMS/FUNDING OPPORTUNITIES

- **Illinois Environmental Protection Agency (IEPA) Wastewater/Storm Water and Drinking Water Loans (IL 1.0):** IEPA programs provide financial assistance to eligible public or private applicants for the design and construction of a wide variety of projects that protect or improve the quality of Illinois' water resources or address human health and failing water infrastructure.  
<https://www2.illinois.gov/epa/topics/grants-loans/state-revolving-fund/Pages/default.aspx>

## Kansas

### PROGRAMS/FUNDING OPPORTUNITIES

- **The Emergency Management Performance Grant (EMPG) (KS 1.0):** The EMPG is offered to give assistance to counties in developing disaster and assistance programs, priorities, and organizations. The purpose of the program is to ensure that a comprehensive emergency management system exists for disasters or emergencies resulting from natural disasters, technological, or man-caused events. <http://www.kansastag.gov/KDEM.asp?PageID=411>
- **Community Development Block Grants (KS 1.1):** Business finance grants to cities or counties can be loaned to private businesses to provide gap financing that creates or retains permanent jobs. Funding is also available for infrastructure improvements that directly create or retain permanent jobs. Eligible activities include infrastructure, land acquisition, fixed assets and working capital. Some repayment is required for all Economic Development categories. Grants are made to cities and counties, who then loan funds to developing businesses. Repaid funds are returned to the state revolving loan fund. Funds may also be used for infrastructure on a loan / grant basis. The funding ceiling is \$35,000 per job created or retained with a maximum of \$750,000.  
<https://www.kansascommerce.gov/program/community-programs/cdbg/cdbg-eco-devo/>
- **Kansas State Revolving Fund (KS 1.2):** The Public Water Supply Section manages programs that can provide funding assistance for municipalities that desire to make drinking water and wastewater infrastructure improvements. Grant funding is available for planning assistance related to drinking water infrastructure and loan funding is available for planning, design, and construction of both drinking water and wastewater system infrastructure. There are 3 planning grant programs, Regional Public Water Supply Planning Grants, and Small Public Water Supply Systems Grants, and Corrosion Control Study Grants. Regional Public Water Supply Planning Grants can provide for 50% of the cost (up to \$12,500) for developing engineering studies that evaluate regional solutions to public water supply needs. Small Public Water Supply System Grants can provide for 50% of the cost (up to \$5,000) for developing engineering studies for public water supply systems serving a population of 1,000 or less that are out of compliance with drinking water regulations. Corrosion Control Study Grants can provide for 50% of the cost (up to \$3,000) for developing a corrosion control study for public water supply systems serving a population of 10,000 or

less that have had an action level exceedance for lead or copper. The Kansas SRF can provide subsidized interest rate loans for almost any public water supply system or wastewater system infrastructure need. The interest rate for loans made in July 2021 is 1.33%.

<https://www.kdheks.gov/pws/loansgrants/loansgrants.html>

## Maine

### GENERAL SOURCES OF INFORMATION

- **List of grants from the Department of Agriculture, Conservation and Forestry (ME 1.0):** <http://www.maine.gov/DACF/about/grants/index.shtml>
- **Main Grants Watch (ME 1.2):** The website provides information on available grants, as well as guidelines for application as well as eligibility. <https://maine.grantwatch.com/>
- **The Grantsmanship Center – Maine (ME 1.3):** This page provides a list of the top grant providers for the State of Maine <https://www.tqci.com/funding-sources/ME/top>
- **Maine Department of Transportation (ME 1.4):** <http://www.maine.gov/mdot/about/funding/>

### PROGRAMS/FUNDING OPPORTUNITIES

- **Maine Turnpike Authority (ME 1.5):** <http://www.maineturnpike.com/Projects-Planning/Construction-Projects.aspx>
  - Resurfacing, Guardrail and Clear Zone Improvements
  - Bridge Repair and Rehabilitation
  - Interchange Improvements
- **EPF Municipal Grant Program (ME 1.56):** <http://www.maine.gov/mpuc/greenpower/>
- **Maine Historic Preservation Commission (MHPC) (ME 1.7):** <https://www.maine.gov/mhpc/programs/grants>
  - Historic Preservation Grant Funding

## Maryland

- **Maryland Department of Natural Resources (MD 1.0):** <http://dnr.maryland.gov/ccs/Pages/funding/fundingopp.aspx>

## Massachusetts

- **Executive Office of Energy and Environmental Affairs (MA 1.0)** <http://www.mass.gov/eea/agencies/czm/program-areas/stormsmart-coasts/grants/>
  - Coastal Resilience Grant Program -

## Michigan

### PROGRAMS/FUNDING OPPORTUNITIES

- **The Department of Agriculture and Rural Development (MI 1.0)** provides grant opportunities to promote the sustainability of land-based industries and support infrastructure that benefits rural communities.  
[http://www.michigan.gov/mdard/0,4610,7-125-1570\\_51684\\_78392---,00.html](http://www.michigan.gov/mdard/0,4610,7-125-1570_51684_78392---,00.html)
  - Michigan Rural Development Fund Grants

## New Hampshire

### GENERAL SOURCES OF INFORMATION

- **A chart to New Hampshire State and Federal Funding (NH 1.0):** <https://www.nh.gov/transparentnh/where-the-money-comes-from/>
- **Grant Watch – New Hampshire (NH 1.1):** The website provides information on current grants, instructions for application, as well as eligibility.  
<https://newhampshire.grantwatch.com/>

### PROGRAMS/FUNDING OPPORTUNITIES

- **New Hampshire Department of Safety (NH 1.3):**  
<https://www.nh.gov/safety/divisions/dmv/registration/municipal-agents/index.htm>
  - Municipal Agent Program

## New Jersey

### GENERAL SOURCES OF INFORMATION

- **New Jersey Governor's Office of Recovery and Rebuilding (NJ 1.3):** <http://nj.gov/gorr/>
  - Flood Hazard Mitigation Initiatives
  - Energy Resilience

## New York

### GENERAL SOURCES OF INFORMATION

- **Resources for Building Waterfront Resilience (NY 1.0):**  
<https://wri.cals.cornell.edu/hudson-river-estuary/climate-change-hudson-river-estuary/resources-resilience/>
- **A Guide to Federal and New York State Funding (NY 1.1):**  
<http://www.gillibrand.senate.gov/imo/media/doc/Gillibrand%20Federal%20and%20State%20General%20Grants%20Guide%202015.pdf>

- **New York State Citizens Guide (NY 1.2):** The website provides information on available grants, as well as guidelines for application as well as eligibility. <https://www.budget.ny.gov/citizen/index.html>
- **New York State Assembly – Grants Action News (NY 1.3):** An up-to-date newsletter for grantseekers to become informed about newly established grants. The newsletter outlines eligibility guidelines, deadlines, and contains contact information for further questions. <https://nyassembly.gov/gan/>
- **NYS Consolidated Funding Application (NY 1.4):** New York State's Consolidated Funding Application (CFA) allows communities to design comprehensive projects and with one application, apply to multiple state funding sources. <https://apps.cio.ny.gov/apps/cfa/>

## PROGRAMS/FUNDING OPPORTUNITIES

- **NYS Department of Environmental Conservation (DEC) (NY 1.5):** <http://www.dec.ny.gov/pubs/grants.html>
  - Hudson River Estuary Grants
  - Climate Smart Communities Grants
  - Water Quality Improvements Program
- **Environmental Facilities Corporation (EFC) (NY 1.6):** <https://www.efc.ny.gov/environmental-facilities-corporation>
  - Wastewater Infrastructure Engineering Planning
  - Clean Water Revolving Loan Fund
  - Green Innovation Grant Program
- **New York Department of State (DOS) (NY 1.7):** <https://www.dos.ny.gov/opd/programs/WFRevitalization/LWRP.html>
  - Local Waterfront Revitalization Program
  - Brownfield Opportunity Area
- **New York State Energy Research and Development Authority (NYSERDA) (NY 1.8):** <https://www.nyserda.ny.gov/Funding-Opportunities/Current-Funding-Opportunities>
  - Clean Energy Communities Program
- **NYS Office of Parks, Recreation and Historic Preservation (OPRHP) (NY 1.9):** <https://parks.ny.gov/grants/>
  - EPF Municipal Grant Program
- **NYS Hudson River Valley Greenway (NY 1.10):** <https://hudsongreenway.ny.gov/grants-funding>
  - Communities and Compact Grant Programs
- **Division of Homes and Community Renewal (NY 1.11):** <https://hcr.ny.gov/>

- **Governor's Office of Storm Recovery (NY 1.12):** <https://stormrecovery.ny.gov/>
  - Funding Portal: <https://stormrecovery.ny.gov/funding/funding-portal>
- **NY Department of Transportation (NY 1.13):** <https://www.dot.ny.gov/funding>

## North Carolina

### PROGRAMS/FUNDING OPPORTUNITIES

- **Charlotte-Mecklenburg, NC Stormwater Services Division (NC 1.0):**  
<http://charmeck.org/stormwater/Pages/default.aspx>
  - Local authority in charge of analyzing hazard risk and prioritizing properties for appropriate mitigation projects, ranging from buyouts to environmental restoration.
  - Program funded primarily through stormwater utility fees.

## Ohio

### PROGRAMS/FUNDING OPPORTUNITIES

- **Economic Development Loan and Public Infrastructure Grant Program (OH 1.0):** creates and retains permanent, private-sector jobs, principally for low and moderate income persons, through the expansion and retention of business and industry in Ohio communities. Funds are granted to local government applicants for both economic development loan and public infrastructure projects. Public off-site infrastructure funds are retained as a grant by the local government. In the case of a loan, the local government grantee loans the funds to the beneficiary business for fixed asset financing projects and the funds are repaid to the local government Revolving Loan Fund. [https://development.ohio.gov/cs/cs\\_edl.htm](https://development.ohio.gov/cs/cs_edl.htm)
- **Residential Public Infrastructure Program (OH 1.1):** The Residential Public Infrastructure Grant Program creates safe and sanitary living environment for Ohio citizens, through the provision of safe and reliable drinking water and proper disposal of sanitary waste. [https://development.ohio.gov/cs/cs\\_rpi.htm](https://development.ohio.gov/cs/cs_rpi.htm)
- **Ohio Department of Public Safety (OH 1.2):** Offers grants to law enforcement, fire, EMS and various other safety partners to help achieve its mission to save lives and reduce injuries and economic loss in the state of Ohio. <http://www.publicsafety.ohio.gov/grants.stm>
- **Ohio Development Services Agency (OH 1.3):** The Community Development Program provides communities with flexible funding for housing and community development projects to address the needs of low- and moderate-income individuals and to eliminate slum and blight. The program also includes competitive grants for Neighborhood Revitalization, Downtown Revitalization, and Critical Infrastructure projects. <https://greencountydod.org/wp-content/uploads/2017/01/CDAllocationAndCompetitive.pdf>

- **Ohio Department of Transportation (OH 1.4):** The Department maintains a direct loan and bondfinancing program through the State Infrastructure Bank. The money is used as a method of funding highway, rail, transit, intermodal, and other transportation facilities and projects.  
<http://www.dot.state.oh.us/Divisions/Finance/Pages/StateInfrastructureBank.aspx>

## Oklahoma

### GENERAL SOURCES OF INFORMATION

- **Historic Funding Perspective of all OKOHS Grant Programs (OK 1.0):** Summary of grantfunding Oklahoma receives and how the state allocates those grants. [https://www.ok.gov/homeland/Grant\\_Information/index.html](https://www.ok.gov/homeland/Grant_Information/index.html)

## Oregon

### GENERAL SOURCES OF INFORMATION

- **Contact information for resources available to public water systems, including grants and loans to fund drinking water infrastructure and source protection projects (OR 1.0).**  
<http://www.oregon.gov/deq/wq/programs/Pages/DWP-Funding.aspx>
- **Oregon Resilience Task Force (OR 1.1):**  
<http://www.oregon.gov/OMD/OEM/Pages/Resilience-Taskforce.aspx>
- **Oregon Business (OR 1.2):** Manages grant and loan programs designed to help communities improve the quality of life of their citizens.  
<http://www.orinfrastructure.org/>

## Rhode Island

### GENERAL SOURCES OF INFORMATION

- **Rhode Island Infrastructure Bank Financial Report (RI 1.0):**  
<https://www.riib.org/financial>
- **Office of Internal Audit for Rhode Island (RI 1.1):** Information and reports on state funding and state grants. <http://audits.ri.gov/reports/>
- **Rhode Island Grant Watch (RI 1.2):** This website provides information, including descriptions, eligibility, and funding opportunities for Rhode Island grants.  
<https://rhodeisland.grantwatch.com/>

## PROGRAMS/FUNDING OPPORTUNITIES

- **Local Open Space Grant (RI 1.3):** <http://www.dem.ri.gov/programs/planning/grants/>
  - Facilitate land conservation
  - Land acquisition and development
  - Recreational Trail Grant Program
- **Municipal Road and Bridge Revolving Fund (RI 1.4):** Construction and restoration funding for local roads and bridges. <https://www.riib.org/mrbf>
- **Rhode Island Office of Energy Resources (RI 1.5):** <http://www.energy.ri.gov/renewable/ref/>
  - Renewable Energy Fund
- **Rhode Island Efficient Building Fund (RI 1.6):** <http://www.energy.ri.gov/RIEBF/>
- **Rhode Island Department of Transportation (RI 1.7):** <http://www.dot.ri.gov/business/govandutilities.php>

## Texas

### PROGRAMS/FUNDING OPPORTUNITIES

- **Texas Infrastructure Resiliency Fund:** <https://statutes.capitol.texas.gov/Docs/WA/htm/WA.16.htm#16.452>
- **County Transportation Infrastructure Fund Grant Program (TX 1.0):** <http://www.txdot.gov/government/funding/county-fund.html>
- **The Texas General Land Office (TXGLO) (TX 1.2):** <https://www.glo.texas.gov/>
  - The Infrastructure program - assists communities to recover from disasters by funding public facility projects such as roads and bridges, flood and drainage improvements, community centers/shelters, fire stations, and emergency back-up generators
  - The Disaster Recovery Program - provides funding for creative and substantive long-term planning studies and projects. This includes conducting resiliency studies to mitigate the effects of future disasters.
- **The Gulf of Mexico Alliance (TX 1.3):** <http://www.gulfofmexicoalliance.org/our-priorities/priority-issue-teams/community-resilience-team/>
  - Regional Coastal Resilience Grants Program - This project provides small grants to 10 communities to implement programs that will enhance their coastal resilience. Selected communities are eligible to receive up to \$45,000 in funding assistance as well as technical assistance from state and

federal agencies and local knowledge experts.

#### **Defense Economic Adjustment Assistance Grant (DEAAG) (TX 1.4)**

- <https://gov.texas.gov/organization/military/grants>
- The Defense Economic Adjustment Assistance Grant Program (DEAAG) is an infrastructure grant program designed to assist defense communities that have been positively or negatively impacted by a change or announced change by the Department of Defense. DEAAG funding is available to local municipalities, counties, defense base development authority, junior college districts and Texas State Technical College campuses, and regional planning commissions representing these communities. DEAAG funding is available to meet matching requirements for federal funding. Grants awarded may range from \$50,000 to \$5 million per project.
- A defense community is eligible for a grant from DEAAG if the commission determines that it satisfies one of the eligibility criteria as referenced in above in the Texas Government Code and Texas Administrative Code. The grant funds are administered on a reimbursement basis. Administrative costs will not be allowed for reimbursement. Please contact the Texas Military Preparedness Commission at [tmprc@gov.texas.gov](mailto:tmprc@gov.texas.gov) or 512-475-1475 should you have any questions. The grant will be scored on the following criteria: military value, project probability, relation to the National Defense Strategy, dual military/community benefit, new missions, resiliency, and efficiency.

#### **Texas Military Value Revolving Loan Fund (TMVRLF) (TX 1.5)**

- <https://gov.texas.gov/organization/military/loans>
- Created by the 78th Texas Legislature, the Texas Military Value Revolving Loan Fund (TMVRLF) is a comprehensive loan program providing financial assistance to defense communities in Texas. The TMVRLF is financed through the sale of general obligation bonds with a current balance of roughly \$204 million.
- TMVRLF is a low cost source of funding to eligible communities. Financing will be offered to projects that:
  - Enhance the military value of area military bases and defense facilities
  - Lessen the adverse impacts of BRAC 1995 or later for an economic development project
  - Provide assistance to communities positively impacted by BRAC 1995 or later for an infrastructure project
  - Supplement the community economic redevelopment value of a closed military base or defense facility
- Eligible applicants are from a “defense community” meaning a political subdivision, includes a municipality, county or special district, that is adjacent to, is near, or encompasses part of a military base or defense facility per Section 397.001, Local Government Code

## Vermont

### GENERAL SOURCES OF INFORMATION

- **Department of Environmental Conservation Grant and Loan Programs (VT 1.0):** <http://dec.vermont.gov/grant-loan-programs>
- **Vermont Grants Management Guide (GMP) (VT 1.1):** The website provides information on available grants, as well as guidelines for application as well as eligibility. <http://accd.vermont.gov/community-development/funding-incentives/vcdp/grants-management-guide>
- **Agency of Commerce and Community Development (VT 1.2):** <http://accd.vermont.gov/community-development>
- **VT Department of Transportation (VT 1.3):** <http://legislature.vermont.gov/assets/Legislative-Reports/Sec-10-Funding-Study-Report-final.pdf>

### PROGRAMS/FUNDING OPPORTUNITIES

- **Brownfields Reuse and Environmental Liability Program (BRELLA) (VT 1.4):** <https://dec.vermont.gov/waste-management/contaminated-sites/brownfields/BRELLA>
  - Public investment to promote successful redevelopment projects
  - Reduce threats caused by brownfields
- **Vermont – Flood Ready (VT 1.5):** <http://floodready.vermont.gov/node/777>
  - Developing local infrastructure
  - Protecting the functions of local watersheds
  - Adapting critical infrastructure
- **On-site Loan Program (VT 1.6):** Loans for the repair and replacement of failed on-site wastewater and water supply systems  
<https://dec.vermont.gov/water-investment/water-financing/on-site-loan>
- **Unsafe Dam State Revolving Fund (VT 1.7):** <https://dec.vermont.gov/water-investment/dam-safety/unsafe-dam-srf>
- **Water Planning Loan (VT 1.8):** Provides loans for the testing and creation of public watersystems engineering  
<https://dec.vermont.gov/water-investment/water-financing/dwsrf-water-planning-loan>
- **Vermont Emergency Relief and Assistance Fund (VT 1.9):** Provides a 7.5 percent state match to FEMA Federal Public Assistance after declared disasters. Communities that take specific resilience steps are eligible to receive up to a 17.5 percent match  
[http://floodready.vermont.gov/find\\_funding/emergency\\_relief\\_assistance](http://floodready.vermont.gov/find_funding/emergency_relief_assistance)

## Virginia

### GENERAL SOURCES OF INFORMATION

- **Common Wealth of Virginia Office of Transportation, Office of TransportationPublic-Private Partnerships (VA 1.0):**  
<http://www.p3virginia.org/>
- **National Capital Region (NCR) Urban Area Security Initiative (UASI) funds (VA 1.1)**

## Washington

### PROGRAMS/FUNDING OPPORTUNITIES

- **State of Washington Transportation Improvement Board (TIB) (WA 1.0):**  
<http://www.tib.wa.gov/grants/Grants.cfm>
  - Urban Arterial Program (UAP)

## Non-Governmental Programs

### The Kresge Foundation

*Place-based, local systems, neighborhood, and environments funding (NGO 1.0)*

**Website**

<http://kresge.org/opportunities>

**Type of Financing**

Grant

**Critical Infrastructure Sector**

N/A

**Overview**

Funding and grants offered for communities seeking resilience from natural disasters.

### The Rockefeller Foundation

*CityNext (NGO 1.1)*

**Website**

<https://www.rockefellerfoundation.org/our-work/grants/>

**Type of Financing**

Grants

**Critical Infrastructure Sector**

N/A

**Overview**

Helping cities, organizations, and communities better prepare for, respond to, and transform from disruption, through technical assistance, grant and funding.

### OpenSpace Institute

*Environmental Focused Grants (NGO 1.2)*

**Website**

[http://www.osiny.org/site/PageServer?pagename=Program\\_CFP\\_GeographicRegions](http://www.osiny.org/site/PageServer?pagename=Program_CFP_GeographicRegions)

**Type of Financing**

Grant

**Critical Infrastructure Sector**

N/A

**Overview**

Grants and loans w/ focus on the east coast for communities looking to improve resiliency to environmentally delicate areas.

**The Threshold Foundation*****Thriving Resilient Communities Funds (NGO 1.3)*****Website**

<https://www.thresholdfoundation.org/thriving-resilient-communities>

**Type of Financing**

Grant

**Overview**

Funds collaborative tools and approaches that build leadership and capacity for communities to address their own strategic needs in the face of energy, climate, economic, and social challenges.

**The Wildlife Conservation Society*****Climate Adaptation Fund (NGO 1.4)*****Website**

<http://wcsclimateadaptationfund.org/program-information>

**Type of Financing**

Award Funding

**Critical Infrastructure Sector**

N/A

**Overview**

Awards will be made to non-profit conservation organizations for applied, on-the-ground projects focused on implementing priority conservation actions for climate adaptation at a landscape scale.

**Eligibility**

This program provides grants to U.S.-based non-profit conservation organizations with approved IRS 501(c)(3) status. Grants can be awarded for projects only within the 50 U.S. states and six U.S. territories. The WCS Climate Adaptation Fund is unable to make grants to for-profit corporations, individuals, universities, public agencies, municipalities or other types of government entities.

## Additional Information Sources – Funding Resources

Resource	Information Available	Link
<b>Grants.gov</b>	A searchable database of USG grants available including sponsoring agency, posted and closing dates. Grantor agencies include the CDC, NSF, NIH, etc. Funding Opportunity Number is an active hyperlink category that allows the user to view the grant opportunity summary sheet.	<a href="http://www.grants.gov/web/grants/search-grants.html">http://www.grants.gov/web/grants/search-grants.html</a>
<b>FedCenter.gov</b>	Contains information on various Federal, State and non-profit organization grant opportunities.	<a href="https://www.fedcenter.gov/opportunities/grants/">https://www.fedcenter.gov/opportunities/grants/</a>
<b>Catalog of Federal Domestic Assistance</b>	Contains detailed program descriptions for 2,299 Federal assistance programs.	<a href="https://www.cfda.gov/index?s=main&amp;mode=list&amp;tab=list&amp;tabmode=list">https://www.cfda.gov/index?s=main&amp;mode=list&amp;tab=list&amp;tabmode=list</a>
<b>DisasterAssistance.gov</b>	Provides access to disaster help and resources for the U.S. and territories and lists currently declared disaster states (and affected counties) that may allow for individual assistance.	<a href="http://www.disasterassistance.gov">www.disasterassistance.gov</a>
<b>U.S. Climate Resilience Toolkit</b>	A listing of a number of federal government and NGO sources for technical assistance funding to promote increased climate resilience with hyperlinks to other organizations. It is a coordinated effort by NOAA, USDA, and the Department of the Interior.	<a href="https://toolkit.climate.gov/content/funding-opportunities">https://toolkit.climate.gov/content/funding-opportunities</a>
<b>Federal Funding Compendium for Urban Heat Adaptation (2013)</b>	Provides a list of federal funding sources for climate-related work.	<a href="https://www.georgetownclimate.org/files/report/Federal%20Funding%20Compendium%20for%20Urban%20Heat%20Adaptation.pdf">https://www.georgetownclimate.org/files/report/Federal%20Funding%20Compendium%20for%20Urban%20Heat%20Adaptation.pdf</a>
<b>EPA Catalogue of Federal Funding Sources for Watershed Protection</b>	A searchable database of financial assistance sources (grants, loans, cost-sharing) available to fund a variety of watershed protection projects.	<a href="https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=20004O44.TXT">https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=20004O44.TXT</a>

<b>National Integrated Drought Information System</b>	Provides information and services to mitigate drought including links to USG Agencies that provide financial assistance.	<a href="https://www.drought.gov/drought/resources/recovery">https://www.drought.gov/drought/resources/recovery</a>
<b>Tribal Climate Change Guide for Funding, Science, Programs, and Adaptation Plans</b>	A sortable spreadsheet that can help tribes find potential funding sources and other resources, maintained by University of Oregon.	<a href="http://tribalclimateguide.uoregon.edu/">http://tribalclimateguide.uoregon.edu/</a>
<b>Great Lakes Costal Resilience</b>	Coordinating organization with information on financing and technical resources on zoning and land use, infrastructure, habitat and environment, and public health and safety. Provides links to a number of resources and other organizations.	<a href="http://www.greatlakesresilience.org/">http://www.greatlakesresilience.org/</a>
<b>Federation of Canada: Green Municipal Fund</b>	A unique program that provides funding and knowledge services to support sustainable community development. GMF-supported initiatives aim to improve air, water, and soil, and mitigate the impacts of climate change (for potential for cross-border initiatives).	<a href="http://www.fcm.ca/home/programs/green-municipal-fund.htm">http://www.fcm.ca/home/programs/green-municipal-fund.htm</a>
<b>U.S. Committee on the Marine Transportation Systems (CMTS) Federal Funding Handbook: Marine Transportation System Infrastructure</b>	Reference to funding programs with which stakeholders might not be familiar, including coastal wetland & wildlife, disaster recovery, and economic development.	<a href="https://www.cmts.gov/downloads/2017_CMTS_Federal_Funding_Handbook_for_MTS_Infrastructure.pdf">https://www.cmts.gov/downloads/2017_CMTS_Federal_Funding_Handbook_for_MTS_Infrastructure.pdf</a>
<b>Statelocalgov.net</b>	List of state and local grant funding opportunities.	<a href="http://www.statelocalgov.net/50states-state-grants.cfm">http://www.statelocalgov.net/50states-state-grants.cfm</a>

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# **Appendix B**

## **FDC Resiliency Project Inventory**

Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
<b>Bay County (NSA Panama City, Tyndall)</b>							
Bay County (NSA Panama City, Tyndall)	Panama City	2022 Florida State Budget Unfunded Item	Panama City Stormwater Management Study-Southern Area	\$2M	DRG, Resilient Florida	Medium	2022 Florida State Budget
Bay County (NSA Panama City, Tyndall)	Panama City	City of Panama City Lift Station and Sanitary Sewer Hardening	Severe rainfall events, can cause detrimental impacts to the operation of the sanitary sewer system; due to age and materials causing loss of function of sanitary systems throughout Panama City. The proposed project would mitigate the loss of function, by increasing the capacity of the sanitary sewer system.	Total: \$34,775,000 Funded: \$26,081,250 Match: \$8,693,750	BRIC	Medium	Local Mitigation Strategy
Bay County (NSA Panama City, Tyndall)	Panama City	Parker Police Department Wind Retrofit	The goal is to harden the police department, so it can be a shelter for first responders and a stand-alone base of operations during recovery efforts.	T: \$300,000 F: \$225,000 M: \$75,000	BRIC, HMGP, Resilient Florida	Medium	Local Mitigation Strategy
Bay County (NSA Panama City, Tyndall)	Panama City	City of Springfield - Portable Bypass Pump for Lift Stations	Purchase of two trailered, portable bypass pumps to use in case of power loss or outage, in order to maintain the critical function of pumping sewage throughout the city.	T: \$160,000 F: \$120,000 M: \$40,000	Local Budget	Medium	Local Mitigation Strategy
Bay County (NSA Panama City, Tyndall)	Panama City	City of Springfield - Fire Department Generator	The purchase and installation of a 40kw Generator would allow power to remain at the temporary Fire Department facility in the event of an outage by Gulf Power.	T: \$35,318 F: \$26,489 M: \$8,830	BRIC, Resilient Florida, Local Budget	Medium	Local Mitigation Strategy



Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
Bay County (NSA Panama City, Tyndall)	Panama City	City of Springfield Police Department Generator	The purchase and installation of a 40kw Generator would allow power to remain at the temporary Police Department facility in the event of an outage by Gulf Power. The Police Department is a critical service that must continue during and after a storm.	T: \$40,435 F: \$30,326 M: \$10,109	BRIC, Resilient Florida, Local Budget	Medium	Local Mitigation Strategy
Bay County (NSA Panama City, Tyndall)	Bay County	2022 Florida State Budget Unfunded Item	Bay County Water Treatment Plant Improvements	\$8M	COIVD State/Local Recovery Funds, Resilient Florida	Low	2022 Florida State Budget
Bay County (NSA Panama City, Tyndall)	Bay County	Bay County Roadways, Flood Control and Drainage Improvements	The project will provide for the design, permitting and construction of approximately 62 miles of County-wide flood control, stabilization measures and drainage improvements to mitigate the frequency and severity of flooding in areas subject to inundation damages and losses from recurring storm and disaster events.	T: \$53,034,138 F: \$39,775,603 M: \$13,258,535	HMGP, Bay County Surtax Funds, Resilient Florida	Medium	Local Mitigation Strategy
Bay County (NSA Panama City, Tyndall)	Bay County	Wastewater Distribution System Hardening	This project entails installing improvements to the County wastewater system which will improve system functionality, serviceability, and performance as well as improve the County's readiness and responsiveness in disaster scenarios.	T: \$1,750,000 F: \$1,312,500 M: \$437,500	FEMA, HMGP, HUD, CDBG-DR, FEMA PA, COVID Local/State Recovery Fund	Medium	Local Mitigation Strategy

Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
Bay County (NSA Panama City, Tyndall)	Bay County	Lift Station Hardening	Install backup generators and/or bypass pumps at all wastewater lift stations and water pumping stations in the Bay County wastewater and water system. This project will ensure that the lift stations will continue to pump wastewater in the event of a loss of commercial power, significantly minimizing the potential for sewer backups and overflows and that water pumping station will continue to pump potable water in the event of a loss of commercial power at the station.	T: \$2,700,000 F: \$2,025,000 M: \$675,000	Insurance, FEMA, HMGP, HUD, CDBG-DR, FEMA PA, COVID Local/State Recovery Fund, Resilient Florida	Medium	Local Mitigation Strategy
Bay County (NSA Panama City, Tyndall)	Bay County	Potable Water Distribution System Hardening	This project entails installing improvements to the County potable water system which will improve system functionality, serviceability, and performance, as well as improve the County's readiness and responsiveness in disaster scenarios. Examples include installation of new isolation valves, installation of new pipelines for system looping and increasing pipe sizes.	T: \$1,750,000 F: \$1,312,500 M: \$437,500	PA, HMGP, HUD, Bay County, COVID Local/State Recovery Fund	Medium	Local Mitigation Strategy



Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
Bay County (NSA Panama City, Tyndall)	Bay County	Bay County - CW - Western Region Resiliency Center and Saferoom Complex	In accordance with ICC-500 and FEMA P-361 the FEMA stand-alone safe room will be built to withstand 200 mile per hour winds providing near -absolute protection during high wind events such as tornadoes and hurricanes. The FEMA saferoom will be for specific occupants such as first responders, critical and essential personnel to be protected for a minimum of 24 hours.	T: \$17,858,888 F: \$13,394,166 M: \$4,464,722	HMGP, Tourist Development Council tax revenues; Triumph Gulf Coast Funding; and Federal support Economic Development Administration Grants, BRIC, DIG, DRG, Resilient Florida	High	Local Mitigation Strategy
Bay County (NSA Panama City, Tyndall)		Bay County - CW - EOC Water Line Hardening	This project will include construction of an 8 inch water line to provide backup water source to the EOC	T: \$1,000,000 F: \$750,000 M: \$250,000	Insurance, FEMA HMGP, HUD, CDBG-DR FEMA Public Assistance Funding	Low	Local Mitigation Strategy
Bay County (NSA Panama City, Tyndall)	NSA PC	Thomas Drive Drainage Project	Corrects drainage issues along Thomas Drive which is the main traffic corridor adjacent to NSA Panama City. The goal is to prevent storm water from flooding the installation during heavy rain events.	TBD	DIG, DRG, DCIP, FDSTF, Resilient Florida	High	CPLO
Bay County (NSA Panama City, Tyndall)	NSA PC	East End Panama City Beach Microgrid	Develops a hardened electrical microgrid on the east end of Panama City Beach providing power to NSA Panama City and surrounding community during area wide power outages.	TBD	BRIC, DIG, DRG, DCIP, FDSTF, Resilient Florida	High	CPLO

Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
Bay County (NSA Panama City, Tyndall)	NSA PC	Dredging/Turning Basin	Creates a turning basin outside the entrance to NSA Panama City's Alligator Bayou. This will allow for larger shallow draft Navy and Coast Guard vessels to safely moor at the installations. FDOT SIS designated waterway corridor which is Gulf Intracoastal Waterway and connects to Port Panama City SIS Connector.	TBD	DRG, REPI	Medium	CPLO
Bay County (NSA Panama City, Tyndall)	NSA PC	Area Wide Stormwater Management Projects	Address flooding issues that have plague Bay County following Hurricane Michael. Due to the tremendous amount of trees lost during the hurricane, ground water levels have remained high, preventing the recession of water during large rain events. This has caused mission impacts due to personnel unable to safely report to work.	TBD	DIG, DRG, DCIP, FDSTF, Resilient Florida	High	CPLO



Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
Bay County (NSA Panama City, Tyndall)	NSA PC	US 98/NSA PC Northgate Intersection Improvements	Creates an additional Ingress/Egress to NSA PC. NSA PC is limited to one main gate for Ingress/Egress and one Egress only gate. For safety of personnel, NSA PC would like to explore the option to utilize the Northgate of NSA PC which has been closed since the construction of the Thomas Drive Flyover. This is an FDOT designated SIS MAF (Military Access Facility)	TBD	DIG, DRG, DCIP, FDSTF	High	CPLO
<b>Central Florida (Avon Park)</b>							
Central Florida (Avon Park)	City of Avon Park		Retrofit Fire Headquarters Building	\$27K	BRIC, DIG, DRG, Resilient Florida, Local Budget	Low	Local Mitigation Strategy
Central Florida (Avon Park)	City of Avon Park		Retrofit Public Works Building	\$18K	BRIC, Resilient Florida, Local Budget	Low	Local Mitigation Strategy
Central Florida (Avon Park)	City of Avon Park		Lightning damage prevention system - wastewater	\$70K	Local Budget	Low	Local Mitigation Strategy
Central Florida (Avon Park)	City of Avon Park		Wind Retrofit Avon Park City Hall	\$170K	BRIC, Resilient Florida, Local Budget	Low	Local Mitigation Strategy
Central Florida (Avon Park)	City of Avon Park		Avon Park Pandemic Flu Plan	\$10K	Local Budget	Low	Local Mitigation Strategy
Central Florida (Avon Park)	City of Avon Park		Avon Park Retrofit Recreation Bldg shutters	\$31K	BRIC, Local Budget	Low	Local Mitigation Strategy
Central Florida (Avon Park)	City of Avon Park		FEMA Pilot Project Debris Removal	\$5K	Local Budget	Low	Local Mitigation Strategy

Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
Central Florida (Avon Park)	City of Avon Park		Avon Park Airport Stormwater Drainage	\$1.5M	DIG, Resilient Florida, Local Budget	Low	Local Mitigation Strategy
<b>Clay County (Camp Blanding)</b>							
Clay County (Camp Blanding)	Clay County	2022 Florida State Budget Unfunded Item	Clay County Utility Authority Mid-Clay Potable Reclaimed Water Pilot Project	\$600K	CWSRF, WIFA Loan	Low	2022 Florida State Budget
<b>Jacksonville (Blount, Jacksonville, Mayport)</b>							
Jacksonville (Blount, Jacksonville, Mayport)	Jacksonville	Jacksonville Airport Authority (JAA) Cecil Airport Runway Repairs	Cecil Airport has supported the Department of Defense (DOD) aircraft with support for operational and training missions. 50 percent of all Cecil's operations are military aircraft. The DOD's aircraft (particularly the P-8 airframe) have broken portions of the runway because of the heavy gross weight. The FAA will not allow JAA to report DOD		DIG, DRG, DCIP, Local Budget	Medium	CPLO



Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
			operations in the total accounting of airfield operations. Cecil Airport is used by all DOD Services and closure of the runway would impact DOD operational and training missions. This is an FDOT designated SIS Spaceport.				
Jacksonville (Blount, Jacksonville, Mayport)	Jacksonville	Jacksonville Electric Authority Substation (NS Mayport)	Construct a more secure and resilient barrier wall around the JEA substation outside NS Mayport.		DIG, DRG, DCIP, FDSTF	High	CPLO
Jacksonville (Blount, Jacksonville, Mayport)	Jacksonville	Jacksonville Electric Authority Substation (NAS Jacksonville)	Construct a more secure barrier and resilient wall around the JEA substation outside of NAS Jacksonville		DIG, DRG, DCIP, FDSTF	High	CPLO
Jacksonville (Blount, Jacksonville, Mayport)	Jacksonville	Encroachment Protection of NAS, NS and Outlying Landing Field (OLF) Whitehouse	Continue the critical buffering of the three installations ensuring compatible land uses.		DIG, DRG, FDSTF, REPI	Medium	CPLO
Jacksonville (Blount, Jacksonville, Mayport)	City of Atlantic Beach	Construct New Water Main	Proposed construction of new 12" water main to improve capacity and pressure for consumers directly adjacent to the installation, enable future connection to the installation, and providing redundancy	\$596, 470	DCIP	Medium	EFI/OLDCC

Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
Jacksonville (Blount, Jacksonville, Mayport)	Jacksonville	A1A Resiliency Study – Transportation Impacts	This modeling will yield important data for planning future infrastructure improvements, and it is essential to developing future nature-based interventions that protect and enhance local habitats and natural resources. Together, this data and the community prioritization of vulnerabilities and responses will provide a robust and concrete basis for future collaborations between the community, public and private sector organizations, the Navy, and other partners in planning for a more resilient shared future		DRG, FDSTF	High	CPLO
<b>Choctawhatchee Bay (Eglin, Hurlburt)</b>							
Choctawhatchee Bay (Eglin, Hurlburt)	Okaloosa County	Okaloosa County Water and Sewer – Florosa Potable Water Elevated Storage Tank	the tank and main provide resiliency to one of our most vulnerable areas this area does not have enough water storage and transmission/ distribution mains during emergencies such as main breaks, fires, and storms; 2022 Florida State Budget Unfunded Item	\$3M-\$13M (Local estimate underway)	DIG, DRG, COVID State/Local Recovery, DCIP, Resilient Florida, Local Budget	Medium	CIP
Choctawhatchee Bay (Eglin, Hurlburt)	City of Destin	Cross Town Connector (CIP)	Two-lane road connecting Beach Drive to Benning Drive.	\$6M	Local Budget	Low	CIP
Choctawhatchee Bay (Eglin, Hurlburt)	Okaloosa County	Water and Sewer Resiliency (CIP)	generators, bypass pumps, lift station rehab, etc. (2025-2027)	\$1.3M	COVID State/Local Recovery, Resilient Florida	Low	CIP



Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
Choctawhatchee Bay (Eglin, Hurlburt)	Okaloosa County Water and Sewer	Gravity Sewer Rehab	install cured-in-place pipe (CIPP) and other related rehab activities for about 40 more miles still need to be rehabilitated at the cost of approximately \$300K per mile	\$12M	COVID State/Local Recovery	Low	CIP
Choctawhatchee Bay (Eglin, Hurlburt)	Okaloosa County Water and Sewer	Lift Station Rehab	rehabilitating/modifying about 9 lift stations per year, at the cost of about \$200K per station; with new equipment, stationary generators, bypass pumping capability, we are much better postured for storms and significant rain events	\$1.8M	COVID State/Local Recovery, Local Budget	Low	CIP
Choctawhatchee Bay (Eglin, Hurlburt)	Okaloosa County Water and Sewer	Shoal River Ranch WRF (WRRF?) Water Resource Recovery Facility	new sewer plant in the north end of Okaloosa County, where growth it set to occur; housing is a big need of Eglin AFB	\$17M (\$13M already funded)	DIG, DRG, DCIP	High	CIP
Choctawhatchee Bay (Eglin, Hurlburt)	Okaloosa County Water and Sewer	Backup Generators	40 lift stations have been identified for possible stand-by generators. Each lift station would have a natural gas stationary generator, a diesel fuel stationary generator, or a trailer-mounted generator staged on-site.	\$2.5M	COVID State/Local Recovery Fund, Resilient Florida	Medium	OCWS
Choctawhatchee Bay (Eglin, Hurlburt)	Okaloosa County W&S	Bypass Pumps	5 additional portable bypass pumps and 2 large stationary bypass pumps	\$1.5M	COVID State/Local Recovery, Local Budget	Low	OCWS
Choctawhatchee Bay (Eglin, Hurlburt)	Walton County	Construct New Fire Station	Proposed construction of a new fire station to enable wildland firefighting and faster deployment of Emergency Medical Services	\$3.5M	DCIP	High	EFI/OLDCC

Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
Choctawhatchee Bay (Eglin, Hurlburt)	City of Destin	Undergrounding of Utilities (CIP)	Opinion of Probable Cost has identified 7 phases each costing around 13M to do the entire city. Phase 1 is along HW98 from Marler Bridge to Airport Road (FDOT designated SIS). A Binding Cost Estimate from FPL has been requested. We are exploring funding sources at this time. Franchise fees will support the majority of Phase 1 funding	\$1.4M	BRIC, HMGP, Resilient Florida, Local Funding	Medium	CIP
<b>Orlando (NSA Orlando)</b>							
Orlando (NSA Orlando)	Orlando	Hydrology Study	Cross-jurisdictional hydrology study for NUWC Okahumpka		DRG, FDSTF	High	CPLO
Orlando (NSA Orlando)	Orlando	NSA Orlando Military Installation Resiliency Plan (MIRP)	Conduct MIRP for area near and around NSA Orlando		OLDCC MIRP, DRG	High	CPLO
<b>Pensacola Area (Pensacola, Corry, Saufley, Whiting)</b>							
Pensacola Area (Pensacola, Corry, Saufley, Whiting)	NAS Pensacola	NAS Pensacola 115KV Resiliency Substation	This project will construct an electrical distribution substation, provide a new switchgear and connect new feeders.	\$17.9M		High	CPLO
Pensacola Area (Pensacola, Corry, Saufley, Whiting)	NAS Pensacola	Pensacola Bay Living Shoreline Project	Project includes the creation of approximately 20,000 linear feet of emergent and submerged reef breakwaters and 200 acres of emergent marsh and submerged aquatic vegetation habitat. Site A: White Island, Site B: Naval Air Station Pensacola Eastern Shore, and Site C: Sherman Inlet at NAS	\$592,000 (Fully Funded, 100% Design Complete)		High	CPLO



Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
			Pensacola. This is a FDOT designated SIS.				
Pensacola Area (Pensacola, Corry, Saufley, Whiting)	NAS Pensacola	Pensacola Pass Dredging	USACE performing dredging of Pensacola Pass entrance channel and redistributing sand to eroded beached on Perdido Key. Dredging operations were scheduled for completion by 1 May 2022. Designated as FDOT SIS MAF waterway.		NOAA	Medium	EFI
Pensacola Area (Pensacola, Corry, Saufley, Whiting)	NAS Whiting Field	Communications - Frequency management Study	Detailed study of a growing and identified need to advance technology throughout Santa Rosa County's populated and rural-growth areas; advancing opportunities to expand and grow 5G coverage.	\$125K	DRG, FDSTF	Medium	CPLO
Pensacola Area (Pensacola, Corry, Saufley, Whiting)	NAS Whiting Field	Potable Water Connection	NASWF has "single-point" failure with no potable water to the installation. Installation is noted for its premiere efforts in water quality and processes using three on-base wells and purification methods. As with any product/service/instrument – redundancy/flexibility in resources would enable uninterrupted or potential impacts on mission support and personnel.		DCIP	High	CPLO

Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
Pensacola Area (Pensacola, Corry, Saufley, Whiting)	NAS Whiting Field	Climate Study	The focus of such a survey/data collection effort would serve to incorporate a scorecard, SWOT analysis, and planned alternatives in a “one-source” document. Effort would pinpoint challenges: (1) mission loss on the coastline, (2) greenspace capabilities/flexibility on installations, (3) community-military partnering projects that enhance/promote long-term mission capabilities/enhancements, (4) identify wildlife corridors that might migrate due to environmental changes, (5) transportation strategies to address current/future infrastructure loss/growth footprints, etc.		DRG, Military Installation Sustainability program	High	CPLO
Pensacola Area (Pensacola, Corry, Saufley, Whiting)	NAS Whiting Field	Hazard Mitigation Plans	Due to age, fiscal challenges and historic rain fall over the last several years, there has been noted degradation in our storm water system – increasing water run off risks and mitigations		BRIC, DRG, DCIP, FEMA	High	CPLO
Pensacola Area (Pensacola, Corry, Saufley, Whiting)	NAS Whiting Field	Incompatible Development/Urban Sprawl	This project will promote the purchase of restrictive-use easements over critical mission footprints and safeguard against mission impacts in perpetuity.		DIG, DRG, FDSTF, Florida Forever, USFW, Forest Legacy, Longleaf, USDA, Acres for America and REPI	High	CPLO
<b>Space Coast (Cape Canaveral, Patrick)</b>							



Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
Space Coast (Cape Canaveral, Patrick)	Space Coast TPO	Cape Canaveral Spaceport ITS (TPO)	Implement ITS technologies along corridor, Message signs; traffic signal coordination from Indian Rv. Bridge to Space Commerce Way	\$6.3M	FHA Surface Transportation	Low	TPO
Space Coast (Cape Canaveral, Patrick)	Space Coast TPO	SR 528 (both projects) (TPO)	Widen 4 to 6 lanes, includes separate trail on north side - E of SR 3 to SR 401 (Port)/E of Industry Road to SR 3	\$278M/\$200M	FHA Surface Transportation	Low	TPO
Space Coast (Cape Canaveral, Patrick)	Space Coast TPO	SR 401 (TPO) (Design)	Bridge replacement at SR 401 Interchange to Cape Canaveral Air Force Station	\$2.1M	DIG, DRG, DCIP, Resilient Florida, FHA Surface Transportation	High	TPO
Space Coast (Cape Canaveral, Patrick)	Space Coast TPO	SR 520 Causeway Vulnerability Analysis (TPO)	Identify improvements needed to make corridor resilient and able to sustain impacts of shocks and stressors	\$500K	Resilient Florida, Local Budget	Medium	TPO
Space Coast (Cape Canaveral, Patrick)	Space Coast TPO	Traffic Management Center (TPO)	Control Center - Staffing to manage ITS; Signals	\$14M (\$11,251,940 Funded)	FHA Surface Transportation	Low	TPO
Space Coast (Cape Canaveral, Patrick)	Space Coast TPO	Transportation Resiliency Master Plan	Transportation Resiliency Master Plan		DRG, Resilient Florida	Medium	TPO
Space Coast (Cape Canaveral, Patrick)	Space Coast TPO	ITS Master Plan Implementation	This master plan formulates a strategy for the development and maintenance of Brevard County's ITS network; incorporate various methodologies in conformance with national, statewide, and regional architecture, and aid in the formation of a sound basis for design, plans, specifications,			Low	TPO

Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
			estimates, operations and maintenance to phase implementation for the potential ITS projects.				
Space Coast (Cape Canaveral, Patrick)	Space Coast TPO	Pineda Causeway - from Wickham to A1A	Not yet on TPO priority list. This is a FDOT designated SIS MAF.		FHA Surface Transportation	Low	TPO
Space Coast (Cape Canaveral, Patrick)	Space Coast TPO	A1A north of Pineda to George King	Not yet on TPO priority list		FHA Surface Transportation	Low	TPO
Space Coast (Cape Canaveral, Patrick)	Space Coast TPO	520 from South Banana River drive to A1A – Fiber project	Not yet on TPO priority list			Low	TPO
Space Coast (Cape Canaveral, Patrick)	Space Coast TPO	Ellis Road	Widening of I-95/John Rodes to Wickham from 2 to 4 lanes (FDOT Designated SIS Strategic Growth Connector)	\$19,343,894	FHA Surface Transportation	Low	TPO
Space Coast (Cape Canaveral, Patrick)	Brevard County	Construct New EOC	New Brevard County EOC and PSAP Center	\$14,404,729	BRIC, DIG, DRG, State Homeland Security Program, HMGP, Jurisdiction Annual Budget, Resilient Florida	High	Local Mitigation Strategy
Space Coast (Cape Canaveral, Patrick)	Brevard County	LMS Coordinator Position	Create LMS Coordinator	\$68,400	Pre-Disaster Mitigation, State Homeland Security Program, Jurisdiction Annual Budget	High	Local Mitigation Strategy



Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
Space Coast (Cape Canaveral, Patrick)	Brevard County	Emergency Communications	Emergency Communication Improvements	\$2,000,000	DIG, DRG, DCIP, HMGP, FDSTF, CISA, SAFECOM	High	Local Mitigation Strategy
Space Coast (Cape Canaveral, Patrick)	Brevard County	Flood Mitigation	Flood hazard mitigation -north Merritt Island	\$4,700,000	DIG, DRG, DCIP, SWU, HMGP, Resilient Florida	High	Local Mitigation Strategy
Space Coast (Cape Canaveral, Patrick)	Brevard County	Backup Generator	County 911 Communications Generator	\$100,000	BRIC, DIG, DRG, HMGP, Jurisdiction Budget, Resilient Florida	Medium	Local Mitigation Strategy
Space Coast (Cape Canaveral, Patrick)	Cape Canaveral	Stormwater Infrastructure	Cape Canaveral stormwater upgrade	\$6,000,000	DIG, DRG, HMGP, Jurisdiction Annual Budget	High	Local Mitigation Strategy
Space Coast (Cape Canaveral, Patrick)	Cape Canaveral	Backup Generator	Cape Canaveral Lift Station Generators	\$400,000	DIG, DRG, HMGP, Jurisdiction Annual Budget, Resilient Florida	High	Local Mitigation Strategy
Space Coast (Cape Canaveral, Patrick)	Port Canaveral	Backup Generator	Port Canaveral Generator for Bulk Fuel Shipments	\$203,660	HMGP, Jurisdiction Annual Budget, FEMA Port Security	Medium	Local Mitigation Strategy
Space Coast (Cape Canaveral, Patrick)	Port Canaveral	Infrastructure Hardening	Port Canaveral Infrastructure Hardening/Burying – Utility Poles	\$3,000,000	BRIC, HMGP, Jurisdiction Annual Budget, Resilient Florida	Medium	Local Mitigation Strategy
Space Coast (Cape Canaveral, Patrick)	Satellite Beach	Vulnerability Study	Eng. study -Building Wind Vulnerability	\$20,000	Jurisdiction Annual Budget, Resilient Florida	Low	Local Mitigation Strategy
Space Coast (Cape Canaveral, Patrick)	Satellite Beach	Backup Generator	Fire Station Hardening & Generator	\$162,185	BRIC, HMGP, Jurisdiction Annual Budget, Resilient Florida	Medium	Local Mitigation Strategy

Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
Space Coast (Cape Canaveral, Patrick)	Satellite Beach	Backup Generator	Police Station Hardening & Generator	\$794,385	BRIC, HMGP, Jurisdiction Annual Budget, Resilient Florida	Medium	Local Mitigation Strategy
Space Coast (Cape Canaveral, Patrick)	Satellite Beach	Backup Generator	City Hall and Civic Center Hardening & Generator	\$990,730	BRIC, HMGP, Jurisdiction Annual Budget, Resilient Florida	Low	Local Mitigation Strategy
Space Coast (Cape Canaveral, Patrick)	Satellite Beach	Infrastructure Hardening	DRS Community Center Hardening	\$853,450	BRIC, HMGP, Jurisdiction Annual Budget, Resilient Florida	Low	Local Mitigation Strategy
<b>South Florida (Homestead, Key West, SOUTHCOM)</b>							
South Florida (Homestead, Key West, SOUTHCOM)	Doral	Central Water Treatment Plant Haz Mat Storage	The Central District Wastewater Treatment Plant has a sodium hypochlorite solution storage/distro system which needs protected from exposure to hurricanes, tropical storms, sea level rise, storm surge and corrosive environment. A protective building around the storage tanks and pumps should be built promptly to avoid potential chemical leaks which may represent a hazard to the employees and the community.		BRIC, Resilient Florida, Local Budget, CWSRF, WIFA Loan	Low	Local Mitigation Strategy
South Florida (Homestead, Key West, SOUTHCOM)	Doral	Year 1- Stormwater Master Plan (2021)	1 Year Stormwater Improvements Capital Improvement Plan developed after the 2021 Stormwater Master Plan (SWMP) Update. SWMP Update provided a 5 year capital improvement plan for stormwater improvements throughout the City.	\$1,951,251	Local Budget	Medium	Local Mitigation Strategy



Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
South Florida (Homestead, Key West, SOUTHCOM)	Doral	Year 2- Stormwater Master Plan (2021)	2 Year Stormwater Improvements Capital Improvement Plan developed after the 2021 Stormwater Master Plan (SWMP) Update. SWMP Update provided a 5 year capital improvement plan for stormwater improvements throughout the City.	\$2,015,681	Local Budget	Medium	Local Mitigation Strategy
South Florida (Homestead, Key West, SOUTHCOM)	Doral	Year 3- Stormwater Master Plan (2021)	3 Year Stormwater Improvements Capital Improvement Plan developed after the 2021 Stormwater Master Plan (SWMP) Update. SWMP Update provided a 5 year capital improvement plan for stormwater improvements throughout the City.	\$2,345,582	Local Budget	Medium	Local Mitigation Strategy
South Florida (Homestead, Key West, SOUTHCOM)	Doral	Year 4- Stormwater Master Plan (2021)	4 Year Stormwater Improvements Capital Improvement Plan developed after the 2021 Stormwater Master Plan (SWMP) Update. SWMP Update provided a 5 year capital improvement plan for stormwater improvements throughout the City.	\$2,138,597	Local Budget	Low	Local Mitigation Strategy

Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
South Florida (Homestead, Key West, SOUTHCOM)	Doral	Year 5- Stormwater Master Plan (2021)	5 Year Stormwater Improvements Capital Improvement Plan developed after the 2021 Stormwater Master Plan (SWMP) Update. SWMP Update provided a 5 year capital improvement plan for stormwater improvements throughout the City.	\$2,347,477	Local Budget	Low	Local Mitigation Strategy
South Florida (Homestead, Key West, SOUTHCOM)	Homestead	Promote mitigation measures for critical facilities	Enhancing and Hardening of Current Back-Up Power Generation for City Hall. The City of Homesteads Government Center or City hall is a 83,841-SF, 3-story structure designed and built to withstand up to a Category 5 hurricane. It consists of a Council Chambers with an occupancy for over 250 people, Divisional Emergency Operations Center	\$129,000	DIG, DRG, HMGP, Resilient Florida, Local Budget, CDBG	High	Local Mitigation Strategy
South Florida (Homestead, Key West, SOUTHCOM)	Homestead	Emergency Generator and Switchgear Replacement at Homestead Airport	The scope of this project is to remove the existing four (4) emergency generators and switchgears and the replacement of the same with the proper sized based on current demand of existing loads and desire capacity for future growth. This project is a turn-key project which includes all phases of the project: Engineering, Design, Permitting, removal of the existing	\$3,200,000	Resilient Florida, Local Budget	Low	Local Mitigation Strategy



Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
			generators and switchgear, construction and installation of the four new generators and switchgear of various sizes at various locations within the Homestead General Aviation Airport (HGA)				
South Florida (Homestead, Key West, SOUTHCOM)	Miami-Dade	Promote mitigation measures for critical facilities	The project involves the actual hardening of the roof and structure to meet regulatory requirements and withstand category four or five hurricanes for facilities which maintain rescue engines, trucks and equipment, valuable personnel and computers. The average estimated value of the vehicles and equipment at these stations is \$2,000,000.	\$1,020,000	BRIC, HMGP, Resilient Florida, Local Budget	Medium	Local Mitigation Strategy
South Florida (Homestead, Key West, SOUTHCOM)	Miami-Dade	Promote mitigation measures for critical facilities	This project includes addressing the vulnerabilities identified through the Risk and Resilience Vulnerability Assessment required by the America Water Infrastructure Act of 2018. The projects are developed through applying the RAM-CAP/J100 standard and address manmade and natural threats across the water system including plants, water supply, distribution, and financial and operations and maintenance.		COVID State/Local Recovery, HMGP, Resilient Florida, Local Budget, DHS, CWSRF	Medium	Local Mitigation Strategy

Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
South Florida (Homestead, Key West, SOUTHCOM)	Miami-Dade	Promote mitigation measures for critical facilities.	The countywide energy resilience project involves the replacement of 50-year old diesel back-up generators at Miami-Dade Fire Rescue Headquarters with a solar microgrid system. The solar microgrid will be supported by the installation of two dual fuel (natural gas and liquid propane) generators to provide additional energy source redundancy. Maintaining power countywide services at MDRF Headquarters is critical because it also houses Miami-Dade County's Emergency Operations Center (EOC), 911 Fire Dispatch Center, and the South Florida Fusion Center.	\$16,340,000	HMGP, BRIC, Resilient Florida	Medium	Local Mitigation Strategy
South Florida (Homestead, Key West, SOUTHCOM)	Miami-Dade	Reduce Miami-Dade's vulnerability to natural and man-made hazards	The proposed mitigation strategies to address flood vulnerabilities at the selected basins, by hardening S27 coastal structure, maintaining basin discharge levels while sea levels rise, and increasing basin storage, constitute valuable strategies to address critical C&SF Project stressors and vulnerabilities. These will enable SFMWMD, in partnership with Miami Dade County, to further pursue its mission to safeguard and restore South Florida's	\$69,000,000	BRIC, HMGP, NOAA	Medium	Local Mitigation Strategy



Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
			water resources and ecosystems, protect our communities from flooding, and meet the region's water needs while connecting with the public and stakeholders.				
South Florida (Homestead, Key West, SOUTHCOM)	Miami-Dade	Miami-Dade County Hurricane Safe Harbors for Water Plant Operators	This funding will support the construction of safe harbor facilities for water plant operators during extreme weather events. Modifications will be made at each of the three water plants to accommodate operators safe passage to key locations required for continuity of operations such as the generator, electrical switchgear and high service pump rooms.	\$4,500,000	Resilient Florida, Local Budget	Low	Local Mitigation Strategy
South Florida (Homestead, Key West, SOUTHCOM)	Miami-Dade	Cutler Pit Land Acquisition Project: Nature-based Adaptation Approaching using Buffer Lands Acquired in South MDC to Reduce Risks of Storm Surge and Sea Level Rise	This project would help implement the County's Sea Level Rise Strategy by acquiring additional buffer lands between Biscayne Bay & developed areas upland. This project would acquire 500+ acres of wetlands & a waterbody from a willing seller. This would buffer critical assets from surge, provide flood mitigation via water storage, reduce further	\$600,000	NOAA	Medium	Local Mitigation Strategy

Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
			development in the Coastal High Hazard Area, and enhance habitat for endangered species. The property is adjacent to MDC, State & Federal lands.				
South Florida (Homestead, Key West, SOUTHCOM)	NAS Key West	Communications Infrastructure Resiliency Study (Matrix Recommended Project)	Frequent outages cause heavy reliance on radio communications and hardline. Having a reliable emergency system will be life-saving in locating stranded individuals, proving directions on where to go etc. Stakeholders: AT&T, Comcast, NMCI.	TBD	DRG, FDSTF	High	CPLO
South Florida (Homestead, Key West, SOUTHCOM)	NAS Key West	Transportation Resiliency Study (Matrix Recommended Project)	One way in, one way out via US-1. Loss of a bridge would turn any rescue/recovery effort into an aerial or sea mission.	TBD	DRG, FDSTF	High	CPLO
South Florida (Homestead, Key West, SOUTHCOM)	NAS Key West	Bulk Diesel Storage Upgrades (Matrix recommended project)	Limiting factor of emergency backup power on NAS Key West is availability of Ultra-Low Sulfur Diesel. Increasing permanent storage facility capacity may relieve this.	TBD	DIG, DRG, DCIP	High	CPLO
South Florida (Homestead, Key West, SOUTHCOM)	Monroe County	Hazard Mitigation Plans	Joint strategy to lessen the impact of damage from severe storms and sea level rise, which pose a serious threat to the installation. A strategy for phasing out portions of the installation and ordering certain operations/annexes for large		DRG, NOAA	High	Local Mitigation Strategy



Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
			scale engineering projects must be prioritized.				
South Florida (Homestead, Key West, SOUTHCOM)	Monroe County	EOC Enhancements	Saferoom enhancements for County EOC in conjunction with design and construction of new facility. The current facility is shared with the County Commission, which is not sustainable during emergencies.	\$10M (In Progress?)	BRIC, DIG, DRG, Resilient Florida, FEMA, NOAA	High	Local Mitigation Strategy
South Florida (Homestead, Key West, SOUTHCOM)	Monroe County	Critical Facility Generators	County-Wide Emergency Back-Up Power Enhancement for Critical Facilities	\$200K	BRIC, DIG, DRG, HMGP, Resilient Florida, FEMA, CDBG	Medium	Local Mitigation Strategy
<b>Tampa (MacDill)</b>							
Tampa (MacDill)	St. Pete Beach	2022 Florida State Budget Unfunded Item	St. Pete Beach Coastal Resiliency- Community Center Shoreline Rehabilitation	\$1.65M	EMPG, HMGP, BRIC, FMA	Medium	2022 Florida State Budget
Tampa (MacDill)	Tampa	Private Sector Coordination	Private Sector Coordination: Strengthened through County OEM/Hazard Mitigation Sections. Ensure reps from MacDill AFB, Port of Tampa, Westshore Business Alliance, Tampa Downtown Partnership, Greater Tampa Chamber of Commerce, Ybor City Chamber, come together to cooperate.		DRG, FDSTF, County Funds	High	Local Mitigation Strategy
Tampa (MacDill)	Tampa	Community Resiliency Strategy	Use existing tools and create new data to evaluate the vulnerability, impacts and economic costs of sea level rise for the Tampa Bay area under different sea level rise		DRG, FEMA, NOAA, FHWA	High	Local Mitigation Strategy

Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
			scenarios, as well as to provide adaptation options for the region.				
Tampa (MacDill)	Tampa	Spatial-Temporal Econometric Model to costs and Benefits of Adaptation Strategies	Use existing NOAA tool to evaluate the vulnerability, impacts and economic costs of sea level rise for the Tampa Bay area under different sea level rise scenarios, as well as to provide adaptation options for the region.	\$300,000	Florida Sea Grant, NOAA	High	Local Mitigation Strategy
Tampa (MacDill)	Tampa	Storm surge Chemical Contamination Study	Utilize Phase I Study of impacts from storm surge event; determine mitigation measures for structures and impacts to persons and the environment.	\$120,000	OHS Issue Grants, NOAA	Low	Local Mitigation Strategy
Tampa (MacDill)	Tampa	MacDill Gate Access Improvement	Alleviate ongoing issues and approve accessibility/turn around capabilities for MacDill AFB.			Medium	EFI
Tampa (MacDill)	Tampa	Cross Bay Shuttle System/Ferry	Year Round capable vessel for cross bay travel. Federal Transit Administration grant gave \$4.9M out of required \$6.1M conceptual vessel. The goal is to increase annual capacity from 115,000 passengers to 750,000. HMS intends to ramp up bus service to MacDill Air Force Base once it's connected with South Hillsborough County via the ferry. Land has been donated but a South County		DIG, DRG, FDSTF	Medium	EFI



Project Area	Project Location	Project Name	Project Description	Estimated Cost (In-Progress)	Potential Funding Source (In-Progress)	Resiliency Impact Correlation (In-Progress)	Project Source
			Terminal must be constructed prior to shuttle service. Rep Castor requested \$1.5M from FY 2023 NDAA for floating terminal at MacDill.				
Tampa (MacDill)	Tampa	Tampa Hillsborough Expressway Authority (THEA) Discount Program	Continue to improve accessibility to MacDill through improvements in the toll reduction program		DIG	Low	EFI
Tampa (MacDill)	Tampa	MacDill 48 Park Pond	MacDill 48 Park maximize flooding relief/enhance water quality in the Lower Peninsula Southeast Watershed. A survey team is working in the project area to collect data that will be used in the project design. Design began in July 2020 and will take 18 months to complete. Construction/installation of the stormwater drainage conveyance system is expected to begin fall 2022.			Medium	EFI

## Appendix C

# FDC Community Vulnerability Assessment

## FEMA National Risk Index Hazard Summary

County	FEMA National Risk Index Hazard																	
	Avalanche	Coastal Flooding	Cold Wave	Drought	Earthquake	Hail	Heat Wave	Hurricane	Ice Storm	Landslide	Lightning	Riverine Flooding	Strong Wind	Tornado	Tsunami	Volcanic Activity	Wildfire	Winter Weather
<b>Bay County:</b> (NSA Panama City, Tyndall)																		
Bay	N/A	Relatively Low	NR	Very Low	Very Low	Relatively Low	Relatively Low	Relatively High	N/A	Very Low	Relatively High	Relatively High	Relatively Low	Relatively High	N/A	N/A	Relatively Low	Relatively Low
<b>Central Florida:</b> (Avon Park)																		
Highlands	N/A	N/A	Very High	Relatively High	Very Low	Relatively Low	NR	Very High	N/A	Relatively Low	Relatively High	Relatively High	Relatively High	Relatively High	N/A	N/A	Relatively High	NR
Polk	N/A	N/A	Very High	Relatively High	Relatively Low	Relatively Low	NR	Relatively High	N/A	Relatively Low	Very High	Relatively High	Relatively High	Relatively High	N/A	N/A	Relatively High	NR
<b>Clay County:</b> (Camp Blanding)																		
Clay	N/A	Relatively Low	Relatively Low	Very Low	Very Low	Very Low	NR	Relatively Moderate	N/A	Very Low	Relatively Low	Relatively Low	Very Low	Relatively Moderate	N/A	N/A	Relatively Low	NR
<b>Jacksonville:</b> (Blount, Jacksonville, Mayport)																		
Duval	N/A	Relatively Moderate	Relatively Low	Very Low	Relatively Low	Very Low	NR	Relatively Low	Very Low	Very Low	Relatively High	Relatively High	Relatively Low	Relatively High	Insufficient Data	N/A	Relatively Moderate	NR
<b>Choctawhatchee Bay:</b> (Eglin, Hurlburt)																		
Okaloosa	N/A	Relatively Low	NR	Relatively Low	Very Low	Very Low	Relatively Low	Relatively Moderate	Very Low	Very Low	Relatively High	Relatively Low	Relatively Low	Relatively High	N/A	N/A	Relatively Low	Relatively Low
Santa Rosa	N/A	Relatively Low	NR	Relatively Low	Very Low	Very Low	Relatively Low	Relatively Low	Very Low	Very Low	Relatively Moderate	Relatively Low	Very Low	Relatively Moderate	N/A	N/A	Relatively Low	Very Low
Walton	N/A	Relatively Low	NR	Relatively Moderate	Very Low	Very Low	Relatively Low	Relatively Moderate	Very Low	Relatively Low	Relatively High	Relatively Moderate	Relatively Low	Relatively High	N/A	N/A	Relatively Low	Relatively Low
<b>Orlando:</b> (NSA Orlando)																		
Orange	N/A	Very Low	Very High	Relatively High	Relatively Low	Very Low	NR	Relatively Moderate	N/A	Relatively Low	Very High	Relatively Moderate	Relatively High	Very High	N/A	N/A	Relatively High	NR
Seminole	N/A	Very Low	Very High	Relatively Low	Very Low	Very Low	NR	Relatively High	N/A	Very Low	Relatively Moderate	Very Low	Relatively High	Relatively High	N/A	N/A	Relatively Moderate	NR
<b>Pensacola Area:</b> (Pensacola, Corry, Saufley, Whiting)																		
Escambia	N/A	Relatively Low	NR	Relatively Low	Relatively Low	Relatively Low	Relatively Moderate	Relatively High	Very Low	Relatively Low	Relatively High	Relatively High	Relatively Low	Relatively Moderate	N/A	N/A	Relatively Moderate	Relatively Moderate
Santa Rosa	N/A	Relatively Low	NR	Relatively Low	Very Low	Very Low	Relatively Low	Relatively Low	Very Low	Very Low	Relatively Moderate	Relatively Low	Very Low	Relatively Moderate	N/A	N/A	Relatively Low	Very Low
<b>Space Coast:</b> (Cape Canaveral, Patrick)																		
Brevard	N/A	Relatively High	Very High	Relatively Moderate	Relatively Low	Very Low	NR	Relatively High	N/A	Very Low	Relatively High	Relatively High	Relatively Moderate	Relatively High	Insufficient Data	N/A	Relatively High	NR
<b>South Florida:</b> (Homestead, Key West, SOUTHCOM)																		
Miami-Dade	N/A	Very High	Very High	Relatively High	Relatively Low	Relatively Low	NR	Very High	N/A	Relatively Low	Very High	Very High	Relatively Moderate	Very High	N/A	N/A	Relatively High	NR
Monroe	N/A	Relatively Moderate	Very Low	NR	Very Low	Very Low	NR	Relatively High	N/A	Very Low	Relatively Low	Relatively Moderate	Very Low	Relatively Low	N/A	N/A	Very Low	NR
<b>Tampa:</b> (MacDill)																		
Hillsborough	N/A	Relatively Moderate	Very High	Relatively High	Relatively Low	Relatively Low	NR	Relatively Moderate	N/A	Very Low	Very High	Relatively Moderate	Relatively Low	Very High	N/A	N/A	Relatively Moderate	NR

**Risk Index Legend**

■ Very High  
 ■ Relatively High  
 ■ Relatively Moderate  
 ■ Relatively Low  
 ■ Very Low

  No Rating  
   Not Applicable  
   Insufficient Data

National Risk Index Data CAO: Jul 26, 2022

## 2018 Florida ESHMP Hazard Summary

County	Florida Enhanced State Hazard Mitigation Program Hazard																	
	Flood	Dam Failure	Hurricane/Tropical Storm	Tornado	Severe Storm	Wildfire	Drought	Extreme Heat	Winter Storm	Freeze	Erosion	Sinkholes	Landslides	Seismic Events	Terrorism	Technological Incidents	Mass Migration	
<b>Bay County:</b> (NSA Panama City, Tyndall)																		
Bay	High	-	High	High	-	Med	-	-	-	-	-	-	Low	-	-	-	-	
<b>Central Florida:</b> (Avon Park)																		
Highlands	High	Low	High	-	High	High	High	High	Med	Med	-	Low	Low	-	Low	High	-	
Polk	High	Low	Med High	High	High	High	Med High	Med	-	High	-	High	-	-	-	Med	-	
<b>Clay County:</b> (Camp Blanding)																		
Clay	High	-	Med	Med	High	High	Med	Med	Med	Med	-	Med	-	Low	Low	Med	-	
<b>Jacksonville:</b> (Blount, Jacksonville, Mayport)																		
Duval	High	-	High	Low	High	High	Low	Low	-	Low	-	-	-	-	Low	Low	Low	
<b>Choctawhatchee Bay:</b> (Eglin, Hurlburt)																		
Okaloosa	Med High	Med	Med	Med High	Med High	High	High	Med	-	Low	-	Low	-	-	-	-	-	
Santa Rosa	High	-	High	High	High	High	Med	Med	Med High	Med High	High	-	-	-	-	-	-	
Walton	High	-	High	High	High	Med	Low	Low	Low	Low	High	Low	-	-	Low	Med	-	
<b>Orlando:</b> (NSA Orlando)																		
Orange	High	-	High	High	High	High	High	High	Med	Med	-	High	-	-	Med	High	-	
Seminole	High	-	High	High	Med High	Med High	High	Med High	Low	Low	-	Med	-	Low	Med	High	Low	
<b>Pensacola Area:</b> (Pensacola, Corry, Saufley, Whiting)																		
Escambia	High	Low	High	Med High	High	Med	Med	-	-	Low	Low	Low	Low	Low	Low	Low	Low	
Santa Rosa	High	-	High	High	High	High	Med	Med	Med High	Med High	High	-	-	-	-	-	-	
<b>Space Coast:</b> (Cape Canaveral, Patrick)																		
Brevard	High	Low	High	High	High	Med High	Med	Low	Low	-	Med High	-	-	Low	Low	Med	-	
<b>South Florida:</b> (Homestead, Key West, SOUTHCOM)																		
Miami-Dade	High	-	High	High	High	Low	Med	-	Med	-	Med	-	-	-	-	-	-	
Monroe	High	-	Med High	High	High	Med High	Low	Low	-	Low	High	-	-	-	-	-	-	
<b>Tampa:</b> (MacDill)																		
Hillsborough	High	Med	Med High	High	High	High	Low	Low	Low	Low	Low	Low	Med	-	-	Low	Med	Low

Ranking Level	Code	Description
High Hazard Ranking	H	One or more occurrences each year
Medium/High Hazard Ranking	MH	One occurrence every 3 years
Medium Hazard Ranking	M	One occurrence every 5 – 7 years
Low Hazard Ranking	L	One occurrence every 10 years
Not Identified	-	-

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## **Appendix D**

# **FEMA National Risk Index Report**

# National Risk Index



September 23, 2022

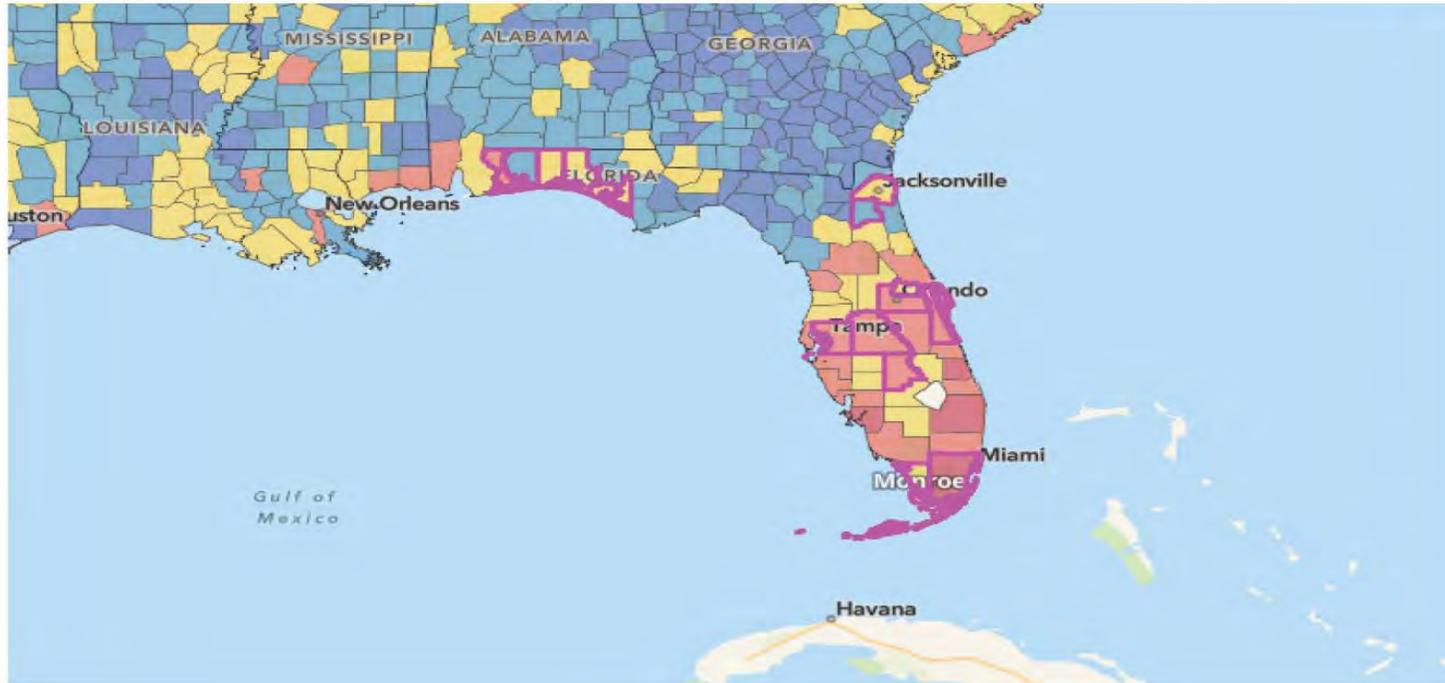
## Risk Comparison Report

Use this report to determine how risk factors in selected communities compare to each other. Click a community name in any table below to open an individual risk profile report for that community and review its risk factors in more detail.

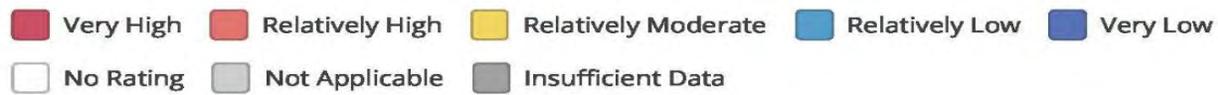
**While reviewing this report, keep in mind that low risk is driven by lower loss due to natural hazards, lower social vulnerability, and higher community resilience.**

For more information about the National Risk Index, its data, and how to interpret the information it provides, please review the **About the National Risk Index** and **How to Take Action** sections at the end of this report. Or, visit the National Risk Index website at [hazards.fema.gov/nri/learn-more](https://hazards.fema.gov/nri/learn-more) to access supporting documentation and links.

## Risk Index



### Risk Index Legend



Rank	Community	State	Rating	Score			
1	Miami-Dade County	FL	Very High	63.93	0		100
2	Highlands County	FL	Relatively High	33.37	0		100
3	Brevard County	FL	Relatively High	30.22	0		100
4	Polk County	FL	Relatively High	28.92	0		100
5	Orange County	FL	Relatively High	27.71	0		100
6	Escambia County	FL	Relatively High	27.16	0		100
7	Hillsborough County	FL	Relatively High	26.18	0		100
8	Bay County	FL	Relatively Moderate	22.61	0		100
9	Duval County	FL	Relatively Moderate	21.16	0		100
10	Seminole County	FL	Relatively Moderate	20.26	0		100
11	Monroe County	FL	Relatively Moderate	17.53	0		100
12	Walton County	FL	Relatively Moderate	14.37	0		100
13	Okaloosa County	FL	Relatively Moderate	13.61	0		100
14	Clay County	FL	Relatively Low	11.54	0		100
15	Santa Rosa County	FL	Relatively Low	9.21	0		100

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## Hazard Type Risk Index

Hazard type Risk Index scores are calculated using data for only a single hazard type, and reflect a community's relative risk for only that hazard type.

## Avalanche

Rank	Community	State	Rating	Score
	Bay County	FL	Not Applicable	--
	Brevard County	FL	Not Applicable	--
	Clay County	FL	Not Applicable	--
	Duval County	FL	Not Applicable	--
	Escambia County	FL	Not Applicable	--
	Highlands County	FL	Not Applicable	--
	Hillsborough County	FL	Not Applicable	--
	Miami-Dade County	FL	Not Applicable	--
	Monroe County	FL	Not Applicable	--
	Okaloosa County	FL	Not Applicable	--
	Orange County	FL	Not Applicable	--
	Polk County	FL	Not Applicable	--
	Santa Rosa County	FL	Not Applicable	--
	Seminole County	FL	Not Applicable	--
	Walton County	FL	Not Applicable	--

## Coastal Flooding

Rank	Community	State	Rating	Score	
1	Miami-Dade County	FL	Very High	94.01	0      100
2	Brevard County	FL	Relatively High	40.81	0      100
3	Monroe County	FL	Relatively Moderate	33.42	0      100
4	Duval County	FL	Relatively Moderate	31.56	0      100
5	Hillsborough County	FL	Relatively Moderate	25.19	0      100
6	Clay County	FL	Relatively Low	13.93	0      100
7	Bay County	FL	Relatively Low	13.51	0      100
8	Escambia County	FL	Relatively Low	12.29	0      100
9	Walton County	FL	Relatively Low	11.42	0      100
10	Okaloosa County	FL	Relatively Low	10.34	0      100
11	Santa Rosa County	FL	Relatively Low	7.07	0      100
12	Orange County	FL	Very Low	2.24	0      100
13	Seminole County	FL	Very Low	1.95	0      100
	Highlands County	FL	Not Applicable	--	
	Polk County	FL	Not Applicable	--	

### Cold Wave

Rank	Community	State	Rating	Score	0	100
1	Orange County	FL	Very High	92.20		100
2	Brevard County	FL	Very High	71.20		100
3	Hillsborough County	FL	Very High	68.45		100
4	Polk County	FL	Very High	67.36		100
5	Highlands County	FL	Very High	65.69		100
6	Miami-Dade County	FL	Very High	64.58		100
7	Seminole County	FL	Very High	50.22		100
8	Duval County	FL	Relatively Low	16.31		100
9	Clay County	FL	Relatively Low	9.14		100
10	Monroe County	FL	Very Low	4.60		100
	Bay County	FL	No Rating	0.00		100
	Escambia County	FL	No Rating	0.00		100
	Okaloosa County	FL	No Rating	0.00		100
	Santa Rosa County	FL	No Rating	0.00		100
	Walton County	FL	No Rating	0.00		100

## Drought

Rank	Community	State	Rating	Score		
1	Highlands County	FL	Relatively High	40.52	0	100
2	Miami-Dade County	FL	Relatively High	31.27	0	100
3	Polk County	FL	Relatively High	29.83	0	100
4	Hillsborough County	FL	Relatively High	28.56	0	100
5	Orange County	FL	Relatively High	22.75	0	100
6	Brevard County	FL	Relatively Moderate	15.10	0	100
7	Walton County	FL	Relatively Moderate	13.14	0	100
8	Escambia County	FL	Relatively Low	10.57	0	100
9	Seminole County	FL	Relatively Low	7.87	0	100
10	Santa Rosa County	FL	Relatively Low	7.02	0	100
11	Okaloosa County	FL	Relatively Low	5.81	0	100
12	Bay County	FL	Very Low	4.18	0	100
13	Duval County	FL	Very Low	1.33	0	100
14	Clay County	FL	Very Low	0.83	0	100
	Monroe County	FL	No Rating	0.00	0	100

## Earthquake

Rank	Community	State	Rating	Score			
1	Duval County	FL	Relatively Low	7.66	0		100
2	Miami-Dade County	FL	Relatively Low	6.77	0		100
3	Orange County	FL	Relatively Low	5.69	0		100
4	Hillsborough County	FL	Relatively Low	4.59	0		100
5	Polk County	FL	Relatively Low	4.28	0		100
6	Brevard County	FL	Relatively Low	4.24	0		100
6	Escambia County	FL	Relatively Low	4.24	0		100
8	Bay County	FL	Very Low	3.18	0		100
9	Highlands County	FL	Very Low	3.15	0		100
10	Seminole County	FL	Very Low	3.10	0		100
11	Okaloosa County	FL	Very Low	3.03	0		100
12	Clay County	FL	Very Low	2.91	0		100
13	Walton County	FL	Very Low	2.53	0		100
14	Santa Rosa County	FL	Very Low	1.81	0		100
15	Monroe County	FL	Very Low	0.52	0		100

## Hail

Rank	Community	State	Rating	Score		
1	Hillsborough County	FL	Relatively Low	12.31	0	
2	Polk County	FL	Relatively Low	12.07	0	
3	Miami-Dade County	FL	Relatively Low	10.19	0	
4	Escambia County	FL	Relatively Low	9.23	0	
5	Bay County	FL	Relatively Low	7.69	0	
6	Highlands County	FL	Relatively Low	7.03	0	
7	Walton County	FL	Very Low	6.81	0	
8	Okaloosa County	FL	Very Low	6.38	0	
9	Orange County	FL	Very Low	6.37	0	
10	Santa Rosa County	FL	Very Low	5.54	0	
11	Brevard County	FL	Very Low	4.53	0	
12	Seminole County	FL	Very Low	4.35	0	
13	Clay County	FL	Very Low	3.55	0	
14	Duval County	FL	Very Low	3.47	0	
15	Monroe County	FL	Very Low	0.94	0	

## Heat Wave

Rank	Community	State	Rating	Score			
1	Escambia County	FL	Relatively Moderate	12.73	0		100
2	Okaloosa County	FL	Relatively Low	9.10	0		100
3	Bay County	FL	Relatively Low	7.19	0		100
4	Santa Rosa County	FL	Relatively Low	5.96	0		100
5	Walton County	FL	Relatively Low	4.99	0		100
	Brevard County	FL	No Rating	0.00	0		100
	Clay County	FL	No Rating	0.00	0		100
	Duval County	FL	No Rating	0.00	0		100
	Highlands County	FL	No Rating	0.00	0		100
	Hillsborough County	FL	No Rating	0.00	0		100
	Miami-Dade County	FL	No Rating	0.00	0		100
	Monroe County	FL	No Rating	0.00	0		100
	Orange County	FL	No Rating	0.00	0		100
	Polk County	FL	No Rating	0.00	0		100
	Seminole County	FL	No Rating	0.00	0		100

## Hurricane

Rank	Community	State	Rating	Score		
1	Miami-Dade County	FL	Very High	58.93	0	
2	Highlands County	FL	Very High	48.93	0	
3	Escambia County	FL	Relatively High	41.78	0	
4	Bay County	FL	Relatively High	33.40	0	
5	Brevard County	FL	Relatively High	33.00	0	
6	Seminole County	FL	Relatively High	27.77	0	
7	Polk County	FL	Relatively High	22.64	0	
8	Monroe County	FL	Relatively High	21.30	0	
9	Orange County	FL	Relatively Moderate	21.04	0	
10	Hillsborough County	FL	Relatively Moderate	18.39	0	
11	Walton County	FL	Relatively Moderate	15.89	0	
12	Clay County	FL	Relatively Moderate	15.73	0	
13	Okaloosa County	FL	Relatively Moderate	14.29	0	
14	Santa Rosa County	FL	Relatively Low	9.74	0	
15	Duval County	FL	Relatively Low	9.69	0	

### Ice Storm

Rank	Community	State	Rating	Score
1	Duval County	FL	Very Low	6.77 
2	Escambia County	FL	Very Low	3.88 
3	Okaloosa County	FL	Very Low	2.74 
4	Walton County	FL	Very Low	2.57 
5	Santa Rosa County	FL	Very Low	1.72 
	Bay County	FL	Not Applicable	--
	Brevard County	FL	Not Applicable	--
	Clay County	FL	Not Applicable	--
	Highlands County	FL	Not Applicable	--
	Hillsborough County	FL	Not Applicable	--
	Miami-Dade County	FL	Not Applicable	--
	Monroe County	FL	Not Applicable	--
	Orange County	FL	Not Applicable	--
	Polk County	FL	Not Applicable	--
	Seminole County	FL	Not Applicable	--

## Landslide

Rank	Community	State	Rating	Score		
1	Miami-Dade County	FL	Relatively Low	11.54	0	
2	Walton County	FL	Relatively Low	11.01	0	
3	Polk County	FL	Relatively Low	10.00	0	
4	Highlands County	FL	Relatively Low	9.86	0	
5	Orange County	FL	Relatively Low	9.69	0	
6	Escambia County	FL	Relatively Low	8.35	0	
7	Clay County	FL	Very Low	7.73	0	
8	Seminole County	FL	Very Low	7.01	0	
9	Okaloosa County	FL	Very Low	6.82	0	
10	Duval County	FL	Very Low	6.29	0	
11	Hillsborough County	FL	Very Low	6.26	0	
12	Monroe County	FL	Very Low	4.55	0	
13	Brevard County	FL	Very Low	4.27	0	
14	Santa Rosa County	FL	Very Low	4.11	0	
15	Bay County	FL	Very Low	4.10	0	

## Lightning

Rank	Community	State	Rating	Score	0	100
1	Miami-Dade County	FL	Very High	100.00		100
2	Polk County	FL	Very High	64.42		100
3	Hillsborough County	FL	Very High	58.58		100
4	Orange County	FL	Very High	52.04		100
5	Highlands County	FL	Relatively High	47.65		100
6	Escambia County	FL	Relatively High	45.20		100
7	Brevard County	FL	Relatively High	44.95		100
8	Duval County	FL	Relatively High	40.88		100
9	Bay County	FL	Relatively High	38.22		100
10	Okaloosa County	FL	Relatively High	37.68		100
11	Walton County	FL	Relatively High	30.12		100
12	Seminole County	FL	Relatively Moderate	26.01		100
13	Santa Rosa County	FL	Relatively Moderate	21.99		100
14	Clay County	FL	Relatively Low	13.79		100
15	Monroe County	FL	Relatively Low	13.50		100

## Riverine Flooding

Rank	Community	State	Rating	Score	0	100
1	Miami-Dade County	FL	Very High	77.21		100
2	Polk County	FL	Relatively High	28.77		100
3	Duval County	FL	Relatively High	27.25		100
4	Escambia County	FL	Relatively High	23.54		100
5	Brevard County	FL	Relatively High	21.21		100
6	Highlands County	FL	Relatively High	19.84		100
7	Bay County	FL	Relatively High	19.62		100
8	Walton County	FL	Relatively Moderate	16.41		100
9	Monroe County	FL	Relatively Moderate	15.33		100
10	Orange County	FL	Relatively Moderate	14.89		100
11	Hillsborough County	FL	Relatively Moderate	11.83		100
12	Santa Rosa County	FL	Relatively Low	8.85		100
13	Clay County	FL	Relatively Low	8.19		100
14	Okaloosa County	FL	Relatively Low	8.12		100
15	Seminole County	FL	Very Low	5.11		100

## Strong Wind

Rank	Community	State	Rating	Score	0	100
1	Orange County	FL	Relatively High	40.91		100
2	Polk County	FL	Relatively High	40.69		100
3	Highlands County	FL	Relatively High	27.09		100
4	Seminole County	FL	Relatively High	23.34		100
5	Miami-Dade County	FL	Relatively Moderate	20.21		100
6	Brevard County	FL	Relatively Moderate	19.88		100
7	Duval County	FL	Relatively Low	13.14		100
8	Hillsborough County	FL	Relatively Low	12.79		100
9	Bay County	FL	Relatively Low	11.50		100
10	Okaloosa County	FL	Relatively Low	11.46		100
11	Escambia County	FL	Relatively Low	10.27		100
12	Walton County	FL	Relatively Low	9.05		100
13	Monroe County	FL	Very Low	6.26		100
14	Santa Rosa County	FL	Very Low	5.64		100
15	Clay County	FL	Very Low	4.14		100

## Tornado

Rank	Community	State	Rating	Score	0	100
1	Miami-Dade County	FL	Very High	76.76		100
2	Hillsborough County	FL	Very High	53.96		100
3	Orange County	FL	Very High	50.50		100
4	Highlands County	FL	Relatively High	34.03		100
5	Brevard County	FL	Relatively High	33.87		100
6	Seminole County	FL	Relatively High	33.03		100
7	Polk County	FL	Relatively High	32.03		100
8	Bay County	FL	Relatively High	30.71		100
9	Okaloosa County	FL	Relatively High	28.07		100
10	Duval County	FL	Relatively High	27.88		100
11	Walton County	FL	Relatively High	26.23		100
12	Escambia County	FL	Relatively Moderate	20.84		100
13	Clay County	FL	Relatively Moderate	17.88		100
14	Santa Rosa County	FL	Relatively Moderate	16.89		100
15	Monroe County	FL	Relatively Low	13.31		100

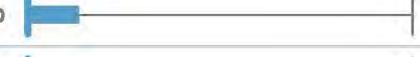
## Tsunami

Rank	Community	State	Rating	Score
	Bay County	FL	Not Applicable	--
	Brevard County	FL	Insufficient Data	--
	Clay County	FL	Not Applicable	--
	Duval County	FL	Insufficient Data	--
	Escambia County	FL	Not Applicable	--
	Highlands County	FL	Not Applicable	--
	Hillsborough County	FL	Not Applicable	--
	Miami-Dade County	FL	Not Applicable	--
	Monroe County	FL	Not Applicable	--
	Okaloosa County	FL	Not Applicable	--
	Orange County	FL	Not Applicable	--
	Polk County	FL	Not Applicable	--
	Santa Rosa County	FL	Not Applicable	--
	Seminole County	FL	Not Applicable	--
	Walton County	FL	Not Applicable	--

## Volcanic Activity

Rank	Community	State	Rating	Score
	Bay County	FL	Not Applicable	--
	Brevard County	FL	Not Applicable	--
	Clay County	FL	Not Applicable	--
	Duval County	FL	Not Applicable	--
	Escambia County	FL	Not Applicable	--
	Highlands County	FL	Not Applicable	--
	Hillsborough County	FL	Not Applicable	--
	Miami-Dade County	FL	Not Applicable	--
	Monroe County	FL	Not Applicable	--
	Okaloosa County	FL	Not Applicable	--
	Orange County	FL	Not Applicable	--
	Polk County	FL	Not Applicable	--
	Santa Rosa County	FL	Not Applicable	--
	Seminole County	FL	Not Applicable	--
	Walton County	FL	Not Applicable	--

## Wildfire

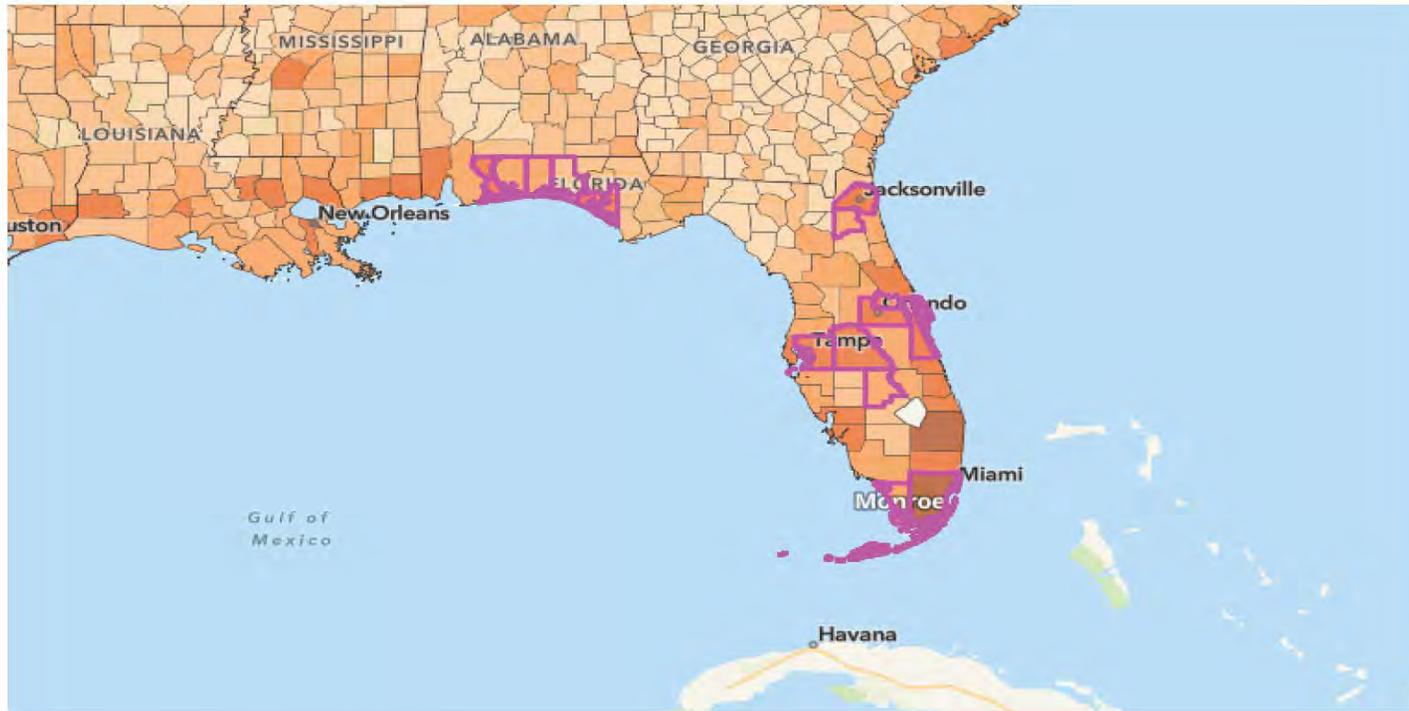
Rank	Community	State	Rating	Score		
1	Miami-Dade County	FL	Relatively High	54.45	0	
2	Brevard County	FL	Relatively High	50.02	0	
3	Polk County	FL	Relatively High	48.54	0	
4	Orange County	FL	Relatively High	40.20	0	
5	Highlands County	FL	Relatively High	37.54	0	
6	Hillsborough County	FL	Relatively Moderate	26.41	0	
7	Seminole County	FL	Relatively Moderate	23.29	0	
8	Duval County	FL	Relatively Moderate	21.55	0	
9	Escambia County	FL	Relatively Moderate	15.24	0	
10	Clay County	FL	Relatively Low	13.93	0	
11	Walton County	FL	Relatively Low	10.83	0	
12	Okaloosa County	FL	Relatively Low	10.75	0	
13	Bay County	FL	Relatively Low	10.53	0	
14	Santa Rosa County	FL	Relatively Low	10.42	0	
15	Monroe County	FL	Very Low	5.19	0	

## Winter Weather

Rank	Community	State	Rating	Score		
1	Escambia County	FL	Relatively Moderate	18.52	0	
2	Okaloosa County	FL	Relatively Low	13.62	0	
3	Bay County	FL	Relatively Low	12.45	0	
4	Walton County	FL	Relatively Low	10.55	0	
5	Santa Rosa County	FL	Very Low	8.59	0	
	Brevard County	FL	No Rating	0.00	0	
	Clay County	FL	No Rating	0.00	0	
	Duval County	FL	No Rating	0.00	0	
	Highlands County	FL	No Rating	0.00	0	
	Hillsborough County	FL	No Rating	0.00	0	
	Miami-Dade County	FL	No Rating	0.00	0	
	Monroe County	FL	No Rating	0.00	0	
	Orange County	FL	No Rating	0.00	0	
	Polk County	FL	No Rating	0.00	0	
	Seminole County	FL	No Rating	0.00	0	

## Expected Annual Loss

Expected Annual Loss measures the expected loss each year due to natural hazards.



Rank	Community	State	Rating	Score			
1	Miami-Dade County	FL	Very High	46.24	0		100
2	Brevard County	FL	Relatively High	33.64	0		100
3	Escambia County	FL	Relatively High	33.37	0		100
4	Hillsborough County	FL	Relatively High	32.40	0		100
5	Orange County	FL	Relatively High	32.06	0		100
6	Seminole County	FL	Relatively High	30.56	0		100
7	Polk County	FL	Relatively High	28.87	0		100
8	Bay County	FL	Relatively High	27.78	0		100
9	Duval County	FL	Relatively High	27.64	0		100
10	Highlands County	FL	Relatively Moderate	22.11	0		100
11	Monroe County	FL	Relatively Moderate	21.41	0		100
12	Clay County	FL	Relatively Moderate	20.29	0		100
13	Santa Rosa County	FL	Relatively Moderate	19.25	0		100
14	Okaloosa County	FL	Relatively Moderate	19.14	0		100
15	Walton County	FL	Relatively Low	15.78	0		100

## Expected Annual Loss for Hazard Types

Expected Annual Loss scores for hazard types are calculated using data for only a single hazard type, and reflect a community's relative expected annual loss for only that hazard type.

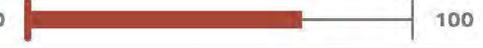
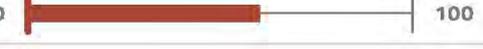
## Avalanche

Rank	Community	State	Rating	Score
	Bay County	FL	Not Applicable	--
	Brevard County	FL	Not Applicable	--
	Clay County	FL	Not Applicable	--
	Duval County	FL	Not Applicable	--
	Escambia County	FL	Not Applicable	--
	Highlands County	FL	Not Applicable	--
	Hillsborough County	FL	Not Applicable	--
	Miami-Dade County	FL	Not Applicable	--
	Monroe County	FL	Not Applicable	--
	Okaloosa County	FL	Not Applicable	--
	Orange County	FL	Not Applicable	--
	Polk County	FL	Not Applicable	--
	Santa Rosa County	FL	Not Applicable	--
	Seminole County	FL	Not Applicable	--
	Walton County	FL	Not Applicable	--

## Coastal Flooding

Rank	Community	State	Rating	Score	
1	Miami-Dade County	FL	Very High	53.45	0  100
2	Brevard County	FL	Relatively High	35.70	0  100
3	Duval County	FL	Relatively High	32.39	0  100
4	Monroe County	FL	Relatively High	32.08	0  100
5	Hillsborough County	FL	Relatively Moderate	24.50	0  100
6	Clay County	FL	Relatively Moderate	19.25	0  100
7	Bay County	FL	Relatively Low	13.05	0  100
8	Escambia County	FL	Relatively Low	11.87	0  100
9	Santa Rosa County	FL	Relatively Low	11.61	0  100
10	Okaloosa County	FL	Relatively Low	11.42	0  100
11	Walton County	FL	Relatively Low	9.86	0  100
12	Seminole County	FL	Very Low	2.31	0  100
13	Orange County	FL	Very Low	2.04	0  100
	Highlands County	FL	Not Applicable	--	
	Polk County	FL	Not Applicable	--	

## Cold Wave

Rank	Community	State	Rating	Score		
1	Orange County	FL	Very High	95.89	0	
2	Hillsborough County	FL	Very High	76.14	0	
3	Brevard County	FL	Very High	71.24	0	
4	Seminole County	FL	Very High	68.07	0	
5	Polk County	FL	Very High	60.43	0	
6	Miami-Dade County	FL	Relatively High	41.99	0	
7	Highlands County	FL	Relatively High	39.13	0	
8	Duval County	FL	Relatively Low	19.14	0	
9	Clay County	FL	Relatively Low	14.44	0	
10	Monroe County	FL	Very Low	5.05	0	
	Bay County	FL	No Expected Annual Losses	0.00	0	
	Escambia County	FL	No Expected Annual Losses	0.00	0	
	Okaloosa County	FL	No Expected Annual Losses	0.00	0	
	Santa Rosa County	FL	No Expected Annual Losses	0.00	0	
	Walton County	FL	No Expected Annual Losses	0.00	0	

## Drought

Rank	Community	State	Rating	Score		
1	Hillsborough County	FL	Relatively High	29.07	0	100
2	Polk County	FL	Relatively High	24.49	0	100
3	Highlands County	FL	Relatively High	22.09	0	100
4	Orange County	FL	Relatively High	21.65	0	100
5	Miami-Dade County	FL	Relatively Moderate	18.61	0	100
6	Brevard County	FL	Relatively Moderate	13.83	0	100
7	Santa Rosa County	FL	Relatively Moderate	12.06	0	100
8	Walton County	FL	Relatively Moderate	11.87	0	100
9	Escambia County	FL	Relatively Low	10.68	0	100
10	Seminole County	FL	Relatively Low	9.76	0	100
11	Okaloosa County	FL	Relatively Low	6.72	0	100
12	Bay County	FL	Very Low	4.22	0	100
13	Duval County	FL	Very Low	1.43	0	100
14	Clay County	FL	Very Low	1.20	0	100
	Monroe County	FL	No Expected Annual Losses	0.00	0	100

## Earthquake

Rank	Community	State	Rating	Score		
1	Duval County	FL	Relatively Low	10.00	0	100
2	Orange County	FL	Relatively Low	6.59	0	100
3	Hillsborough County	FL	Relatively Low	5.69	0	100
4	Escambia County	FL	Relatively Low	5.21	0	100
5	Clay County	FL	Relatively Low	5.12	0	100
6	Miami-Dade County	FL	Relatively Low	4.90	0	100
7	Brevard County	FL	Relatively Low	4.72	0	100
8	Seminole County	FL	Relatively Low	4.68	0	100
9	Polk County	FL	Relatively Low	4.27	0	100
10	Okaloosa County	FL	Relatively Low	4.26	0	100
11	Bay County	FL	Very Low	3.91	0	100
12	Santa Rosa County	FL	Very Low	3.79	0	100
13	Walton County	FL	Very Low	2.78	0	100
14	Highlands County	FL	Very Low	2.09	0	100
15	Monroe County	FL	Very Low	0.63	0	100

## Hail

Rank	Community	State	Rating	Score		
1	Hillsborough County	FL	Relatively Low	14.27	0	
2	Polk County	FL	Relatively Low	11.28	0	
3	Santa Rosa County	FL	Relatively Low	10.86	0	
4	Escambia County	FL	Relatively Low	10.62	0	
5	Bay County	FL	Relatively Low	8.85	0	
6	Okaloosa County	FL	Relatively Low	8.40	0	
7	Walton County	FL	Very Low	7.00	0	
8	Miami-Dade County	FL	Very Low	6.90	0	
8	Orange County	FL	Very Low	6.90	0	
10	Seminole County	FL	Very Low	6.14	0	
11	Clay County	FL	Very Low	5.84	0	
12	Brevard County	FL	Very Low	4.72	0	
13	Highlands County	FL	Very Low	4.36	0	
14	Duval County	FL	Very Low	4.25	0	
15	Monroe County	FL	Very Low	1.08	0	

## Heat Wave

Rank	Community	State	Rating	Score		
1	Escambia County	FL	Relatively Moderate	14.93	0	 100
2	Okaloosa County	FL	Relatively Low	12.22	0	 100
3	Santa Rosa County	FL	Relatively Low	11.91	0	 100
4	Bay County	FL	Relatively Low	8.44	0	 100
5	Walton County	FL	Relatively Low	5.24	0	 100
	Brevard County	FL	No Expected Annual Losses	0.00	0	 100
	Clay County	FL	No Expected Annual Losses	0.00	0	 100
	Duval County	FL	No Expected Annual Losses	0.00	0	 100
	Highlands County	FL	No Expected Annual Losses	0.00	0	 100
	Hillsborough County	FL	No Expected Annual Losses	0.00	0	 100
	Miami-Dade County	FL	No Expected Annual Losses	0.00	0	 100
	Monroe County	FL	No Expected Annual Losses	0.00	0	 100
	Orange County	FL	No Expected Annual Losses	0.00	0	 100
	Polk County	FL	No Expected Annual Losses	0.00	0	 100
	Seminole County	FL	No Expected Annual Losses	0.00	0	 100

## Hurricane

Rank	Community	State	Rating	Score		
1	Escambia County	FL	Very High	44.18	0	
2	Miami-Dade County	FL	Relatively High	36.70	0	
3	Seminole County	FL	Relatively High	36.05	0	
4	Bay County	FL	Relatively High	35.32	0	
5	Brevard County	FL	Relatively High	31.63	0	
6	Highlands County	FL	Relatively High	27.92	0	
7	Clay County	FL	Relatively High	23.81	0	
8	Monroe County	FL	Relatively High	22.40	0	
9	Orange County	FL	Relatively High	20.96	0	
10	Hillsborough County	FL	Relatively High	19.59	0	
11	Polk County	FL	Relatively High	19.45	0	
12	Santa Rosa County	FL	Relatively Moderate	17.52	0	
13	Okaloosa County	FL	Relatively Moderate	17.29	0	
14	Walton County	FL	Relatively Moderate	15.02	0	
15	Duval County	FL	Relatively Moderate	10.89	0	

## Ice Storm

Rank	Community	State	Rating	Score
1	Duval County	FL	Very Low	9.86 0  100
2	Escambia County	FL	Very Low	5.31 0  100
3	Okaloosa County	FL	Very Low	4.30 0  100
4	Santa Rosa County	FL	Very Low	4.01 0  100
5	Walton County	FL	Very Low	3.15 0  100
	Bay County	FL	Not Applicable	--
	Brevard County	FL	Not Applicable	--
	Clay County	FL	Not Applicable	--
	Highlands County	FL	Not Applicable	--
	Hillsborough County	FL	Not Applicable	--
	Miami-Dade County	FL	Not Applicable	--
	Monroe County	FL	Not Applicable	--
	Orange County	FL	Not Applicable	--
	Polk County	FL	Not Applicable	--
	Seminole County	FL	Not Applicable	--

## Landslide

Rank	Community	State	Rating	Score	
1	Clay County	FL	Relatively Low	14.91	0  100
2	Walton County	FL	Relatively Low	13.26	0  100
3	Orange County	FL	Relatively Low	12.29	0  100
4	Seminole County	FL	Relatively Low	11.59	0  100
5	Escambia County	FL	Relatively Low	11.25	0  100
6	Polk County	FL	Relatively Low	10.95	0  100
7	Okaloosa County	FL	Relatively Low	10.52	0  100
8	Santa Rosa County	FL	Very Low	9.42	0  100
9	Miami-Dade County	FL	Very Low	9.15	0  100
10	Duval County	FL	Very Low	9.02	0  100
11	Hillsborough County	FL	Very Low	8.50	0  100
12	Highlands County	FL	Very Low	7.17	0  100
13	Monroe County	FL	Very Low	6.10	0  100
14	Bay County	FL	Very Low	5.53	0  100
15	Brevard County	FL	Very Low	5.22	0  100



## Riverine Flooding

Rank	Community	State	Rating	Score		
1	Miami-Dade County	FL	Very High	48.08	0	
2	Duval County	FL	Relatively High	30.63	0	
3	Escambia County	FL	Relatively High	24.89	0	
4	Polk County	FL	Relatively High	24.72	0	
5	Bay County	FL	Relatively High	20.76	0	
6	Brevard County	FL	Relatively High	20.33	0	
7	Monroe County	FL	Relatively Moderate	16.12	0	
8	Santa Rosa County	FL	Relatively Moderate	15.92	0	
9	Walton County	FL	Relatively Moderate	15.51	0	
10	Orange County	FL	Relatively Moderate	14.83	0	
11	Hillsborough County	FL	Relatively Moderate	12.60	0	
12	Clay County	FL	Relatively Moderate	12.39	0	
13	Highlands County	FL	Relatively Low	11.32	0	
14	Okaloosa County	FL	Relatively Low	9.83	0	
15	Seminole County	FL	Very Low	6.63	0	

## Strong Wind

Rank	Community	State	Rating	Score		
1	Orange County	FL	Very High	70.29	0	
2	Polk County	FL	Very High	60.32	0	
3	Seminole County	FL	Relatively High	52.27	0	
4	Brevard County	FL	Relatively Moderate	32.86	0	
5	Highlands County	FL	Relatively Moderate	26.66	0	
6	Duval County	FL	Relatively Moderate	25.48	0	
7	Okaloosa County	FL	Relatively Moderate	23.92	0	
8	Hillsborough County	FL	Relatively Low	23.50	0	
9	Miami-Dade County	FL	Relatively Low	21.72	0	
10	Bay County	FL	Relatively Low	20.99	0	
11	Escambia County	FL	Relatively Low	18.73	0	
12	Santa Rosa County	FL	Relatively Low	17.51	0	
13	Walton County	FL	Very Low	14.76	0	
14	Monroe County	FL	Very Low	11.35	0	
15	Clay County	FL	Very Low	10.81	0	

## Tornado

Rank	Community	State	Rating	Score	0	100
1	Hillsborough County	FL	Very High	57.49		100
2	Orange County	FL	Very High	50.30		100
3	Miami-Dade County	FL	Very High	47.81		100
4	Seminole County	FL	Very High	42.89		100
5	Okaloosa County	FL	Relatively High	33.96		100
6	Bay County	FL	Relatively High	32.48		100
7	Brevard County	FL	Relatively High	32.46		100
8	Duval County	FL	Relatively High	31.34		100
9	Santa Rosa County	FL	Relatively High	30.39		100
10	Polk County	FL	Relatively High	27.52		100
11	Clay County	FL	Relatively High	27.07		100
12	Walton County	FL	Relatively Moderate	24.80		100
13	Escambia County	FL	Relatively Moderate	22.04		100
14	Highlands County	FL	Relatively Moderate	19.42		100
15	Monroe County	FL	Relatively Low	14.00		100

## Tsunami

Rank	Community	State	Rating	Score
	Bay County	FL	Not Applicable	--
	Brevard County	FL	Insufficient Data	--
	Clay County	FL	Not Applicable	--
	Duval County	FL	Insufficient Data	--
	Escambia County	FL	Not Applicable	--
	Highlands County	FL	Not Applicable	--
	Hillsborough County	FL	Not Applicable	--
	Miami-Dade County	FL	Not Applicable	--
	Monroe County	FL	Not Applicable	--
	Okaloosa County	FL	Not Applicable	--
	Orange County	FL	Not Applicable	--
	Polk County	FL	Not Applicable	--
	Santa Rosa County	FL	Not Applicable	--
	Seminole County	FL	Not Applicable	--
	Walton County	FL	Not Applicable	--

## Volcanic Activity

Rank	Community	State	Rating	Score
	Bay County	FL	Not Applicable	--
	Brevard County	FL	Not Applicable	--
	Clay County	FL	Not Applicable	--
	Duval County	FL	Not Applicable	--
	Escambia County	FL	Not Applicable	--
	Highlands County	FL	Not Applicable	--
	Hillsborough County	FL	Not Applicable	--
	Miami-Dade County	FL	Not Applicable	--
	Monroe County	FL	Not Applicable	--
	Okaloosa County	FL	Not Applicable	--
	Orange County	FL	Not Applicable	--
	Polk County	FL	Not Applicable	--
	Santa Rosa County	FL	Not Applicable	--
	Seminole County	FL	Not Applicable	--
	Walton County	FL	Not Applicable	--

## Wildfire

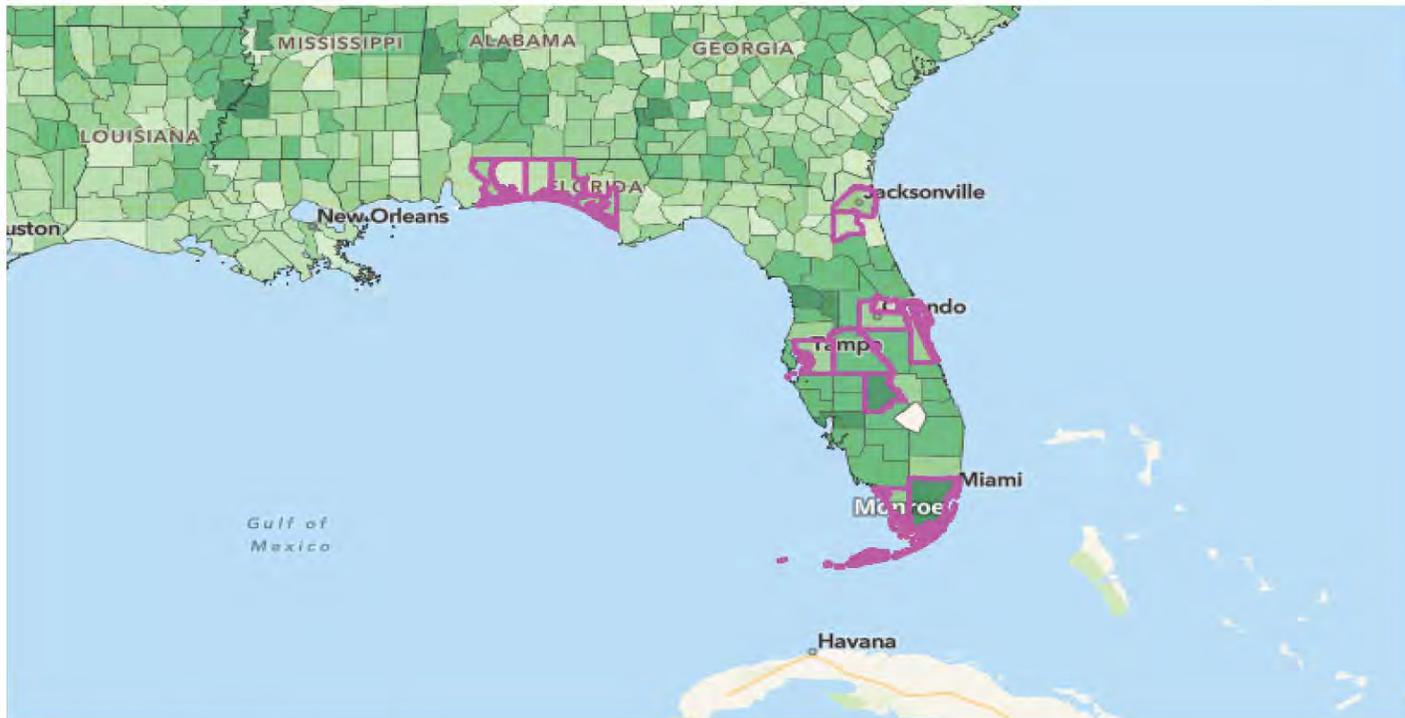
Rank	Community	State	Rating	Score			
1	Brevard County	FL	Relatively High	47.90	0		100
2	Polk County	FL	Relatively High	41.68	0		100
3	Orange County	FL	Relatively High	40.02	0		100
4	Miami-Dade County	FL	Relatively High	33.89	0		100
5	Seminole County	FL	Relatively High	30.22	0		100
6	Hillsborough County	FL	Relatively High	28.12	0		100
7	Duval County	FL	Relatively Moderate	24.21	0		100
8	Highlands County	FL	Relatively Moderate	21.41	0		100
9	Clay County	FL	Relatively Moderate	21.07	0		100
10	Santa Rosa County	FL	Relatively Moderate	18.73	0		100
11	Escambia County	FL	Relatively Moderate	16.11	0		100
12	Okaloosa County	FL	Relatively Low	13.00	0		100
13	Bay County	FL	Relatively Low	11.13	0		100
14	Walton County	FL	Relatively Low	10.24	0		100
15	Monroe County	FL	Very Low	5.45	0		100

## Winter Weather

Rank	Community	State	Rating	Score		
1	Escambia County	FL	Relatively Moderate	24.38	0	
2	Okaloosa County	FL	Relatively Moderate	20.51	0	
3	Santa Rosa County	FL	Relatively Moderate	19.25	0	
4	Bay County	FL	Relatively Low	16.39	0	
5	Walton County	FL	Relatively Low	12.42	0	
	Brevard County	FL	No Expected Annual Losses	0.00	0	
	Clay County	FL	No Expected Annual Losses	0.00	0	
	Duval County	FL	No Expected Annual Losses	0.00	0	
	Highlands County	FL	No Expected Annual Losses	0.00	0	
	Hillsborough County	FL	No Expected Annual Losses	0.00	0	
	Miami-Dade County	FL	No Expected Annual Losses	0.00	0	
	Monroe County	FL	No Expected Annual Losses	0.00	0	
	Orange County	FL	No Expected Annual Losses	0.00	0	
	Polk County	FL	No Expected Annual Losses	0.00	0	
	Seminole County	FL	No Expected Annual Losses	0.00	0	

## Social Vulnerability

Social Vulnerability measures the susceptibility of social groups to the adverse impacts of natural hazards, including disproportionate death, injury, loss, or disruption of livelihood.



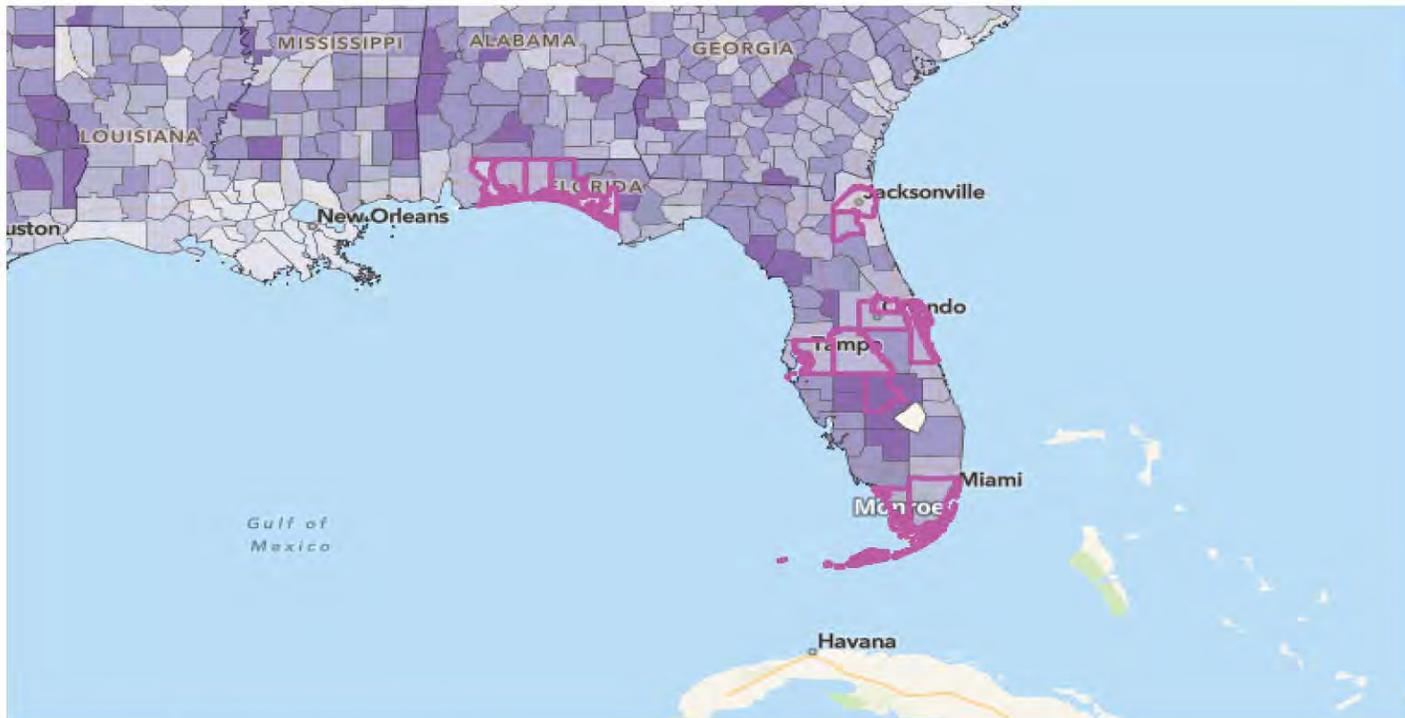
### Social Vulnerability Legend

- Very High
- Relatively High
- Relatively Moderate
- Relatively Low
- Very Low
- Data Unavailable

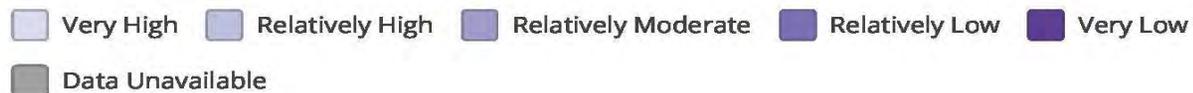
Rank	Community	State	Rating	Score	
1	Highlands County	FL	Very High	64.88	0  100
2	Miami-Dade County	FL	Very High	63.85	0  100
3	Polk County	FL	Relatively High	46.31	0  100
4	Brevard County	FL	Relatively Moderate	42.73	0  100
5	Walton County	FL	Relatively Moderate	41.55	0  100
6	Orange County	FL	Relatively Moderate	40.17	0  100
7	Bay County	FL	Relatively Moderate	39.61	0  100
8	Escambia County	FL	Relatively Moderate	39.14	0  100
9	Monroe County	FL	Relatively Moderate	38.75	0  100
10	Hillsborough County	FL	Relatively Moderate	38.08	0  100
11	Duval County	FL	Relatively Moderate	36.97	0  100
12	Okaloosa County	FL	Relatively Low	33.46	0  100
13	Seminole County	FL	Relatively Low	31.42	0  100
14	Clay County	FL	Relatively Low	27.16	0  100
15	Santa Rosa County	FL	Very Low	22.70	0  100

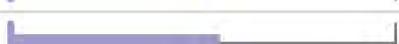
## Community Resilience

Community Resilience measures a community's ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions.



### Community Resilience Legend



Rank	Community	State	Rating	Score		
1	Bay County	FL	Relatively High	56.25	0	
2	Duval County	FL	Relatively High	55.80	0	
3	Escambia County	FL	Relatively High	55.57	0	
4	Clay County	FL	Relatively Moderate	55.19	0	
5	Brevard County	FL	Relatively Moderate	54.97	0	
6	Santa Rosa County	FL	Relatively Moderate	54.84	0	
7	Seminole County	FL	Relatively Moderate	54.75	0	
8	Monroe County	FL	Relatively Moderate	54.69	0	
9	Hillsborough County	FL	Relatively Moderate	54.46	0	
10	Okaloosa County	FL	Relatively Moderate	54.36	0	
11	Orange County	FL	Relatively Moderate	53.71	0	
12	Polk County	FL	Relatively Moderate	53.42	0	
13	Miami-Dade County	FL	Relatively Moderate	53.39	0	
14	Walton County	FL	Relatively Low	52.73	0	
15	Highlands County	FL	Very Low	49.69	0	

## About the National Risk Index

The National Risk Index is a dataset and online tool to help illustrate the United States communities most at risk for 18 natural hazards: Avalanche, Coastal Flooding, Cold Wave, Drought, Earthquake, Hail, Heat Wave, Hurricane, Ice Storm, Landslide, Lightning, Riverine Flooding, Strong Wind, Tornado, Tsunami, Volcanic Activity, Wildfire, and Winter Weather.

The National Risk Index leverages available source data for Expected Annual Loss due to these 18 hazard types, Social Vulnerability, and Community Resilience to develop a baseline relative risk measurement for each United States county and Census tract. These measurements are calculated using average past conditions, but they cannot be used to predict future outcomes for a community. The National Risk Index is intended to fill gaps in available data and analyses to better inform federal, state, local, tribal, and territorial decision makers as they develop risk reduction strategies.

Explore the National Risk Index Map at [hazards.fema.gov/nri/map](https://hazards.fema.gov/nri/map).

Visit the National Risk Index website at [hazards.fema.gov/nri/learn-more](https://hazards.fema.gov/nri/learn-more) to access supporting documentation and links.

## Calculating the Risk Index

Risk Index scores are calculated using an equation that combines scores for Expected Annual Loss due to natural hazards, Social Vulnerability and Community Resilience:

$$\text{Risk Index} = \text{Expected Annual Loss} \times \text{Social Vulnerability} \div \text{Community Resilience}$$

Risk Index scores are presented as a composite score for all 18 hazard types, as well as individual scores for each hazard type.

For more information, visit [hazards.fema.gov/nri/determining-risk](https://hazards.fema.gov/nri/determining-risk).

## Calculating Expected Annual Loss

Expected Annual Loss scores are calculated using an equation that combines values for exposure, annualized frequency, and historic loss ratios for 18 hazard types:

$$\text{Expected Annual Loss} = \text{Exposure} \times \text{Annualized Frequency} \times \text{Historic Loss Ratio}$$

Expected Annual Loss scores are presented as a composite score for all 18 hazard types, as well as individual scores for each hazard type.

For more information, visit [hazards.fema.gov/nri/expected-annual-loss](https://hazards.fema.gov/nri/expected-annual-loss).

## Calculating Social Vulnerability

Social Vulnerability is measured using the Social Vulnerability Index (SoVI) published by the University of South Carolina's Hazards and Vulnerability Research Institute (HVRI).

For more information, visit [hazards.fema.gov/nri/social-vulnerability](https://hazards.fema.gov/nri/social-vulnerability).

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## Calculating Community Resilience

Community Resilience is measured using the Baseline Resilience Indicators for Communities (HVRI BRIC) published by the University of South Carolina's Hazards and Vulnerability Research Institute (HVRI).

For more information, visit [hazards.fema.gov/nri/community-resilience](https://hazards.fema.gov/nri/community-resilience).

## How to Take Action

There are many ways to reduce natural hazard risk through mitigation. Communities with high National Risk Index scores can take action to reduce risk by decreasing Expected Annual Loss due to natural hazards, decreasing Social Vulnerability, and increasing Community Resilience.

For information about how to take action and reduce your risk, visit [hazards.fema.gov/nri/take-action](https://hazards.fema.gov/nri/take-action).

## Disclaimer

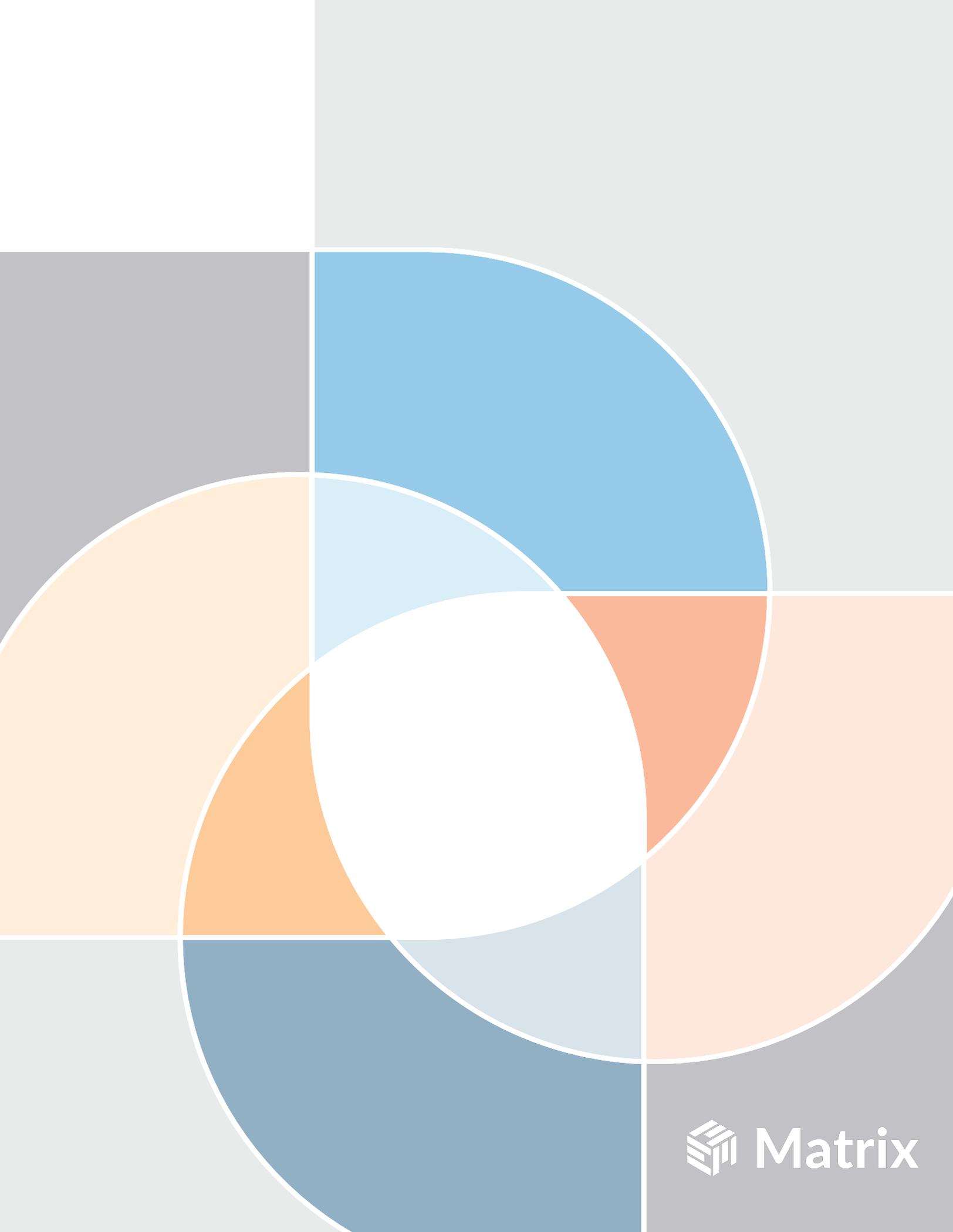
The National Risk Index (the Risk Index or the Index) and its associated data are meant for planning purposes only. This tool was created for broad nationwide comparisons and is not a substitute for localized risk assessment analysis. Nationwide datasets used as inputs for the National Risk Index are, in many cases, not as accurate as available local data. Users with access to local data for each National Risk Index risk factor should consider substituting the Risk Index data with local data to recalculate a more accurate risk index. If you decide to download the National Risk Index data and substitute it with local data, you assume responsibility for the accuracy of the data and any resulting data index. Please visit the **Contact Us** page if you would like to discuss this process further.

The methodology used by the National Risk Index has been reviewed by subject matter experts in the fields of natural hazard risk research, risk analysis, mitigation planning, and emergency management. The processing methods used to create the National Risk Index have produced results similar to those from other natural hazard risk analyses conducted on a smaller scale. The breadth and combination of geographic information systems (GIS) and data processing techniques leveraged by the National Risk Index enable it to incorporate multiple hazard types and risk factors, manage its nationwide scope, and capture what might have been missed using other methods.

The National Risk Index does not consider the intricate economic and physical interdependencies that exist across geographic regions. Keep in mind that hazard impacts in surrounding counties or Census tracts can cause indirect losses in your community regardless of your community's risk profile.

Nationwide data available for some risk factors are rudimentary at this time. The National Risk Index will be continuously updated as new data become available and improved methodologies are identified.

The National Risk Index Contact Us page is available at [hazards.fema.gov/nri/contact-us](https://hazards.fema.gov/nri/contact-us).



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