Acquisition Directorate
Polar Icebreaker Project

Polar Icebreaker Replacement Project

AICC Brief January 2014
CG-9323 | CDR Tim Newton & Mr. Neil Meister
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

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

### Diagram:

- **Project Identification:** Identify Capability Gap
- **Need Phase:** Validate the need and define the problem
  - Concept of Operations
  - Mission Need Statement
  - Capability Development Plan
  - Initial Acquisition Strategy
- **Analyze/Select:** Develop and Evaluate Alternatives and Requirements
- **Obtain:** Produce and Maintain the Capability
- **Produce/Deploy & Support:** Produce and Maintain the Capability

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Unclassified | PIB AICC Brief | CG-9323 | January 2014
Mission Need

<table>
<thead>
<tr>
<th>High Latitude Mission Performance Gaps</th>
<th>Arctic</th>
<th>Antarctic</th>
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<tbody>
<tr>
<td><strong>Significant</strong></td>
<td>Defense Readiness (DR), Ice Operations (IO), Marine Environmental Protection (MEP), Ports, Waterways, &amp; Coastal Security (PWCS)</td>
<td>Defense Readiness, Ice Operations</td>
</tr>
<tr>
<td><strong>Moderate</strong></td>
<td>Aids to Navigation (AtoN), Other Law Enforcement (OLE), Search &amp; Rescue (SAR)</td>
<td>Other Law Enforcement, Marine Environmental Protection</td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td>Living Marine Resources (LMR), Marine Safety (MS)</td>
<td>Living Marine Resources, Marine Safety, Search &amp; Rescue</td>
</tr>
</tbody>
</table>

- **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

<table>
<thead>
<tr>
<th>Mission</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEARCH &amp; RESCUE</td>
<td>MARINE SAFETY</td>
</tr>
<tr>
<td>∨</td>
<td>∨</td>
</tr>
</tbody>
</table>

### DHS Missions / Goals

<table>
<thead>
<tr>
<th>Mission</th>
<th>Goal</th>
</tr>
</thead>
</table>
| 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)  
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

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

<table>
<thead>
<tr>
<th>Mission Operational Capability</th>
<th>Mission Support Capability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Break Ice</td>
<td>Conduct Search and Rescue</td>
</tr>
<tr>
<td>Perform Maneuverability/ Sea Keeping</td>
<td>Conduct Underway Refueling &amp; Replenishment</td>
</tr>
<tr>
<td>Launch/Recover Boats</td>
<td>Support Science Missions</td>
</tr>
<tr>
<td>Conduct Aviation Operations</td>
<td>Provide Command &amp; Control</td>
</tr>
<tr>
<td>Escort Vessels</td>
<td>Provide Heavy Lift</td>
</tr>
<tr>
<td>Tow Vessels</td>
<td>Provide Medical Treatment</td>
</tr>
<tr>
<td>Conduct Boarding Operations</td>
<td>Employ Sensors</td>
</tr>
<tr>
<td>Conduct Dive Operations</td>
<td>Execute Damage Control</td>
</tr>
<tr>
<td>Conduct Marine Environmental Response</td>
<td>Implement Human Systems</td>
</tr>
<tr>
<td>Conduct Communications</td>
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</tr>
</tbody>
</table>

**Mission Alignment**

Supports DHS mission areas 1, 2, 4, 5, 6 and 7
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)
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 DIFENBAKER Icebreaker Project
    - USCG hoping to capitalize on Lessons Learned, now construction timeframes coincide.
  - USCG/Finland Border Guard Cooperation
  - Industry Engagement
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
Questions

CGC POLAR STAR off Barrow, AK – 03JUL2013