



**HAMPTON ROADS**  
**MARITIME INDUSTRIAL BASE**  
**ECOSYSTEM<sup>SM</sup>**  
Moving Maritime Forward Together

## **Ensuring the Naval Maritime Workforce**

**The right maritime trade skills, in the right number, available at the right time to support Navy's 30-year Shipbuilding Plan**

**Brief to the Virginia Beach MEDAC**

*22 February 2021*

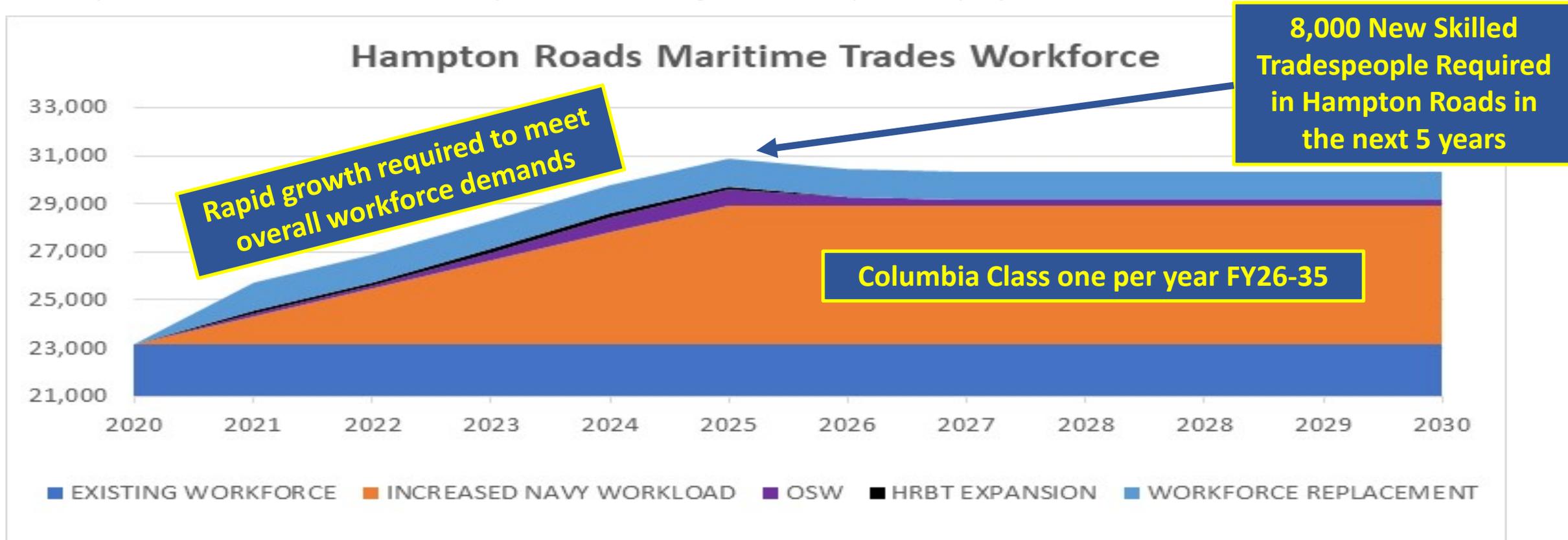
# Maritime Trades



# Hampton Roads Maritime Workforce Challenges

**Background.** There are numerous factors aligning over the next several years that place the Hampton Roads Maritime Workforce at risk of being able to successfully accomplish all expected projects. They include:

- Aging current workforce
- Inability to attract younger and more diverse workers to maritime skilled trades
- Increased Navy ship construction, maintenance, modernization, and repair work
- Impact of Offshore Wind and Hampton Roads Bridge Tunnel Expansion projects on maritime workforce



# U.S. Defense Industrial Base

## Industrial Capabilities Report January 2021

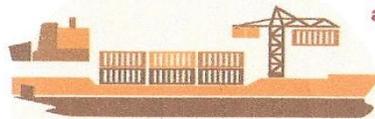


**125**  
Fragile Suppliers

From 2001-2015  
**17,000** companies  
ceased being prime vendors  
for the DoD



**14,000**  
Aircraft Manufactured and  
maintained annually



Only **4**  
Active Shipyards

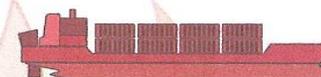
**97%** of ALL U.S. imports  
are delivered by foreign ships

**China's Goal: Constrain the U.S.**   
and become the Commercial Center of Gravity in the World  
A Major Disruptor

# China



- **2nd Largest Shipping Fleet** in the world
- **Constructed 1/3** of the world's vessels in 2019
- **Produces 96%** of the world's shipping containers.



- **Produces more than 80%** of the world's ship-to-shore cranes
- **Owns 7 out of the 10** busiest ports in the world



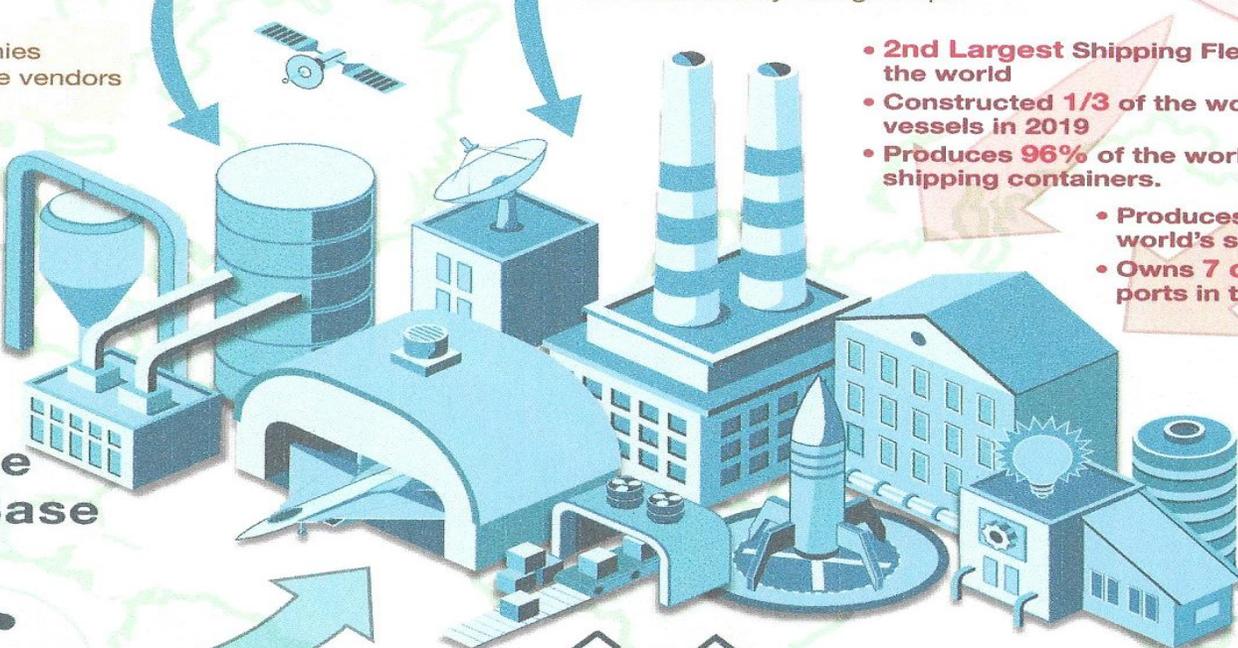
- **Semiconductors/Microelectronics**
- **Space satellites and imagery**
- **Unmanned Aerial Systems**
- **Sensors**



## ★ The Defense Industrial Base

**1.1 Million**  
WorkForce

**9%** of U.S. Employment  
Welders  
Electricians  
Pipe Fitters  
Techs  
Accountants



The **U.S. Defense Industrial Base** consists of more than 100,000 companies and their subcontractors

**Globally** the domestic and foreign companies in the Defense Industrial Base could exceed

**160,000**

**743**  
Billion  
Market Cap  
for the 10 largest  
DoD Suppliers

**778**  
Billion  
Facebook's  
Market Cap

# *Synchronizing National, Regional, and Local Workforce Efforts*

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## ➤ **Discussion.**

- There is an abundance of local, regional, and national initiatives to support the advancement of technological innovations in the maritime industry, to expand and upskill the workforce, and/or to apply enhanced curriculum. Within Hampton Roads alone, there are myriad programs (~100) that support one or more of these aspects of training the naval maritime workforce.
- The current lack of integration among current and pending programs leads to inefficiencies, dramatically reduces the potential for implementing large-scale 21<sup>st</sup> Century training and certification programs, and thwarts the implementation of Industry 4.0/5.0 technologies and the requisite education, training, and certification of the workforce required to implement these technologies.

## ➤ **Action.**

- Coordination of workforce efforts across national, state, regional, and local workforce programs would:
  - More efficiently deliver curricula, reducing time from inception to certification of candidates;
  - Standardize certifications that are fully portable while simultaneously meeting industry workforce needs;
  - Allow for rapid upskilling of the workforce to match changing workforce demands;
  - Improve Strategic Communications and visibility of training programs and their pathway to employment;
  - Allow for enhanced awareness across diverse populations about workforce opportunities;
  - Allow local programs to easily leverage improvements made at higher levels (e.g., national, state);
  - Allow for rapid application of improved safety, environmental, and health training requirements for cross-industry standardization.

## *MIBE's Vision for 2021-2022*

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A bold vision to achieve the workforce required to meet the Navy's workforce challenges of the next decade:

- Link and integrate currently disparate efforts across the region.
- Align and integrate required workforce training and certification programs to support the Navy's most critical ship production, repair, and modernization programs.
- Standardize curricula across trades, selecting pilot trades in Hampton Roads as the start of a "Building Block" approach.
- Apply lessons from this effort could be applied across all ship construction and repair activities in all geographic areas supporting naval maritime industries.

# *Addressing the Challenge: Pending MIBE Projects*

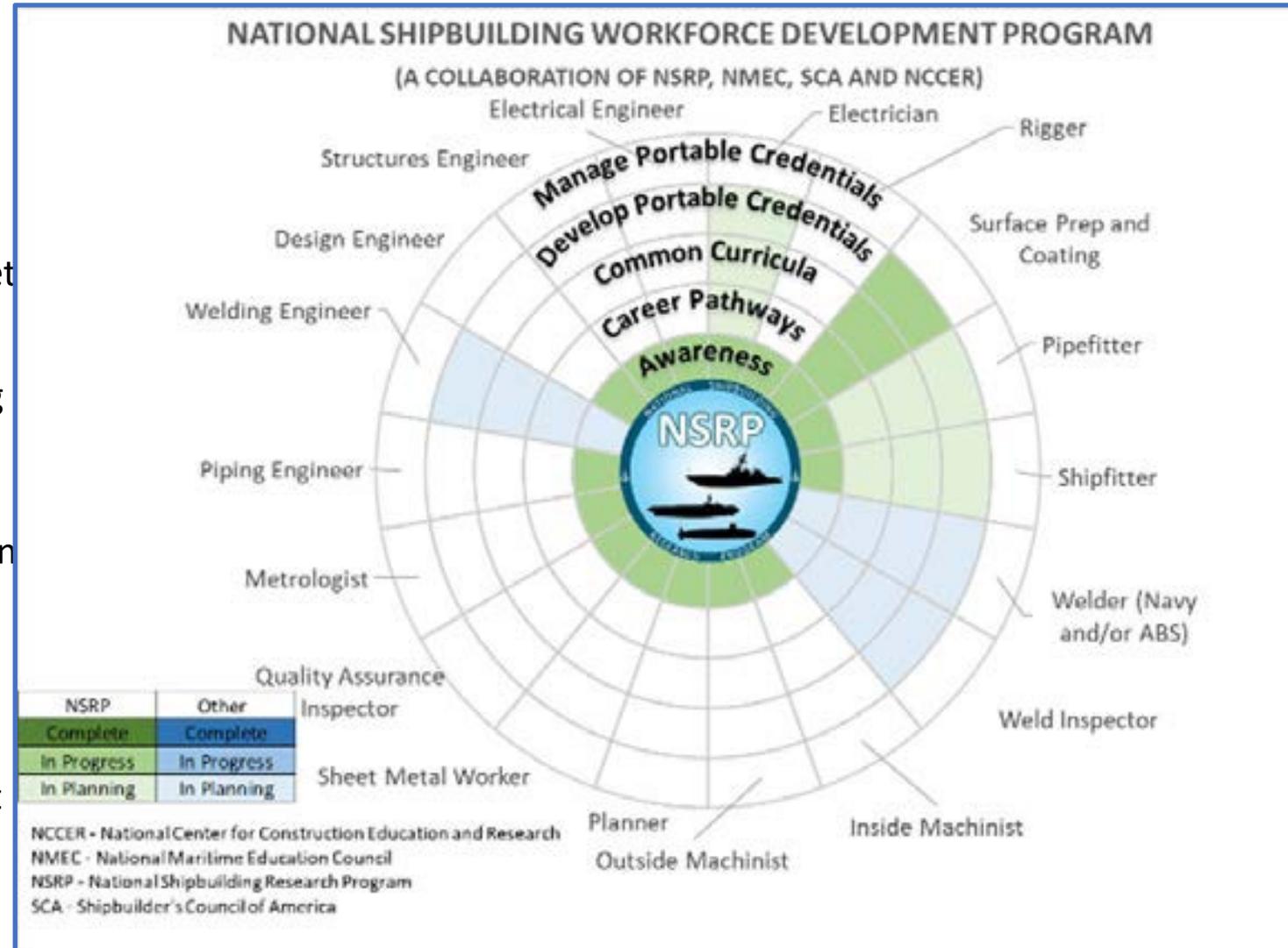
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- #1 Regional Talent Pipeline Integration. The project will develop and implement a consolidated pipeline for integrating existing national, state, regional, and local training and certification programs for all maritime trades. This will be done to support development of the Career and Technical Education Hubs described in Project #2 below.
- #2 Career and Technical Education Hubs. Determine the site requirements, funding requirements, and instructor and technical support requirements to support establishment of two Career & Technical Education (CTE) hubs in Hampton Roads.
- #3 Workforce Curriculum and Certification Standardization. Working with industry partners, work to align training and credentialing standards to lead to standardized curricula and competency metrics.
- #4 Regional Maritime Facilities Gap Assessment. This assessment of Hampton Roads maritime facilities will identify gaps in the maritime industry's ability to execute the Navy's 30-Year Shipbuilding Plan. The assessment will identify where shortfalls exist in current infrastructure and prioritize investments in order to provide highest return on these investments.

# Standardized Maritime Workforce Curricula

## A Building Block Approach

- Effective Pre-apprentice and training/certifications programs are run by K-12 and Community College systems that are accredited through regional and state agencies. Therefore, attempting to standardize multiple curricula across multiple state entities at once is extremely difficult.
- Model programs have partnered with local industry and education systems to develop curricula that meet both industry and state certification requirements.
- Programs such as LIFT's *Operation Next* have demonstrated a methodology to attract transitioning Servicemembers to the trades.
- Focusing on a few specific workforce requirements (e.g., Welder, Pipefitter) at a regional level would allow development of a model process for application to other trades and other geographic locations and their workforces.
- A building block approach would demonstrate successes that would build support and buy-in from industry, academic, and government stakeholders.
- Hampton Roads is a prime location for a pilot project supporting standardized maritime trades due to the number of industry and municipal supporters and current linkages to academic (TCC, TNCC, ODU) and partner trade organizations (IALR/SENEDIA).



# Final Thoughts

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For several years well-intentioned federal, state, and local investments have focused on either building the capacity of the current workforce, or on implementing new and improved technologies to modernize the industrial base and upskill the workforce to utilize these new tools. These modest investments have been stove-piped, and by nature, led to outdated training programs that are not delivering the right skills to industry.

## **These disjointed efforts should not continue!**

Instead we should focus our efforts around three key elements as we move forward:

- Remove existing stovepipes to integrate disparate programs, streamline and adjust curricula to shorten time from candidate inception to employment, and ensure seamless pathways from initial training to certification (industry standards).
- Stop incentivizing new and/or growing existing small, unintegrated programs that should not be part of the overall future training and certification strategy. These distract from what must be done and applies band-aids to a worsening issue.
- As Steve Jobs once said let's "Think Different!" To ensure the 21<sup>st</sup> century workforce needed to support naval sustainment in the decades ahead we need to think BIG! We must partner with major industry leaders, and local, state, and federal stakeholders to properly resource the standup of **major** state-of-the-art **facilities** in Hampton Roads that allow for:
  - Implementation of the latest technologies and application of modern training techniques;
  - The ability to refresh technologies within the training pipelines on a continuous basis (IALR model);
  - Access and utilization for the entirety of the maritime industrial base.

**Let's get after it!**

# MIBE Project Partners

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- National Shipbuilding Research Program (NSRP)
- SkillsUSA
- Lightweight Innovations for Tomorrow (LIFT)
- Pre-apprenticeship Program Leads
- Virginia Digital Shipbuilding Program
- Hampton Roads Workforce Council
- Local government officials
- Hampton Roads Chamber of Commerce
- Virginia Ship Repair Association (VSRA)
  - Maritime Trades Training Program
- Hampton Roads Maritime Collaborative for Growth & Innovation
- Southeastern New England Defense Industrial Alliance (SENEDIA)
- National Center for Construction Education and Research (NCCER)
- Peninsula Chamber of Commerce
- COVA MAP
- Virginia Maritime Association
- Virginia Manufacturer's Association
  - Manufacturing Skills Institute
- Old Dominion University (ODU)
- Tidewater Community College (TCC)
- Thomas Nelson Community College (TNCC)
- Large industry partners
- Small and Medium Manufacturers
- Virginia Modeling Analysis & Simulation Ctr
- Coastal Virginia Offshore Wind Project
- National Maritime Education Council (NMEC)
- Institute for Advanced Learning and Research (IALR)

# *MIBE Contact Information*

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