

NAVSEA

WARFARE CENTERS

Indian Head

NSWC IHD Smart Arsenal

Proposed Programmatic Scope and Partnerships

Presented to: TPP Defense Summit

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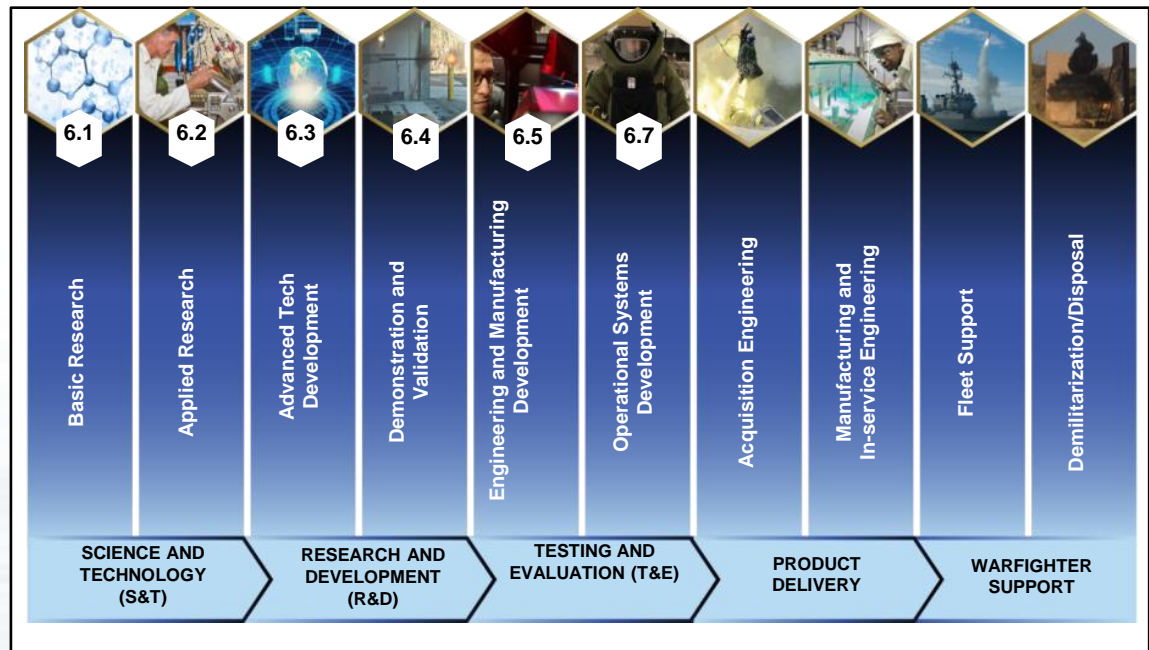
NSWC Indian Head

Mission: Research, develop, test, evaluate (RDT&E), manufacture and provide in-service support of energetics and energetic systems. Provide Soldiers, Marines, Sailors and Airmen with information and technology to detect, locate, access, identify, render safe, recover, exploit and dispose of explosive threats.

Vision: Outpace our Adversaries

Key Highlights:

- Navy's Center of Excellence for energetics
- SECNAV designated **Arsenal** for energetics and ordnance systems
- Only DON activity delivering full-spectrum energetics solutions from basic research through disposal





The Navy's Arsenal

- Purpose built in 1890
- Navy's public arsenal
- Government owned
- Required for surge
- Leader in innovation

NSWC IHD is the Navy's only government owned and operated surge energetics manufacturing site with the capabilities and expertise needed for wartime mobilization

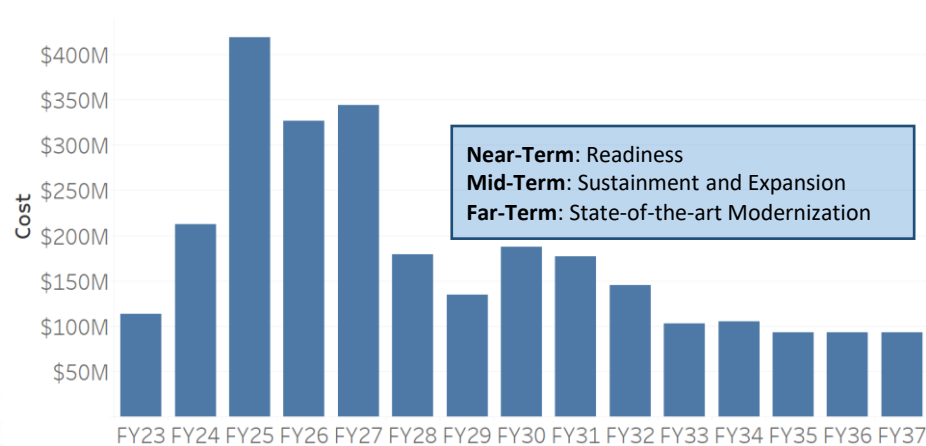


ECMP Overview

- Navy's all-hands-on-deck strategy for the MIB bolsters the private and organic sectors.
- Within the OIB, the Energetics Comprehensive Modernization Plan (ECMP) unlocks latent capacity, expands capability and capacity further, and commits to a world class OIB.

- ECMP Facts:

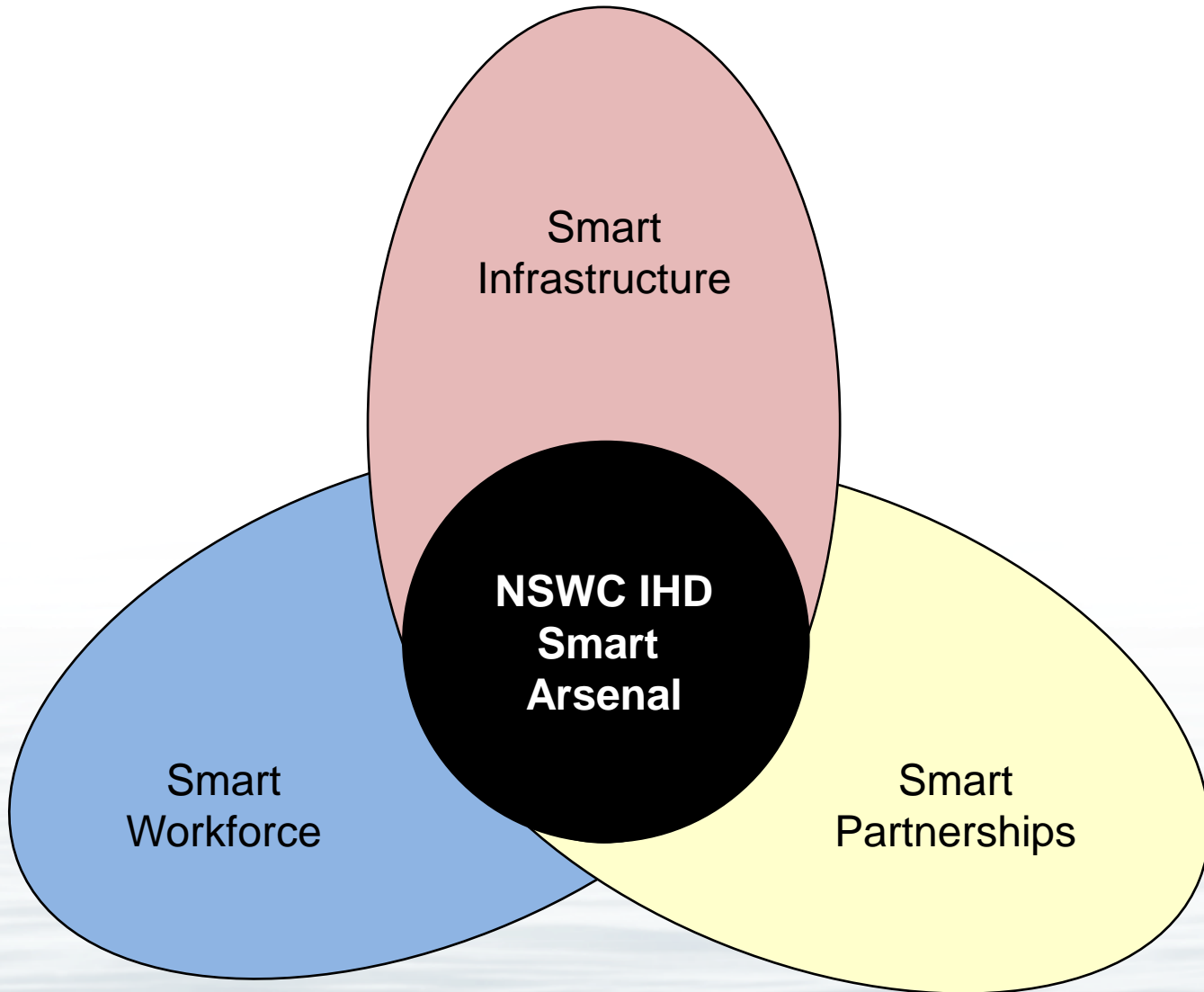
- Aligned to the National Defense Industrial Strategy
- Approved by ASN(RDA), VADM Morley, in October 2023
- \$2.7 billion dollar plan over 15 years for 500+ projects spanning NSWC IHD and NAWC WD
- \$345 million invested in FY23/24 to unlock capacity
- NAWC WD earthquake recovery plan ongoing since 2019
- Deliberate strategy for ABL expansion (e.g., "Plant 5")
- Establishes hybrid business model for NSWC IHD



Navy's All-Hands-On-Deck Strategy Bolsters Munition Capability and Capacity



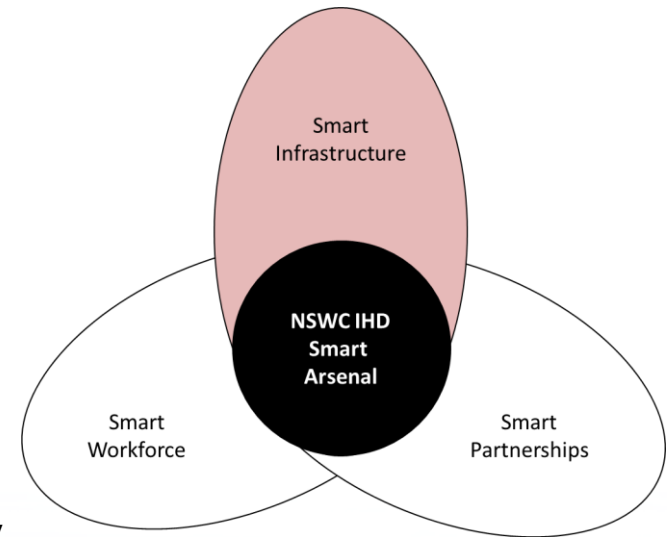
NSWC Indian Head Division's Smart Arsenal





Smart Infrastructure Primary Elements

1. **Smart Infrastructure** that enables modernization via:
 - **Real-time awareness of operational status of NSWC IHD facilities and equipment**
 - Data capture to support archiving, analysis, and analytics at multiple classification levels and various locations
 - **Conduct of operations entirely in the digital environment, eliminating paper in NSWC IHD operating facilities and manual data entry**
 - **Preventive maintenance predictions and real-time process quality evaluation**
 - Impartial, fact-based information to support anomaly assessment and investigation
 - Robust communications and emergency notifications without addition of hardwired infrastructure
 - Training, operations monitoring, and collaboration at unclassified, CUI, Secret, and TS/SCI levels via a Smart Arsenal Center in a refurbished building on base





Primary Objectives

1. Establish closed, 5G network across the Cornwallis Peninsula (Phase 2: Stump Neck Annex):

- **Objective Summary:** establish a robust 5G network across the Cornwallis Peninsula to support digital objectives of arsenal production modernization
- **Attributes:**
 - Provides method to move data into and out of a cloud environment in real-time
 - Support emergency notifications and other communications

2. Modernize NSWC IHD Arsenal production and test & evaluation methodologies and processes:

- **Objective Summary:** gain operational efficiencies from the integration of machine data, sensor information, and production process data to reduce human error, improve the productivity of the operations team, enable computer vision, and provide real-time monitoring of all operational processes
- **Attributes:**
 - All production process documents available and updated digitally via tablets
 - Maximum incorporation of automated measurements and process equipment
 - Preventive maintenance tracked digitally and process monitors available to support predictive failure analysis
 - Direct digital data support to model-based system engineering
 - Robust archival system to sustain permanent records, including lot folders

3. OIS interface that maintains real-time energetic systems status:

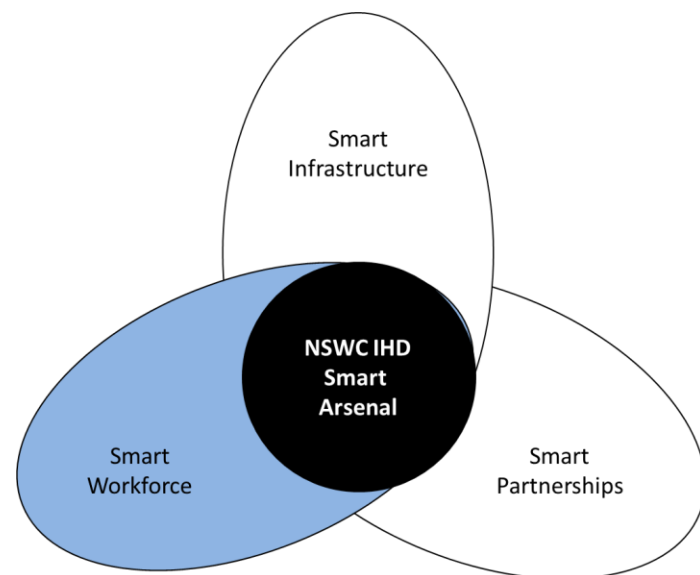
- **Objective Summary:** provide real-time tracking of energetics on- and off-station, and improve security and accountability of inventory
- **Attributes:**
 - Threshold real-time interface to current OIS, Objective provide a system to modernize and replace current OIS
 - Ensures tracking of energetics throughout lifecycle from arrival on station to delivery to customer



Smart Workforce Primary Elements

2. **Smart Workforce** Augmentation and Development:

- NSWC IHD captive contracts to augment Government civilian workforce with qualified scientist, engineer, and operations personnel
- Center for Industrial and Technical Excellence (CITE)-enabled Public-Private Partnerships (P3) to provide personnel surge capacity directly linked to specific work requests
- **Apprenticeship and pre-engineering programs to provide trained incoming personnel and offer growth opportunities**
 - Develop apprenticeship program linked to progression from Wage Grade to the Personnel Demonstration Project (DEMO) and promotion within DEMO
 - Establish pre-engineering curriculum that leads to a 5-year program with internships and an engineering
 - Pre-employment training at CSM Velocity Center or Munitions Campuses
- **Post-employment training at IHD Velocity Lab, CSM Velocity Center, Munitions Campuses, and Smart Arsenal Center**

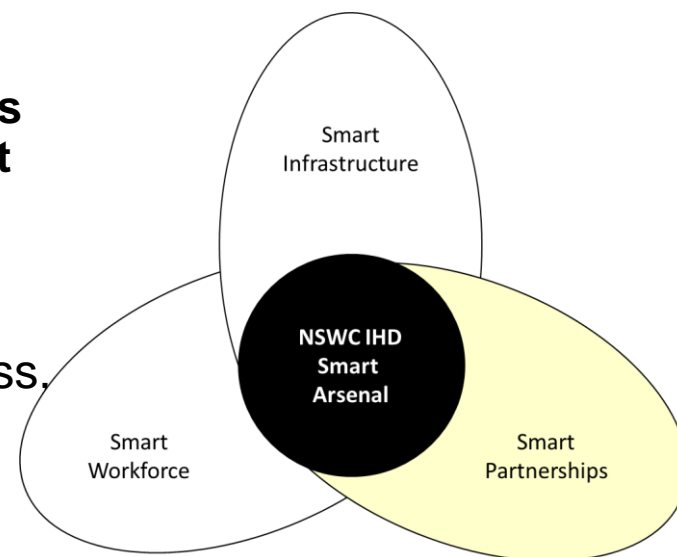




Smart Partnerships Primary Elements

3. *Smart Partnerships*, including with:

- **The NAC-administered Naval Energetic Systems and Technologies Other Transaction Agreement (NEST OTA) to develop prototypes**
- Energetics Technology Center (ETC) to link providers to NSWC IHD tool development and training, energetic system, manufacturing process, and T&E method needs
- With academia to establish apprenticeship, pre-engineering degree, engineering degrees, energetics R&D, and internships
- ACMI Munitions & Hypersonics Campuses in support of partnerships, and tool and process technology development
- **Town of Indian Head, Charles County, and Maryland to further develop and enhance the Southern Maryland Technical Corridor**





Smart Partnerships

Partnerships are the cornerstone to the command's success. They facilitate the exchange of innovative ideas, cutting-edge technologies and best practices, which are vital for enhancing the skills and capabilities of the workforce.

- **SOMD 2030 Workforce Development Concept - SoMD 2030 is focused on building up our STEM pipeline, increasing career opportunities, and expanding partnerships with government, industry, and academia.**
 - High school apprentices
 - College interns
 - Naval Energetics Technology Apprentice Program (NETAP)
 - Career Awareness Visits/Fairs
- **Apprenticeship Programs**
 - Utilize current apprenticeship program and/or develop new program linked to progression from Wage Grade to the Personnel Demonstration Project (DEMO) and promotion within DEMO
- Pre-engineering programs to provide trained incoming personnel and offer growth opportunities
- Pre-employment training at the College of Southern Maryland Velocity Center and/or munitions campuses



Potential and Current Partnerships

- Charles County Economic Development
- Military Alliance Council
- The Patuxent Partnership
- Tri-County Council
- U.S. Bomb Technicians Association
- Charles County Public Schools
- College of Southern Maryland
- ACMI Munitions
- University of Maryland
- St. Mary's College
- Purdue University
- University of Texas
- Southwest Research Institute



Next Steps

- Continue engagement with ETC to develop partnered effort and shape American Center for Manufacturing & Innovation's (ACMI) Munitions Campuses
- Work with Office of Manufacturing Capability Expansion & Investment Prioritization (MCEIP) and submit a funding proposal for 5G and cloud-based network architecture development and implementation
- Support community efforts with the Town of Indian Head, Charles County, and Maryland to advance the Western Charles County Technology Corridor
- Modify ECMP projects to ensure integration of Smart Arsenal objectives
- Develop plan with academia to establish apprenticeship and pre-engineering programs
- Outreach to academia to establish 5-year engineering degree program plan with internships