

**POLAR FACILITIES AND LOGISTICS**

**\$284,960,000**  
**-\$23,360,000 / -7.6%**

**Polar Facilities and Logistics**

(Dollars in Millions)

	FY 2016 Actual	FY 2017 (TBD)	FY 2018 Request	Change over FY 2016 Actual	
				Amount	Percent
Polar Facilities	\$196.53	-	\$177.85	-\$18.68	-9.5%
Polar Logistics	111.79	-	107.11	-4.68	-4.2%
<b>Total, Polar Facilities and Logistics</b>	<b>\$308.32</b>	<b>-</b>	<b>\$284.96</b>	<b>-\$23.36</b>	<b>-7.6%</b>

**Polar Facilities**

The Office of Polar Programs (OPP) within the Directorate for Geosciences (GEO) provides the infrastructure needed to support U.S. research conducted in Antarctica, including research funded by NSF and by U.S. mission agencies, for year-round work at three U.S. stations, on two research ships, and at a variety of remote field camps. Support to other agencies includes mission-essential satellite communications support at McMurdo Station for the Joint Polar Satellite System (JPSS), and the National Aeronautics and Space Administration’s (NASA) Ground Networks for the relay of data. Through a partnership with the National Oceanic and Atmospheric Administration (NOAA), NASA, and the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), OPP supports the relay of real-time satellite-based weather information that informs global forecasting. In addition, OPP enables important climate monitoring activities for NOAA at the Clean Air Facility at South Pole Station, one of only five such sites around the globe. OPP also provides support for: NASA’s Long Duration Balloon program that enables research in fields ranging from astrophysics to cosmic radiation to solar astronomy; the South Pole Remote Earth Science and Seismological Observatory (SPRESSO), the most seismically-quiet station on earth and a key site contributing to U.S. activities associated with the Comprehensive Test Ban Treaty and to U.S. Geological Survey (USGS) and NSF efforts for global seismic monitoring; and access to sites that are key to precise orbit determinations for optimizing use of the Global Navigation Satellite System (GNSS).

All support for these activities is provided by OPP, including transportation, facilities, communications, utilities (water and power), health and safety infrastructure, and environmental stewardship. The U.S. Antarctic Program (USAP) maintains the U.S. presence in Antarctica in accordance with U.S. policy, and supports Antarctic Treaty administration under State Department leadership.

**Total Obligations for Polar Facilities**

(Dollars in Millions)

	FY 2016 Actual	FY 2017 (TBD)	FY 2018 Request	ESTIMATES <sup>1</sup>				
				FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Antarctic Infrastructure and Logistics	\$196.53	-	\$177.85	\$177.85	\$177.85	\$177.85	\$177.85	\$177.85
<b>Total, Polar Facilities</b>	<b>\$196.53</b>	<b>-</b>	<b>\$177.85</b>	<b>\$177.85</b>	<b>\$177.85</b>	<b>\$177.85</b>	<b>\$177.85</b>	<b>\$177.85</b>

<sup>1</sup> Outyear funding estimates are for planning purposes only.

OPP contracts with a prime contractor for science support, operations, the leasing of research vessels, and the maintenance of the Antarctic stations and related infrastructure in New Zealand and Chile. The contractor is selected through a competitive process. Rotary and fixed-wing aircraft used in support of research are also provided through separate competitively-awarded contracts. Other agencies and

contractors provide technical support in areas of expertise such as engineering, construction, and communications. Following a major refurbishment program, the U.S. Coast Guard's (USCG) *Polar Star* returned to service in 2014 and is successfully providing annual icebreaking services for the McMurdo Station resupply effort.

### **Management and Oversight**

- NSF Structure: OPP staff, including subject matter experts in operational and scientific disciplines, have overall responsibility for funding and managing Polar Facilities under the USAP; NSF budgets for and manages USAP on behalf of the Nation. This includes planning all activities and overseeing contractors. OPP's Antarctic Sciences section funds merit-reviewed research proposals for which access to Antarctica is essential to advancing the scientific frontiers and that can only be achieved or are best achieved with research work in/on Antarctica and the Southern Ocean. Research is conducted in a broad array of geo- and bio- sciences, including earth system science, and space and astrophysical sciences. The Antarctic Infrastructure & Logistics section enables research in Antarctica on behalf of the U.S. government through a network of stations, labs, equipment, and logistical resources. The Environment, Health, and Safety section oversees the environmental, health, and safety aspects of research and operations conducted in Polar Regions.
- External Structure: The Antarctic prime support contract is currently held by Leidos Innovations Corporation. There are many separate subcontractors for supplies and technical services, and other services are procured through separate competitively-bid contracts.
- Reviews: OPP evaluates the performance of the Antarctic support contractor annually via an Award Fee Plan, which involves multiple tiers of review, including a Performance Evaluation Board (PEB) composed of representatives from OPP and the Office of Budget, Finance, and Award Management (BFA). In addition, OPP's performance is reviewed externally by Committees of Visitors and the Office of Polar Programs Advisory Committee. The USAP Blue Ribbon Panel (BRP) released a report on its review of the program in July 2012.<sup>18</sup> The NSF response to the USAP BRP report was released in March 2013.<sup>19</sup>



Helicopters provide support to field parties in the McMurdo Dry Valleys in southern Victoria Land and at remote field camps. Credit: Kristan Hutchison, RPSC

### **Current Status**

- All facilities (stations, research vessels, and field camps) are currently operating normally.
- The USAP BRP report concluded that ushering in a new age of Antarctic science simply by expanding traditional methods of logistical support would be prohibitively costly. Instead, it recommended numerous ways to more efficiently and cost-effectively support research while maintaining high standards of safety and increasing the flexibility to support evolving science foci in the future. Continued progress is planned to implement BRP recommendations, including investment in prioritized lifecycle acquisitions. Priority will also be given to site work that would be needed to support implementation of the Antarctic Infrastructure Modernization for Science (AIMS) project, currently moving toward the final stages of design. The AIMS project will redevelop McMurdo Station to be a consolidated, more efficient facility. Also included are utilities distribution and fire protection. Plans are under development to upgrade satellite communications systems to support operations and research and to replace the Palmer Station pier to ensure long-term access to unique research in the peninsula region.

<sup>18</sup> [www.nsf.gov/od/opp/usap\\_special\\_review/usap\\_brp/rpt/index.jsp](http://www.nsf.gov/od/opp/usap_special_review/usap_brp/rpt/index.jsp)

<sup>19</sup> [www.nsf.gov/od/opp/usap\\_special\\_review/usap\\_brp/rpt/nsf\\_brp\\_response.pdf](http://www.nsf.gov/od/opp/usap_special_review/usap_brp/rpt/nsf_brp_response.pdf)

**Renewal/Re-competition/Termination**

- In FY 2012, Lockheed Martin Corporation, now the Leidos Innovations Corporation, was awarded a 13.5 year contract, consisting of a five-year base period and four option periods, exercised on the basis of performance, that total an additional 8.5 years.
- Contracts for fixed and rotary wing support are managed as assisted acquisitions by the Department of Interior, Office of Aviation Services. A five-year contract for helicopter support was awarded to PHI, Inc. of Lafayette, Louisiana, in May 2013. A five-year contract for fixed-wing aviation services, currently held by Kenn Borek Air of Calgary, Canada, is now under competition.
- U.S. policy directs NSF to maintain an active and influential presence in Antarctica, including year-round occupation of South Pole Station and two coastal stations. As the scientific forefronts addressed there evolve over time, so do the research emphases at the three stations and the infrastructure needed to support them.

**Polar Logistics**

Polar Logistics consists of two activities: the U.S. Antarctic Logistical Support program within the Antarctic Infrastructure and Logistics section, and the Research Support and Logistics program within the Arctic Sciences section.

**Total Obligations for Polar Logistics**

(Dollars in Millions)

	FY 2016 Actual	FY 2017 (TBD)	FY 2018 Request	ESTIMATES <sup>1</sup>				
				FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
U.S. Antarctic Logistical Support	\$67.52	-	\$71.00	\$71.00	\$71.00	\$71.00	\$71.00	\$71.00
Arctic Research Support and Logistics	44.27	-	36.11	36.11	36.11	36.11	36.11	36.11
<b>Total, Polar Logistics</b>	<b>\$111.79</b>	<b>-</b>	<b>\$107.11</b>	<b>\$107.11</b>	<b>\$107.11</b>	<b>\$107.11</b>	<b>\$107.11</b>	<b>\$107.11</b>

The U.S. Antarctic Logistical Support program funds support activities provided by the U.S. Department of Defense (DoD). DoD operates as a logistical support provider on a cost-reimbursable basis. Major funding elements of DoD support include: military personnel, LC-130 flight operations, and maintenance support through the 109th Airlift Wing of the New York Air National Guard in Scotia, New York, and Antarctica; transportation and training of military personnel supporting the USAP; support for air traffic control, weather forecasting, and ground electronics maintenance through the Space and Naval Warfare Systems Command; the charter of Air Mobility Command airlift and Military Sealift Command ships for the re-supply of McMurdo Station; bulk fuel purchased from the Defense Logistics Agency; and reimbursement for use of DoD satellites for communications.

The Research Support and Logistics program in the Arctic Sciences section of OPP responds to science supported by the section. Funding is provided directly to grantees or to key organizations that provide or manage Arctic research support and logistics. A contractor provides research support and logistics services for NSF-sponsored activities in the Arctic. Additional major support components include: access to USCG and other icebreakers, University-National Oceanographic Laboratory (UNOLS) vessels and coastal boats; access to fixed- and rotary-wing airlift support; upgrades at Toolik Field Station, University of Alaska Fairbanks' field station for ecological research on Alaska's North Slope; safety training for field researchers and funding for field safety experts; global satellite telephones for emergency response and improved logistics coordination; and development of a network of strategically placed U.S. observatories linked to similar efforts in Europe and Canada. In FY 2016, the Directorate for Biological Science's (BIO) Division of Environmental Biology provided funding, approximately \$164,000, through OPP's Arctic support

contractor CH2M Hill and through the University of Alaska, Fairbanks for ongoing logistical support for two BIO funded projects in Alaska.

### **Management and Oversight**

- NSF Structure: OPP has overall responsibility for U.S. Antarctic Logistical Support and Arctic Research Support & Logistics.
  - U.S. Antarctic Logistical Support is budgeted for and managed by the Antarctic Infrastructure and Logistics Section, which includes managers with operational expertise responsible for planning and overseeing all USAP support.
  - Arctic Sciences personnel support merit-reviewed research proposals in social, earth systems, and a broad range of natural sciences; its Research Support & Logistics program responds to research by assisting researchers with access to the Arctic and sharing of plans and results with local Arctic communities.
  - The Environment, Health, and Safety section oversees the environmental, health, and safety aspects of research and operations conducted in polar regions.
- External Structure:
  - DoD operates as a logistical support provider on a cost-reimbursable basis. The agencies cooperate under a Memorandum of Agreement that includes guidance for planning and scheduling and sets forth the terms and conditions for reimbursement to DoD by NSF.
  - The Arctic support contract was re-competed and awarded to the incumbent, CH2M Hill, in September 2011. There are many separate subcontractors for supplies and technical services, and other services are procured through separate competitively bid contracts.
- Reviews: OPP evaluates the performance of the Arctic support contractor informally on an ongoing basis and formally each year using feedback from the research community they support, and by conducting site visits that include representatives from OPP and BFA. OPP's performance is externally reviewed by Committees of Visitors and the Office of Polar Programs Advisory Committee.

### **Current Status**

All facilities (stations, research vessels, and field camps) are currently operating as normal.

### **Renewal/Re-competition/Termination**

NSF re-competed the Arctic support contract and made an award to the incumbent contractor, CH2M Hill, in September 2011. The contract has an initial term of four years and the possibility of two, two-year extensions exercised on the basis of performance.