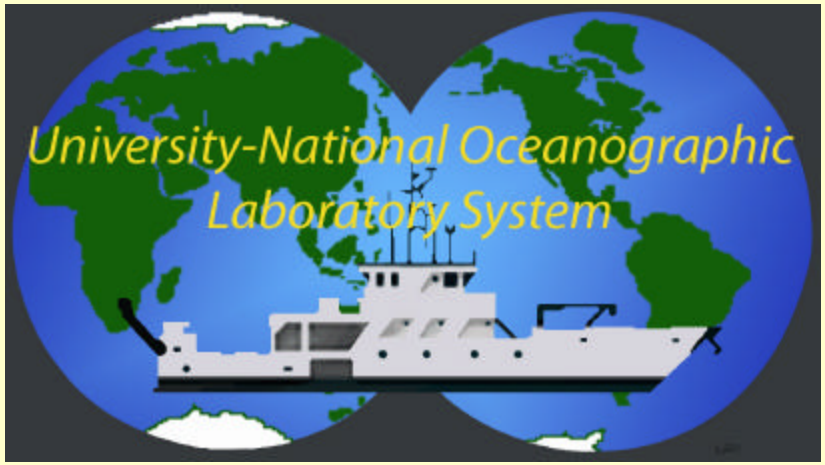
University-National Oceanographic Laboratory System

UNOLS Report to RVTEC



November 8, 2005

UNOLS 2005 Major Activities

(Committee activities have not been included as they will be addressed separately by RVTEC Liaisons)

1. **Provided recommendations on budget shortfalls and impact on 2006 ship use**
2. **2006 Ship Scheduling Process and Results**
3. **Marcus Langseth Seismic Oversight Committee**
4. **Establish ADA Guidelines for Research Vessels**
5. **UNOLS Briefing Package**
6. **UNOLS Office Review**
7. **Fleet Renewal Activities and Status Changes**
   - **Ocean Class hull evaluation and recommendation**
   - **Global Class SMR Development**
   - **Decommissioning and transfer**
   - **Fleet Improvement Plan**
8. **UNOLS Calendar and Booth**

1. Budget Shortfalls and Impact on 2006 Ship Use

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 (Committee Tasks on next slide)
- **Spring 2005**
  - **Identified Funded Projects and defined magnitude of problem.**
  - **Agency priorities identified and budget levels refined.**
- **UNOLS recommendations provided to Larry Clark on July 18, 2005, prior to summer scheduling.**

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).

<u>The plan should provide the following:</u>

a. A short-term recommendation to address the 2006 budget shortfall.

b. Provide long-term scenarios (3 years) for ship lay-ups and retirements.

UNOLS Recommendations on Budget Shortfalls

Short-term:

- Lay-up the *Alpha Helix*, one Intermediate Class vessel on the west coast, one Intermediate Class vessel on the east coast and one Global or Ocean Class vessel. The *Weatherbird II* should be retired as it is replaced by Seward Johnson II.
- Schedulers should be careful to create schedules that do not leave the vessel stranded in remote locations or rendered unworkable by the lack of approval for funding a particular project.
- The choice of actual ships to be laid up in 2006 should be made by Agency Program Managers based on criteria that maximize the amount of field work accomplished within the budget, meet any ship specific science requirements, and fairly distribute the pain of lay-ups among operating institutions.
- The minimum number of ships should be put into a lay-up for an entire year (as opposed to partial lay-ups for a larger number of vessels)
- Other methods for fleet-wide cost savings should also be explored thoroughly.

UNOLS Recommendations on Budget Shortfalls

Long-term assuming level funding for next four years:

What should be the role of early retirements for meeting near-term budget reductions?

- Options for meeting near-term budget shortfalls could include rotating lay-ups or some early retirements. Retirement dates could be accelerated by one or two years to devote the funds saved directly to fleet renewal or short term operational deficits.

How can UNOLS plan long term for fleet size and composition?

- PIs should not have to wait more that a year to execute funded field programs.
- We recommend that the ratios between funds being set aside for current operations and renewal funding be examined.
- In planning for new ships, an emphasis needs to be placed on the future day rates of the ships in order to avoid the natural tendency to want to upgrade the capabilities of each new ship regardless of the overall balance in the fleet.

What steps can UNOLS take to ensure implementation of long-term fleet plans?

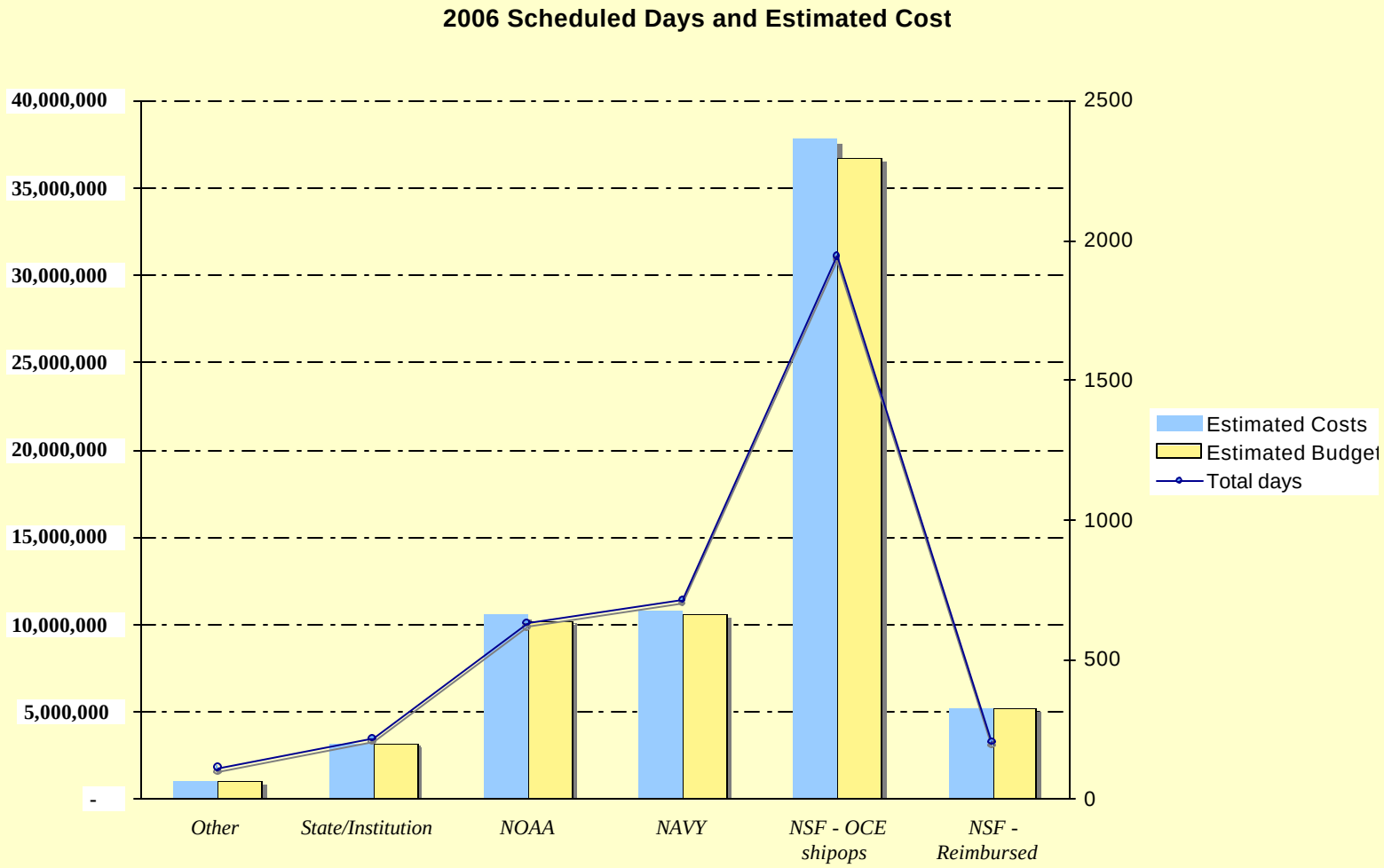
- UNOLS should continue to work closely with these organizations *(CORE and JOI)* and the Federal Oceanographic Facilities Committee (FOFC) to ensure coordinated long-term fleet planning and funding and should work proactively to ensure that the expertise of the UNOLS members and their sources of information are available to policy makers.

2. 2006 Ship Scheduling Process and Results

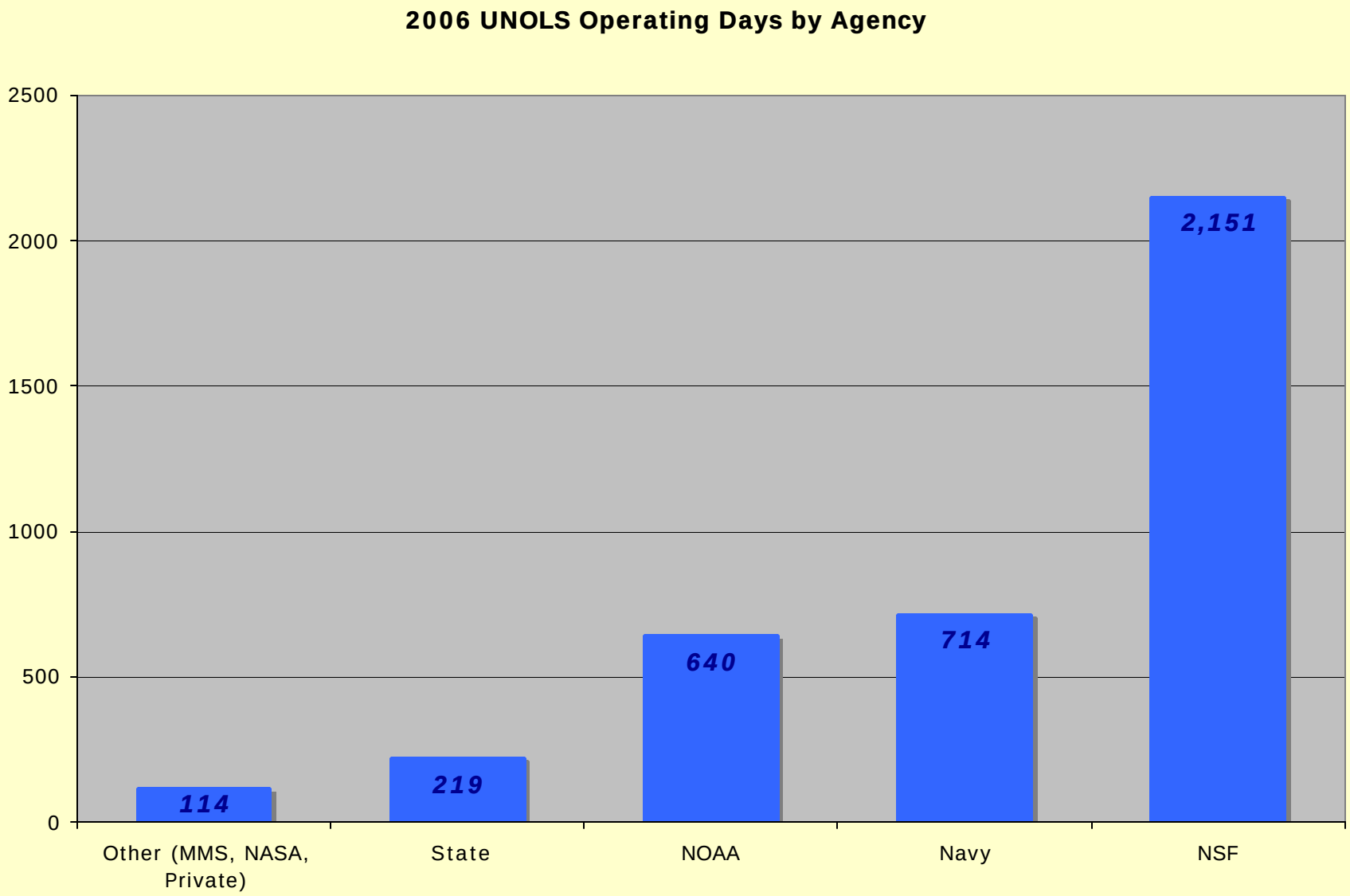
2006 Ship Scheduling Process and Results

- The Ship Scheduling Committee held its July and September meetings in order to move towards viable 2006 operating schedules.
- ONR advised large ship schedulers that NSF and ONR had come to an agreement to use rotating extended maintenances periods in home port (rather than “laying-up” these vessels)
- A large portion of the shortfall in funds and ship days will fall upon intermediates and regional class vessels:
  - *Alpha Helix* will be in lay-up status
  - *Marcus Langseth*, *Oceanus*, *Endeavor*, *New Horizon* and *Wecoma* are working on the premise of partial lay-ups.
  - Many other vessels are operating well below optimal utilization.
  - Some institutions will receive a monetary supplement from NSF to help with crew retention.

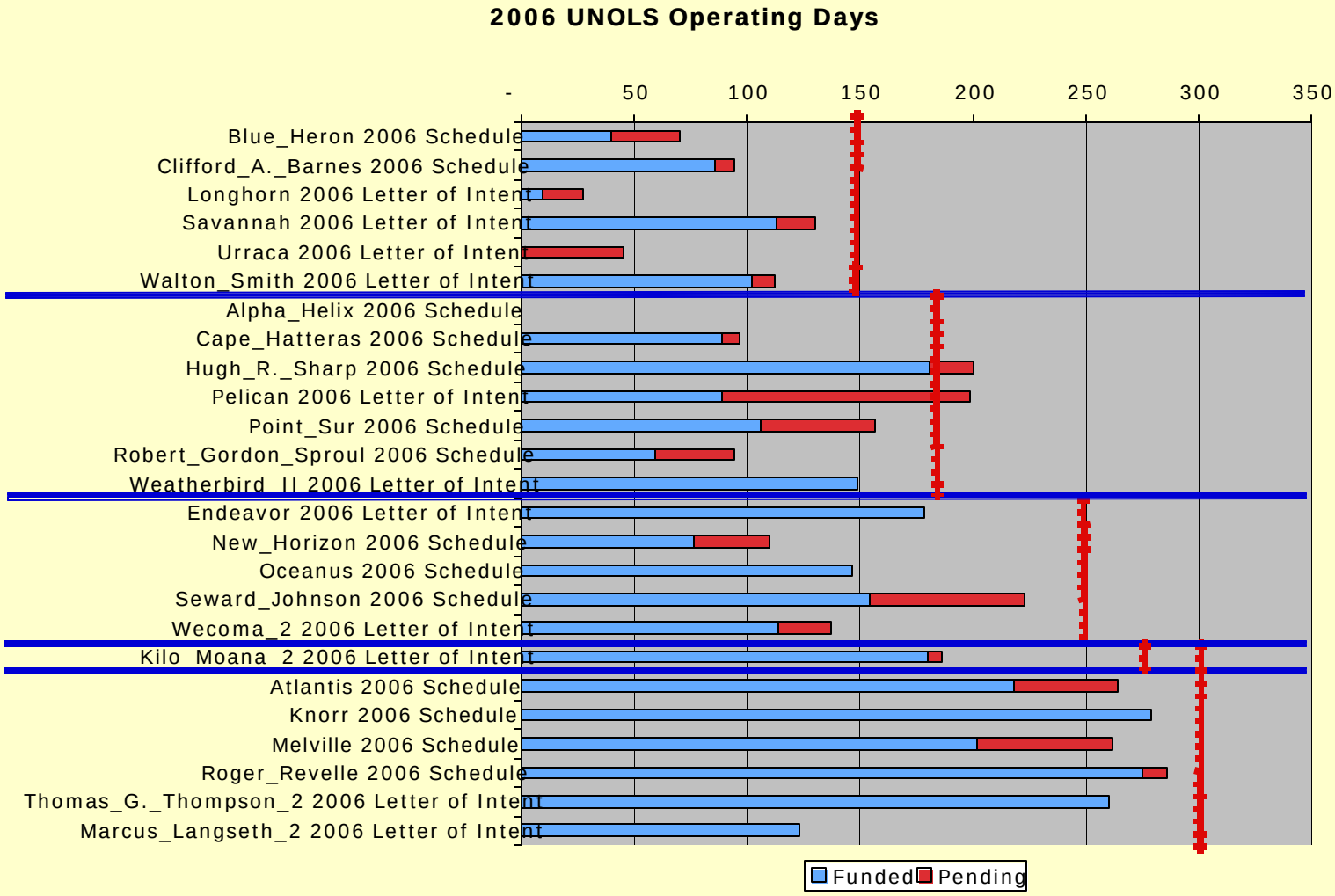
2006 Costs versus Estimated Budgets



2006 Operating days = 3829

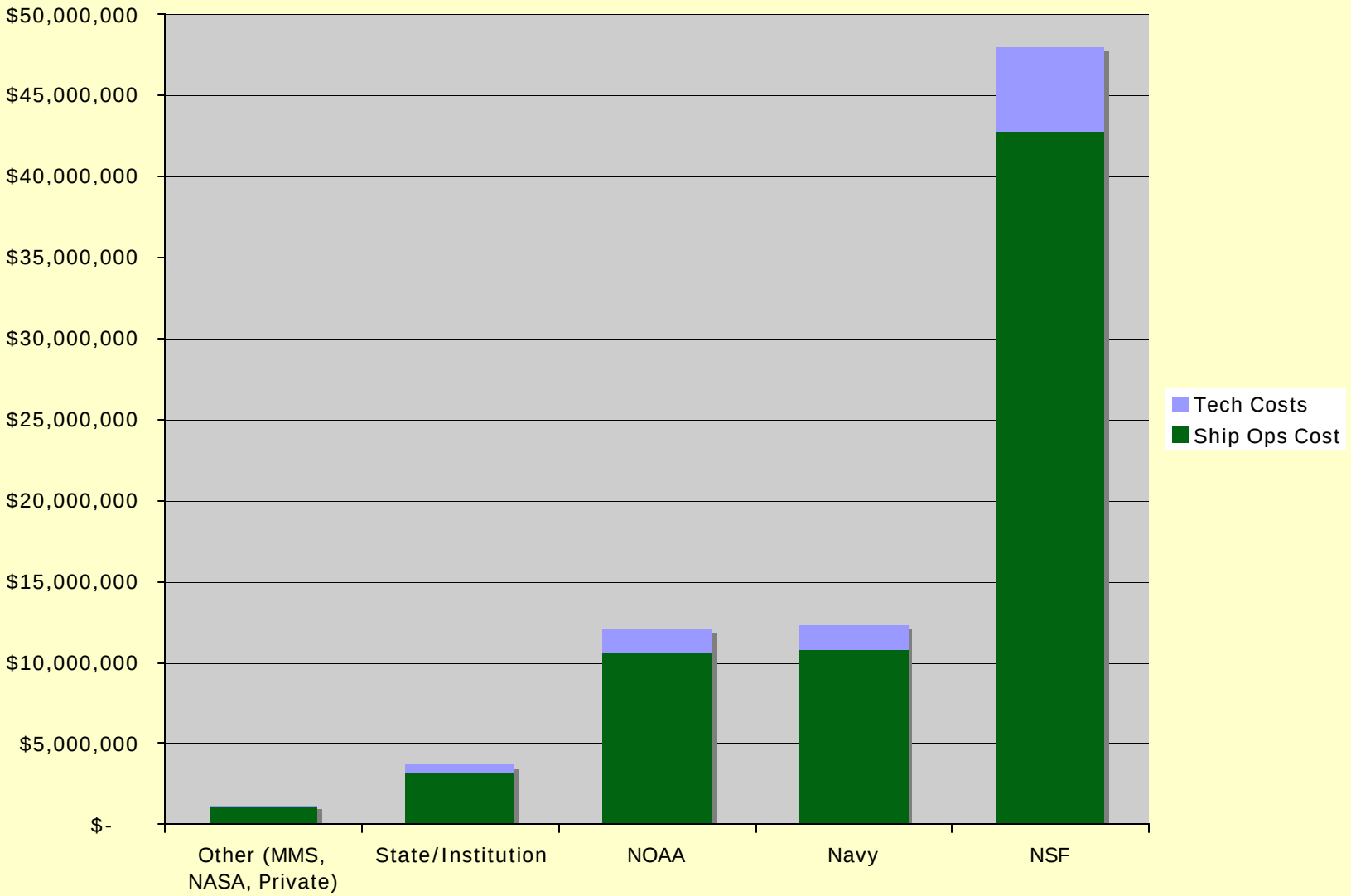


2006 UNOLS Ship Utilization

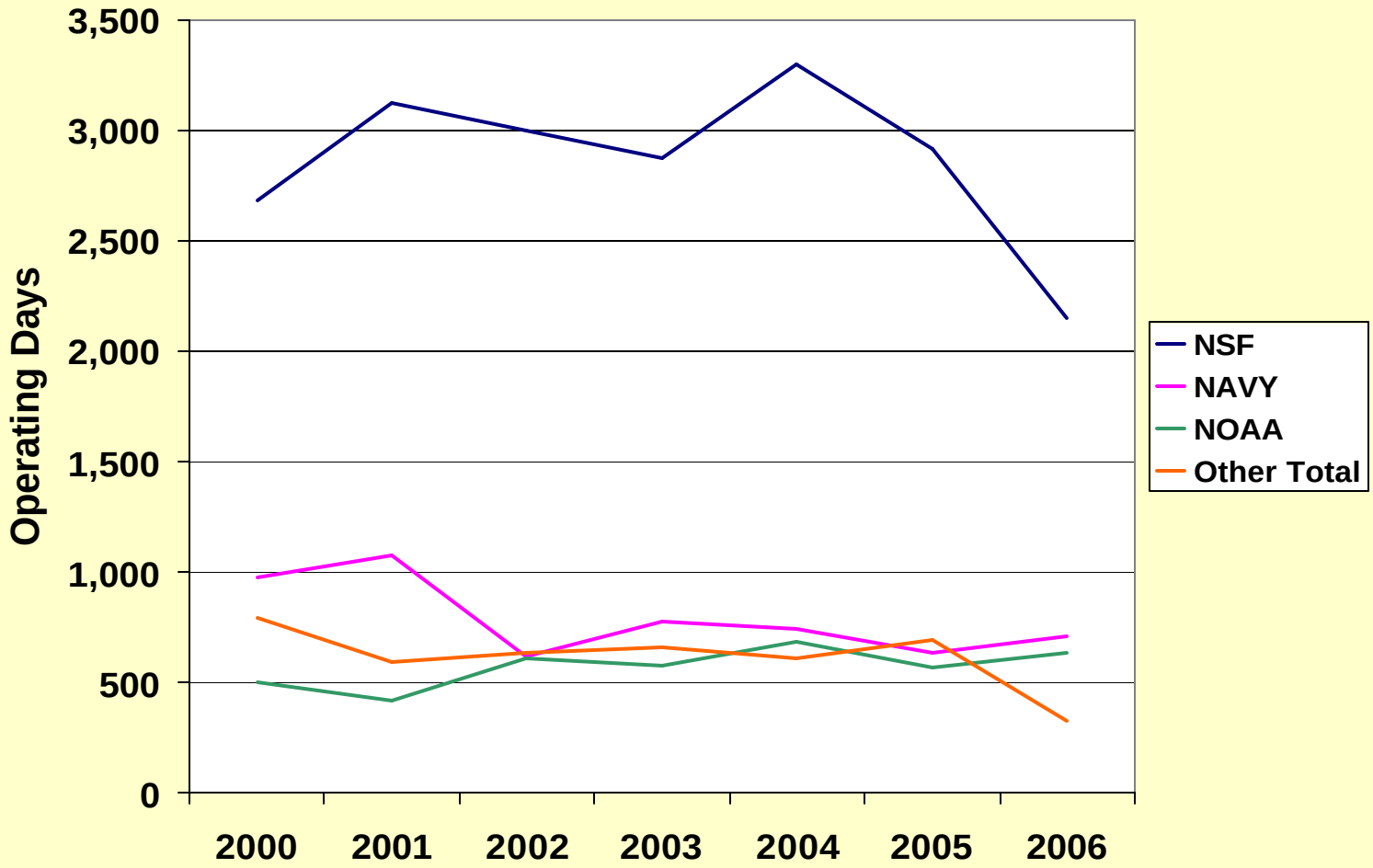


Note: In the FOFC fleet renewal plan Ocean Class utilization is nominally 275 days, whereas the Global class utilization target is about 300 days. Regional class utilization is 180 - 200 days and local vessels are about 150 days.

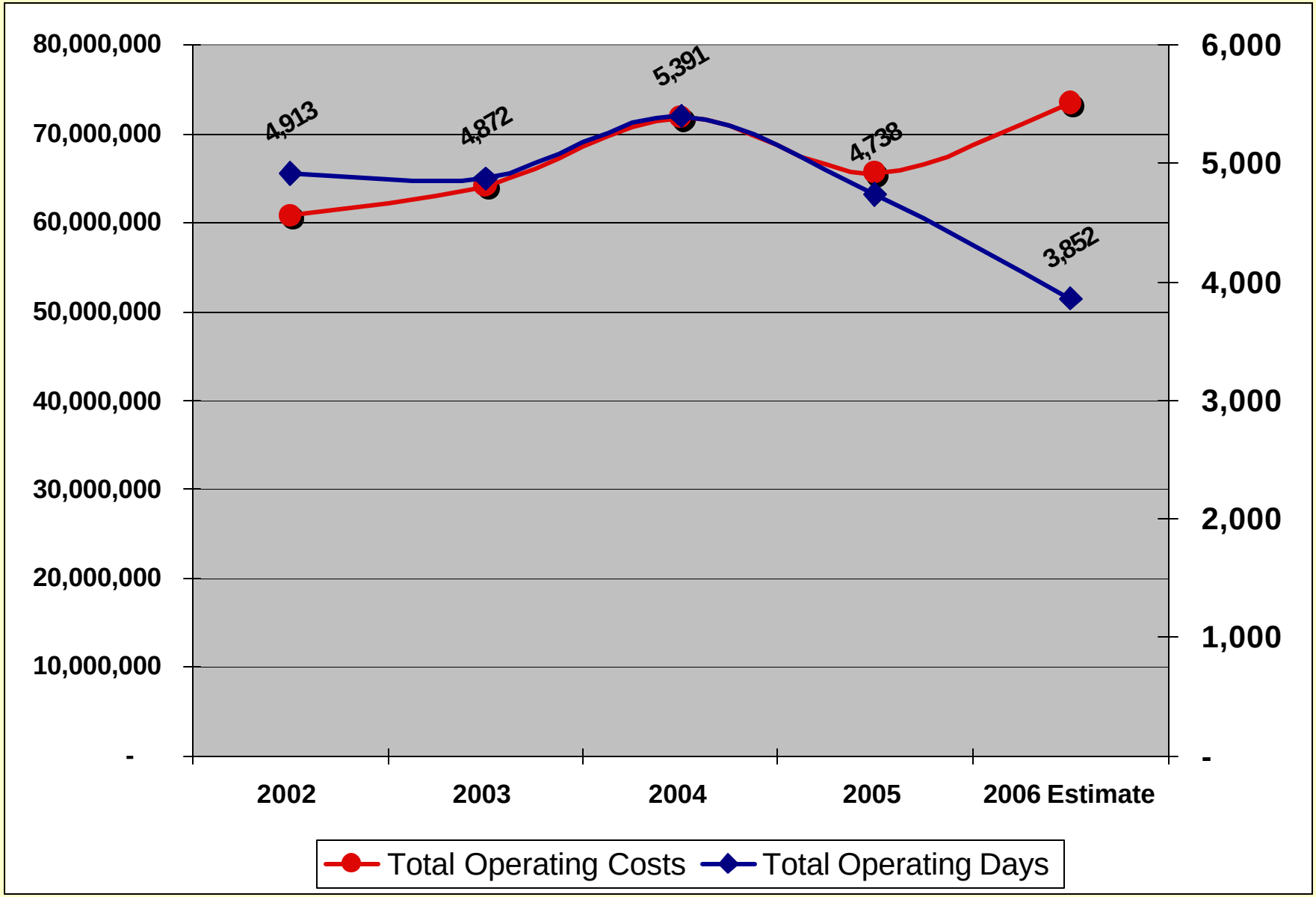
2006: $77M in Ship Ops & Technician Costs



UNOLS Fleet Utilization (2000-2006)



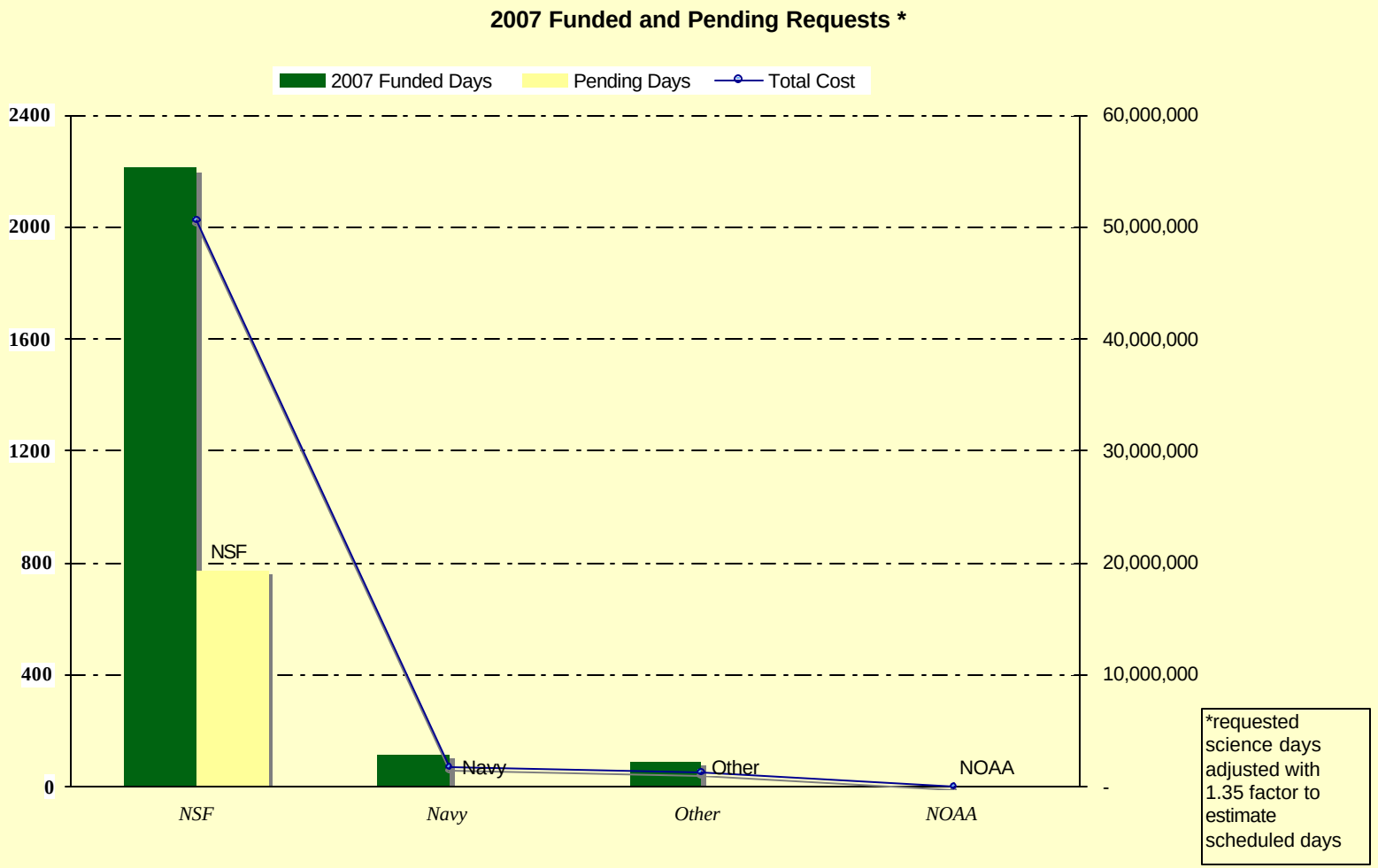
2002 – 2006 UNOLS Fleet Operating Days and Cost

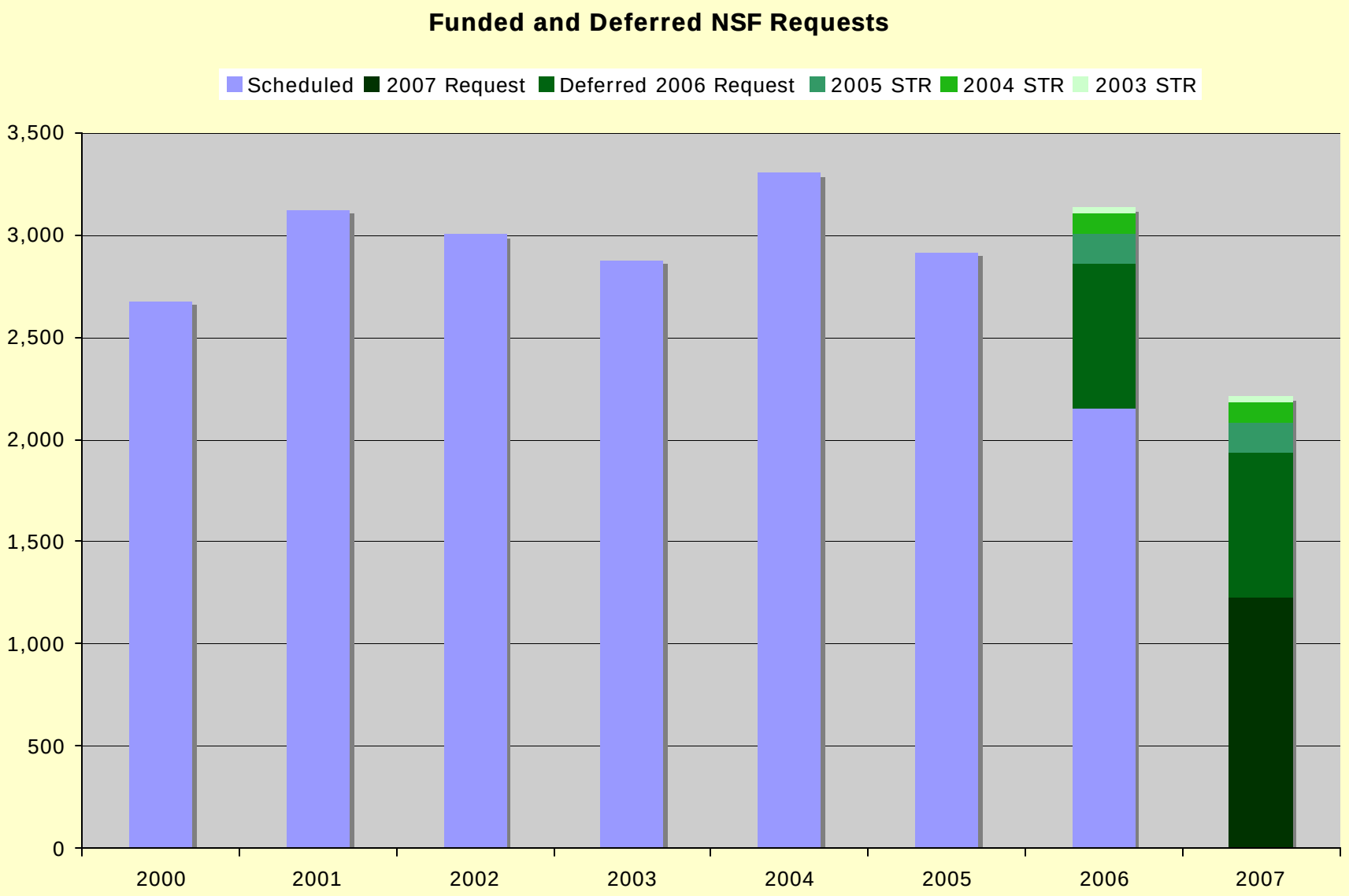


Ship Scheduling Miscellaneous Items:

- Some activity has occurred for UNOLS to play a small role in DART deployments in 2005/2006. NOAA/NDBC has taken a stance that once schedules have been developed, then they can better decipher opportunities to insert work for deployments, turnarounds, and repairs.
- Large ship schedules still have questions marks, which can only be resolved with the final congressional appropriations for the Navy's plus-up and NOAA ship charters.
- The NSF director provided OCE with approximately $3M to cover increases in fuel costs, which will help prevent deferring even more field programs into 2007.
- Schedules are slowly moving from the Letter of Intent to posted preliminary 2006 schedules for public viewing (20 schedules posted).

2007 Scheduling




Funded and Deferred NSF Requests
Scheduled
2007 Request
Deferred 2006 Request
2005 STR
2004 STR
2003 STR
3,500
3,000
2,500
2,000
1,500
1,000
500
0
2000
2001
2002
2003
2004
2005
2006
2007

Summary - 2006 Budget vs. Cost and Future Ship Time Initiatives

- Projected budgets are now fairly close to projected 2006 scheduled operations.
  - Appropriations are not final
  - Fuel costs are big unknown with huge impact
- Further evaluation of budget impacts on long term utilization projections
- Additional analysis of delayed access to the sea and impact on seagoing science.

3. *Marcus Langseth* Science Oversight Committee (MLSOC)

Marcus Langseth Science Oversight Committee (MLSOC)

- A New UNOLS Committee was formed to oversee Science and Ship Operations for a National Oceanographic Seismic Facility (R/V *Marcus Langseth*)– Membership approval October 14, 2005
- The UNOLS Council will approve the UNOLS designation of the vessel and National Facility when appropriate.
- The UNOLS Chair will appoint the initial members of the *MLSOC* in consultation with the UNOLS Council based on our committee's recommendations.

Background

- LDEO acquired a modern commercial 3D seismic vessel to replace *Ewing*, now renamed the *R/V Marcus Langseth*
- A *Ewing* Replacement Oversight Conversion Committee (EROCC) chaired by Tom Shipley is providing science and operator input to the conversion process.
- The *Langseth* will be operated as a UNOLS Vessel AND as a National Oceanographic Facility
- The science community and NSF desire a “DESSC like” oversight committee that would provide advice to LDEO and the funding agencies regarding the operation of this facility.

Charge to MLSOC

- **Provide advice on scientific programs.**
- **Forecast future operations locations.**
- **Provide advice on scheduling issues.**
- **Address user concerns.**
- **Review technical capabilities.**
- **Monitor issues related to permitting.**
- **Encourage technology expansion and upgrades.**
- **Reporting on activities and recommendations**
- **Meet twice a year.**

MLSOC Membership

- 9 voting members
  - 3D and 2D seismic, including industry operations and data acquisition expertise
  - OBS and PASSCAL experience
  - General Oceanography including:
    - Coring, ROV ops, Moorings, Phys/Bio/Chem Oceanography, General Over-the-side ops
    - Mapping, Observatories
- Ex-Officio RVTEC and RVOC reps, probably from LDEO
- Other Ex-Officio representatives from LDEO
- Participation by Federal Agency representatives
- Nominations were solicited from community

4. Americans with Disabilities Act (ADA) Guidelines for Research Vessels

Americans with Disabilities Act (ADA) Guidelines for Research Vessels

Background:

- NSF has indicated the need for new ship construction and ship conversion efforts to address ADA requirements.
- Vessels that support Federally funded academic research should be equipped and arranged as feasible to accommodate persons with disabilities.
- In turn, procedural guidelines to carry out shipboard operations by persons with disabilities are needed.

ADA Guidelines for Research Vessels

Tasks:

- Draft Preliminary ADA Guidelines for the Regional Class Acquisition effort. (Need ASAP)
- Convene a 2-day Community Workshop to define shipboard and procedural guidelines required to accommodate sea-going scientists with disabilities.
- Establish General ADA Guidelines for new ship construction/conversion.
- Draft procedural guidelines for at-sea research operations by seagoing scientists with disabilities.

ADA Guidelines for Research Vessels

Membership Suggestions:

- FIC Member - Terry Whitledge (UAF)
- Risk Manager - Dennis Nixon (URI)
- Safety Committee Rep
- Seagoing scientists with disabilities
- Ship Master
- Marine Superintendent
- Langseth Conversion Rep
- David Chapman (UDel)
- RVTEC Representative – ***Nomination Needed***

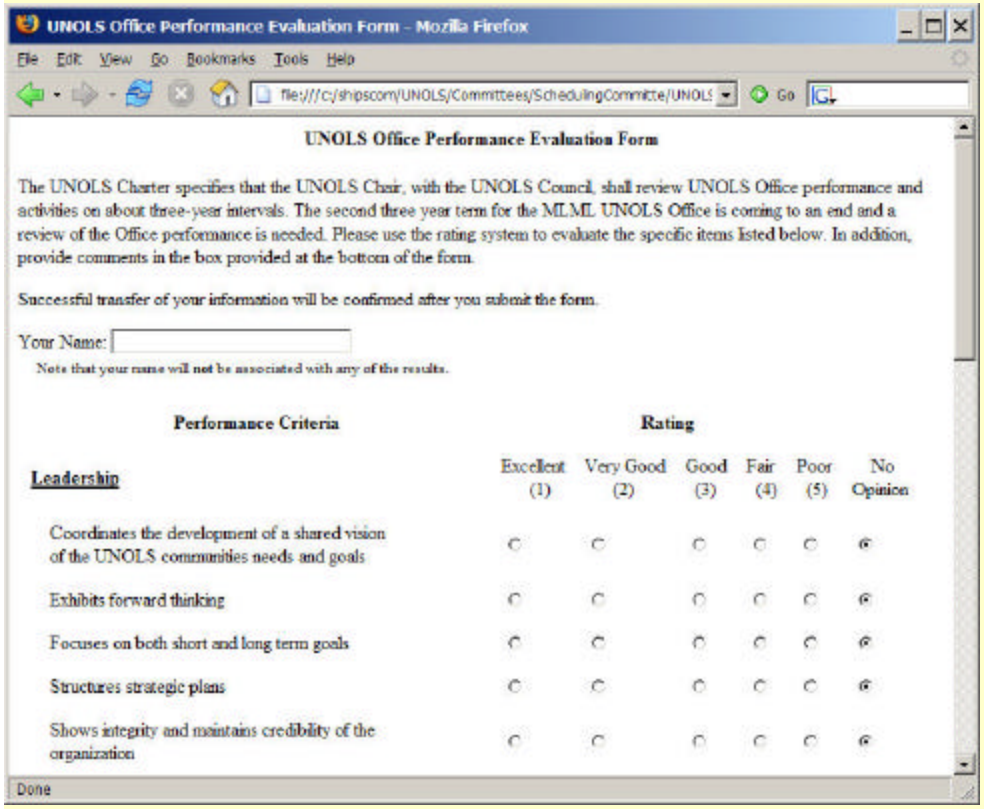
5. UNOLS Briefing Package

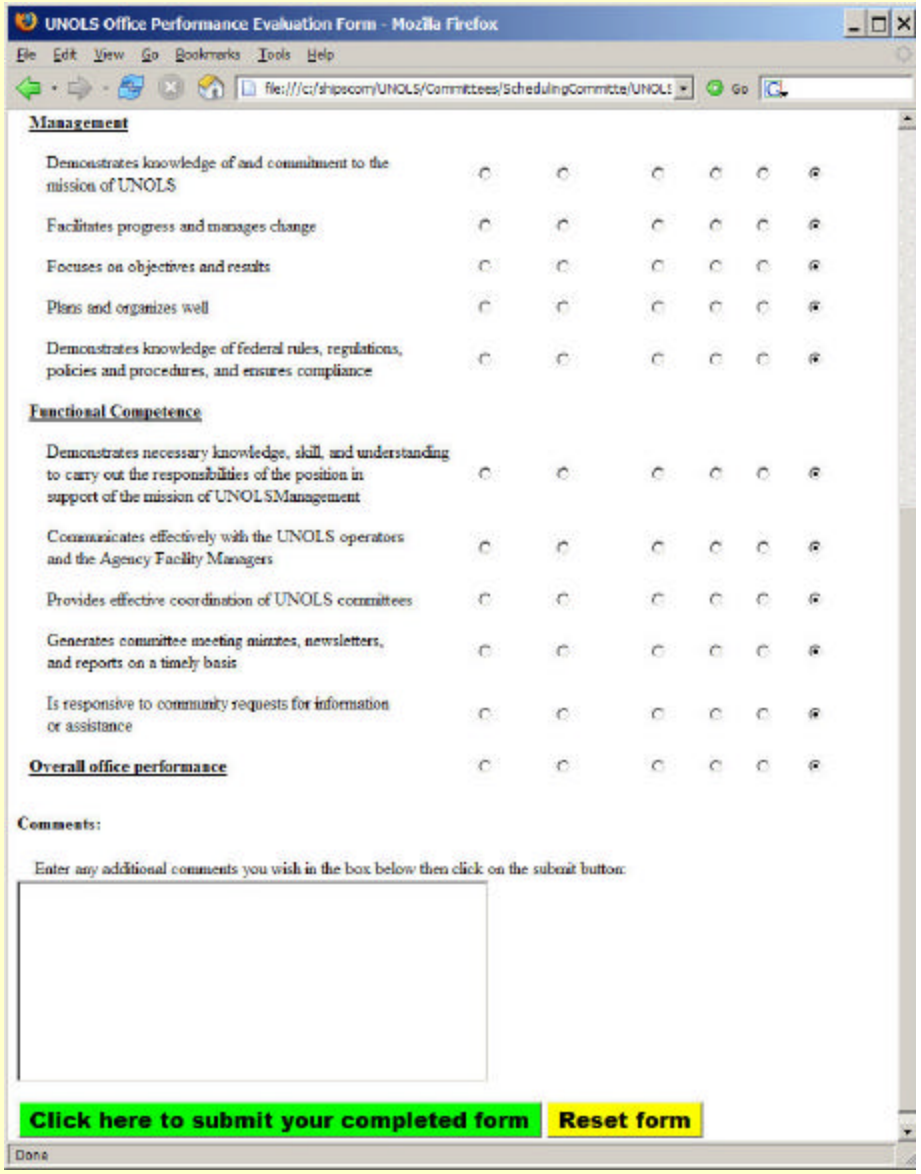
UNOLS Briefing Package Outline

1) What is UNOLS? Short description of what UNOLS is and what it does. Committee structure and tasks. The number of ships, their distribution, and retirement dates.
2) Status of the UNOLS fleet today in terms of:
    1) Current and near-term funding shortfalls and consequences
    2) Longer term oceanographic scientific community needs: OOI (Orion) and IOOS etc.
3) Status of funding
    1) What is in the budget? (Regional vessels)
    2) What's in the budget planning stages? (ARRV, OOI (Orion observatories)
    3) What's proposed? - longer range outlook (IOOS, Ocean Class vessels)
4) Discussion topics:
    1) How to stay on top of the planning process

6. The UNOLS Office Performance Evaluation

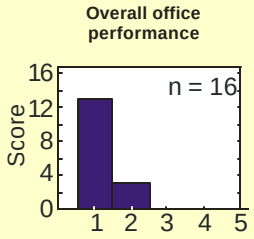
The UNOLS Office Performance Evaluation Form



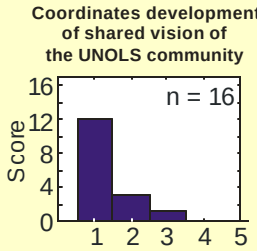


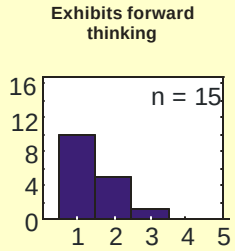
UNOLS Office performance Review Results - October 2005

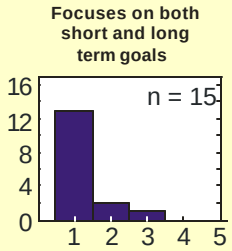
Overall Score = 1.2

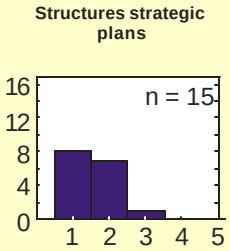


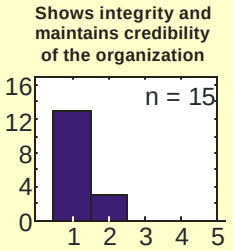
Leadership



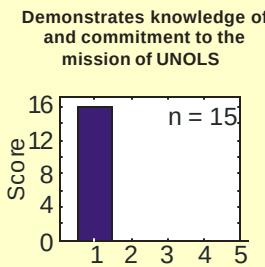


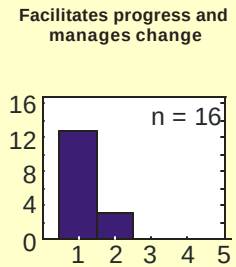


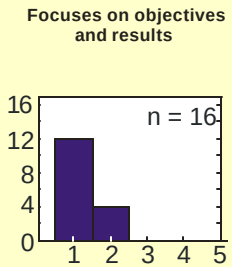


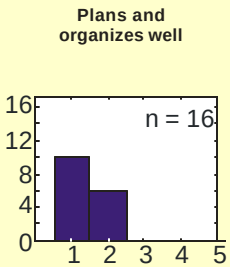


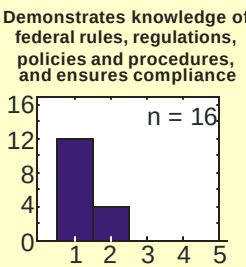
Management



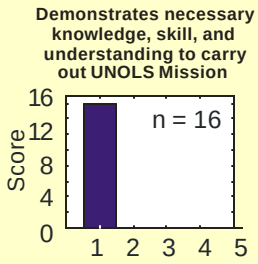


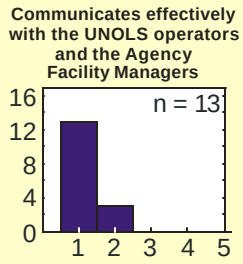


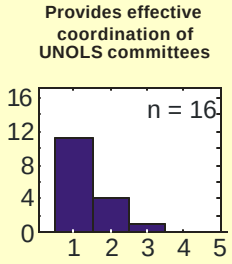


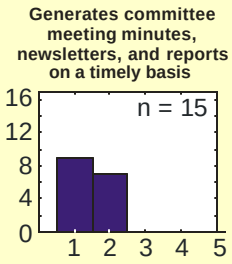


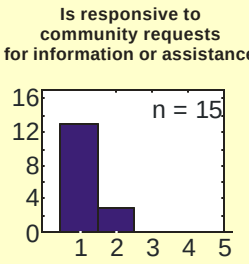
Functional Competence











Rating (1-Excellent 2-Very Good 3-Good 4-Fair 5-Poor)

Office Review
Conclusion and Recommendation

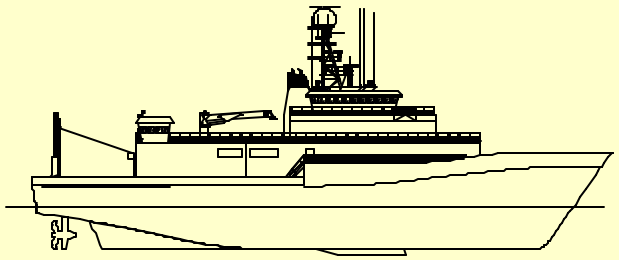
- Based on this evaluation, the Ad Hoc committee finds the performance of the UNOLS office to be excellent.
- The Council passed a resolution endorsing MLML to host the UNOLS office for a third three year term.

7. Fleet Renewal and Activities

Ocean Class

- UNOLS provided a recommendation to ONR on the Ocean Class hull form (Feb 2005)

  "Based on the information developed …, UNOLS has reached the conclusion that the next ocean class ships should be monohulls."



- UNOLS poised to provide feedback

General Purpose Global Vessel SMR Mid Life Refit considerations

2006 - *THOMPSON*

Global Class SMR Steering Committee Formed

Chair - Bruce Howe (UW)

2011 – *REVELLE*

2012 – *ATLANTIS*

Global Class SMR Update

- **Tasking:**
  - **Produce Global Class General-Purpose SMR document.**
  - **As a follow-on activity incorporate Heavy Lift considerations, and Seismic Capabilities**

- **Project Website:**
  <http://www.unols.org/committees/fic/global/global_smr.html>

- **Upcoming Activity -** Community Survey:
  - UNOLS On-Line Form - November 2005.
  - Review preliminary response at Fall AGU.
  - ***Community input requested!***

R/V Seward Johnson II Transfer

BBSR is moving forward with plans to acquire *R/V Seward Johnson II* and retire *R/V Weatherbird II*.

- Late October 2005 – *SJII* began a 4.5 month modification and maintenance period at Lyon's Shipyard in Norfolk, VA
- January 25, 2006 – *Weatherbird II* arrives at Lyon's shipyard for cross-decking.
- March 2006 – *SJII* begins operations from BBSR and support of BATS.

R/V Gyre Decommissioning

- After 32 years of service, the R/V *Gyre*, operated by Texas A&M, retired from the UNOLS Fleet in August 2005.

UNOLS Fleet Improvement Plan Outline

- **Executive Summary / Intro**
- **Identify Future Science Initiatives** – includes major science disciplines, education & outreach, multidisciplinary programs, and cross cutting initiatives. – **Why are Ships Needed**
- **Current Fleet Composition and Utilization**
- **Future Fleet Projections and Future Requirements**
- **Recommendations**

~ Working Draft Exists ~

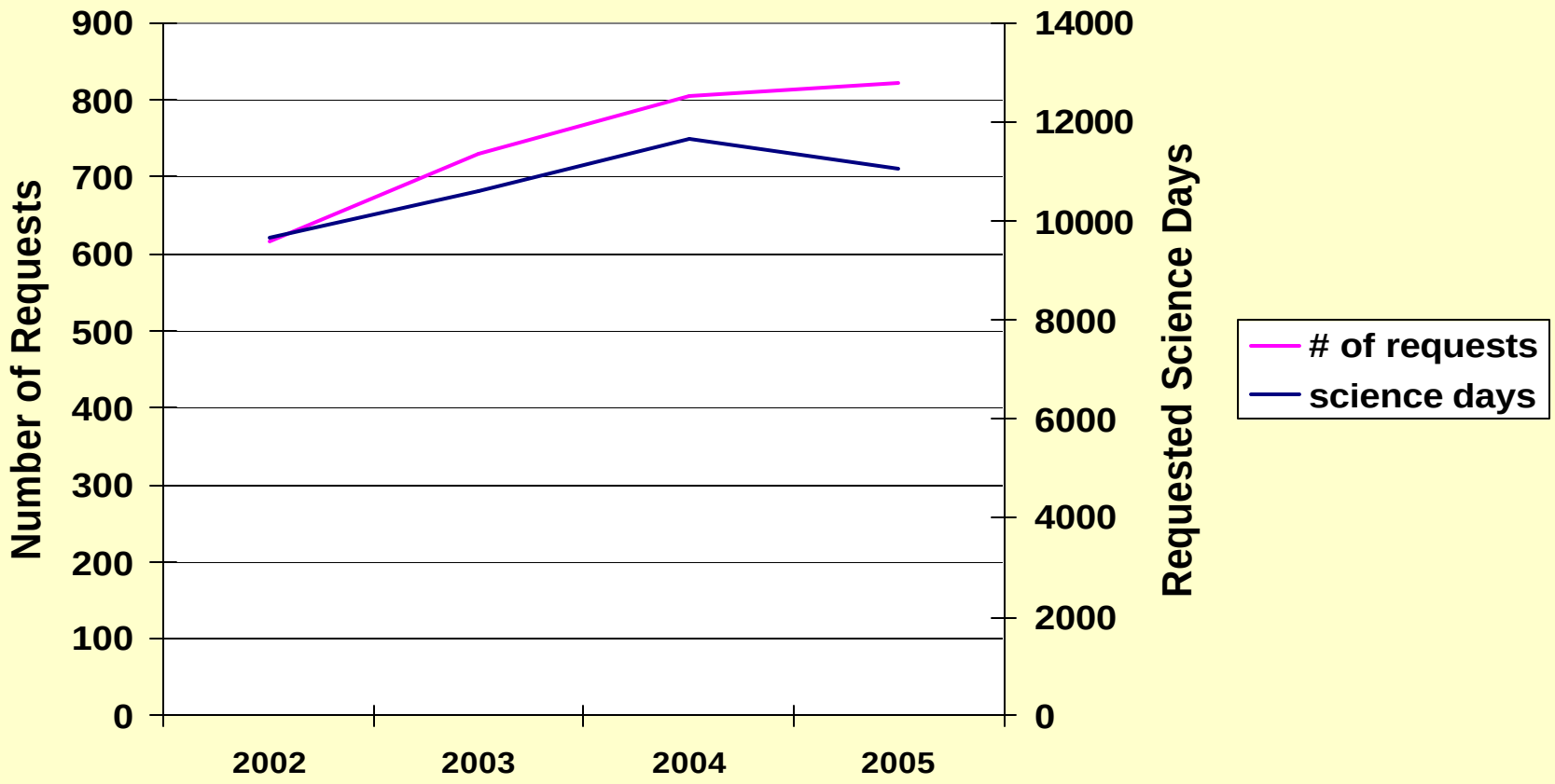
~ Review Draft available early part of 2006 ~

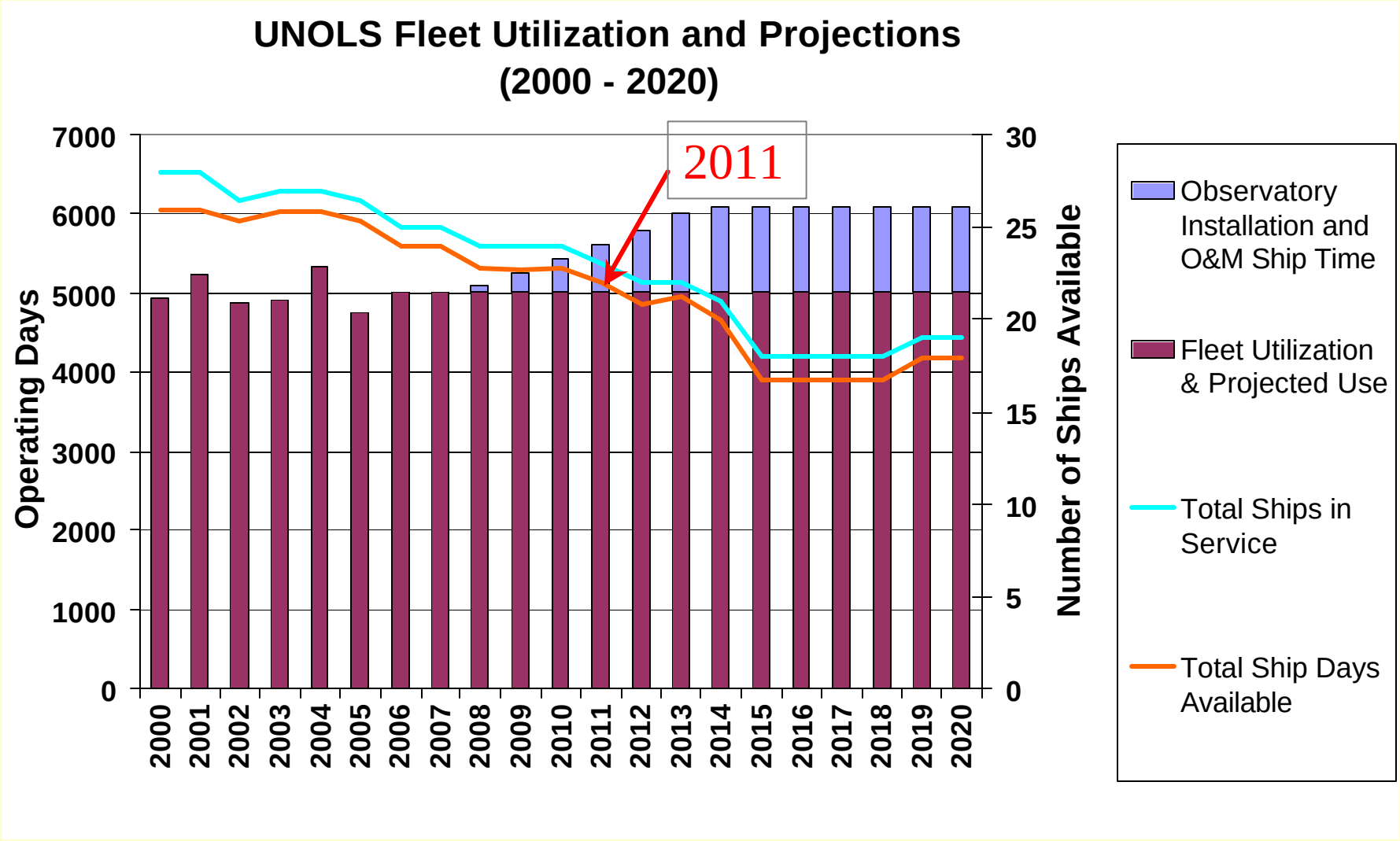
Current Fleet vs. 2020 Fleet

Class	Number of Ships	Total # Science Berths in 2005	Days Available	Avg Op Days Used (03-05)		Number of Ships	Total # Science Berths (1)	Available Days
Global	6	199	1800	1594		4	130	1200
Ocean/ Intermedia	8	177	2200	1708		6	156	1650
Regional	3	39	400	469		3	60	600
NDSF Vehicles								
Fleet Total	17	415	4400	3771		13	346	3450

Notes: 1) Berths: Ocean Class = 25, *Kilo Moana* =30, ARRV = 26, Regional = 20

UNOLS Ship Time Demand




UNOLS Fleet Utilization and Projections
(2000 - 2020)
Operating Days
Number of Ships Available
7000
6000
5000
4000
3000
2000
1000
0
30
25
20
15
10
5
0
2011
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Observatory Installation and O&M Ship Time
Fleet Utilization & Projected Use
Total Ships in Service
Total Ship Days Available

8. UNOLS 2005 Calendar

December				
DESSC	Winter Meeting	4-Dec		San Francisco, CA
UNOLS	UNOLS Booth #228 - Fall AGU	6-Dec	9-Dec	San Francisco, CA
AICC	Winter Meeting	12-Dec	13-Dec	Seattle, WA

UNOLS Booth at Fall AGU

December 6-9, 2005

San Francisco, CA

Volunteers Needed!

End

Load Handling System Workshop

GOAL

" *Develop a conceptual design for the "next-generation" over-the-side load handling system for the UNOLS fleet."*

Committee Members:

Matt Hawkins, Chair

Tom Althouse

Andy Bowen

Marc Willis

Jim Holik

Load Handling System Workshop

- One year effort.
- Joint-funded by NSF and ONR.
- Focused on ship visits and field evaluations of existing systems.
- Addressed:
  - Loading Handling System design standards
  - Incorporation of “Next-generation” UNOLS wire
  - “Next-generation” science packages
  - Motion compensation
  - “Hands-free” deployment and recovery
  - Size/Weight: “Scale-able” to different vessel classes

Load Handling System Workshop

- LHS Workshop addressed handling moderately-sized, fairly common, science packages over the side and stern:
  - CTD's
  - AUV's and ROV's
  - Scanfish and Triaxis
  - Mocness
- Does not address, or attempt to replace, the stern A-frame.
- Does not address, or attempt to investigate, highly specialized or large handling systems like long-coring.

Preliminary Findings are available on the UNOLS website at:
<**http://www.unols.org/publications/reports/lhsworkshop/index.html**>

Load Handling System Workshop (Status as of September 2005)

- Two systems are currently under detailed design and fabrication at Caley Ocean Systems using the Functional Requirements developed during the LHS Workshop – one for *KILO MOANA* and one for the *HUGH R. SHARP* (CAPE HENLOPEN Replacement).

- The systems have different arrangements for the handling apparatus (to suit each vessel). However, both use all-electric winches having motion-compensation, “slip-mode”, “auto-tension”, and use docking heads for capturing the science package.

- Both are being built to ABS standards in lieu of Sub-Chapter U.

- These system are due to be delivered and installed in early 2006, and both operators will keep the community and LHS Committee informed on how well they perform.