A hazard resilient future for Naval Station Newport within its coastal community:

Military Installation Resilience Review (MIRR) for short-term preparedness and long-term planning

Senior Decision Makers Report Out

June 16, 2022
### Today’s Overview

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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</thead>
<tbody>
<tr>
<td>09:00</td>
<td>Welcome</td>
</tr>
<tr>
<td>09:05</td>
<td>Tools developed in this project (Austin)</td>
</tr>
<tr>
<td>09:30</td>
<td>Challenges &amp; Recommendations (Pam)</td>
</tr>
<tr>
<td>10:00</td>
<td>Discussion</td>
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**Meeting Objective**

To provide an information brief to share insight and findings that support high level decisions related to natural hazards resilience and military infrastructure.
Welcome!

- **Benefits of the MIRR**
  - Navy mission
  - Island/State economy
  - Public health & safety

- **Looking at NAVSTA Newport as an interdependent member of the Island community**

- **Recognizing the State’s role:** (bridges, roads, and emergency management authorities)

[Map of Aquidneck Island](newportcityri.com/aquidneck-island)
The MIRR Project Timeline

**PHASE 1**
- Identify and map flooding and wind vulnerabilities resulting from storms and sea level rise

**PHASE 2**
- Validate, share, and engage stakeholders to foster understanding of impacts, consequences, and interdependencies

**PHASE 3**
- Make recommendations for implementation actions to increase resiliency

**PHASE 4**
- Develop final report, visualizations and presentation tools

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**August 2020 - March 2021**

**April 2021 - December 2021**

**December 2021 - February 2022**

**March 2022 - August 2022**
MIRR Recommendations

1. Establish an overarching mechanism and framework for resilience for the NAVSTA Newport and the three municipalities and other appropriate stakeholders
2. Enhance emergency management collaboration
3. Enhance collaboration for resilience through infrastructure planning and execution
4. Develop partnerships to support collaborative funding and grant management that leverages DoD and municipal capacities
5. Develop strategic communication plan
Captain James McIver,
Commanding Officer
NAVSTA Newport

Bill VanHouten,
Program Manager, Office of Local Defense Community Cooperation (OLDCC)
Tools developed in this project…

… and how they can be used going forward
1. ADCIRC (Advanced CIRCulation) Storm Models

- New England application has been validated against historic storms in NE
- All the ADCIRC scenarios for this project have been completed
- Wind and water level model data have been post processed for the integration to the dashboard

<table>
<thead>
<tr>
<th>ID</th>
<th>Event Type</th>
<th>Sea Level</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Calm - No Storm</td>
<td>Present MSL - For Reference</td>
</tr>
<tr>
<td>2</td>
<td>1 ft SLR</td>
<td>1 ft SLR</td>
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<tr>
<td>3</td>
<td>3 ft SLR</td>
<td>3 ft SLR</td>
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<tr>
<td>4</td>
<td>5 ft SLR</td>
<td>5 ft SLR</td>
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<tr>
<td>5</td>
<td>High Impact Hurricane - Modified 1938 Hurricane</td>
<td>Present MSL</td>
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<tr>
<td>6*</td>
<td>1 ft SLR</td>
<td>1 ft SLR</td>
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<tr>
<td>7</td>
<td>3 ft SLR</td>
<td>3 ft SLR</td>
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<tr>
<td>8</td>
<td>5 ft SLR</td>
<td>5 ft SLR</td>
</tr>
<tr>
<td>9</td>
<td>Hyper Storm – Superstorm Sandy</td>
<td>Present MSL</td>
</tr>
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<td>10*</td>
<td>1 ft SLR</td>
<td>1 ft SLR</td>
</tr>
<tr>
<td>11</td>
<td>3 ft SLR</td>
<td>3 ft SLR</td>
</tr>
<tr>
<td>12</td>
<td>5 ft SLR</td>
<td>5 ft SLR</td>
</tr>
</tbody>
</table>

ADCIRC Scenarios for Report (1 - 12)

*Scenarios to be used in workshop (6 & 10)
2. 3D Storm Visualizations
2. 3D Storm Visualizations

Coasters Harbor Island
Hurricane of 1938 modeled with 1' of Sea Level Rise

North
1) Identify key facilities and contacts

Steering committee meeting to identify key areas of concern

2) Initial field collection using Survey123 mobile app

Facility site visit, record asset location, take photos, discuss consequences and take notes (instructional video provided to assist)

3) Review and revise via online mapper

Facility managers access online mapper to enter additional details
3. Hazard Consequence Data Collection Methodology

- The asset of concern
- The specific location of asset
- A modelable hazard threshold
- The consequences of an impact on the facility, the community, emergency management, the mission, etc., as well as predicted recovery period
- Policy documents associated with mission objectives, requirements, and organizational/operational structure
3. Summary of Collected Data

Total Hazard Consequence Thresholds collected: 152
4. Online Dashboard Tool
5. Evacuation Models from Naval Postgraduate School

- Evacuation takes 14 hrs under clear skies
- Majority of evacuees would need to go off-island (~2900 go west)
- Model considers evacuees from NAVSTA Newport going to shelters
Overview of the Tabletop Training Exercise (TTX)

Dec. 12, 2021
Innovate Newport
Purpose of TTX

- Share and critically evaluate new information.
- Engage decision-makers given their understanding of impacts, consequences, and interdependencies relating to severe weather events.
- Identify priorities for resilience actions.

Audience/participants
- 28 Subject Matter Experts (SME)

Objectives: By the end of the meeting(s):
- Impact data discussed and validated
- Recommended actions will be identified, including the lead and those involved.
- Continue to build buy-in to the need for resilience planning and action

Register Now

December 14th, 2021 8:30 - 4:30
Registration begins at 8:30 am, coffee and snacks provided
Innovate Newport - 513 Broadway, Newport
*Inclement weather backup date: January 6th, 2022

Be a Plankowner in Building a Hazard-Resilient Future for NAVSTA Newport and its Neighbors

You are invited to join us for the MIIP TTX tabletop exercise: a dynamic, engaging collaboration of the U.S. Naval War College, Naval Station Newport, the City of Newport, and the University of Rhode Island.

This event will explore the impacts of severe storms and rising sea levels for infrastructure, emergency operations, and planning purposes. Contribute your expertise and discover strategies to enhance NAVSTA Newport’s resilience in the wake of catalysts to instability such as climate change, the tyranny of time, and economic impacts of severe storms to the Aquidneck Island Community.

The purpose of the one-day event is to:
- Share and critically evaluate new information.
- Engage decision-makers given their understanding of impacts, consequences, and interdependencies relating to severe weather events.
- Identify priorities for resilience actions.

Register here for the Event

*TThis event is by invitation only. If you feel that additional colleagues should attend, please contact the organizers.

Please direct questions to Pam Rubinoff, URI Coastal Resources Center, rubinoff@uri.edu.

TTX Draft Report Decision makers meeting Final Report
Galley has 10 days of food at any time need to find generators

Damage to this road cuts off access to the Melville node almost entirely.

WWTF basement floods, four sump pumps move water out to maintain low water, if pumps go down cannot move sludge

Emergency generator would be knocked off and service disrupted
TTX Move 3: Discuss Proposed Actions for Priorities

1. Resilience priority name
2. One sentence description of consequences
3. Resilience action(s) identified
4. Who should take the lead and be involved
Asset Level Recommendations
(identified at TTX)
High-Priorities Identified at TTX

(N) – DoN-centric – These are at-risk facilities and assets (i.e., impacted by modeled storm scenarios) inside the fence line in NAVSTA Newport, operated, overseen, and funded by the Navy, and do not have shared responsibility with the adjacent communities to function.

(I) – Interdependent Management of DoN/Municipal infrastructure – These are at-risk facilities and assets located on and off the Navy base. They are considered interdependencies since the service is provided by other entities.

<table>
<thead>
<tr>
<th>Descriptive Theme</th>
<th>ID</th>
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<tbody>
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<td>Potable Water</td>
<td>I-14</td>
<td>Easton Pond Station 1</td>
</tr>
<tr>
<td>Wastewater</td>
<td>I-13</td>
<td>Long Wharf Station 1</td>
</tr>
<tr>
<td></td>
<td>I-16</td>
<td>City of Newport Wastewater Treatment Facility (WWTF)</td>
</tr>
<tr>
<td>Transportation</td>
<td>I-2</td>
<td>NAVSTA Pier 2</td>
</tr>
<tr>
<td></td>
<td>I-4, I-24, I-25</td>
<td>Major Island Bridges – Newport Pell, Mount Hope, and Sakonnet River</td>
</tr>
<tr>
<td></td>
<td>I-6</td>
<td>Burma Road, Arterial Road Length</td>
</tr>
<tr>
<td></td>
<td>I-5</td>
<td>Gate 2- Elizabeth Brook Bridge</td>
</tr>
<tr>
<td></td>
<td>N-13</td>
<td>NAVSTA Gate 1 and Access Bridge</td>
</tr>
<tr>
<td>Energy</td>
<td>I-15</td>
<td>National Grid High Voltage Transmission Lines</td>
</tr>
<tr>
<td>Environmental</td>
<td>I-1</td>
<td>Surplus Navy Land, Melville, decommissioned stormwater outflow and separator tanks</td>
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## High-Priorities Identified at TTX

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Long Wharf Pump Station

Ownership: City of Newport

The problem: Severe storm risk of flooding the electrical system and basement pumps; sanitary sewer would overflow into adjacent areas. The pump station is responsible for 80% of flow into Newport WWTF.

Possible solutions:
- Protect facility entrances with flood barriers
- Elevate and upgrade aging infrastructure
  - TTX participants focused on a near-term enhancement project (20 - 50 years)

Proposed partners: City of Newport (lead), NAVSTA Newport
Ownership: NAVSTA Newport

The problem: Stormwater outflow funnels runoff and groundwater from the Superfund site, towards Melville that could back up or fill with seawater during storms. Contaminated flood water could flow out of storm manholes by the train tracks and Safe Harbor New England Boatworks.

Possible solutions:
- Existing plans recommend enhancing municipal and naval collaboration to remediate environmental contamination around the tank farms
- TTX participants recommended further investigation into the substances held within the tank to better quantify the impacts of this asset being compromised and the cost of mitigation

Proposed partners: NAVSTA Newport (lead),
Burma Road, Defense Highway

Ownership: NAVSTA Newport

The problem: The road serves for evacuation and the supply network. Low points where stormwater is channeled across the road are vulnerable to inundation. Loss of this route could affect response capacity for multiple jurisdictions. High-use by many marine trades industries, public boat ramp, and more.

Possible solutions:
Existing plans recommend:
- Make the road a viable alternative for north-south traffic flows on Island to increase capacity
- Transfer the road to the State to provide an important evacuation route for navy personnel and Island residents

Proposed partners: NAVSTA Newport, RIDOT, Town of Portsmouth
NAVSTA Pier 2

Ownership: NAVSTA Newport

The problem: Vulnerable to **surge and wind damage**. If inoperable (from flooding, loss of water, or other storm impacts), *Naval Public Works, Pier Operations, Coast Guard Operations etc. are compromised*. The water supply is located onsite, and damage would leave the pier **under increased fire vulnerability**, without heat, and without water supply.

Possible solutions:
- TTX participants agreed that **replacing aging infrastructure** would decrease vulnerability, and likely be a medium cost action
- A higher cost alternative would involve **raising the entire structure**

Proposed partners: NAVSTA Newport (lead), USCG, NOAA
### Other High Priority Interdependent Assets Identified at TTX

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**Flood Scenario:** 1938 Hurricane + 1' SLR
Navy-Centric Priority Assets

- 28 facilities total (37 Asset HCTs)
- One identified at TTX as High Priority:
  - **NAVSTA Base Gate 1 and Access Bridge (N-13)**
- Others include:
  - Assets within Naval War College, Surface Warfare Officer School, Naval Academy Prep School
  - NAVSTA steam plant
  - Wastewater lift and pump stations
  - Low-lying roads
  - Gate 2, Elizabeth Brook Bridge
NAVSTA Base Gate 1 & Access Bridge

Ownership: NAVSTA Newport

The problem: Bridge access *road already floods* with high tides. If Gate 1 (used 24/7) is compromised due to a severe storm, major transportation *rerouting* will be necessary; *security to NAVSTA Newport* could be compromised. Security fences are *vulnerable to high winds* and at risk of getting damaged during a storm. A generator also exists in this area.

Possible solutions:
- Reroute traffic to other gates
- Evaluate measures for bridge and base security
- Shore protection

Proposed partners: NAVSTA Newport (lead)
Overarching Challenges and Recommendations
Overarching Challenges for Military Resilience

- **Existing governance mechanisms** prevent consistent collaborative planning and program implementation between the Navy and the municipalities.
- **Siloed functions** related to the DoN and municipal operations, for emergency management and/or long-term planning impede resilience.
- **Inadequate resources** for funding improvements and program managing programs challenge all jurisdictions.
- **Resilience requires incentives, and sustained leadership** for both emergency management and long-term, strategic planning.
R1. Establish an overarching mechanism and framework for resilience for the NAVSTA Newport and the three municipalities and other appropriate stakeholders

Create
Create a Memorandum of Understanding (MOU) to establish roles and integrate goals for resilience

Establish
Establish a working group of cross functional team members that meets periodically

Design
Design an assessment process to evaluate the effectiveness

E.g., Mystic River Collaborative in Boston; Louisiana Coastal Restoration Authority Board; Bay Area Water District; LEPC
R2. Enhance emergency management collaboration

Engage
- Engage an effective cross jurisdictional committee with Municipal/Naval EM staff
  • Define key roles and responsibilities for effective Island EM planning and response

Follow-up
- Follow-up on the Naval Postgraduate School’s evacuation study
  • Leverage to refine Island evacuation planning

Adapt
- Adapt MIRR-CHAMP dashboard for use in real-time emergency management in collaboration with RIEMA

Conduct
- Conduct periodic exercises with all stakeholders
R3. Enhance collaboration for resilience through infrastructure planning and execution

Establish Island-wide Resilience Coordinator position

- Informed by RIIB Pilot associated with municipal resilience program (MRP)
- Leverage and enhance the coverage to incorporate NAVSTA Newport

Organize a process to assess, review, and implement plans/priorities to increase resilience of interdependent infrastructure assets

- Identify cross jurisdictional priorities, strategies, and plan of execution
- Review priorities and implementation actions annually
- Leverage funding between DoN, state, and municipal entities
## R4. Develop strategic communication plan

<table>
<thead>
<tr>
<th>Develop</th>
<th>Develop <strong>strategic messaging</strong> to advance resilience strategies that assist NAVSTA’s mission to support the Navy with world-class education, training, and research and development activities</th>
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</thead>
<tbody>
<tr>
<td>Coordinate</td>
<td>Coordinate on <strong>external communications</strong> to municipal, state, and federal leadership</td>
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</tbody>
</table>
| Align     | Align with national security strategic objectives (U.S Climate priorities)  
  • Strategic competition  
  • National Defense strategies                                                                                      |
R5. Develop partnerships to support collaborative funding and grant management that leverages DoD and municipal capacities

- Mobilize leadership and support to catalyze planning and funding action
- Engage off-island leadership, including MIDLANT, RIIB, RIEMA
- Leverage DoD $ to support efforts outside fence line that helps achieve military mission
Potential Funding Partnerships to assist in implementing resilience projects

Federal
- U.S. Department of Defense Office of Local Defense Community Cooperation
- Association of Defense Communities
- Readiness and Environmental Protection Integration
- Intergovernmental Support Agreements
- DoN-Centric Funding Opportunities

State
- Rhode Island Infrastructure Bank
- The Southeast New England Program
Discussion
THANK YOU!

Pam Rubinoff - Coastal Resources Center, URI
Austin Becker - Marine Affairs, URI
Rosemarie Fusco - Marine Affairs, URI
Cornelia Mueller – NAVSTA Newport
Sarah Atkins, Trish Reynolds - City of Newport
Hank Brightman - NWC