



Section 7
Project Timelines and
Funding Options

7. PROJECT TIMELINE AND FUNDING OPTIONS

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Section 7

Project Timelines and Funding Options

Vision for Regional Mission Assurance

The vision for regional mission assurance in South Florida is built upon the following objectives:

- Leveraging world-renowned South Florida regional resilience expertise
- Partnering with regional military commands and installations
- Enabling military mission assurance for these unique locations and capabilities
- Benefiting national security and South Florida communities

Mission Assurance Through Community Resilience

Bundle Interventions

The interventions shown in Section 6 were bundled together into projects, based on the vulnerabilities they addressed. This was done in recognition that a comprehensive, holistic approach to problem-solving is optimal for building resilience over time.

Phase Interventions Based on Feasibility

Once the interventions were bundled together, they were put into an order of implementation based on feasibility. This phasing exercise was the next step in creating a roadmap for resilience and regional mission assurance.

"...the planet's changing climate has a dramatic effect on our missions, plans, and installations. Every year, we see the consequences of increasing incidents of flooding, drought, wildfires, and extreme weather events on our installations at home."

— Secretary of Defense
Lloyd J. Austin III

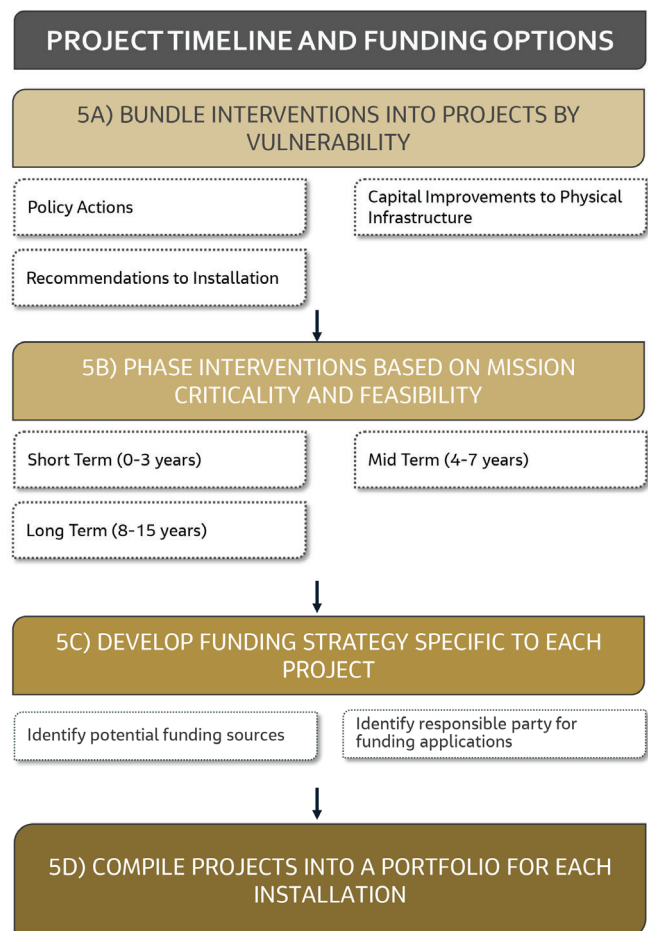


Figure 7-1. Adaptation Methodology Step 5

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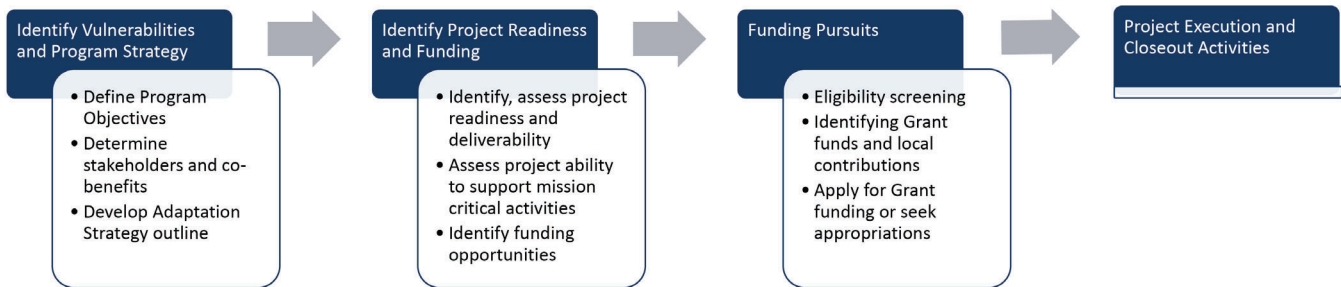


Figure 7-2. MIRR Funding Outline Strategy

Funding Strategy

The MIRR is designed to help communities partner with local commands to make informed decisions that respond to, address, and mitigate activities that impair or are likely to impair the access to or the use of the installation and the performance of its mission(s). As defense communities play a key role in supporting military installations, there is a need to empower defense communities with the resources they need to implement meaningful resilience measures. Therefore, in addition to traditional funding sources, unique funding opportunities exist specifically for defense communities to engage in resiliency planning and to implement resilience projects as outlined in Figure 7-2.

Designed as a resource for defense communities, the MIRR gives special attention to one key community stakeholder – the installation – particularly as it relates to resources beyond installation boundaries. This provides the basis for identifying shared opportunities for defense communities and installations to work together to enhance resilience. Key Federal and state funding programs that might be applicable to the resilience projects identified in the MIRR were reviewed for how they may be applied to support climate adaptation programs. In addition to bringing defense-related funding to the table for implementation, the MIRR is aligned with the national security imperative, potentially precipitating reprioritization of existing funded and/or unfunded municipal resilience projects.

Given these opportunities, capital resilience projects will often require pulling from a variety of different funding sources, prompting the need for insight into cost sharing, and leveraging partnerships. A detailed catalog of Federal and state grant programs applicable to each installation is included as Appendix D. Each community can use the information in this section to define its particular challenge and craft a strategy for recommending implementation timeframes, building upon successful examples, creating partnerships, and identifying potential funding mechanisms.

Funding Options

Federal grant programs received a significant increase in funding with the passage of the Bipartisan Infrastructure Law. In addition to boosting available funding for long-standing grant programs (such as the U.S. Department of Transportation [USDOT] Rebuilding American Infrastructure with Sustainability and Equity [known as RAISE] Program and the Infrastructure for Rebuilding America [known as INFRA] Program), a set of entirely new grant programs offer additional opportunities for installation communities as they seek to fund a range of resilience investments. In addition to competitive grant programs, increases in Federal formula funding have flowed to the state, increasing long-standing transportation funding streams administered by FDOT and MPOs. There are a number of relevant grant programs funded through state agencies and other local entities, as well as state-distributed programs that are funded through Federal formula funds.

Across all of the new or long-standing Federal funding and financing programs, the outlined funding priorities are directing new Federal infrastructure dollars toward projects aligned with the Federal Administration's goals. These priorities are summarized as follows:

- **Equity:** Planning and implementation of projects that advance equity across America
- **Recovery & Resilience:** Planning and implementing projects that build resilience to and long-term recovery from shocks
- **Workforce Development:** Planning and implementation of projects that support workforce education and skills training activities directly connected to the hiring and skills needs of the business community
- **Technology-Based Development:** Planning and implementation of projects that foster regional knowledge ecosystems that support entrepreneurs and start-ups
- **Environmentally Sustainable Development:** Planning and implementation of projects that help address the climate crisis

Other Considerations

There are several Federal and state credit instruments that could potentially be a source of financing to support infrastructure needs. In particular, low-cost financing tools facilitate borrowing against future revenues. This process converts the financing into current funding when needed. The borrowed funds must then be repaid with interest in the future.

In addition to Federal and state funding and financing options, public agencies are using a wide array of methods to deliver improvements for both new and existing facilities. These methods range from the traditional design-bid-build model to the more innovative alternative delivery models. Beyond the opportunity to transfer key risks from the public agency to the private entity, alternative delivery models such as Public-Private Partnership (P3) can overcome funding shortfalls by introducing new sources of funding, thus allowing projects to be delivered sooner and in certain circumstances offering shorter construction timeframes, lower construction costs, and increased efficiency in operations.

For competitive funding programs and other financing instruments, additional project-specific factors need to be considered when weighing project funding options:

- **Project Readiness:** State of preparedness of a project to ensure that the project is ready for development and implementation as planned
- **Cost-Benefit Analysis:** An analysis that weighs the benefits of a decision versus the costs associated with the project
- **Value for Money Analysis:** Value for money means achieving the optimal combination of benefits and costs in delivering services users want, and typically involves a combination of qualitative and quantitative approaches to evaluate P3 versus conventional delivery models

Based on the intervention and project identified, the funding programs in this section highlight a number of funding programs on a range of resilience planning and development phases of infrastructure that will be applicable to installations and community partners.

SFOMF Resilience Portfolio

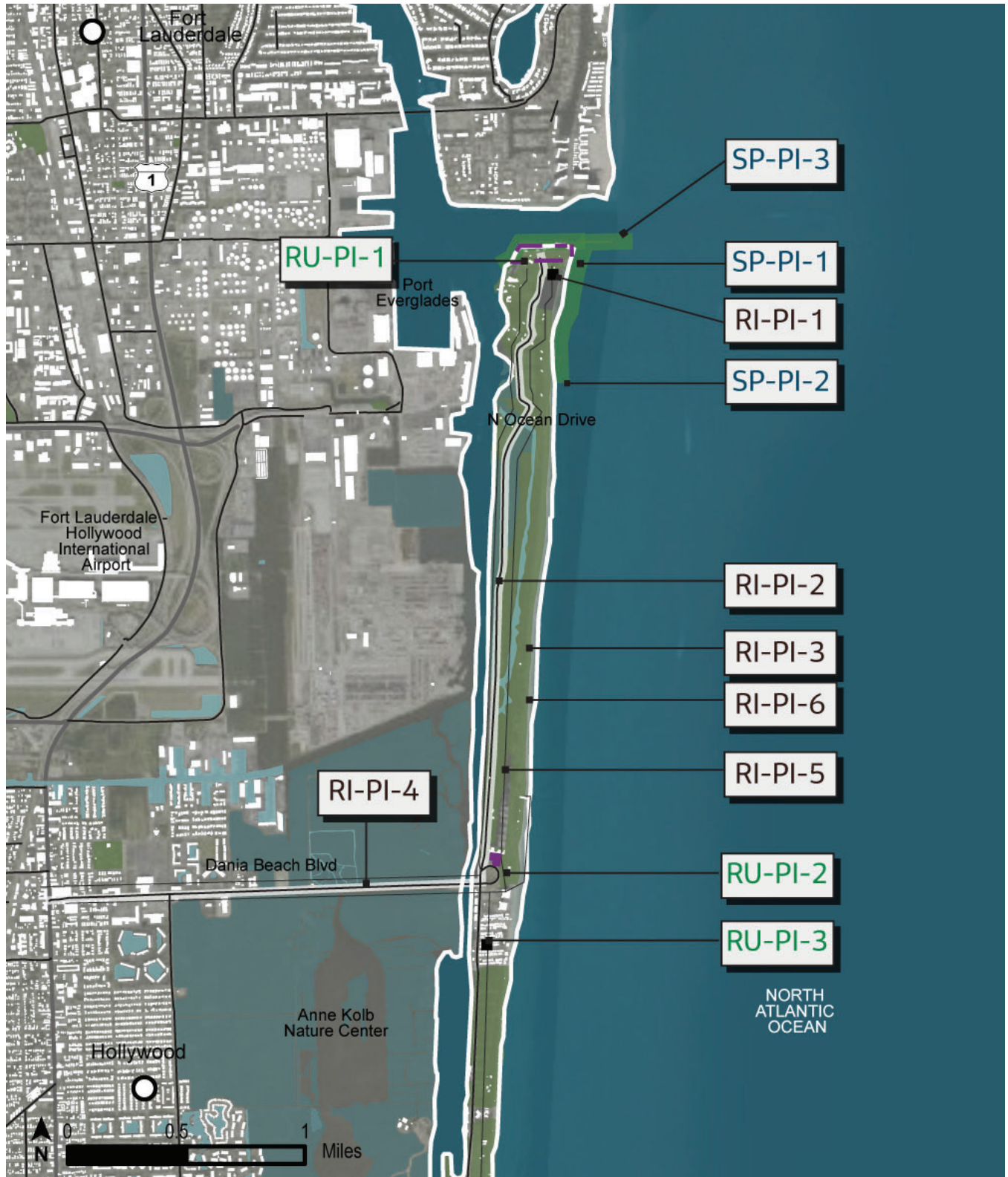


Figure 7-3. SFOMF Resilience Plan

The component interventions of all SFOMF projects were plotted on an implementation timeline to define when the project pieces would be carried out. There are three categories within the timeline: short-term, indicating 0 to 3 years, mid-term, indicating 4 to 7 years, and long-term, indicating 8 to 15 years.

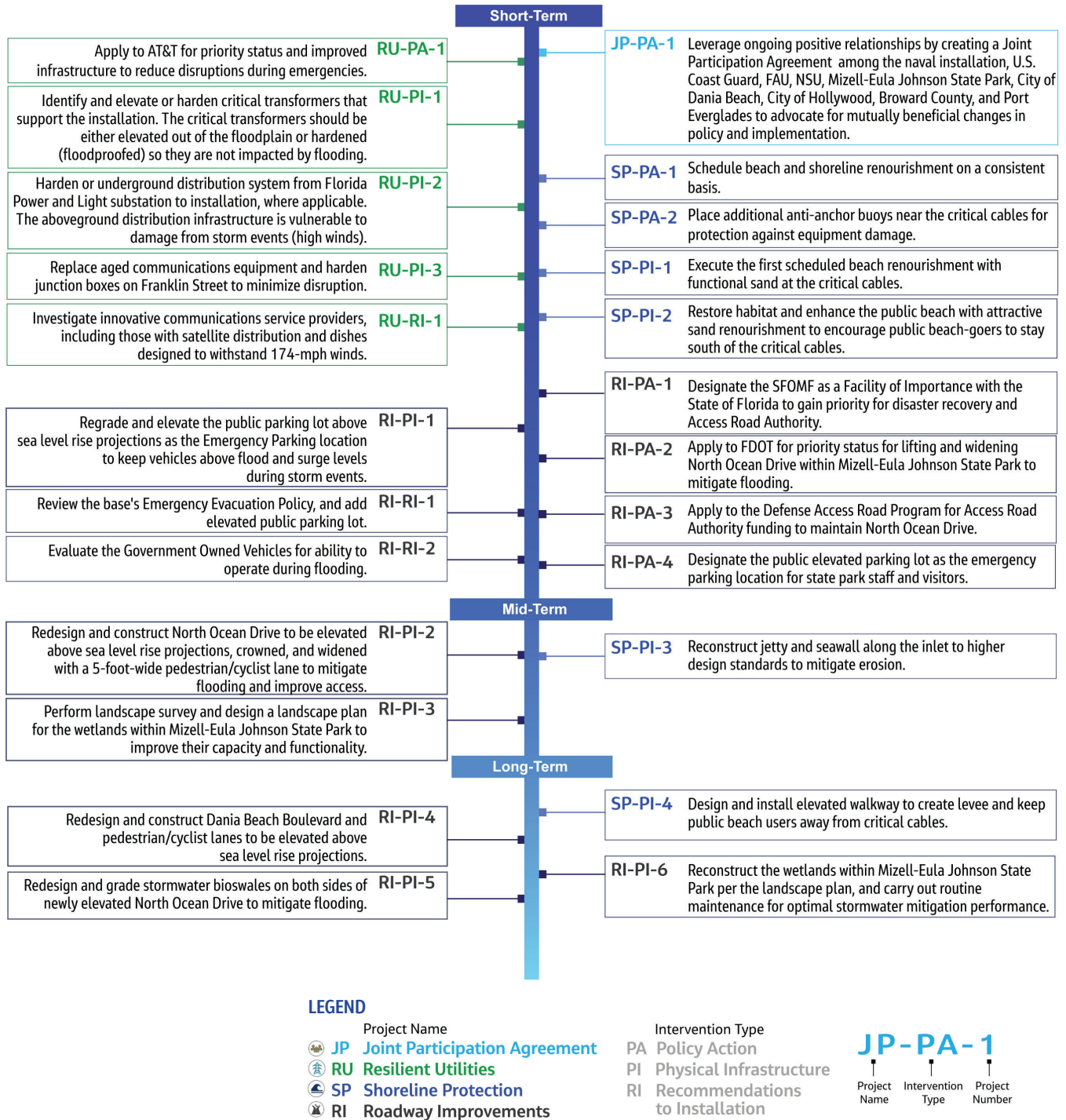


Figure 7-4. SFOMF Project Timeline

7. PROJECT TIMELINE AND FUNDING OPTIONS

Funding Options

SFOMF Joint Participation Agreement

JPAs formalize the coordination framework for effective planning and funding pursuits and pave the way for addressing vulnerabilities.

Table 7-1. SFOMF Joint Participation Agreement Interventions

Tag	Description	Criticality	Responsible Party and Partners	Timeframe
JP-PA-1	Leverage ongoing positive relationships by creating a JPA to advocate for mutually beneficial changes in policy and implementation.	Primary Mission Critical	Responsible Party: SFRPC Partners: SFOMF, USCG Station Fort Lauderdale, FAU, NSU, Dr. Von D. Mizell-Eula Johnson State Park, City of Dania Beach, City of Hollywood, Broward County, Port Everglades, SFDA	Short Term

Table 7-2. SFOMF Joint Participation Agreement Funding Options

Funding Program	Description	Notes
Building Resilient Infrastructure and Communities (FEMA)	Capability and Capacity-Building Activities: Activities that enhance the knowledge, skills, and expertise of the current workforce to expand or improve the administration of mitigation assistance. Subcategories include building codes activities, partnership activities, project scoping, and hazard mitigation planning.	<ul style="list-style-type: none"> • Required coordination with FDEM • Requires 25% non-Federal cost share <ul style="list-style-type: none"> – Economically disadvantaged communities eligible for up to 10% non-Federal cost share
National Coastal Resilience Fund – (National Fish and Wildlife Federation [NFWF])	Community Capacity Building and Planning: Activities that build the capacity to plan and execute a variety of future resilience strategies, projects, and other activities. Projects under this category should support the development of a plan or plans that prioritize resilience strategies and projects, and identify specific efforts that, when implemented, will meet community goals of increasing resilience and improving habitat for fish and wildlife.	<ul style="list-style-type: none"> • \$15 million in DoD set-aside funding is available for coastal resilience projects that benefit military installations. In the proposal narrative, applicants will be asked to provide additional information to clearly describe the coastal hazards that threaten the military mission, the nature-based solution proposed to address those threats, and how the project will maintain and improve military resilience and directly benefit defense mission capabilities of the DoD installation or range the project is associated with. Coordinating with the local DoD installation before applying is strongly encouraged. • Non-Federal match is not required but is encouraged to demonstrate broad support for the project.

Funding Program	Description	Notes
Climate Resilience Regional Challenge (NOAA)	<p>Community Capacity Building and Planning: The focus of this grant program is on holistic, collaborative approaches to increase resilience in coastal regions. Proposed projects should address risk reduction, regional collaboration, equity, and building enduring capacity for adaptation. (The Notice of Funding Opportunity [NOFO] was announced on June 20, 2023.)</p>	<ul style="list-style-type: none"> • The recently announced \$575 million NOAA Climate Resilience Regional Challenge includes Track One funding focused on regional collaborative building and strategy development that can be used to initiate new, regional-scale collaborations or to advance existing partnerships focused on climate resilience and can the development.
Installation Resilience (OLDCC)	<p>Community Capacity Building and Planning: The Installation Resilience is designed to support the organizing, planning, and implementation actions necessary to foster, protect, and enhance the sustainability of military installations. This program enables a “one community” response through a collaborative Federal, state, local, and private effort to optimize the capacities and resources each can bring to the effort, including:</p> <ul style="list-style-type: none"> • Targeted studies or plans concerning, but not limited to, transportation, land use/encroachment, utility services, housing, stormwater management, sewer, and communications. • Tabletop exercises with local military and civilian (public and private) leadership to review capacities of hard infrastructure and public services to respond to natural and/or human-caused disruptions. 	<p>There are two ways a community can participate in Installation Resilience program activities:</p> <ul style="list-style-type: none"> • Service Nomination Process. The Military Services may nominate installation(s) for assistance through annual requests or may also nominate installations out of cycle. • Community Nomination Process. State and local governments may submit an inquiry to the Office of Local Defense Community Cooperation.



Aerial View South of Dr. Von D. Mizell-Eula Johnson State Park

7. PROJECT TIMELINE AND FUNDING OPTIONS

SFOMF Shoreline Protection

Table 7-3. SFOMF Shoreline Protection Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
SP-PI-1	First scheduled beach renourishment with functional sand at the critical cables	Primary Mission Critical	Construction Maintenance	Responsible Party: USACE Partner: JPA	Short Term	\$302/ square yard (yd ²)
SP-PI-2	Restore habitat and enhance the public beach with attractive sand renourishment south of the critical cables	Mission Supportive	Planning Design Construction Maintenance	Responsible Party: USACE Partners: EWN, TNC	Short Term	\$302/yd ²
SP-PI-3	Reconstruct jetty and seawall exposed to erosion along the inlet to higher design standards	Secondary Mission Critical	Planning Design Construction Maintenance	Responsible Party: Dr. Von D. Mizell-Eula Johnson State Park Partners: JPA, EWN, DARPA	Mid Term	\$16.5M
SP-PI-4	Design and install elevated walkway to create levee and keep public beach users away from critical cables	Mission Supportive	Design Construction Maintenance	Responsible Party: Dr. Von D. Mizell-Eula Johnson State Park Partner: JPA	Long Term	\$465,000



Shoreline Erosion and Damaged Jetty

Table 7-4. SFOMF Shoreline Protection Physical Infrastructure Funding Options

Funding Program	Description	Notes
Transformational Habitat Restoration and Coastal Resilience (NOAA)	Funds habitat restoration actions that rebuild productive and sustainable fisheries, contribute to the recovery and conservation of threatened and endangered species, use natural infrastructure to reduce damage from flooding and storms, promote resilient ecosystems and communities, and yield socioeconomic benefits.	<ul style="list-style-type: none"> • No local cost share is required, but encouraged
Beach Erosion and Hurricane and Storm Damage Reduction - (USACE) - Section 103 CAP	Funds projects to protect public and private properties and facilities against damages caused by storm-driven waves and currents through the construction of revetments, groins, and jetties.	<ul style="list-style-type: none"> • Requires 35% non-Federal cost share
National Coastal Resilience Fund (NFWF)	Restoration and Monitoring: Projects that protect and enhance resilience of natural systems and help mitigate the impacts of future storms and other natural-hazard events and threats on key local community assets (such as emergency services, infrastructure, and centers of economic activity), and drive the expected benefit to fish and wildlife.	<ul style="list-style-type: none"> • \$15 million in DoD set-aside funding is available for coastal resilience projects that benefit military installations. In the proposal narrative, applicants will be asked to provide additional information to clearly describe the coastal hazards that threaten the military mission, the nature-based solution proposed to address those threats, and how the project will maintain and improve military resilience and directly benefit defense mission capabilities of the DoD installation or range the project is associated with. Coordinating with the local DoD installation before applying is strongly encouraged. • Non-Federal match is not required, but is encouraged to demonstrate broad support for the project.
Climate Resilience Regional Challenge (NOAA)	Community Capacity Building and Planning: The focus of this grant program is on holistic, collaborative approaches to increase resilience in coastal regions. Proposed projects should address risk reduction, regional collaboration, equity, and building enduring capacity for adaptation. (The NOFO was announced on June 20, 2023.)	<ul style="list-style-type: none"> • The recently announced \$575 million NOAA Climate Resilience Regional Challenge includes Track Two funding that focuses on the implementation of resilience and adaptation that aligns with reducing risk and vulnerability. This track provides funding for applicants to implement coordinated adaptation efforts that support a holistic vision for resilience and build the capacity of the communities in a region to sustain efforts into the future, especially those communities that have been marginalized, underserved, and underrepresented.

7. PROJECT TIMELINE AND FUNDING OPTIONS

SFOMF Roadway Improvements

Table 7-5. SFOMF Roadway Improvements Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
RI-PI-1	Regrade and elevate the public parking lot above SLR projections	Mission Supportive	Design Construction Maintenance	Responsible Party: Dr. Von D. Mizell- Eula Johnson State Park Partner: JPA for Funding	Short Term	\$414/yd ²
RI-PI-2	Redesign and construct North Ocean Drive to be elevated above SLR projections, crowned, and widened with a 5-foot-wide pedestrian/cyclist lane	Secondary Mission Critical	Planning Design Construction Maintenance	Responsible Party: Dr. Von D. Mizell- Eula Johnson State Park Partner: JPA	Mid Term	\$414/yd ²
RI-PI-3	Perform landscape survey and design a landscape plan for the wetlands within Dr. Von D. Mizell-Eula Johnson State Park	Secondary Mission Critical	Planning Design Construction Maintenance	Responsible Party: Dr. Von D. Mizell- Eula Johnson State Park Partner: JPA	Mid Term	\$80,000
RI-PI-4	Redesign and construct Dania Beach Boulevard and pedestrian/cyclist lanes to be elevated above SLR projections	Secondary Mission Critical	Planning Design Construction Maintenance	Responsible Party: Dr. Von D. Mizell- Eula Johnson State Park Partners: JPA, City of Dania Beach	Long Term	\$414/yd ²
RI-PI-5	Redesign and grade stormwater bioswales on both sides of newly elevated North Ocean Drive	Secondary Mission Critical	Planning Design Construction Maintenance	Responsible Party: Dr. Von D. Mizell- Eula Johnson State Park Partner: JPA	Long Term	\$40,000
RI-PI-6	Construct and maintain the restored wetlands	Secondary Mission Critical	Planning Design Construction Maintenance	Responsible Party: Dr. Von D. Mizell- Eula Johnson State Park Partner: JPA	Long Term	\$484/yd ²

Table 7-6. SFOMF Roadway Improvements Physical Infrastructure Funding Options

Funding Program	Description	Notes
PROTECT (Formula and Competitive Discretionary programs) (FDOT and Federal Highway Administration [FHWA])	Provides funding to ensure surface transportation resilience to natural hazards including climate change, SLR, flooding, extreme weather events, and other natural disasters through support of planning activities, resilience improvements, community resilience and evacuation routes, and at-risk coastal infrastructure.	<ul style="list-style-type: none"> • FDOT receives approximately \$70 million in annual PROTECT formula funding. • Requires 20% non-Federal cost share.
Building Resilient Infrastructure and Communities (FEMA)	Mitigation Projects: Projects designed to increase resilience and public safety, reduce injuries and loss of life, and reduce damage and destruction to property, critical services, facilities, and infrastructure.	<ul style="list-style-type: none"> • Required coordination with FDEM • Requires 25% non-Federal cost share <ul style="list-style-type: none"> – Economically disadvantaged communities eligible for up to 10% non-Federal cost share
Defense Access Roads (FHWA and Military Surface Deployment and Distribution Command [SDDC])	Provides funding to ensure highway improvements needed to support adequate highway service to defense and defense-related installations. The need for these improvements may arise in connection with the establishment, expansion, or operation of defense installations that create an unanticipated impact on the long-range requirements for the development of highways in the vicinity. The primary purpose of the funding is for highway improvements necessary for the functioning of the installation so that the defense installation does not burden the existing highway.	<ul style="list-style-type: none"> • The local military installation identifies the access or mobility needs and brings these deficiencies to the attention of the SDDC, who reviews the requirement and makes a preliminary eligibility determination. State and local stakeholders will need to coordinate with the installations to identify the required funding to support roadway improvements and repairs.



North Ocean Drive and Surrounding Wetlands

7. PROJECT TIMELINE AND FUNDING OPTIONS

SFOMF Resilient Utilities

Table 7-7. SFOMF Resilient Utilities Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
RU-PI-1	Identify and elevate or harden critical transformers that support the installation. The critical transformers should be either elevated out of the floodplain or hardened (floodproofed) so they are not impacted by flooding.	Secondary Mission Critical	Design Construction Maintenance	Responsible Party: FPL Partner: JPA for Funding	Short Term	--
RU-PI-2	Harden or underground distribution system from FPL substation to installation, where applicable. The aboveground distribution infrastructure is vulnerable to damage from storm events (high winds).	Secondary Mission Critical	Design Construction Maintenance	Responsible Party: FPL Partner: JPA for Funding	Short Term	--
RU-PI-3	Replace old communications equipment and harden junction boxes on Franklin Street.	Mission Supportive	Construction Maintenance	Responsible Party: AT&T Partner: JPA for Funding	Short Term	--

Table 7-8. SFOMF Resilient Utilities Funding Options

Funding Program	Description	Notes
Building Resilient Infrastructure and Communities (FEMA)	<p>Mitigation Projects: Projects designed to increase resilience and public safety, reduce injuries and loss of life, and reduce damage and destruction to property, critical services, facilities, and infrastructure.</p>	<ul style="list-style-type: none"> • Required coordination with FDEM • Requires 25% non-Federal cost share <ul style="list-style-type: none"> – Economically disadvantaged communities eligible for up to 10% non-Federal cost share.
Grid Resilience State Formula Grants (Department of Energy [DOE])	<p>The Grid Resilience program is designed to strengthen and modernize America’s power grid against wildfires, extreme weather, and other natural disasters and will provide funding over 5 years based on a formula to states, territories, and tribes.</p> <p>States can use grant funding to issue subawards to electric grid operators, electricity storage operators, transmission owners and operators, and distribution providers.</p>	<ul style="list-style-type: none"> • The State of Florida and electric grid operators are recipients of funding. • The eligible entity that receives a subaward is required to match 100% of the amount of the subaward.
Grid Resilience and Innovation Partnerships (GRIP) Program (DOE)	<p>The GRIP program funds projects across three separate programs to enhance grid flexibility and improve the resilience of the power system against extreme weather threats.</p> <p>The Grid Resilience Utility and Industry Grants support activities that will modernize the electric grid to reduce impacts from extreme weather and natural disasters.</p>	<ul style="list-style-type: none"> • Eligible entities include electric grid operators, electricity storage operators, transmission owners and operators, distribution providers, and so forth. • The eligible entity that receives a subaward is required to match 100% of the amount of the subaward.

USAG-Miami/SOUTHCOM Resilience Portfolio

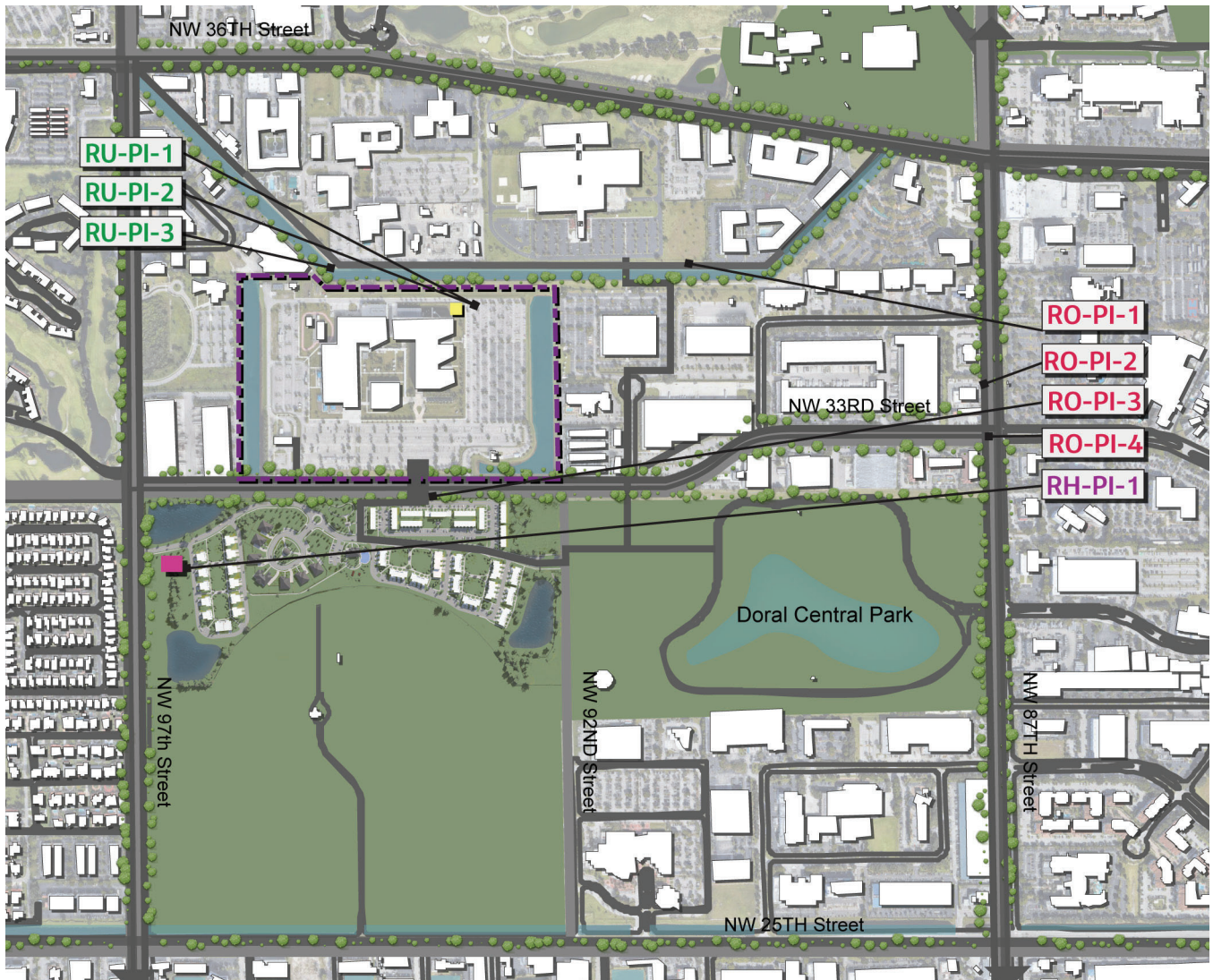
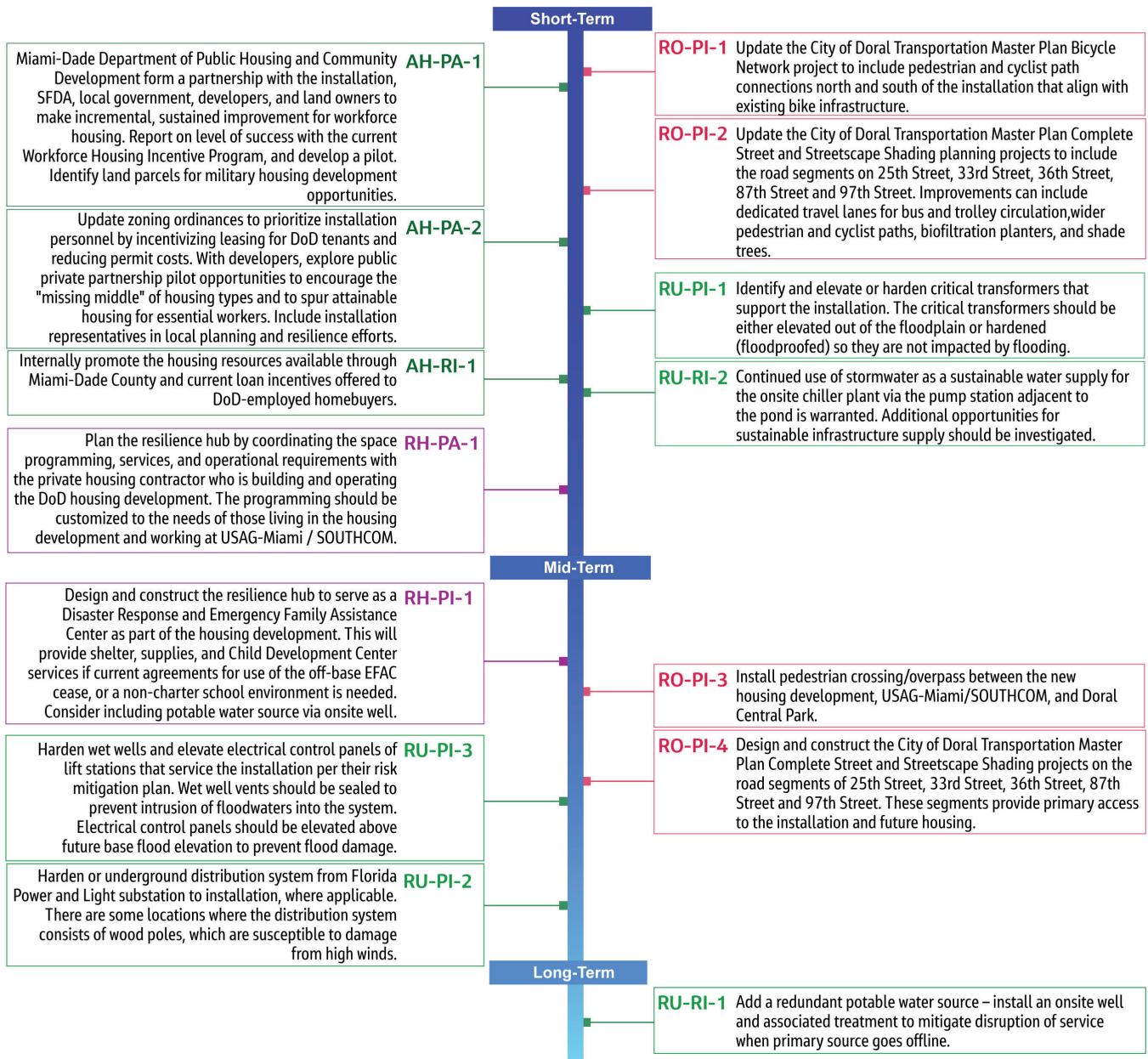


Figure 7-5. USAG-Miami/SOUTHCOM Resilience Plan

The component interventions of all USAG-Miami/SOUTHCOM projects were plotted on an implementation timeline to define when the project pieces would be carried out. There are three categories within the timeline: short-term, indicating 0 to 3 years, mid-term, indicating 4 to 7 years, and long-term, indicating 8 to 15 years.



LEGEND

- Project Name
- AH Attainable Housing
 - RU Resilient Utilities
 - RO ROW Improvements
 - RH Resilience Hub

- Intervention Type
- PA Policy Action
 - PI Physical Infrastructure
 - RI Recommendations to Installation

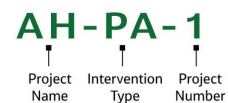


Figure 7-6. USAG-Miami/SOUTHCOM Project Timeline

7. PROJECT TIMELINE AND FUNDING OPTIONS

Funding Options

USAG-Miami/SOUTHCOM Resilient Utilities

Table 7-9. USAG-Miami/SOUTHCOM Resilient Utilities Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
RU-PI-1	Identify and elevate or harden critical transformers that support the installation. The critical transformers should be either elevated out of the floodplain or hardened (floodproofed) so they are not impacted by flooding.	Primary Mission Critical	Design Construction Maintenance	Responsible Party: FPL Partner: JPA for Funding	Short Term	--
RU-PI-2	Harden or move underground distribution system from FPL substation to installation, where applicable. There are some locations where the distribution system consists of wood poles, which are susceptible to damage from high winds.	Primary Mission Critical	Design Construction Maintenance	Responsible Party: FPL Partner: JPA for Funding	Mid Term	--
RU-PI-3	Harden wet wells and elevate electrical control panels of lift stations that service the installation per their risk mitigation plan.	Mission Supportive	Construction Maintenance	Responsible Party: Miami-Dade County (WASD) Partner: JPA for Funding	Mid Term	--

Table 7-10. USAG-Miami/SOUTHCOM Resilient Utilities Funding Options

Funding Program	Description	Notes
<p>Defense Community Infrastructure Pilot Program (OLDCC and DoD)</p>	<p>The Defense Community Infrastructure Pilot Program is designed to address deficiencies in community infrastructure, and supportive of a military installation, to enhance military value, installation resilience, and military family quality of life.</p> <p>Eligible community infrastructure projects are any complete and usable transportation project; community support facilities (for example, school, hospital, police, fire, emergency response, or other community support facility) and utility infrastructure projects (for example, water, wastewater, telecommunications, electric, gas, or other utility infrastructure [with necessary cyber safeguards]) that:</p> <ul style="list-style-type: none"> • are located off a military installation • support a military installation • are owned by a state or local government or a not-for-profit, member-owned utility service 	<ul style="list-style-type: none"> • Requires at least 30% non-Federal cost share. • Projects located in rural areas (areas with populations of less than 100,000) or projects determined to be “advantageous for reasons related to national security” with a signed statement from a Military Department Secretary are eligible to receive full Federal funding.
<p>Grid Resilience State Formula Grants (DOE)</p>	<p>The Grid Resilience program is designed to strengthen and modernize America’s power grid against wildfires, extreme weather, and other natural disasters and will provide funding over 5 years based on a formula to states, territories, and tribes.</p> <p>States can use grant funding to issue subawards to electric grid operators, electricity storage operators, transmission owners and operators, and distribution providers.</p>	<ul style="list-style-type: none"> • The State of Florida and electric grid operators are recipients of funding. • The eligible entity that receives a subaward is required to match 100% of the amount of the subaward.
<p>Grid Resilience and Innovation Partnerships Program (DOE)</p>	<p>The GRIP program funds projects across three separate programs to enhance grid flexibility and improve the resilience of the power system against extreme weather threats.</p> <p>The Grid Resilience Utility and Industry Grants support activities that will modernize the electric grid to reduce impacts from extreme weather and natural disasters.</p>	<ul style="list-style-type: none"> • Eligible entities include electric grid operators, electricity storage operators, transmission owners and operators, distribution providers, and so forth. • The eligible entity that receives a subaward is required to match 100% of the amount of the subaward.

7. PROJECT TIMELINE AND FUNDING OPTIONS

USAG-Miami/SOUTHCOM Right-of-Way Improvements

Table 7-11. USAG-Miami/SOUTHCOM Right-of-Way Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
RO-PI-1	Update the City of Doral Transportation Master Plan Bicycle Network project to include pedestrian and cyclist path connections north and south of the installation that align with existing bike infrastructure.	Mission Supportive	Planning	Responsible Party: City of Doral Partner: USAG-Miami/SOUTHCOM	Short Term	\$50,000
RO-PI-2	Update the City of Doral Transportation Master Plan Complete Street and Streetscape Shading planning projects to include the road segments on 25th Street, 33rd Street, 36th Street, 87th Street and 97th Street.	Mission Supportive	Planning	Responsible Party: City of Doral Partner: USAG-Miami/SOUTHCOM	Short Term	\$50,000
RO-PI-3	Install pedestrian crossing/overpass between the new housing development and installation.	Mission Supportive	Design Construction Maintenance	Responsible Party: City of Doral Partner: USAG-Miami/SOUTHCOM	Mid Term	\$16.75M
RO-PI-4	Design and construct the City of Doral Transportation Master Plan Complete Street and Streetscape Shading projects on the road segments of 25th Street, 33rd Street, 36th Street, 87th Street and 97th Street.	Mission Supportive	Design Construction Maintenance	Responsible Party: City of Doral Partner: USAG-Miami/SOUTHCOM	Mid Term	\$1500/ yd ²

Table 7-12. USAG-Miami/SOUTHCOM Right-of-Way Funding Options

Funding Program	Description	Notes
Safe Streets and Roads for All Program (USDOT)	Funds the development of a comprehensive safety action plan to address roadway safety issues and implementation of projects identified in the Action Plan.	<ul style="list-style-type: none"> • Requires coordination with the local MPO or Transportation Planning Organization • Requires at least 20% non-Federal cost share
Rebuilding American Infrastructure with Sustainability and Equity Program (USDOT)	Funds a wide range of critical freight and passenger transportation infrastructure projects with priority to projects that support safety, environmental sustainability, mobility and community connectivity, and quality of life.	<ul style="list-style-type: none"> • Requires at least 20% non-Federal cost share



Right-of-Way Improvements Section

7. PROJECT TIMELINE AND FUNDING OPTIONS

USAG-Miami/SOUTHCOM Attainable Housing

Table 7-13. USAG-Miami/SOUTHCOM Attainable Housing Policy Action Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe
AH-PA-1	Department of Public Housing and Community Development form a partnership with the installation, SFDA, local government, developers, and land owners to make incremental, sustained improvement for attainable housing for installation personnel. Report on level of success with the current Workforce Housing Incentive Program, and develop a pilot. Identify land parcels for military housing development opportunities.	Mission Supportive	Planning	Responsible Party: Miami-Dade County Partners: SFDA, City of Doral, Local Developers, and Land Owners	Short Term

Table 7-14. USAG-MIAMI/SOUTHCOM Attainable Housing Funding Options for Future Phases

Funding Program	Description	Notes
Community Development Block Grant (CDBG) Entitlement Program (Department of Housing and Urban Affairs [HUD])	<p>Provides annual grants on a formula basis to entitled cities and counties to develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low- and moderate-income persons.</p> <p>CDBG funds may be used for activities that include, but are not limited to:</p> <ul style="list-style-type: none"> • Acquisition of real property • Relocation and demolition • Rehabilitation of residential and non-residential structures • Construction of public facilities and improvements, such as water and sewer facilities, streets, and neighborhood centers, and the conversion of school buildings for eligible purposes 	<ul style="list-style-type: none"> • Miami-Dade County is the local CDBG grantee. • Local share requirements may differ depending on the grantee.

USAG-Miami/SOUTHCOM Resilience Hub

Table 7-15. USAG-Miami/SOUTHCOM Resilience Hub Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
RH-PI-1	Design and construct the resilience hub to serve as a Disaster Response and EFAC as part of the housing development.	Additional Supportive	Planning Design Construction Maintenance	Responsible Party: Housing Developer Partner: USAG-Miami/SOUTHCOM	Mid Term	\$88,700/ft ²

Table 7-16. USAG-MIAMI/SOUTHCOM Resilience Hub Funding Options

Funding Program	Description	Notes
Building Resilient Infrastructure and Communities (FEMA)	<p>Mitigation Projects: Projects designed to increase resilience and public safety, reduce injuries and loss of life, and reduce damage and destruction to property, critical services, facilities, and infrastructure.</p> <p>Eligible mitigation measures and activities relating to resilience hubs include:</p> <ul style="list-style-type: none"> • purchasing and installing backup power equipment, including generators, microgrids, and associated equipment • implementing structural and non-structural retrofits to buildings that house resilience hubs • implementing flood mitigation measures to increase protection to facilities that serve as resilience hubs 	<ul style="list-style-type: none"> • Required coordination with FDEM • Requires 25% non-Federal cost share <ul style="list-style-type: none"> – Economically disadvantaged communities eligible for up to 10% non-Federal cost share
Hazard Mitigation Grant Program (HMGP) - FEMA	<p>Provides funding to state, local, tribal, and territorial governments to support hazard mitigation planning and mitigation activities to reduce future disaster losses in their communities.</p> <p>Eligible mitigation measures and activities relating to resilience hubs include:</p> <ul style="list-style-type: none"> • implementing structural and non-structural retrofits to buildings that house resilience hubs • implementing flood mitigation measures to increase protection to facilities that serve as resilience hubs • construction of safe rooms for communities in areas prone to hurricane activity 	<ul style="list-style-type: none"> • HMGP funding is only available to states when authorized under a Major Disaster Declaration. • Applicants must have a FEMA-approved hazard mitigation plan to receive HMGP funding. • Requires 25% non-Federal cost share.

HARB Resilience Portfolio

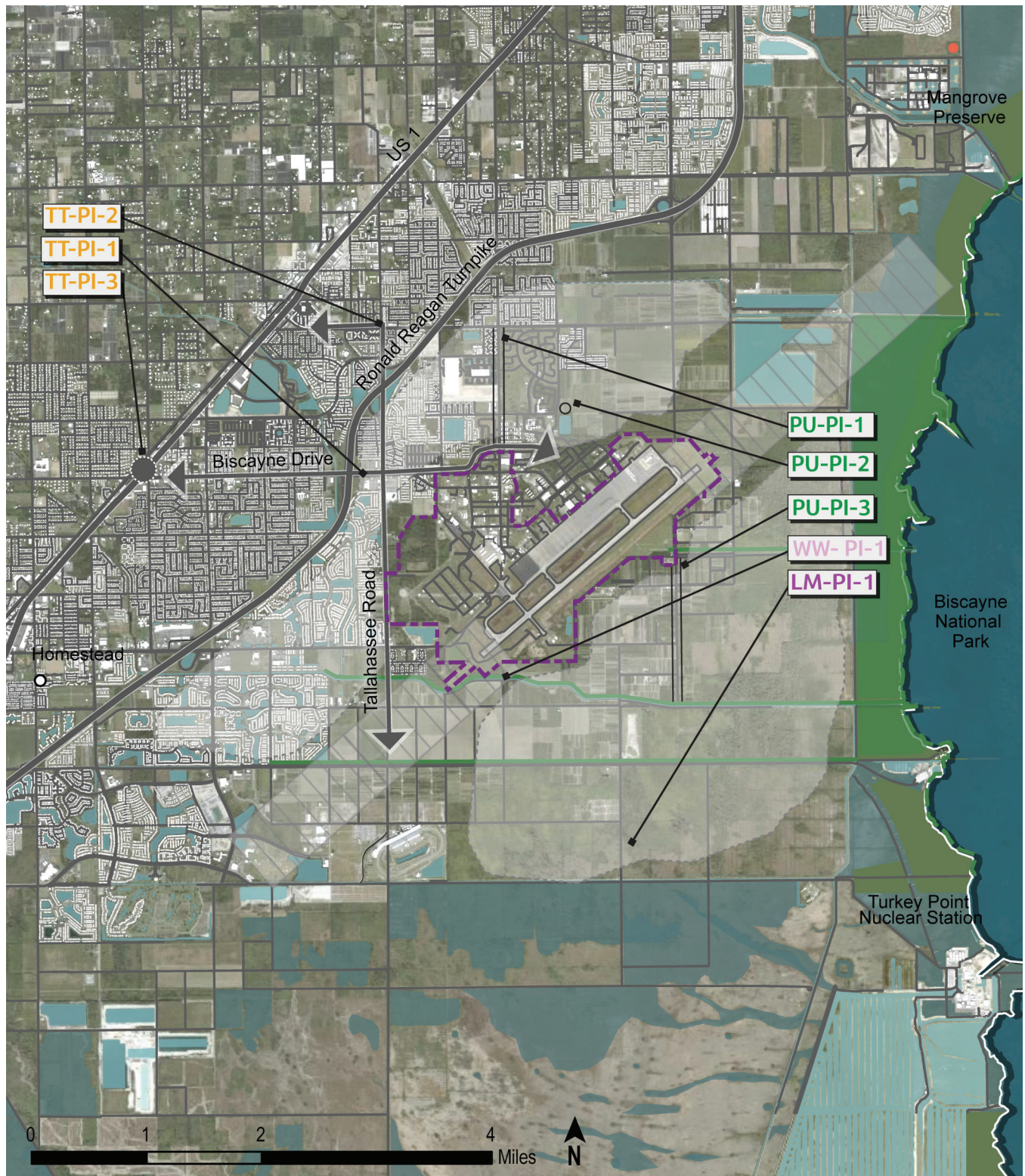


Figure 7-7. HARB Resilience Plan

The component interventions of all HARB projects were plotted on an implementation timeline to define when the project pieces would be carried out. There are three categories within the timeline: short-term, indicating 0 to 3 years, mid-term, indicating 4 to 7 years, and long-term, indicating 8 to 15 years.



LEGEND

- Project Name
- JP Joint Participation Agreement
 - PU Power Utilities
 - TT Transit and Transportation
 - NI Natural Infrastructure
 - LM Land Management
 - WW Water and Wastewater Utilities

- Intervention Type
- PA Policy Action
 - PI Physical Infrastructure
 - RI Recommendations to Installation



Figure 7-8. HARB Project Timeline

7. PROJECT TIMELINE AND FUNDING OPTIONS

Funding Options

HARB Joint Participation Agreement

JPAs formalize the coordination framework for effective planning and funding pursuits and pave the way for addressing vulnerabilities.

Table 7-17. HARB Joint Participation Agreement Interventions

Tag	Description	Criticality	Responsible Party and Partners	Timeframe
JP-PA-1	Leverage ongoing positive relationships by creating a JPA among HARB, City of Homestead, Miami-Dade County, and SFDA to advocate for mutually beneficial changes in policy and implementation.	Primary Mission Critical	Responsible Party: SFRPC Partners: HARB, City of Homestead, Miami-Dade County, SFDA	Short Term



Bird's Eye View of HARB

Table 7-18. HARB Joint Participation Agreement Funding Options

Funding Program	Description	Notes
Building Resilient Infrastructure and Communities (FEMA)	<p>Capability and Capacity-Building Activities: Activities that enhance the knowledge, skills, and expertise of the current workforce to expand or improve the administration of mitigation assistance. Subcategories include building codes activities, partnership activities, project scoping, and hazard mitigation planning.</p>	<ul style="list-style-type: none"> • Required coordination with FDEM • Requires 25% non-Federal cost share <ul style="list-style-type: none"> – Economically disadvantaged communities eligible for up to 10% non-Federal cost share
Installation Resilience (OLDCC)	<p>Community Capacity Building and Planning: The Installation Resilience is designed to support the organizing, planning, and implementation actions necessary to foster, protect, and enhance the sustainability of military installations. This program enables a “one community” response through a collaborative Federal, state, local, and private effort to optimize the capacities and resources each can bring to the effort, including:</p> <ul style="list-style-type: none"> • Targeted studies or plans concerning, but not limited to, transportation, land use/encroachment, utility services, housing, stormwater management, sewer, and communications. • Tabletop exercises with local military and civilian (public and private) leadership to review capacities of hard infrastructure and public services to respond to natural and/or human-caused disruptions. 	<p>There are two ways a community can participate in Installation Resilience program activities:</p> <ul style="list-style-type: none"> • Service Nomination Process. The Military Services may nominate installation(s) for assistance through annual requests or may also nominate installations out of cycle. • Community Nomination Process. State and local governments may submit an inquiry to the Office of Local Defense Community Cooperation.

7. PROJECT TIMELINE AND FUNDING OPTIONS

Table 7-19. HARB Transit and Transportation Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
TT-PI-1	Commission a planning study for Biscayne Drive and Tallahassee Road focused on flood risk mitigation and Complete Street design.	Primary Mission Critical	Planning	Responsible Party: Miami-Dade County Partner: JPA for Funding	Short Term	\$300,000
TT-PI-2	Redesign and construct roadway improvements based on the recommendations from the planning study.	Primary Mission Critical	Design Construction Maintenance	Responsible Party: Miami-Dade County Partner: JPA for Funding	Mid Term	\$1,440/ yd ²
TT-PI-3	Add a BRT stop at Biscayne Drive and U.S. Route 1 on the South Dade TransitWay corridor.	Additional Supportive	Planning Design Construction Maintenance	Responsible Party: Miami-Dade County Partner: JPA for Funding	Mid Term	--



Transit Corridor Section

Table 7-20. HARB Transit and Transportation Funding Options

Funding Program	Description	Notes
<p>Defense Community Infrastructure Pilot Program (OLDCC and DoD)</p>	<p>The Defense Community Infrastructure Pilot Program is designed to address deficiencies in community infrastructure that supports a military installation, to enhance military value, installation resilience, and military family quality of life.</p> <p>Eligible community infrastructure projects are any complete and usable transportation project; community support facilities (for example, school, hospital, police, fire, emergency response, or other community support facility) and utility infrastructure projects (for example, water, wastewater, telecommunications, electric, gas, or other utility infrastructure [with necessary cyber safeguards]) that:</p> <ul style="list-style-type: none"> • are located off a military installation • support a military installation • are owned by a state or local government or a not-for-profit, member-owned utility service 	<ul style="list-style-type: none"> • Requires at least 30% non-Federal cost share. • Projects located in rural areas (areas with populations of less than 100,000) or projects determined to be “advantageous for reasons related to national security” with a signed statement from a Military Department Secretary are eligible to receive full Federal funding.
<p>PROTECT (Formula and Competitive Discretionary programs) (FDOT and FHWA)</p>	<p>Provides funding to ensure surface transportation resilience to natural hazards including climate change, SLR, flooding, extreme weather events, and other natural disasters through support of planning activities, resilience improvements, community resilience and evacuation routes, and at-risk coastal infrastructure.</p>	<ul style="list-style-type: none"> • FDOT receives approximately \$70 million in annual PROTECT formula funding. • Requires 20% non-Federal cost share.
<p>Defense Access Roads (FHWA and SDDC)</p>	<p>Provides funding to ensure highway improvements needed to support adequate highway service to defense and defense-related installations. The need for these improvements may arise in connection with the establishment, expansion, or operation of defense installations that create an unanticipated impact on the long-range requirements for the development of highways in the vicinity. The primary purpose of the funding is for highway improvements necessary for the functioning of the installation so that the defense installation does not burden the existing highway.</p>	<ul style="list-style-type: none"> • The local military installation identifies the access or mobility needs and brings these deficiencies to the attention of the SDDC, who reviews the requirement and makes a preliminary eligibility determination. State and local stakeholders will need to coordinate with the installations to identify the required funding to support roadway improvements and repairs.

7. PROJECT TIMELINE AND FUNDING OPTIONS

HARB Natural Infrastructure

Table 7-21. HARB Natural Infrastructure Funding Options

Funding Program	Description	Notes
N/A	Continue ongoing efforts with the installation.	

HARB Power Utilities

Table 7-22. HARB Power Utilities Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
PU-PI-1	Install an automated switch be installed at the offsite substation. In the event of an outage at the substation, power will be automatically redirected to a different facility without manual intervention.	Secondary Mission Critical	Construction Maintenance	Responsible Party: FPL Partner: JPA for Funding	Short Term	--
PU-PI-2	Harden or move underground distribution system from the substation to installation. Hardening can include converting wood to concrete poles, while undergrounding protects infrastructure from aboveground hazards.	Secondary Mission Critical	Construction Maintenance	Responsible Party: FPL Partner: JPA for Funding	Mid Term	--
PU-PI-3	Identify and elevate or harden critical transformers that support the installation. The transformers should be elevated out of the floodplain or hardened so they are not impacted by flooding.	Secondary Mission Critical	Design Construction Maintenance	Responsible Party: FPL Partner: JPA for Funding	Mid Term	--

Table 7-23. HARB Power Utilities Funding Options

Funding Program	Description	Notes
<p>Defense Community Infrastructure Pilot (DCIP) Program (OLDCC and DoD)</p>	<p>The Defense Community Infrastructure Pilot Program is designed to address deficiencies in community infrastructure, and supportive of a military installation, to enhance military value, installation resilience, and military family quality of life.</p> <p>Eligible community infrastructure projects are any complete and usable transportation project; community support facilities (for example, school, hospital, police, fire, emergency response, or other community support facility) and utility infrastructure projects (for example, water, wastewater, telecommunications, electric, gas, or other utility infrastructure [with necessary cyber safeguards]) that:</p> <ul style="list-style-type: none"> • are located off a military installation • support a military installation • are owned by a state or local government or a not-for-profit, member-owned utility service 	<ul style="list-style-type: none"> • Requires at least 30% non-Federal cost share. • Projects located in rural areas (areas with populations of less than 100,000) or projects determined to be “advantageous for reasons related to national security” with a signed statement from a Military Department Secretary are eligible to receive full Federal funding.



Power Infrastructure at HARB

7. PROJECT TIMELINE AND FUNDING OPTIONS

HARB Water and Wastewater Utilities

Table 7-24. HARB Water and Wastewater Utilities Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
WW-PI-1	Connect HARB to wastewater line that will run south past the installation. This will add a redundant option for wastewater service.	Secondary Mission Critical	Planning Design Construction Maintenance	Responsible Party: Miami-Dade County (WASD) Partner: JPA for Funding	Long Term	\$140,000

Table 7-25. HARB Water and Wastewater Utilities Funding Options

Funding Program	Description	Notes
Clean Water and Drinking Water State Revolving Fund (SRF) - FDEP	<p>The Clean Water SRF provides low-interest loans to local governments to plan, design, and build or upgrade wastewater, stormwater, and nonpoint source pollution prevention projects.</p> <p>The Drinking Water SRF provides low-interest loans to local governments and private utilities to plan, design, and build or upgrade drinking water systems and for source water development.</p>	<ul style="list-style-type: none"> • Wastewater and Drinking Water system owners would need to work with FDEP for financing • Maximum Federal share is 80% <ul style="list-style-type: none"> – projects benefiting the small, disadvantaged community that serves a population of less than 10,000 and whose household income is below the State of Florida average may qualify for principal forgiveness
Building Resilient Infrastructure and Communities (FEMA)	<p>Capability and Capacity-Building Activities: Activities that enhance the knowledge, skills, and expertise of the current workforce to expand or improve the administration of mitigation assistance. Subcategories include building codes activities, partnership activities, project scoping, and hazard mitigation planning activities.</p>	<ul style="list-style-type: none"> • Required coordination with FDEM • Requires 25% non-Federal cost share <ul style="list-style-type: none"> – Economically disadvantaged communities eligible for up to 10% non-Federal cost share

HARB Land Management

Table 7-26. HARB Land Management Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
LM-PI-1	Develop parameters for the study that defines encroachment in all its forms. This study will provide the support for actions that can protect the base from land management and encroachment.	Additional Supportive	Planning	Responsible Party: Miami-Dade County Partner: JPA for Funding	Short Term	\$250,000

Table 7-27. HARB Land Management Funding Options

Funding Program	Description	Notes
Readiness and Environmental Protection Integration (REPI) Program (DoD)	Preserves and enhances military missions by helping remove or avoid land use conflicts near installations, ranges, and their associated facilities, range infrastructure, and airspace, as well as addressing regulatory restrictions that inhibit military activities. The military installation partners with a state or local government or private conservation group to cost-share the acquisition of easements and other real property interests from willing sellers.	<ul style="list-style-type: none"> • While REPI is an internal DoD program, it requires partnership by a state or local government (for example, City of Homestead or Miami-Dade County). • The City or County must contact the installation office to begin the process.

NASKW Resilience Portfolio



Figure 7-9. NASKW Resilience Plan

The component interventions of all NASKW projects were plotted on an implementation timeline to define when the project pieces would be carried out. There are three categories within the timeline: short-term, indicating 0 to 3 years, mid-term, indicating 4 to 7 years, and long-term, indicating 8 to 15 years.



LEGEND

- Project Name**
- JP Joint Participation Agreement
 - RU Resilient Utilities
 - SS Shoreline Stability
 - SI Stormwater Infrastructure
 - AH Attainable Housing
 - RI Roadway Improvements
- Intervention Type**
- PA Policy Action
 - PI Physical Infrastructure
 - RI Recommendations to Installation
- JP-PA-1**
- Project Name
 - Intervention Type
 - Project Number

Figure 7-10. NASKW Project Timeline

7. PROJECT TIMELINE AND FUNDING OPTIONS

Funding Options

NASKW Joint Participation Agreement

JPAs formalize the coordination framework for effective planning and funding pursuits and pave the way for addressing vulnerabilities.

Table 7-28. NASKW Joint Participation Agreement Interventions

Tag	Description	Criticality	Responsible Party and Partners	Timeframe
JP-PA-1	Amend the existing JPA among NASKW, City of Key West, and Monroe County to include the USCG Sector Key West, Fort Zachary Taylor State Park, and SFDA.	Primary Mission Critical	Responsible Party: SFRPC Partners: NASKW, U.S. Coast Guard Sector Key West, City of Key West, Monroe County, Fort Zachary Taylor State Park, SFDA	Short Term

Table 7-29. NASKW Joint Participation Agreement Funding Options

Funding Program	Description	Notes
Building Resilient Infrastructure and Communities (FEMA)	Capability and Capacity-Building Activities: Activities that enhance the knowledge, skills, and expertise of the current workforce to expand or improve the administration of mitigation assistance. Subcategories include building codes activities, partnership activities, project scoping, and hazard mitigation planning.	<ul style="list-style-type: none"> • Required coordination with FDEM • Requires 25% non-Federal cost share <ul style="list-style-type: none"> – Economically disadvantaged communities eligible for up to 10% non-Federal cost share
National Coastal Resilience Fund (NFWF)	Community Capacity Building and Planning: Activities that build the capacity to plan and execute a variety of future resilience strategies, projects, and other activities. Projects under this category should support the development of a plan or plans that prioritize resilience strategies and projects, and identify specific efforts that, when implemented, will meet community goals of increasing resilience and improving habitat for fish and wildlife.	<ul style="list-style-type: none"> • \$15 million in DoD set-aside funding is available for coastal resilience projects that benefit military installations. In the proposal narrative, applicants will be asked to provide additional information to clearly describe the coastal hazards that threaten the military mission, the nature-based solution proposed to address those threats, and how the project will maintain and improve military resilience and directly benefit defense mission capabilities of the DoD installation or range the project is associated with. Coordinating with the local DoD installation before applying is strongly encouraged. • Non-Federal match is not required but is encouraged to demonstrate broad support for the project.

Funding Program	Description	Notes
Climate Resilience Regional Challenge (NOAA)	<p>Community Capacity Building and Planning: The focus of this grant program is on holistic, collaborative approaches to increase resilience in coastal regions. Proposed projects should address risk reduction, regional collaboration, equity, and building enduring capacity for adaptation. (The NOFO was announced on June 20, 2023.)</p>	<ul style="list-style-type: none"> • The recently announced \$575 million NOAA Climate Resilience Regional Challenge includes Track One funding focused on regional collaborative building and strategy development that can be used to initiate new, regional-scale collaborations or to advance existing partnerships focused on climate resilience and can the development.
Installation Resilience (OLDCC)	<p>Community Capacity Building and Planning: The Installation Resilience is designed to support the organizing, planning, and implementation actions necessary to foster, protect, and enhance the sustainability of military installations. This program enables a “one community” response through a collaborative Federal, state, local, and private effort to optimize the capacities and resources each can bring to the effort, including:</p> <ul style="list-style-type: none"> • Targeted studies or plans concerning, but not limited to, transportation, land use/encroachment, utility services, housing, stormwater management, sewer, and communications. • Tabletop exercises with local military and civilian (public and private) leadership to review capacities of hard infrastructure and public services to respond to natural and/or human-caused disruptions. 	<p>There are two ways a community can participate in Installation Resilience program activities:</p> <ul style="list-style-type: none"> • Service Nomination Process. The Military Services may nominate installation(s) for assistance through annual requests or may also nominate installations out of cycle. • Community Nomination Process. State and local governments may submit an inquiry to the Office of Local Defense Community Cooperation.



NASKW Working Group

7. PROJECT TIMELINE AND FUNDING OPTIONS

Shoreline Stability and Security

Table 7-30. NASKW Shoreline Stability and Security Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
SS-PI-1	Bring innovative hybrid design solutions to address the stabilization of critical shorelines based on their familiarity with the subject matter and the area.	Primary Mission Critical	Design Construction Maintenance	Responsible Party: EWN Partner: DARPA	Short Term	--
SS-PI-2	Construct improvements to mission critical shorelines south of Boca Chica.	Primary Mission Critical	Design Construction Maintenance	Responsible Party: Monroe County Partners: EWN, DARPA	Short Term	\$485/yd ²
SS-PI-3	Construct improvements to shorelines on Fleming Key.	Primary Mission Critical	Design Construction Maintenance	Responsible Party: City of Key West Partners: EWN, DARPA	Mid Term	\$485/yd ²
SS-PI-4	Develop a Landscape Master Plan as a complement to the Strategic Plan and Bicycle and Pedestrian Plan. This plan should include an Installation Perimeter typology – a new roadway classification for streetscape treatment around the installation boundary.	Primary Mission Critical	Planning Design Construction Maintenance	Responsible Party: City of Key West Partner: NASKW	Mid Term	\$150,000
SS-PI-5	Design and construct the streetscape improvements of the Installation Perimeter segments in the Landscape Master Plan	Primary Mission Critical	Design Construction Maintenance	Responsible Party: City of Key West Partner: --	Long Term	\$1497/yd ²



NASKW Airfield and Shorelines at Boca Chica Key

7. PROJECT TIMELINE AND FUNDING OPTIONS

Table 7-31. NASKW Shoreline Stability and Security Funding Options

Funding Program	Description	Notes
Transformational Habitat Restoration and Coastal Resilience (NOAA)	Funds habitat restoration actions that rebuild productive and sustainable fisheries, contribute to the recovery and conservation of threatened and endangered species, use natural infrastructure to reduce damage from flooding and storms, promote resilient ecosystems and communities, and yield socioeconomic benefits.	<ul style="list-style-type: none"> • No local cost share is required but encouraged.
Beach Erosion and Hurricane and Storm Damage Reduction (USACE) - Section 103 CAP	Funds projects to protect public and private properties and facilities against damages caused by storm-driven waves and currents through the construction of revetments, groins, and jetties.	<ul style="list-style-type: none"> • Requires 35% non-Federal cost share.
National Coastal Resilience Fund (NFWF)	Restoration and Monitoring: Projects that protect and enhance the resilience of natural systems and help mitigate the impacts of future storms and other natural hazard events and threats on key local community assets (such as emergency services, infrastructure, and centers of economic activity), and drive the expected benefit to fish and wildlife.	<ul style="list-style-type: none"> • \$15 million in DoD set-aside funding is available for coastal resilience projects that benefit military installations. In the proposal narrative, applicants will be asked to provide additional information to clearly describe the coastal hazards that threaten the military mission, the nature-based solution proposed to address those threats, and how the project will maintain and improve military resilience and directly benefit defense mission capabilities of the DoD installation or range the project is associated with. Coordinating with the local DoD installation before applying is strongly encouraged. • Non-Federal match is not required but is encouraged to demonstrate broad support for the project.
Climate Resilience Regional Challenge (NOAA)	Community Capacity Building and Planning: The focus of this grant program is on holistic, collaborative approaches to increase resilience in coastal regions. Proposed projects should address risk reduction, regional collaboration, equity, and building enduring capacity for adaptation. (The NOFO was announced on June 20, 2023.)	<ul style="list-style-type: none"> • The recently announced \$575 million NOAA Climate Resilience Regional Challenge includes Track Two funding that focuses on the implementation of resilience and adaptation efforts that align with reducing risk and vulnerability. This track provides funding for applicants to implement coordinated adaptation efforts that support a holistic vision for resilience and build the capacity of the communities in a region to sustain efforts into the future, especially those communities that have been marginalized, underserved, and underrepresented.

Funding Program	Description	Notes
Installation Resilience (OLDCC)	<p>Community Capacity Building and Planning: The Installation Resilience is designed to support the organizing, planning, and implementation actions necessary to foster, protect, and enhance the sustainability of military installations. This program enables a “one community” response through a collaborative Federal, state, local, and private effort to optimize the capacities and resources each can bring to the effort, including:</p> <ul style="list-style-type: none"> • Targeted studies or plans concerning, but not limited to, transportation, land use/encroachment, utility services, housing, stormwater management, sewer, and communications; and, • Tabletop exercises with local military and civilian (public and private) leadership to review capacities of hard infrastructure and public services to respond to natural and/or human-caused disruptions. 	<p>There are two ways a community can participate in Installation Resilience program activities:</p> <ul style="list-style-type: none"> • Service Nomination Process. The Military Services may nominate installation(s) for assistance through annual requests or may also nominate installations out of cycle. • Community Nomination Process. State and local governments may submit an inquiry to the Office of Local Defense Community Cooperation. <p>The installation resilience grants have a minimum 10% non-Federal cost-share.</p>

7. PROJECT TIMELINE AND FUNDING OPTIONS

NASKW Resilient Utilities

Table 7-32. NASKW Resilient Utilities Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
RU-PI-1	Elevate and harden substations and transformers with identified high and medium risk. This will improve electrical service reliability by reducing flood impacts.	Primary Mission Critical	Design Construction Maintenance	Responsible Party: Keys Energy Partner: JPA For Funding	Short Term	--
RU-PI-2	Harden communications infrastructure. This can include installing a fiber backbone and creating a redundant and separate service for the DoD, and elevating ground transformers.	Primary Mission Critical	Design Construction Maintenance	Responsible Party: AT&T Partner: JPA For Funding	Short Term	--
RU-PI-3	Move distribution lines underground in areas where lines are traveling through a heavily vegetated area.	Primary Mission Critical	Design Construction Maintenance	Responsible Party: Keys Energy Partner: JPA For Funding	Short Term	--
RU-PI-4	Design and construct backup energy projects from the feasibility study.	Primary Mission Critical	Design Construction Maintenance	Responsible Party: City of Key West Partner: JPA For Funding	Mid Term	--
RU-PI-5	Design and construct stormwater storage and filtration projects from the feasibility study.	Primary Mission Critical	Design	Responsible Party: City of Key West Partner: JPA For Funding	Mid Term	--



Power Infrastructure at NASKW

7. PROJECT TIMELINE AND FUNDING OPTIONS

Table 7-33. NASKW Resilient Utilities Funding Options

Funding Program	Description	Notes
Building Resilient Infrastructure and Communities (FEMA)	<p>Capability and Capacity-Building Activities: Activities that enhance the knowledge, skills, and expertise of the current workforce to expand or improve the administration of mitigation assistance. Subcategories include building codes activities, partnership activities, project scoping, and hazard mitigation planning activities.</p>	<ul style="list-style-type: none"> • Required coordination with FDEM • Requires 25% non-Federal cost share <ul style="list-style-type: none"> – Economically disadvantaged communities eligible for up to 10% non-Federal cost share
Defense Community Infrastructure Pilot Program (OLDCC and DoD)	<p>The DCIP Program is designed to address deficiencies in community infrastructure that supports a military installation, to enhance military value, installation resilience, and military family quality of life.</p> <p>Eligible community infrastructure projects are any complete and usable transportation project; community support facilities (for example, school, hospital, police, fire, emergency response, or other community support facility) and utility infrastructure projects (for example, water, wastewater, telecommunications, electric, gas, or other utility infrastructure [with necessary cyber safeguards]) that:</p> <ul style="list-style-type: none"> • are located off a military installation • support a military installation • are owned by a state or local government or a not-for-profit, member-owned utility service 	<ul style="list-style-type: none"> • Requires at least 30% non-Federal cost share. • Projects located in rural areas (areas with populations of less than 100,000) or projects determined to be “advantageous for reasons related to national security” with a signed statement from a Military Department Secretary are eligible to receive full Federal funding.
Grid Resilience State Formula Grants (DOE)	<p>The Grid Resilience program is designed to strengthen and modernize America’s power grid against wildfires, extreme weather, and other natural disasters and will provide funding over 5 years based on a formula to states, territories, and tribes.</p> <p>States can use grant funding to issue subawards to electric grid operators, electricity storage operators, transmission owners and operators, and distribution providers.</p>	<ul style="list-style-type: none"> • The State of Florida and electric grid operators are recipients of funding. • The eligible entity that receives a subaward is required to match 100% of the amount of the subaward.

Funding Program	Description	Notes
Grid Resilience and Innovation Partnerships Program (DOE)	<p>The GRIP program funds projects across three separate programs to enhance grid flexibility and improve the resilience of the power system against extreme weather threats.</p> <p>The Grid Resilience Utility and Industry Grants support activities that will modernize the electric grid to reduce impacts from extreme weather and natural disasters.</p>	<ul style="list-style-type: none"> • Eligible entities include electric grid operators, electricity storage operators, transmission owners and operators, distribution providers, and so forth. • The eligible entity that receives a subaward is required to match 100% of the amount of the subaward.
Energy Efficiency and Conservation Block Grant (EECBG) Program (DOE)	<p>The EECBG Competitive Program will award funding to local governments, state-recognized tribes, or teams of these communities for a wide variety of projects that lower energy costs, reduce carbon emissions, improve energy efficiency, and reduce overall energy use.</p> <p>Examples include:</p> <ul style="list-style-type: none"> • development and implementation of an Energy Efficiency and Conservation Strategy • retaining technical consultant services to assist the eligible entity in the development of a strategy • application and implementation of energy distribution technologies that significantly increase energy efficiency 	<ul style="list-style-type: none"> • City of Key West or Monroe County is eligible to apply. • Cost sharing is not required.



Resilient Community through Redundant Infrastructure

7. PROJECT TIMELINE AND FUNDING OPTIONS

NASKW Stormwater Infrastructure

Table 7-34. NASKW Stormwater Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
SI-PI-1	Design and construct a stormwater pump station, piping, and outfall to alleviate flooding on Palm Avenue at Trumbo Point.	Secondary Mission Critical	Design Construction Maintenance	Responsible Party: City of Key West Partner: JPA For Funding	Mid Term	--

Table 7-35. NASKW Stormwater Infrastructure Funding Options

Funding Program	Description	Notes
Clean Water and Drinking Water State Revolving Fund (FDEP)	<p>The Clean Water SRF provides low-interest loans to local governments to plan, design, and build or upgrade wastewater, stormwater, and nonpoint source pollution prevention projects.</p> <p>The Drinking Water SRF provides low-interest loans to local governments and private utilities to plan, design, and build or upgrade drinking water systems and for source water development.</p>	<ul style="list-style-type: none"> Wastewater and Drinking Water system owners would need to work with FDEP for financing Maximum Federal share is 80% <ul style="list-style-type: none"> projects benefiting the small, disadvantaged community that serves a population of less than 10,000 and whose household income is below the State of Florida average may qualify for principal forgiveness
Building Resilient Infrastructure and Communities (FEMA)	Mitigation Projects: Projects designed to increase resilience and public safety; reduce injuries and loss of life; and reduce damage and destruction to property, critical services, facilities, and infrastructure.	<ul style="list-style-type: none"> Required coordination with FDEM Requires 25% non-Federal cost share <ul style="list-style-type: none"> Economically disadvantaged communities eligible for up to 10% non-Federal cost share
PROTECT (Formula and Competitive Discretionary programs) (FDOT and FHWA)	Provides funding to ensure surface transportation resilience to natural hazards including climate change, SLR, flooding, extreme weather events, and other natural disasters through support of planning activities, resilience improvements, community resilience and evacuation routes, and at-risk coastal infrastructure.	<ul style="list-style-type: none"> FDOT receives approximately \$70 million in annual PROTECT formula funding. Requires 20% non-Federal cost share.



Palm Avenue Entry Control Point to Trumbo Point

7. PROJECT TIMELINE AND FUNDING OPTIONS

NASKW Roadway Improvements

Table 7-36. NASKW Roadway Improvement Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
RI-PI-1	Design and construct segment updates in a phased manner per the JPA's amendments.	Secondary Mission Critical	Design Construction Maintenance	Responsible Party: Key West, Monroe County, NASKW Partner: JPA For Funding	Mid Term	--

Table 7-37. NASKW Roadway Improvement Funding Options

Funding Program	Description	Notes
PROTECT (Formula and Competitive Discretionary programs) (FDOT and FHWA)	Provides funding to ensure surface transportation resilience to natural hazards including climate change, SLR, flooding, extreme weather events, and other natural disasters through support of planning activities, resilience improvements, community resilience and evacuation routes, and at-risk coastal infrastructure.	<ul style="list-style-type: none"> • FDOT receives approximately \$70 million in annual PROTECT formula funding. • Requires 20% non-Federal cost share.
Building Resilient Infrastructure and Communities (FEMA)	Mitigation Projects: Projects designed to increase resilience and public safety; reduce injuries and loss of life; and reduce damage and destruction to property, critical services, facilities, and infrastructure.	<ul style="list-style-type: none"> • Required coordination with FDEM • Requires 25% non-Federal cost share <ul style="list-style-type: none"> – Economically disadvantaged communities eligible for up to 10% non-Federal cost share
Charging and Fueling Infrastructure (USDOT)	The Discretionary Grant Program for Charging and Fueling Infrastructure is a competitive grant program from FHWA to strategically deploy publicly accessible electric vehicle charging infrastructure.	<ul style="list-style-type: none"> • Requires 20% non-Federal cost share.

Funding Program	Description	Notes
Defense Community Infrastructure Pilot Program (OLDCC and DoD)	<p>The DCIP Program is designed to address deficiencies in community infrastructure, and supportive of a military installation, to enhance military value, installation resilience, and military family quality of life.</p> <p>Eligible community infrastructure projects are any complete and usable transportation project; community support facilities (for example, school, hospital, police, fire, emergency response, or other community support facility) and utility infrastructure projects (for example, water, wastewater, telecommunications, electric, gas, or other utility infrastructure [with necessary cyber safeguards]) that:</p> <ul style="list-style-type: none"> • are located off a military installation • support a military installation • are owned by a state or local government or a not-for-profit, member-owned utility service 	<ul style="list-style-type: none"> • Requires at least 30% non-Federal cost share. • Projects located in rural areas (areas with populations of less than 100,000) or projects determined to be “advantageous for reasons related to national security” with a signed statement from a Military Department Secretary are eligible to receive full Federal funding.
Defense Access Roads (FHWA and SDDC)	<p>Provides funding to ensure highway improvements needed to support adequate highway service to defense and defense-related installations. The need for these improvements may arise in connection with the establishment, expansion, or operation of defense installations that create an unanticipated impact on the long-range requirements for the development of highways in the vicinity. The primary purpose of the funding is for highway improvements necessary for the functioning of the installation so that the defense installation does not burden the existing highway.</p>	<ul style="list-style-type: none"> • The local military installation identifies the access or mobility needs and brings these deficiencies to the attention of the SDDC, who reviews the requirement and makes a preliminary eligibility determination. State and local stakeholders will need to coordinate with the installations to identify the required funding to support roadway improvements and repairs.



U.S. Route 1 to Key West

7. PROJECT TIMELINE AND FUNDING OPTIONS

NASKW Attainable Housing and Resilience Hub

Table 7-38. NASKW Attainable Housing and Resilience Hub Physical Infrastructure Interventions

Tag	Description	Criticality	Phases Needed	Responsible Party and Partners	Timeframe	Cost
AH-PI-1	Design and construct the planned resilience hub in Bahama Village and master-plan, design, and construct three additional hubs to support residents, including civilian staff and families for post-disaster support.	Additional Supportive	Planning Design Construction Maintenance	Responsible Party: City of Key West Partner: JPA For Funding	Mid Term	--

Table 7-39. NASKW Attainable Housing and Resilience Hub Funding Options

Funding Program	Description	Notes
Community Development Block Grant Entitlement Program (HUD)	<p>Provides annual grants on a formula basis to entitled cities and counties to develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low- and moderate-income persons.</p> <p>CDBG funds may be used for activities that include, but are not limited to:</p> <ul style="list-style-type: none"> • Acquisition of real property • Relocation and demolition • Rehabilitation of residential and non-residential structures • Construction of public facilities and improvements, such as water and sewer facilities, streets, and neighborhood centers, and the conversion of school buildings for eligible purposes 	<ul style="list-style-type: none"> • Monroe County is the local CDBG grantee. • Local share requirements may differ depending on the grantee.

Bringing Innovation in Utility Resilience

The installations of South Florida, most notably NASKW, are dependent on utilities systems positioned on peninsulas, islands, and spanning long distances. These systems, being supplied and maintained by third-party providers, are facing increasing chances of aging, supply chain, and climate-related disruptions. Therefore, this MIRR recommends that utility resilience for these installations focus on redundancy rather than replacement.

Redundancy is the creation of a local supply that acts as a backup for when primary sources experience disruption. This is particularly impactful when one utility disruption can have a cascading effect by disrupting others as well. There are two types of redundancy that can be applied:

Technical Redundancy. These measures add a backup of technical resources in the same location as the primary source. While providing an easy load transfer, these measures will face the same locational hazards as the primary source.

Geographical Redundancy. Redundant measures that are dispersed geographically provide the load transfer, without the vulnerability to locational hazards that the primary source faces.

Potable Water

Creating a redundant local potable water supply can be approached through two methods:

Reverse Osmosis (Desalination). Reverse Osmosis (RO) is a water treatment process that removes contaminants from water by using pressure to force water molecules through a semipermeable membrane. During this process, the contaminants are filtered out and flushed away, leaving clean drinking water. However, desalination has a high power demand.

Forward Osmosis. Forward Osmosis (FO) is an osmotic membrane process with a semipermeable membrane that unlike RO does not use applied pressure to achieve separation of water from dissolved solutes such as ions, molecules and larger particles. As a result, FO requires a lot less energy than RO because it works with the natural process rather than against it.



Long Utility Spans



Reverse Osmosis Water Treatment



Boil Notice for Potable Water

7. PROJECT TIMELINE AND FUNDING OPTIONS

Power

Microgrids. Combined Heat and Power generation plants can provide backup power at 22 megawatts, with a 5- to 6-day storage capacity. They require a supply line or shipping mechanism, but produce notably less waste than traditional plants at the end of their useful life.

Hybrid: Underwater Transmission with Geographically Distributed Batteries. Underwater electric transmission lines, which are a reliable but high-cost option, can be reduced when used in tandem with renewable battery storage. This hybrid approach allows for geographic dispersement of batteries, engaging them only when needed, and allows for charging when not engaged.

Small Modular Reactor (SMR). An alternative to large nuclear reactors, an SMR is approximately the size of a boxcar and provides effective, reliable redundancy for reactors.



Combined Heat and Power Generator



Communications Satellite

Communications

Satellite Distribution. Communications and connectivity demand continues to increase at a rapid pace. Therefore, redundant communication and connectivity pathways should be created to serve future demand, which is anticipated to be higher than current levels. Satellite distribution is becoming more widely available and increasing reliable as more satellites are launched. It is quickly becoming the primary source of communications for large organizations, especially as availability decreases prices and risk.