Defense-Critical Supply Chain Resilience

NDIA Manufacturing Division Meeting
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Office of the Assistant Secretary of Defense for Industrial Base Policy

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Industrial Base Policy

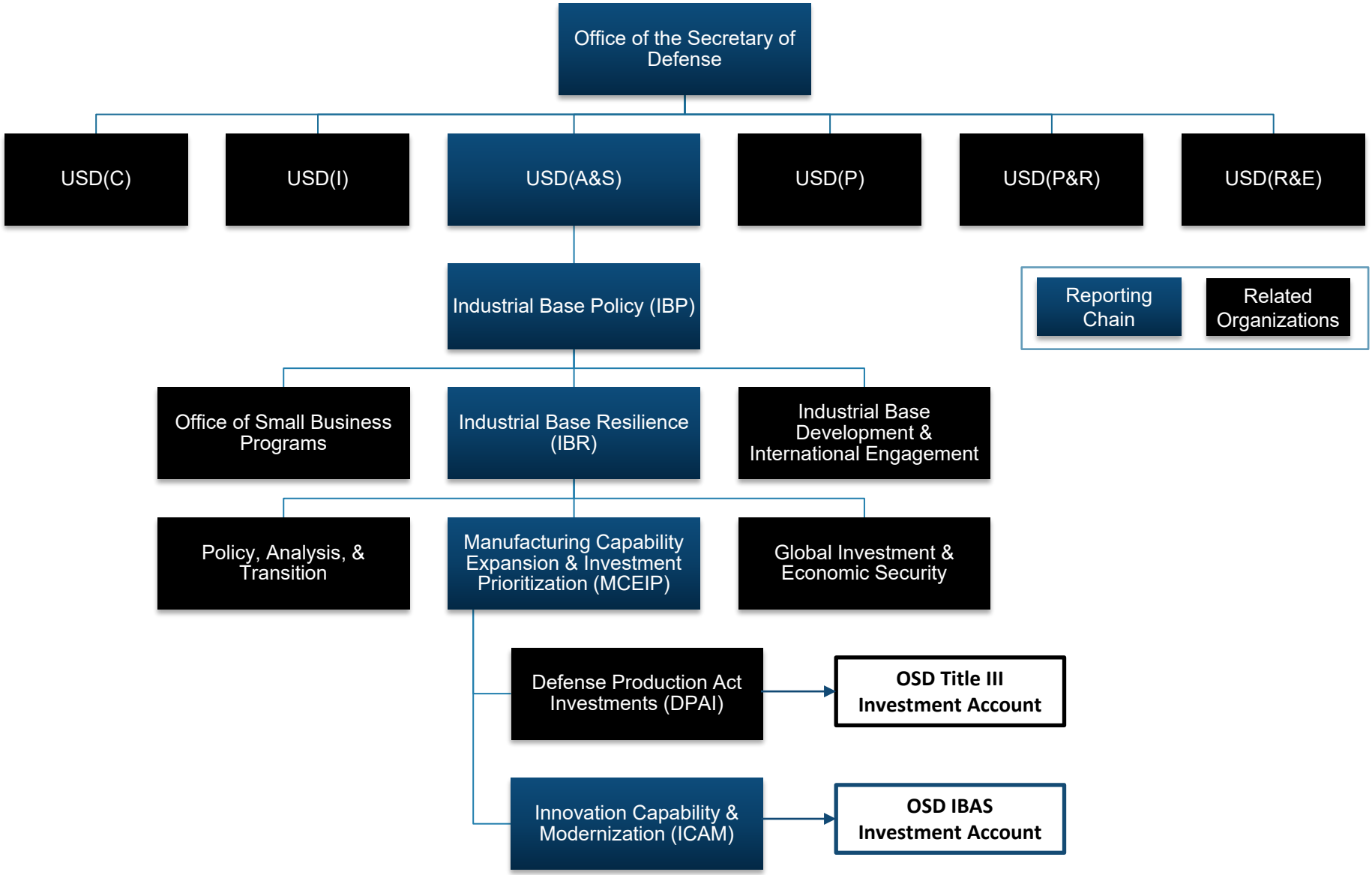
Mission Statement

***IBP Mission*: Work with domestic and international partners to forge and sustain a robust, secure, and resilient industrial base enabling the Warfighter, now and in the future**

"America's economic security and national security are mutually reinforcing and, ultimately the nation's military strength cannot be untethered from our overall industrial strength. We must act now to build on recent progress and ensure we have the capacity to produce at speed and scale."

Dr. William A. LaPlante
Under Secretary of Defense for Acquisition and Sustainment
Remarks Supporting January 2024 Roll-out of the National Defense Industrial Strategy (NDIS)

Organizational Structure



MCEIP Quick-Look

*Together these portfolios provide **complementary** and flexible authorities to incentivize and strengthen the Defense Industrial Base*

Innovation Capability and Modernization (ICAM)

- **Oversees the Industrial Base Analysis and Sustainment (IBAS) program's powerful and flexible authorities to address industrial base health and risks**
- RDT&E investment funds (BA 6.7)
- Enables both rapid and sustained responses to DoD and Administration requirements

Defense Production Act Investments (DPA)

- **Oversees execution of Defense Production Act (DPA) Title I and Title III authorities**
- **Title I:** Ensures the timely availability of industrial resources to meet national defense and emergency preparedness requirements through the Defense Priorities and Allocations System (DPAS)
- **Title III:** An investment authority committed to ensuring resilient, robust domestic supply chains in order to reduce reliance on foreign manufacturing and correct domestic shortfalls in the defense industrial base

Incentivizes creation, expansion, and/or preservation of domestic industrial manufacturing capabilities and materials needed to meet national and homeland security requirements

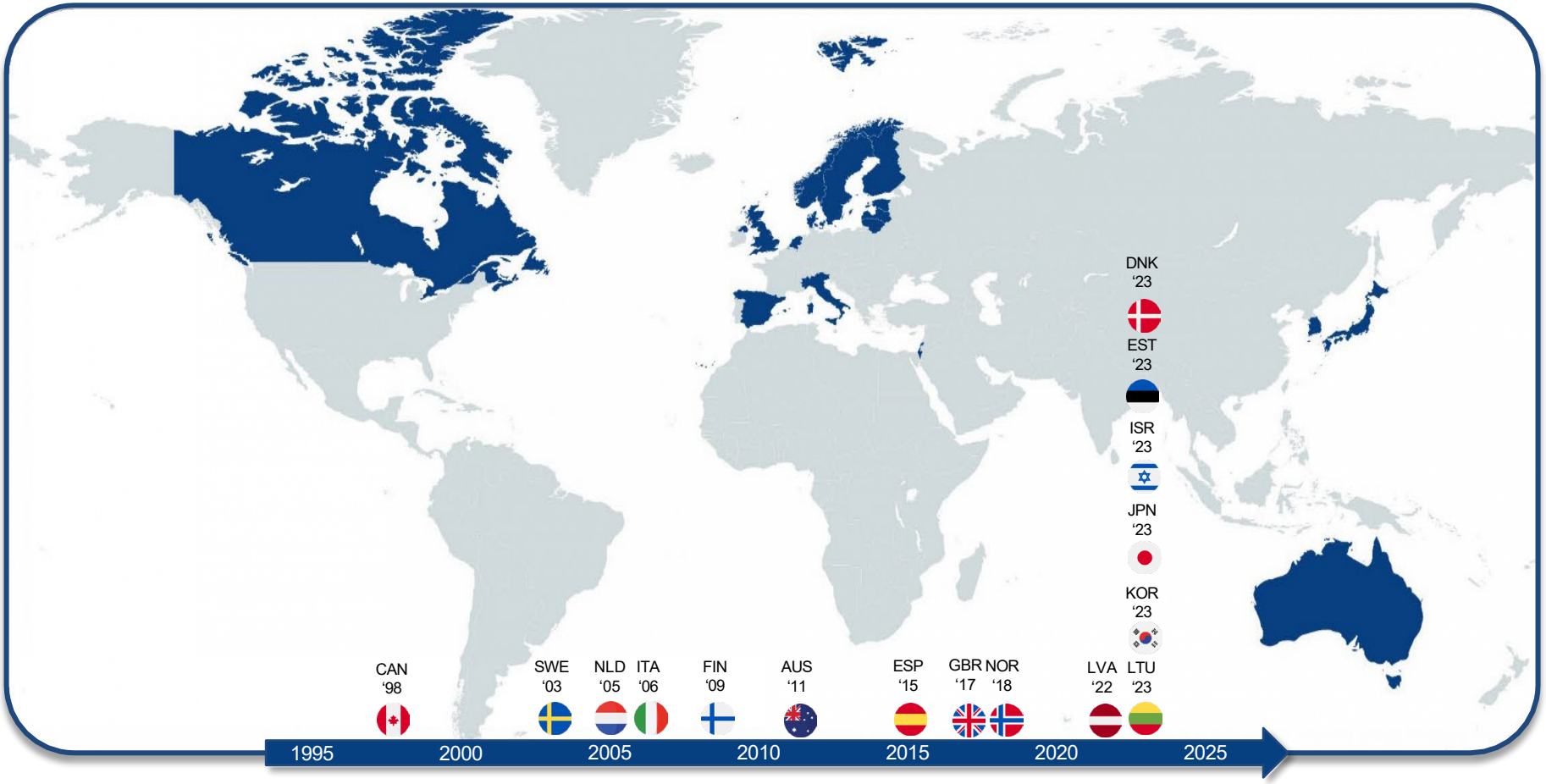
Defense Production Act

(40 U.S.C. 4501 et seq.)

- The Defense Production Act (DPA) authorizes the **President** to **ensure the availability of U.S. and Canadian industry for U.S. defense, essential civilian, and homeland security requirements**.
- The **House Committee on Financial Services** and the **Senate Committee on Banking, Housing, and Urban Affairs** have jurisdiction over DPA.

DPA Authorities		
Title I	Title III	Title VII
Priorities and Allocations	Expansion of Productive Capacity and Supply	General Provisions
• Prioritize Federal contracts over all other orders • Control distribution of scarce materials within the civilian economy • Allocate scarce materials against Federal or private contracts • Prevent hoarding of scarce materials	• Incentives to develop, maintain, modernize, and expand production capacity or critical technologies: – Loans/ loan guarantees – Purchases/ purchase commitments – Grants and subsidies	• Mandatory survey authority of any U.S.-registered business entity • Anti-trust immunity for industry, to develop and implement national emergency preparedness plans • Committee on Foreign Investment in the U.S. (CFIUS) • Civilian Executive Reserve, called into Federal service during a national emergency

Security of Supply Arrangement Partners



The United States currently maintains **15 Security of Supply Arrangements (SOSAs) + 1 MoU**

Of the existing arrangements, the U.S. has concluded **six within the last 12 months**

DPA Title III Authorities and Priority Areas

Authorities

Loan Guarantees §301 (50 U.S.C. 4531)	Loans §302 (50 U.S.C. 4532)	Purchase Commitments §303 (50 U.S.C. 4533)	Purchases §303 (50 U.S.C. 4533)
• May be extended when credit is not available to the loan applicant under reasonable terms and conditions sufficient to finance the activity • Prospective earning power of the loan applicant and the character and value of the security pledged provide a reasonable assurance of repayment of the loan to be guaranteed	• May be extended when private financing is beyond the risk of the commercial market • Projected earnings following the loan are sufficient to cover repayment costs	• Create a guaranteed demand to reduce risks for industry to make their own investments	• Provide direct subsidies to companies to assist in establishing production capabilities including: – Purchase and installation of production equipment in privately owned or Government owned facilities – Engineering support to improve quality and yield of production facilities – Sample quantities for process validation and customer qualification testing

Priority Areas
§303 (50 U.S.C. 4533)

Sustain Critical Production	Commercialize Research and Development Efforts	Scale Emerging Technologies
"To create, maintain, protect, expand, or restore domestic industrial capabilities essential for National Defense"	"From Government sponsored research and development to commercial applications" and "from commercial research and development to National Defense"	"For the increased use of emerging technologies in security program applications and the rapid transition of emerging technologies"

DPA Title III Evaluation Requirements

SAM.gov and DBIC Other Transaction Agreement (OTA)

- **Industry Mailbox**
  - osd.pentagon.ousd-a-_s.mbx.dpa-title-iii-industry-_inquiries@mail.mil
- **Industry - Open Funding Opportunity Announcement**
  - https://sam.gov/opp/f373370cf_e504a0c9ac0ad41dccee52e/v_iew
- **Defense Industrial Base Consortium (DBIC) OTA**

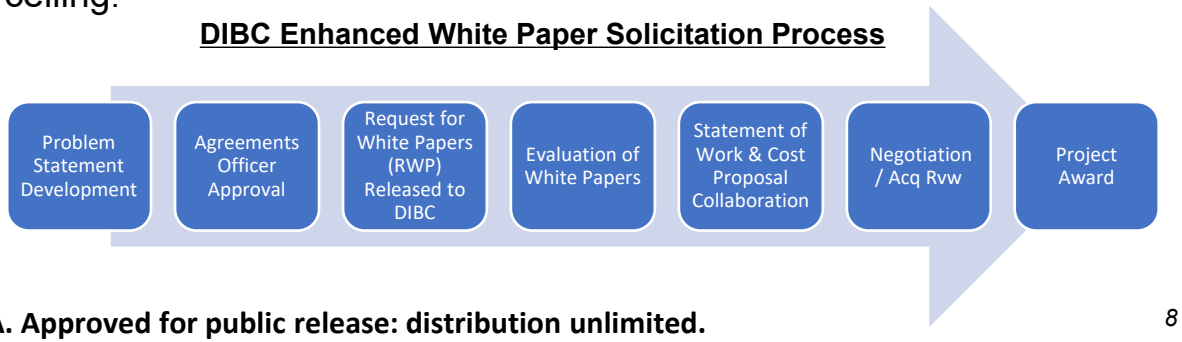
DEFENSE INDUSTRIAL BASE CONSORTIUM

- Businesses from the **US, UK, Australia, or Canada,** visit www.dibconsortium.org to learn more and to join the DIBC.
- The DIBC is an active partner of the National Technology Alliance (NTA). Visit https://nta.org/about/ to learn more about this innovation-focused association and follow links to join.

DIBC Membership

- **The DIBC initial membership fee is $0, and annual dues will never exceed $250.**
- Businesses from the US, UK, Australia, or Canada, visit www.dibconsortium.org to learn more and to join the DIBC.
- Up to a ten-year Period of Performance (PoP) and no funding ceiling.

DIBC Enhanced White Paper Solicitation Process



Innovation Capability and Modernization (ICAM)

Building the "Next Generation of the Arsenal of Democracy" through execution of the Industrial Base Analysis and Sustainment (IBAS) Program

Mission: Strengthen the competitive posture of the U.S. Defense Industrial Base (DIB) in the era of great powers and global competition

Vision: A modern industrial base that fortifies traditional DIB capabilities and forges emerging sectors to respond at will to national security requirements

Priorities:

- **Prepare the defense industrial workforce** – Promote, elevate, and accelerate industrial talent pipelines
- **Ready the modern DIB** – Advance and sustain traditional defense manufacturing sectors
- **Prepare for the future** – Identify, attract, and cultivate emerging defense sectors
- **Assess and shape the risk** – Mitigate supply chain vulnerabilities within the global DIB
- **Build and strengthen partnerships** – across the global DIB

Statutorily Based

10 U.S. Code § 4817. Industrial Base Fund – IBAS Authorities

1. to support the monitoring and assessment of the industrial base
2. to address critical issues in the industrial base relating to urgent operational needs;
3. to support efforts to expand the industrial base; and
4. to address supply chain vulnerabilities.

These authorities can be used to enhance domestic and allied supply chains.

IBAS Industrial Capacity Investment Successes

PE: 0607210D8Z

Navy Propulsion Foundry Project

Partner(s)	DIB Sector(s)	Key Achievement(s)	IBAS Funding
• **Rolls-Royce Marine North America (RRMNA)**	• Shipbuilding • Machine Tools • Advanced Manufacturing • Materials	• Established a prototype production line to produce centrifugal castings including skills, know how, processes and methods related to centrifugal casting capability	$5.5M

Problem: U.S. depends on foreign sources for large cast/forged products which are foundational to defense systems and platforms

Solution: IBAS partnered with RRMNA to manufacture items it currently outsources (such as Stainless Steel parts and centrifugally cast Controllable Pitch Propeller hubs)

A propeller is readied for inspection at RRMNA's Pascagoula, MS foundry

Cold-rolled Aluminum

Partner(s)	DIB Sector(s)	Key Achievement(s)	IBAS Funding
• **Constellium SE**	• Shipbuilding • Aircraft • Ground Systems	• Teardown and upgrade of the mill complete	$9.5M

Problem: Cold-rolled aluminum plate was identified in the 2018 DoD-led Interagency Task Force report as "essential for armoring U.S. ground combat vehicles, constructing Navy ships, and building military aircraft."

Solution: IBAS partnered with Constellium SE to tear-down and modernize the 1950s-era mill to upgrade its mechanical, electrical, hydraulic, and process control systems

An engineer controls mill operations at the Ravenswood, WV plant

IBAS Program Acquisition Pathways

Primary Other Transaction Agreements (OTAs)

Cornerstone

DEFENSE INDUSTRIAL BASE CONSORTIUM

Defense Industrial Base Consortium

S²MARTS

Strategic & Spectrum Missions Advanced Resilient Trusted Systems

http://ibasp-public.ria.army.mil/ **https://www.dibconsortium.org/** **https://s2marts.org/**

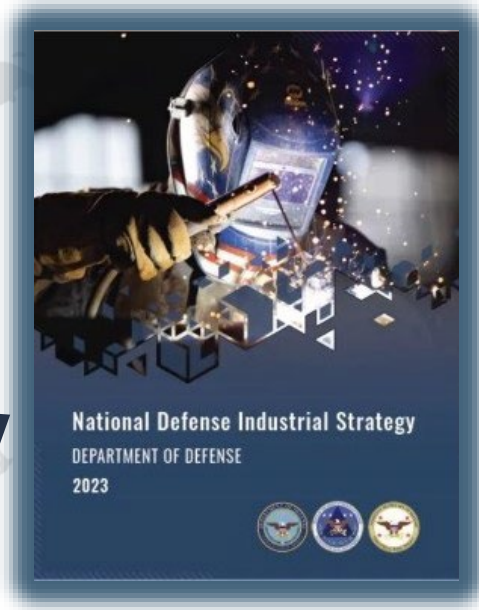
Steps to Engage

1. Join the consortium
2. Review open and upcoming requests
3. Submit White Paper/ Full Proposal

Other Vehicles: NEST, PEO STRI, Other Military Service and defense agency (DA) vehicles, General Services Administration

Executive Order (E.O.) 14017

Sustaining Focus Across America's Supply Chains



"The current and future strategic environment requires immediate, comprehensive, and decisive action in strengthening and modernizing our defense industrial base ecosystem to ensure the security of the United States and our allies and partners."

Deputy Secretary of Defense, Dr. Kathleen Hicks
2023 National Defense Industrial Strategy

National Defense Industrial Strategy

Overview and Key Take-Aways

Defense Industrial Context → **Defense Industrial Strategy**

Growing Challenges…

- Supply Chain
- Workforce
- Technological Change
- Spending Constraints
- Geopolitical Threats

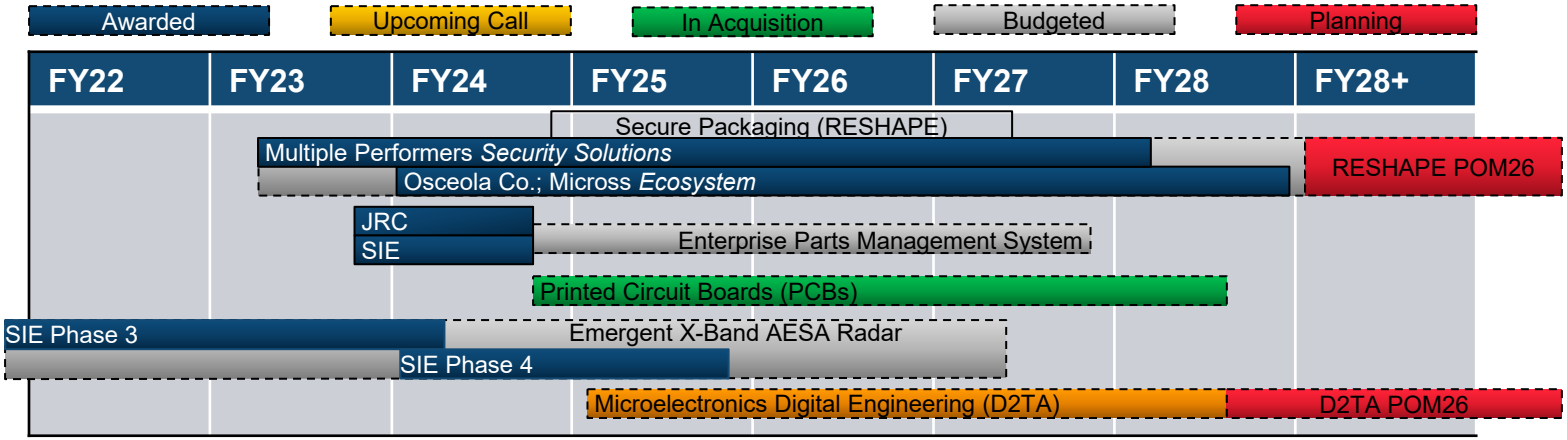
… Require Intentional Efforts

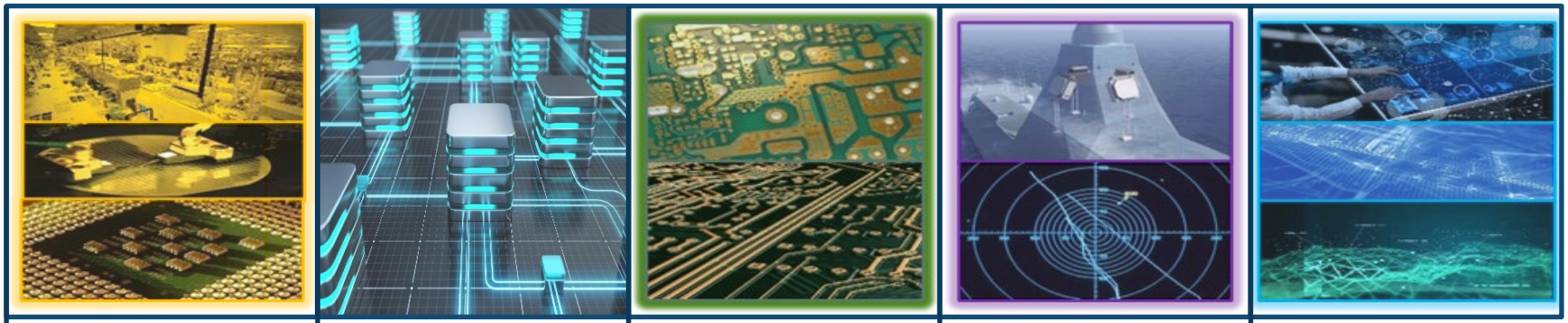
- **Strategy** to promote resilient, vibrant industrial base
- **Four priorities**:
  - Supply Chain Resilience
  - Workforce Readiness
  - Acquisition Flexibility
  - Economic Deterrence
- **Results**: Stronger, larger, and better aligned industrial base

IBAS FYDP FY24 - FY29

FYDP	FY24 Enacted	Grand Total
IBAS Total - Initial FYDP	$1,017,141	$5,426,412
IBAS Core	$11,788	$87,212
Submarine Industrial Base & Workforce	$264,475	$845,249
Microelectronics	$150,286	$1,504,368
Hypersonic Weapons	$10,000	$120,000
Batteries	$5,125	$11,175
Castings & Forgings	$144,963	$1,606,477
Critical Minerals	$175,692	$707,422
Radar & Study	$15,475	32,800
Total after finalized reductions	$777,804	$4,914,703

Microelectronics Base Programming





Secure Packaging

- Establish CONUS secure packaging ecosystem that incorporates pure play suppliers while leveraging existing facilities to enable scalable high-mix/low-volume production and security solution requirements.

Enterprise Parts Management System

- Develop DoD centric cloud-based repository for microelectronics parts that will manage parts inventory, manufacturing and material shortages, counterfeit awareness, and supply chain risk management.

Advanced Boards & Substrates

- Onshore the capability for trusted and reliable PCB & interconnect manufacturing technologies to support critical DoD microelectronics systems.

RF Electronics

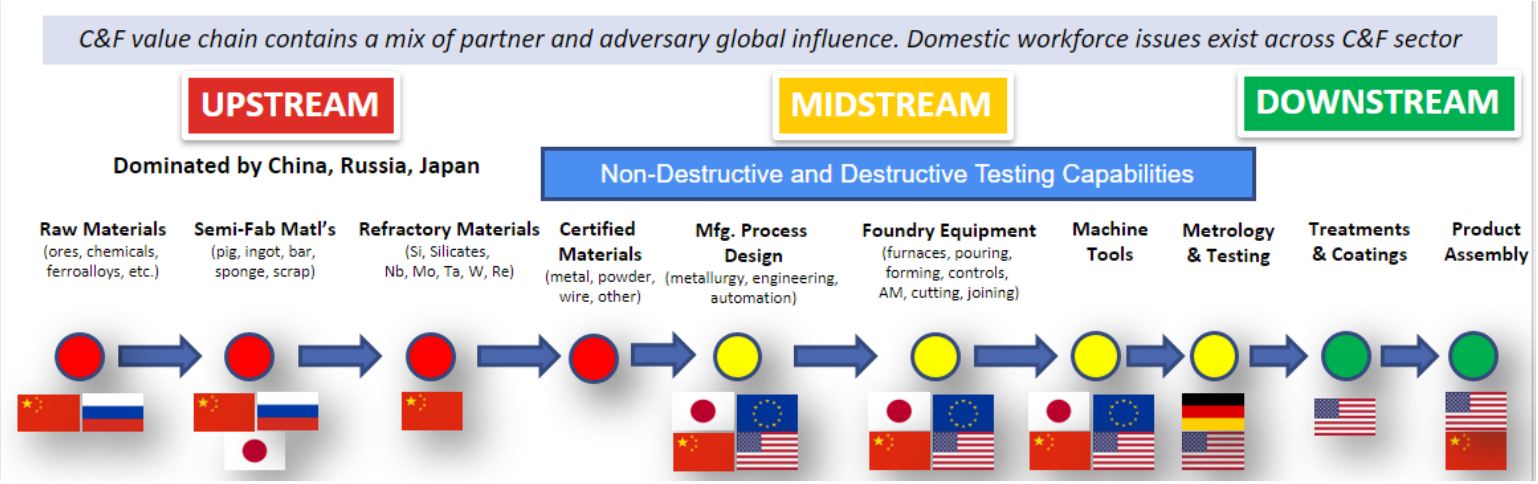
- Radar system accelerator project to mitigate X-Band supply chain risks and provide critical Size, Weight, and Power (SWaP) advantages supporting Homeland Defense.

Digital Engineering

- Implement secure Authorized-To-Operate (ATO) ME development infrastructure for use by programs of record and their associated industrial base partners.

Castings & Forgings

Focus Area Quick-Look



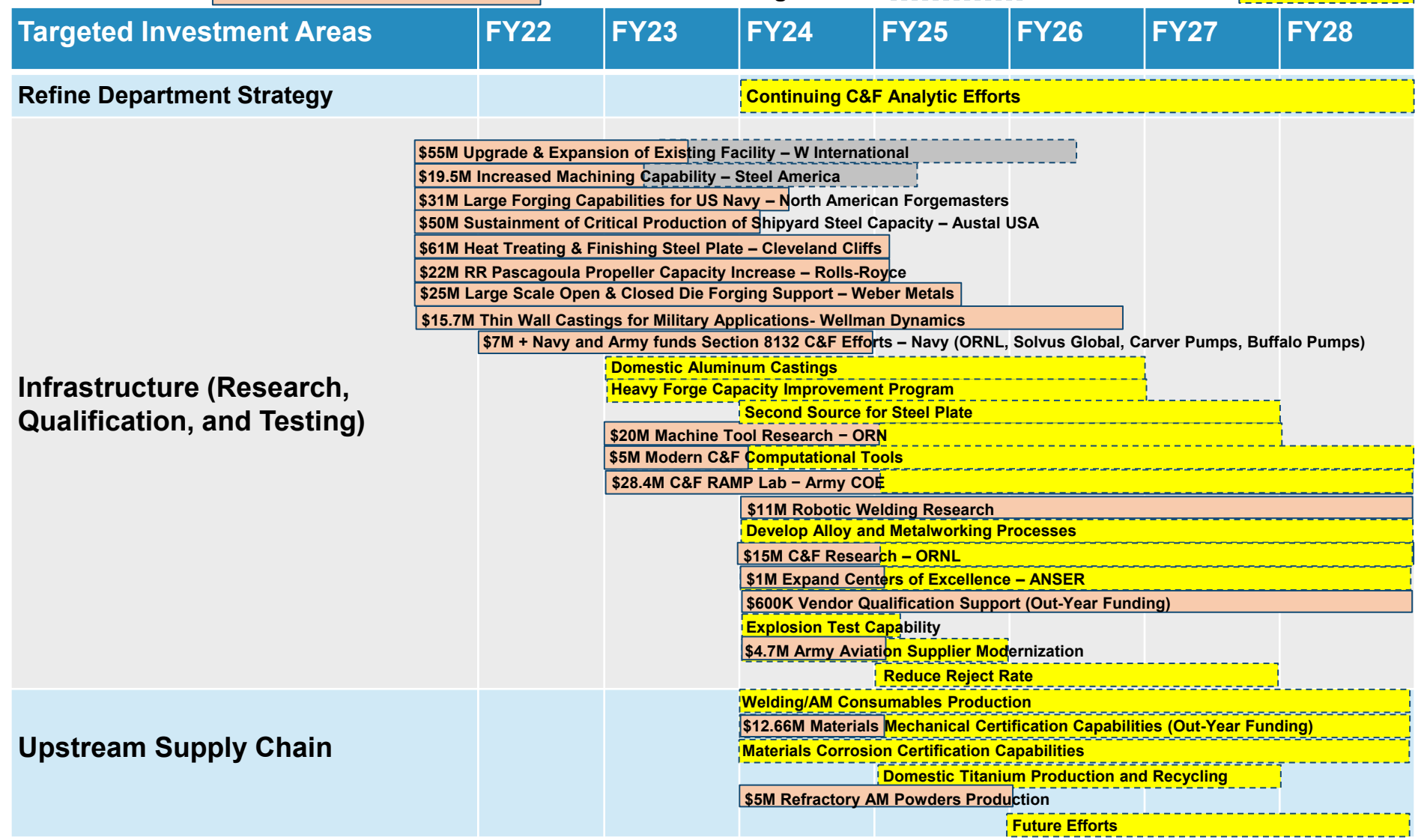
- Strategic Context: C&F parts are critical to all DoD systems and weapons
- Key Sector Challenges/Issues: Foreign competitors dominate value chain, domestic workforce is shrinking, U.S.G. and DoD policies limit global competitiveness
- DoD Supply Chain Equities:
  - C&F parts in key systems are high importance/low-volume, need specialized materials
  - C&F products are essential components of machine tools used to make other products
  - Forgings are in 20% of the products in the U.S. GDP

– Major Actions:
  - Develop DoD C&F Investment Strategy: In formal coordination
  - Invest in the C&F industrial base to modernize/expand capacity: Investing ~ $2B FYDP
  - Expand partnerships among U.S.G., industry, international bodies: Efforts beginning

MCEIP Castings & Forgings

Integrated Investments Roadmap

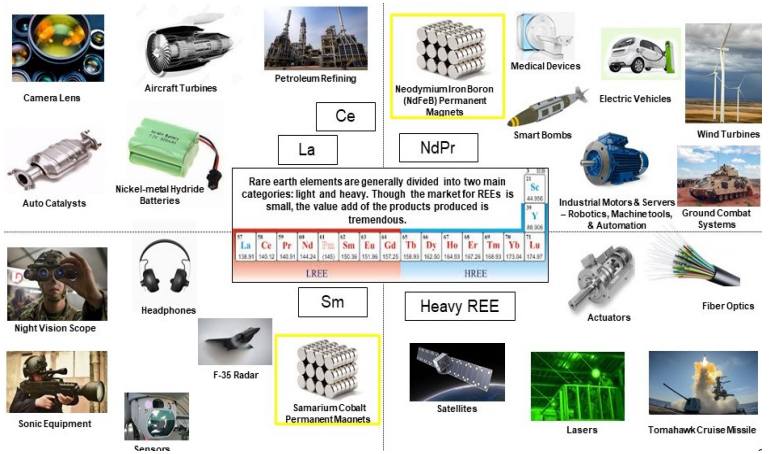
Awarded Efforts: Obligation (Fully or Partially) Occurred **No-Cost Monitoring Period:** **Planned Efforts:** Not Awarded to Date



Strategic & Critical Materials

Focus Area Quick-Look

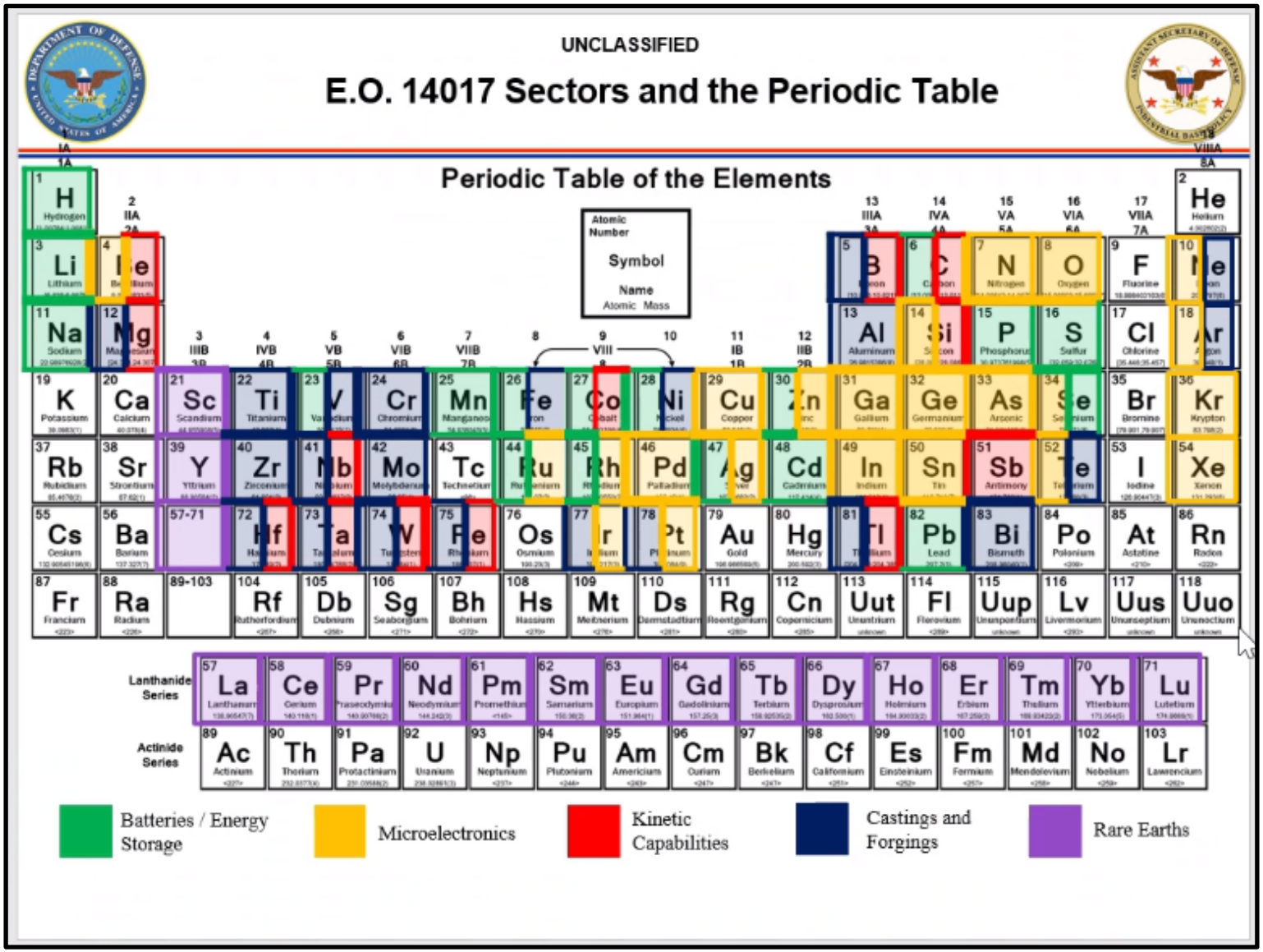
- Strategic Context: China controls 80% of the global rare earth element (REE) market—U.S. commercial and defense industries are highly exposed and vulnerable
- Key Sector Challenges/Issues:
  - Material shortfalls in military conflict scenario
  - Sole-source suppliers/supply concentration
  - Price shocks
  - Human capital gaps
  - Conflict CM, organized crime, forced labor



- DoD Supply Chain Equities: Small volume, low-value purchases of large numbers of neodymium-iron-boron permanent magnets incorporated at the sub-tier level
  - REE components are required in guided munitions, flight control surfaces, and strategic systems; >60 REE applications in the F-35 alone
- Recommendations:
  - Prioritize resourcing for the National Defense Stockpile Transaction Fund
  - Obtain legislative reforms to the Strategic & Critical Materials Stock Piling Act of 1979
  - Implement the Joint Stockpiling MOA with DOE and State
  - Develop Presidential Determinations for DPA Title III critical materials projects
  - Develop over-arching business development plan to attract non-traditional contractors (e.g., miners / recyclers, sub-tier vendors) to DoD solicitations for critical materials

Rare Earth Elements in Defense-Critical Sectors

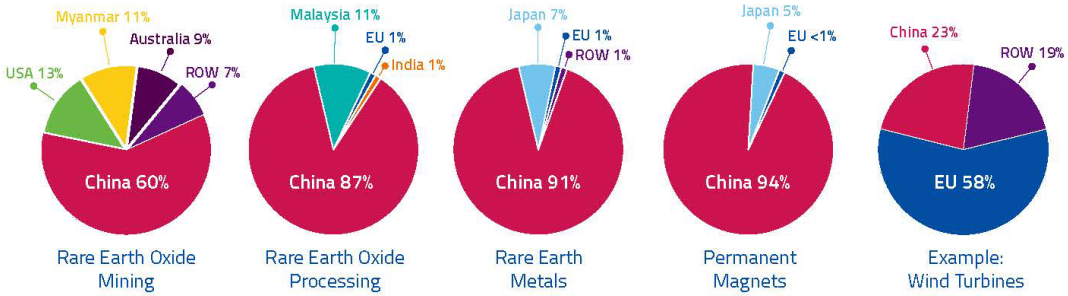
Focus Area Quick-Look



Economic Prosperity & National Security

Case Study: Strategic and Critical Material Supply Chains

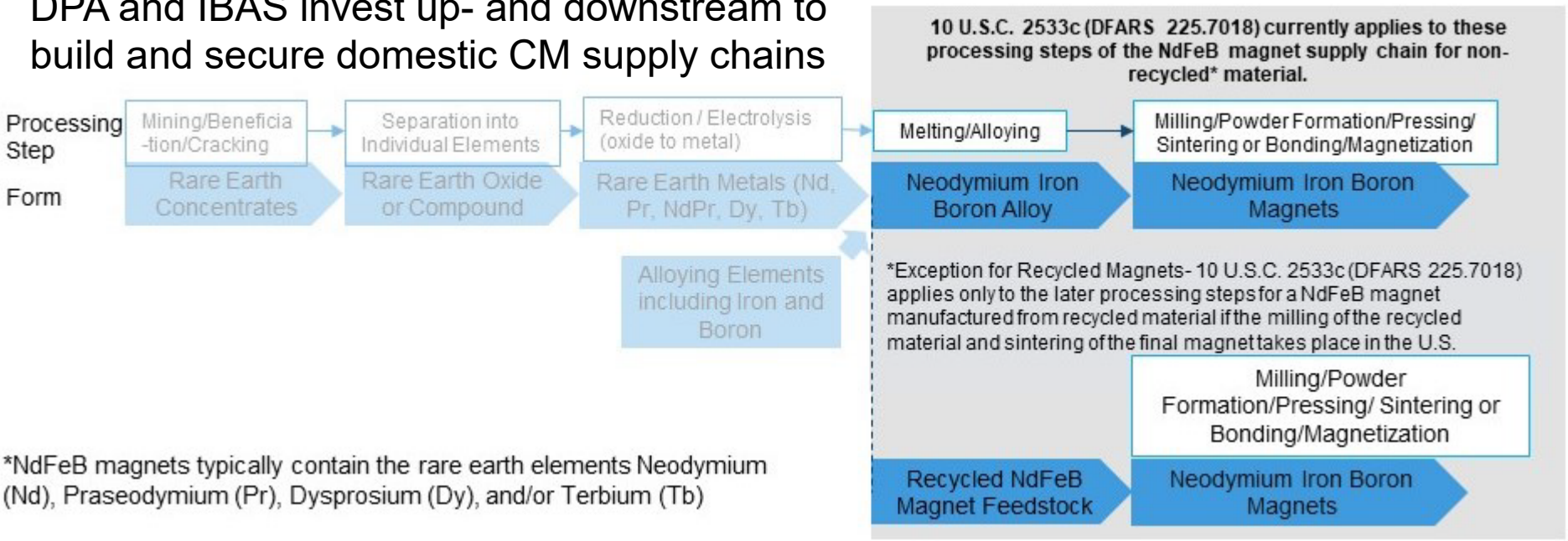
- DoD generally opposes restricting sources of supply, but will if there is significant supply chain risk
- Example: recent restrictions to sources of supply at tiers of rare earth element magnets*



From rare earths mining to wind turbine manufacturing: estimated market shares in 2019

Sources: Team analysis and Roskill 2018; Adamas Intelligence 2019; Peteves 2017; Carrara et al. 2020; IEA 2021; USGS 2021.; Rare Earth Magnets and Motors: A European Call for Action

- DPA and IBAS invest up- and downstream to build and secure domestic CM supply chains



MCEIP Strategic & Critical Materials

Integrated Investment Roadmap

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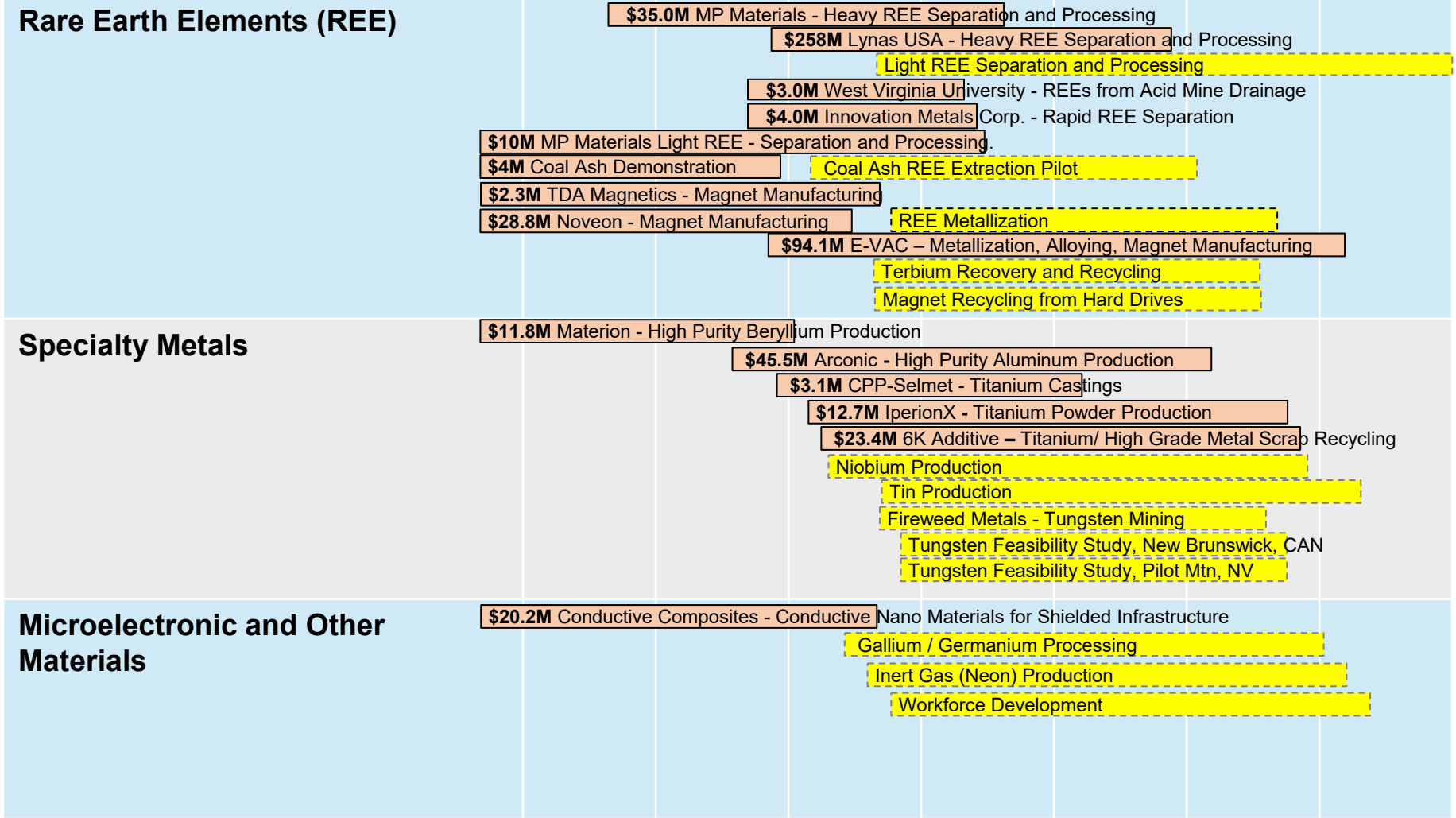
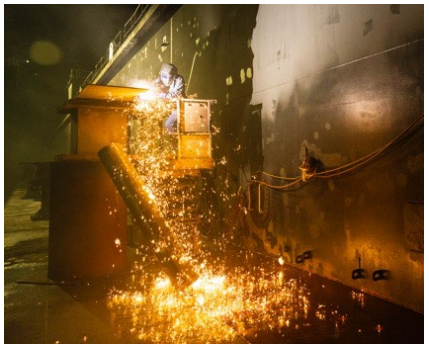
Planned Efforts: Not Awarded to Date



ICAM Submarine Industrial Base Work Force Outreach Efforts

National marketing campaign - buildsubmarines.com

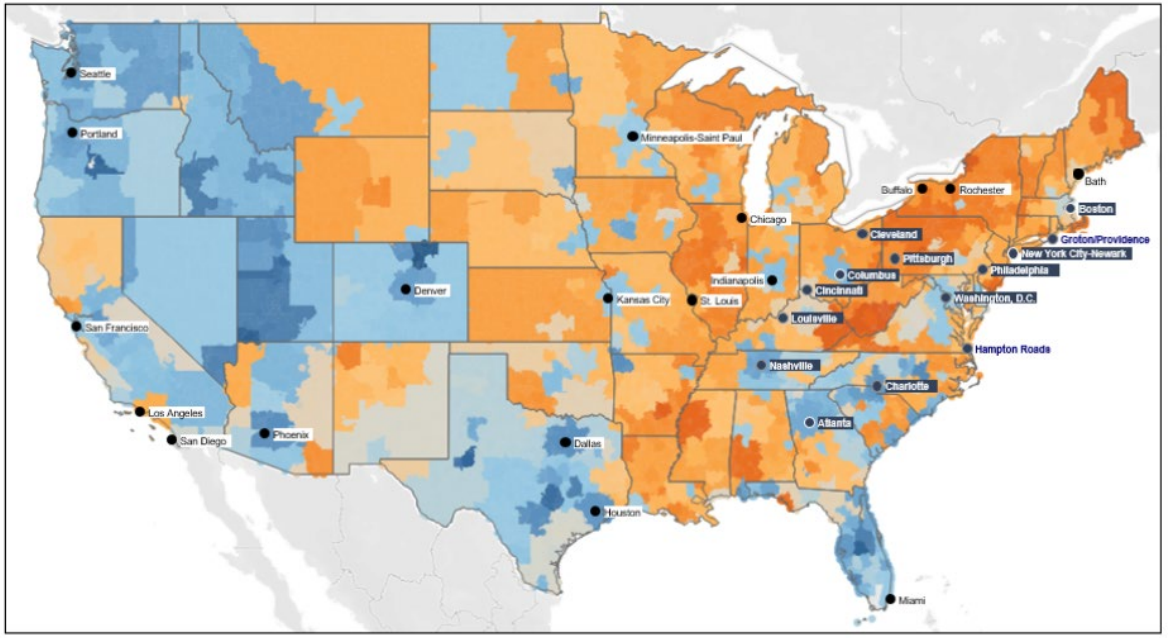
- **Key Objective**: Drive consideration and demand for the 140,000+ submarine manufacturing careers needed to fulfill the 1+2 mission
- **Primary Audiences**: Those most likely to fill the job-gap yearly, over the next ten years
  - Existing skilled trades workers not in DIB/SIB
  - Emerging workforce talent interested in trades jobs
  - Transitioning military
- **How Success is Measured:** Increase of applications for careers within the SIB (click applies) and increased awareness of SIB careers (website visits)
- **Metrics**
  - Website visits since 01 Sep 2023: 4,800,000
  - Job applications since 01 Sep 2023: 313,000
  - Job alerts created since 01 Sep 2023: 149,000
- **Primary campaign partners (RFK Racing, MLB, WNBA)**
  - Website visits during MLB digital campaign and CT Sub (WNBA) partner announcement 12-18 Apr 2024: 583,000 (this is 14% of total site visits since launch)
  - Job applications during MLB digital campaign and CT Sub (WNBA) partner announcement 12-18 Apr 2024: 46,700 (this is 17% of total job applications since launch)



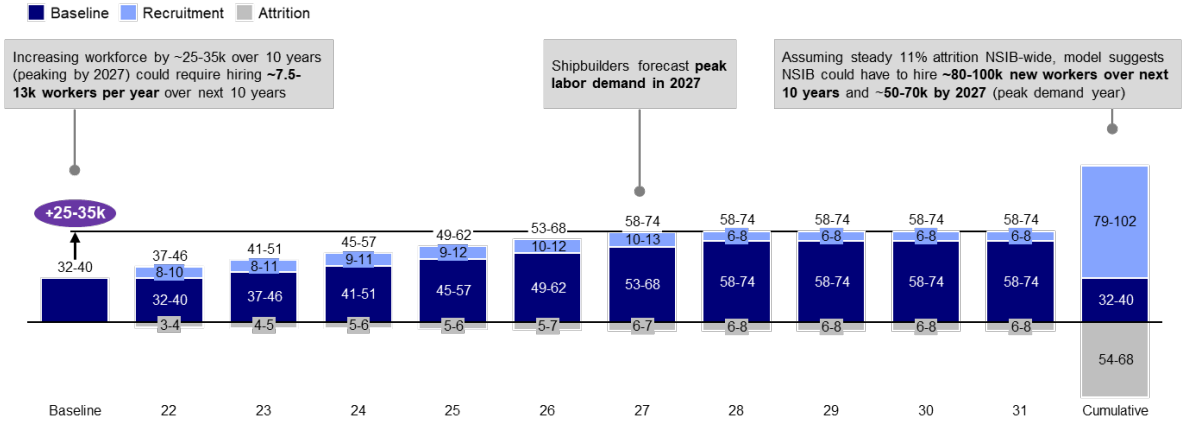
Manufacturing Workforce Strategic Condition

General trends limiting the SIB:

- Working-age population shrinking in regions where defense programs need workers
  - Orange tones show losses, blue areas show increases
  - Many shifts are due to migration
- Global and adjacent markets compete for workers
- Reduced manufacturing footprint, less societal interest in manufacturing have resulted in diminished manufacturing-oriented CTE capacity
- Foundational education for success in industrial skills training pipelines not available in many middle and high schools



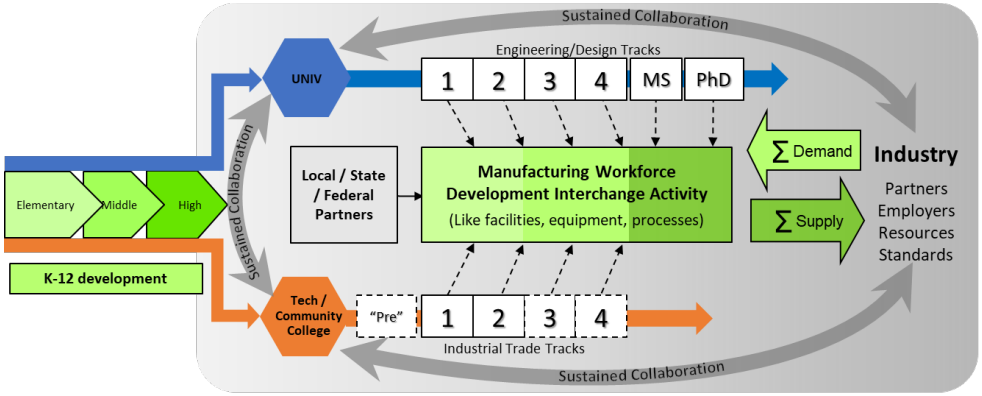
Modeled NSIB workforce size and recruitment pipeline based on top-down sizing, 000 FTEs per year, approx.[3]



National Imperative for Industrial Skills Initiative

Building Capacity and Proven Solutions

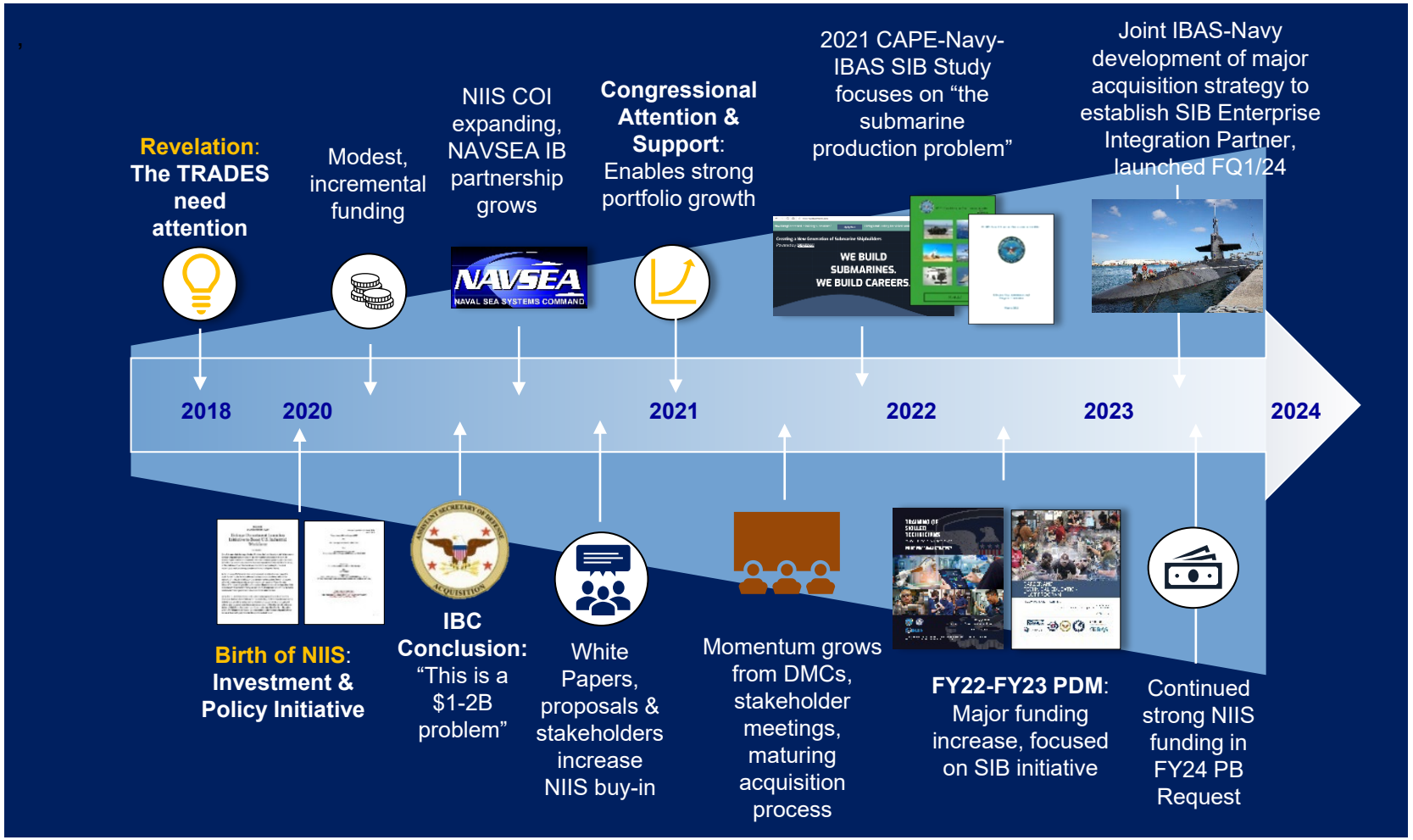
- **Initiative launched in 2020 to invest in prototype projects for industrial workforce development (WFD)**
  - Departmental response to chronic industrial skills gaps and shortages
  - **WFD ecosystem model** provides common touch point; targets all segments/interfaces
  - Facilitates multiple approaches to ***recruit, train, hire, and retain skilled workers***
  - Recognizes interplay of K-12 and post-secondary education/training tracks



- **Key principle: active, sustained partnering with industry, academia, military departments, federal agencies, and state governments**
  - Builds partner communities through hands-on involvement and mutual benefit
  - Increases program's momentum through unified effort
- **Creating regionally focused activities targeting capacity where skills are most needed**
  - Delivers broad benefits to defense industrial base (DIB)—private industry and organic industrial base (OIB)
  - Regional submarine industrial base-focused efforts intensified/scaled in New England and Virginia
  - Other NIIS investments distributed nationally across multiple regions/locales and defense needs

Pilot projects stress-test multiple ecosystem elements and approaches to meet recruiting, education & training, and retention needs; delivering measurable outcomes in the initiative's fourth year

NIIS Evolution - FY18 to Present



Acronym list: COI--Community of interest; DMC--Defense Manufacturing Conference; FQ1/24--first quarter of FY24; IB--industrial base; IBC--Industrial Base Council; PB--President's budget; PDM--Program Decision Memorandum; SIB--submarine industrial base

Where We Are Today

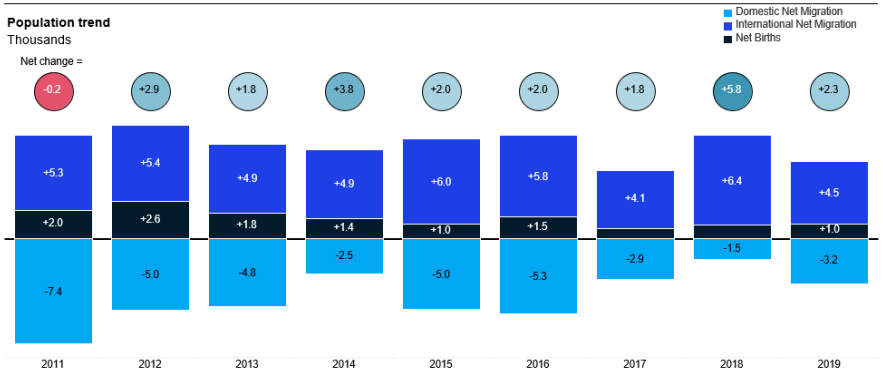
Using Multiple Local Views to Understand Trends by Location

Population growth is fueled by immigration

Aging population indicate importance of early exposure to SIB trades

Significant portion "some college" but no insights into sub-populations within this category

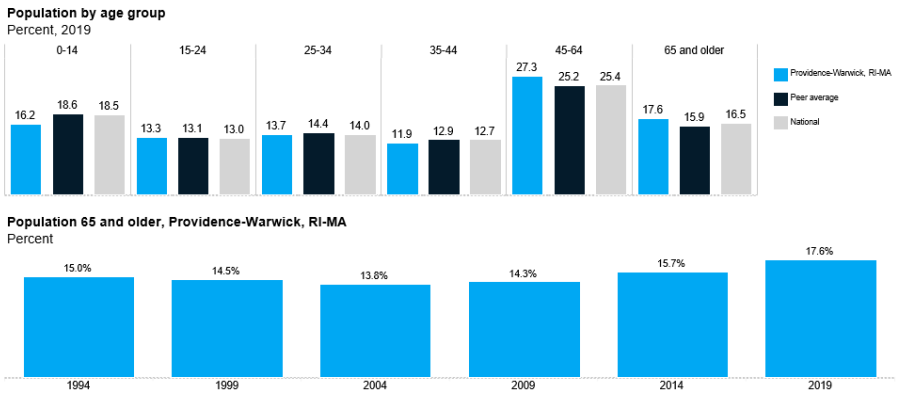
Providence-Warwick's population has been continually growing in the last decade driven by stable international net migration



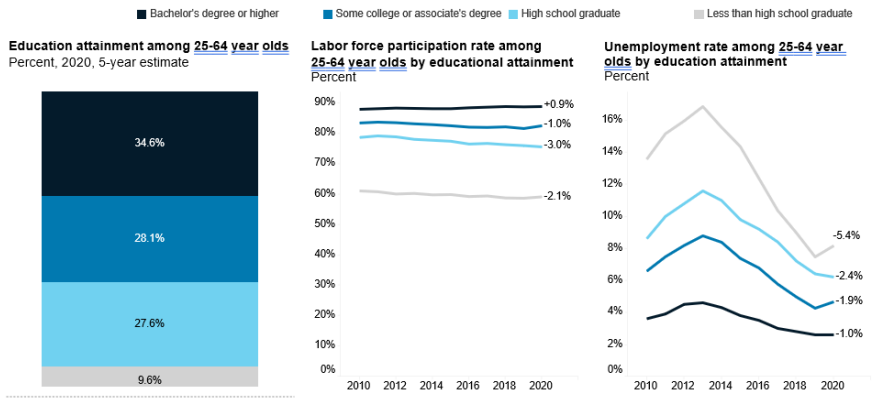
Note: 2021 migration data not yet available. Due to differing methodologies between the components of population change estimates (Population and Housing Unit Estimates) and the county-level migration flows (American Community Survey), the data may differ across pages.

Source: Moody's Analytics

Providence-Warwick's population trends older than US and peer average; the share of senior population has grown 2.6 p.p. since the mid 90's



About 63% of Providence-Warwick's residents have some college or higher, and unemployment rate has decreased for all educational groups since 2010



Source: US Census Bureau, American Community Survey (ACS) 5-year estimates

PRE-DECISIONAL – DOCUMENT INTENDED TO PROVIDE INSIGHT BASED ON CURRENTLY AVAILABLE INFORMATION FOR CONSIDERATION AND NOT SPECIFIC ADVICE

SIB Workforce Development: Proposed Investment Areas / Lines of Effort

1. **Regional Training System (RTS) Build-Out** *(https://buildsubmarines.com/)*
   - Catalyzes development of regionally-focused partnerships and business/educational processes creating integrated workforce training systems that expand SIB training/education capacity
   - Each RTS design recognizes unique conditions and needs of each DIB-dense region
   - Most multifaceted, involved investment line of effort; supported by detailed analysis
2. **Individual Career & Technical Education (CTE) Center Expansion (non-RTS)**
   - Also tied to training and education capacity expansion, but more focused on incentivizing tailored capacity expansion of individual CTE schools/centers within targeted states
   - Investments are focused on equipment upgrades and instructor cadre expansion to create modest increases in throughput training capacity
3. **Enhancement of other Industrial Workforce Development Functions**
   - Important 'balancing investments' addressing specific functional segments of the workforce development ecosystem; e.g., new collar training and curricula development; outreach, awareness & recruiting; candidate-employer matching, etc.
   - Includes resourcing of important wrap-around support services and funding for pilot activity testing new policies to better support defense industrial workforce needs
4. **Submarine Industrial Base Modernization and Capacity Expansion**
   - Pilot effort to expand shipyard production capability from aluminum only to include steel production capability
   - Includes associated retraining of workforce to meet new submarine steel production support and avoids loss of existing skilled workforce

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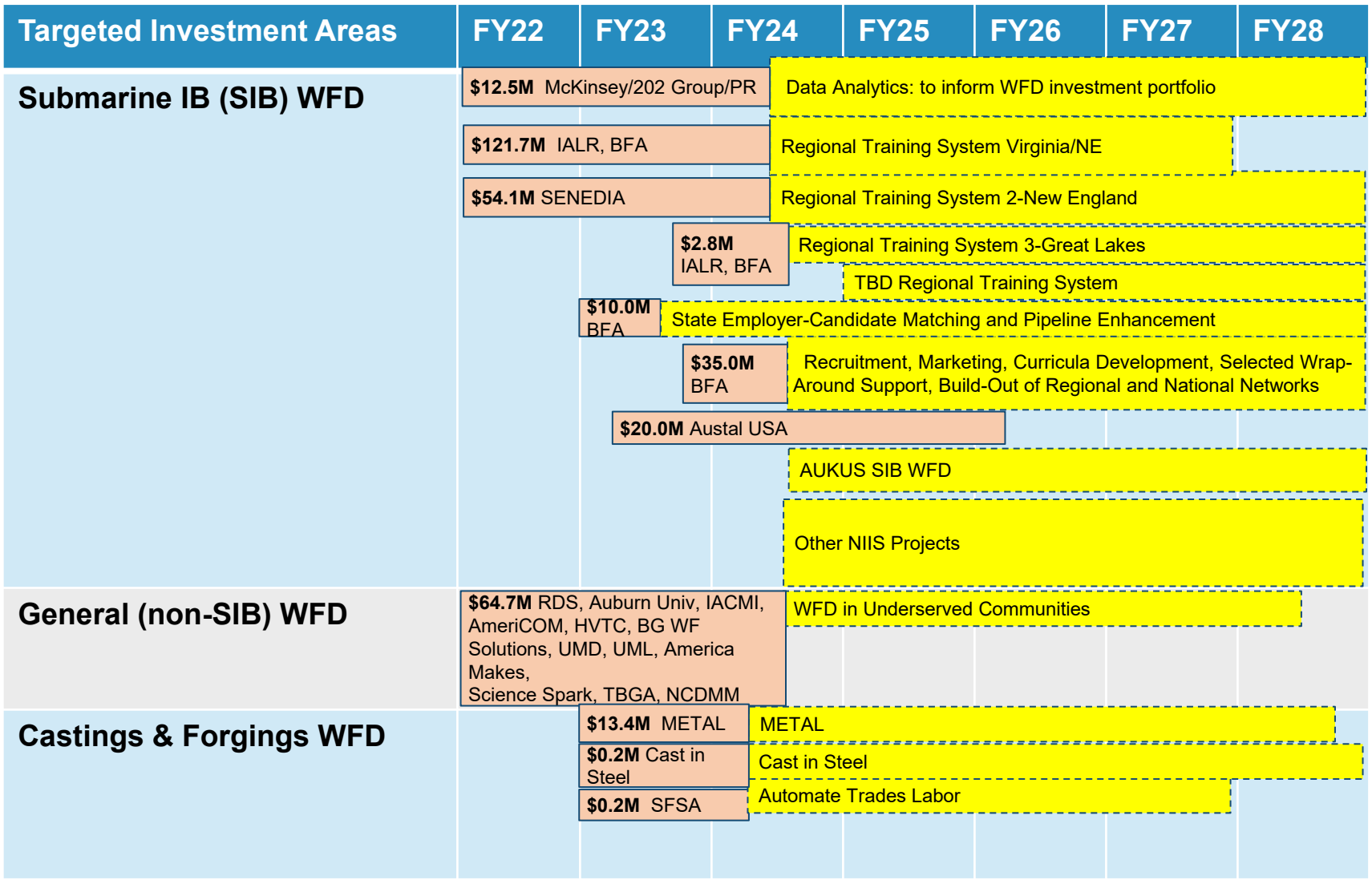
MCEIP Workforce Development (WFD)

Integrated Investment Roadmap

Awarded Efforts: Obligation (Fully or Partially) Occurred

Planned Efforts: Not Awarded to Date



Efficient and Impactful Execution for DoD

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- Built to achieve 21st century industrial dominance
  - Convening and catalyzing on shared interests creates return on investment
  - Investments mitigate competitive issues and improve DIB readiness and force posture
- Strategic vision and partnerships aligned with national defense/economic policies
  - Broad authorities positions the IBAS Program to address challenges and achieve National Security Strategy goals
- Effective early warning "ground sensor" of industrial issues
  - Boots on the ground - walk the floors to inform and update DoD and IBP leadership
  - Tactical response to red and blue disruptions of supply chain
- **Credibility with Industry: "we talk shop" and execute at pace**
  - Full-spectrum operations—problem identification through acquisition award
  - Cornerstone consortia address broad range of industry needs
  - Acquisition strategy to award <120 days

Contact Us

- **DoD Industrial Base Policy Websites**
  - *https://www.businessdefense.gov/*
  - *https://www.businessdefense.gov/ibr/mceip/index.html*
- **Industrial Base Analysis and Sustainment (IBAS) Program**
  - *https://www.businessdefense.gov/ai/ibas/index.html*
  - *Email to: osd.pentagon.ousd-a-s.mbx.ibas@mail.mil*

Questions?

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