Bonneville Power Administration's Power Function Review

BPA Fish & Wildlife Program

Management Discussion

April 18, 2005

BPA's Financial Disclosure Information

1. All FY '05-'09 information was provided in March 2005 and cannot be found in BPA-approved Agency Financial Information but is provided for discussion or exploratory purposes only as projections of program activity levels, etc.

2. All FY '97-'04 information was provided in March 2005 and is consistent with audited actuals that contain BPA-approved Agency Financial Information.

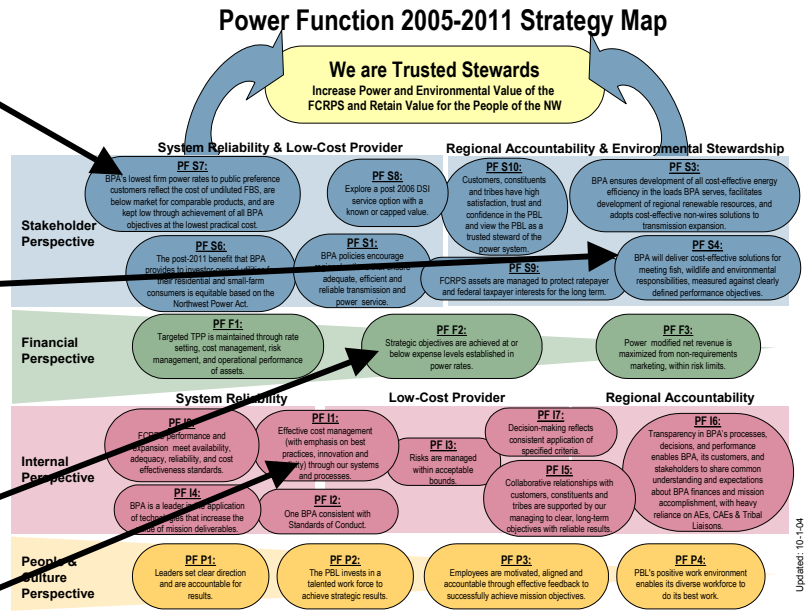
Power Function Review
Fish & Wildlife Program
Support of PBL Balanced Scorecard

PF S7: BPA's lowest firm power rates to public preference customers reflect the cost of undiluted FBS, are below market for comparable products, and are kept low through achievement of all BPA objectives at the lowest practical cost.

PF S4: BPA will deliver cost effective solutions for meeting fish, wildlife and environmental responsibilities, measured against clearly defined performance objectives.

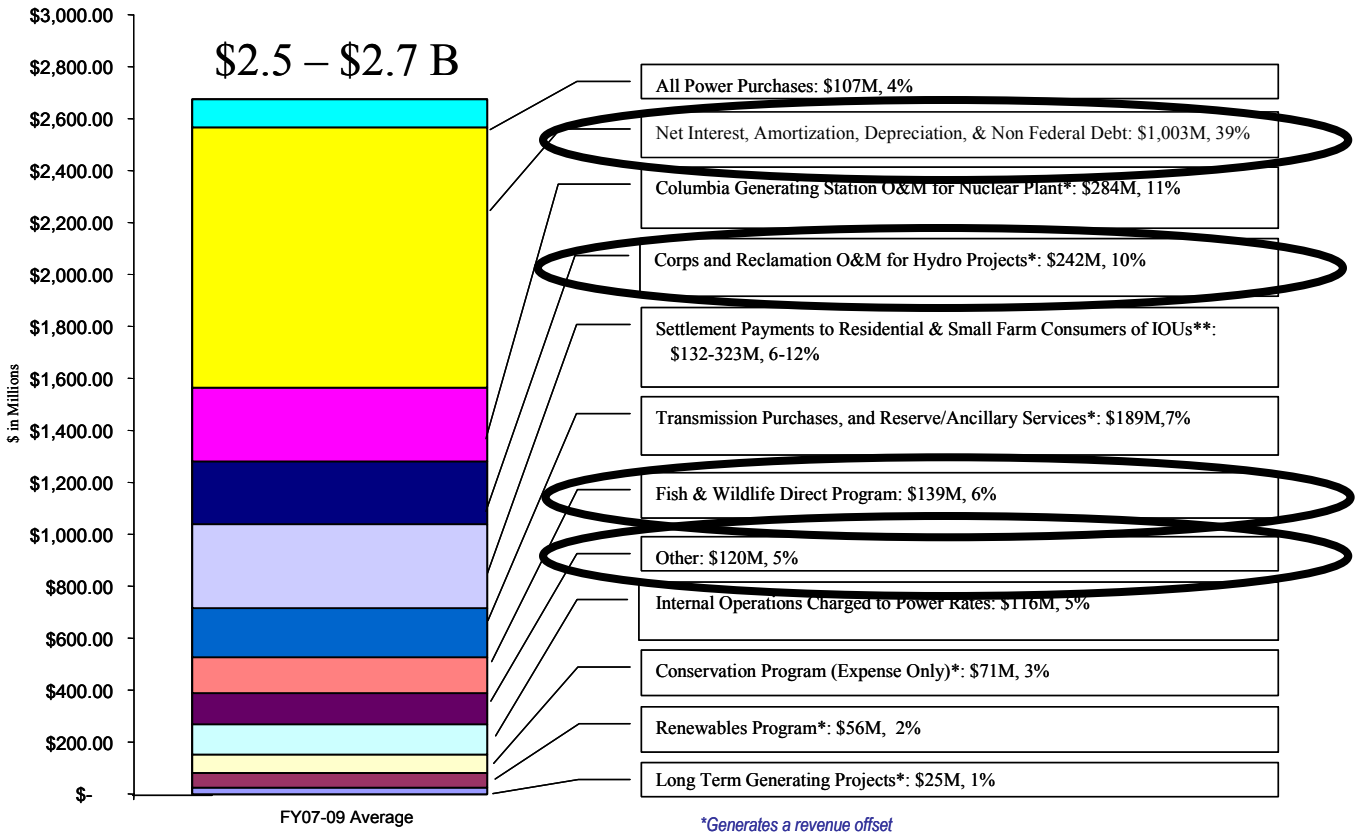
PF F2: Strategic objectives are achieved at or below expense levels established in power rates.

PF I1: Effective cost management (with emphasis on best practices, innovation and simplicity) through our systems and processes.



Power Rate Structure

- All the Fish & Wildlife Program costs, with the exception of Hydro Operations, are included in the revenue requirement of the PBL rate structure.



Note: See BPA's Financial Disclosure Information Page

BPA's Overall Fish & Wildlife Program Decisions

1. Installation timing and operating requirements for removable spillway weirs

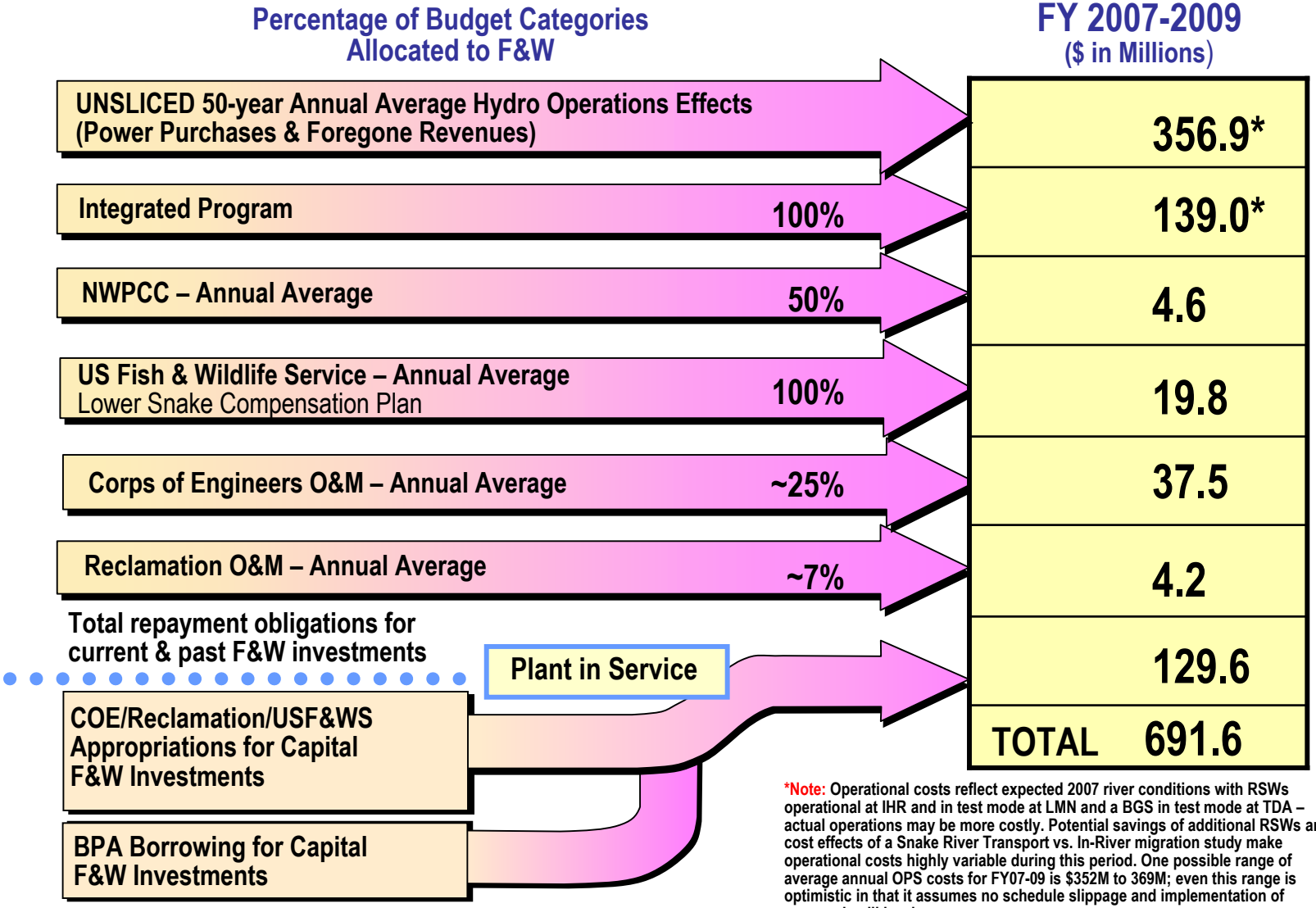
2. A proposed summer transportation test requiring additional spill at projects that collect fish may begin in 2007 or 2008

3. Funding Level for Lower Snake Hatcheries

4. Integrated Program funding level

5. Timing and shape of CRFM forecast

BPA's Total Fish & Wildlife Program: Total Annual Average Cost to BPA Rate Payers



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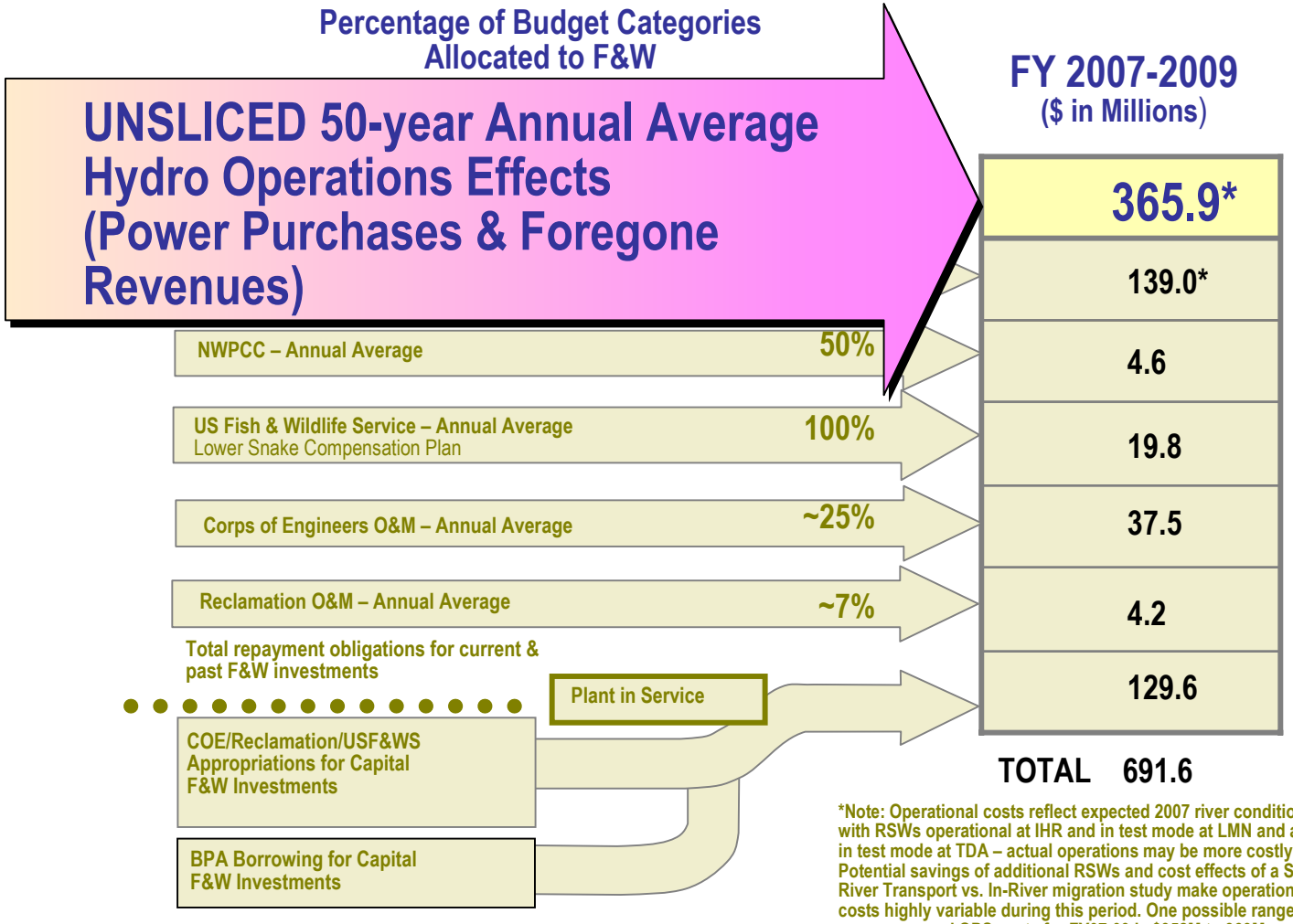
Integrated Program assumes additional projects funded within existing budget.

F&W Hydro Operations Effects

BPA's Total Fish & Wildlife Program: Total Annual Average Cost to BPA Rate Payers



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F&W Hydro Operations Effects

- **How are river and reservoir operations for fish reflected when establishing BPA rates?**

  BPA uses a hydro-system computer model (HYDSIM) to identify the period-by-period average energy production we can expect in 50 water conditions while operating to fish criteria for each year of the rate case period.
  - Energy production is compared to our estimated firm load period-by-period.
  - Deficits cause the purchase of secondary energy and surplus can be sold.
  - The resulting revenue (Net Secondary Energy Revenue) is used as input to establish the level of our rates.
  - ***It is important to note that in the rate process there is no line-item expense for fish operations as there is for the Integrated Program.***

- **What are fish operation criteria?**
  - Reservoir elevation objectives
  - Juvenile bypass spill objectives
  - Flow augmentation targets

F&W Hydro Operations Effects

- **How are the fish operations criteria for rate case modeling established?**
  - BPA is constantly updating these assumptions as new information becomes available from agencies and forums around the region.
  - At a point in time, BPA will adopt the assumptions to be included in the rate case hydroregs (plural since operations for fish are often different fro each year of the rate case period) based on the best information available at that time.
  - This is necessary to have the energy production information avaiable in time to fit the rate case schedule.

- **Are there currently uncertainties regarding fish operations criteria during the rate case period?**

  Yes, several
  - Installation timing and operating requirements for removable spillway weirs (RSWs) and other surface bypass improvements are not set yet. RSWs or surface passage improvements are planned at Ice Harbor, Lower Monument, The Dalles, McNary and Little Goose between 2005 and 2010 and may alter river operations.
  - A proposed summer transportation test requiring additional spill at projects that collect fish may begin in 2007 or 2008. The test itself and adaptive management decisions that might be made in response to research results may affect river operations as well.

FY07-FY09 UPA Surface Passage Improvements

• Through the 2007-2009, in addition to the existing RSWs at Lower Granite and Ice Harbor, additional surface passage improvements are expected as follows:

Project	2007	2008	2009
Lower Monumental	RSW Installation		
McNary		1st RSW Installation	2nd RSW Installation
The Dalles	BGS Installation		

•These improvements are anticipated to have benefits that are twofold

- Improved juvenile passage and survival
- Increased generation

FY07-FY09 UPA Surface Passage Improvements

•Actual facility operation is contingent upon biological performance and may differ from assumptions made in modeling efforts done prior to construction and testing.

RSW/Passage Improvement Operational Assumptions:

- IHR 30% of flow 24 hours per day,
- LMN 20 kcfs 24 hours per day,
- MCN 30% of flow 24 hours per day,
- TDA 30% of flow 24 hours per day,
- Generally, configuration improvements are operated in a test mode for two years – test mode is the above assumption vs. UPA/BiOp spill and does not provide as much of an energy benefit.

FY2007-FY2009 50-Year Average Generation Change with RSW and Surface Passage Improvements under the UPA/BiOp

	April	May	June	July	August
2007	62 aMW	67 aMW	72 aMW	99 aMW	95 aMW
2008	86 aMW	85 aMW	91 aMW	99 aMW	95 aMW
2009	189 aMW	202 aMW	199 aMW	164 aMW	144 aMW

2007 Assumptions: Lower Monumental RSW in test mode, Ice Harbor RSW fully operational, The Dalles BGS in test mode

2008 Assumptions: Lower Monumental RSW in test mode, Ice Harbor RSW fully operational, The Dalles BGS in test mode, one RSW in test mode at McNary

2009 Assumptions: Lower Monumental RSW fully operational, Ice Harbor RSW fully operational, The Dalles BGS fully operational, two RSWs in test mode at McNary

FY2007-FY2009 50-Year Average Summer Generation Change with Snake River Fall Chinook Transport vs. In-River Migration Study

July	August
-473 aMW	-448 aMW

Assumptions: Spill juvenile collection projects – Lower Granite, Little Goose, Lower Monumental and McNary all of July and August when the study begins (estimated start date 2008) at the following levels:

LWG: 20 kcfs/24 hours per day

LGS: 20 kcfs/24 hours per day

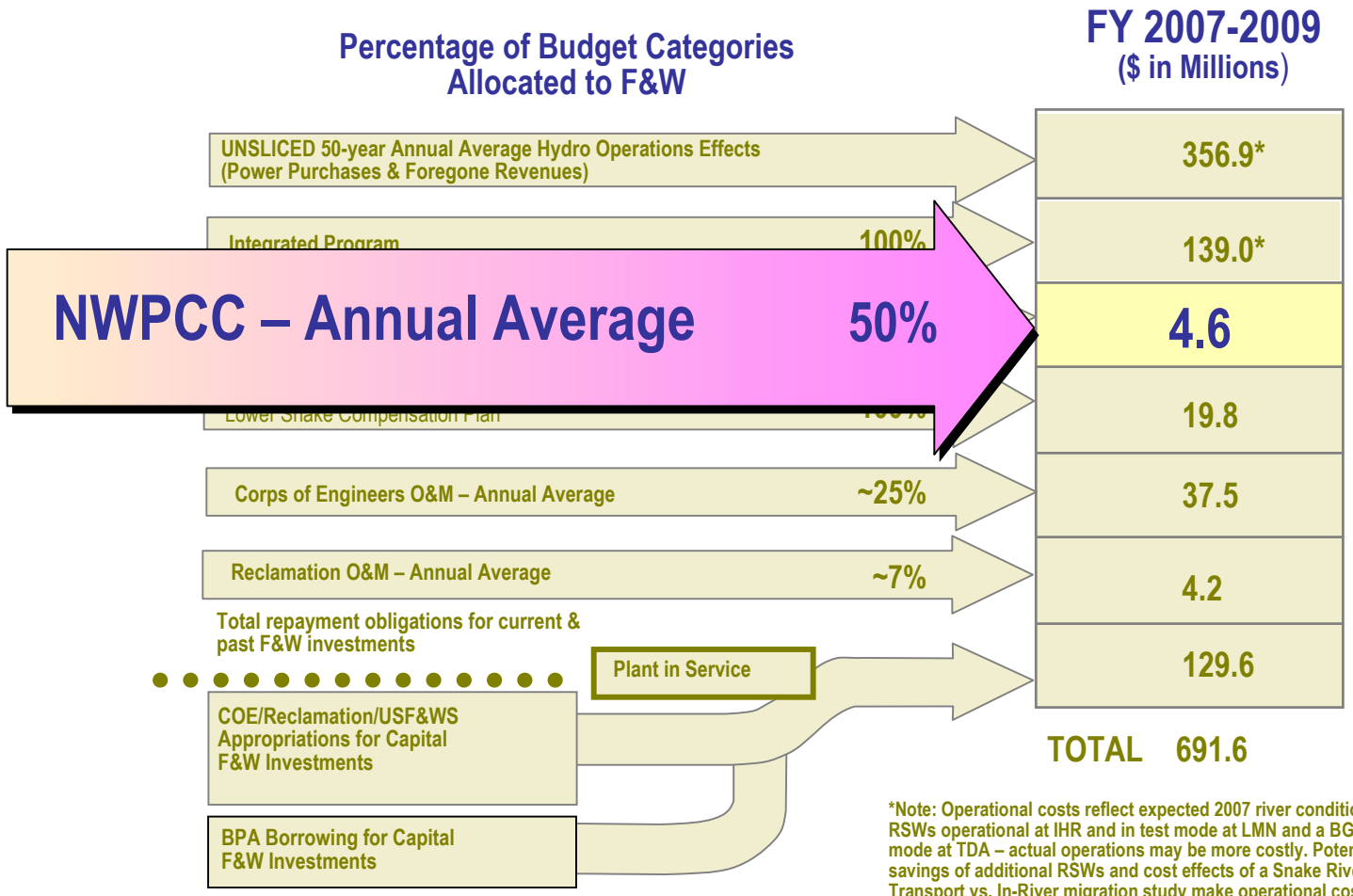
LMN: 20 kcfs/24 hours per day

MCN: 30% of flow/24 hours per day

The design of his study is still under discussion and these assumptions are for discussion purposes only. Actual project operations may differ significantly.

F&W Portion Of NW Power and Conservation Council

BPA's Total Fish & Wildlife Program: Total Annual Average Cost to BPA Rate Payers



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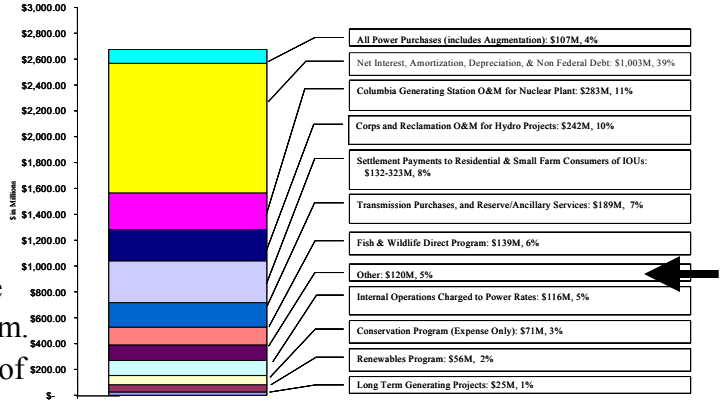
NW Power and Conservation Council

	FY97-01 Average	FY02-06 Average	FY07-09 Average
Program Level	$7.2 M	$8.3 M	$9.1 M



- The Power and Conservation Council is a separate line item on the PBL Income Statement. One half of their budget ($4.6 M) is attributable to the F&W Program.
- The Power and Conservation Council budget is included in the "Other" section of the PBL total expenses bar graph.

Program:

- The Council develops and maintains a regional power plan and a fish and wildlife program to balance the Northwest's environment and energy needs. Its three tasks are to:
  1. develop a 20-year electric power plan that will guarantee adequate and reliable energy at the lowest economic and environmental cost to the Northwest
  2. develop a program to protect and rebuild fish and wildlife populations affected by hydropower development in the Columbia River Basin
  3. educate and involve the public in the Council's decision-making processes.

Risks:

- Costs may be higher than shown if inflationary factors require higher cost of living increases than currently anticipated.

Drivers of Change:

- The increases from the 02-06 average to the 07-09 average is driven by an inflation factor of 2.4%. This covers cost of living increases and other increases in Power and Conservation Council costs such as travel, leases, etc.

US Fish & Wildlife Service – Lower Snake Compensation Plan

Lower Snake River Compensation Plan Program

Operation and Maintenance Budget for the Fish Hatchery Program

Managed by U.S. Fish and Wildlife Service

Boise, ID Field Office

Includes budgets for 11 hatcheries, 10 satellite facilities, and monitoring and evaluation of fish health and hatchery program effectiveness

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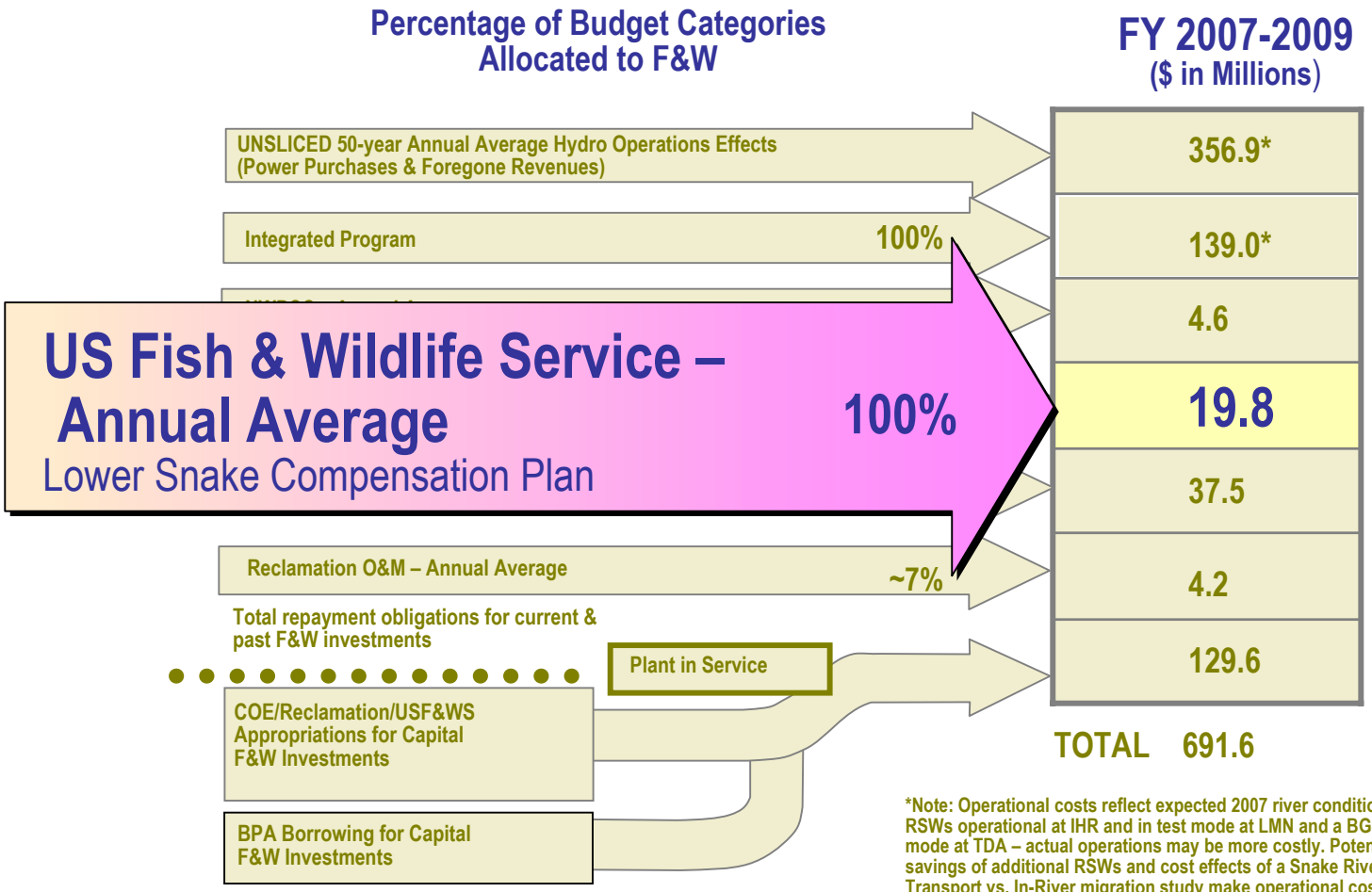

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Lower Snake River Compensation Plan Program

Program Goals & Objectives

- Legislative mandate for LSRCP mitigation adult return goals to or above the lower Snake River project area:
  - Fall Chinook Salmon – 18,300
  - Spring/Summer Chinook Salmon – 58,700
  - Steelhead – 55,100
  - Rainbow Trout – 93,000 lbs

Performance Measures

- Participation in the NPCC Provincial and ISRP Review.
- Initiation of a Performance Indicator Program for FY 2002 through FY 2006.
- Objective of performance indicator program is to serve as a basis for evaluating program performance and to optimize efficiency and fish quality.

Program Funding Mechanisms

- LSRCP Program funded by Congressional Appropriations through FY 2000.
- BPA direct funding of the LSRCP began with a Letter Agreement in FY 2001 and a Memorandum of Agreement (MOA) for FY 2002 – FY 2006 funding.
- MOA covers expense only, no direct funding mechanism currently exists for capital spending.

Lower Snake River Compensation Plan Program

Future Drivers and Uncertainties

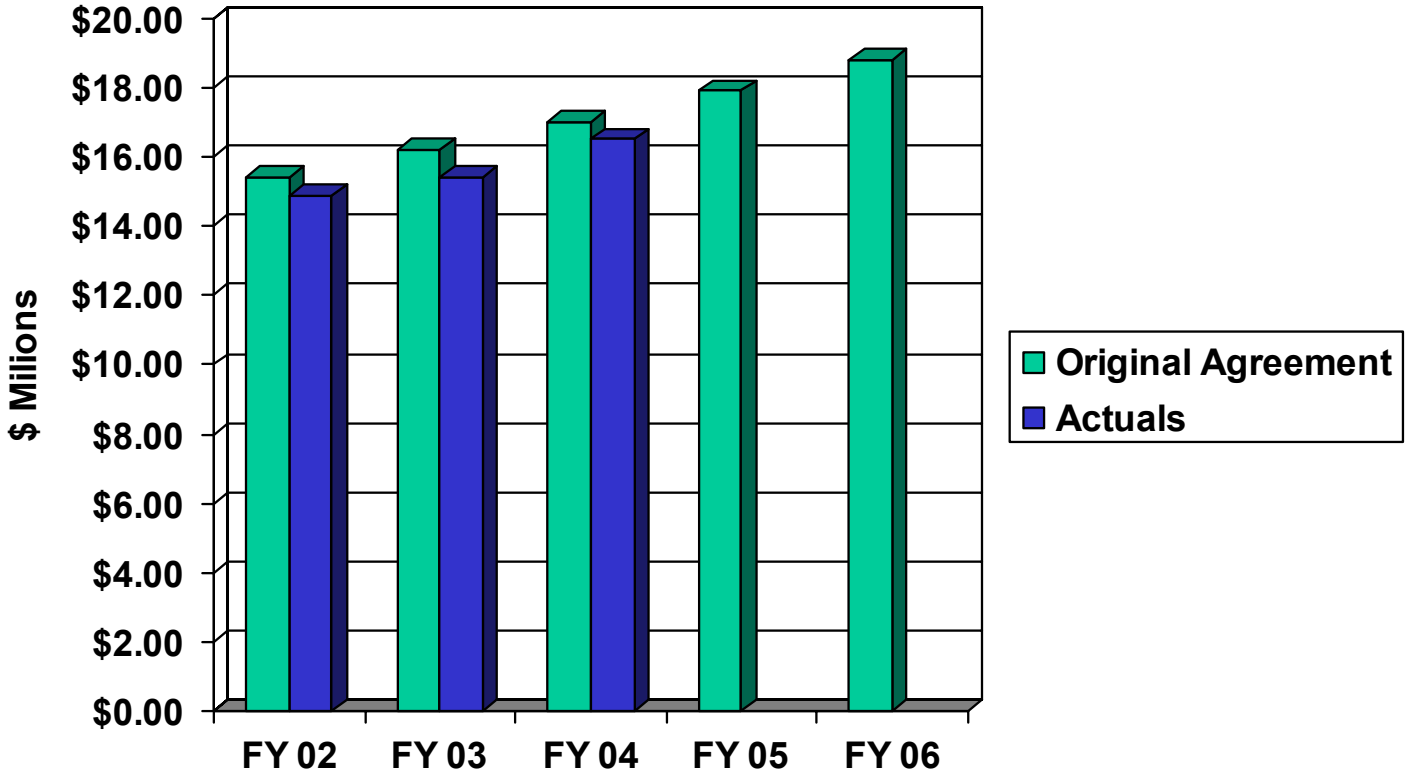
- APRE & HGMP's may require facility changes/upgrades
- ESA Recovery Planning
- Cost of living increases such as health care
- US vs. Oregon litigation that could affect production levels
- Uncertainty of unexpected maintenance costs associated with aging facilities.
- Increasing costs of materials such as steel, concrete, wood, fuel, and fish food

Capital Mechanism

- Current BPA direct agreement is expense only
- Past capital funding for LSRCP construction was through congressional appropriations to Corps.
- Ability to access capital funding through congressional appropriations is uncertain today.
- Alternative is development of a capital funding agreement with BPA, if and when needed.

Original Five-Year
BPA/USFWS Direct Funding Agreement

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Original 5-year Direct Funding Agreement	$15.4M	$16.2M	$17.0M	$17.9M	$18.8M
Actuals	$14.9M	$15.4M	$16.5M		



Lower Snake River Compensation Plan Program

Future Agreement

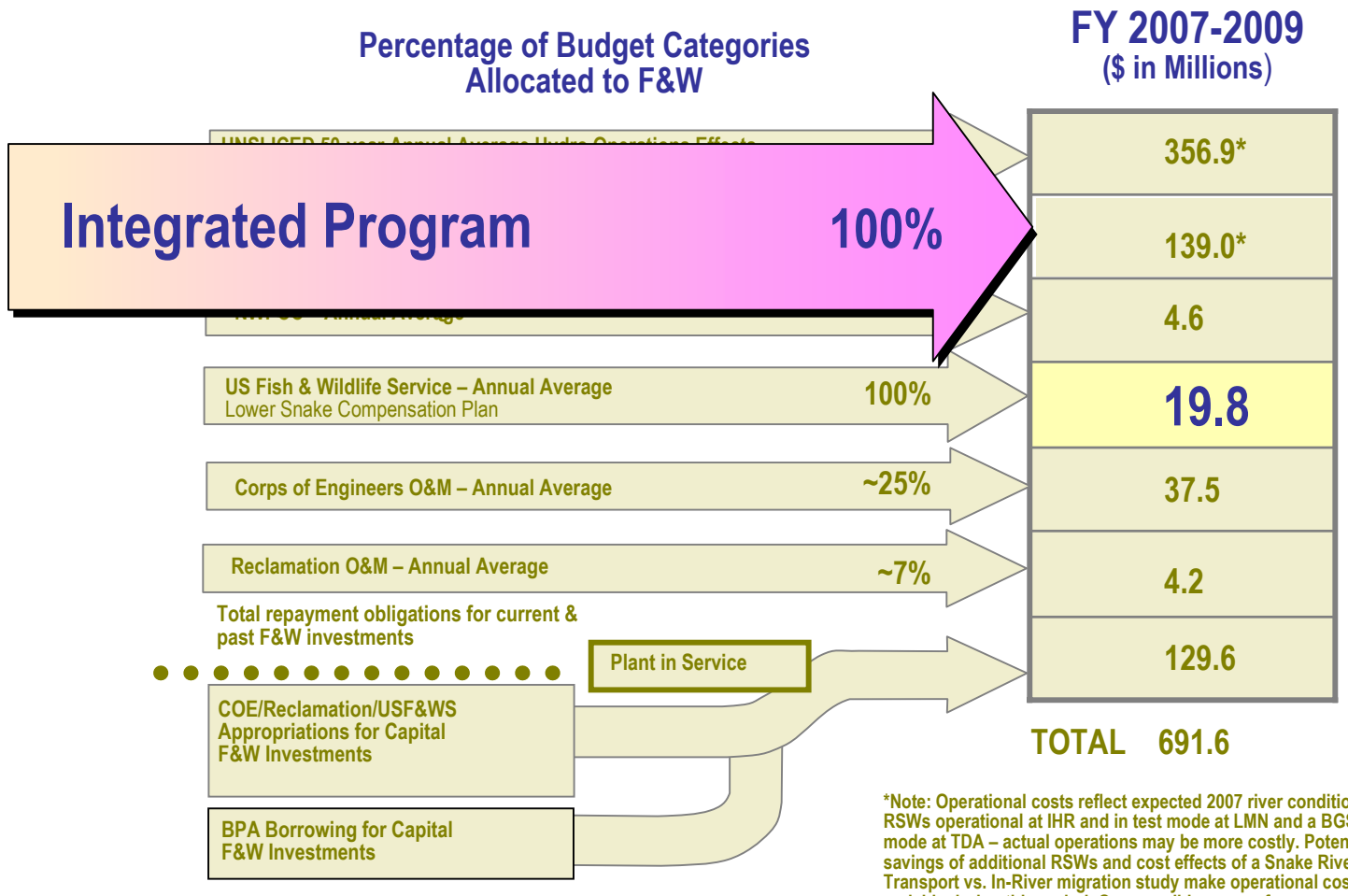
- Negotiation for a BPA direct funding agreement for FY 2007 – FY 2011 will occur within the next year
- Preliminary estimates include the following three funding alternatives:
  - Baseline O&M expenses for hatchery, research and evaluation programs,
  - Baseline O&M expenses including some non-routine maintenance, e.g., replacement pumps, motors, raceway and water line repairs, and
  - Baseline O&M expenses including a more comprehensive inventory and schedule for non-routine maintenance and equipment replacement, e.g., major facility rehabilitation: buildings, ponds, fish weir and fish transport vehicles.

Funding Alternatives

	FY 07	FY08	FY09
O&M Only	$17.1	$17.9	$18.8
O&M +	$18.9	$19.8	$20.7
O&M ++	$20.7	$21.1	$21.5

Integrated Fish & Wildlife Program
(Direct Program)

BPA's Total Fish & Wildlife Program: Total Annual Average Cost to BPA Rate Payers



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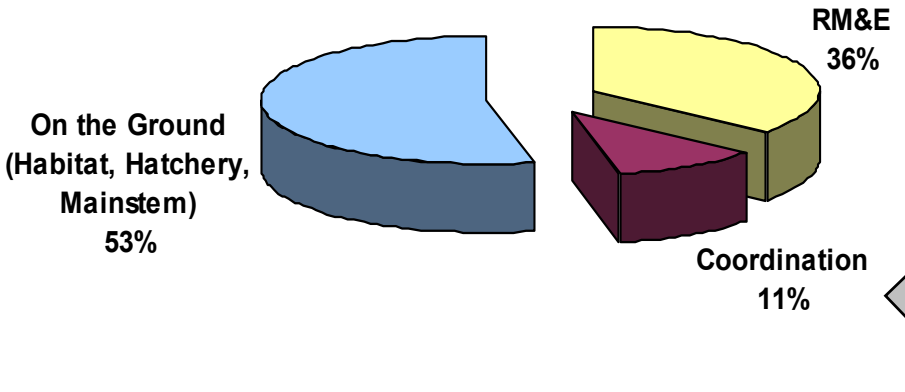
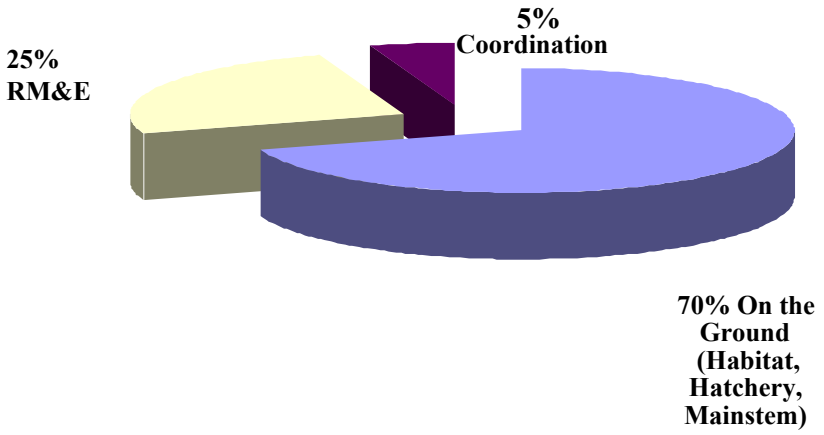
Integrated Fish & Wildlife Program

Includes mitigation efforts for BPA's ESA offsite fish and wildlife requirements for USFWS and NOAA Fisheries FCRPS Biological opinions and NW Power & Conservation Council's Fish and Wildlife Program

FY 2001 - 2004 Expenditures by Category



Proposed Expenditure Guideline by Category



Assumptions for Future F&W Program Costs

December 6, 2004 **(does not include BPA Fish & Wildlife overhead of $11M)**

F&W Program Compartment	Recent Spending (FY01-04 Avg)	Committed Contract Amounts (from Project Appraisal)	Budget Drivers (UP)	Budget Drivers (DOWN)	Net Change Assumption
M&E	$30	$9.3 M	Bi-Op driven large-scale monitoring; Mainstem evaluations; Fall chinook monitoring	Efficiencies in project scale monitoring from regional M&E plan; Reprogramming short-term assessments; May be appropriate for cost share, COE contribution	Same or decrease
Research	$11 M	$2.1 M	Bi-Op life-stage research; NPCC Research Plan may drive priorities; Continuation of Innovative category	Better focus, less opportunistic (ad hoc) research, May be appropriate for cost share, COE contribution	Decrease
IMCA	$11.7 M	$10.9 M	Watershed coordination support; Regional data mgmt	Some opportunity	Same or small increase
Production	$39.6 M (includes some capital)	$32.5 M	O&M for new facilities (Chief Joe, NEOH, Klickitat, Mid-C coho, Walla Walla, Klickitat), not including capital; planning costs moving from capital to expense	Efficiencies in project-scale operations; Completion of some construction	Increase
Mainstem	$6 M	$4.6 M	BiOp increases in predator control Lamprey passage work	Little opportunity; Maybe appropriate for cost share, COE contribution	Increase
Habitat	$35.8 M	$12.1M	Subbasin plans; BiOp off-site mitigation	Reprogramming based on subbasin plans	Increase
	$134.1 M	**$71.5 M**			

Decision Requirement for the Integrated Program

BPA needs to establish base rates that anticipate and cover Integrated Program costs including those for offsite USFWS and NOAA Fisheries BiOps and Council Program/NW Power Act and federal treaty Tribal trust responsibilities for the duration of the FY2007-2009 rate case.

Scope
All offsite USFWS & NOAA Fisheries FCRPS BiOp and Integrated Fish & Wildlife Program costs are included.

Background

•In the 2000 rate case, BPA made a commitment to "keep the options open" to allow for funding of whatever decisions were made under the BiOp and the Integrated Fish & Wildlife Program. The result was the Fish and Wildlife Funding Principles.

•As PBL gets ready to set rates for the FY2007-2009 rate period, we again face uncertainty about fish costs under the Integrated Program. This uncertainty is due to a number of factors including:

- Premature/uncertain subbasin planning costs (particularly for habitat actions).
- APRE and HGMP recommendations for hatchery upgrades and reprogramming.
- Ongoing litigation over the NOAA Fisheries 2004 FCRPS BiOp and USFWS 2000 BiOp.
- Development of new BiOp for the Willamette.

•BPA is seeking ways to meet fish, wildlife, and environmental responsibilities while keeping rates as low as is reasonably possible.

Alternatives Considered & Key Decision Factors

There are four alternatives to consider:

1. **Low Case:** Option reduces funding levels to support ESA driven priorities while meeting only minimum Power Act requirements except for those ESA mitigation projects that also have benefits to non-ESA listed anadromous, resident fish and wildlife species.

2. **Medium Case:** Option similar to – slightly greater than Integrated Program in the current rate case to meet subbasin plan and BiOp requirements through redirecting of some RM&E and IMCA funds to on the ground actions.

3. **High Case:** Option greater than that for the Program in the current rate case and provides additional funding to cover new BiOp and Subbasin Plan requirements.

4. **Rationale Only/Costs TBD:** May be the best incentive for regional parties to take more time to collaborate in discussions leading to a new Program level based upon clear priorities and objectives that the region can support. May push Program funding level discussions into the same time frame as the formal Rate Case (i.e., fall 2005).

Alternatives Considered & Key Decision Factors, cont.

FY 2007 - 2009 PFR/Rate Case Cost Scenarios for the Integrated Fish & Wildlife Program							
	Annual Average Investment						
Category	**FY 2001 - 2004**	**Low**		**Medium**		**High**	
RM&E	$41,000,000	$30,000,000	1/,2/	$32,000,000	1/	$43,000,000	6/
New BiOp RM&E	$0	$2,000,000	3/	$3,000,000	4/	$5,000,000	
IMCA	$11,700,000	$6,000,000	1/	$6,000,000	1/	$13,000,000	7/
Production	$39,600,000	$37,000,000	2/	$40,000,000		$43,000,000	7/
Mainstem	$6,000,000	$6,000,000	2/	$6,000,000		$6,000,000	
Habitat	$35,800,000	$34,000,000	2/	$36,000,000		$37,000,000	6/
New BiOp/SBP	$0	$0		$10,000,000	5/	$15,000,000	5/
BPA OH	$11,000,000	$11,000,000	2/	$11,000,000		$12,000,000	6/
Total	**$145,100,000**	**$126,000,000**		**$144,000,000**		**$174,000,000**	

1/ assumes 70/25/5 allocation between habitat/hatcheries, RM&E and coordination/info mgt

2/ a 5% reduction from FY01-04 spending is reflected based on assumed efficiency gains

3/ new RM&E in Biop is $3-5M; 50% of *low* end assumed to be funded w/ new $$, the rest comes from a reallocation of existing RM&E (after imposing the 70/25/5 allocation guidelines)

4/ same as footnote 3, except 50% of *high* end is assumed to be funded with new money

5/ new Biop- and subbasin plan- habitat work funded with 70/25/5 allocation and reprogramming of current funding within habitat category

6/ 1.5% inflation factor assumed between 2005 and 2008 (lesser salary/energy cost influences)

7/ 3% inflation factor assumed for 2005-2008 (greater influence of salary and/or energy costs)

Integrated Program Issues

- How should pace, prioritization and mitigation responsibility be addressed in developing the Integrated Program funding level for the next rate period?
- How should BPA and the Council approve RM&E in the future to make it more strategic to provide improved information for fish and wildlife management decisions by regional policy makers?
- How could RM&E be more strategic to the broader combination of CRFM, NOAA-Fisheries and the Integrated Program?
- How might BPA structure a Partnering/Cost-Share policy to ensure it is not missing opportunities to undertake priority mitigation that meets common goals of each party?
- What structure or mechanism would facilitate increased Partnering among parties with funds that may be available but underutilized?
- What structure for planning would you suggest to enable priority investments for habitat protection (e.g., land acquisition, conservation easements) that do not readily meet BPA's Capital policy?

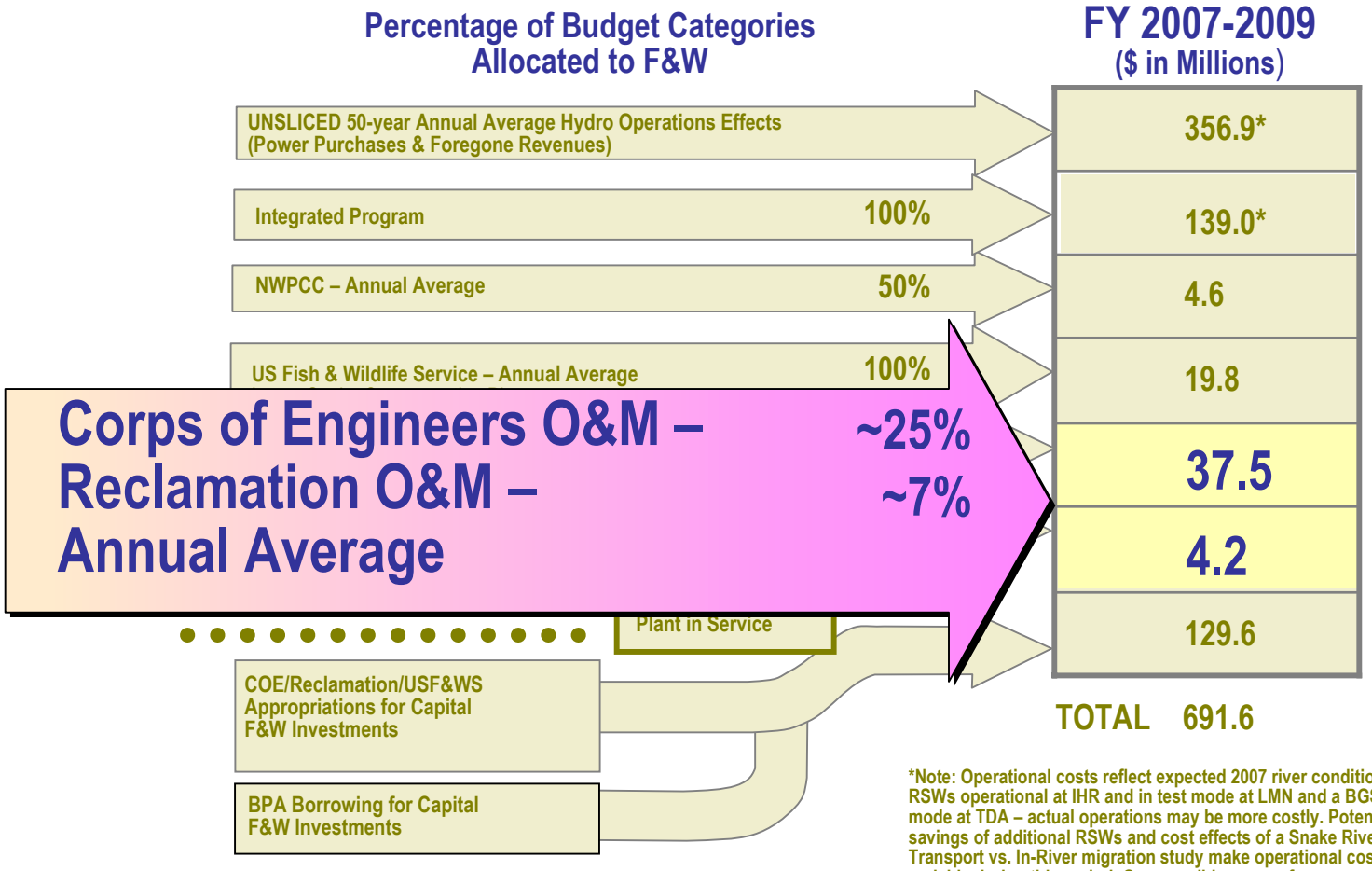
Corps of Engineers and Reclamation O&M

<u>Direct Funding Agreements</u>

Corps: Fish and Wildlife O&M

Reclamation: Leavenworth Complex

BPA's Total Fish & Wildlife Program: Total Annual Average Cost to BPA Rate Payers



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Funding levels

(Dollars are in millions)

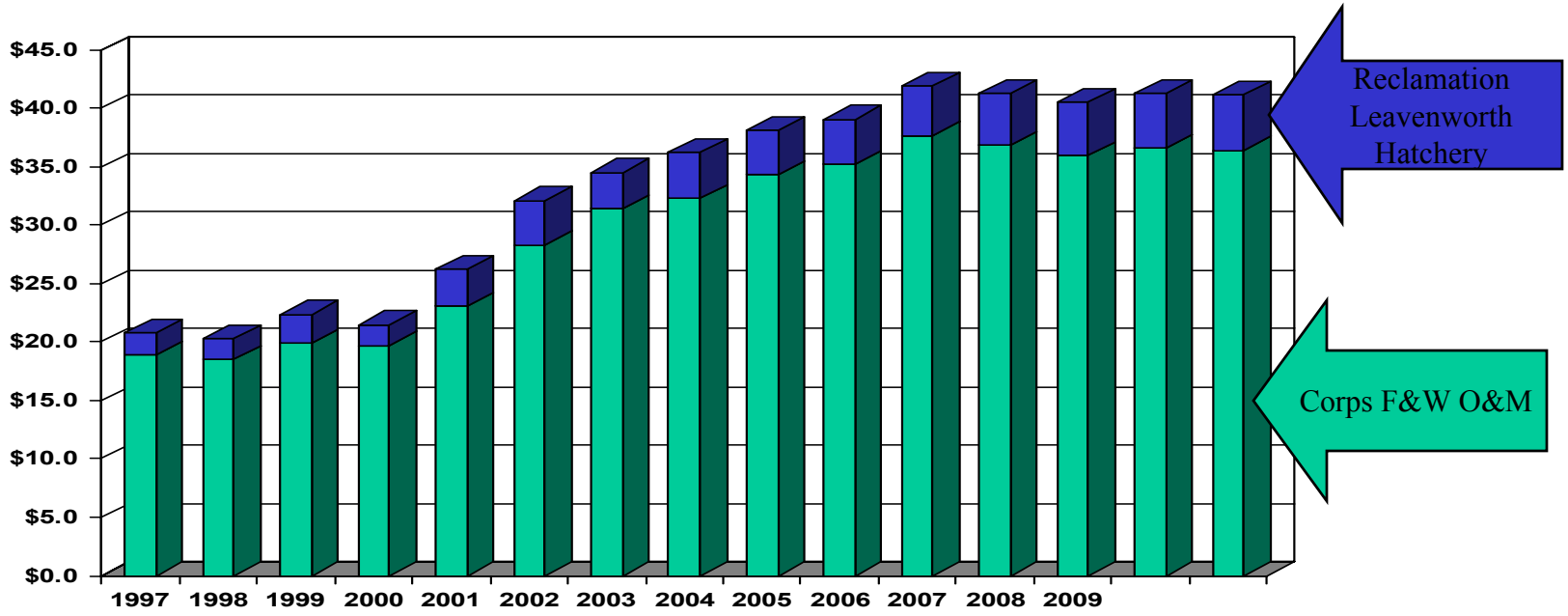
ACTUAL EXPENDITURES

	1997	1998	1999	2000	2001	2002	2003	2004
Corps Fish and Wildlife O&M	18.9	18.5	19.9	19.7	23.1	28.3	31.4	32.3
Reclamation Leavenworth Hatchery	1.9	1.8	2.5	1.8	3.1	3.8	3.1	3.9
Totals:	**20.8**	**20.3**	**22.4**	**21.5**	**26.2**	**32.1**	**34.5**	**36.2**

FORECASTED BUDGET

	2005	2006	2007	2008	2009	2010	2011	07-'09 Average
Corps Fish and Wildlife O&M	34.3	35.2	37.7	36.9	36.0	36.6	36.4	36.9
Reclamation Leavenworth Hatchery	3.8	3.9	4.2	4.4	4.5	4.7	4.8	4.4
Totals:	**38.1**	**39.1**	**41.9**	**41.3**	**40.5**	**41.3**	**41.2**	**41.2**

•Note: The $41.2M 07-09 average is a included in the $242.2M 07-09 average Corp/Reclamation O&M program forecast



Note: See BPA's Financial Disclosure Information Page

US Army Corps of Engineers

Operations and Maintenance Budget for the Fish and Wildlife Program

Portland, Seattle and Walla Walla Districts

Corps F&W Expense Budget

- **Funding for O&M tasks in areas affected by the operation of Corps hydropower producing dams:**
  - Willamette & Rogue Basins (9/15)
  - Lower Columbia River (4)
  - Snake River Basin(5)
  - Upper Columbia Basin(3)

- **We cooperatively rank each task as to its relative importance:**
  - Priority 1 = Required by law that are needed every year * (74%)
  - Priority 2 = Required by law that are needed irregularly * (20%)
  - Priority 3 = Items pending legal requirement (4.5%)
  - Priority 4 = Other Corps Stewardship Program (0.5%)

* Priority 1 & 2 activities are generally funded annually.

Corps F&W Expense Budget

(continued)

US Army Corps of Engineers
Northwestern Division

Lower Granite FY05 O&M Plan			
		1000's	
Routine O&M Baseline Budget:	BiOp Action	FY 05	Priority
Fish Transport	40,43,44	$471	1
Operations of Fish Passage Fac.	144	$485	1
Maintenance of Fish Passage Fac.	6, 144, 145	$492	1
AFEP (Transport, Adult Fish Passage)	Many	$414	1
Subtotal		$1,862	
Wildlife/Resident Fish:		FY 05	05
Wildlife Management	None	$239	1
Wildlife Maintenance	None	$14	1
Level 2 Wildlife Inventories	None	$206	4
Level 2 GIS Work	None	$21	4
Replace Cattle Water Corridors W/ Wel	None	$147	4
Nisqually John Canyon Grassland Proj	None	$147	4
Shoreline Stabilization	None	$147	4
Aerial Deer Surveys	None	$147	4
Wildlife Mitigation	None	$147	4
Subtotal		$1,216	
Total		$4,075	

Non-Routine Items:		FY 05	05
Dev. Preventative Maint. Program	6, 145	$150	2
AFEP (Steelhead Kelt Study)	109	$273	2
Debris Handling	146	$74	2
ESBS Overhaul	6, 144, 145	$30	2
Repaint Barge Holds	145	$150	3
Subtotal		$677	
Water Quality		FY 05	05
Fixed Monitoring Stations	54, 131	$89	1
Regional Database	198	$8	2
System TDG Modeling	133	$2	2
Temperature Modeling Plan (Snake R)	143	$100	2
Review TDG Monitoring (Forebay)	132	$60	2
WQ Actions Report	5	$3	2
Temperature Study (Technical Phase)	Appendix B	$50	3
TDG Monitors (Data Qual./Redund.)	131	$8	3
Subtotal		$320	

Priority 1 Items =	$2,204
Priority 2 Items =	$700
Priority 3 Items =	$208
Priority 4 Items =	$963

Note: See BPA's Financial Disclosure Information Page

Corps F&W Expense Budget

(continued)

US Army Corps of Engineers
Northwestern Division

- **Anadromous Fish (85%)**
  - Operation/maintenance of fish passage facilities at dams, mitigation hatcheries, smolt transportation, multi-year fish passage research outlined by BiOp, program management
  - Spare parts for fish passage facilities, painting fish barges, coordinating and conducting fish operations, and conducting irregular fish passage or disease research, project management

- **Wildlife and Resident Fish (10%)**
  - Baseline wildlife management, habitat mitigation, mitigation hatchery maintenance, and invasive species coordination, project management

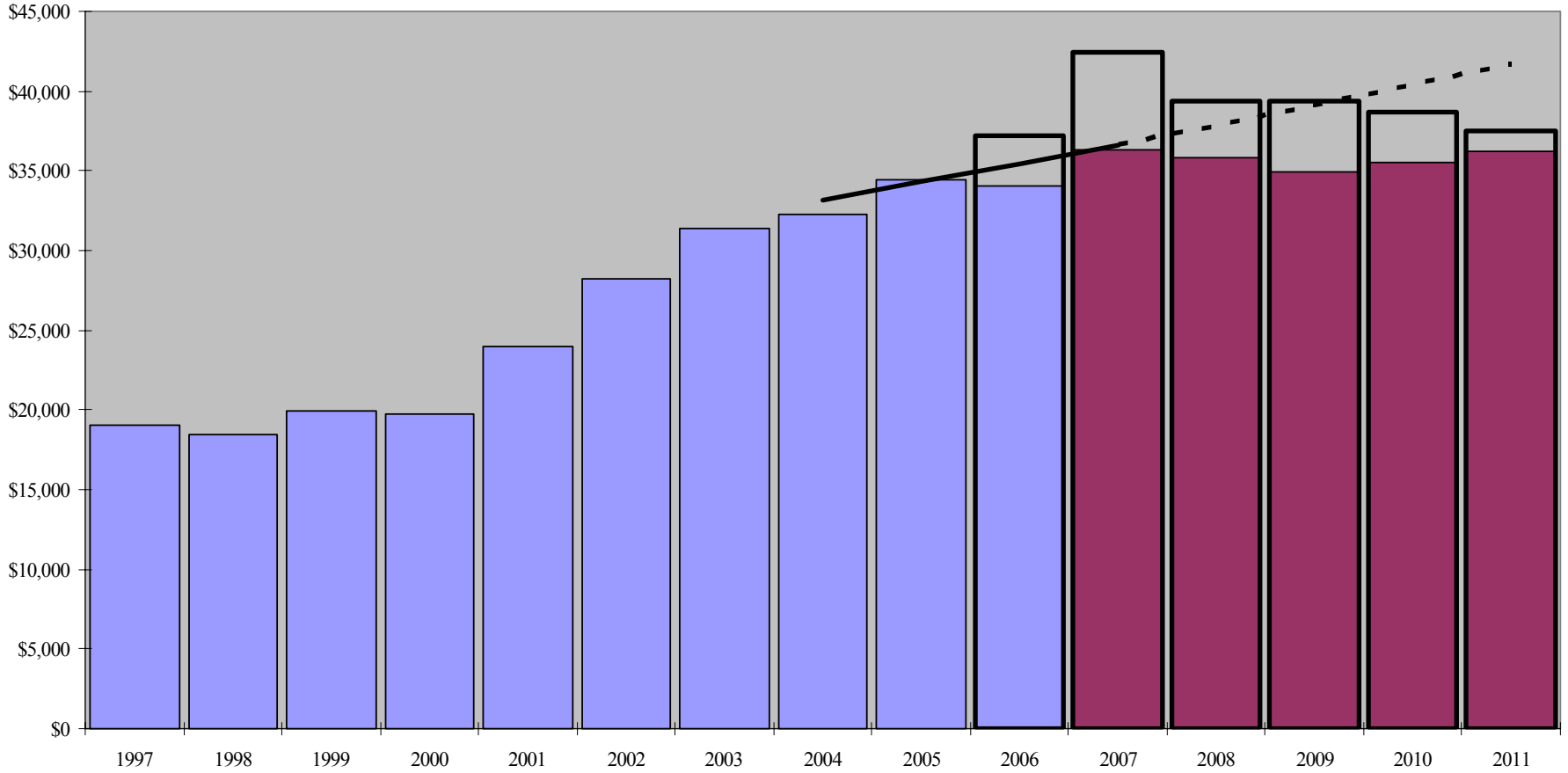
- **Water Quality (5%)**
  - Total Dissolved Gas and Temperature monitoring/modeling, and TMDL coordination, project management

Corps F&W Expense Budget

(continued)

US Army Corps of Engineers
Northwestern Division

US Army Corps of Engineers Expense Fish and Wildlife Budget



The yellow line is original 3% program ramp. The uncolored boxes refer to unfunded category 3 and 4 items. The maroon boxes refer to the anticipated budget request for the minimum program execution. The purple boxes refer to previously expended/requested dollars.

Note: See BPA's Financial Disclosure Information Page

Corps F&W Expense Budget

(continued)

US Army Corps of Engineers
Northwestern Division

- **What has changed the budget in the past:**
  - Biological Opinions for Endangered Species
- **What will change the budget in the future:**
  - Efficiencies and applying new technologies
  - Biological Opinions for Endangered Species
  - Unanticipated events
    - Aquatic nuisance species, etc…
- **Cost Effectiveness and Biological Effectiveness:**
  - Occurs on a Case-by Case basis
  - Alternative breakdown of line items
    - Project Management (5%)
    - Research (15%)
    - Fish Passage (37%)
    - Hatcheries (19%)
    - Transportation (11%)
    - Wildlife & Res. Fish (6%)
    - Water Quality (5%)
- **Role of the Regional Forum:**
  - Fish Passage Operations and Maintenance Team
  - Fish Facility Design Review Work Group
  - Studies Review Work Groups
- **Planning Documents:**
  - Fish Passage Plan
  - Water Management Plan

Bureau of Reclamation

Operation and Maintenance Budget
Leavenworth Fish Hatchery Complex

Pacific Northwest Region
Bureau of Reclamation

Reclamation Expense Budget
Leavenworth Fish Hatchery Complex

- Mitigation for Permanent Barrier Created by Construction of Grand Coulee Dam.
- Bureau had responsibility to restore, to preconstruction levels of abundance, the salmon resources jeopardized by the construction of Grand Coulee Dam.
- Complex is composed of Leavenworth, Entiat and Winthrop National Fish Hatcheries.
- Following construction, complex transferred to Fish and Wildlife service for operation and maintenance.
- Construction, operation and maintenance expenses to be repaid to the government by the farmers and power users.
- Current Complex hatchery operations are authorized by the following treaties, judicial decisions and legislation:
  - Treaty with the Yakama, 06/09/1855
  - Treaty with the Nez Perce, and Tribes of Middle Oregon, 06/25/1855
  - Treaty with the Bands of Colvilles, 04/08/1872
  - U.S. v. Oregon ("Belloni Decision", Case 899), 07/08/1969
  - Endangered Species Act of 1973
  - Pacific Salmon Treaty Act of 1985
  - Salmon and Steelhead Conservation and Enhancement Act, 1980
  - Treaty with the Walla Walla, Cayuse, Umatilla Tribes, 06/09/1855
- The Leavenworth Complex Fish production programs support mitigation efforts in the Columbia River Basin. Production goals are set by the Columbia River Fisheries Management Plan under the U.S. v Oregon decision of 1969.

Reclamation Expense Budget
Leavenworth Fish Hatchery Complex
(continued)

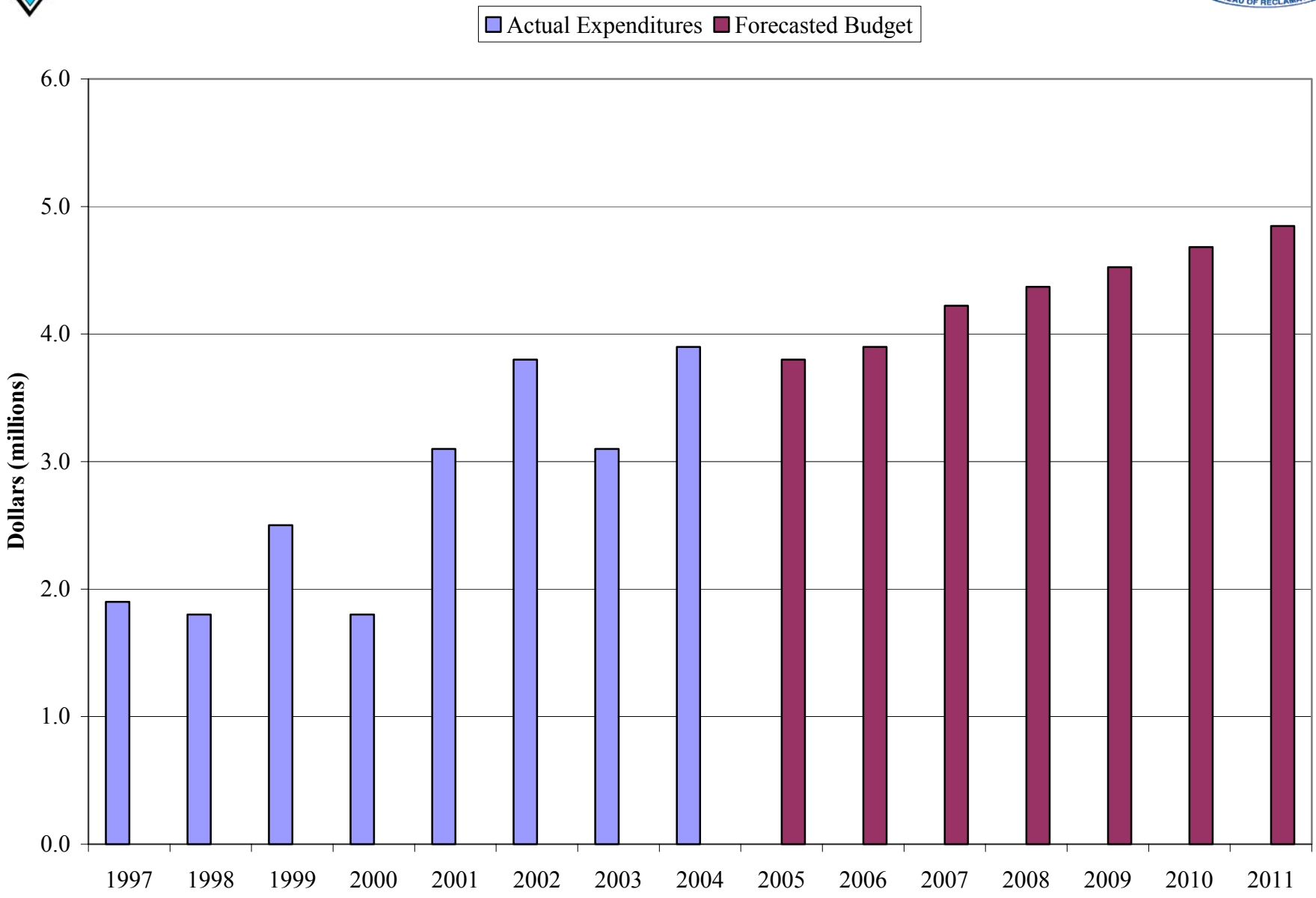
- The Leavenworth NFH currently rears 1.625 Million spring Chinook salmon smolts annually and provides a tribal and sport fishery on Icicle Creek.

- The Entiat NFH rears 400,000 spring Chinook salmon smolts annually for release into the Entiat River.

- The Winthrop NFH rears 600,000 spring Chinook salmon and 100,000 summer steelhead for release in the Methow River.

- **Budget Allocation:**
  - Operations for Leavenworth, Entiat, and Winthrop Complex: ~ 58%
  - Mid-Columbia FRO Support: ~ 23%
    - Monitoring and evaluation program, tagging, marking programs, permit compliance, Biological Assessments, Hatchery and Genetic Management Plans, ESA compliance, supplies and materials.
  - Olympia Fish Health Center Support: ~7%
    - Diagnostic fish health services at Leavenworth, Entiat and Winthrop NFH's Monthly fish health inspection throughout the entire rearing cycle of the salmon (egg to adult), diagnostic work, supplies, and materials.
  - Maintenance for above facilities ~ 12%

Reclamation F&W Expense Budget



Note: See BPA's Financial Disclosure Information Page

Power Function Review

Columbia River Fish Mitigation Project
(CRFM)

Columbia River
Fish Mitigation Project

US Army Corps of Engineers
Northwestern Division

- **Purpose:** Mitigate impacts to anadromous fish passage at the Columbia/Snake River run-of-river dams
- **Authority:** Original Congressional dam construction and operation authorities
- **Project initiation:** 1991
- **Funding source:** Congressional appropriations
- **Estimated project cost:** $1.5 -1.6 Billion
- **Current estimated completion date:** 2014
- BPA repayment of "power share" of construction and O&M costs
- **Transfers to Plant-in-Service:**
  - Costs transferred when new facility goes into operation
  - Special Congressional guidance provided for "mitigation analysis" costs within the project
    - Hold until analysis "completed"
    - Originally contemplated a 2001 completion
    - Scope includes biological baseline evaluations , prototype development and testing, and alternatives analyses
  - Guidance pre-dated first BIOP and appreciation for the scope of the passage issues
    - Currently approximately $300M being held
    - Corps revisiting the issue

Columbia River
Fish Mitigation Project

(continued)

US Army Corps of Engineers
Northwestern Division

Funding Source: Congressional Appropriations

Annual Expenditures:		Transfers to Plant-in-Service (power share):	
1997:	$85.2	1997:	$
1998:	$98.3	1998:	$
1999:	$78.6	1999:	$14.1
2000:	$70.4	2000:	$47.0
2001:	$84.5	2001:	$ 6.2
2002:	$73.2	2002:	$ 8.8
2003:	$82.3	2003:	$68.4
2004:	$65.9	2004:	$62.9

(Dollars are in millions)

Note: See BPA's Financial Disclosure Information Page

Columbia River
Fish Mitigation Project

(continued)

US Army Corps of Engineers
Northwestern Division

Estimated annual transfers to Plant-in Service 2005-2009 (Power share)

Possible Scenarios*

(Dollars are in millions)

Year:	2005	2006	2007	2008	2009
Scenario A (Study costs included)	$229	$22	$102	$180	$6
Scenario B (Study costs deferred)	$134	$22	$76	$136	$6

* Ultimate cost transfers dependent on Corps review of mitigation analysis costs guidance and actual dates for completion of new facilities

Note: See BPA's Financial Disclosure Information Page

Columbia River
Fish Mitigation Project

(continued)

US Army Corps of Engineers
Northwestern Division

- **Primary focus - passage facility configuration and operations at the dams:**
  - Evaluate project and system fish passage & survival
  - Identify/develop/construct passage improvements
  - Seek cost effective alternatives
  - Implement Biological Opinions
  - Regional coordination
    - Biological/technical review &input
    - Establish priorities
      - Critical issues/uncertainties for research
      - Biological outputs for alternative actions
      - Costs

- **2005 program highlights:**
  - Passage research at all projects except John Day and in the estuary
  - Avian predation research and planning
  - RSW construction at Ice Harbor
  - RSW design for Lower Monumental
  - Surface bypass/configuration evaluations at The Dalles, John Day, McNary and Little Goose

Columbia River
Fish Mitigation Project

(continued)

US Army Corps of Engineers
Northwestern Division

- **Cost Effectiveness:**
  - Develop alternatives for each project or group of projects
  - Consider all costs, including opportunity costs
  - "Decision documents"
  - Coordinate with Regional Forum partners

- **Project execution:**
  - Follow guidelines of Corps' Project Management Business Process
  - Project Manager and Project Delivery Team assigned
  - Project Management Plan developed
  - Monthly management reviews (cost and schedule performance & issues)
  - Independent Technical Reviews

Columbia River
Fish Mitigation Project

(continued)

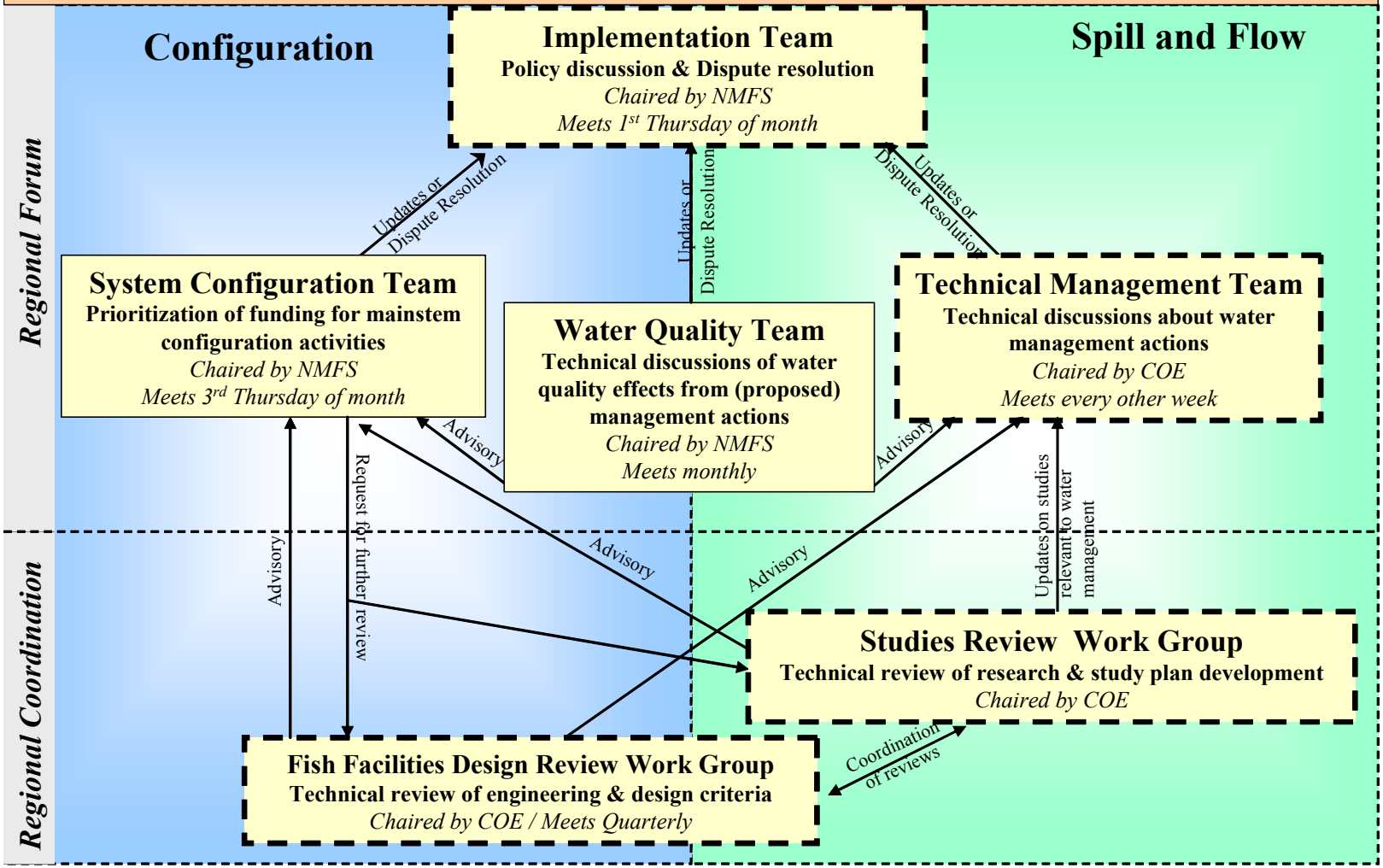
US Army Corps of Engineers
Northwestern Division

- **Anticipated future actions:**
  - Continue development of surface bypass
    - Spillway weirs
    - Sluiceway modifications
    - Forebay guidance devices
  - System analysis for Snake River Dams and McNary (transport projects)
  - Decision documents for John Day & The Dalles, update Bonneville's
  - Continue to address biological performance issues

- **Costs:**
  - Thru FY 2004 (expended) - $ 930 million
  - FY 2005 (appropriated) - $ 75 million
  - FY 2006 (request) - $ 89
  - Annual estimates (2007-2014) - $70-90M /year
  - Estimated total project cost - $ 1,550-1,650 million

- **Schedule**
  - Complete by 2014 (to meet Biological Opinion goals)

NMFS REGIONAL FORUM / REGIONAL COORDINATION
For ESA Implementation - Hydro



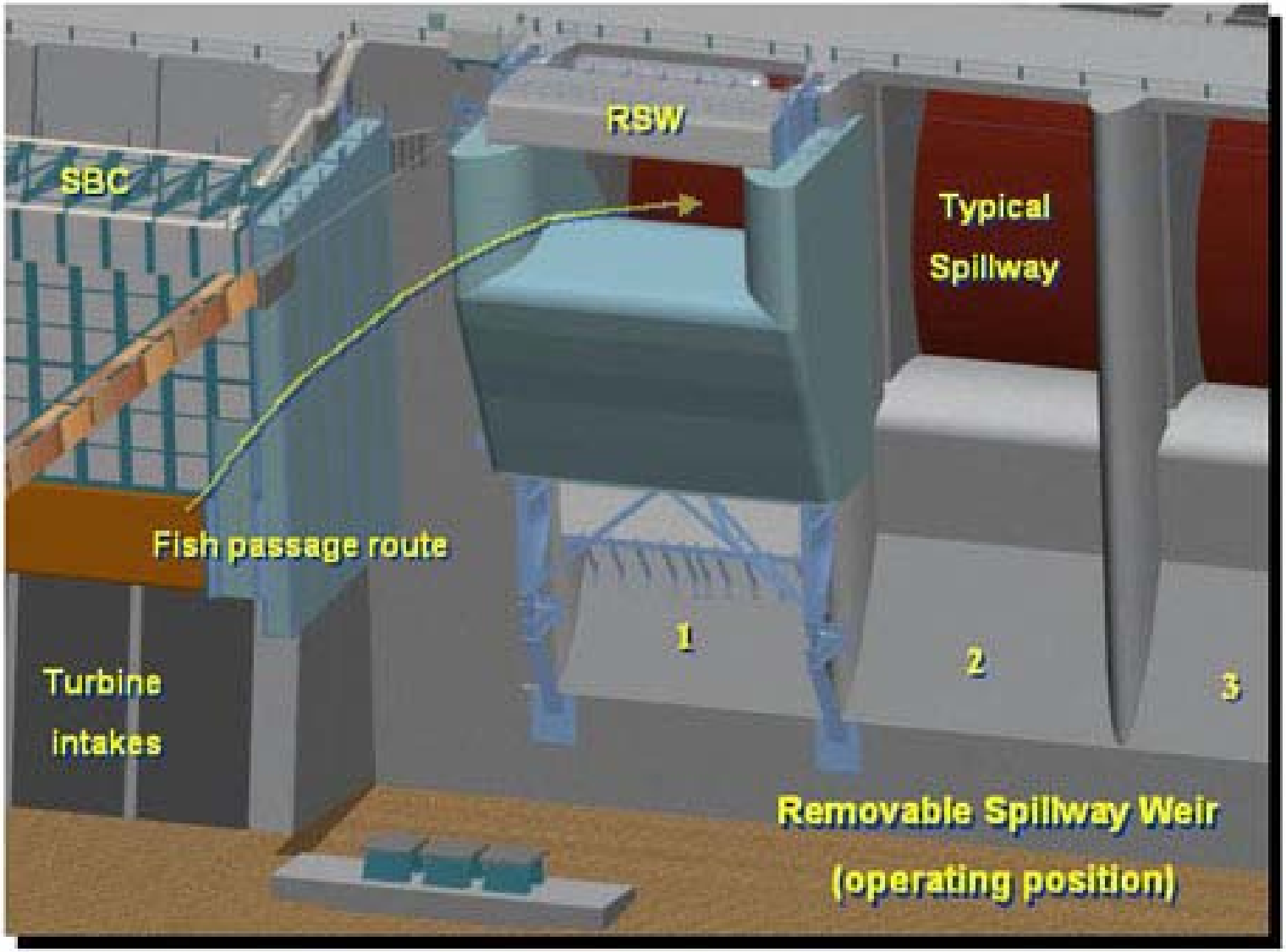
FY 2005 CRFM Program

US Army Corps of Engineers
Northwestern Division

	Project	Measure	Cost Est	Cuml.		Prior.
1	Bonn	B2 corner collector evaluation	2,250	2,250		17
2	Bonn	Corner Collector PIT-Tag Detection	500	2,750		17
3	Bonn	Adult PIT tag detection	1,600	4,350		15.5
4	Bonn	PH 2 FGE improvements	2,695	7,045		13.5
5	Bonn	Juvenile Fish Passage studies	4,300	11,345		13
6	Bonn	B2 corner collector follow-on	620	11,965		12
7	Bonn	B2 DSM, monitoring, outfall follow-on	100	12,065		10
9	IH	Auxiliary water supply improvments	383	12,448		18
10	IH	PIT tag detection on the main transport flume	545	12,993		18
11	IH	Survival/efficiency study	261	13,254		8.5
12	IH	Removable spillway weir	14,137	27,391		7.5
13	JD	Configuration decision doc & surface bypass model study	1,100	28,491		15.5
14	JD	Biological studies	0	28,491		11.5
15	JD	JD mitigation evaluation (Ringold Hatchery)	125	28,616		
16	LGo	Removable spillway weir	0	28,616		18
17	LGo	Extended length screens	100	28,716		6
18	LGo	Survival/efficiency study	2,000	30,716		4
19	LGr	RSW summer radio tag study	1,922	32,638		17.5
20	LGr	RSW/BGS evaluation	1,916	34,554		12.5
21	LGr	Juvenile bypass system improvement	300	34,854		9
22	LGr	Extended length screens	185	35,039		6
23	LoMo	Barge loading improvements	108	35,147		16.5
24	LoMo	Removable spillway weir	2,812	37,959		12
25	LoMo	Survival/efficiency study	2,600	40,559		3.5
26	McN	Removable spillway weir	1,700	42,259		18
27	McN	McNary N. shore adult PIT	85	42,344		18
28	McN	Spillway gate and hoist rehab	1,330	43,674		17.5
29	McN	Extended length screens	255	43,929		6
30	McN	Survival/efficiency study	2,200	46,129		4.5
31	Sys	Flood control study	80	46,209		18
32	Sys	High Q PIT dectection at spillway and intakes	100	46,309		18
33	Sys	Lamprey passage studies	450	46,759		15.5
34	Sys	PIT tag recovery estuary & avian islands	1,405	48,164		15.5
35	Sys	Estuary avian predation study	500	48,664		13
36	Sys	Juvenile delayed mortality study	2,800	51,464		12.5
37	Sys	Turbine passage survival study, Ph II incl. B.I.T.	855	52,319		10.5
39	Sys	Adult passage studies	1,190	53,509		8
40	Sys	Fish ladder transition pool and weir mods evaluation	100	53,609		7.5
41	Sys	Estuary studies	6,995	60,604		7
42	Sys	Evaluation of juvenile fish separators	115	60,719		5.5
43	Sys	Snake & McNary decision document	440	61,159		4.5
44	Sys	Adult passage temperature effects	459	61,618		
45	Sys	Sub-yeraling survival study methods	195	61,813		
46	TD	Spillway and sluiceway evaluations	5,950	67,763		17
47	TD	Decision document	250	68,013		15.5
48	TD	Spillway modifications	300	68,313		12.5
49	TD	Forebay passage device (curtain)	440	68,753		11.5
50	TD	Spillway improvements study	0	68,753		10.5
51	TD	Surface bypass/forebay passage	2,000	70,753		9.5
52	TD	Sluiceway improvement	200	70,953		8
53			70,953			
54		**Corps adds**				
55		Lo Mo spillway parapet wall	620			
56		McN forebay temperature study	300			
57		TRT support	300			
58			72,173			
60		**Additional potential adds**				
61		LoMo spillway near field test	140			
62		B2 fish units intake trash rake	330			
63		TD sluicway prototype j-blocks removal	500			
64		McNary adult lamprey	0			
			73,143			

Removable Spillway Weir

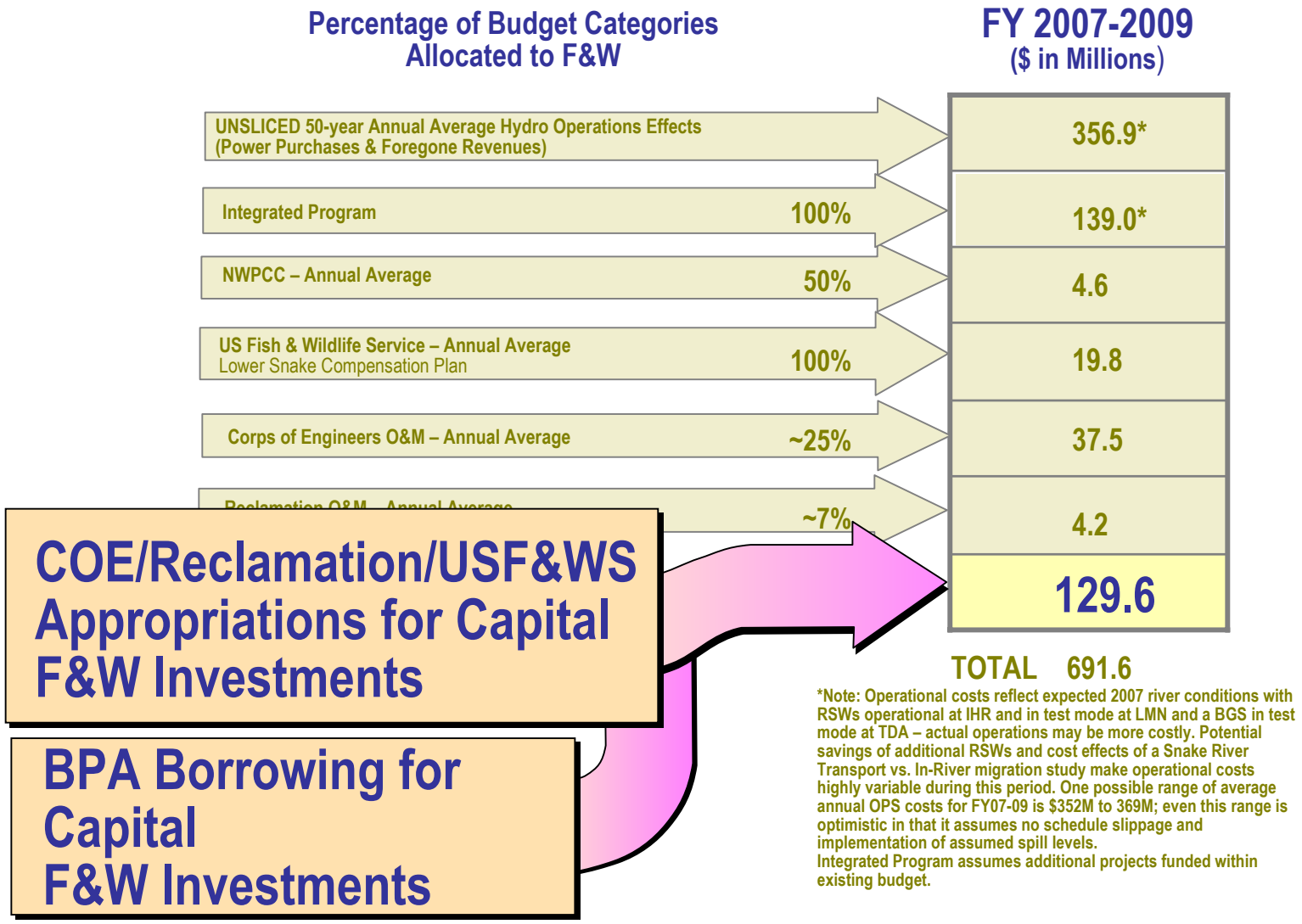
US Army Corps of Engineers
Northwestern Division



COE/Reclamation/USF&WS Appropriations for Capital F&W Investments

BPA Borrowing for Capital F&W Investments

BPA's Total Fish & Wildlife Program: Total Annual Average Cost to BPA Rate Payers



Capital Funding Mechanisms for Fish and Wildlife Investment

BPA currently funds capital fish and wildlife investment in two ways: Bonds Issued to Treasury, and Capital Appropriations.

Bonds Issued to Treasury

- Bonds issued to Treasury represent debt issued by Bonneville to the US Treasury since the late 1970's to finance BPA investments in transmission, fish & wildlife, and conservation, and in direct-funded Corps & Bureau investments.

- Bonds outstanding are limited by law to $4.45 billion. Interest rates are set at prevailing government corporation rates.

- This specifically includes capital investment in BPA's Fish and Wildlife Direct Program. BPA funds the investments, and issues bonds to Treasury to cover the investment. The term of these bonds is not to exceed the average life of the associated investments, which is 15 years. Interest is paid semi-annually on these bonds, and the principal is paid at the end of the term. Callable bonds may be issued, and can be "called" or paid early, but BPA must then pay a premium. BPA pays the full amount of these investments, then receives credits against its Treasury payment, under section 4(h)(10)(C) of the Northwest Power Act, for the non-power portion of the investment.

Capital Funding Mechanisms for Fish and Wildlife Investment (Continued)

Capital Appropriations

- Appropriations represent funding provided by annual Congressional appropriations for Corps and Bureau capital investments in hydro related facilities, including fish recovery measures, and for BPA investments in transmission prior to implementation of the 1974 (self-financing) Transmission Act. With passage of the 1996 BPA Appropriations Refinancing Act, interest rates are at Treasury's prevailing market rates, without mark-up.

- This specifically includes Corps of Engineers' investment in the Columbia River Fish Mitigation project (CRFM). The Corps receives appropriated funds and uses them for construction. Once a project is completed, it is moved to "plant-in-service" in the FCRPS accounting system. It is at this point that the power portion becomes BPA's obligation to repay to the US Treasury. These obligations must be paid within 50 years.

Net Interest, Depreciation and Amortization for Fish and Wildlife

BPA manages all of its debt as a single agency portfolio. This includes investment in transmission assets, hydro projects, conservation, and fish and wildlife, as well as non-Federal third-party debt backed by BPA.

The capital components of fish and wildlife investment in the Power Business Line revenue requirement are:

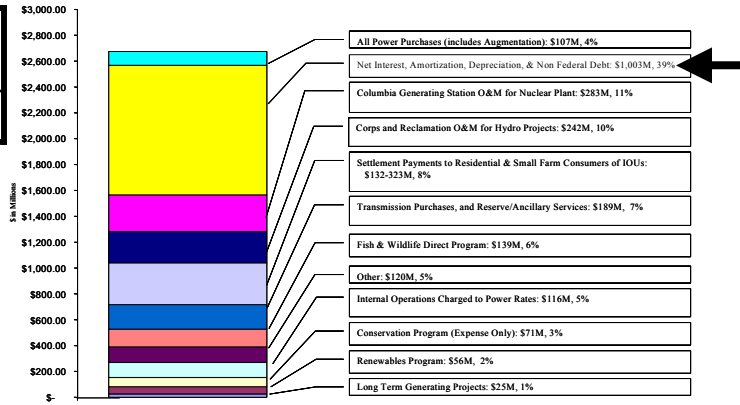
- **Depreciation** – The depreciation of appropriated investment for fish mitigation program at hydro projects managed by the Corps of Engineers, and the Lower Snake hatcheries, depreciated over 75 years.
- **Amortization** – The depreciation of non-revenue producing assets such as BPA's direct fish and wildlife capital investments (non-appropriated), amortized over 15 years.
- **Net Interest** – Comprised of interest on bonds & appropriations netted against interest credit from the Bonneville Fund and certain non-cash items.

Depreciation and amortization are direct results of the level of capital investment, so will increase or decrease based on investment levels (for amortization) and timing of project completion (for depreciation). Net interest expense, however, has several components, and is influenced by other factors, such as BPA's debt management decisions and the cash balance in the Bonneville fund, in addition to capital investment levels.

FY07-09 Power Expenses

Net Interest, Depreciation & Amortization For Fish and Wildlife

	FY97-01 Average	FY02-06 Average	FY07-09 Average
Program Level	**$75.7M**	**$86M**	**$130M**



Program:

- This category includes expenses related to the capital portion of the Fish and Wildlife Direct Program, and the Corps investment for fish and wildlife, specifically the Columbia River Fish Mitigation project, or CRFM.
- ***Program components of $130M/year annual expense for FY07-09:***
  - 18% Depreciation.
  - 18% Amortization
  - 64% Net Interest

Risks:

- Rising interest rates, affecting the cost of future repayment obligations
- Changes in the plant-in-service schedule of the Columbia River Fish Mitigation project by the Corps of Engineers
- Reduced cash balance in the Bonneville Fund, decreasing interest credit

Opportunities for Reductions:

- Continued aggressive debt management to reduce interest costs
- Continuation of the Debt Optimization Program
- Lower interest rates
- Increased cash balance, increasing interest credit

Drivers of Change:

- Decreased Federal interest expense due to advance amortization (2001-2009) from Debt Optimization Program
- Plant-in-Service schedule revisions for CRFM
- Change in projected interest income due to change in cash balance

All FY 2005-2009 depreciation and amortization information was provided on January 28, 2005 and cannot be found in BPA-Approved Agency Financial Information, but is provided for discussion or exploratory purposes only as projects of program activity levels, etc. All FY 1997-2004 depreciation and amortization information was provided on January 28, 2005 and is consistent with audited actuals that contain BPA-approved Agency Financial Information. Net interest amounts shown here are derived estimates for presentation purposes, and cannot be found in BPA-approved Agency Financial Information, but is provided for discussion or exploratory purposes only.

Net Interest, Depreciation and Amortization for Fish and Wildlife

PLANT IN SERVICE BY YEAR ($ millions)	2001	2002	2003	2004	2005	2006	2007	2008	2009
CRFM - 2002 Rate Case Forecast (Annual Average of 18 Alternatives)	$468.9	$111.8	$44.7	$213.6	$91.2	$125.9			
CRFM - Actual 2001-2004/Forecast	$6.2	$8.8	$68.4	75.9 [1/]	$17.0	$182.0	$100.2	$113.4	$147.4
Cumulative (starting from 1978)		$504.0	$572.5	$648.4	$665.4	$847.4	$947.6	$1,060.9	$1,208.3

F&W Direct Program Investment (2002 Rate Case Forecast)	$27.0	$36.0	$36.0	$36.0	$36.0	$36.0			
F&W Direct Program Investment -Actual (2001-2004)/Forecast	$16.5	$6.1	$11.6	$8.5	$36.0	$36.0	$36.0	$36.0	$36.0
Cumulative (Starting in 1985)		$273.3	$284.9	$293.4	$329.4	$365.4	$401.4	$437.4	$473.4

1/ Includes $15 million transferred from CRFM Construction-Work-In-Progress to plant-in-service at specific dams, rather than to CRFM plant

PROGRAM FIXED EXPENSES - CAPITAL INVESTMENTS ($ millions)		2002	2003	2004	2005	2006	2007	2008	2009
INTEREST EXPENSE - BPA		$11.5	$11.2	$10.9	$11.7	$13.4	$15.5	$17.7	$19.4
INTEREST EXPENSE - NON-BPA		$37.1	$38.7	$42.4	$44.3	$49.6	$57.1	$62.5	$69.2
AMORTIZATION EXPENSE		$17.2	$17.4	$17.5	$18.2	$19.5	$20.9	$22.3	$23.5
DEPRECIATION EXPENSE		$12.5	$13.2	$14.6	$15.5	$17.5	$20.3	$22.5	$25.1
TOTAL FIXED EXPENSES		**$78.2**	**$80.4**	**$85.4**	**$89.7**	**$99.9**	**$113.9**	**$125.0**	**$137.1**
BPA Capital Expenses		**$28.7**	**$28.5**	**$28.4**	**$29.8**	**$32.8**	**$36.4**	**$40.1**	**$42.9**
Non-BPA Capital Expenses		**$49.6**	**$51.9**	**$57.0**	**$59.9**	**$67.1**	**$77.5**	**$85.0**	**$94.3**

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Columbia River Fish Mitigation Project

Estimated annual transfers to Plant-in Service 2005-2009 (Power share)

Possible Scenarios*

(Dollars are in millions)

Year:	2005	2006	2007	2008	2009
"Base" Plant-in-Service	**$27**	**$182**	**$100**	**$113**	**$147**
Interest	$21	$26	$34	$40	$47
Depreciation	$5	$7	$10	$12	$13
Scenario A Plant-in-Service	**$229**	**$22**	**$102**	**$180**	**$6**
Interest	$27	$34	$37	$45	$49
Depreciation	$7	$8	$9	$11	$12
Scenario B Plant-in-Service	**$134**	**$22**	**$76**	**$136**	**$6**
Interest	$24	$28	$31	$36	$40
Depreciation	$6	$7	$8	$9	$10

*** Ultimate cost transfers dependent on Corps review of mitigation analysis costs guidance and actual dates for completion of new facilities**

PFR F&W Debt Management Issues

What would be the preferred schedule for plant-in-service?

- Transfer as much into service as soon as possible?
- Retain as much as possible in CWIP until the project is completed?
- Levelize transfers beginning in FY 2007?

The final decision will be made by the Corps, in conformance with generally accepted accounting policies. A primary objective from an accounting standpoint would be to match benefits to the appropriate generation of ratepayers.