

# Agenda



- 1:00pm Welcome (Jeff Flood, SC Staff)
- 1:05pm Roll Call (Jeff)
- 1:10pm FOIA Preamble (Tom Crabbs, SC Chair)
- 1:15pm Chair Updates (Tom)
- 1:25pm DoD Compatible Use Program (formerly JLUS) Overview & Discussion (HRPDC)
- 1:55pm Readiness & Environmental Protection Integration Overview & Discussion (Jaime Simon, REPI)
- 2:25pm Lines of Effort & Dewberry Needs (Tom)
- 2:50pm Public Comments & Next Meeting June 16, 2021 (Jeff)
- 3:00pm Motion to Close Meeting (Tom)

“ under the current state of emergency [COVID19 Pandemic], it is impracticable or unsafe for the sub-committee to assemble in a single location; and that the purpose of the meeting is to discuss or transact the business necessary to continue operations of the Subcommittee, and the discharge of its lawful purposes, duties, and responsibilities under Executive Order 71.

# UPDATE

- DEWBERRY

# Lines of Effort

## Awareness

- Identify and engage all federal partners
- Understand federal adaptation strategies
- Understand federal priority projects
- Understand Federal investment strategies
- Understand Federal tools used to inform adaptation and feasibility strategies (e.g. JLUS, REPI, RAFT, etc)
- Understand federal storm water management programs
- Conduct federal resilience round tables

## Alignment

- Identify existing local and federal coordination models
- Identify local and federal shared studies and plans
- Identify existing state and federal coordination
- Identify existing state and federal shared studies and plans
- Identify state governance role
- Identify investment sources (state, local, federal, private)
- Identify existing federal/local projects; determine gaps
- Identify existing authorities and gaps that facilitate or limit coordination

## Action

- Recommend state governance role
- Deliver a prioritized list of existing shared projects
- Target a recommended project
- Develop a model that delivers collective local, tribal, state, private, and federal strategy and investment to execute a recommended project

Support legislative language that enables USACE to include federal property in non-DoD funded feasibility studies, increases the limits of the 3x3x3 rule for studies that include federal lands, and lifts the Congressionally imposed cap of 10 studies per year.





# REPI

READINESS AND ENVIRONMENTAL  
PROTECTION INTEGRATION PROGRAM



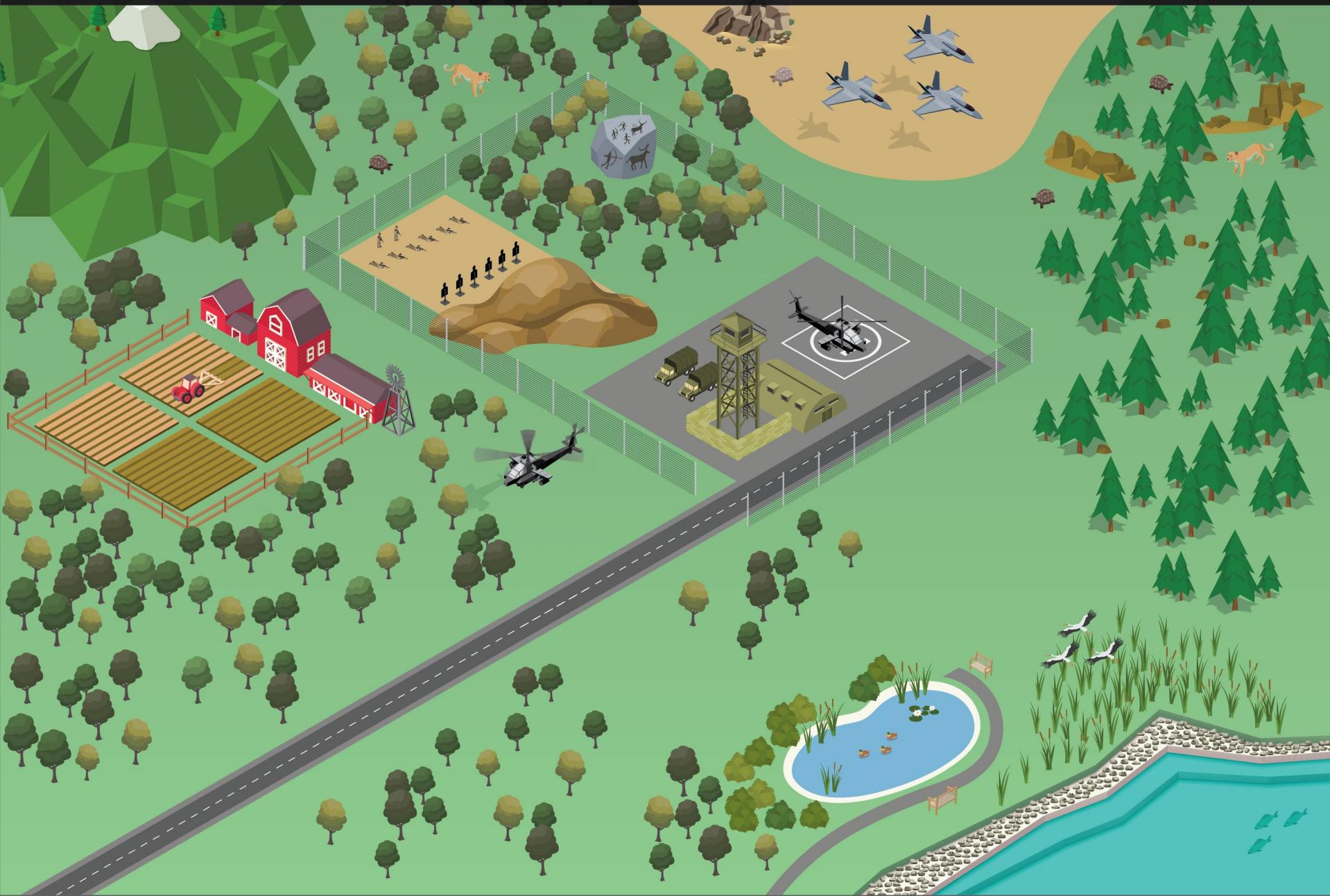
## Sustaining Department of Defense's Mission Readiness and Environmental Protection Integration (REPI) Program Overview

Jaime Simon  
Deputy Program Director  
Readiness and Environmental Protection Integration (REPI) Program



# Sustaining DoD's Mission

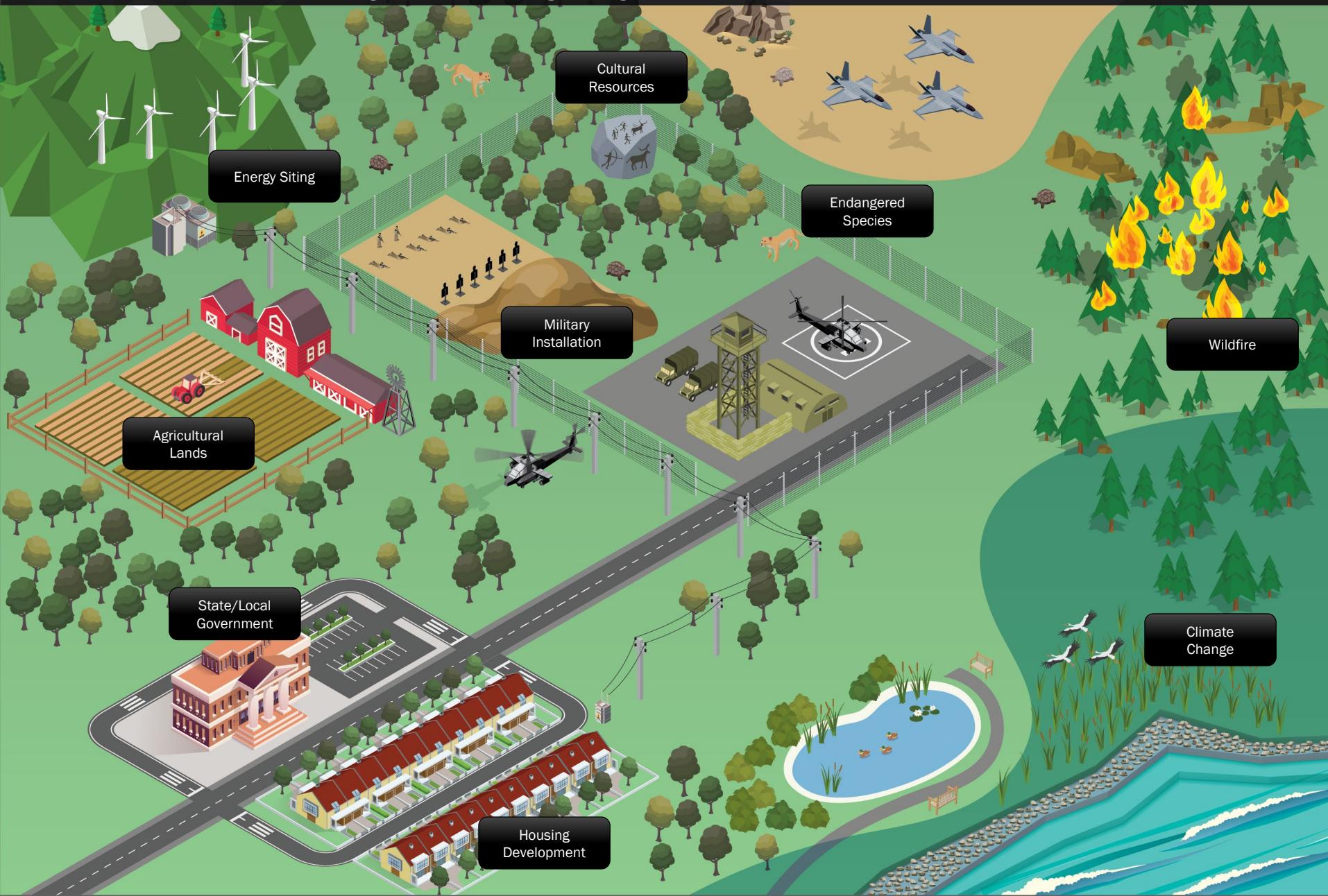
*Most DoD installations and ranges were once located in open, undeveloped landscapes that were compatible with our testing, training, and operational missions*





# Sustaining DoD's Mission

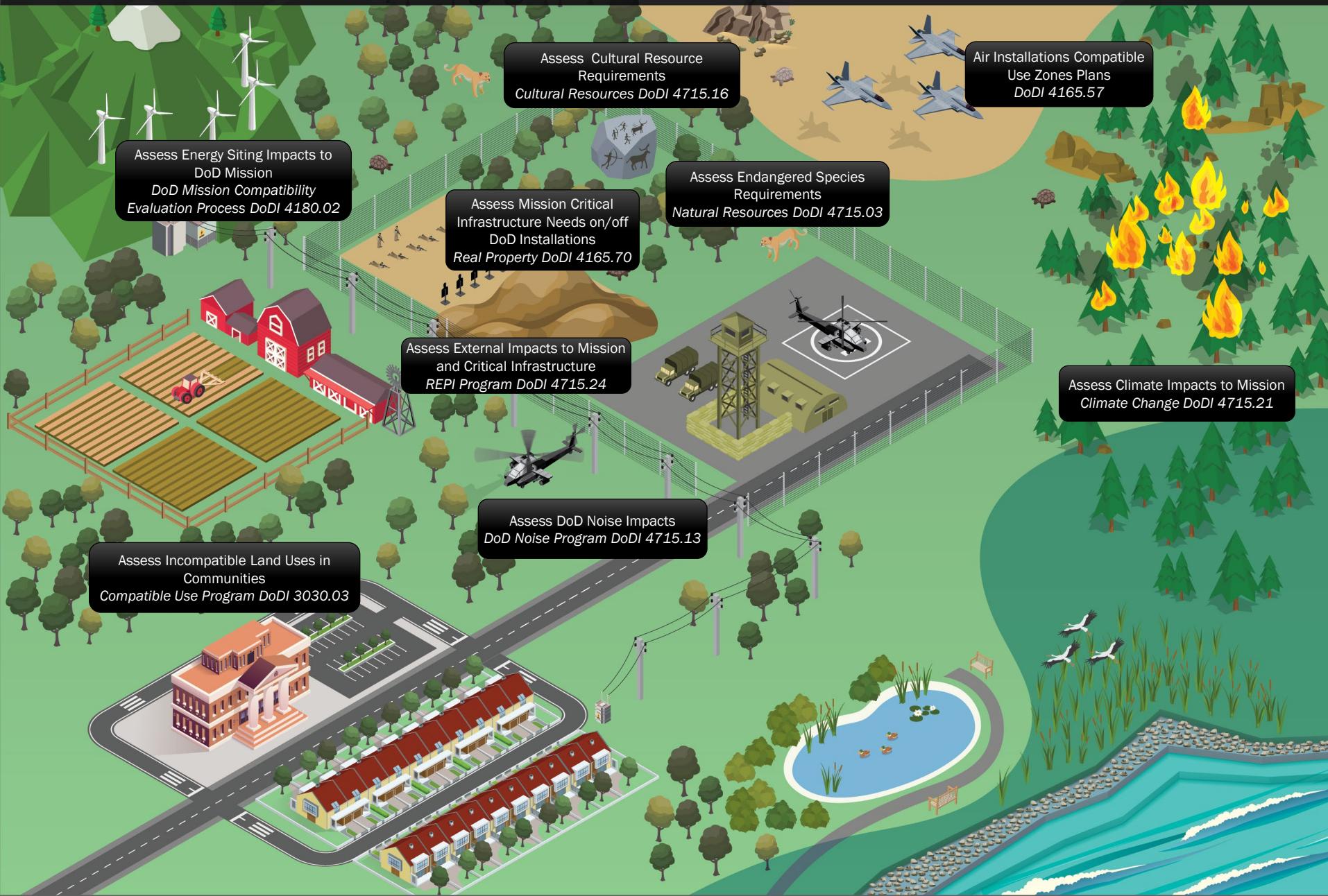
As populations grow, development increases, and the climate changes, DoD has to balance mission needs with the needs of the surrounding communities, neighboring landowners, species, and environment





# Sustaining DoD's Mission — Assessment

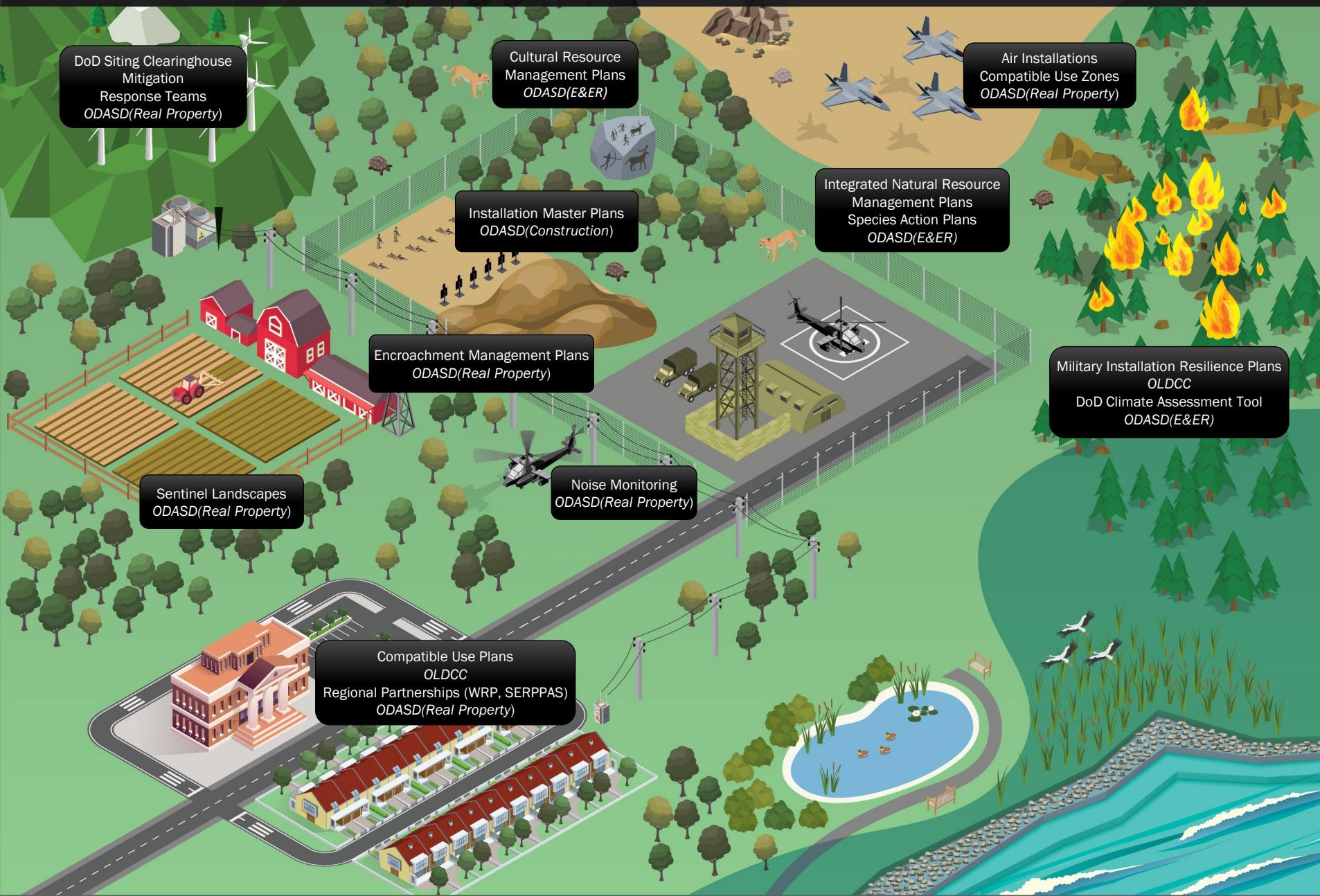
In order to address mission sustainment in different settings, an installation or partner organization must first assess the threats at hand





# Sustaining DoD's Mission — Planning Tools

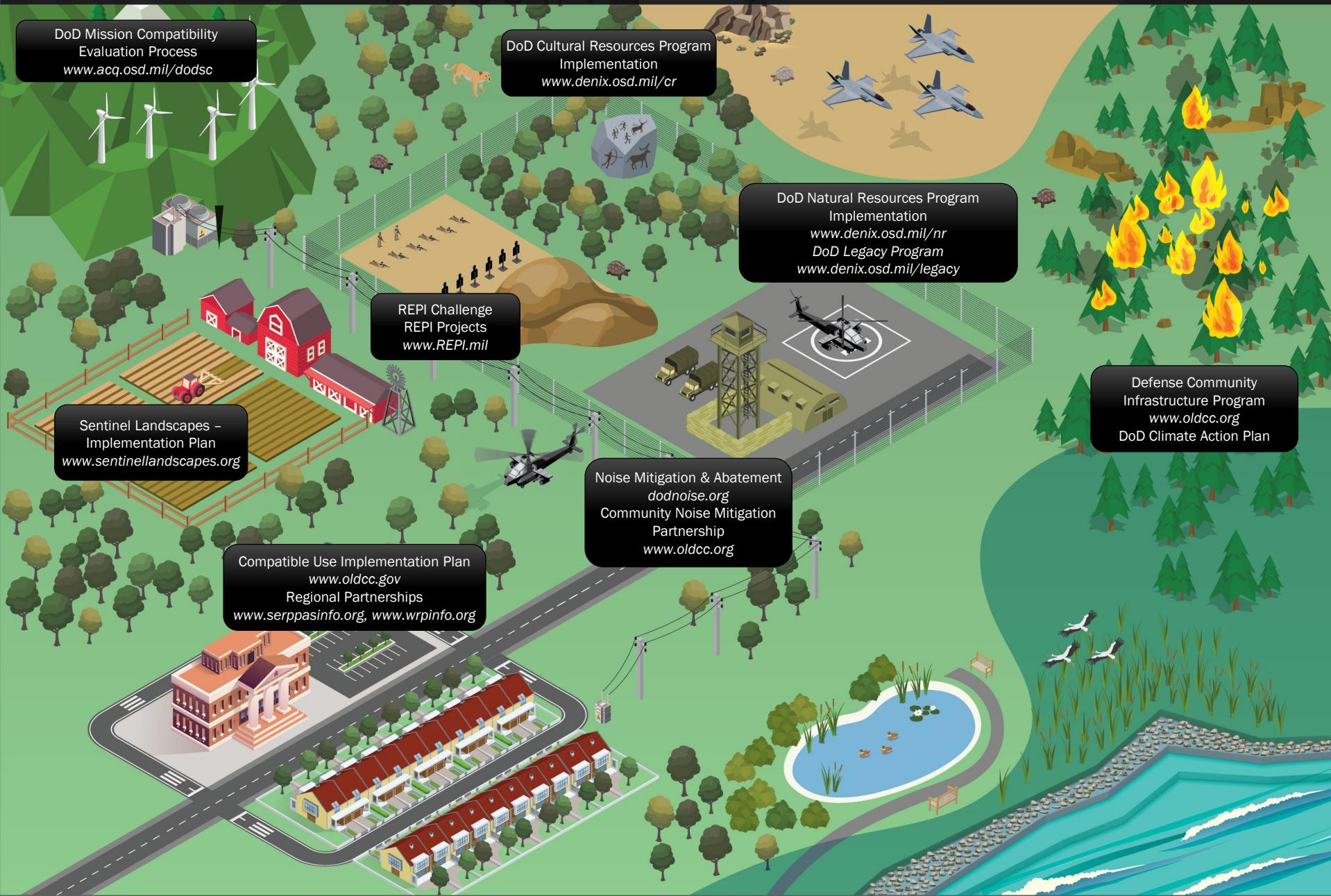
An installation or partner organization can now leverage available planning tools to best address the identified threats





# Sustaining DoD's Mission — Partnering/Implementation Tools

An installation or partner organization can more effectively address threats by leveraging partnering and implementation tools/funding opportunities with stakeholders who have similar goals



# Sustaining DoD's Mission

## What does Military Installation Resilience Mean to REPI?

Authorized by, [10 U.S.C. § 2684a\(a\)](#) REPI resilience projects **protect, restore, and enhance off-base natural infrastructure** and sustain military mission capabilities.

- Natural infrastructure solutions help installations prevent, prepare for, and recover from anticipated or unanticipated changes in environmental conditions.
- When executing a resilience project, installations may also leverage the **Sikes Act** (16 U.S.C. § 670c-1), a complementary authority governing DoD management of natural resources.

### WHAT ARE “ENVIRONMENTAL CONDITIONS”?



SEA LEVEL RISE AND  
RECURRING FLOODING



INLAND  
FLOODING



INCREASED DROUGHT  
CONDITIONS



INCREASED  
PRECIPITATION



EXTREME WEATHER



IMPACTS ON  
PROTECTED SPECIES  
OR HABITAT



INCREASED  
WILDFIRES



THAWING  
PERMAFROST



UNITED STATES DEPARTMENT OF DEFENSE

**REPI**

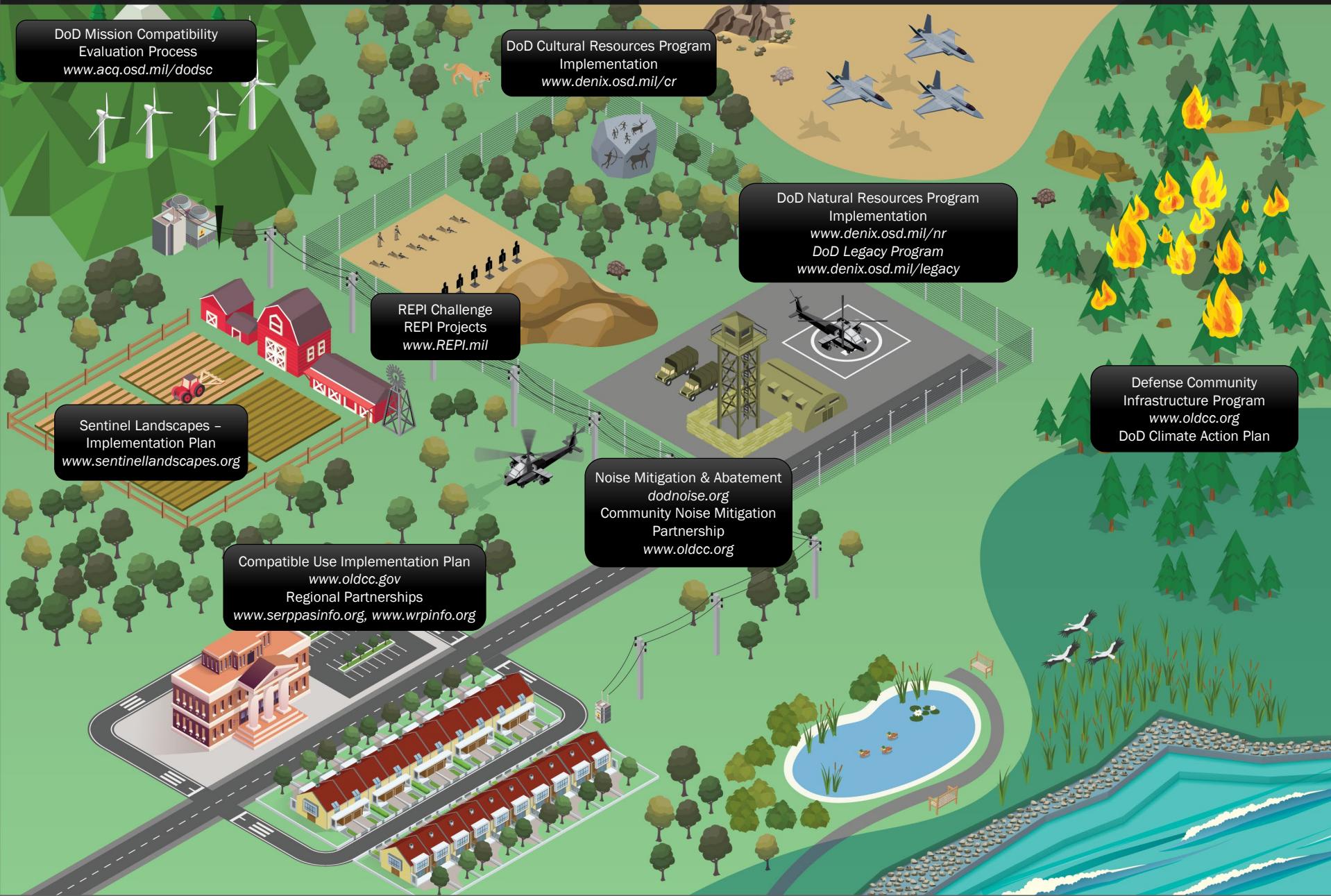
READINESS AND ENVIRONMENTAL  
PROTECTION INTEGRATION PROGRAM





# Sustaining DoD's Mission — Partnering/Implementation Tools

An installation or partner organization can more effectively address threats by leveraging partnering and implementation tools/funding opportunities with stakeholders who have similar goals



# Sustaining DoD's Mission

## Establishing/Available Authorities to Implement Tools

- REPI – REPI projects may leverage any of the following authorities to pursue funding:
  - Section 2684a of title 10, United States Code (10 U.S.C. § 2684a)
  - Section 670c-1 of title 16, United States Code (16 U.S.C. § 670c-1), or the Sikes Act Authority
  - Section 2679 of title 10, United States Code (10 U.S.C. § 2679), or the Intergovernmental Support Agreement (IGSA) authority
- Military Aviation and Installation Assurance Siting Clearinghouse
  - Section 358 of Public Law 111-383, the 2011 National Defense Authorization Act (NDAA), and Title 10 Section 183a established the Clearinghouse
  - Part 211 of Title 32 of the Code of Federal Regulations, established the mission compatibility evaluation process
- Sentinel Landscapes
  - Section 317 of Public Law 115-91, the 2018 NDAA, formalized in statute the partnership that was initially established via memorandum of understanding in 2013
- DoD Office of Local Defense Community Cooperation (OLDCC)
  - Public Law 115 – 232 Section 2861, the 2019 NDAA, authorized the Defense Community Infrastructure Program
- Other NDAA directed programs/requirements 10 U.S.C § 2815, as amended by the FY2021 NDAA, authorizes military services to do resilience-related military construction projects both on and off the installation.



UNITED STATES DEPARTMENT OF DEFENSE

**REPI**

READINESS AND ENVIRONMENTAL  
PROTECTION INTEGRATION PROGRAM



# Hampton Roads Region – Joint Land Use Studies

Federal Installation Partnerships Subcommittee  
May 19, 2021

Whitney S Katchmark  
HRPDC Water Resources Principal

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# Agenda

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Overview of concept

Norfolk – Virginia Beach JLUS study

Chesapeake – Portsmouth JLUS study

# What is a Joint Land Use Study?

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The JLUS process helps communities identify and address concerns of military installations

- Funded by the Office of Local Defense Community Cooperation
- Community-driven with military input and participation

# What is a Joint Land Use Study?

Brings together Navy and localities to discuss impact of flooding on Navy operations and readiness

- Getting to work
- Accessing community facilities and services
- Relying on local infrastructure



Flooding Along Hampton Boulevard  
Bill Tiernan/Virginian-Pilot

# Benefits of Joint Land Use Study

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Unique opportunity to get official involvement from the navy and endorsement of local measures that support their mission.

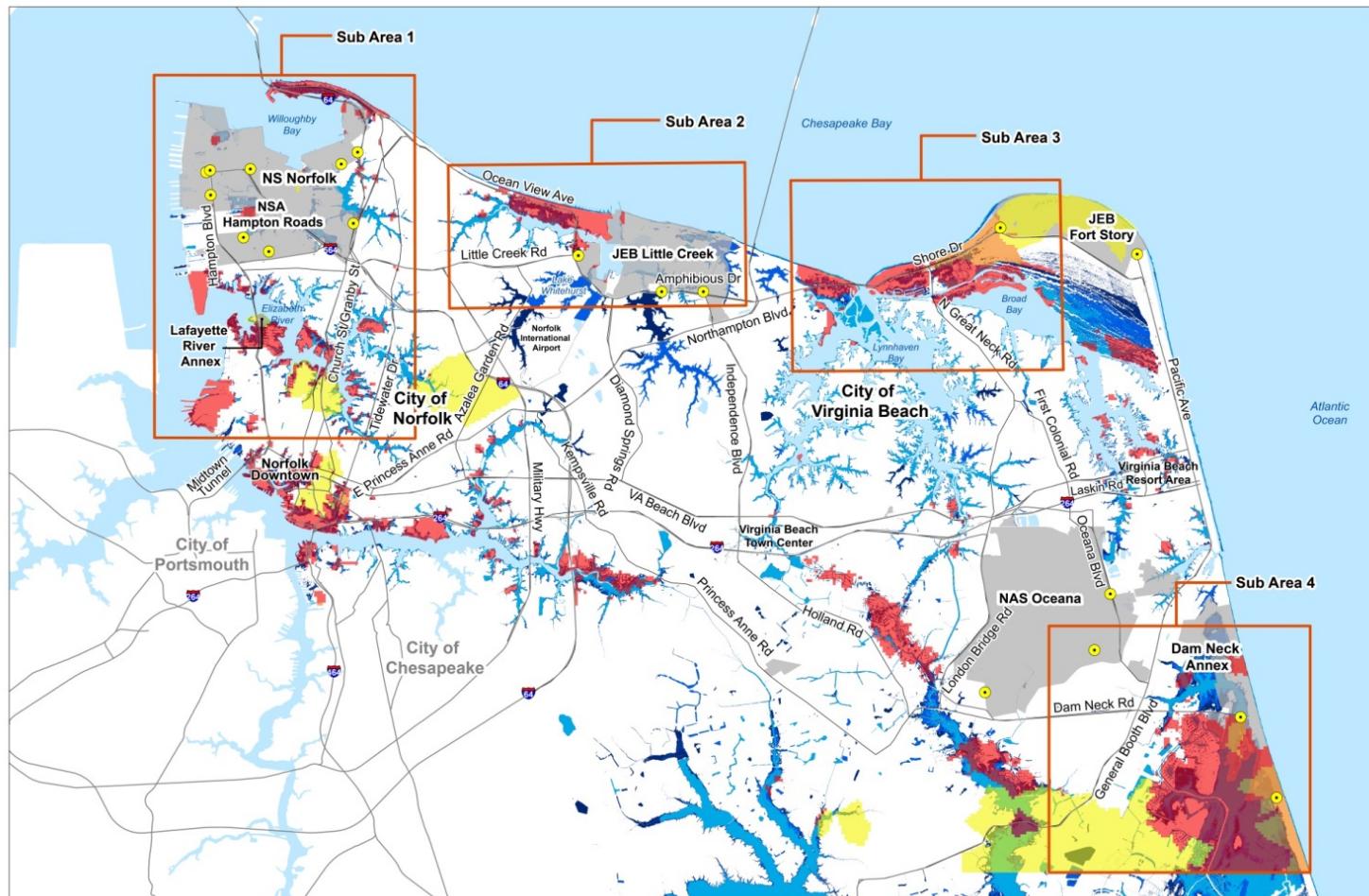
Tees up the region for potential federal assistance for resiliency projects.

# Key Questions

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- What issues do we want to focus on?
- What areas are the most important to look at?
- What is important to the Navy?
- How can we prioritize recommendations?

# Geographic Area



Legend

Jurisdictional Boundary

Access Control Point

Blocked Access

Blocked or Indirect Access  
(Less than 2 Assets)

Minor Tidal Flooding,  
1.5' SLR

Sources: City of Norfolk; City of Virginia Beach; U.S. Navy; U.S. Department of Transportation; Hampton Roads TPO

Roadway

Blocked or Indirect Access  
(2 or More Assets)

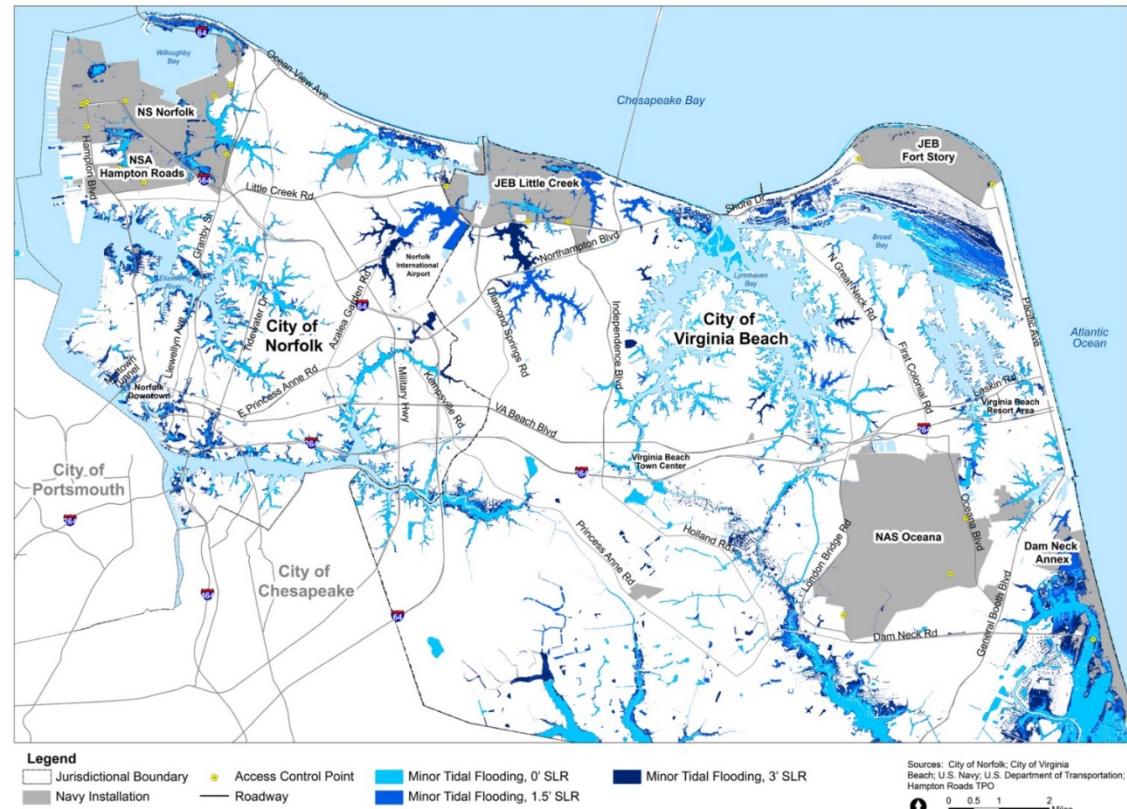
Minor Tidal Flooding,  
0' SLR

Minor Tidal Flooding,  
3' SLR

0 0.5 1 2 Miles

# Norfolk – Virginia Beach JLUS Primary Issue

- Chronic, nuisance flooding is a different problem than storm surge.
- Sea level rise will make nuisance flooding worse.



# What Matters to the Navy

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- Reliable and resilient access routes for DoD personnel.
- Adequate and well-maintained stormwater management systems.
- Reliable and resilient utility networks.
- Effective institutionalized coordination, cooperation, and collaboration at multiple scales.
- Regional prioritization mechanism for resiliency initiatives.

# Criteria for Prioritization

<b>INSTALLATION READINESS</b> Weight = 3x	Project reduces flood risk along a DoD Strategic corridor	<b>Each criteria = 1 point</b>
	Project reduces vulnerability to flooding of DoD structure/asset	
	Project improves utility reliability for DoD installation	
	Project improves access to more than one DoD installation	
<b>DOD PERSONNEL READINESS</b> Weight = 2x	Project serves a ZIP code with a high number of DoD commuters	
	Project reduces vulnerability of community assets that DoD personnel rely upon (via retrofit or rebuild)	
	Project improves access in areas with blocked/indirect access to community assets that DoD personnel rely on	
	Project creates potential community recreation/health opportunities	
<b>CO-BENEFITS</b> Weight = 1x	Project benefits a community asset (or multiple community assets)	
	Project creates potential ecosystem benefits (water quality, habitat)	
	Project is inconsistent with local land use goals and priorities	
	Project reduces current flood risk to communities	
<b>SYSTEM PERFORMANCE AND DESIGN</b> Weight = 1x	Project creates potential green infrastructure opportunities	
	Project benefits multiple jurisdictions	
	Project is adaptable to future conditions/considers future flood risk and sea level rise impacts.	

# JLUS Recommendations

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## 22 ACTIONS

Address challenges in a specific area related to access or community facilities, stormwater, flood risk, etc.

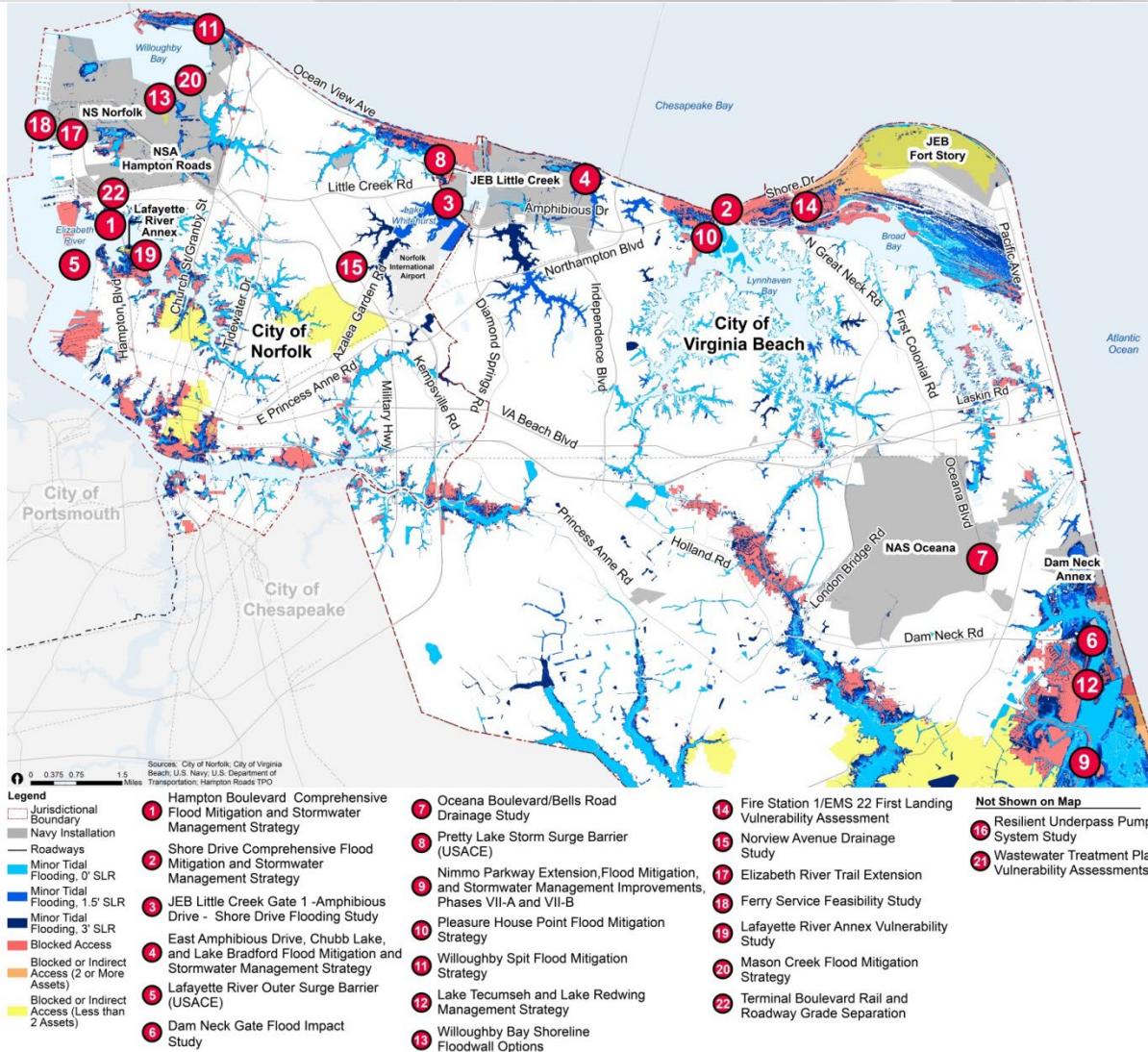
## 23 REGIONAL COORDINATION STRATEGIES

Address issues related to coordination and outreach; advocacy policy and development regulations; and technology and data

## 7 CONVERSATIONS

Require further discussion and exploration to determine if further study is needed

# Recommended Actions



# Recommended Actions – Top 8

ACTION #	ACTION	SCORE	LOCALITY	INSTALLATIONS SERVED
1	Hampton Boulevard Comprehensive Flood Mitigation and Stormwater Management Strategy	19	Norfolk	NSN, NSA HR, LRA
2	Shore Drive Comprehensive Flood Mitigation and Stormwater Management Strategy	19	Virginia Beach	JEB LC - FS
3	JEB Little Creek Gate 1 - Amphibious Drive - Shore Drive Flooding Study	18	Norfolk, Virginia Beach	JEB LC - FS
4	East Amphibious Drive, Chubb Lake, and Lake Bradford Flood Mitigation and Stormwater Management Strategy	17	Virginia Beach	JEB LC - FS
5	Lafayette River Outer Surge Barrier (USACE)	16	Norfolk	NS Norfolk, NSA HR, LRA
6	Dam Neck Gate Flood Impact Study	15	Virginia Beach	NAS Oceana-Dam Neck Annex
7	Oceana Boulevard/Bells Road Drainage Study	15	Virginia Beach	NAS Oceana-Dam Neck Annex
8	Pretty Lake Storm Surge Barrier (USACE)	15	Norfolk	JEB LC - FS

**NSN = Naval Station Norfolk**

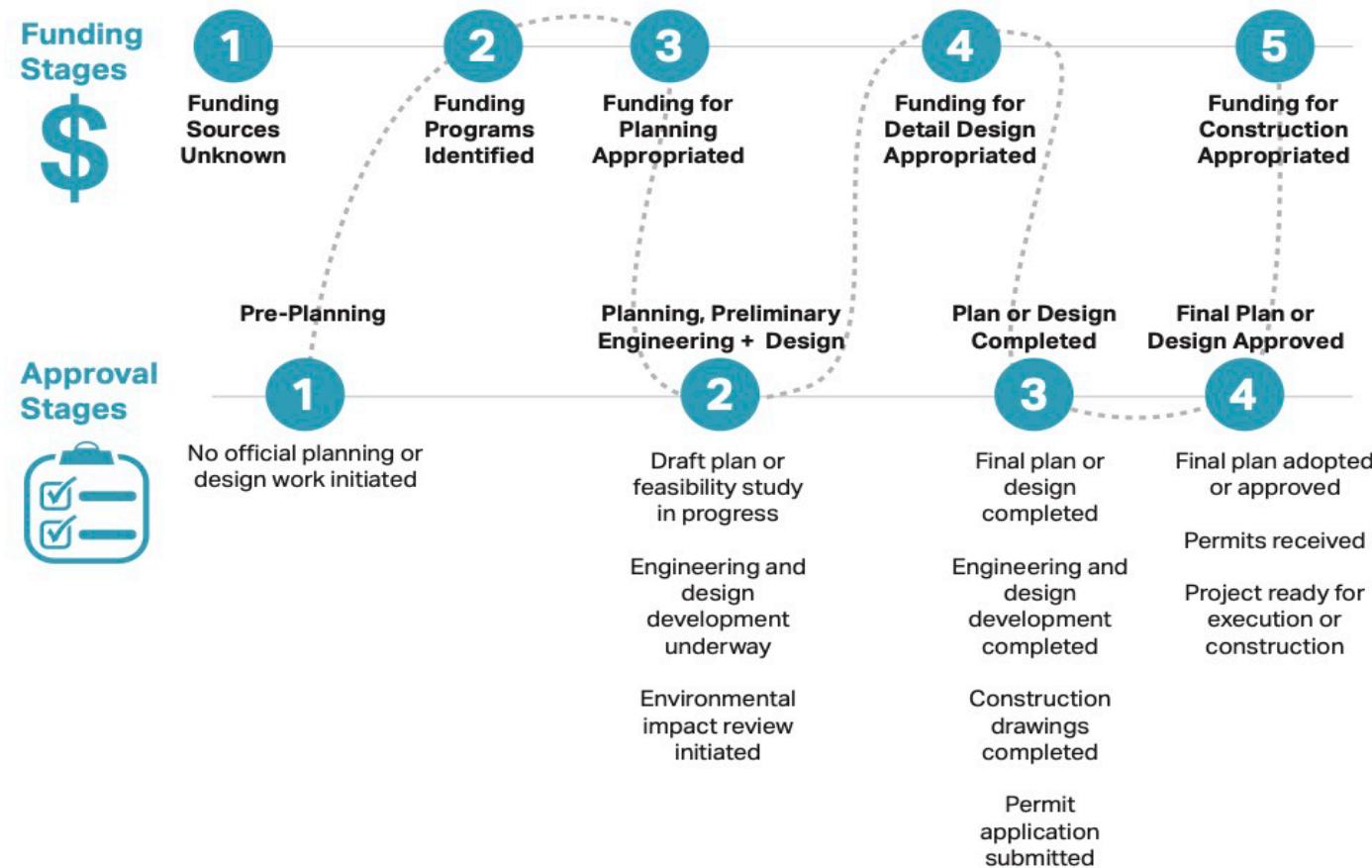
**NSA HR = Naval Support Activity Hampton Roads**

**LRA = Lafayette River Annex**

**JEB LC – FS = Joint Expeditionary Base Little Creek – Fort Story**

**NAS Oceana – DNA = Naval Air Station Oceana – Dam Neck Annex**

# Implementation Assessment



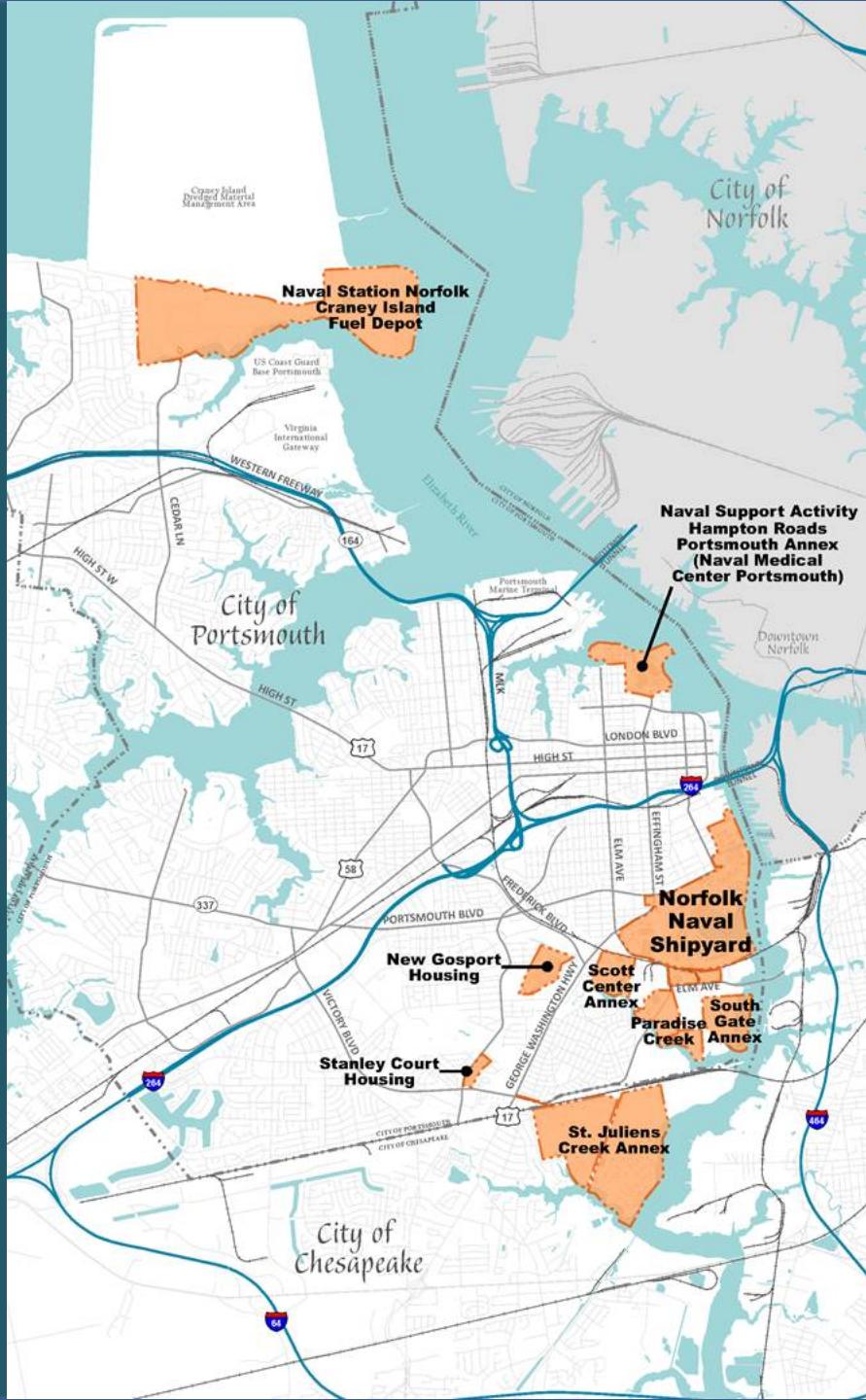
**TABLE 6-2: JLUS IMPLEMENTATION ACTION MATRIX**

Action #	Score	Action	Sea Level Rise Time Threat	Installation Areas Served*	Responsible Parties	Partners	Funding Stage	Approval Stage
1	19	Hampton Boulevard Comprehensive Flood Mitigation and Stormwater Management Strategy	Today (0' SLR)	NSN, NSA HR, LRA	Norfolk	U.S. Navy, VA Port Authority, VDOT, HRPDC	1	1
2	19	Shore Drive Comprehensive Flood Mitigation and Stormwater Management Strategy	Today (0' SLR)	JEB LC - FS	Virginia Beach	U.S. Navy	1	1
3	18	JEB Little Creek Gate 1 - Amphibious Drive - Shore Drive Flooding Study	Today (0' SLR)	JEB LC - FS	Norfolk, Virginia Beach	U.S. Navy, USACE, ORF	1	1
4	17	East Amphibious Drive, Chubb Lake, and Lake Bradford Flood Mitigation and Stormwater Management Strategy	Today (0' SLR)	JEB LC - FS	Virginia Beach	U.S. Navy	4	5
5	16	Lafayette River Outer Surge Barrier (USACE)	Today (0' SLR)	NSN, NSA HR, LRA	Norfolk	USACE, U.S. Navy, USCG	3	2
6	15	Dam Neck Gate Flood Impact Study	Today (0' SLR)	NAS Oceana-Dam Neck	Virginia Beach	U.S. Navy	1	1
7	15	Oceana Boulevard/Bells Road Drainage Study	Today (0' SLR)	NAS Oceana-Dam Neck	Virginia Beach	U.S. Navy	1	1
8	15	Pretty Lake Storm Surge Barrier (USACE)	Today (0' SLR)	JEB LC - FS	Norfolk	USACE, U.S. Navy, USCG	1	2
9	14	Nimmo Parkway Extension, Flood Mitigation, and Stormwater Management Improvements, Phases VII-A and VII-B	Today (0' SLR)	NAS Oceana-Dam Neck	Virginia Beach	N/A	1	1
10	14	Pleasure House Point Flood Mitigation Strategy	Today (0' SLR)	JEB LC - FS	Virginia Beach	N/A	1	1
11	14	Willoughby Spit Flood Mitigation Strategy	Today (0' SLR)	NSN	Norfolk	N/A	1	2
12	11	Lake Tecumseh and Lake Redwing Management Strategy	Today (0' SLR)	NAS Oceana-Dam Neck	Virginia Beach	U.S. Navy	1	1
13	11	Willoughby Bay Shoreline Floodwall Options	Today (0' SLR)	NSN	U.S. Navy	Norfolk	1	2
14	9	Fire Station 1/EMS 22 First Landing Vulnerability Assessment	Today (0' SLR)	JEB LC - FS	Virginia Beach	N/A	1	1
15	9	Norview Avenue Drainage Study	Today (0' SLR)	JEB LC - FS	Norfolk	ORF	1	1

# Chesapeake – Portsmouth JLUS

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- Anticipate the study will be completed by September 2021.
- Focused on resiliency but has broader set of issues than Norfolk – Virginia Beach JLUS



# JLUS Issues



## Roadway Flooding

Flooding limits or prevents access to multiple Navy installations and reduces connectivity to critical corridors and Interstates.

Flooding reduces the number of trips that can be made in the transportation network and contributes to congestion.

Flooding limits or prevents access to community services that Navy personnel and residents rely upon.



## Transit

Transit options for installation employees are limited and are not well-linked to on-base shuttle systems.

Bus hours of operation, routes, stop locations, and transfer processes are likely deterrents to use.

Gaps in the pedestrian and trail network can discourage the use of other modes.



## Parking

Employee and visitor parking overflows into neighborhoods around NNSY and future mission growth at NNSY will further reduce on base parking supply.

Available on base parking spaces are not proximal to the concentration of workers.



## Land Use and Utilities

Zoning and land use policies are generally not focused on areas adjacent to the installations.

A limited number of eating, shopping, or convenience options exist near the installations.

Underlying environmental restrictions, freight activity, and land use compatibility will affect reuse potential.



## Coordination + Communication

Regional-level activities could have the potential to impact Navy operations.

Existing coordination mechanisms in place vary in formality and level of effectiveness.

# JLUS Goals

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- Future flooding impacts to the transportation network are mitigated
- Access to Navy installations is maintained and expanded
- Neighborhoods surrounding the installations are enhanced
- Redevelopment and reuse of land improve the local economy
- Policies and regulations manage growth and prevent conflicts
- Navy and locality relationships are strengthened

# Goals and Criteria

## GOALS

Future flooding impacts to the transportation network are mitigated

Access to Navy installations is maintained and mobility options are expanded

Neighborhoods surrounding the installations are enhanced

Redevelopment and reuse of land improve the local economy

Policies and regulations manage growth and prevent conflicts

Navy and locality relationships are strengthened

## CRITERIA (13)

### DOD Mission Readiness

- Reduces future flood risk along a DOD strategic corridor
- Benefits more than one DOD installation or site
- Benefits gate access areas
- Reduces land use conflicts near installations

### Transportation Network Connectivity

- Improves regional transportation connectivity
- Improves circulation and efficiency of the transportation network
- Promotes alternative options for mobility

### Community Benefits

- Benefits one or more community assets (police, fire, hospital)
- Improves safety and walkability
- Creates potential community health or recreation benefits
- Benefits at risk or underserved communities

### Economic Resiliency

- Supports reuse and redevelopment of underutilized lands
- Contributes to local economic development goals

# Criteria Application and Scoring

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Apply criteria to the following strategy types:

- Flood Mitigation
- Access and Parking
- Land Use and Utilities

Assign a qualitative rating of High, Medium, or Low to the following strategy types:

- Policies
- Coordination and Communication

Evaluation approach:

- DOD Mission Readiness (5 criteria, weight = 2x)
- Transportation Network Connectivity (3 criteria, weight = 1x)
- Community Benefits (4 criteria, weight = 1x)
- Economic Resiliency (2 criteria, weight = 2x)

# Implementation Assessment

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**Assess feasibility of the following strategies types:**

- Parking (5)
- Multi-modal (11)
- Flood Mitigation (8)
- Land Use and Development (10)
- Access (3)
- Utilities (2)

## **Feasibility Factors**

- Lead Organization
- Supporting Partners
- Estimated Cost (\$, \$\$, \$\$\$)
- Timeframe (Short, Mid, Long)
- Outside Coordination (Low, Medium, High)

# 7.0 IMPLEMENTATION PLAN

The actions, policies, and practices outlined in the JLUS are intended to support the cities of Portsmouth and Chesapeake in their goal of helping to maintain and enhance the military missions at NNSY, Naval Medical Center Portsmouth, and Craney Island Fuel Depot.

The actions address a wide range of issues and opportunities for ensuring reliable and resilient access to the installations and throughout the study area, reducing flood risk along major corridors, supporting compatible redevelopment that achieves local economic development goals, and reducing impacts on adjacent communities related to parking. Strategies related to policies and practices define approaches for developing or enhancing tools for improved coordination among the JLUS partners to advance priorities.

The SLR ranges used in the JLUS analysis suggest the planning horizon for the JLUS is long term (2065). However, the recommended actions are intended to provide a roadmap for action that can begin today and focuses on the next 10 to 15 years. The top-scoring actions recommend comprehensive flood mitigation and stormwater management approaches for primary corridors that the DoD relies upon. These actions, and others, will require more coordinated and technical analyses in order to identify infrastructure solutions that can be supported and advanced toward implementation. The anticipated impacts from flooding will increase over time, and initiating efforts in the near term is important, as major infrastructure projects are a significant investment that can take many years to plan, design, and build.

The score for each action defines the level of importance for implementation. Table 7.1 shows how the actions break down by Tiers, and Figure 7.1 displays the Tier 1 through Tier 3 actions using shading to help distinguish priority. A higher score indicates a stronger ability to address the JLUS criteria and goals.

## 7.1 Implementation Factors

The execution of actions can be affected by many different factors, including available funding and the level of coordination required with other parties that could increase the number of approvals or reviews that are required. These factors, discussed below, may allow some actions ranked lower in score to advance faster than those with a higher-ranked score.

Table 7.2, at the end of this chapter, provides an implementation matrix with each Tier 1 through Tier 4 action sorted by score. The table includes additional information that should be considered as a strategy advances, including timeframe, estimated project cost, and level of outside coordination required. Table 7.3 includes a consolidated matrix of the unranked recommended policies and practices organized by strategy type.

**Table 7.1** Recommended JLUS Strategies by Tier

Priority Ranking		Score Range	# of Actions	Ranking Color (See Figure 7.1)
Tier 1	High	15–17	4	
Tier 2	Medium	12–14	7	
Tier 3	Low	10–11	7	
Tier 4		< 10	21	 (Not mapped)

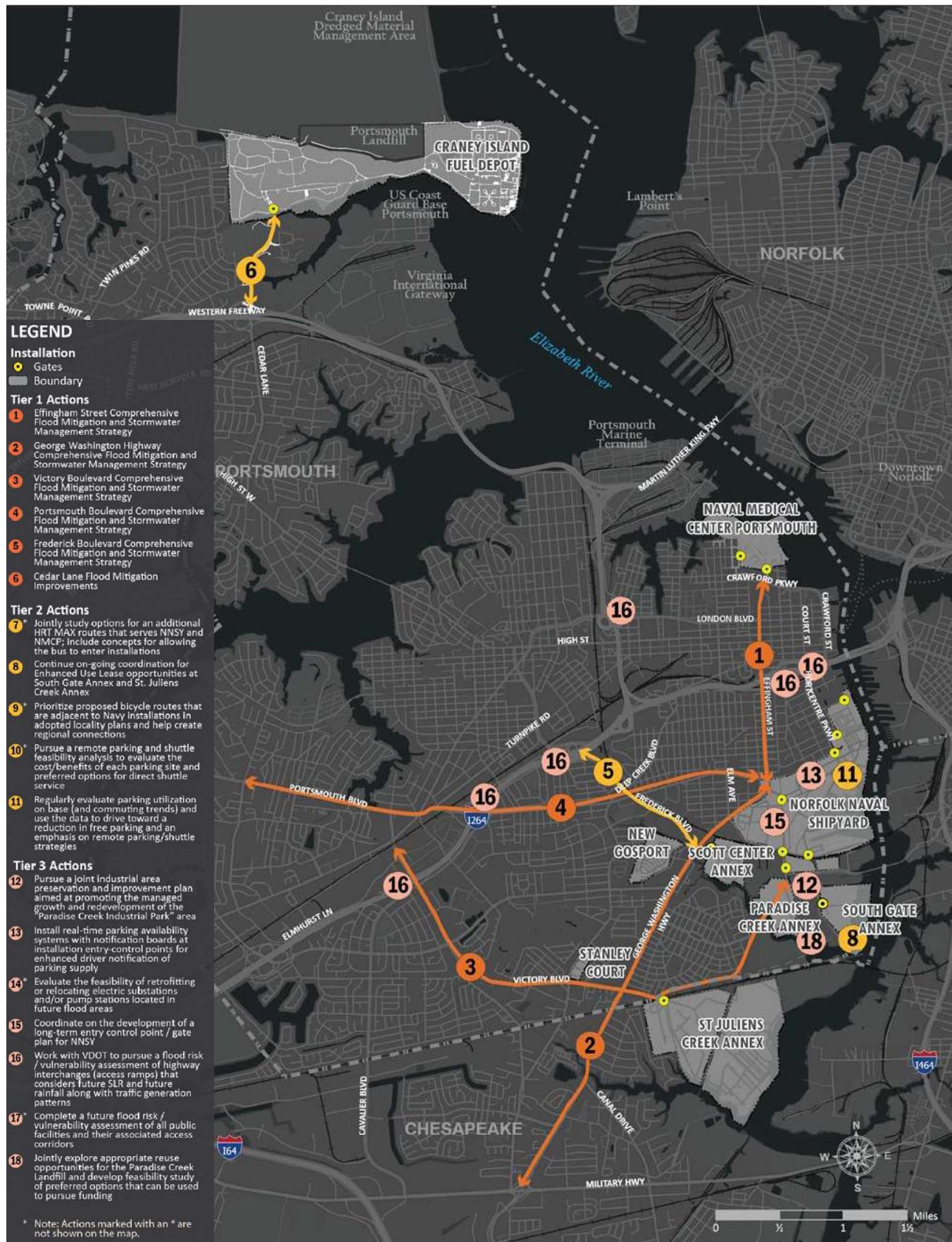


Figure 7.1 Tier 1-3 JLUS Actions

## Project Leadership and Supporting Partners

Implementation of the JLUS strategies will require leadership and support from a number of partners. A lead responsible party has been identified along with supporting partner roles for each strategy in the implementation matrices. The lead party is responsible for initiating the recommendation, working to identify and engage various project partners, and seeing the action through to completion. There may be other partners, such as non-profits, state agencies, or federal agencies, beyond those listed, that can be of support and be instrumental to advancing an action forward.

## Estimated Project Cost Range

As discussed in Chapter 5, providing a useful cost estimate for implementation is difficult at the early stages of planning. Estimated costs for each strategy were defined in general terms in an attempt to reflect the potential cost for more detailed study, design, and construction of a solution, where applicable. The ranges are as follows:

\$	Up to \$100K
\$\$	\$100K – \$1M
\$\$\$	>\$1M

The actual cost to implement an action will be influenced by many factors that are unknown at this stage of the process. These ranges provide a rough order of magnitude estimate that can be refined as project details and scoping are determined. Potential funding sources are identified for each strategy in Chapter 5, and a full list of funding sources, with website links, is included in the Appendix for reference.

## Timeframe

Each strategy has been assigned a timeframe associated with when a strategy would be fully implemented or completed, as follows:

Short-term:	< 3 years
Mid-term:	3–10 years
Long-term:	> 10 years

The timeframe indicator is not a prioritization factor like the project ranking score. Rather it takes into consideration the complexity of a project and can be useful to identify strategies that may be more feasible to implement.

Some projects are more complex than others. While the top-ranking strategies indicate importance, any opportunity to advance a strategy should be embraced and not limited by project ranking.

Figure 7.2 displays the Tier 1 through Tier 4 strategies considering the score, estimated cost range, and timeframe. Each strategy is placed on the diagram based on the cost and proposed timeframe, and the color of the action marker provides an indicator of Tier. This diagram is helpful to illustrate that while Tier 1 projects are longer term and have higher estimated costs, a significant number of actions with lower estimated costs could be advanced in the short term.

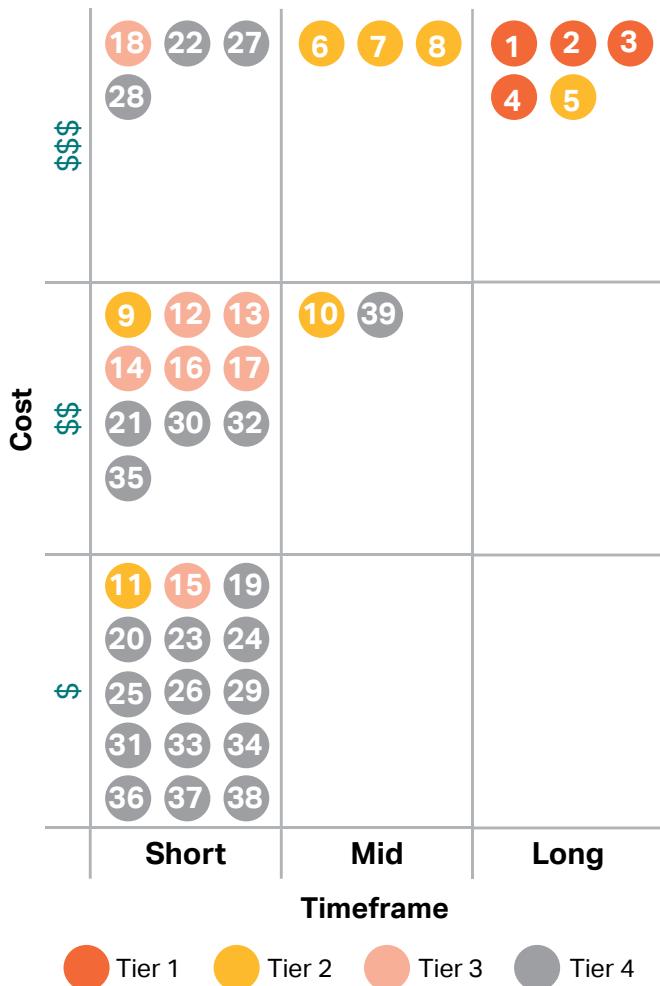


Figure 7.2 Cost Vs. Timeframe of Tier 1-4 Actions

## **Level of Required Outside Coordination or Cooperation**

The level of coordination and cooperation required to implement a strategy can add additional time to project execution. A qualitative assessment of the anticipated level of coordination was completed for each strategy using a range of options, including none, low, medium, and high. Many actions, including all of the Tier 1 actions and half of the Tier 2 actions, are estimated to require a high level of coordination with outside partners because no planning or design activities related to the actions has been initiated and the processes require more detailed planning, preliminary engineering and design, or feasibility analyses and may trigger associated approvals or permits. Coordination will be both critical and beneficial to fully understand and address the interests and perspectives of the parties affected by an action, and to derive solutions that are appropriate and supported. However, not all actions will require as much coordination with outside entities, such as those pertaining to parking internal to NNSY, which can be addressed by NNSY planners and public works, or re-evaluation of the SSPD, which can be initiated by Portsmouth transportation planners and engineers.

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**Table 7.2** Ranked JLUS Actions (Tiers 1-4)

Action #	Action	Score	Lead Organization	Supporting Partners	Estimated Project Cost \$ = <100k \$\$ = 100k - 1M \$\$\$ = 1M+	Timeframe	Outside Coordination
1	Effingham Street Comprehensive Flood Mitigation and Stormwater Management Strategy.	17	Portsmouth	VDOT, U.S. Navy	\$\$\$	Long	High
2	George Washington Highway Comprehensive Flood Mitigation and Stormwater Management Strategy.	16	Portsmouth	Chesapeake, VDOT, U.S. Navy	\$\$\$	Long	High
3	Victory Boulevard Comprehensive Flood Mitigation and Stormwater Management Strategy.	15	Portsmouth	Chesapeake, VDOT, U.S. Navy	\$\$\$	Long	High
4	Portsmouth Boulevard Comprehensive Flood Mitigation and Stormwater Management Strategy.	15	Portsmouth	VDOT, U.S. Navy	\$\$\$	Long	High
5	Frederick Boulevard Comprehensive Flood Mitigation and Stormwater Management Strategy.	14	Portsmouth	VDOT, U.S. Navy	\$\$\$	Long	High
6	Cedar Lane Flood Mitigation Improvements	14	Portsmouth	U.S. Navy, USCG	\$\$\$	Mid	High
7	Jointly study options for an additional HRT pilot MAX route that serves NNSY and NMCP and include concepts for allowing the bus to enter the installations.	13	HRT	U.S. Navy, Portsmouth, Chesapeake	\$\$\$	Mid	Medium

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Action #	Action	Score	Lead Organization	Supporting Partners	Estimated Project Cost \$ = <100k \$\$ = 100k - 1M \$\$\$ = 1M+	Timeframe	Outside Coordination
8	Continue on-going coordination for Enhanced Use Lease opportunities at South Gate Annex and St. Juliens Creek Annex.	13	U.S. Navy	Portsmouth Chesapeake	\$\$\$	Mid	High
9	Prioritize proposed bicycle routes that are adjacent to Navy installations in adopted locality plans and help create regional connections.	13	Portsmouth, Chesapeake		\$\$	Short	Low
10	Pursue a remote parking and shuttle feasibility analysis to evaluate the cost/benefits of each parking site and preferred options for direct shuttle service.	12	Portsmouth	U.S. Navy, HRTPO, HRT, TRAFFIX	\$\$	Mid	High
11	Regularly evaluate parking utilization on base (and commuting trends) and use the data to drive toward a reduction in free parking and an emphasis on remote parking/shuttle strategies.	12	U.S. Navy	HRTPO, HRT, TRAFFIX	\$	Short	Low
12	Pursue a joint industrial area preservation and improvement plan aimed at promoting the managed growth and redevelopment of the "Paradise Creek Industrial Park" area.	11	Portsmouth	U.S. Navy, Chesapeake	\$\$	Short	High

Action #	Action	Score	Lead Organization	Supporting Partners	Estimated Project Cost \$ = <100k \$\$ = 100k - 1M \$\$\$ = 1M+	Timeframe	Outside Coordination
13	Install real-time parking availability systems with notification boards at installation entry-control points for enhanced driver notification of parking supply.	11	U.S. Navy	Portsmouth	\$\$	Mid	None
14	Evaluate the feasibility of retrofitting or relocating electric substations and/or pump stations located in future flood areas.	11	Dominion Energy, HRSD	Portsmouth, Chesapeake, U.S. Navy	\$\$	Mid	Medium
15	Coordinate on the development of a long-term entry control point/gate plan for NNSY.	11	U.S. Navy	Portsmouth	\$	Mid	Medium
16	"Work with VDOT to pursue a flood risk/vulnerability assessment of highway interchanges (access ramps) that considers future SLR and future rainfall along with traffic generation patterns."	10	VDOT, HRTPO	Portsmouth	\$\$	Mid	High
17	Complete a future flood risk/vulnerability assessment of all public facilities and their associated access corridors.	10	Portsmouth, Chesapeake	HRPDC	\$\$	Mid	Medium

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Action #	Action	Score	Lead Organization	Supporting Partners	Estimated Project Cost \$ = <100k \$\$ = 100k - 1M \$\$\$ = 1M+	Timeframe	Outside Coordination
18	Jointly explore appropriate reuse opportunities for the Paradise Creek Landfill and develop feasibility study of preferred options that can be used to pursue funding.	10	U.S. Navy	Portsmouth, HRPDC, Elizabeth River Project	\$\$\$	Mid	High
19	Conduct a joint HRT/NAVY study that targets DOD needs and details workforce points of origin to inform revisions to the stops and frequency of HRT Routes 41, 45, and 43.	9	HRTPO	HRT, U.S. Navy, Portsmouth	\$	Short	Low
20	Perform a study to prioritize changeable message sign location and integration based on anticipated diversion route operations.	9	Portsmouth		\$	Short	Low
21	Explore the use of automated vehicles and/or shuttles to carry people from downtown garages to NMCP.	9	HRT	U.S. Navy, Portsmouth	\$\$	Long	High
22	Jointly study options for a secondary access road to Craney Island Fuel Depot that does not impact the city landfill.	9	U.S. Navy	Portsmouth, USACE, HRTPO	\$\$\$	Mid	High

Action #	Action	Score	Lead Organization	Supporting Partners	Estimated Project Cost \$ = <100k \$\$ = 100k - 1M \$\$\$ = 1M+	Timeframe	Outside Coordination
23	Consider establishing a special compatible use overlay district/zone around each installation to better inform and guide development opportunities.	9	Portsmouth, Chesapeake	U.S. Navy	\$	Short	Medium
24	Promote consideration of adding bicycle lanes at Gate 2 at NMCP and evaluate options for upgrading bicycle infrastructure as a whole at all installations.	9	U.S. Navy	Portsmouth	\$	Short	Low
25	Jointly identify appropriate locations for secure bicycle parking external to the installations and near the gates.	9	Portsmouth	U.S. Navy	\$	Short	Low
26	Consider modifying NMCP Gate 2 to serve specific users only to help reduce neighborhood impacts.	8	U.S. Navy	Portsmouth	\$	Short	Low
27	Study options for mixed use / shared parking development in the vicinity of NNSY Gate 10.	8	U.S. Navy, Portsmouth		\$\$\$	Mid	High

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Action #	Action	Score	Lead Organization	Supporting Partners	Estimated Project Cost \$ = <100k \$\$ = 100k - 1M \$\$\$ = 1M+	Timeframe	Outside Coordination	
1	28	Pursue a joint planning and feasibility study for the siting of a regional First Responder Academy, Class A burn building, and emergency vehicle operations course to support multiple jurisdictions and the Navy.	8	Chesapeake	Portsmouth, HRPDC	\$\$\$	Mid	High
2	29	Establish a food truck zone adjacent to Gate 10 outside NNSY and pursue development of a food truck program at NMCP similar to the one at NNSY.	8	Portsmouth	U.S. Navy	\$	Short	Medium
3	30	Pursue a joint planning study of St. Juliens Creek corridor and/or Blows Creek corridor to explore options for expanded public recreational access to the water around St. Juliens Creek Annex.	8	Chesapeake	U.S. Navy	\$\$	Short	Medium
4	31	Centralize and reissue parking permits at NNSY based on a zonal parking permit structure and assign permits according to a designated hierarchy.	7	U.S. Navy		\$	Short	None

Action #	Action	Score	Lead Organization	Supporting Partners	Estimated Project Cost \$ = <100k \$\$ = 100k - 1M \$\$\$ = 1M+	Timeframe	Outside Coordination
32	Jointly study options for interconnecting water service to St. Juliens Creek Annex and evaluate alternatives for extending water and sewer service eastward toward the Elizabeth River to support future redevelopment.	7	Chesapeake	U.S. Navy	\$\$	Short	High
33	Re-evaluate the zoning classification for the triangle area between the rail line and Elm Avenue, east of George Washington Highway.	7	Portsmouth		\$	Mid	Low
34	Study options for expanded ferry service to NMCP.	7	HRT	HRTPO, Portsmouth, Chesapeake	\$	Mid	Medium
35	Refine the NNSY internal shuttle route to be more direct and efficient (connect to parking and explore off-site option).	5	U.S. Navy	Portsmouth	\$\$	Short	None
36	Expand the shared bicycle program on NNSY and establish a similar program at NMCP.	5	U.S. Navy		\$	Short	None
37	Expand the comfort rating analysis used in the Portsmouth Bike and Pedestrian Plan and consider adding lighting adequacy into the analysis.	5	Portsmouth		\$	Short	None

Action #	Action	Score	Lead Organization	Supporting Partners	Estimated Project Cost \$ = <100k \$\$ = 100k - 1M \$\$\$ = 1M+	Timeframe	Outside Coordination
38	Re-evaluate the need for the SSPD and its geographic limits and restrictions.	5	Portsmouth		\$	Short	None
39	Install additional installation directional signage along key corridors to direct employees and visitors to installations.	5	Portsmouth, Chesapeake		\$\$	Mid	Low

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**Table 7.3** Recommended Policies and Practices (Unranked)

#	Policy or Practice Recommendation	Lead Organization	Estimated Project Cost \$ = <100k \$\$ = 100K - 1M \$\$\$ = 1M+	Timeframe	Outside Coordination
<b>Planning Coordination and Outreach</b>					
1	Adopt an MOU among JLUS partners to commit to working together to advance and implement JLUS priorities.	HRPDC	\$	Short	High
2	Establish a formal charter for a Chesapeake Military Municipal Partnership that includes a focus on St. Juliens Creek Annex.	Chesapeake	\$	Short	High
3	Designate an individual staff person in each City (e.g. military liaison position) to serve as a single POC for the Navy with a goal of expediting coordination across departments.	Portsmouth, Chesapeake	\$	Short	None
4	Continue to monitor potential impacts from the Federal Channel Expansion on the Craney Island Fuel Depot and NNSY waterfront current and future operations and coordinate with USACE and Virginia Port Authority to address concerns.	U.S. Navy	\$	Short	Medium
5	Continue to monitor navigation impacts along the Elizabeth River during the evaluation of future development and access proposals to prevent navigational trouble spots.	USCG	\$	Short	High
6	Develop guidance for regional projects that would define a formal mechanism to ensure all affected parties are sufficiently engaged and consulted in the project.	HRPDC	\$	Short	High
7	Include military installation planners in city planning processes (master plans, transportation planning, etc.) and city planners in military planning processes (where possible) to promote information sharing and mutually beneficial outcomes.	Portsmouth, Chesapeake, U.S. Navy	\$	Short	High
8	Develop a stormwater systems maintenance MOU for each installation and respective locality to define on-going roles and responsibilities for routine maintenance of ditches, culverts, and other drainage components that span locality/Navy jurisdiction.	HRPDC	\$	Short	High
9	Set quarterly recurring coordination meetings between the Navy, localities, and the Norfolk and Portsmouth Belt Line Railroad.	U.S. Navy, Portsmouth	\$	Short	High
10	Continue to monitor communication signal interference near the Elizabeth River crossing of the Norfolk and Portsmouth Belt Line Railroad and work with the Railroad to identify courses of action for reducing impacts.	U.S. Navy	\$	Short	Medium

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#	Policy or Practice Recommendation	Lead Organization	Estimated Project Cost \$ = <100k \$\$ = 100k - 1M \$\$\$ = 1M+	Timeframe	Outside Coordination
11	Define Navy primary and secondary utility POCs for each installation and the associated coordination protocols between NAVFAC counterparts and utility providers (natural gas, electric).	U.S. Navy	\$	Short	Low
12	Consider the formation of a regional industrial lands task force to support the development of guidance for reducing risk along the Southern Branch of the Elizabeth River.	HRPDC	\$	Short	High
13	Update the Military Commuter Survey (HRTPO) on a recurring basis so that it can regularly inform regional transportation and transit planning processes	HRTPO	\$	Short	Medium
14	Develop and regularly update outreach materials for NNSY, Naval Medical Center Portsmouth, and St. Julien's Creek Annex employees about appropriate protocols, locations, and enforcement procedures for parking outside the installation and available transit options, and update materials as conditions and options change.	U.S. Navy	\$\$	Short	Low
15	Continue ongoing coordination and communication about the future of the Wheelabrator waste-to-energy plant and potential opportunities for reuse.	U.S. Navy	\$	Short	High
16	Develop coordinated emergency evacuation protocols for local and federal workers in the downtown area of Portsmouth.	Portsmouth	\$	Mid	Low
17	Explore options for establishing a regional Mobile Rehabilitation Unit (vehicle) that can support emergency response training and incident response needs at DoD installations.	Portsmouth, Chesapeake	\$	Short	High
18	Ensure local emergency managers and elected officials are informed about the DSCA as a resource strategy to support local emergency management planning and response activities.	U.S. Navy	\$	Short	Low

#### Advocacy

1	Continue to explore and pursue funding opportunities through the DCIP and DAR Program.	HRPDC	\$	Short	High
2	Pursue an amendment to the VDOT SMART SCALE criteria to include SLR, flooding, and military readiness as factors for prioritizing projects for funding	HRPDC, HRTPO	\$	Mid	High
3	Pursue an amendment to the Code of Virginia and the Virginia Residential Property Disclosure Act for mandatory disclosure requirements for flood hazard, including 500-year flood, for real estate transactions (purchase and rental).	Portsmouth, Chesapeake	\$	Mid	High

#	Policy or Practice Recommendation	Lead Organization	Estimated Project Cost \$ = <100k \$\$ = 100k - 1M \$\$\$ = 1M+	Timeframe	Outside Coordination
4	Advocate for FEMA to incorporate precipitation into coastal/storm surge analyses.	HRPDC	\$	Short	High
5	Continue to advocate for the development of expanded transit services to NNSY and NMCP and other DoD installations.	U.S. Navy, Portsmouth, Chesapeake, HRPDC	\$	Short	High

### Policy and Development Regulations

1	Include the 3,000-foot notification boundary reference in local plans and policy documents.	Portsmouth, Chesapeake	\$	Short	Low
2	Incorporate future climate conditions (rainfall, SLR) into comprehensive plan updates and area plans so that land use policy, growth management strategies, and siting of public facilities (schools, fire, police) consider future conditions for flooding and access constraints caused by flooding.	Portsmouth, Chesapeake	\$	Short	High
3	Incorporate up-to-date projections for future SLR, future rainfall, and storm surge into roadway design guidelines and projects to cover the project's expected service life.	VDOT	\$	Short	High
4	Develop regional guidance for integrating tidal and rainfall scenarios into the regional TDM so that the information can be used in future scenario planning.	HRTPO	\$	Short	High
5	Develop future base flood elevation design guidelines that incorporate SLR.	Portsmouth, Chesapeake	\$\$	Mid	High
6	Strengthen repetitive loss definitions and administrative procedures in local floodplain management ordinances to provide added protections to insured property owners.	Portsmouth, Chesapeake	\$	Short	Medium
7	Require a recorded declaration of land use restriction in SFHA that prohibits converting areas under elevated structures to habitable space by permanently restricting uses to parking, storage and access to the building.	Portsmouth	\$	Mid	Medium

#	Policy or Practice Recommendation	Lead Organization	Estimated Project Cost \$ = <100k \$\$ = 100k - 1M \$\$\$ = 1M+	Timeframe	Outside Coordination
<b>Technology and Data Strategies</b>					
1	Define GIS data-sharing protocols, requirements, and POCs at the cities and the Navy to support cross-jurisdictional technical studies, analyses, and project execution	Portsmouth, Chesapeake, U.S. Navy	\$	Short	High
2	Develop a future flooding mapping layer for the JLUS study area and once complete develop proposed ordinance revisions to support local implementation.	Portsmouth, Chesapeake	\$	Short	High
3	Develop/assemble comprehensive mapping of the Elizabeth River shoreline and adjacent industrial properties to support coordinated planning, management of flood risk and hazardous materials, and river access.	HRPDC	\$\$	Short	High
4	Develop an automated parking management system to document/track violations and enforce parking restrictions and then utilize adaptive management to improve the system based on trends.	Portsmouth	\$\$	Mid	Medium
5	Develop a notification system for motorists about the Elizabeth River drawbridge (Beltline Railroad) north of the Jordan Bridge and tie the notification system to local and regional traffic alert systems.	Portsmouth	\$\$	Mid	High
6	Expand the pilot flood sensor program under development by the HRPDC to include routes serving the Navy and ensure the notification system works with DoD and Virginia Port Authority notification systems.	HRPDC	\$	Short	High