Southeast Region Federal Construction

2025 SUMMIT

April 22-24 Wilmington, North Carolina

Infrastructure & Environmental Summit

Virginia North Carolina South Carolina Georgia Florida

Hosted by:

US Senator Thom Tillis

US Senator Ted Budd

North Carolina Military Business Center

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Emerging Technology and Building System Operations

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Shipyard Infrastructure Optimization Program (SIOP)

SIOP Update to Southeast Region Federal Construction Summit

Program Executive: Mr. Mark Edelson, PEO Industrial Infrastructure
Program Manager: CAPT Luke Greene, SIOP (PMO 555)

23 April 2025

Agenda

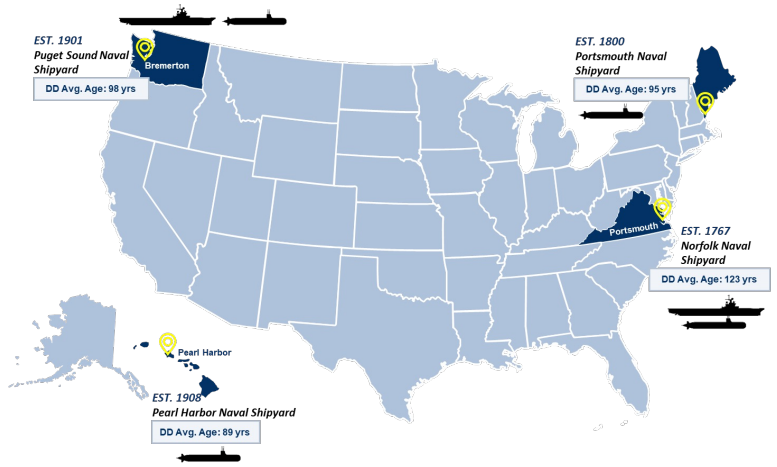
- **Mission**
- **Lines of Effort**
  - **LOE 1 – Dry Docks and Piers**
  - **LOE 2 – Facilities Optimization**
  - **LOE 3 – Equipment Modernization**

- **Emerging Technology and Building Systems Opportunities**
  - This session convenes senior government leaders and industry experts to highlight new and emerging technologies **modernizing military installations and enhancing strategic readiness** across the Department of Defense (DoD). The discussion will emphasize **innovations shaping the future of base infrastructure,** facility management, and **operational efficiency.**
  - Objective: Equip attendees with actionable insights and collaborative pathways to **support the transformation of military installations** into smarter, greener, and more connected environments.

Shipyard Infrastructure Optimization Program (SIOP)

Problem Statement

- Condition, capacity, and configuration of facilities, dry docks, and equipment at the four public shipyards contribute to inadequate throughput and loss of fleet operational availability.
- Shipyards designed for constructing conventional ships are not optimized for repairing the nuclear fleet.



Baseline Performance (2018)

- Dry dock capability/survivability gaps: insufficient dry docks for VIRGINIA Blk V and FORD-class.
- Inadequate facilities and equipment led to maintenance delays that contributed to >1,300 lost operational days for carriers and >12,500 lost operational days for submarines. (FY00-16, GAO).

Solution – SIOP

LOE 1: Construct and recapitalize dry docks and piers

LOE 2: Recapitalize and reconfigure infrastructure for optimization

LOE 3: Modernize industrial plant equipment

SIOP North Star

Enable increased submarine and carrier maintenance throughput by recapitalizing shipyard infrastructure and equipment required to conduct scheduled depot maintenance and by reconfiguring infrastructure layout to deliver reductions in availability durations.

LOE 1 – Dry Dock Modernization

Norfolk Naval Shipyard – Dry Dock 8 Modernization
Five projects including $486M cooling water for Ford class aircraft carriers
Ford class in the Atlantic

Portsmouth Naval Shipyard – Dry Dock 1 Expansion
$2.5B project underway in support of Virginia class submarines
3 to 5 dry docks

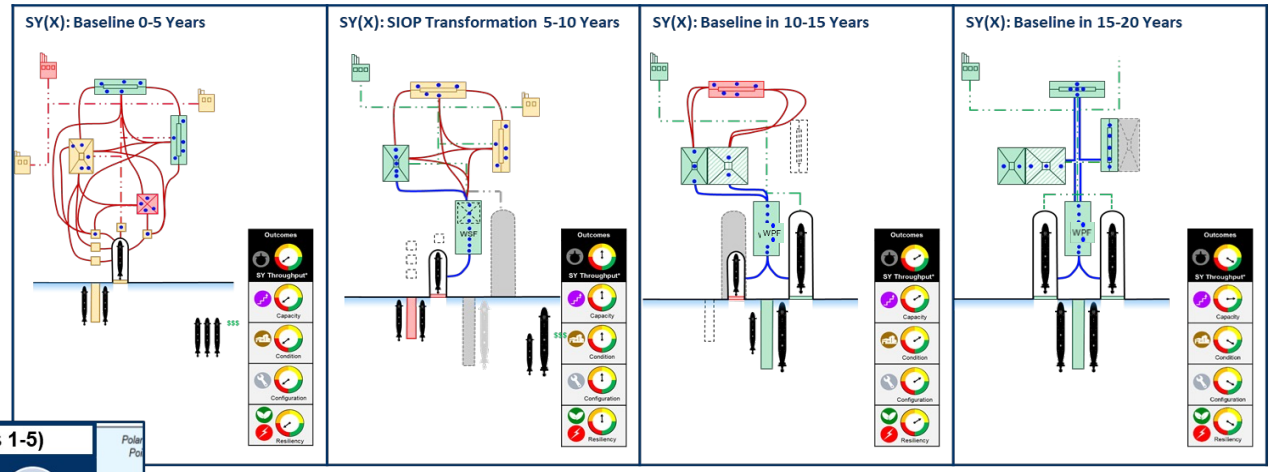
Active Nuclear Fleet
Ford Class: 1
Nimitz: 10
Ohio (SSBN): 14
Ohio (SSGN): 4
Seawolf: 3
Virginia: 23
Los Angeles: 25

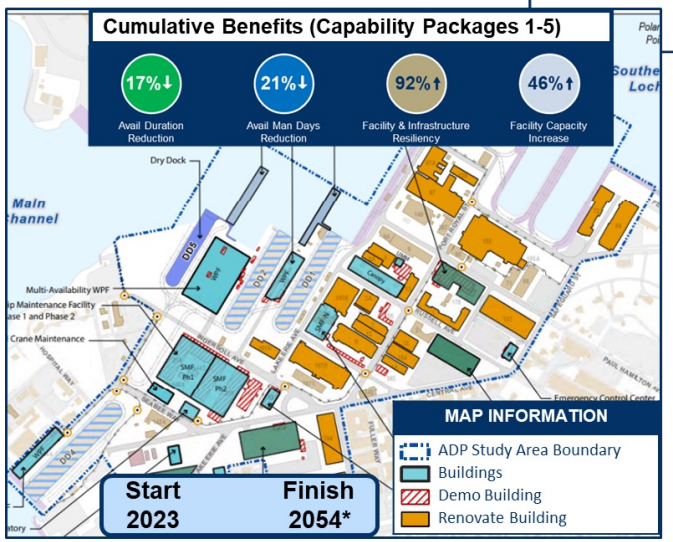
Pearl Harbor Naval Shipyard – New Dry Dock 5
$4.5B project underway in support of Virginia class submarines
2 to 3 Virginia class dry docks

Puget Sound Naval Shipyard – New Multi-Mission Dry Dock
Approaching 80% design, NEPA, and Tribal consultations underway
Ford class in the Pacific

LOE 2 – Facilities Optimization

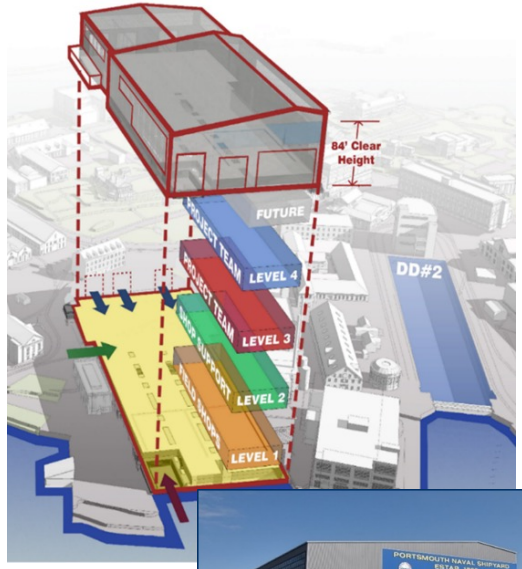
- **Modeling & Simulation**
  - Based on 22 availabilities
  - Reduce travel time
  - Move quick-turn shops to waterfront
  - Move back-house shops, logistics, and admin away from docks
  - Locate engineers, tool rooms, locker rooms, and training spaces near shops

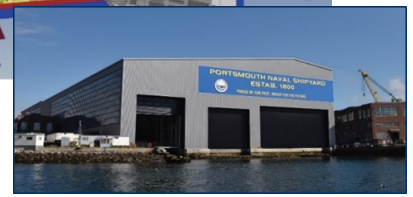




- **Area Development Plans (ADP)**
  - Translate Mod/Sim into actionable plans
  - Configuration Baseline provides associated schedule
  - Projects linked to Key Performance Parameters

- **PNSY Waterfront Production Facility**
  - Ribbon cut on 10 Feb 24
  - Four stories inside Bldg 178
  - Extensive use of early contractor involvement (ECI)
  - Brings functions to the waterfront
  - Collocates shops with engineers and project teams
  - Projects linked to Key Performance Parameters
  - Reduce submarine availability duration by 2%





LOE 3 – Industrial Equipment Recapitalization

Background

- 1,113 pieces of equipment ($3B) across all four public shipyards. Average age: 24 years
- Private sector average age: 7-10 years
- Most equipment unsupported by original manufacturers
- Significant supply chain stressors: Chips, steel, gears, etc.
- Minimal commonality of machinery or maintenance approach across shipyards

Path Forward

- Consistent, sufficient procurement to bring all equipment within expected service life
- Create commonality: procurement & maintenance efficiencies; workforce exchange
- Cost savings
- Establish enterprise-wide supplemental maintenance contracts
- Connected equipment
  - Transmit designs to machines and among shipyards
  - Monitor performance and health
- Remote material tracking for geo-location
- Predictive modeling & simulation through digital model
- Advanced Manufacturing allow buy/make trade-off

Shaft Lathe (PSNS)

Boring Mill (PHNS)

237 pieces of capitalized equipment installed by SIOP to date
90% domestically sourced

Questions?

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