

ANTARCTIC FACILITIES AND OPERATIONS

\$192,140,000
-\$55,820,000 / -22.5%

Antarctic Facilities and Operations Funding
(Dollars in Millions)

FY 2018 Actual ¹	FY 2019 (TBD)	FY 2020 Request	Change over	
			FY 2018 Actual Amount	Percent
\$247.96	-	\$192.14	-\$55.82	-22.5%

¹ FY 2018 Actual includes \$42.58 million in additional FY 2018 one-time funding above the requested amount.

Antarctic Facilities

OPP 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, 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. 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, 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 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).

Total Obligations for Antarctic Facilities
(Dollars in Millions)

	FY 2018	FY 2019	FY 2020	ESTIMATES ²				
	Actual ¹	(TBD)	Request	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Antarctic Facilities and Operations	\$203.24	-	\$192.14	\$192.14	\$192.14	\$192.14	\$192.14	\$192.14
AIMS Development and Design	16.14	-	-	-	-	-	-	-
Palmer Pier Upgrade	28.58	-	-	-	-	-	-	-
Total	\$247.96	-	\$192.14	\$192.14	\$192.14	\$192.14	\$192.14	\$192.14

¹ FY 2018 Actual includes \$42.58 million in additional FY 2018 one-time funding above the requested amount; \$14.0 million for AIMS Development and Design and \$28.58 million for Palmer Pier construction.

² Outyear estimates are for planning purposes only.

The FY 2020 Budget Request for Antarctic Facilities is \$192.14 million. The reduction relative to FY 2018 is primarily due to one-time investments made in FY 2018 to replace the aging pier at Palmer Station, funding to advance Antarctic Infrastructure Modernization for Science (AIMS) development and design and other miscellaneous improvements. In FY 2020, funds will provide for station operations and science support at NSF’s three Antarctic stations, various near and deep field camps, and two leased research vessels.

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 *Polar Star* returned to service in 2014 and provides 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 managing Antarctic Facilities under the U.S. Antarctic Program (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 and Logistics section enables research in Antarctica on behalf of the U.S. government through a network of stations, labs, equipment, and logistical resources.
- 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 BFA. In addition, OPP's performance is reviewed externally by Committees of Visitors and the OPP Advisory Committee. The USAP Blue Ribbon Panel (BRP) released a report on its review of the program in July 2012.¹ The initial NSF response to the USAP BRP report was released in March 2013 and progress to address recommendations is ongoing.² This budget request includes a request for funding for the AIMS project, a major part of the NSF response to the BRP report.



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.
 - For example, construction is underway to upgrade satellite communications systems to support operations and research, and construction activities to replace the Palmer Station pier to ensure long-term access to unique research in the peninsula region could begin as early as the 2020 austral summer season. NSF is also constructing a consolidated Information Technology and Communications building. This was phased to ensure continuous functionality when the AIMS project construction gets underway in FY 2020.

¹ www.nsf.gov/od/opp/usap_special_review/usap_brp/rpt/index.jsp

² www.nsf.gov/od/opp/usap_special_review/usap_brp/rpt/nsf_brp_response.pdf

Major Multi-User Research Facilities

- The National Science Board authorized NSF to award the AIMS project. Leidos is in the process of completing the designs of all construction components, beginning the site preparation work for the backbone utilities and the initial buildings such as the Vehicle and Equipment Operations Center, and procuring the first phases of construction equipment and materials. The AIMS project will redevelop McMurdo Station to be a consolidated, cost-effective facility, including modernized utilities distribution and fire protection. For additional information on AIMS see the AIMS narrative in the MREFC Chapter.

Renewal/Recompetition/Termination

- In FY 2012, Lockheed Martin 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 eight and a half years. Leidos Innovations Corporation now holds the contract as it acquired the responsible division of Lockheed Martin in 2016.
- 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, currently held by PHI, Inc. of Lafayette, Louisiana, is currently under competition. A five-year contract for fixed-wing aviation services was recently awarded to Kenn Borek Air of Calgary, Canada.
- 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.