



Acquisition Directorate

Polar Icebreaker Project

Polar Icebreaker Replacement Project

AICC Brief January 2014

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14 JAN 14



Status and Key Issues

Polar Icebreaker Project Status

- **Summary of Need Phase Activities**
- **Mission Need/Alignment**
- **Planned Capability**

Key Issues

- **Industry Experience & Capability**
- **Producibility**
- **Affordability**

Analyze/Select Phase Exit Criteria

Current Efforts

Project Summary

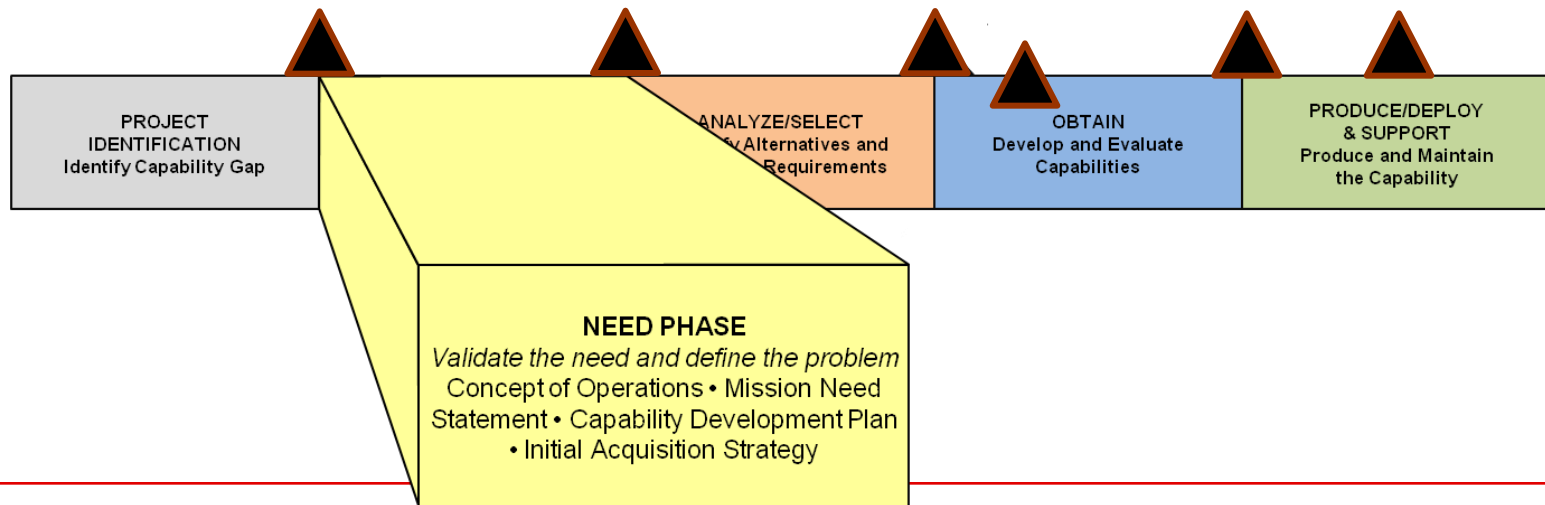
Notional Schedule



Summary of Need Phase Activities

Completion of DHS AD 102-01 Documentation and Need phase Exit Criteria

Document (original signed)	Task	Status	Complete
<input checked="" type="checkbox"/> ADE-0 ADM	Prepare	Approved by Coast Guard	JUL 12
<input checked="" type="checkbox"/> Preliminary Mission Need Statement (P-MNS)	Prepare	Approved by Coast Guard	DEC 12
<input checked="" type="checkbox"/> Mission Need Statement (MNS)	Prepare	Approved by DHS	JUN 13
<input checked="" type="checkbox"/> Concept of Operations (CONOPS)	Prepare	Approved by Coast Guard	SEP 13
<input checked="" type="checkbox"/> Affordability Assessment (AAS)	Prepare	Approved by Coast Guard	NOV 13
<input type="checkbox"/> Capability Development Plan (CDP)	Prepare	At DHS for Approval	



Mission Need

High Latitude Mission Performance Gaps

Arctic	
Significant	Defense Readiness (DR), Ice Operations (IO), Marine Environmental Protection (MEP), Ports, Waterways, & Coastal Security (PWCS)
Moderate	Aids to Navigation (AtoN), Other Law Enforcement (OLE), Search & Rescue (SAR)
Low	Living Marine Resources (LMR), Marine Safety (MS)
Antarctic	
Significant	Defense Readiness, Ice Operations
Moderate	Other Law Enforcement, Marine Environmental Protection
Low	Living Marine Resources, Marine Safety, Search & Rescue

- **National Arctic Strategy – May 10th, 2013**
 - Advance U.S. Security Interests
 - Pursue Responsible Arctic Region Stewardship
 - Strengthen International Cooperation
- **Coast Guard Arctic Strategy – May 21st, 2013**
 - Improving Awareness
 - Modernizing Governance
 - Broadening Partnerships

Polar Icebreaker Mission Alignment

Coast Guard Missions

✓	✓	✓	✓	✓	✓			✓	✓	✓
SEARCH & RESCUE	MARINE SAFETY	AIDS TO NAVIGATION	ICE OPERATIONS	MARINE ENVIRONMENTAL PROTECTION	LIVING MARINE RESOURCES	ILLEGAL DRUG INTERDICTION	UNDOCUMENTED MIGRANT INTERDICTION	OTHER LAW ENFORCEMENT (PROTECT EEZ)	PORTS, WATERWAYS, AND COASTAL SECURITY	DEFENSE READINESS

DHS Missions / Goals

MISSION	GOAL
1 PREVENTING TERRORISM & ENHANCING SECURITY	1.1 PREVENT TERRORIST ATTACKS (PWCS, DR)
	1.2 PREVENT UNAUTHORIZED ACQUISITION/USE OF CBRN MATERIALS/CAPABILITIES (PWCS, DR)
	1.3 MANAGE RISKS TO CRITICAL INFRASTRUCTURE, KEY LEADERSHIP/EVENTS (PWCS)
2 SECURING & MANAGING OUR BORDERS	2.1 SECURE U.S. AIR, LAND, AND SEA BORDER (OLE, PWCS, DR)
	2.2 SAFEGUARD LAWFUL TRADE AND TRAVEL (SAR, MS, AtoN, IO)
4 SAFEGUARDING AND SECURING CYBERSPACE	4.0 SAFEGUARDING AND SECURING CYBERSPACE (PWCS, DR)
5 ENSURING RESILIENCE TO DISASTERS	5.1 MITIGATE HAZARDS (SAR, MS, MEP)
	5.2 ENHANCE PREPAREDNESS (MS, AtoN, IO)
	5.3 ENSURE EFFECTIVE EMERGENCY RESPONSE (SAR, MEP, IO)
	5.4 RAPIDLY RECOVER FROM A CATASTROPHIC EVENT (MEP, AtoN, IO)
6 PROVIDING ESSENTIAL SUPPORT TO THE NATIONAL AND ECONOMIC SECURITY	6.2 ENSURE MARITIME SAFETY AND ENVIRONMENTAL STEWARDSHIP (SAR, MS, MEP, LMR, OLE)
	6.3 CONDUCT AND SUPPORT OTHER LAW ENFORCEMENT ACTIVITIES (OLE, PWCS)
	6.4 PROVIDE SPECIALIZED NATIONAL DEFENSE CAPABILITIES (PWCS, DR)
7 MATURING & STRENGTHENING THE HOMELAND SECURITY ENTERPRISE	IMPROVE CROSS-DEPARTMENTAL MANAGEMENT, POLICY & FUNCTIONAL INTEGRATION (DR) ENHANCE DHS WORKFORCE (DR) ENHANCE INTELLIGENCE, INFORMATION SHARING, AND INTEGRATED OPERATIONS (DR) STRENGTHEN AND UNIFY DHS INTERNATIONAL ENGAGEMENT (DR)

Planned Capability

Mission Alignment
 ▶ Supports DHS mission areas 1, 2, 4, 5, 6 and 7

Mission Operational Capability		Mission Support Capability
Break Ice	Conduct Search and Rescue	Personnel Support
Perform Maneuverability/ Sea Keeping	Conduct Underway Refueling & Replenishment	Organic Maintenance
Launch/Recover Boats	Support Science Missions	Inorganic Maintenance
Conduct Aviation Operations	Provide Command & Control	Pier Services
Escort Vessels	Provide Heavy Lift	Subsistence
Tow Vessels	Provide Medical Treatment	Medical Treatment
Conduct Boarding Operations	Employ Sensors	Work/Life
Conduct Dive Operations	Execute Damage Control	Reliability
Conduct Marine Environmental Response	Implement Human Systems	Availability
Conduct Communications		Maintainability



Key Issues

- **Market Research Indicates Limited Industry Experience & Capability**

- Limited domestic commercial DESIGN capability
- Domestic CONSTRUCTION capability limited to Tier I shipyards and Tier II shipyards. Both will be constrained by workforce & infrastructure.

- **Potential Barriers to Competition**

- Single ship contract & complicated construction
 - Structural Component – icebreaking strength AND double hull

- **Producibility** – Key to shipyard participation and CG affordability

- **Affordability** – High cost asset in challenging budgetary environment

- Whole of government solution

- **Fundamentally different construction density than cutter/combatants**

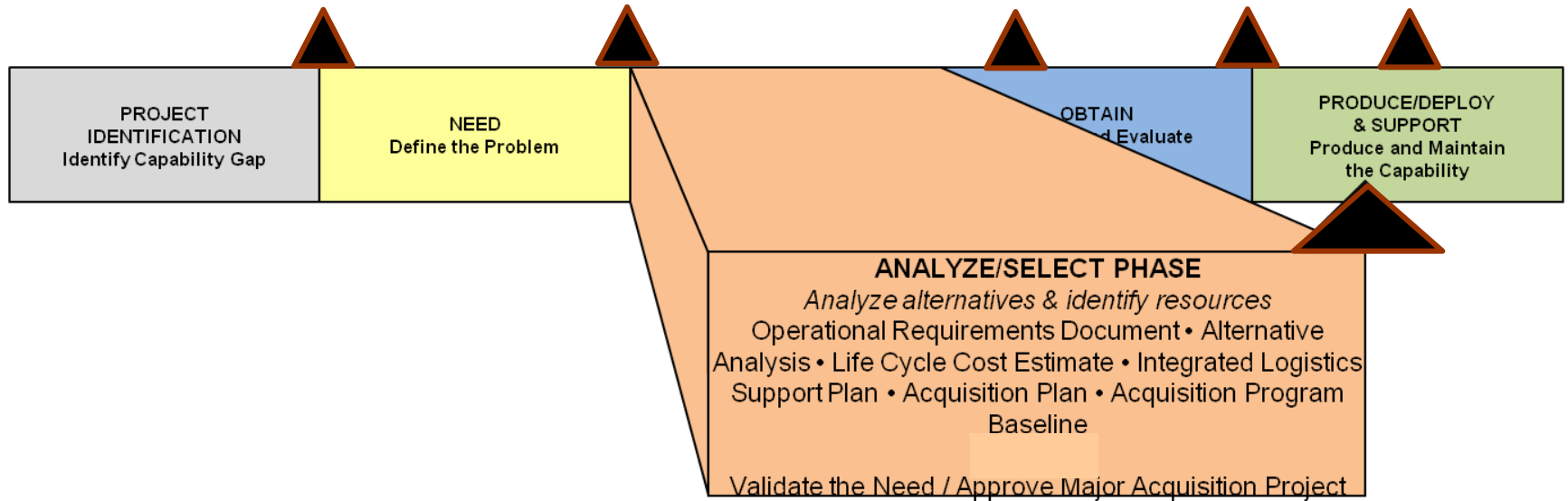
Polar Star (399' ♦ 13,194LT) = 3 x NSC (419' ♦ 4,500LT)



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Analyze/Select Phase



Information developed during the Analyze/Select Phase will inform discussion and allow for trade-offs.

- **Stable set of Requirements – Operational Requirements Document (ORD)**
- **Define Trade Space - Alternatives Analysis (AA)**
- **Detailed Lifecycle Cost Estimate (LCCE)**

Current Efforts

□ Documentation

- **Preliminary Operational Requirements Document (P-ORD); Collects Unconstrained Requirements from Stakeholders**
 - 45 Stakeholders Identified, SME Interviews Ongoing

□ Foreign Government & Industry Engagement

- **USCG/CCG MOU for DIEFENBAKER Icebreaker Project**
 - Project put on hiatus at end of Oct 13 with Canadian Govt decision to build Navy Support Ships first. Construction restart in 2019 at earliest.
 - USCG hoping to capitalize on Lessons Learned, now construction timeframes coincide.
- **USCG/Finland Border Guard Cooperation**
- **Industry Engagement**

Polar Icebreaker Project Summary

Polar Icebreaker Project Status

- All Need Phase Activities are Complete
- Move ahead with Analyze/Select Phase Activities

Analyze/Select Phase Activities

- Validate Affordability
- Alternatives Analysis
- Feasibility Studies
- Requirements Development

Foreign Government and Industry Engagement

Notional Schedule

NOTIONAL POLAR ICEBREAKER RECAPITALIZATION SCHEDULE



Questions



CGC POLAR STAR off Barrow, AK – 03JUL2013

