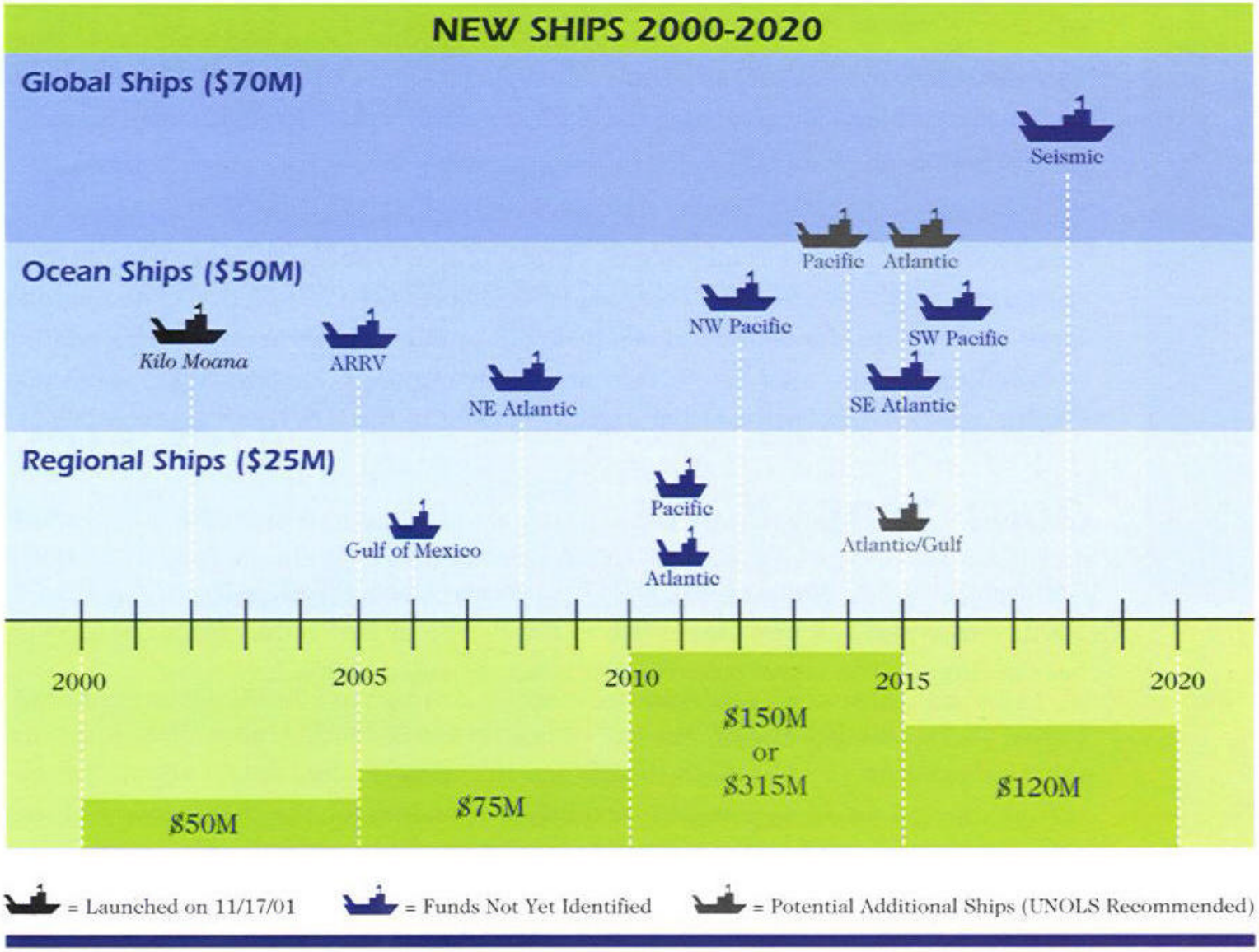
Fleet Improvement Committee Report to UNOLS Council

October 14, 2004

Figure 17. Proposed schedule for new construction.



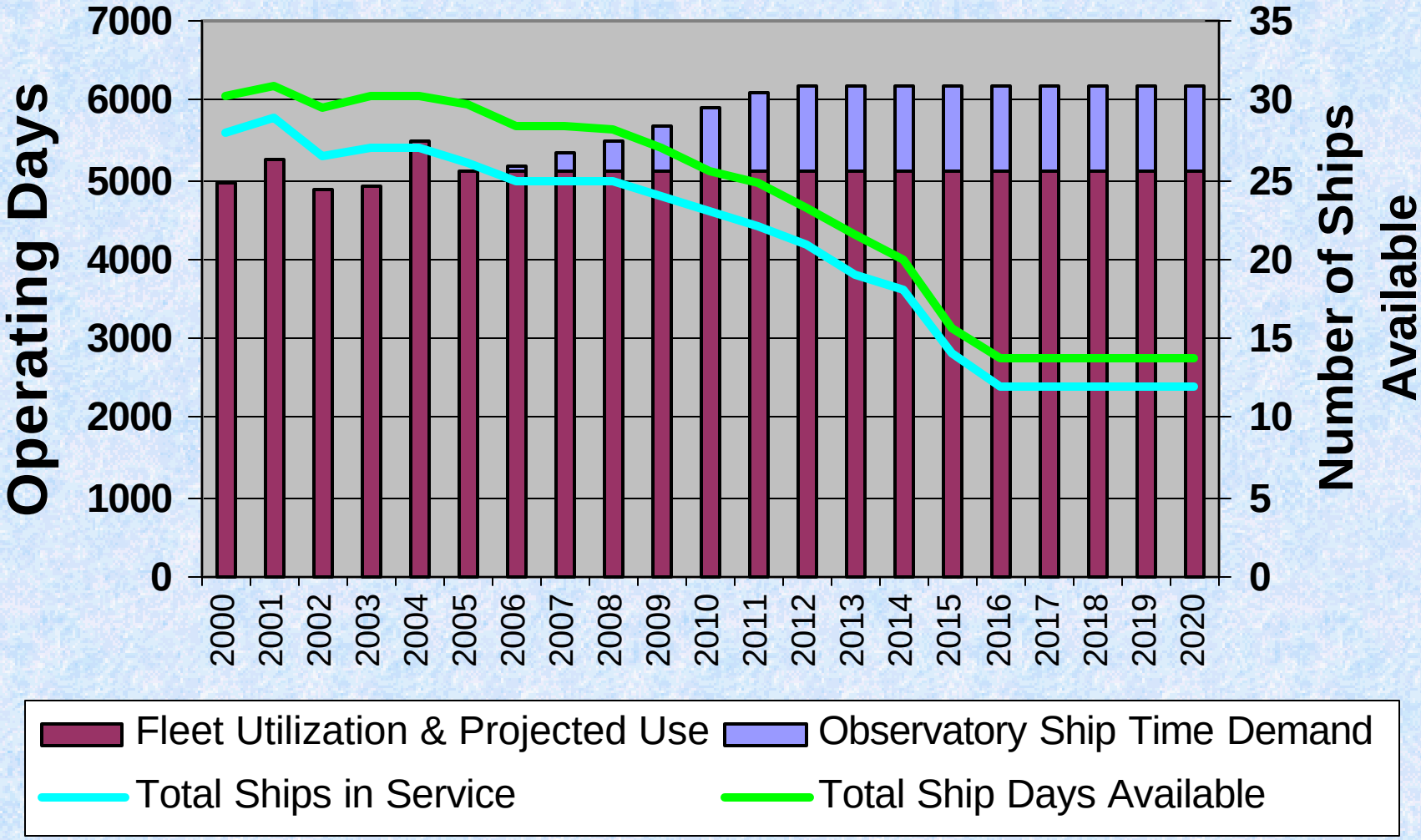
UNOLS Fleet Improvement Plan Outline

- Executive Summary / Intro
- Identify Future Science Initiatives:
  - Biological Oceanography
  - Chemical Oceanography
  - MG&G
  - Physical Oceanography
  - Education
  - Ocean Engineering
  - Cross cutting initiatives (Observatories (in a broad sense))
- Current Fleet Composition and Utilization Trends - Office
  - Current Fleet Description
  - Updated vessel retirement dates and SLEP costs [addressed later]
  - Fleet Trends
    - Geographical utilization

UNOLS Fleet Improvement Plan Outline

- Future Fleet Projections
  - •UNOLS and FOFC Plan Fleet Projections [next slide]
  - •Ship Construction Plans and realistic timelines
  - •Addition of other facility projections (Ocean observatory, etc) [next slide]
  - •Other Facilities – aircraft, deep submergence facilities
  - •Scheduling and operating modes
  - •Shortfalls:
    - •Differences between FOFC and UNOLS FIP
    - •Consequences of not carrying out SLEPs
    - •Tradeoffs between various scenarios
  - •Extensions and expansions beyond the FOFC Plan
  - •Future Fleet Composition
- Fleet Budget Projections and Requirements
  - •Ship Construction Cost
  - •Future Fleet operating cost estimates
- Recommendations

UNOLS Fleet Utilization and Projections (2000 - 2020)



*** Only new construction with funds identified have been included in the total.**

FIP 2005 – Draft Timeline

- Finalize outline and assignments– 15 November
- Coordinate with FOFC - winter
- Draft text and prepare projections – 28 Feb 05
- First Draft – March Council Meeting
- Community review – April 1-30, 2005
- Second draft – Spring/Summer Council Meeting
- Circulate second draft for comment – Sept 1
- Final draft – September 30, 2005

UNOLS Vessel Retirement Dates and Service Life Extension Program Estimates

Update Vessel Retirement Dates

This year the UNOLS Vessel Operators were polled:

- Should vessel retirement dates be extended? And if so:
    - Service Life Extension Program (SLEP) cost estimate for 5-year extension
    - SLEP cost estimate for 10-year extension
- How do the capabilities of their current ships compare to the Ocean Class and Regional Class SMRs?

Vessel Retirement Dates and SLEP Estimates

Eleven UNOLS ships >40 m have retirement dates prior to 2020 and are potential candidates for a SLEP (excluding ALPHA HELIX and EWING):

- 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.
- The immediate focus for ships with retirement dates past 2020 is on mid-life refit planning.

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.
  - The existing Intermediate Class vessels do not meet most of the desired Ocean Class SMRs
  - Regional Class ships fall short of the Regional Class SMRs in many areas.
- 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.

FIC Action – Finalize Report and provide to FOFC

General Purpose Global Vessel SMR Mid Life Refit considerations

2006 - *THOMPSON*

FIC recommends the model used for developing the Ocean & Regional Class SMRs

2011 – *REVELLE*

2012 – *ATLANTIS*

Global Class Steering Committee

- Bruce Howe (UW), Chair – Ocean Observatories
- Tom Althouse (SIO) – Marine Superintendent
- Jim Broda (WHOI) – Coring
- Bob Embly (NOAA/PMEL) – ROVs, MG&G
- Ken Johnson (MBARI) – Chem O.
- Paul Ljunggren (LDEO) – Marine Superintendent
- Dan Schwartz (UW) – Marine Superintendent
- Niall Slowey (TAMU) – FIC Rep, MG&G
- Al Suchy (WHOI) – Marine Superintendent
- Woody Sutherland (SIO) – Marine Technician
- Randy Watts (URI) – Phys. O
- Patricia Wheeler (OSU) – Biol. O.

Global Class SMR Update

- Task Items:
  - **Review the past SMRs and other documentation to form the basis of the SMRs.**
  - **Develop mission scenarios.**
  - **Hold a Community workshop (if needed) to draft a set of requirements and desired capabilities.**
  - **Solicit input and feedback from the larger science and operator community throughout process**
  - **Produce SMR document.**
  - **As a follow-on activity incorporate Heavy Lift considerations, and Seismic Capabilities**
- **Website:**
  <http://www.unols.org/committees/fic/global/global_smr.html>

Global SMRs – Initial Efforts:

- Identify new ship developments/technology
- Identify developments in other countries, oil patch, Navy, etc., that are relevant.
- A review of basic bounding parameters/rules of thumb (size, range, speed, fuel rate, DP tradeoffs, ROV use, manning, cost/day, etc)
- User scenarios will be important to get on the table sooner rather than later
- Get the community involved!

- **Need Project Timeline**

Other Items of Discussion

- Ship Design and Construction Efforts – status
- ADA Requirements
- KILO MOANA Debriefs
- FIC Membership – Chris Measures completes his 2nd term. FIC nominates Jim Cochran.

FIC Projects and Priorities for 2005

- **Regional Class:**
  - Help identify UNOLS representative(s) for the IPT teams.
  - Stay engaged in acquisition process (ongoing)
    - – Provide feedback to NSF – operational capabilities, etc
    - – Insure community input
- **Ocean Class:** Stay engaged
- **Global Class:** Update SMRs
- **ADA Guidelines** - White Paper – Terry
- **Update Fleet Improvement Plan**
- **Ocean Observatories** – Initiate discussions with ORION Office.
- **Ongoing Design and Construction Efforts** - Stay engaged in ARRV, EWING replacement planning, and CHRV.
- **KILO MOANA** – Continue debriefs (streamlined and selective)
  - Obtain feedback from Captains
  - Summary document of Debriefs

Estimated Operating Costs

2004

class	ship	dayrate	total days	Total Cost
global	atlantis	$21,282	291	$6,193,062
global	ewing	$18,300	230	$4,209,000
global	knorr	$20,675	278	$5,747,650
global	melville	$20,338	300	$6,101,400
global	revelle	$20,652	309	$6,381,468
global	thompson	$21,586	313	$6,756,418
	2004 GLOBAL TOTAL		1721	$35,388,998

class	ship	dayrate	total days	Total Cost
ocean	endeavor	$10,979	248	$2,722,792
ocean	gyre	$11,500	93	$1,069,500
ocean	kilo moana	$18,000	309	$5,562,000
ocean	new horizon	$14,402	195	$2,808,390
ocean	oceanus	$12,214	235	$2,870,290
ocean	SJ I	$12,300	180	$2,214,000
ocean	SJ II	$12,300	231	$2,841,300
ocean	wecoma	$12,815	221	$2,832,115
	2004 OCEAN TOTAL		1712	$22,920,387

2020

FOFC 2020	Days	dayrate	Total Cost
atlantis	300	$21,282	$6,384,600
new seismic	300	$30,000	$9,000,000
			$0
			$0
revelle	300	$20,652	$6,195,600
thompson	300	$21,586	$6,475,800
	1200		$28,056,000

ship	total days	dayrate	Total Cost
NE Atlantic	275	$20,000	$5,500,000
			$0
kilo moana	275	$18,000	$4,950,000
SW Pacific	275	$20,000	$5,500,000
			$0
SE Atlantic	275	$20,000	$5,500,000
ARRV	275	$22,817	$6,274,675
NW Pacific	275	$20,000	$5,500,000
	1650		$33,224,675

Estimated Operating Costs

2004

regional	alpha helix	$10,910	129	$1,407,390
regional	hatteras	$9,750	168	$1,638,000
regional	henlopen	$6,226	172	$1,070,872
regional	longhorn	$5,500	75	$412,500
regional	pelican	$4,665	241	$1,124,265
regional	pt sur	$8,115	189	$1,533,735
regional	sproul	$6,981	150	$1,047,150
regional	weatherbird	$8,491	164	$1,392,524
	2004 REGIONAL TOTAL		1288	$9,626,436

class	ship	dayrate	total days	Total Cost
local	blue heron	$4,400	40	$176,000
local	clif. Barnes	$2,262	126	$285,012
local	savannah	$4,600	154	$708,400
local	uracca	$3,701	152	$562,552
local	walton smith	$6,801	228	$1,550,628
	2004 LOCAL TOTAL		700	$3,282,592

2004 TOTALS	5421

2020

			$0
Atlantic	200	$10,000	$2,000,000
CHRV	180	$8,000	$1,440,000
			$0
Gulf of Mex	200	$10,000	$2,000,000
Pacific	200	$10,000	$2,000,000
			$0
			$0
	780		$7,440,000

ship	total days	dayrate	Total Cost
			$0
			$0
savannah	110	$4,600	$506,000
			$0
walton smith	110	$6,801	$748,110
	220		$1,254,110

2020 Totals	3850		$69,974,785