



# USS Yorktown Public Information Meeting

---

Thursday, 26 October 2023



# Speakers

- Patriots Point Development Authority (PPDA)
  - **Chris Hauff**, *Chief of Staff/Deputy Director of Visitor and Community Engagement*
  
- South Carolina Office of Resilience (SCOR)
  - **Ben Duncan**, *Chief Resilience Officer*
  - **Pam Kendrick**, *Environmental & Infrastructure Program Manager*
  
- Research Planning, Inc. (RPI)
  - **Jacqueline Michel**, Ph.D., *President*

# Agenda

1. Introduction
2. Project Background
3. Project Approach
4. Results & Solutions Approach
5. Projected Timeline
6. Adjourn – Discussion Tables in Hangar 1

# Purpose and Need:

## *Overview*

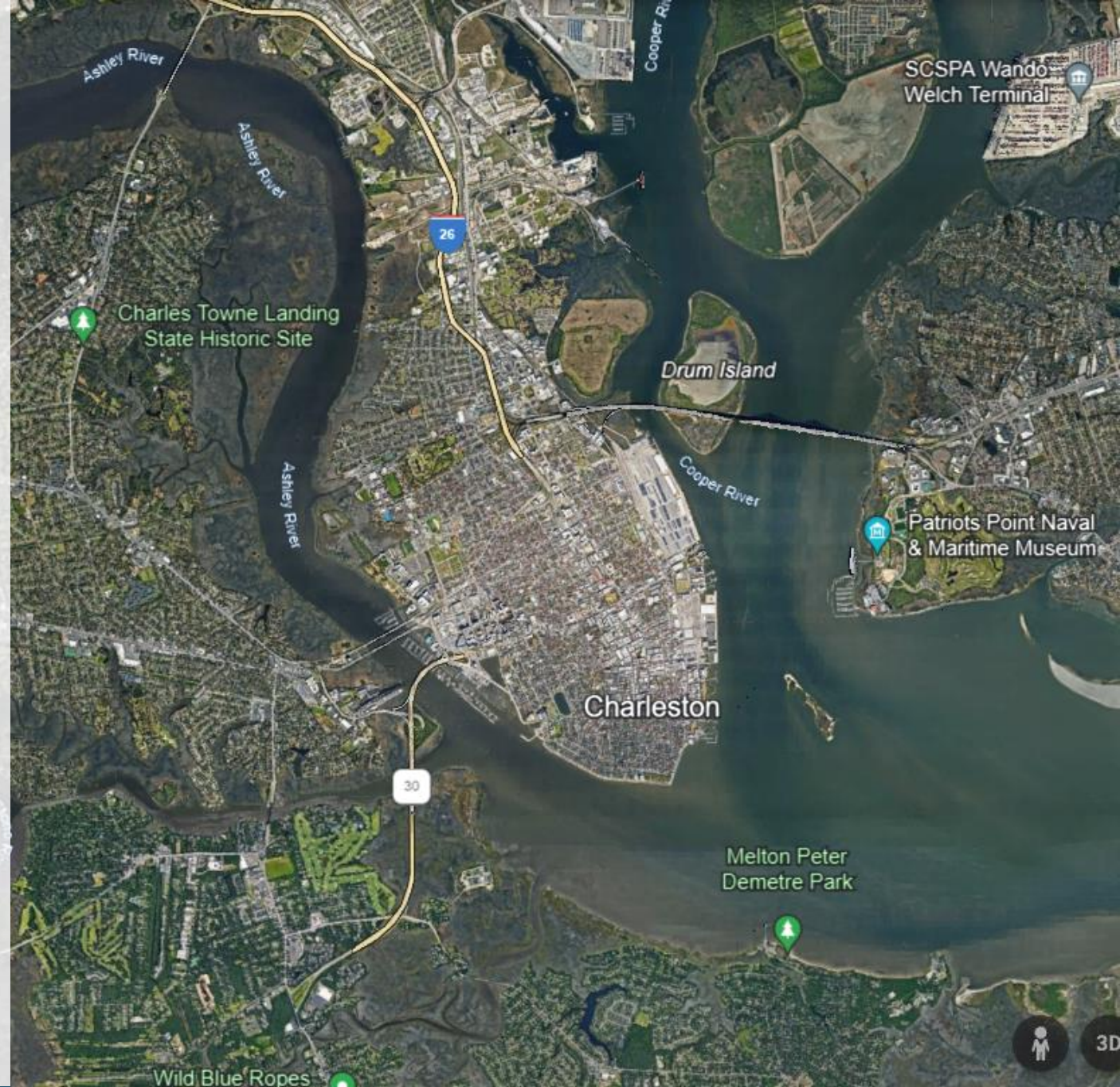
- The USS Yorktown was commissioned on April 15, 1943, and decommissioned in 1970.
- It was accepted by South Carolina “as is” and became a museum in 1975.
- At the time of the Yorktown’s deactivation, the extensive procedures prescribed by the Navy today were not in place to remove contaminants like heavy oils, fuels, and equipment.
- Past studies and small remediation efforts have been conducted. However, contaminants remain onboard the USS Yorktown.



# Purpose and Need:

## *Environmental Protection*

- The USS Yorktown is moored in the Charleston Harbor
- The Charleston Harbor is an important ecological resource for S.C.:
- Bottlenose dolphins and several species of sturgeon
- Spawning areas for many fish species
- Shellfish (oysters, reefs, horseshoe crab, blue crab, shrimp)
- Shoreline habitats composed of salt and brackish marshes, and tidal flats



# Purpose and Need:

## *National Historic Landmark*

- The USS Yorktown was designated a National Historic Landmark in 1980
  - It is the 10<sup>th</sup> aircraft carrier to serve in the U.S. Navy
  - It was renamed to USS Yorktown while under construction to honor the USS Yorktown (CV-5) that sank at the Battle of Midway in June 1942
  - Served in World War II and Vietnam
  - The USS Yorktown recovered the Apollo VIII astronauts and capsule in 1968
- SCOR is coordinating with the State Historic Preservation Office regarding the work.
- Brings tourism, sense of place, and educational value to South Carolina



# Purpose and Need:

## *Economic Impact*

- The Port of Charleston is a world class port with the deepest harbor on the U.S. East Coast
- The Port makes an \$87 billion annual statewide economic impact
- The 2023 SC Ports' Economic Impact Study found that port activities support 1 in 9 jobs in South Carolina
- USS Yorktown remediation will prevent an environmental release that fouls the Port and interrupts trade



# Purpose and Need:

## *Environmental Assessment & Plan*

### **Executive Order #20222-20**

On July 11, 2022, Governor McMaster authorized and directed the SCOR and Patriots Point Development Authority, to:

- Complete an updated comprehensive environmental assessment of any and all remaining legacy contaminants within the USS Yorktown,
- Develop plans to remove or remediate any such hazardous or potentially hazardous materials, and
- Provide an updated estimate of the remediation costs.

This study is funded with American Rescue Plan Act (ARPA) funds through SCOR.





# Hazardous Assessment Strategy

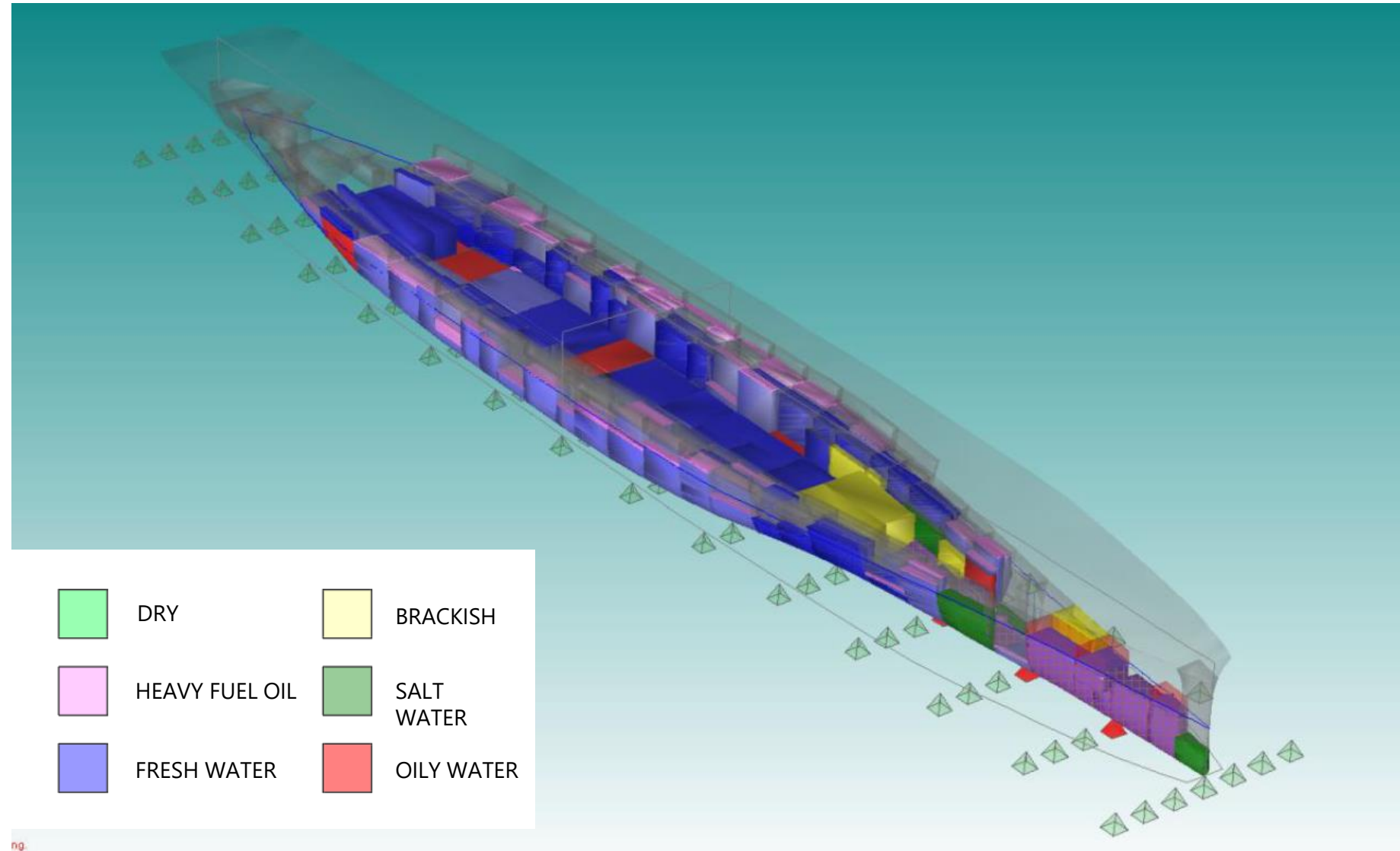
- **Human health: 3 potential exposure populations compared to regulatory standards**
  - Areas open to the general public, including young children
  - Areas accessed by administrative employees and volunteers
  - Areas accessed by maintenance staff, who use personal protection as needed
  
- **Environmental:**
  - Release of metal-contaminated water
  - Oil spill trajectory modeling and risk to sensitive habitats and animals

# Evaluation Method for Suspected Contaminants

- **Fuel oil**: Inspection of all accessible tanks and compartments
- **Contaminated water**: Sampled and tested for oil and metals content
- **Asbestos containing materials**: Collection of samples for analysis
- **Lead-based paint**: Portable analyzer testing of hundreds of **sites**
- **Polychlorinated biphenyls (PCBs)**: Surface wipes (focusing on public access areas) and hydraulic oil samples for analysis

# Issue: Oil and Water in Tanks

There are **428** tanks on the *USS Yorktown*.



# Contaminant Results: Oil & Water



## Remediation Plan

### Structural Tanks

- 100 tanks contain some heavy fuel oil: 65,390 gallons
  - 50 have <50 gallons
  - 5 have >400 gallons
  - Largest volume is 6,400 gallons
- 14 tanks contain oily water: 111,144 gallons

### Non-Structural Tanks and Systems

- 14,115 gallons hydraulic oils

- Restore watertight integrity to hull in the vicinity of the tidal zone.
- De-water flooded compartments and survey condition and contents.
- Treat all pump-off water.
- Remove recoverable bulk heavy fuel oil and hydraulic oil from all tanks not in use.
- Remove fluids from either the double bottom or third bottom to maintain at least one dry compartment between machinery spaces and the hull plating.

# Contaminant Results: Asbestos



## Remediation Plan

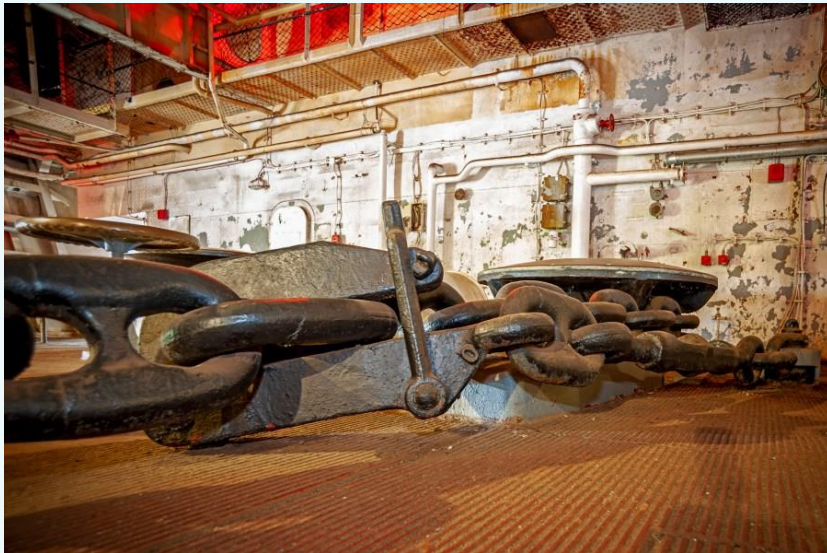
- Tested negative for asbestos:
    - 12 x 12-inch floor tiles
    - Wall board
    - Textured paint
    - Ceiling tiles
    - Dust
  - Tested positive for asbestos:
    - 9 x 9-inch floor tiles
    - Armored cable wiring
    - Pipe insulation
  - Patriots Point staff routinely repair damaged areas using certified abatement contractors
- No areas were identified requiring asbestos remediation in the public areas
  - Periodic air monitoring for asbestos should be conducted as part of an asbestos Operations and Management (O&M) Plan

# Contaminant Results: Lead-Based Paint



## Remediation Plan

- Tested for lead throughout the ship
- 166 locations with positive detections
- 93 in public areas; of these 18 locations were flaking
- Of greatest concern for public exposure is the forecastle



- Conduct routine cleanup of paint chips from the floor in public areas.
- Restrict public access to the forecastle area.
- Patriots Point staff to develop and implement written lead-based paint O&M plan to address periodic visual inspections, maintenance, and repairs.

# Contaminant Results: PCBs



## Remediation Plan

- In public areas, 11 wipe samples (33%) exceeded EPA standards.
- In administrative areas, 1 wipe sample exceeded.
- In maintenance areas, 40 wipe samples (70%) exceeded.
- All areas above EPA standards were associated with machinery, drip trays, or lube oil tanks.
- No handrails, rest rooms, or ladders in public areas were above EPA standards.

- Clean all identified surface in public and administrative areas with PCBs above standard.
- Where this is not possible, isolate the area from any public contact.
- Conduct periodic surface wipe testing and cleaning of public areas.
- Maintenance staff to implement and follow very strict personal protection measures to reduce the potential to track out PCBs when exiting maintenance areas.

# Overall Remediation Plan Approach

## Remediate

- Remove fuel oil from structural tanks
- Remove hydraulic oils
- Treat all waters pumped off during dewatering

## Mitigate

- PCBs: Clean surfaces in public areas
- Lead-based Paint: Routine removal paint chips
- O&M plan for periodic inspections

## Isolate

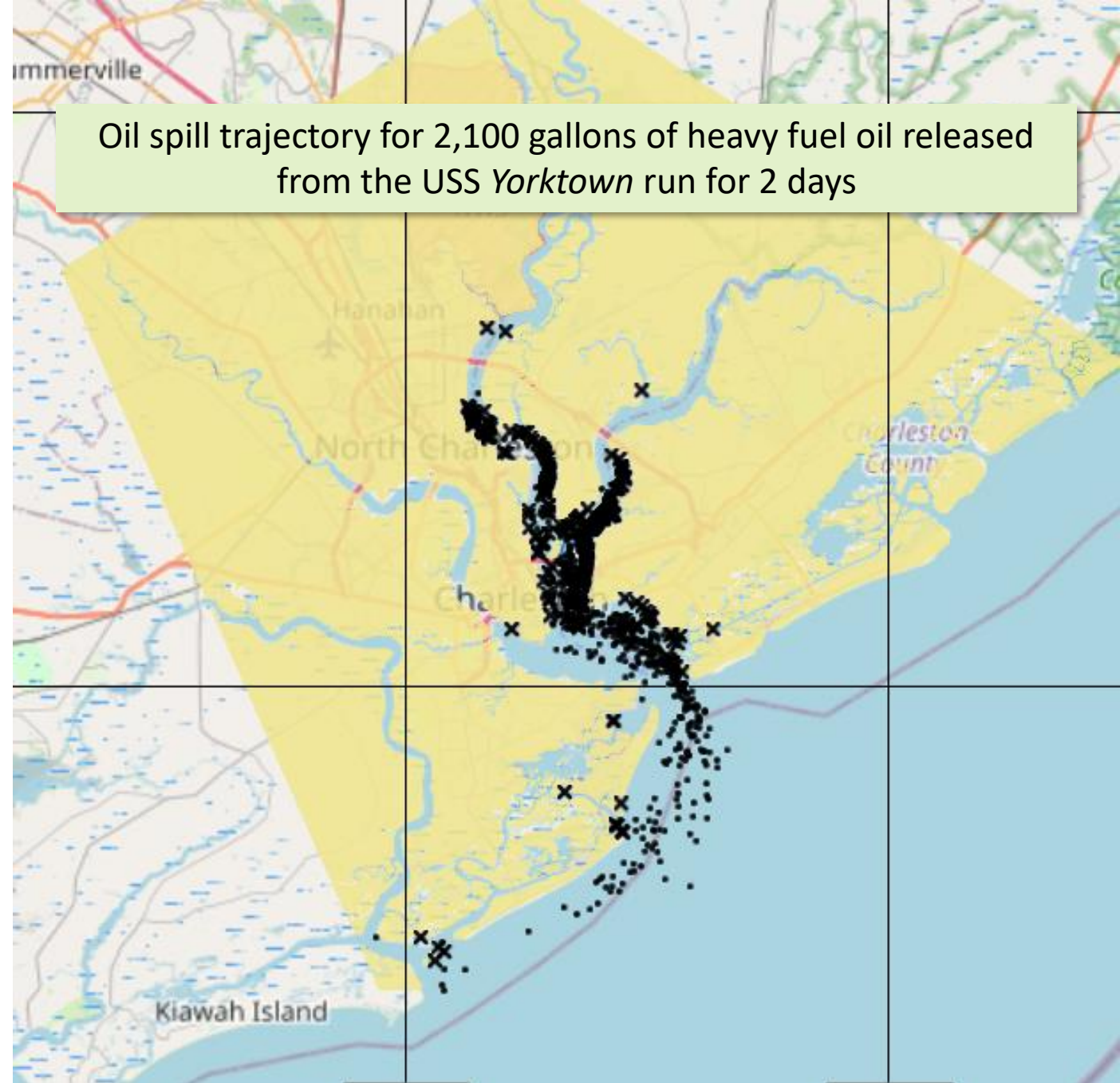
- PCBs: Physical barriers to areas along tour routes that can't be cleaned
- Lead-based paint: No public access to forecastle



# Natural Resources

- Threatened and Endangered species
- Marine mammals
- Birds
- Fish and shellfish
- Sea turtles
- Shoreline habitats, including extensive salt marshes and outer beaches

Because of the very high sensitivity of animals and habitats that could be affected by an oil release, removal of remaining oil is of highest priority.



# Consulting with Agencies (Permits, Approvals, Etc.)

- SC Department of Health and Environmental Control
- SC Department of Archives and History
- SC Department of Natural Resources
- US Army Corps of Engineers
- US Fish and Wildlife Service
- National Marine Fisheries Service
- US Coast Guard
- National Park Service
- US Environmental Protection Agency
- SC Port Authority

# Immediate Repair Operations

Aug-Oct 2023

- In July 2023, when water started to leak into the USS *Yorktown*, which would affect the planned remediation works, SCOR funded immediate repair work.
- The immediate repair consists of two types of work activities:
  1. Exterior work on the hull: Divers patched breaches in the hull using salvage patches



# Immediate Repair Operations

Aug-Nov 2023

## 2. Interior work on the ship:

- Pumping fluids internally among tanks and compartments to monitor the water levels to determine leaking connections among them
- Dewatering tanks to allow access to identify and fix leaks
- To-date:
  - Patched over 20 leaks in the hull and made over 20 internal repairs to isolate tanks;
  - Removed/treated ~300,000 gallons of fluids, regaining access to the forward DC pump room;
  - Cleaned 6 tanks that contained hydrocarbons and multiple accommodation spaces that were previously flooded; and
  - Completed a temporary repair to bulkhead 26, a vital watertight boundary.



# Project Timeline

- **July 2022:** Executive Order issued by Governor directing SCOR to conduct an environmental study
- **July 2022:** SCOR published Request for Qualifications (RFQ) for environmental study
- **November 2022:** Contract signed with Research Planning Inc. (RPI)
- **February 2023:** Completed on-site testing for contaminants
- **March 2023:** Completed detailed cataloging of all areas, tanks, and compartments documented.
- **July 2023:** Identification and prioritization of contaminants aboard the ship complete
- **July 2023:** Begin environmental review in accordance with NEPA (in-progress)
- **August 2023:** JBRC approval for immediate repair work
- **August 2023:** Begin immediate repairs to prepare ship for remediation work
- **November 2023:** Estimated completion of immediate repairs
- **December 2023:** Request JBRC approval for remainder of remediation work in accordance with study
- **December 2023:** Environmental Review, remediation and protective measures plan, final cost estimate to be completed
- **Early 2024:** Bid out remediation work (pending funding approval)

# Adjourn

- 3 tables in Hanger Bay 1 with staff available to answer your questions
- Comment cards are available on all the tables for you to submit your questions or comments
- For the Media, we will meet briefly in the Charleston Harbor Room to answer your questions
- Thank you all for your support of the USS Yorktown!