

UNOLS Report to the DEep Submergence Science Committee

Summary of UNOLS Issues and Activities



June 13, 2005

Topics to Review

- **Budget Shortfalls and Impact on 2006 Ship Use**
- **Fleet Renewal Activities**
- **Arctic Icebreaker Coordination**
- **Aircraft for Oceanography**
- **UNOLS Continuing Issues**

Budget Shortfalls and Impact on 2006 Ship Use

- **Clark (NSF) Letter to UNOLS outlining funding shortfall in February 2005.**
- **Ad Hoc Committee Formed in March 2005.**
 - Marcia McNutt, MBARI (Chair)
 - Eileen Hofmann, ODU
 - Denis Wiesenburg, UAF
- **Funded Projects/LOI evaluated.**
- **Magnitude of Problem defined.**
- **Waiting for NSF Priorities to complete evaluation.**
- **Program funding status needed from NOAA**
- **Recommendations due in time for scheduling meeting in mid-July.**

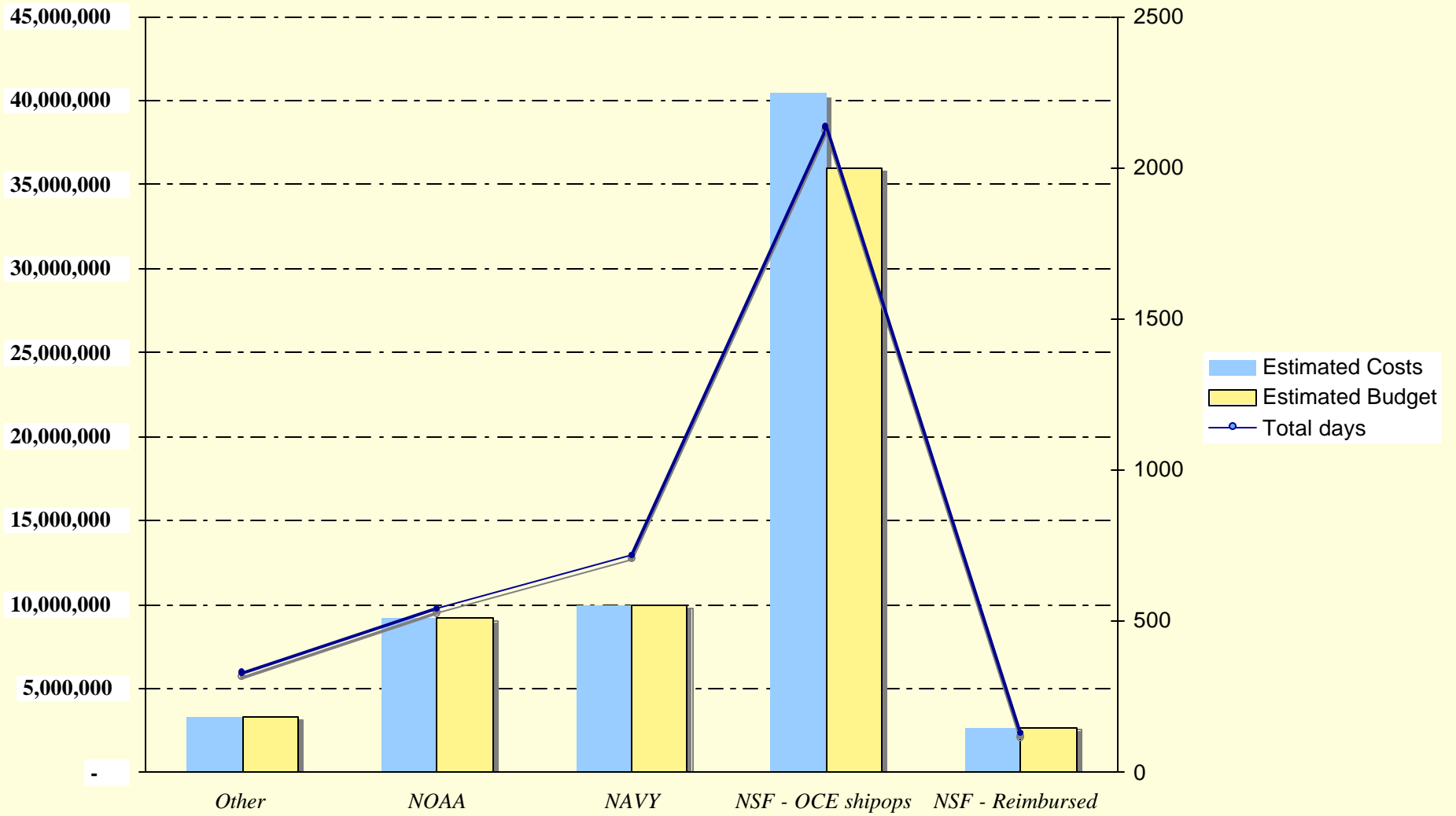
Ad-Hoc Committee Tasks

- 1) Obtain estimate of fleet utilization and operating costs for 2006.
- 2) Estimate the ship operation funding from all sources.
- 3) Develop a plan for ship lay-ups that will fit the budget realities and minimize impact on funded scientific programs. Consider longer term issues such as the impact of retirements versus lay-ups, the various forms of lay-ups, and funding prospects in the out years (Observatories).

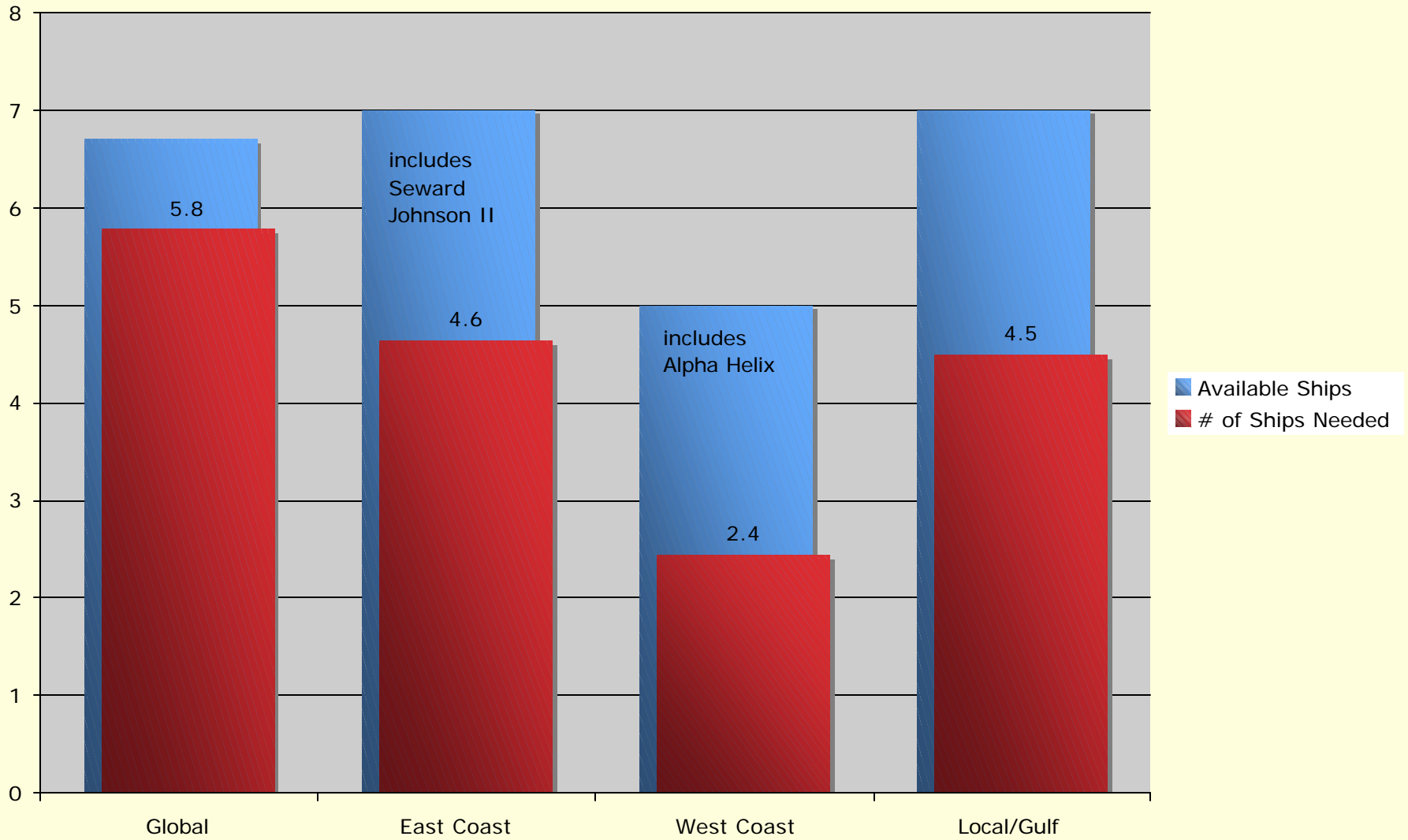
The plan should provide the following:

- a. A short-term recommendation to address the 2006 budget shortfall.
- b. Provide long-term scenarios (3 years) for ship lay-ups and retirements. Various scenarios should be developed to address the possibility of level and declining budgets. The costs and operational impacts associated with the various scenarios should be articulated in the plan.

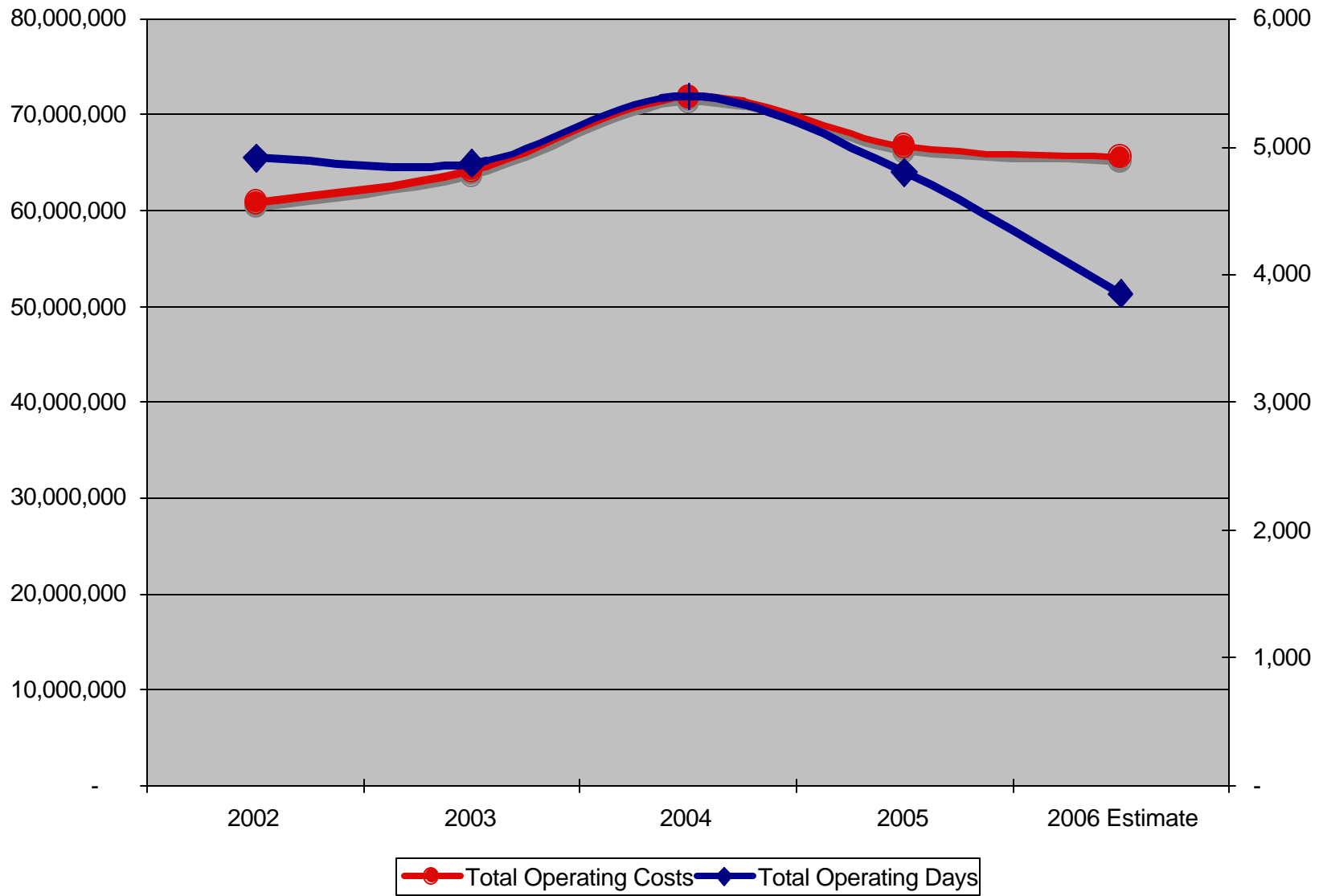
2006 Scheduled Days and Estimated Costs



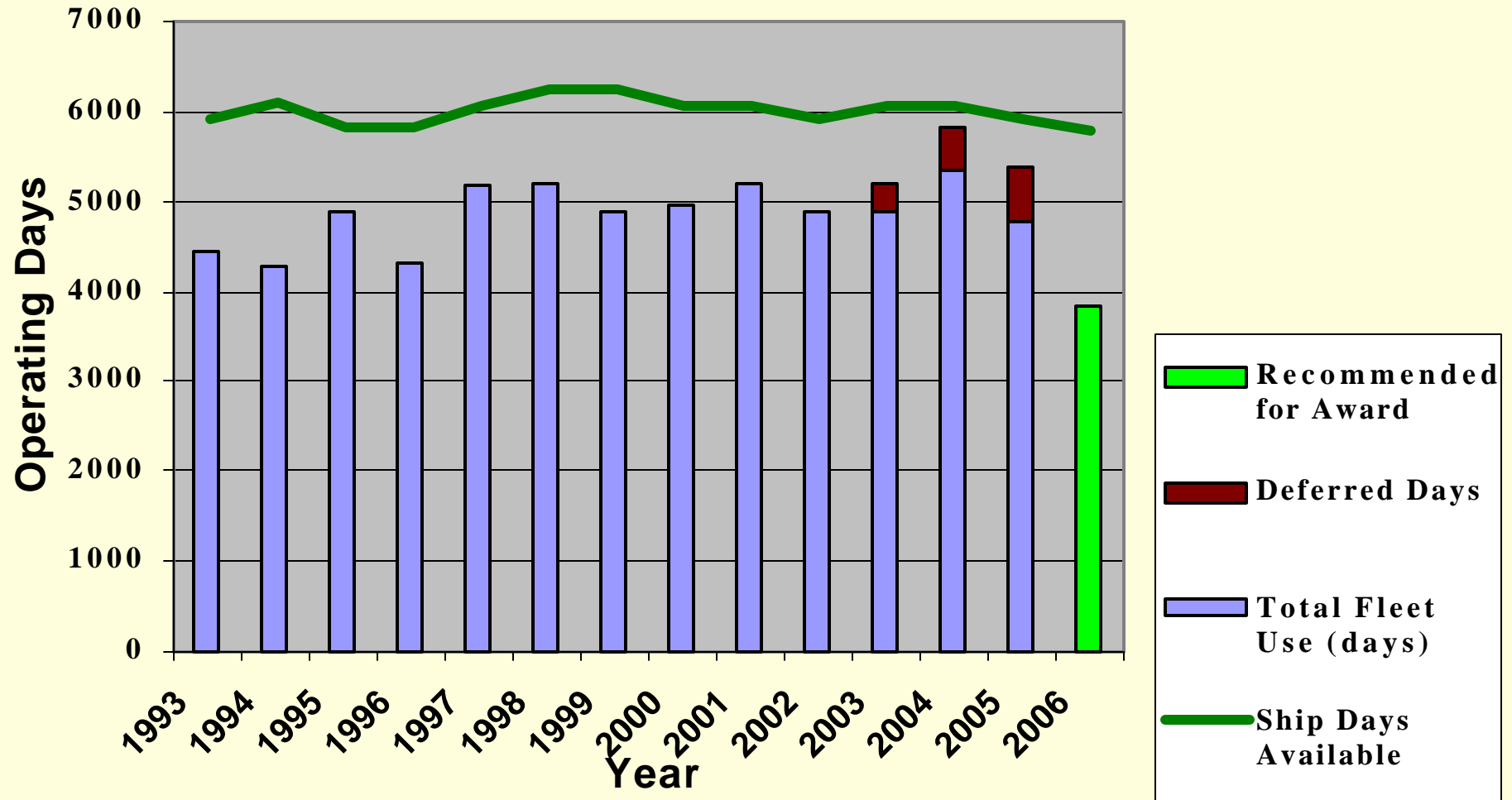
Ships Available vs. Ships Needed



2002 - 2006 UNOLS Fleet Operating Days and Co



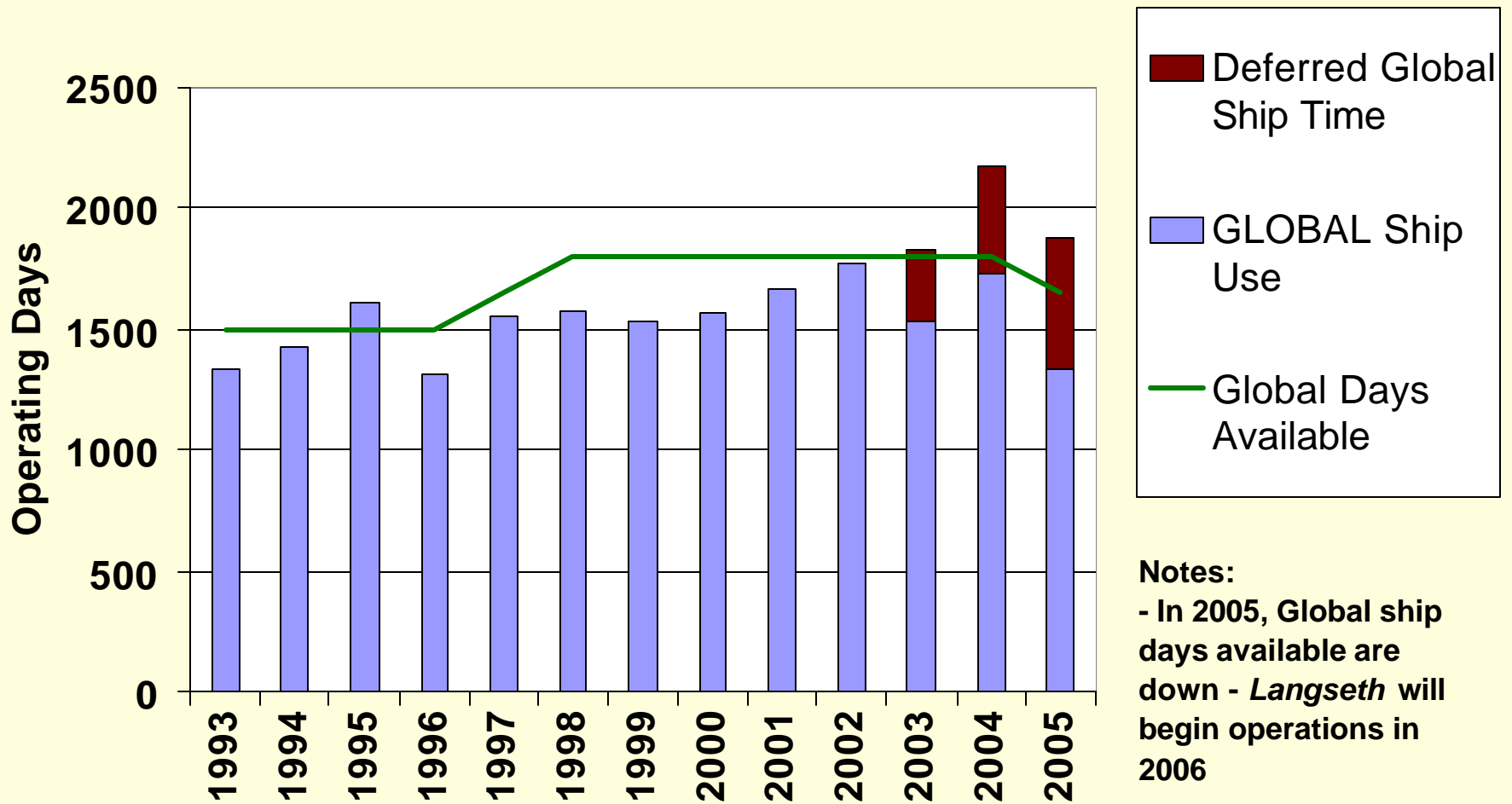
UNOLS Fleet Utilization



“Recommended for Award” includes the estimating factor of 1.35% x STR days for NSF, Navy, and Other ship time. NOAA time does not include the estimating factor.

6/6/05

Global Ship Utilization (1993 - 2005)



4/13/05

Additional Information Needed

- Refined daily rate estimates from ship operators
- Recommendations from operators regarding:
 - lay-ups and lay-up cost estimates
 - vessel retirements vs. lay-ups
- Recommendations from community regarding:
 - the balance between facilities and science budgets
 - the balance between mid-size infrastructure budget and current operations/science budgets
- Updated information about the level of agency ship operations budgets
- **Community Feedback Form:**

http://www.unols.org/projects/fleet_budget_impacts.asp

Fleet Renewal Activities

Not including DESSC

- **Regional Class Acquisition.**
- **Ocean Class Acquisition.**
- **Global Class SMR Development.**
- **Ocean Observatory Facility Needs.**
- **Input to FOFC Update of Fleet Plan.**
- **Update UNOLS Fleet Improvement Plan.**
- **Examine ADA requirements for planned inclusion into SMRs.**
- **Retirement Dates/SLEP report completed.**
Included comparison of present vessel capabilities to SMRs of Regional and Ocean Classes.

Regional and Ocean Class

Regional Class:

- Engaged in acquisition process (ongoing)
 - Provided feedback to NSF (IPT representation, Operational capabilities and Performance Rqmts)
 - Community input via two volunteers as advisors for Technical Evaluation Review Panel (TERP) and 6 volunteers for technical advice to design/build teams and TERP.

Ocean Class:

- Engaged in acquisition process:
 - Visited X-Craft (17 November 2004)
 - Provided a recommendation on hull form (Feb 2005)
 - Legislation in both houses for construction of 4 vessels
 - Navy Timeline:
 - Operator Selection – 2nd Quarter, FY05????
 - IPT and Shipyard award by end of FY05????

General Purpose Global Vessel SMR

Mid Life Refit considerations



2006 - THOMPSON



2011 - REVELLE

- **Steering Committee formed to update Global Vessel General Purpose SMRs has started work.**
- **Incorporate Heavy Lift considerations to address ocean observatory and long coring needs.**
- **Community On-line Survey regarding science needs – coming soon.**



2012 - ATLANTIS

Other Ship News

- **R/V *Ewing* being replaced by R/V *Marcus Langseth*.**



- Conversion taking place.
- Begin operations about the middle of 2006.

- **National Oceanographic Seismic Facility and Oversight Committee (modeled after DESSC):**

- Terms of reference drafted
- Membership: 9 voting members and will include representation from 3D and 2D seismic, OBS and PASSCAL experience, and General Oceanography. Nomination suggestions in progress.
- Membership vote at Annual Meeting (October 2005)

Other Ship News

- Decommission of R/V GYRE in August 2005
- BBSR plans to acquire R/V SEWARD JOHNSON II and retire the R/V WEATHERBIRD II. UNOLS has recommended that on completion of acquisition and successful NSF ship inspection, the renamed vessel be designated a UNOLS vessel.
- CAPE HENLOPEN Replacement Vessel begins operation in 2006.



Ocean Observatory Facility Needs

- Incorporated UNOLS working group recommendations into UNOLS Fleet utilization projections (April 2004)
- Initiated discussions with ORION office:
 - ORION/ESC is starting to develop an Implementation Plan, target completion: late summer 2005
 - FIC will keep abreast of Observatory facility needs and timelines

Vessel Retirement Dates and SLEP Estimates

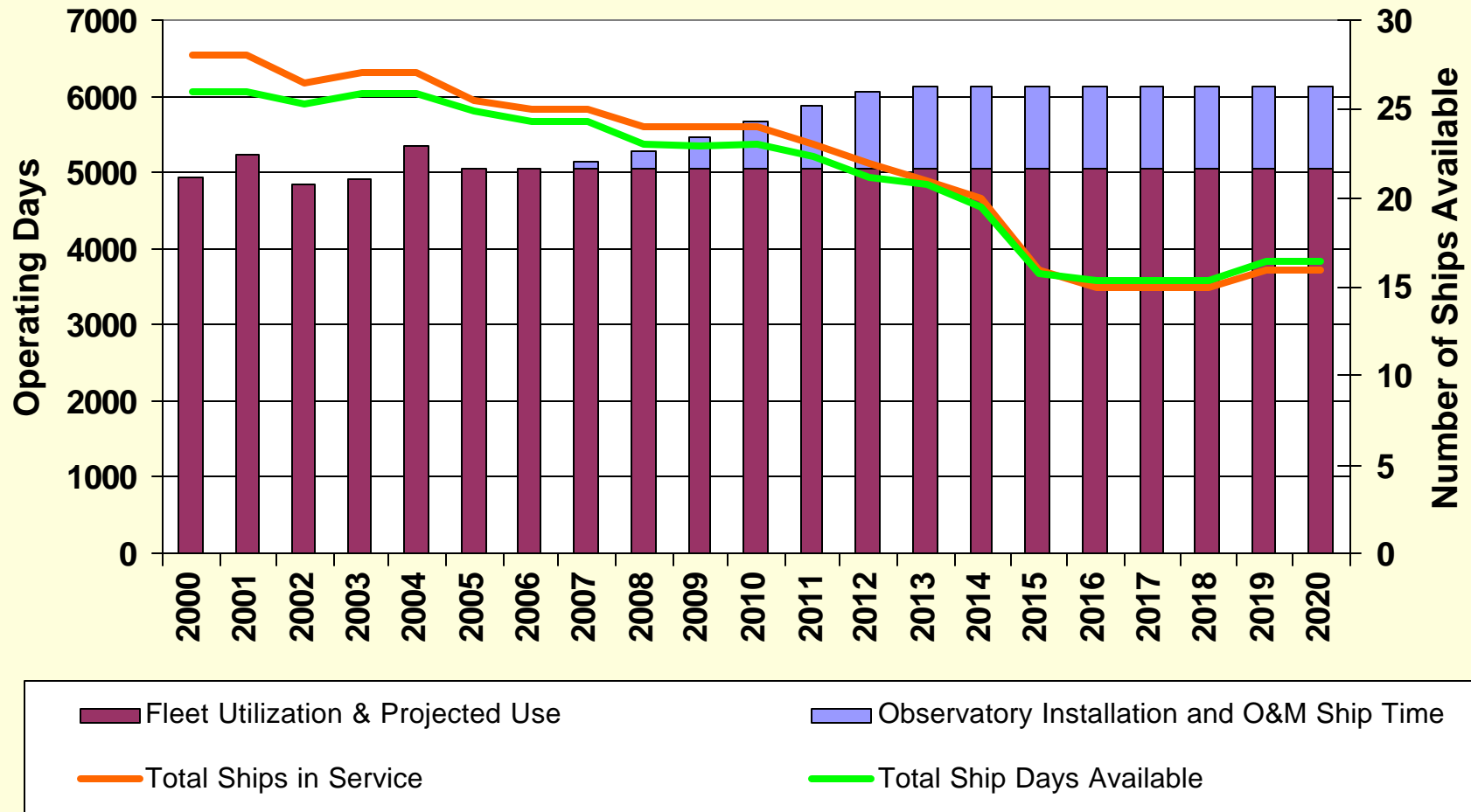
- Eleven UNOLS ships >40 m have retirement dates prior to 2020 and are potential candidates for a SLEP
- Most of the ships (>40m) can have their lifetimes extended 5 and possibly 10 years for an estimated cost of \$1.025M-\$5M per ship for a 5-year life extension.
- Extension of retirement dates for most vessels <40m is not recommended.

UNOLS Fleet Improvement Plan Outline

- **Executive Summary / Intro**
- **Identify Future Science Initiatives** – includes major science disciplines, education & outreach, multidisciplinary programs, and Cross cutting initiatives.
- **Current Fleet Composition and Utilization Trends**
- **Future Fleet Projections**
 - Addition of other facility projections (Ocean observatory, etc)
 - Other Facilities – aircraft, deep submergence facilities
 - Shortfalls and expansions beyond the FOFC Plan
 - Future Fleet Composition
- **Fleet Budget Projections and Requirements**
- **Recommendations**

Draft – September 2005

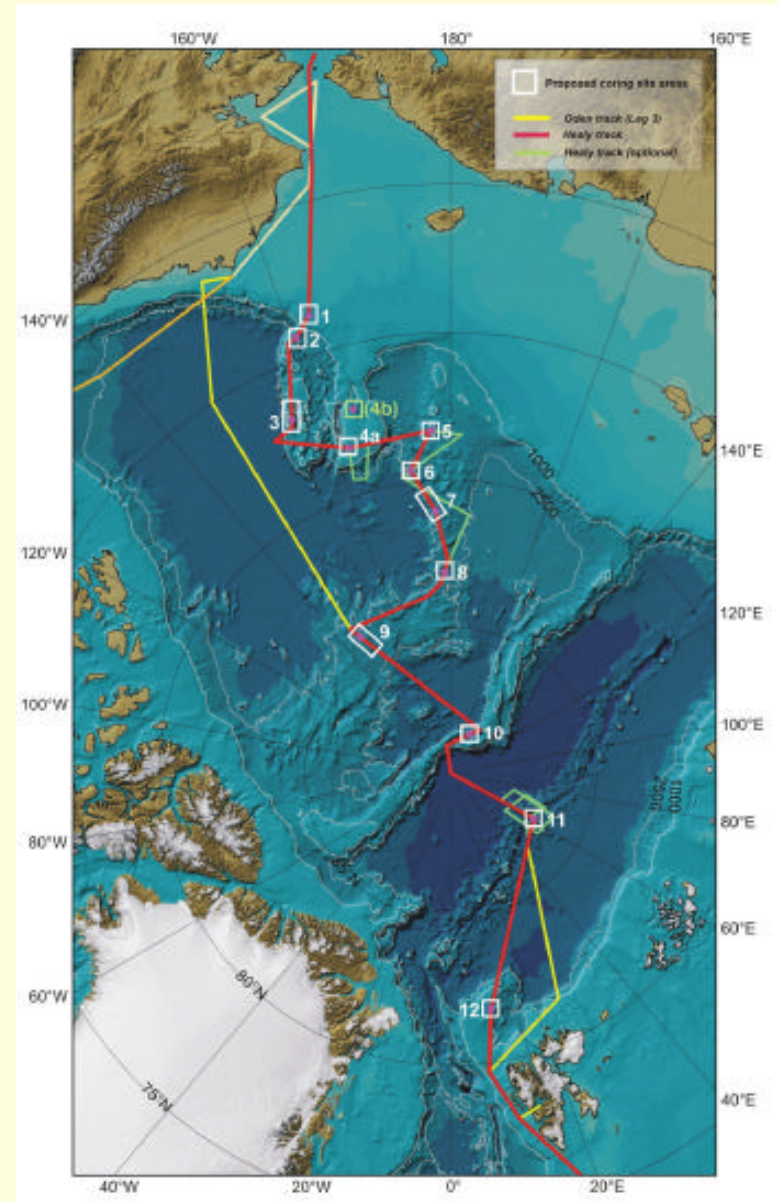
UNOLS Fleet Utilization and Projections (2000 - 2020)



The total ship days include the construction of all new Regional (3) and Ocean Class (4) Ships as identified in the FOFC Plan. See additional notes on following slides.

Arctic Icebreaker Coordination

- *Healy* u/w on June 3rd for three missions in the Arctic
 - HLY0501- June 13 - 27
Healy-Oden Trans-Arctic Expedition (leg1)
 - HLY0502- June 27 - July 26
NOAA Ocean Exploration - improved census of life in the Canada Basin
 - HLY0503- Aug 5 - Sept 30
Healy-Oden Trans-Arctic Expedition (leg2)
The Trans-Arctic Cruises will employ coring, MCS, side-scan and chirp mapping systems. Leg two will be a two ship expedition with the Swedish icebreaker Oden.
 - AICC Chair Margo Edwards is a Co-PI on leg one.



Arctic Icebreaker Coordination

- **President's budget request for icebreaker operations support was included in the NSF budget for FY2006.** Many decisions about future icebreaker funding, operations, and major overhaul/replacement will be affected by the final appropriations action on this budget proposal, which is still pending.
- **AICC provided comprehensive review and comments on two draft versions of a "Mission Analysis" report,** which is the first step in a procurement process that could lead to major overhaul or replacement of the *Polar Star* and *Polar Sea*.
- **Improvements to *Healy* instrumentation, outfitting, and cruise planning information**
 - Prioritized recommendations from 2004 debriefs.
 - Develop short and long-range plans for ice data needed on *Healy*.
 - Review *Healy* cruise planning manual (UNOLS Office assisting with manual/web pages)
 - Review new lab layouts and make recommendation to NSF/USCG.
 - Recommend priorities for "2006" system upgrades
 - Recommendations regarding multibeam upgrade
- **Working with Arctic Communities**
 - Review NSF guidelines for working with arctic communities. (UNOLS Homepage)
 - Write an EOS article about native concerns.
 - Recommend to State Department that Barrow Arctic Science Consortium (BASC) be notified about foreign icebreakers coming into Barrow.

Aircraft for Oceanography



- **SCOAR** (Scientific Committee for Oceanographic Aircraft Research) is developing procedures and criteria for broader use and accessibility of aircraft
- Interact with NCAR-OFAP and ICCAGRA
- Set up procedures for designating new National Oceanographic Aircraft Facilities
- Define basic instrument suite for UNOLS ocean science aircraft
- Set up web-based CIRPAS request system
- Determine operational guidelines and safety standards for UNOLS NOAF aircraft'
 - NCAR –OFAP (Observing Facilities Advisory Panel)
 - CIRPAS (Center for Interdisciplinary Remotely-Piloted Aircraft Studies)
 - ICCAGRA (Interagency Coordinating Committee for Airborne Geoscience Research and Applications)

Other UNOLS Activities and Interests

Shipboard Over-the-Side Handling Systems - Manufacturer winch inspections and load handling system workshop. The study will be publicly available on the UNOLS website soon.

Quality Improvement - Post-cruise assessment process, Kilo Moana debriefs, application of “best practices” through RVTEC and RVOC

Community Engagement/Outreach

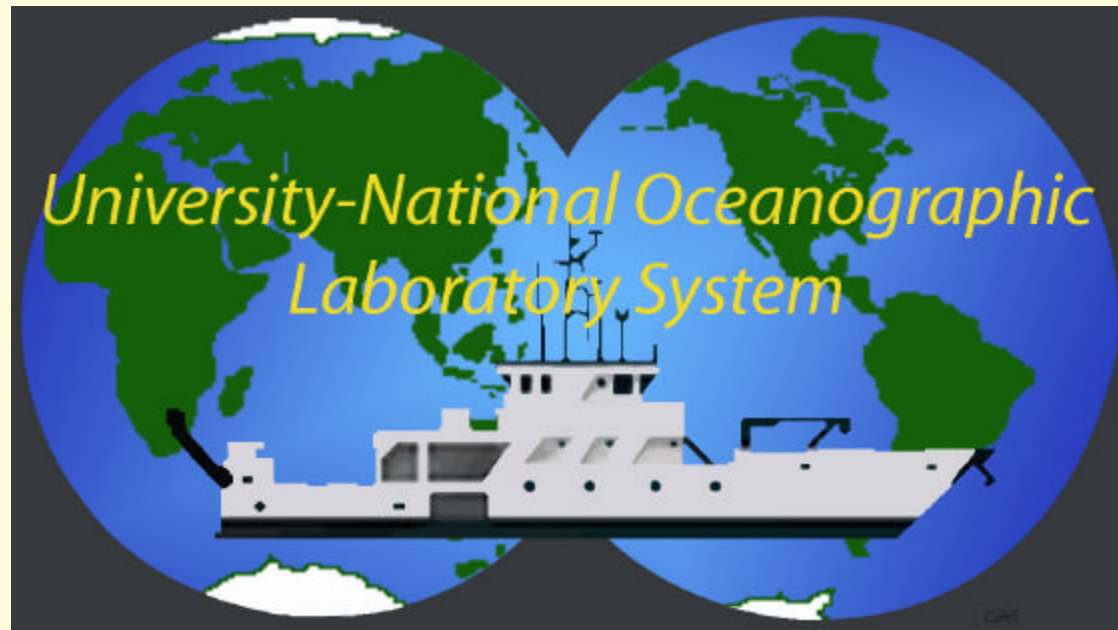
Marine Mammals and Acoustic Permitting Issues

Frequency Spectrum Management Issue

Research Vessel Security and new regulatory requirements
Ocean Class Vessel Security Plans.

Competition of UNOLS Office - MLML plans to compete.

Questions ???



Revised Retirement Dates

Preliminary Findings

- The SLEP estimates focus on maintaining the ship in an operational condition without enhancing the scientific capabilities of the platform.
 - Existing Intermediate Class and Regional Class vessels fall short of meeting the Ocean Class and Regional Class SMRs, respectively.
- Maintaining the current UNOLS fleet vessels beyond their designed service life will significantly impede the advance of ocean science relative to that possible with new ships that meet the SMR specifications.