

United States Navy Arctic Roadmap 2014-2030

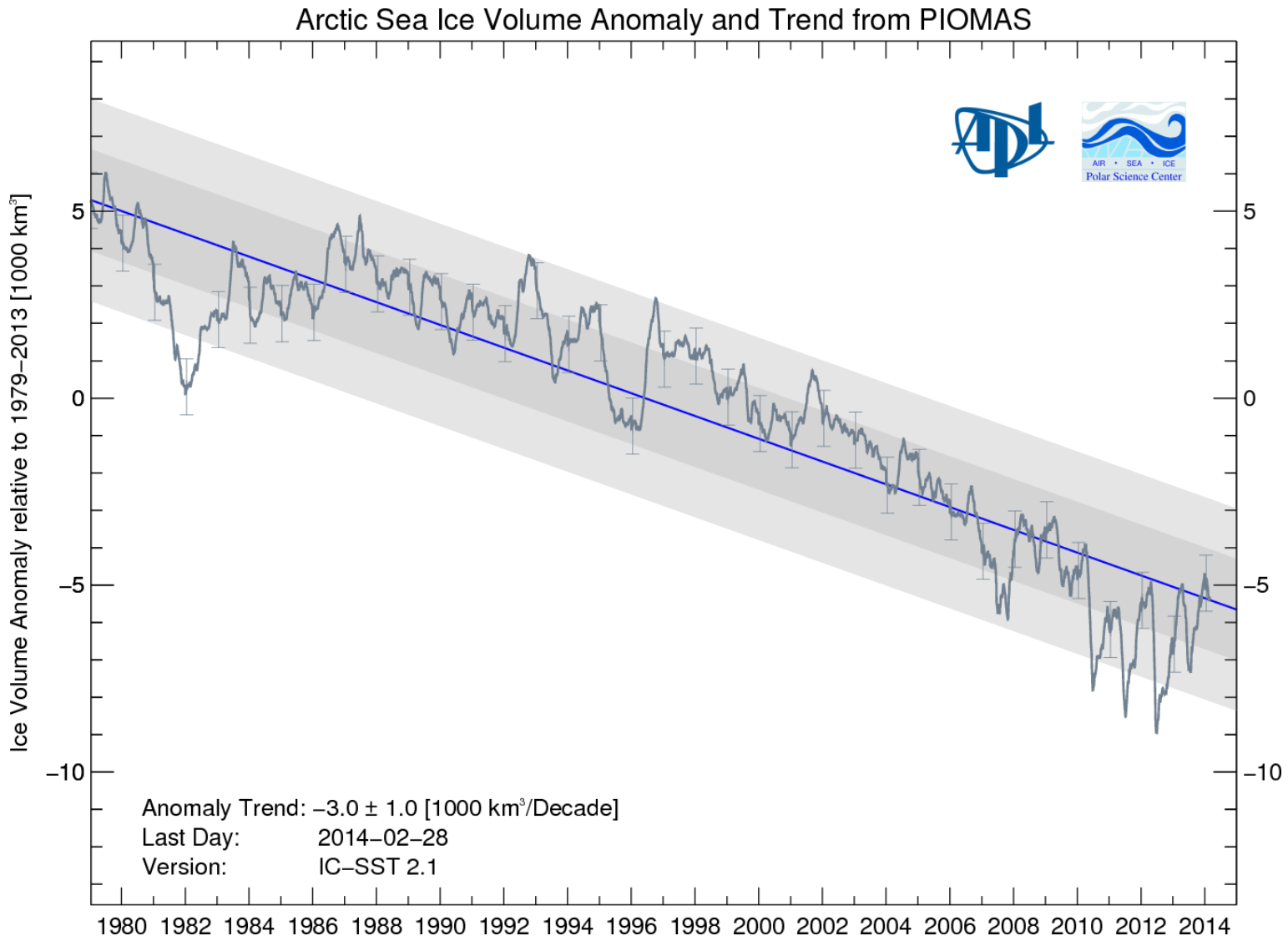


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Predictions and Uncertainty

Non linear reduction in Arctic ice volume



Arctic Ice Coverage

Sea Routes



Northern Sea Route

2025: 6 weeks open
41' controlling draft



Transpolar Route

2025: 2 weeks open
Deep ocean transit



Northwest Passage

2025: intermittently open
33' controlling draft

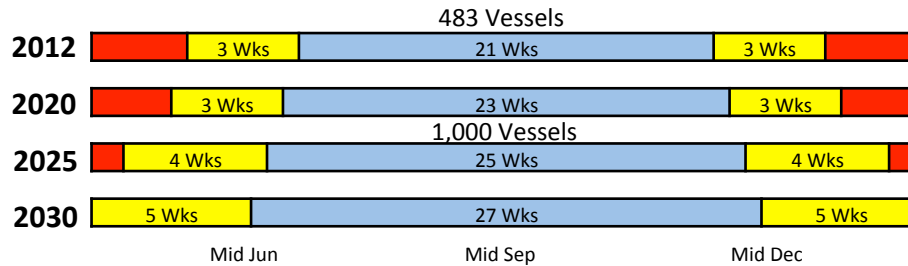
Sea route distances:
Distance from the
Bering Strait to
Rotterdam



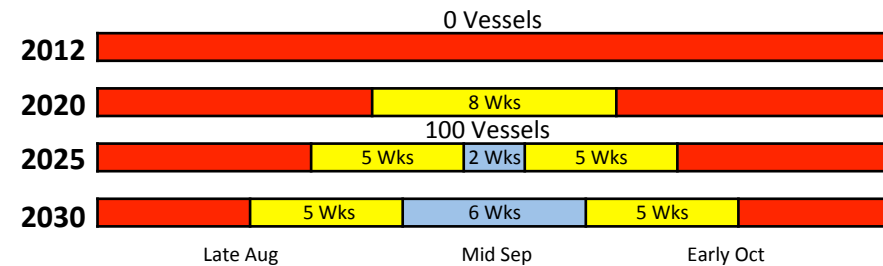


Arctic Sea Route Navigability

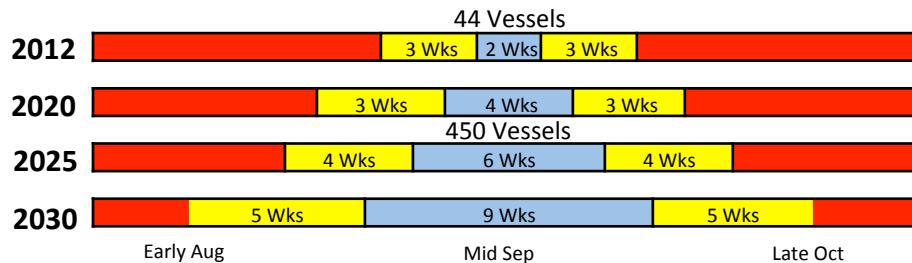
Bering Strait (BS)



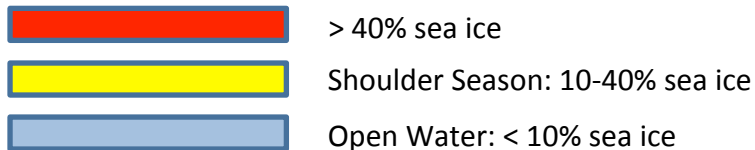
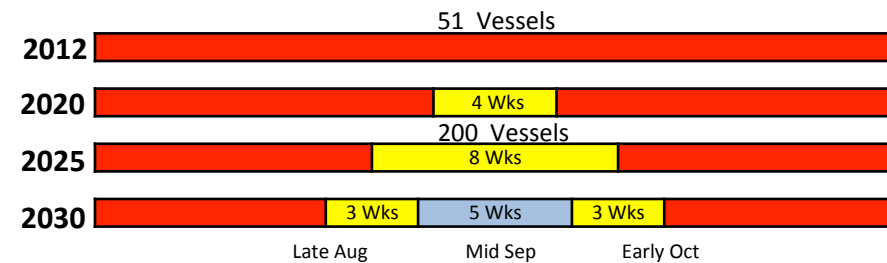
Transpolar Route (TPR) (4,170 NM)



Northern Sea Route (NSR) (4,740 NM)



Northwest Passage (NWP) (5,225 NM)

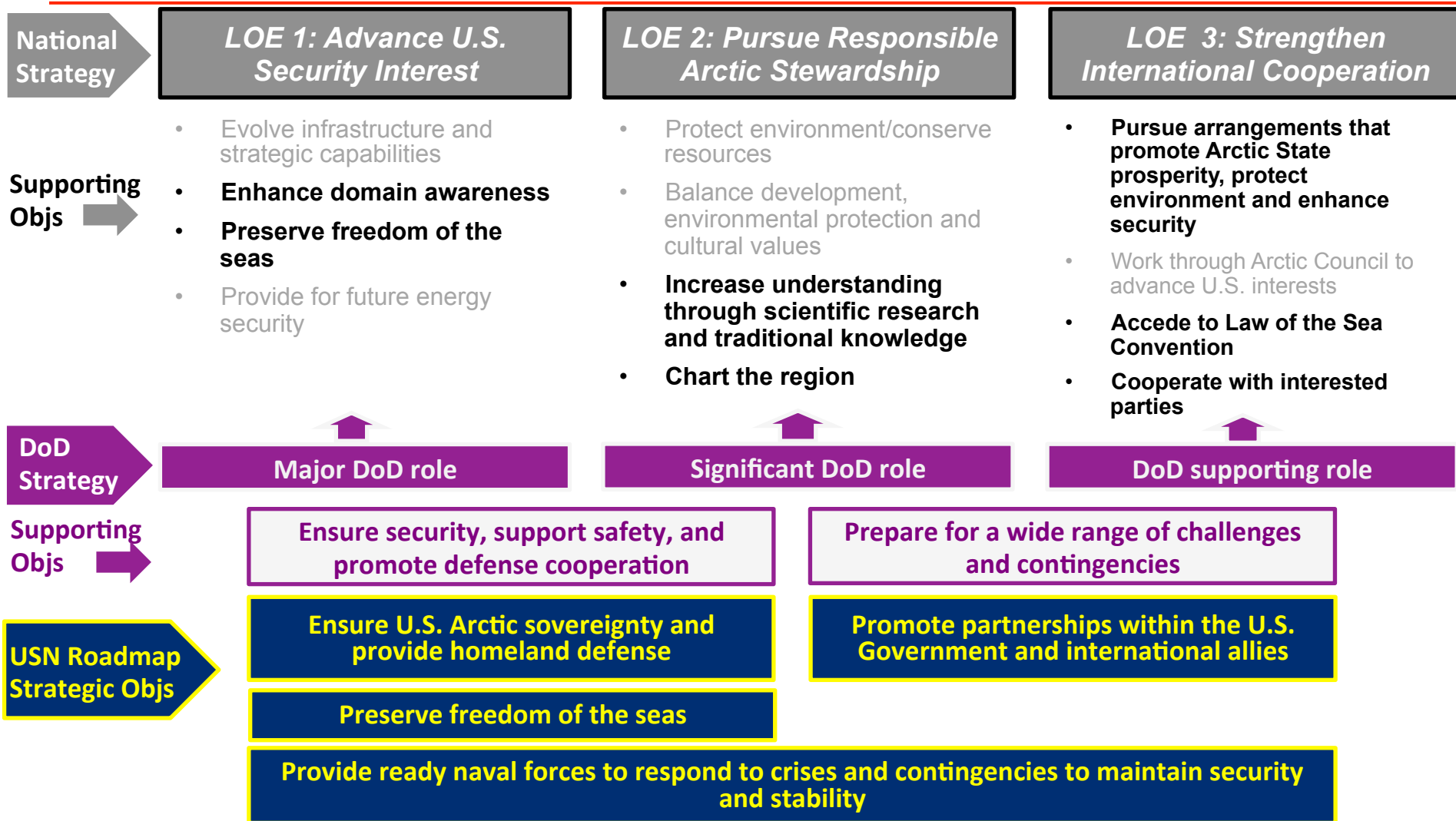


Vessel data from ONI

Polar routes will gradually open. Transit season is short. Maritime activity growth only 2-4% of global shipping. Will not replace the Suez or Panama Canals as primary shipping routes.



Arctic Strategies - Aligned



A secure and stable region where U.S. national interests are safeguarded, the U.S. homeland is protected, and nations work cooperatively to address challenges.



Key Missions – Navy in the Arctic

- ☐ Ensure U.S. sovereignty
 - Defend the homeland
 - Contribute to maritime domain awareness
- ☐ Ensure freedom of the seas
 - Freedom of navigation
- ☐ Support the Coast Guard and other partners
 - Search and Rescue *in support of missions led by USCG and as directed in support of international partners*
 - Environmental response
 - Disaster Response/Defense Support of Civil Authorities

- ***Enable the Joint and Interagency communities to operate in this hard-to-reach, isolated, harsh environment***
- ***Extend the capability to defend U.S. national interests with a skilled force trained and equipped to operate in the Arctic environment***



What are the requirements?

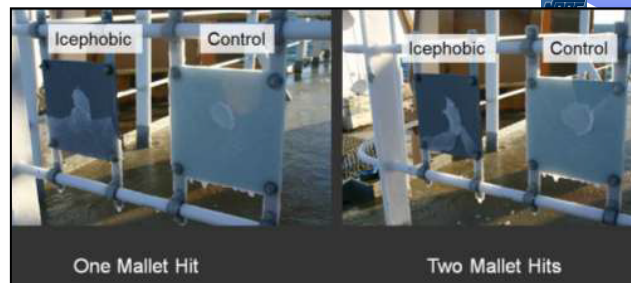


“U.S. Northern Command (CDRUSNORTHCOM) is responsible for advocating for Arctic capabilities. In execution of this responsibility, CDRUSNORTHCOM will collaborate with relevant Combatant Commands, the Joint Staff, the Military Departments and Services, and the Defense agencies to identify and prioritize emerging Arctic capability gaps and requirements.”



Near-term (present-2020)

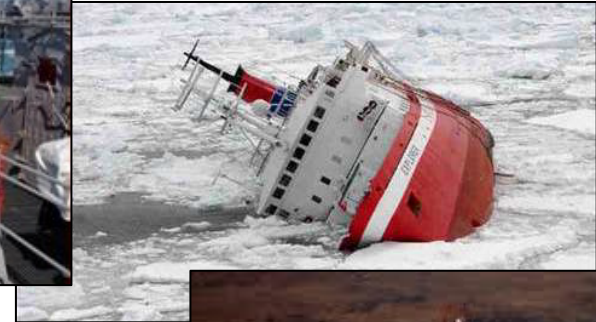
- Sea ice decreases - Major waterways increasingly open
- Shipping remains light - Harsh weather, high sea states, and economy-of-scale limitations
- Presence primarily undersea and air. Surface operations limited to open water
 - Specify Requirements
 - Investment decisions
 - Gain experience/expertise
 - S&T, Exchanges, Exercises
 - Update CONOPS, TTPs
 - Strengthen Partnerships





Mid-term (2020-2030)

- Increasingly open water ways
- Negligible shipping increase - Sub-seasonal route variability, and economy-of-scale limitations
- Surface ship operations in expanding open water areas
 - Ready to respond to contingencies and emergencies
 - Periodic presence
 - Support to SAR, DSCA, FoN
 - Deliver capability
 - Gain additional experience and expertise





Far-term (FY30 and beyond)

- Major waterways consistently open in summer months
- Significant increase in traffic summer months.
 - Oil, gas, and mineral resource exploitation expected to continue
 - Production/transportation models established and sustained
- Operate deliberately for sustained periods as needed
- Manned, trained equipped:
 - Sub, surface, air, space, cyberspace





Arctic Roadmap Implementation Plan

Lines of Effort

Policy,
Strategy,
Missions, & Plans

Requirements

Operations &
Training

Science &
Technology

Environmental
Observation &
Prediction

Safe Navigation

Maritime Domain
Awareness

Platforms,
Weapons, &
Sensors

C4ISR

Installations &
Facilities

Strategic
Communications &
Outreach

Near-term (present-2020)

- Primarily undersea and air presence
- Surface ship presence in open water
- Specify Requirements
- Investment decisions
 - Targeted increases
- Gain experience and expertise
 - S&T
 - Exchanges
 - Exercises
- Update Doctrine, CONOPS, TTPs
- Strengthen Partnerships

Mid-term (2020-2030)

- Be ready to respond to contingencies and emergencies
- Periodic presence
 - Support to SAR, DSCA, FoN
- Deliver capability
- Gain additional experience and expertise

Far-term (FY30 and beyond)

- Operate deliberately for sustained periods as needed
- Manned, trained equipped:
 - Sub, surface, air, space, cyberspace

The roadmap leads to a force that is capable and ready to operate in the Arctic as needed



Navy's National Role?

Implementation Plan
for
The National Strategy for the Arctic Region
January 2014

DOD Lead:

Develop a Framework of Observations and Modeling to Support Forecasting and Prediction of Sea Ice

Objective: Improve sea ice forecasts and predictions at a variety of spatial and temporal scales.

DOD Support: Charting, Models, Maritime Domain Awareness, Observations, etc.



Earth System Prediction Capability (ESPC)

A National Opportunity



TC Forecasts



Extreme Weather
Floods, Droughts

Sea Level Rise



Arctic Operations



Aerosols & GHG



National Security

***A unified national “best-in-world” operational prediction system
O-hours to 30 years ... Atmosphere, Ocean, Ice, Climate, ...***



**Jeanette
Expedition
1879 - 1881**

The U.S. Navy has a long history in the Arctic



Warfighting First – Operate Forward – Be Ready





Narrative

- ❑ The United States is an Arctic nation whose Navy recognizes that the opening of the Arctic Ocean could have important national security implications as well as significant impacts required future capabilities.
- ❑ A stable and secure Arctic region is in our national interest.
- ❑ The U.S. Navy will operate in the Arctic to protect U.S. sovereignty, ensure freedom of the seas, defend the homeland, and respond to crises in support of interagency and international partners.
- ❑ As the perennial ice melts and open water expands, Arctic transit routes will likely be open for longer periods, to the degree that a transpolar route (close to the North pole) will be open for a few summer weeks by the mid-2020's.
- ❑ The Region is expected to remain a low threat security environment where nations resolve differences peacefully; the U.S. Navy will be prepared to prevent conflict and ensure national interests are protected.
- ❑ The U.S. Navy is committed to growing partnerships and alliances with our neighbor navies in the Arctic, to include our next-door neighbors - Russia and Canada.
- ❑ In partnership, the Navy and Coast Guard are committed to ensuring safe, secure, environmentally responsible maritime activity in the Arctic Ocean.
- ❑ The U.S Navy Arctic Roadmap emphasizes long-lead activities on improving operational capabilities, expertise, capacity, extending reach, and leveraging interagency and international partners to position the Navy to meet future demands.



Informing the Roadmap

Current Strategic Guidance

- ☐ A Cooperative Strategy for 21st Century Seapower (Oct 2007)
- ☐ National Security Presidential Directive – 66 Arctic Region Policy (Jan 2009)
- ☐ Quadrennial Defense Review (Feb 2010)
- ☐ U.S. Navy Strategic Objectives for the Arctic (May 2010)
- ☐ National Security Strategy 2010 (May 2010)
- ☐ National Strategy for the Arctic Region (May 2013)
- ☐ U.S. Coast Guard Arctic Strategy (May 2013)
- ☐ DoD Arctic Strategy (Nov 2013)
- ☐ Implementation Plan of National Strategy for the Arctic Region (Jan 2014)

Recent Activity

- ☐ USN-USCG Warfighter Talks
- ☐ ONI – Arctic geostrategic assessment
- ☐ Two Naval Studies Board sessions
- ☐ N3/N5 Strategy and Mission Analysis

“...an Arctic region that is stable and free of conflict, where nations act responsibly in a spirit of cooperation, and where economic and energy resources are developed in a sustainable manner.”

Desired strategic end state, National Strategy for the Arctic Region



U.S. Navy Strategic Objectives

- ☐ *Ensure U.S. Arctic sovereignty and provide homeland defense*
- ☐ *Provide ready naval forces to respond to crisis and contingencies to maintain security and stability*
- ☐ *Preserve freedom of the seas*
- ☐ *Promote partnerships within the U.S. Government and international allies*

In the near to mid-term, the Navy will concentrate on improving operational capabilities, expertise, and capacity, extending reach, and will leverage interagency and international partners to achieve its strategic objectives

Navy Arctic Roadmap Significant Actions

Lines of Effort FY14

FY15

FY16

FY18

FY20

Strategy, Policy, Missions, & Plans

Establish Requirements Working Group

Advocate for Executive Agent for the Arctic

Incorporate CS-21R guidance relating to Arctic capabilities into POM guidance

Develop Arctic engagement plan focusing on partnerships

Incorporate Arctic engagements in Navy Campaign Support Plan

Operations & Training

TYCOMs update Fleet guidance on Arctic operations

TYCOMs generate guidance and training requirements

Develop Arctic CONOP for Naval platforms

Integrate testing of sensors/systems into Arctic exercises /operations

Develop personnel exchange plan with regional partners

Increase participation/visibility in Arctic exercises

Science & Technology

Incorporate Arctic related science and technology requirements in CS-21R

Support access to previously classified information by climate research community

Increase ONR's Arctic Research Efforts

Produce a holistic Arctic environmental sensing plan

Develop CONOPS for Arctic environmental Observer/ Forecaster support

Support efforts to research, develop, resource and sustain an Arctic environmental observation system in support of U.S. operations

Quantify and characterize uncertainty in long range climate and ice forecasting capabilities

Environmental Observation & Prediction

Sustain development of Earth System Prediction Capability Efforts (ESPC)

Safe Navigation

Sustain Arctic Nation Navy hydrographic survey data sharing and planning effort

Coordinate with NGA, NOAA and USCG to develop a national hydrographic plan

Identify safe navigational corridors and NAVAID requirements

Conduct analysis of existing and future high data rate communication requirements

Establish ISR requirements for space, manned and unmanned options

C4ISR

Installations & Facilities

Identify requirements to establish APODs and SPODs

Evaluate capability of existing ports and airfields to support Navy operations

Platforms, Weapons, Support Equipment, and Sensors

Assess current capability of existing platforms in open water/shoulder seasons

Determine weapon and sensor capabilities and requirements

Identify future platforms and engineering requirements that will operate in open water/ shoulder seasons

Identify platform(s) that can act as Navy's Arctic capable AFSB by mid 2020s

Maritime Domain Awareness

Improve MDA through collaboration

Introduce common Vessel of Interest lexicon for MDA in the Arctic

Build Trust and Confidence with Partners

Public Communications and Outreach

Expand cooperative partnerships with Arctic nations and Arctic states, and international, interagency and private sector stakeholders