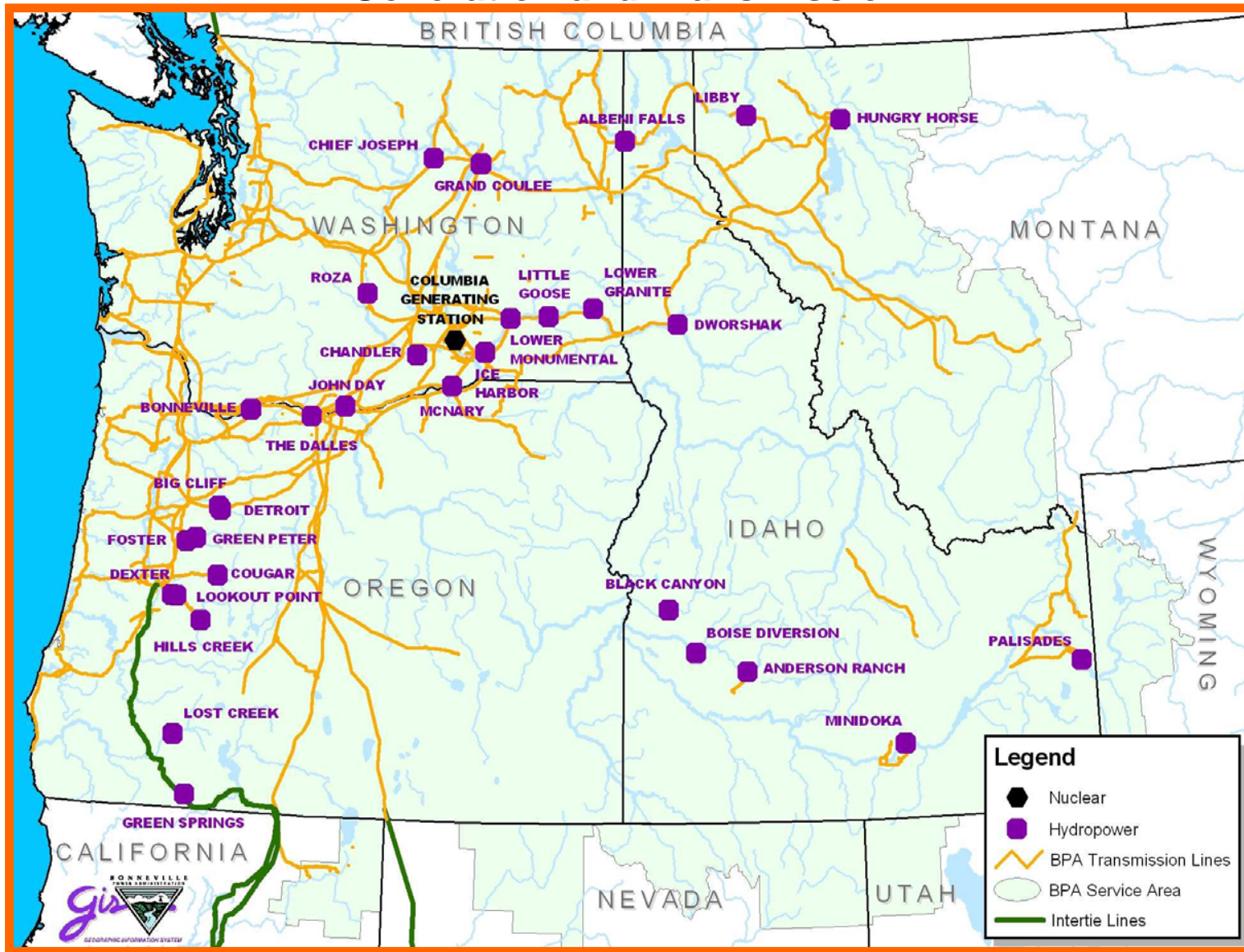


Corps and Reclamation O&M Expense Program

2010 Integrated Program Review (IPR)



Federal Columbia River Power System Generation and Transmission



Program Description and Strategic Objectives

Bureau of Reclamation / Corps of Engineers	2009 Actuals	2010 SOY	2011 WP-10 Rate Case	2011 IPR	2012 IPR	2013 IPR
BUREAU OF RECLAMATION	78,228,221	87,318,000	96,110,000	96,110,000	113,672,000	121,591,000
CORPS OF ENGINEERS	178,406,198	191,060,000	192,433,000	192,433,000	214,000,000	221,000,000
HYDRO PROJECTS INSURANCE	-	-	-	10,000,000	10,000,000	10,000,000
Total	256,634,419	278,378,000	288,543,000	298,543,000	337,672,000	352,591,000

- Program Description:
 - BPA works with U.S. Army Corps of Engineers and the Bureau of Reclamation to implement funding for operations and maintenance activities, non-routine extraordinary maintenance projects, and Fish and Wildlife and Cultural Resources mitigation activities at 31 hydro electric facilities throughout the Northwest.

- Strategic Objectives:
 - S2 : FCRPS Operations & Expansion
 - S7: Environment, Fish & Wildlife
 - I4: Asset Management



Key Products and Outputs

Bureau of Reclamation / Corps of Engineers	2009 Actuals	2010 SOY	2011 WP-10 Rate Case	2011 IPR	2012 IPR	2013 IPR
BUREAU OF RECLAMATION	78,228,221	87,318,000	96,110,000	96,110,000	113,672,000	121,591,000
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HYDRO PROJECTS INSURANCE	-	-	-	10,000,000	10,000,000	10,000,000
Total	256,634,419	278,378,000	288,543,000	298,543,000	337,672,000	352,591,000

■ Key Products and Outputs:

- 8,800 aMW of generation provided to the northwest valued at nearly \$4 billion.
- Reliable Generation and Transmission System Performance and Compliance with WECC/NERC Reliability Standards.
- Safe Work Environment at the Generating Facilities (Complying with new standards for Arc Flash, Lockout/Tagout, Hydraulic Steel Structure Inspections, Asbestos, Emergency Management Systems, etc.).
- Compliance with Biological Requirements for Fish Passage and Clean Water, and Cultural Resources Section 106 requirements.
- Avoids CO2 emissions
- Supports integration of wind and renewables



FY2010 FCRPS Hydro Performance Summary Thru April

FY10 Strategic Performance Indicators

Performance Indicator	Current Score	Measure	Target Thresholds		
			Stretch	Mid	Minimum
Lost Time Accident Rate (Quarterly)	0.6	Number of Lost time accidents per 100 full-time workers (100 FTE = 200,00 person-hours)	1.5	1.7	2.0
Generation System Reliability	100.0%	Maintain the reliability of the Federal Columbia River Power System's generators by: (1) no "high risk factor" violation with a "high" or "severe" violation severity level (level 3 or more); (2) 100 percent of submitted WECC approved mitigation plan and related milestones are completed as scheduled.	100%	N/A	N/A
HLH availability	99.5%	Actual HLH MW available divided by HLH MW planned	98%	N/A	N/A
O&M expenditure rate	101.4%	Actual O&M expenses divided by planned O&M expenses for the latest Annual Power Budget	94%	96%	100%
Capital Expenditure Rate	99.7%	Actual expenditures divided by planned expenditures (evaluated as first half and second half of year, total annual score based 50-50 on each half)	95%	90%	85%

FY10 Tactical Performance Indicators

Performance Indicator	Current Score	Measure	Target Thresholds		
			Stretch	Mid	Minimum
Capital Milestone completion rate	83.8%	Identification and tracking of significant milestones for each investment activity during the current fiscal year. % of completion dates met (at or before the scheduled milestone dates).	95%	85%	75%
Incremental Efficiency Gains	On Track	Number of new runners installed and units returned to service at Grand Coulee *Estimated return to service date - Unit 8, 9/30/10 - Unit 13, 9/30/10.	2	1	N/A
Cultural Resources Stewardship	On Track	Number of key milestones met for implementation of the FCRPS cultural resource program * Performance results are EOY based, See Cultural Resources Program detail page for interim status	1	N/A	N/A

FY10 Operational Performance Indicators

Performance Indicator	Current Score	Measure	Target Thresholds			
			Stretch	Mid	Minimum	
HydroAMP (Quarterly) Powertrain	14.5%	Powertrain component assessments are performed according to maintenance schedule, and data is periodically entered into the FCRPS hydroAMP database. Critical ancillary equipment is identified at each plant, assessments are completed on those identified as "Critical", and are updated in the FCRPS hydroAMP database by the end of the fiscal year.	Powertrain	100% of Powertrain	100% of Powertrain	100% of Powertrain
HydroAMP (Quarterly) Ancillary	22.4%			Ancillary	plus 100% of "Critical"	plus 75% of "Critical"
Operations coordination	100.0%	Percentage of participation in weekly operations coordination meetings	100%	95%	90%	
Forced Outage Factor	2.4%	Sum of all hours experienced during Forced Outages divided by Period Hours (Capacity Weighted: plant level=unit capacity weighted, District/Partner/FCRPS=plant capacity weighted)	1.9%	2.5%	N/A	
Fish Screen Reliability	0.0	Total Unit hours forced out of service by fish related issue's.	250	350	450	
Preventive/predictive maintenance rate (Quarterly)	92.4%	Completion rate for critical planned work on critical equipment	98%	90%	85%	



O&M Program Overview

- O&M Program Overview:
 - 22,059 MW of installed capacity
 - 31 generating plants (including the Pump Generating Plant at Grand Coulee).
 - 212 generating units ranging in size from 1 to 805 MWs.
 - Approximately 1560 employees: salaries and benefits, and materials and supplies related costs are 70 to 75% budget.
 - The O&M program includes funding for mitigation activities associated with cultural resources and fish and wildlife
 - **About 15%** of O&M program costs are **Fish and Wildlife O&M** for screens, hatcheries, fish bypass facilities, trap and transport, etc.
 - **About 2%** of O&M program budget is for the **FCRPS Cultural Resource** program and mitigation activities associated with Section 106 compliance

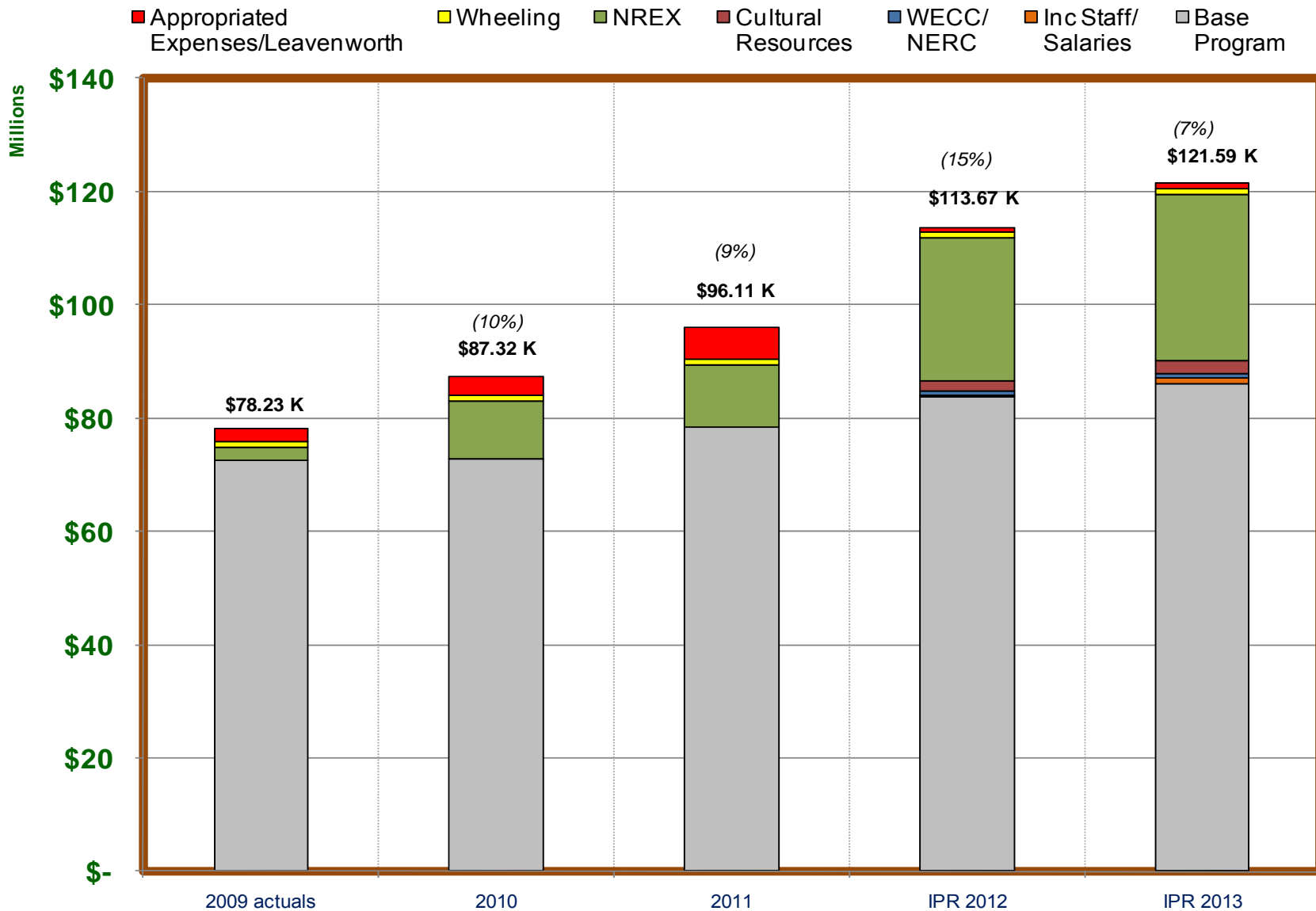


O&M Program Overview (continued)

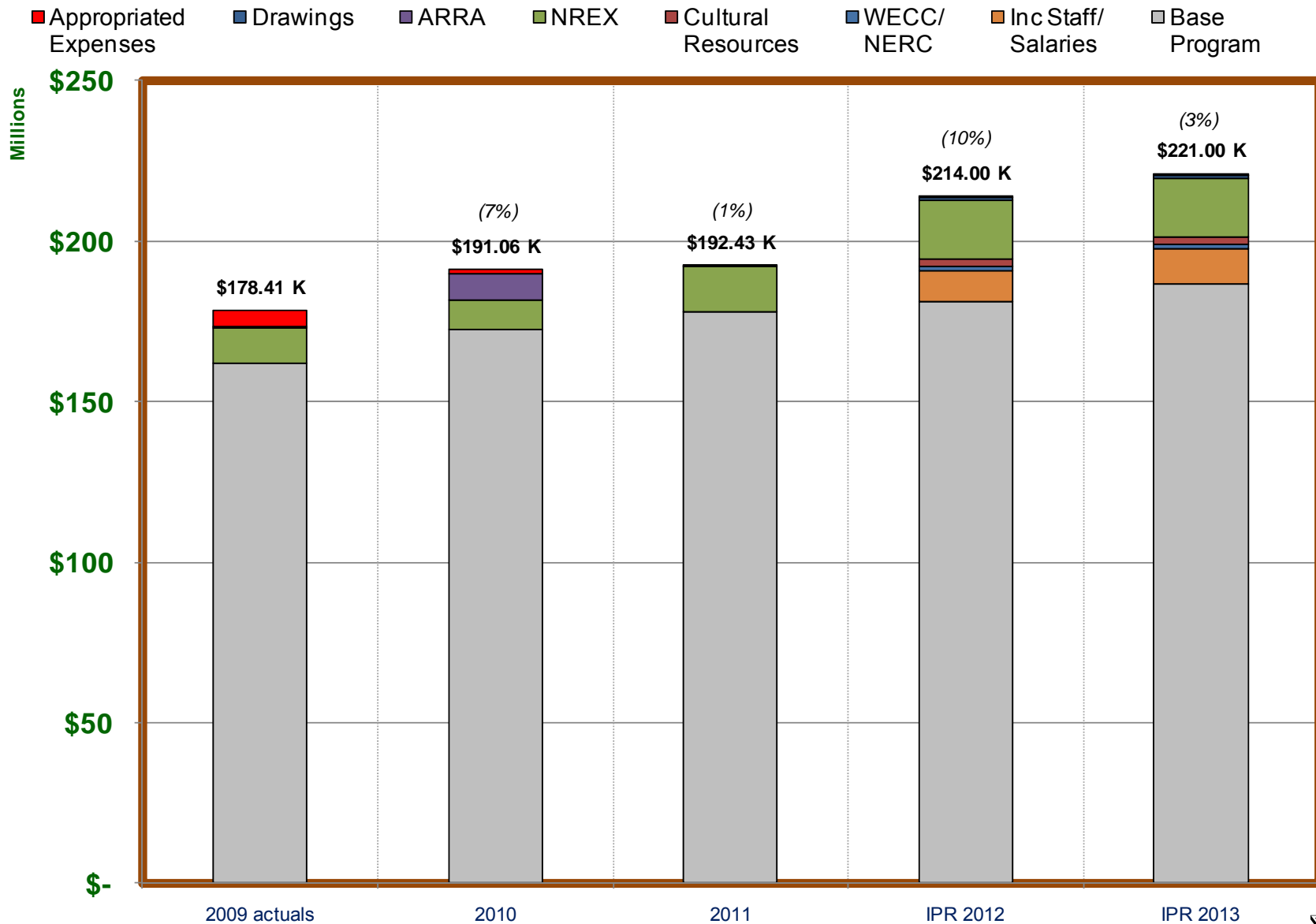
- O&M Program Overview: (continued)
 - About 15% of O&M program costs are for **Non-Routine Extraordinary Maintenance (NREX)**, the large infrequent activities associated with returning failed units to service, repairing gates and other large equipment and structures, as well as the work required for overhauling the big 805 & 600MW units in the Grand Coulee Third Powerplant. *(Note: G19 & G20 600MW units will be updated to 770MW as part of the Grand Coulee Third Powerplant overhauls)*
 - Other O&M budgetary components are programs for Dam Safety, Clean Water, Water Management, Employee Safety (safe work environment), Engineering Support, Contracting and other Support Services, Security.
 - The program is implementing industry best practices for O&M through independent outside peer reviews of the management, mechanical, electrical, and operational functions at the generating plants, and participating in hydro benchmarking forums.



Reclamation O&M Expense Budget Forecast



CORPS Expense Budget Forecast



Fish and Wildlife O&M and Cultural Resources Proposed Budgets

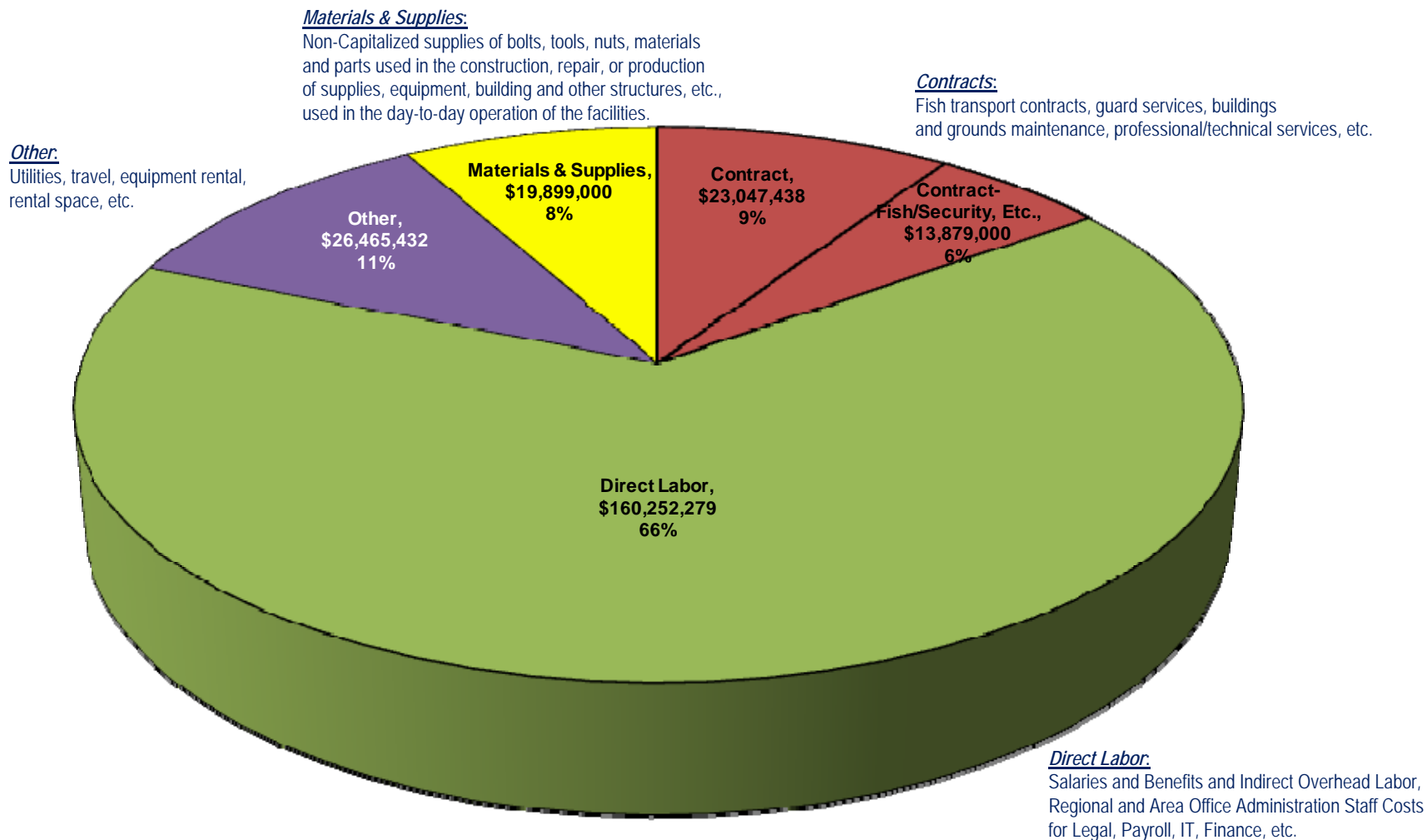
Corps					
	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Total O&M Expense Budget	\$ 178,407,000	\$ 191,060,000	\$ 192,433,000	\$ 214,000,000	\$ 221,000,000
Fish and Wildlife O&M	\$ 37,694,000	\$ 39,774,000	\$ 40,967,000	\$ 42,196,000	\$ 43,462,000
Cultural Resources	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 5,055,000	\$ 5,206,650

Reclamation					
	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Total O&M Expense Budget	\$ 78,228,000	\$ 87,318,000	\$ 96,110,000	\$ 113,672,000	\$ 121,591,000
Leavenworth Hatchery	\$ 4,549,000	\$ 4,683,000	\$ 4,847,000	\$ 5,313,000	\$ 5,499,000
Cultural Resources	\$ 1,400,000	\$ 1,400,000	\$ 1,400,000	\$ 3,086,000	\$ 3,550,000

- Note: Fish and wildlife O&M will be discussed in this afternoon’s session.
- Program drivers are the Biological Opinions and aging infrastructure (both NREX and Capital).
- Risks:
 - Aquatic Nuisance Species (zebra and quagga mussels). Funding for prevention or maintenance is not included in these budgets.
 - Aging infrastructure



FY 2009 Routine O&M Expense Costs by Category



Benchmarking Summary

- Changing program so all plants will be benchmarked annually. Data submittal processes and data quality will be more consistent as a result with this focus on an annual basis.
- Annual benchmarking of all plants will allow us to trend O&M cost categories by power plant to address high cost function areas and share best practices.
- **Corps**' Large and Medium Powerplants
 - Will continue to generally be below average costs with average water.
- **Corps**' Small Powerplants
 - Multipurpose use of projects requires manned control rooms, resulting in some plants being higher than average cost.
- **Reclamation's** Large, Medium, and Small Powerplants
 - Will continue to generally be below average costs with average water.
- **Reclamation's** Micro Powerplants
 - Goal is to manage costs to be below average costs with average water.



O&M Program FY 2012-13 Program Objectives

- FY 2012-13 O&M Program Objectives:
 - ***Low cost power, reliable power, trusted stewardship:***
 - Ensure FCRPS generators are reliable and available to support system during the Grand Coulee Third Powerplant overhauls, during which one 805MW or 600MW unit will be removed from service for 10 to 12 years.
 - Continue to address our Cultural Resources and Fish and Wildlife mitigation responsibilities to enable us to realize the benefits of the low cost hydropower system.



O&M Program FY 2012-13 Spending Drivers

■ FY 2012-13 O&M Program Spending Drivers:

– Cultural Resources:

- The budget has been flat with no inflation adjustment for 15 yrs (since original SOR agreement). Program requirements for Section 106 compliance have increased as a result of the program transitioning from inventorying sites to evaluation and mitigation activities.

– ***Increase over 2011 budget: 2012=\$4.2M, 2013=\$4.7M***

– WECC/NERC reliability:

- The program continues to see new standards/requirements, especially Critical Infrastructure Protection (CIP) for cyber security.

– ***Increase over 2011 budget: 2012=\$2.8M, 2013=\$2.9M***



O&M Program FY 2012-13 Spending Drivers (continued)

- FY 2012-13 O&M Program Spending Drivers: (continued)
 - **Staffing/Salaries:**
 - The Corps and Reclamation are adding staff at several projects (GCL, CHJ, JDA, TDA and others) to improve maintenance and operating performance (i.e. for WECC/NERC, dam and employee safety, completing critical maintenance, managing forced outages and trouble reports, etc.), as well as planning for retirements (adding staff to Trades & Craft training and Engineering CO-OP programs). **Also note**, over the past 5 years, T&C employees raises have ranged from 3.5 to 5.2%, above the 3% used in budget forecasts.
 - Approximately 80 FTE total increase over the 12-13 rate period, including the positions associated with increased WECC/NERC reliability and cultural resources requirements noted above.
 - A staffing review of practices and requirements at Grand Coulee is scheduled for 2011. The review will be conducted by an outside contractor, and process may be used to review FCRPS facilities as well in the future:
 - **Increase over 2011 budget: 2012=\$10.4M, 2013=\$12.1M**



O&M Program FY 2012-13

Objective & Spending Drivers (continued)

- FY 2012-13 O&M Program Spending Drivers: (continued)
 - **Non-Routine Extraordinary Maintenance (NREX):**
 - Aging infrastructure: Average unit age of 48 years, with balance of dam infrastructure as old or older.
 - \$249M in NREX currently accounted for during the 2010-2017 period in the FRCPS Asset Plan. Upcoming work is mostly associated with unit reliability, water control, cranes, and dam infrastructure (some of which are joint items that require matching appropriations). **Note:** Additional NREX needs, beyond those included in the Asset Plan, have been identified over the past year.
 - Seeing large costs associated with repairing failed generating units across system and significant NREX requirements for spillway gates, penstock tubes, cranes, etc.
 - Note: NREX costs for returning failed units to service are usually recovered quickly. For example, the Chief Joseph unit 21 failure cost \$3M to repair, while the value of generation from unit 21 is \$6.8M/yr. Bonneville unit 11 estimated repair cost is \$5.8M over 3 years, while the value of generation over the same period is \$7.8M. Grand Coulee G19 repair cost \$500K, while the value of the lost capacity would be ~\$4M per year.



O&M Program FY 2012-13

Objective & Spending Drivers (continued)

- FY 2012-13 O&M Program Spending Drivers: (continued)
 - **Non-Routine Extraordinary Maintenance (NREX) (continued):**
 - From 2007 – 2009 the Forced Outage Rate has averaged 3.13 for the system, and we experienced several long term unit outages as noted above. Note, industry average is 3.6 for the 2007 – 2008 period (2009 average is not yet available).
 - Costs for the GCL 3rd Powerplant Overhaul increase from FY 2011 thru 2016 as evolving project scope is defined and refined. This project is the biggest driver in NREX expenses with 2012 costs estimated at \$16.6M and 2013 at \$20.7M.
 - **Increase over 2011 budget: 2012=\$23.5M, 2013=\$33.8M**
 - **Appropriated Expenses:**
 - This amount is variable and depends on priorities in the Appropriations, but needs to be covered as an in-year expense. An example of this type of cost would be an emergency repair of a joint project feature associated with the dam structure that congress makes a high priority. In 2009 the Corps had \$5.9M in appropriated expenses and accounting cost reversals that had to be incorporated into the program that year.



Staffing and Salaries

■ Corps Overhead:

- No change in the 15% overhead rate is anticipated in future years
- Corps of Engineers overhead costs include Rent, Utilities, Administrative labor, Training, Supplies, Computer Costs, Communication charges, Equipment, etc.
- COE overhead costs are for local districts only. COE Regional and HQ offices are funded separately and do not contribute to the local district cost pool.
- COE overhead costs are consistent year to year, averaging 15% of the total COE program.

■ Reclamation Indirect:

- No change in the indirect of 14.5 percent is anticipated in future years.
- National Business Center, Department of Interior and Reclamation Denver Office Distributed Costs.
- Region and Area Office Costs – Rent, Utilities, Salaries and Benefits, Training, Materials and Supplies, Computer Costs, Communication Charges, Equipment, Contract Services and others.
- Indirect costs are consistent year to year, averaging 14 to 14.5 percent of the total program.



Staffing and Salaries: Reclamation and Corps FTE FY2009-2014

	Estimated FTE					
	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Reclamation	556	559	558	583	586	586
Corps	993	993	993	1,042	1,081	1,092

Numbers represent filling existing vacancies and planned additional positions

- New Positions
- Filling Vacancies
- Overtime
- Temporaries
- Off-Site Staff
- Contracted Staff



Staffing and Salaries: FTE Increases FY2009 to FY2010

- Reclamation:
 - Three (3) FTE's – Two C & I for maintenance on new electronic equipment and NERC/WECC person.

- Corps:
 - None planned, but positions may be added if required and funding is available

FTE Increases FY2010 to FY2011

- Reclamation:
 - None planned, but positions may be added if required and funding is available

- Corps:
 - None planned, but positions may be added if required and funding is available



Staffing and Salaries: FTE Increases FY2011 to FY2012

- Reclamation:
 - Grand Coulee and other plants: 25 FTE's – 20 maintenance staff to address critical PM, NERC/WECC requirements, control wiring issues, forced outages, and trouble reports; maintenance planner (CARMA); engineer tech for O & M issues: C & I for maintenance on new electronic equipment; and control room operators; staff archeologists for cultural resources

- Corps:
 - Walla Walla District: 13 FTEs:
 - Archeologist to execute planned additional evaluation & mitigation work.
 - Chief Maintenance (4) -Currently NWW does not have Chief of Maintenance, Planner and Maintenance Management Clerks at all Projects. To effectively manage a large maintenance program the work has to be clearly identified, prioritized, and planned. Industry best practices show that organizations that consistently plan their work, can handle up to three times the workload with the same number of available labor hours.
 - FEM Clerk for assisting crews and Maintenance Chief with work order scheduling/processing;



Staffing and Salaries: FTE Increases FY2011 to FY2012 (continued)

- Corps:
 - Walla Walla District: 14 FTEs (continued)
 - Security Guard with training and credentials in accordance to Army Regulations 190-11 and 190-56 to provide post 9/11 security, access control and maintenance of security systems.
 - Painter to address increasing demands due to facility age, maintenance backlog, modernization of equipment and changes in production regulations.
 - Natural Resources Specialist to assist McNary with additional encroachment surveys, patrols & actions required, anticipated approval of the McNary Shoreline Protection Plan as well as support joint ENS and ECC oversight.
 - Staff Mechanical Engineer to address reliability maintenance, relieve Technical Chief in performing quality control and overseeing the onsite reliability maintenance program



Staffing and Salaries: FTE Increases FY2011 to FY2012

■ Corps:

- Portland District: 11 FTEs:

- Archeologist to execute planned additional evaluation & mitigation work.
- Dedicated Safety Officer to address requirements of safety regulations and policies related to arc-flash prevention, protection, additional training, procedures, and personal protection equipment and requirements of the lockout/tagout process for clearing equipment for maintenance outages;
- Supply Technician, Warehouseman Expeditor, and Drafting Technicians - two are needed to provide manpower, parts, and as-built drawings and manuals prior to the start of activity or planned. Upon completion of the activity, work needs to be evaluated, lessons learned documented, drawings, manuals and hazard analysis modified as needed. Standard industry practices are to have these positions perform the duties as needed for maximum workflow efficiency.
- Security Guard with training and credentials in accordance to Army Regulations 190-11 and 190-56 to provide post 9/11 security, access control and maintenance of security systems.
- The decision to separate The Dalles and John Day dams into 2 separate projects has required that shared staff be changed to dedicated positions for each project. This includes Supply Technician, Budget Analyst, Safety Officer and Mechanical Engineer



Staffing and Salaries:

FTE Increases FY2011 to FY2012 (continued)

■ Corps:

- Seattle District: 10 FTEs:

- Archeologist to execute planned additional evaluation & mitigation work.
- Environmental Stewardship Biologist to provide oversight of the stewardship program. Provide technical expertise for the execution of F&W and cultural missions;
- 2 Engineers to provide programmatic oversight on inspections for dam safety and power reviews; provide quality assurance assessments and deficiency corrections and provide support to Strategic Infrastructure Investment Program;
- Management Support to assist with data requests, budget preparation, execution and day-to-budget duties;
- Assistant OPM at Chief Joseph to assist in day-to-day oversight of managing the Project. Help facilitate OPM's role as PM of the O&M program PDT; engagement of regional asset management strategy; assist the OPM with mentoring junior staff and provide better QA/QC of work across the project;
- Dedicated Safety Officer to address requirements of safety regulations and policies related to arc-flash prevention, protection, additional training, procedures, and personal protection equipment and requirements of the lockout/tagout process for clearing equipment for maintenance outages.
- Dedicated WECC/NERC Engineer needed to ensure project compliance and support/assist the District Reliability Compliance Program Coordinator.



Staffing and Salaries: FTE Increases FY2012 to FY2013

- Reclamation:
 - Grand Coulee and other plants: 3 FTE's – 3 maintenance staff to address critical PM, NERC/WECC requirements, forced outages, and trouble reports.

- Corps:
 - Walla Walla District: 13 FTEs
 - Dedicated Safety Officer to address requirements of safety regulations and policies related to arc-flash prevention, protection, additional training, procedures, and personal protection equipment and requirements of the lockout/tagout process of clearing equipment for maintenance outages.
 - Planner to assist in efficiencies with Maintenance scheduling;
 - Procurement Specialist – Projects are remote from District Contracting Office. Coordination is required to get procurement actions through the system' which diverts staff engineers from their primary duties of day-day maintenance engineering. This position will free up the staff engineers to focus on their assigned primary duties and programs
 - Utility Systems Operator - Due to potable water quality issues, WA Department of Health is requiring a water treatment system be installed at Ice Harbor. State regulations require that a state certified water treatment plant operator maintain and report on this system. A utility systems operator will perform these duties and responsibilities.
 - Power Plant Mechanic to address increasing mechanical maintenance demands due to the age of the facility, maintenance backlog, and modernization of equipment. Changes in production regulations have increased the amount of maintenance associated work which has further amplified the amount of preventive maintenance that is deferred or postponed.



Staffing and Salaries: FTE Increases FY2012 to FY2013

■ Corps:

- Portland District: 9 FTEs:

- Drafting Technicians (2) - Needed to make available manpower, parts, and as-built drawings and manuals prior to the start of activity. Upon completion of the activity, work needs to be evaluated, lessons learned documented, drawings, manuals and hazard analysis modified as needed.

■ Corps:

- Seattle District: 6 FTEs:

- Engineers to provide programmatic oversight on inspections for dam safety and power reviews; provide quality assurance assessments and deficiency corrections and provide support to Strategic Infrastructure Investment Program;
- Security Specialist with training and credentials in accordance to Army Regulations 190-11 and 190-56 to provide post 9/11 security, access control and maintenance of security systems;
- Budget Technician to assist Admin office in response to data calls, prepare budgets, and support overall management and execution of the budgets throughout the year;
- FEM Technician - Assist crews and Maintenance Chief with work order scheduling/processing.
- K-Grade Technician - Installation of GDACS and other digital control systems (e.g., exciters, auto start/stop equipment, and annunciation equipment).



Staffing and Salaries: FTE Increases FY2013 to FY2014

- Reclamation:
 - None planned, but positions may be added if required and funding is available

- Corps:
 - Walla Walla District: 10 FTEs:
 - Engineering Cooperative Program



FCRPS Cultural Resource Program

- Program purpose:
 - Federal Agencies are required to address impacts to cultural resources that result from operation and maintenance of FCRPS hydroelectric projects:
 - This is required by the National Historic Preservation Act, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act.
 - Agencies committed to address compliance with cultural resource laws in the System Operations Review Records of Decision and Programmatic Agreements.
 - Cultural resource compliance is accomplished through cooperative working groups composed of regional Tribes, State Historic Preservation Officers, and other affected land managing agencies.



FCRPS Cultural Resource Program (continued)

- Current Funding Levels and Accomplishments:
 - FY1997 – FY 2011 Annual Funding:
 - \$4.5 million Annually System-wide
 - Program Accomplishments at the 14 Hydroelectric Projects FY1997 – FY 2009:
 - Acreage Surveyed
 - Total area surveyed: 116,573 acres
 - 36,000 acres in 1996
 - 80,612 acres surveyed between 1997 and 2009
 - Cultural Resource Sites Identified - 3,796 sites total:
 - 2,223 sites in 1996
 - 1,575 identified between 1997 and 2009



FCRPS Cultural Resource Program (continued)

- Current Funding Levels and Accomplishments (continued):
 - Traditional Cultural Properties Studies Completed - 25 studies total:
 - 3 studies in 1996
 - 22 studies between 1997 and 2009
 - Mitigation Projects Completed - 72 mitigation projects total:
 - 5 sites stabilized in 1996
 - 39 data recovery projects completed and 28 sites stabilized between 1997 & 2009.
 - Numerous public education efforts such as public presentations, DVDs, and information brochures developed.



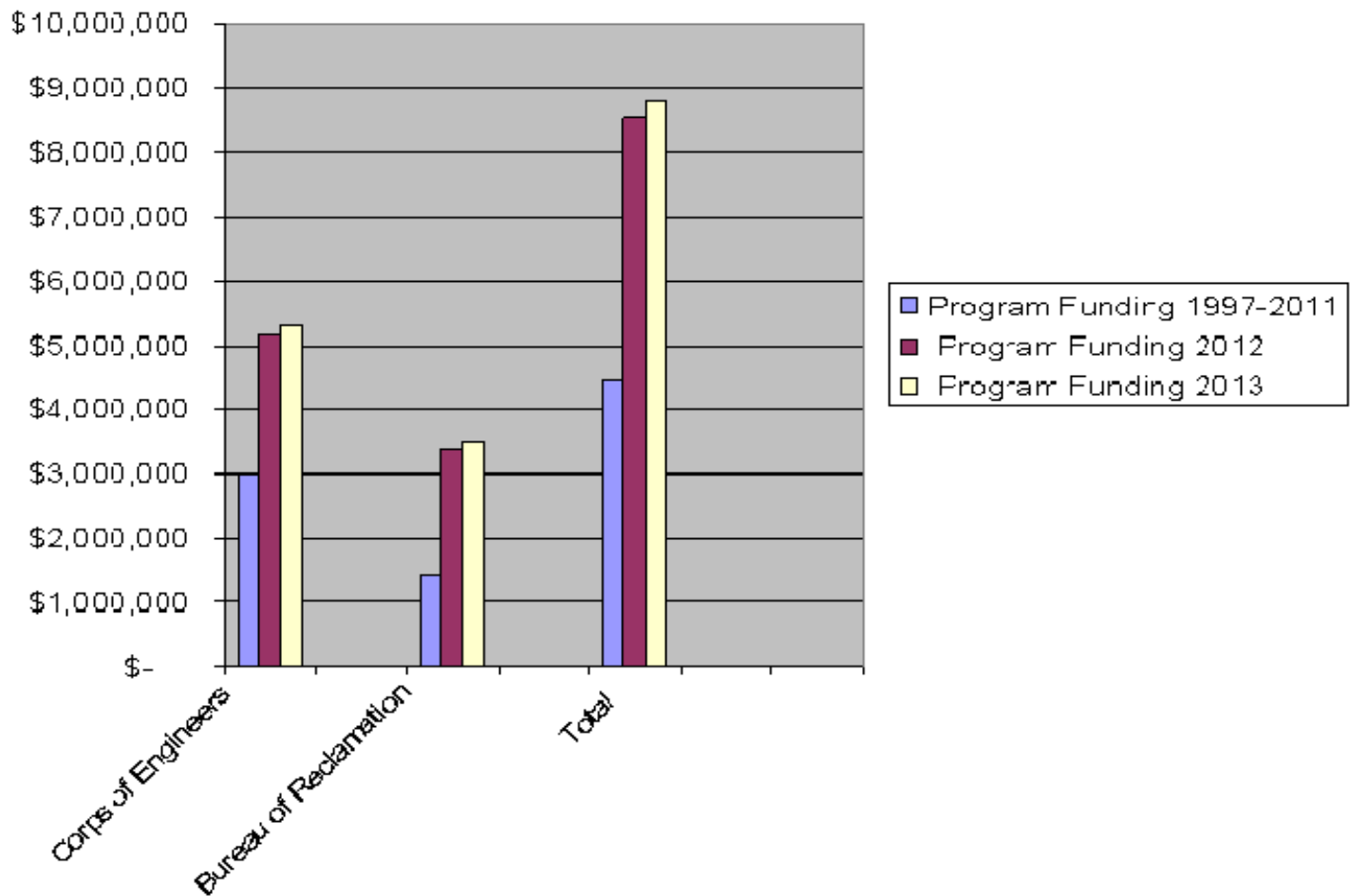
FCRPS Cultural Resource Program (continued)

- Key Factors Supporting the Need for Proposed Increased Funding Levels:
 - No Inflation increase since 1997
 - Changes in Program Scope:
 - 1997 funding plan underestimated level of effort required for TCP work, monitoring, and support services (GIS, NEPA, Engineering Design, etc.)
 - Allow for large-scale mitigation/treatment projects while still accomplishing eligibility determinations and other activities
 - Increased Program Staffing Needs:
 - Agencies require full-time FCRPS Program and support staff to improve Program execution
 - Some Reclamation costs previously in other O&M categories moved to Cultural Resources Budget



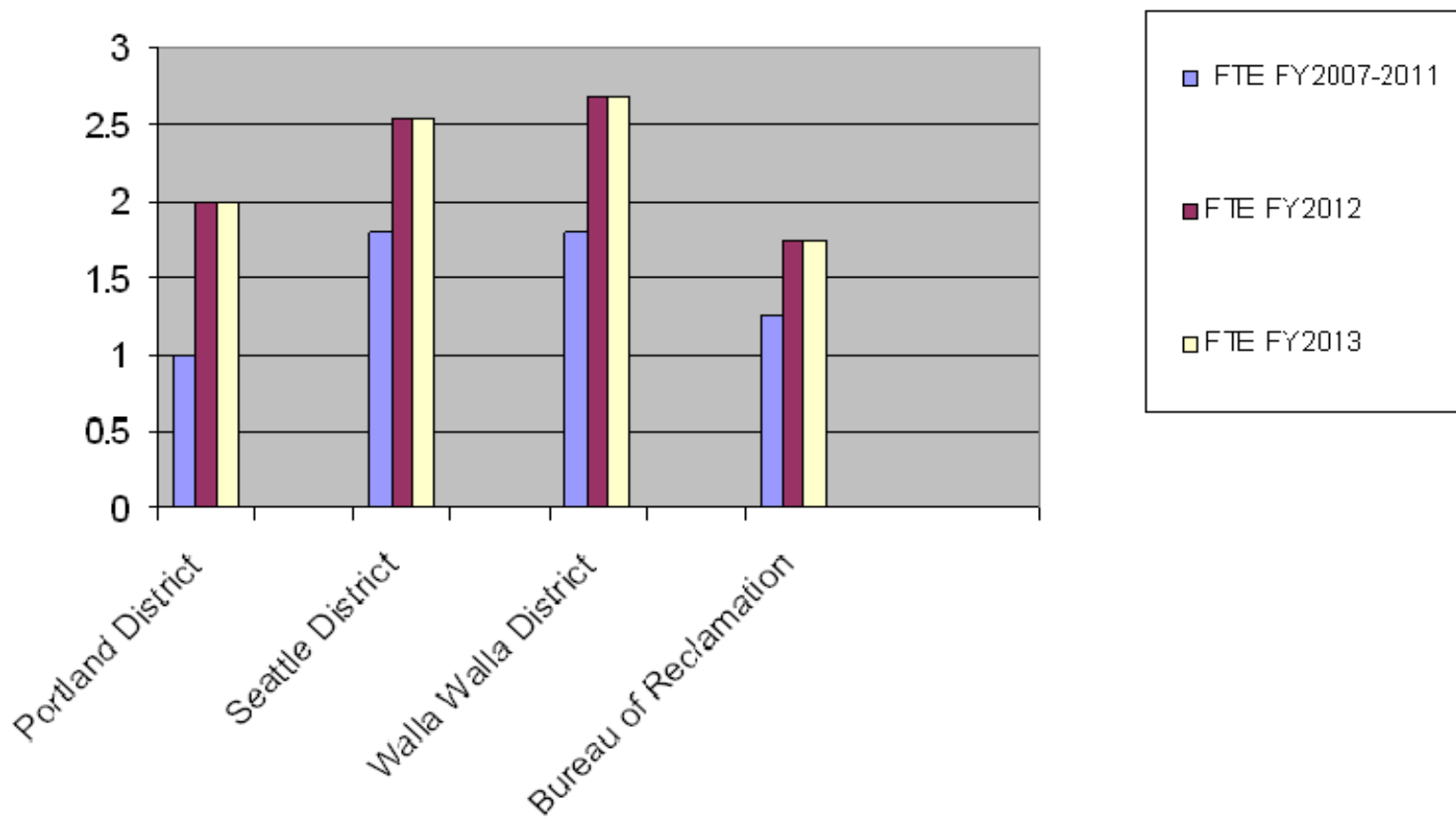
FCRPS Cultural Resource Program (continued)

- Funding -



FCRPS Cultural Resource Program (continued)

- FTE's -



FCRPS Cultural Resource Program (continued)

Erosion at the Libby Dam Project



FCRPS Cultural Resource Program (continued)

Archeological Data Recovery at the Grand Coulee Project



FCRPS Cultural Resource Program (continued)

Stabilization of an Archaeological Site at the Libby Dam Project

Erosion at the Barron Creek Site



Stabilization of the Barron Creek Site



FCRPS Cultural Resource Program (continued)

Bank Stabilization at an Archeological Site Affected by Operation of the Albeni Falls Project



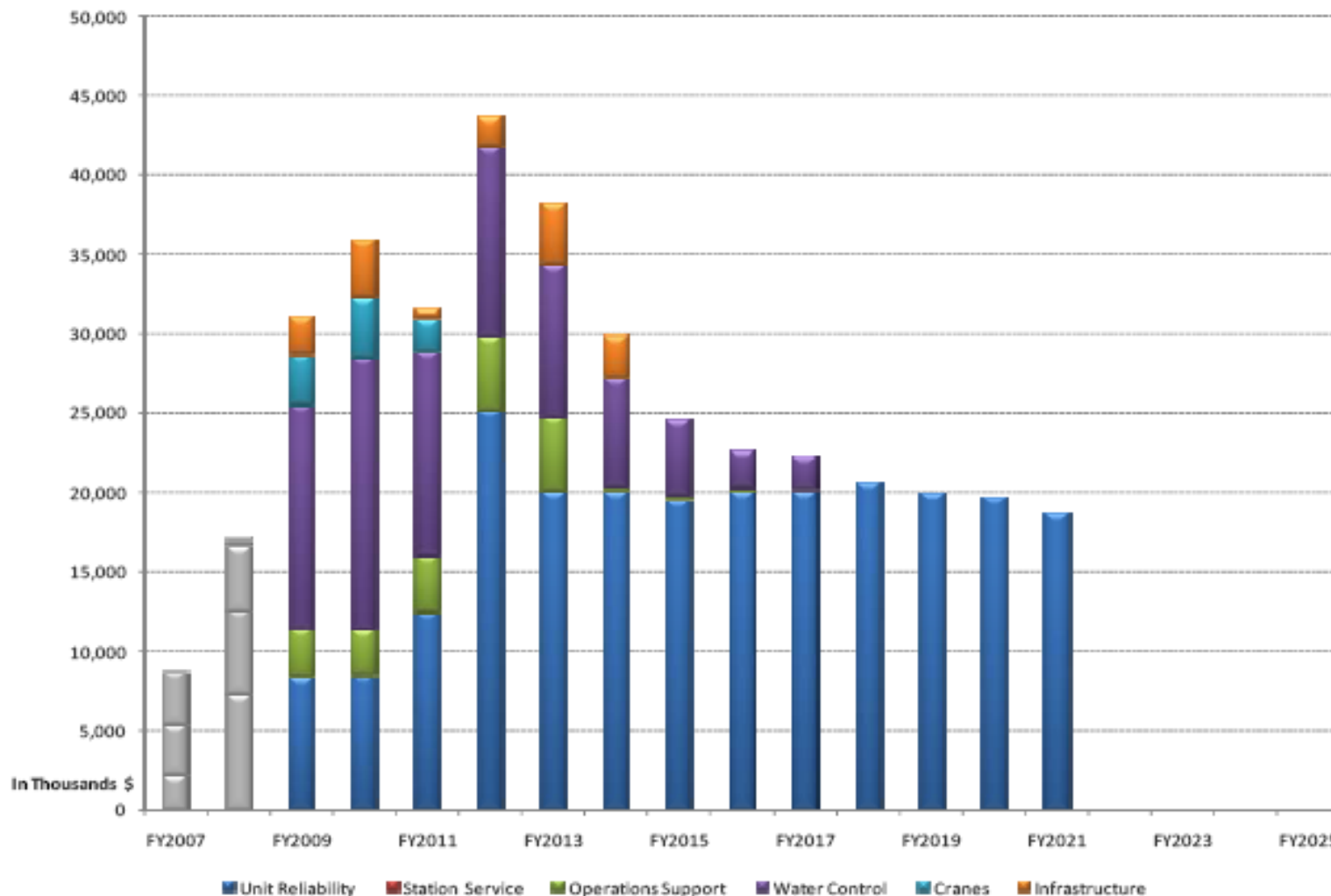
Non-Routine Extraordinary Maintenance (NREX)

- Significant new additional needs identified recently
- From the 2012 Asset Strategy:
 - Committed Non-Routine Extraordinary Maintenance (from the 2008 Integrated Program Review and were not updated for the 2012 strategy):
 - The NREX program provides funding for large, infrequent work activities that are categorized as expense following accounting standards.
 - Committed NREX by Category: The currently committed program is \$249 million for the FY2010 – 2017 period. By equipment category, expenses break down as follows:

Category	Dollar Amount (\$ M)
Unit Reliability:	\$ 146
Station Service:	\$ -
Operations Support:	\$ 16
Water Control:	\$ 68
 Cranes:	\$ 6
Infrastructure:	\$ 12



Committed Extraordinary Maintenance by Equip. Category (from 2008 Integrated Program Review)



Committed Extraordinary Maintenance by Equip. Category (from 2008 Integrated Program Review) (continued)

■ Grand Coulee:

- The majority of NREX is at Grand Coulee (\$145M), primarily for the unit overhauls in the Third Power plant, but also for bypass valve repair, piping replacement, penstock painting, and crane refurbishment:
 - Unit reliability: **\$ 125M**
 - Water control: **\$ 14M**
 - Cranes: **\$ 6M**

■ McNary:

- \$34M in NREX, about half of which is for water control work on spillway gates, headgates, and emergency intake bulkheads. The remainder is for operations support (fish screen rehabilitation) and infrastructure (roofs and access roads).

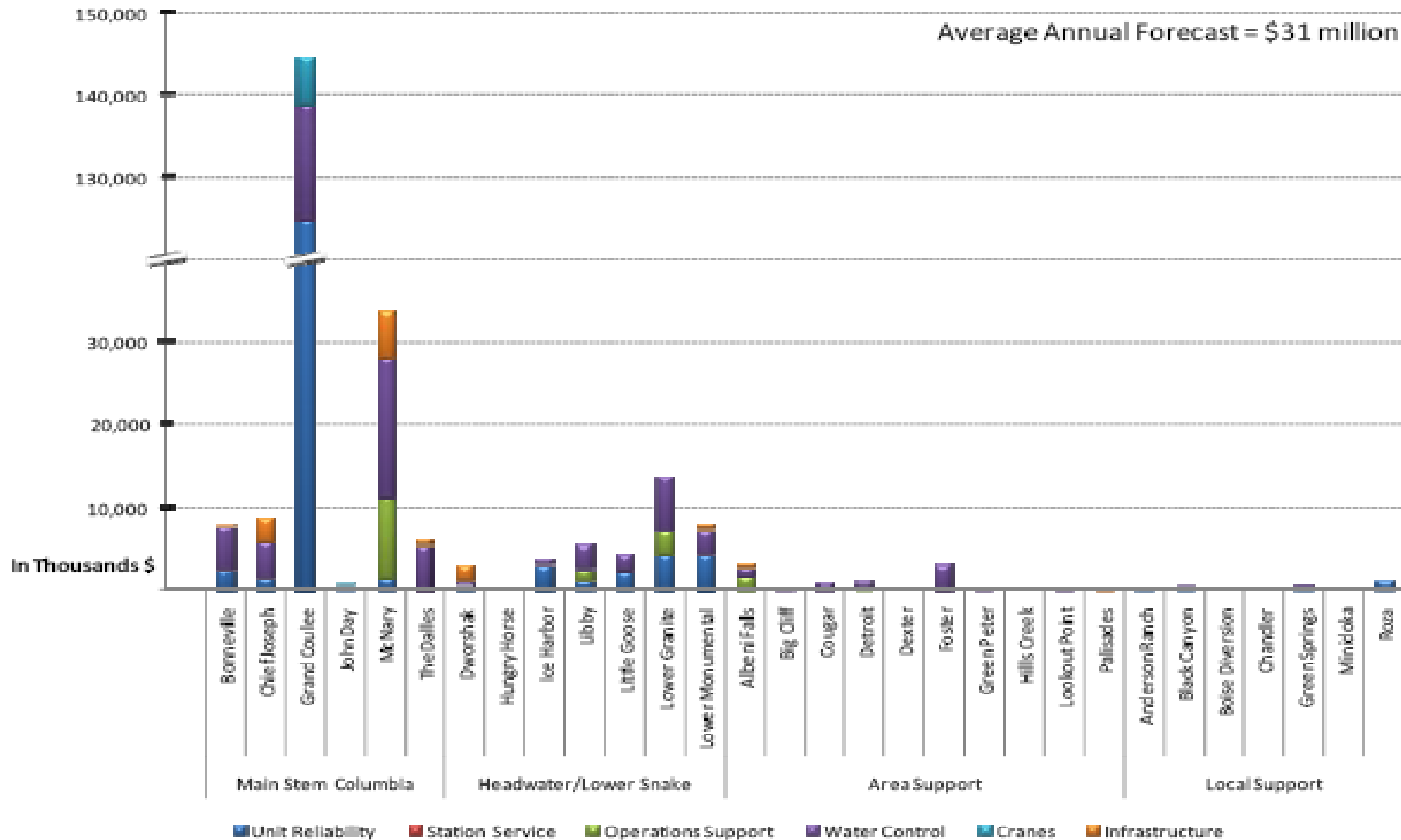
■ Lower Granite:

- \$14M in NREX is committed, primarily for water control (headgates cylinder rehabilitation, intake gate rehabilitation, and replacement of trash boom cable anchors), unit reliability (cavitation repair), and operations support (fish screen rehabilitation)



Committed Extraordinary Maintenance by Plant

(from 2008 Integrated Program Review, FY 2010-FY 2017)

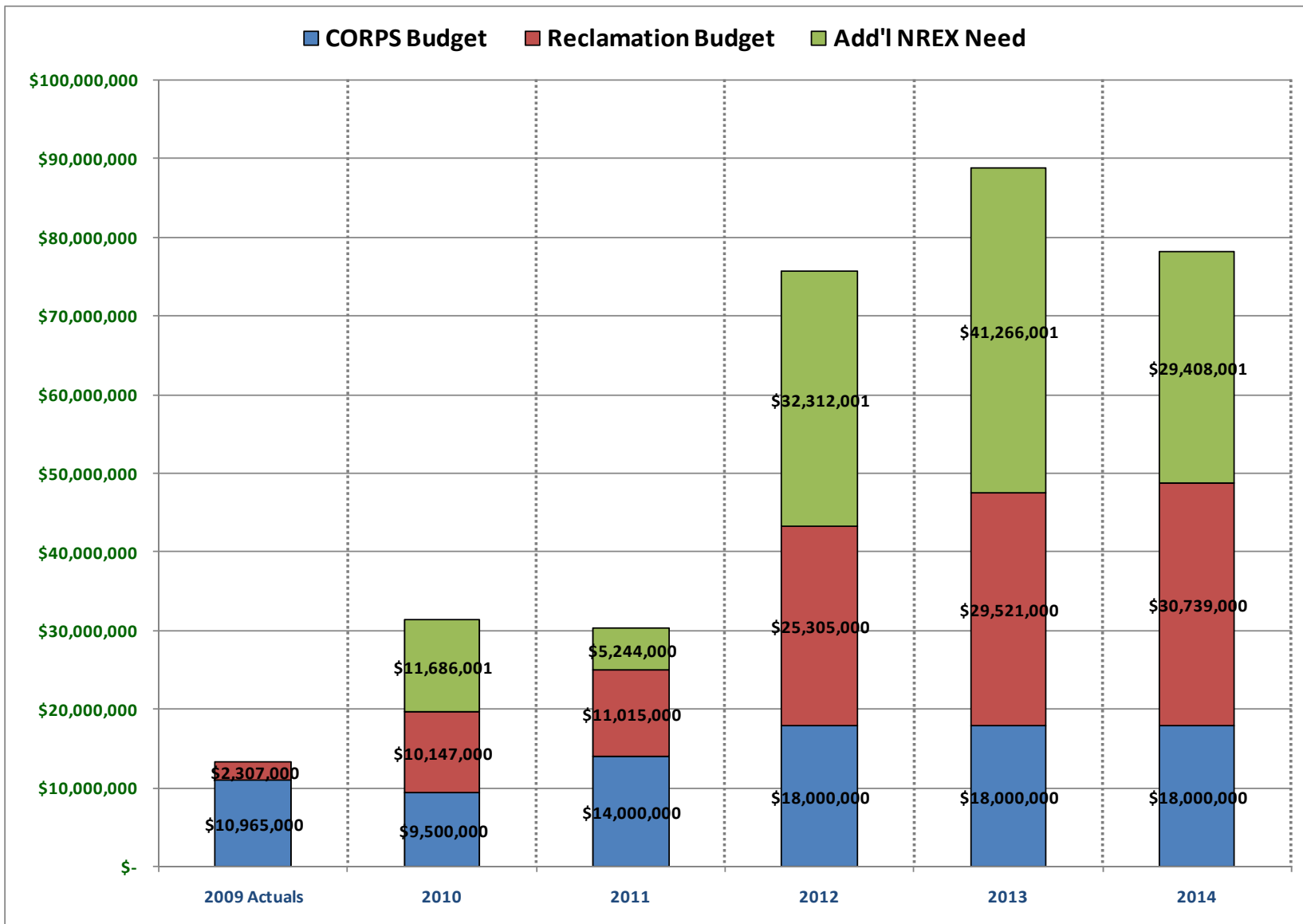


Non-Routine Extraordinary Maintenance (NREX)

- Significant new additional NREX resource requirements have been identified over the last year, particularly at Corps facilities.
- As shown on the next chart, NREX resource requirements create a bow wave of need over the next five years.
- Challenge
 - minimize rate impacts and address NREX needs (while considering ability to execute NREX work and availability of outages).



NREX Proposed Budget and Need



NREX Requirements for the Grand Coulee Third Power Plant Overhauls

- **Pre-Overhaul Work – Complete by March 2013:**
 - NEPA Compliance
 - Rebuilt Cranes, Elevators, and Fixed Wheel Gate Chamber
 - Replace 500 kV cable with 500 kV overhead lines
 - Replace Generator Exciters and Governors
 - Purchase and Install two 525 kV Transformer Banks
 - Purchase New Shaft Seals
 - Construct Material Storage Building

- **Generator G-22, G-23 and G-24:**
 - Mechanical Overhaul:
 - Wicket Gates, Bushings, Servos, Lubrication Systems, Cooling Water Systems, Brake and Jack Systems, New Wear Rings, Bearings, New Shaft Seal, Penstock Coating Repair, Draft-Tube Repair, Head-cover, Operating Ring

 - Planned Outage Schedule - March 2013 to August 2017



NREX Requirements for the Grand Coulee Third Power Plant Overhauls (continued)

■ **Generator G-19, G-20 and G-21:**

- Mechanical Overhaul:
 - Wicket Gates, Bushings, Servos, Lubrication Systems, Cooling Water Systems, Brake and Jack Systems, New Wear Rings, Bearings, New Shaft Seal, Penstock Coating Repair, Draft-Tube Repair, Head-cover, Operating Ring.

- Up-Rate Generator G19 and G-20 from 600MW to 770 MW:
 - New Generator Components – Stator Windings and Core, etc; Foundation improvements; New Bearings; Reuse Turbine Runner; Shaft Improvements/New; Other Components.

- Tentative Projected Costs and Outage Schedule:
 - Aug 2017 to March 2022. Forecasted costs shown in table below:

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
TPP Overhaul (\$ M):	\$ 7.0	\$16.6	\$20.7	\$20.9	\$24.0	\$23.7	\$26.1	\$23.9	\$23.3	\$23.4	\$23.5	\$23.6	\$17.5



Corps and Reclamation O&M Expense Program Potential Risks

- NREX funding is critical to improving and maintaining the equipment condition across the system and for ensuring safe, reliable operations. In addition to possible safety or critical infrastructure issues, limited funding hampers ability to return failed units to service, which directly impacts ability to generate revenue.
- Estimates and schedule for Grand Coulee Third Powerplant overhauls
- Building a sustainable capable workforce is vital to ensuring the long term reliable performance of the system. Staffing gaps cause efficiency losses and may impact safety and reliability.
- Fines and/or sanctions will be issued for WECC/NERC Reliability Standards violation.
- Increasing Biological and Cultural Resources mitigation requirements will require additional resources and budget.
- FY2012-13 budgets don't contain funding for prevention or maintenance required for Aquatic Nuisance Species.



Corps and Reclamation O&M Expense Program Potential Risks (continued)

- Budget reductions or delays in required resources will impact Corps and Reclamations ability to deliver safe, reliable, sustainable low cost power, as well as meet compliance and stewardship responsibilities:
 - Impacts to system availability and reliability.
 - Impacts to security, safety and electric reliability compliance, increasing the risk of additional fines/sanctions by WECC/NERC.
 - Impacts to environmental and cultural resources compliance, increasing risk of not meeting ESA or mitigation requirements.



Corps and Reclamation O&M Expense Program - Conclusions

- The 2012 – 2013 proposed budgets enable the Corps and Reclamation's O&M expense program to continue to provide safe, reliable low cost power while meeting compliance requirements and mitigation responsibilities.
- Budget requests support a capable, sustainable work force to ensure safety and address growing compliance and O&M requirements.
- O&M Expense program budget levels support a reliable, integrated FCRPS hydropower system balancing the Grand Coulee Third Power plant overhauls with the rest of the needs across the system.
- NREX resource requirements have increased due to aging infrastructure and are a critical budget item for maintaining system performance and reliability.



BOR & COE – Reduction Scenario

Bureau of Reclamation / Corps of Engineers	2012 IPR	2012 IPR Reduction Scenario	Delta	2013 IPR	2013 IPR Reduction Scenario	Delta
BUREAU OF RECLAMATION	113,672,000	107,988,000	5,684,000	121,591,000	115,511,000	6,080,000
CORPS OF ENGINEERS	214,000,000	203,300,000	10,700,000	221,000,000	209,950,000	11,050,000
HYDRO PROJECTS INSURANCE	10,000,000	10,000,000	-	10,000,000	10,000,000	-
Total	337,672,000	321,288,000	16,384,000	352,591,000	335,461,000	17,130,000

The Corps and Reclamation proposed program levels for FY 2012-13 reflect needs to address new requirements for WECC/NERC reliability compliance, staffing, cultural resources, and an increasing non-routine extraordinary maintenance backlog reflective of the advanced age of equipment at the generating projects.

The items that follow are activities or initiatives that would not be funded in the event of a 5% reduction to the proposed program levels, as well as the risks associated with not funding them. Please note that since these activities are two years out, the priority to fund or not fund an item may change based on agency or system priorities at that time. Also, items in the tables are not listed in priority order.



BOR & COE O&M Expense – Reduction Scenario

FY 2012 Impact Resulting from Reduction Scenario: Reclamation

Project	Activity	FY 2012 Request	Reduction	Risk/Impact of Reduction	Risk Level
Columbia Basin Project, Grand Coulee	Refurbish Downstream Shafts	1,599	(1,599)	Studies to evaluate recent rehabilitation efforts will be delayed. Recommendations from the studies for additional lateral drain drilling in the shafts or additional monitoring wells will not be accomplished in this fiscal year without this funding. The plants ability to operate as a peaking plant depends on a reliable down stream stabilization system.	High
Columbia Basin Project, Grand Coulee	Grand Coulee Dam Ring Seal Gate Overhaul	1,387	(644)	Delays completion of rehabilitation of the ring seal gates program. Increases overall cost of rehabilitation of the gates due to more wear needing to be repaired and less efficient work processes. These gates provide for the release of water down stream when required for flood control operations, which could be impacted if these gates are not maintained.	Medium
Columbia Basin Project, Grand Coulee	Third Powerplant Draft Tube Bulkhead Rehab	356	(356)	Delays completion of rehabilitation of the Draft Tube Bulkhead gates. Risk delays to the Third Powerplant overhaul program until repairs are made to the bulkheads.	High
Columbia Basin Project, Grand Coulee	Foundation Drain Cleaning - LPH	322	(122)	This reduction will impact the amount of foundation drain cleaning that was scheduled for this year. Risk is that the ten year schedule for completing all drain cleaning would be extended which may compromise dam safety. All drains are to be cleaned at least once every ten years.	Medium
Columbia Basin Project, Grand Coulee	PGP Plant Discharge Tube and Draft Tube Rehab	1,250	(854)	Delays the completion of the recoating of a discharge tube. Increases the overall cost of the recoating of 12 discharge tubes/penstocks due to additional inspections needed and additional surface preparation due to more corrosion. If significant corrosion does begin to occur, replacement of portions of the tubes may be necessary.	Medium
Columbia Basin Project, Grand Coulee	PGP Asbestos Abatement	30	(30)	Reduction delays the completion of the removal of asbestos from areas in the pump generating plant. Risk is health/safety hazards to those working in this plant if procedures are not followed.	High
Columbia Basin Project, Grand Coulee	Third Powerplant Cavitation Repairs	1,393	(393)	This reduction provides less contingency to react to changes in the project specifics as overhaul plans solidify.	High
Columbia Basin Project, Grand Coulee	Cultural Resources	2,866	(1,686)	The revised reduction request for a flat budget without adjustment for inflation is a decrease in funding. Tribal Patrols during drawdown of FDR Lake for flood control are presently less than needed to protect exposed cultural resources. Further funding reductions means less patrols and an increase in site looting and resource degradation. There are burial sites being eroded that are in need of protection. Reduction of funding will mean that studies needed to plan mitigation will be delayed. Delay of applying mitigation measures for these sites will increase the cost of mitigation. Programs and budgets to support them have been planned and discussed with the Tribes, and we will not be able to follow through with reduced funding. This may cause a loss of faith in our ability to perform our responsibilities which may make it more difficult to maintain or build relationships with the Tribes.	High
Total Reduction			(5,684)		



BOR & COE O&M Expense – Reduction Scenario

FY 2012 Impact Resulting from Reduction Scenario: Corps

Project	Activity	FY 2012 Request	Reduction	Risk/Impact of Reduction/Notes	Risk Level
				NREX Power hopper items that would not be started in FY12 and in FY13 with reduction. Examples are:	
John Day	Powerhouse Monolith Leaks	1,000	(1,000)	The monolith joint leakage rates are increasing with time. During the winter months, the flow rates from the leaking joints on the generator floor increases and exceed the capacity of the existing floor drain piping system. Electrical equipment is flooded, there is standing water on the floor and the terrazzo floor has been extensively damaged. Currently the drainage trenches in the drainage galleries are over flowing and the flow rates to the drainage sumps exceed the capacity of the monitoring systems. All drainage pumps are required to operate at higher than normal duty cycles to maintain safe access to the Drainage gallery. If specific singled drainage pumps fail, the gallery floods to a depth of 3 feet making access unsafe. If multiple drainage pumps failed, access and repair could be extremely dangerous and powerhouse flooding could occur. Access in the drainage gallery is dangerous for maintenance & Dam Safety monitoring is in place due to the high volume of water spraying from all directions.	High
Ice Harbor	Wicket Gate Servo Rehab U1-U6	500	(500)	The wicket gate servo motor allows for the closure of the wicket gates in an emergency. A failure of a servo motor will prevent wicket gate closure in the event of a turbine run-a-way condition. If this occurred catastrophic flooding of the powerhouse would be the end result along with possible loss of life.	Medium
Little Goose	Intake Gates & Cylinder Rehab	1,000	(1,000)	Due to the requirements of ESA to install fish screens the the late 90's, the intake gates were fully removed. The 2009 Russian runaway unit has refocused on the need to return emergency unit shutdown capacity to this project. Impacts of not doing this work is the possibility of catastrophic failure, flooding of the lower portions of the powerhouse causing electrical damage. USBR performs emergency gate closure full-load testing every 10 years as required in their Facilities Instructions, Standards and Techniques (FIST) manuals. Many utilities also test their gates frequently and some have adopted 3-minute closure due to previous unit runaway experiences.	High
Lower Monumental	Draft Tube Cavitation Repair Unit 2	100	(100)	Cavitation causes a great deal of noise, damage to components, vibrations, and a loss of efficiency. After a surface is initially affected by cavitation, it tends to erode with at an accelerating pace. The cavitation pits increase the turbulence of the fluid flow and create crevasses that act as sites for additional cavitation bubbles. The pits also increase the components' surface area and leave behind residual stresses and the loss of surface metal. Delaying repair will result in more damage and resulting higher costs for the repairs	Medium
McNary	Rehab Spillway Gates	3,000	(3,000)	Under the requirements of ESA, the spillway gates are frequently utilized for juvenile fish passage. Rehabbing the gates reduces the loads on the operating hoists which are currently overloaded. One hoist has failed in the past resulting in a dropped gate. Delaying repairs can increase the chances in catastrophic failure of the gates.	High
				NREX Joint hopper items that would not be started in FY12 and in FY13 with reduction. Examples are:	
Chief Joseph	Stilling Basin	2,000	(2,000)	The purpose of the stilling basin is dissipate the energy of fast-flowing water (e.g., from a spillway or bottom outlet), and to protect the streambed from erosion. Past surveys of the stilling basin have indicated considerable damage/erosion to baffle blocks, the end sill, and the apron slabs themselves which is a serious dam safety concern as the loss of the basin slabs can lead to a sliding failure of the spillway structure. Frequency of spill at Chief Joseph is expected to increase under the CJD/GCL spill/power swap plans to avoid high dissolved gas levels caused by the outlet tubes at GCL. Erosion progresses faster under this type of low flow conditions than under high releases, and damages and repair costs accelerate if repairs are delayed. Degraded operation would potentially impact ESA due to spill restrictions. Delays also mean larger more costly repairs. Risk will be better assessed after new reconnaissance work in FY11.	High
Bonneville	Spillway Gate, Gantry Crane Hoise Work	1,400	(1,400)	Gates are not functioning (falling) at times for reliable use. Spill patterns for endangered speices are disrupted, and hoist equipment dates from the early 70s and is in poor condition.	High
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BOR & COE O&M Expense – Reduction Scenario

FY 2012 Impact Resulting from Reduction Scenario: Corps

Project	Activity	FY 2012 Request	Reduction	Risk/Impact of Reduction/Notes	Risk Level
The Dalles	Refurbish Spillway Gates	1,700	(1,700)	The original design of the spillway gates did not account for potential forces imposed on the spillway gates for current conditions. These include: waves, ice load, wind, debris, and Trunnion friction. Calculations show several structural members are undersized for load conditions including static loading at normal pool elevation. The proposed work is to strengthen the gates to be able to safely handle the forces upon them. The spillway gates need to be retrofitted to adequately handle daily load conditions and to keep the crews who need to work behind the gates safe. A sudden failure would have significant consequences. Currently 3 gates have documented plastic deformation in the end frames and have been taken out of service.	High
Total FY12 Reduction			10,700		
				<i>Additionally, there is recently identified Regional Strategic Infrastructure Investment work needed in FY12, and FY13. These assets have failed or are expected to fail within the next 5 years and are NOT currently in the NREX joint hopper. See below for examples. Additional Power & Joint Hopper requirements are also listed below.</i>	
Lookout Point	Spillway Gate Strengthening P&S	720	720	Gate failure causes uncontrolled loss of pool, flooding downstream, possible loss of life. If the gates cannot open for flood control, possible overtopping of dam and catastrophic dam failure and loss of life/property downstream.	Medium
Bonneville	Spilling Basin Erosion Probable Failure Mode Analysis, P&S for Repairs and Replacements	4,250	4,250	The condition of the spilling basin has eroded over the years of use for ESA fish passage spill and for dissolved gas levels. The erosion if left untreated can impact the spillway structure causing monoliths to move which could lead to catastrophic failure during a flood event. Possible life safety consequences downstream, impacts safe and functional spillway use, loss of river control, causing large economic impacts.	High
Green Peter	Spillway Gates Repair Trunnion & Gate Strengthening. deformation in the strut arms.	848	848	Bearing materials were identified as being the same as those that failed at Foster causing deformation in the strut arms. At GPR, the entire bearing is of this same material and therefore friction is assumed quite high. If used under load, structure could fail.	High
Lower Granite	Repair Upstream Offshore Trash Shear Boom.	596	596	The trash boom collects debris and prevents it from damaging critical dam features such as spillway gates, the removable spillway weir installed to improve fish passage and the navigation lock.	Medium
Lower Granite	Spillway Gate Repair	1,000	1,000	Delaying repair will result in more corrosion damage and higher resulting repair costs. If damage is allowed to continue, the risk of spillway gate failure will become extreme. A spillway gate failure would result in loss of the upstream pool and catastrophic downstream flooding.	Medium
Lower Granite	Fish Screen Rehab	1,000	1,000	ESA requires fish screens be installed and operational for units to operate. The fish screens have deteriorated to the point where major maintenance needs to be performed such as frames, screen material and mechanisms to rotate the screen material needs repair/rehab. If fish screens are not functioning, then the associated turbine units cannot be operated resulting in loss of power generation.	Medium
McNary	Stilling Basin Erosion Report (Dam Safety)	300	300	Dam Safety Issue. If stilling basin erosion is severe, not known and not immediately corrected, the integrity of the spilling basin and dam monoliths will be at high risk of failure during flood events. This would be Catastrophic - possible life safety, impacts safe and functional spillway use, loss of river control, large economic impacts.	Medium
Dworshak	Unit 2 Thrust Bearing + Turbine Guide Bearing	325	325	Condition of the thrust bearing and guide bearings indicate that they need to be sent offsite to be rebabbitted and rehabbed. The spare components that is shared between the Snake Projects and John Day was not sent offsite to be rehabbed so that it would be ready for the next unit should the guide and thrust bearing needed to be replaced. The spare needs to be sent offsite to be repaired/rehabbed so that it can be installed in Unit2. Critical to operation of Unit 2 - cannot be deferred without risk to generation.	Medium
Little Goose	Replace Iso Phase Bus & Insulators	750	750	A failure of the Iso Phase bus or insulators will result in failure of associated electrical systems and immediate shutdown of turbine generators. This would result in lost generation and expensive repairs to equipment.	Medium
Total FY12 Unfunded Needs to Date		20,489		<i>Note: Additional NREX work items have been identified and will be prioritized and added to the master listing.</i>	



BOR & COE O&M Expense – Reduction Scenario

FY 2013 Impact Resulting from Reduction Scenario: Reclamation

Project	Activity	FY 2013 Request	Reduction	Risk/Impact of Reduction	Risk Level
Columbia Basin Project, Grand Coulee	Refurbish Downstream Shafts	1,655	(1,655)	Studies to evaluate recent rehabilitation efforts will be delayed. Recommendations from the studies for additional lateral drain drilling in the shafts or additional monitoring wells will not be accomplished in this fiscal year without this funding. The plants ability to operate as a peaking plant depends on a reliable down stream stabilization system.	High
Columbia Basin Project, Grand Coulee	Grand Coulee Dam Ring Seal Gate Overhaul	1,428	(663)	Delays completion of rehabilitation of the ring seal gates program. Increases overall cost of rehabilitation of the gates due to more wear needing to be repaired and less efficient work processes. These gates provide for the release of water down stream when required for flood control operations, which could be impacted if these gates are not maintained.	Medium
Columbia Basin Project, Grand Coulee	Foundation Drain Cleaning - 3PP	322	(122)	This reduction will impact the amount of foundation drain cleaning that was scheduled for this year. Risk is that the ten year schedule for completing all drain cleaning would be extended which may compromise dam safety. All drains are to be cleaned at least once every ten years.	Medium
Columbia Basin Project, Grand Coulee	Foundation Drain Cleaning - LPH	333	(147)	This reduction will impact the amount of foundation drain cleaning that was scheduled for this year. Risk is that the ten year schedule for completing all drain cleaning would be extended which may compromise dam safety. All drains are to be cleaned at least once every ten years.	Medium
Columbia Basin Project, Grand Coulee	PGP Plant Discharge Tube and Draft Tube Rehab	1,126	(854)	Delays the completion of the recoating of a discharge tube. Increases the overall cost of the recoating of 12 discharge tubes/penstocks due to additional inspections needed and additional surface preparation due to more corrosion. If significant corrosion does begin to occur, replacement of portions of the tubes may be necessary.	Medium
Columbia Basin Project, Grand Coulee	PGP Coaster/Rev. Flow Gate Rehab	360	(59)	Delays completion of maintenance of the reverse flow gates. Increases overall cost of rehabilitation of these gates due to more wear and increased corrosion. Some parts may need to be replaced in lieu of refurbishing.	Medium
Columbia Basin Project, Grand Coulee	PGP Asbestos Abatement	30	(30)	Reduction of this delays the completion of the removal of asbestos from areas in the pump generating plant. Risk is health/safety hazards to those working in this plant if procedures are not followed.	High
Columbia Basin Project, Grand Coulee	Third Powerplant Cavitation Repairs	1,442	(442)	This reduction will provide less funding for the required tri-annual cavitation repairs to the TPP units. This will translate into more cost to maintain at the next interval.	High
Columbia Basin Project, Grand Coulee	Third Powerplant Overhaul	10,400	(115)	This reduction is due to anticipation of not being able to execute the requested amount or less cost to execute.	High
Columbia Basin Project, Grand Coulee	Cultural Resources	3,173	(1,993)	The revised reduction request for a flat budget without adjustment for inflation is a decrease in funding. Tribal Patrols during drawdown of FDR Lake for flood control are presently less than needed to protect exposed cultural resources. Further funding reductions means less patrols and an increase in site looting and resource degradation. There are burial sites being eroded that are in need of protection. Reduction of funding will mean that studies needed to plan mitigation will be delayed. Delay of applying mitigation measures for these sites will increase the cost of mitigation. Programs and budgets to support them have been planned and discussed with the Tribes, and we will not be able to follow through with reduced funding. This may cause a loss of faith in our ability to perform our responsibilities which may make it more difficult to maintain or build relationships with the Tribes.	High
	Total Reduction		(6,080)		



BOR & COE O&M Expense – Reduction Scenario

FY 2013 Impact Resulting from Reduction Scenario: Corps

Project	Activity	FY 2013 Request	Reduction	Risk/Impact of Reduction/Notes	Risk Level
				<i>NREX Power hopper items that would not be started in FY12 and in FY13 with reduction. Examples are:</i>	
John Day	Powerhouse Monolith Leaks	1,000	(1,000)	The monolith joint leakage rates are increasing with time. During the winter months, the flow rates from the leaking joints on the generator floor increases and exceed the capacity of the existing floor drain piping system. Electrical equipment is flooded, there is standing water on the floor and the terrazzo floor has been extensively damaged. Currently the drainage trenches in the drainage galleries are over flowing and the flow rates to the drainage sumps exceed the capacity of the monitoring systems. All drainage pumps are required to operate at higher than normal duty cycles to maintain safe access to the Drainage gallery. If specific singled drainage pumps fail, the gallery floods to a depth of 3 feet making access unsafe. If multiple drainage pumps failed, access and repair could be extremely dangerous and powerhouse flooding could occur. Access in the drainage galler is dangerous for maintenance & Dam Safety monitoring is in place due to the high volume of water spraying from all directions.	High
Lower Monumental	Turbine Oil Replacement	500	(500)	Replacement of turbine oil is critical to the operation of Kaplan units. If lubrication is not maintained, the unit will become inoperable or the blades cannot be adjusted. This will place the unit in violation of the 1% efficiency operating points resulting in fish mortalities of ESA listed species.	Medium
Ice Harbor	Wicket Gate Servo Rehab U1-U6	500	(500)	The wicket gate servo motor allows for the closure of the wicket gates in an emergency. A failure of a servo motor will prevent wicket gate closure in the event of a turbine run-a-way condition. If this occurred catastrophic flooding of the powerhouse would be the end result along with possible loss of life.	Medium
Little Goose	Intake Gates & Cylinder Rehab	1,400	(1,400)	Due to the requirements of ESA to install fish screens the the late 90's, the intake gates were fully removed. The 2009 Russian runaway unit has refocused on the need to return emergency unit shutdown capacity to this project. Impacts of not doing this work is the possibility of catastrophic failure, flooding of the lower portions of the powerhouse causing electrical damage. USBR performs emergency gate closure full-load testing every 10 years as required in their Facilities Instructions, Standards and Techniques (FIST) manuals. Many utilities also test their gates frequently and some have adopted 3-minute closure due to previous unit runaway experiences.	High
Lower Granite	Fish Screen Rehab	1,000	(1,000)	ESA requires fish screens be installed and operational for units to operate. The fish screens have deteriorated to the point where major maintenance needs to be performed such as frames, screen material and mechanisms to rotate the screen material needs repair/rehab. If fish screens are not functioning, then the associated turbine units cannot be operated resulting in loss of power generation.	Medium
McNary	Headgates + Emerg Intake Bulkheads	1000	(1,000)	Headgate chain replacement necessary for safety as these gates are handled by the intake crane frequently. Chain is degraded and has broken loose resulting in near misses.	Medium
				<i>NREX Joint hopper items that would not be started in FY12 and in FY13 with reduction. Examples are:</i>	
The Dalles	Refurbish Spillway Gates	1,700	(1,700)	The original design of the spillway gates did not account for potential forces imposed on the spillway gates for current conditions. These include: waves, ice load, wind, debris, and Trunnion friction. Calculations show several structural members are undersized for load conditions including static loading at normal pool elevation. The proposed work is to strengthen the gates to be able to safely handle the forces upon them. The spillway gates need to be retrofitted to adequately handle daily load conditions and to keep the crews who need to work behind the gates safe. A sudden failure would have significant consequences. Currently 3 gates have documented plastic deformation in the end frames and have been taken out of service.	High
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BOR & COE O&M Expense – Reduction Scenario

FY 2013 Impact Resulting from Reduction Scenario: Corps

Project	Activity	FY 2012 Request	Reduction	Risk/Impact of Reduction/Notes	Risk Level
Bonneville	Spilling Basin Erosion Probable Failure Mode Analysis, P&S for Repairs and Replacements	3,950	(3,950)	The condition of the spilling basin has eroded over the years of use for ESA fish passage spill and for dissolved gas levels. The erosion if left untreated can impact the spillway structure causing monoliths to move which could lead to catastrophic failure during a flood event. Possible life safety consequences downstream, impacts safe and functional spillway use, loss of river control, causing large economic impacts.	High
	Total FY13 Reduction		11,050		
				Additionally, there is recently identified Regional Strategic Infrastructure Investment work needed in FY12, and FY13. These assets have failed or are expected to fail within the next 5 years and are NOT currently in the NREX joint hopper. See below for examples. Additional Power & Joint Hopper	
Lookout Point	Spillway Gate Strengthening P&S	720	720	Gate failure causes uncontrolled loss of pool, flooding downstream, possible loss of life. If the gates cannot open for flood control, possible overtopping of dam and catastrophic dam failure and loss of life/property downstream.	Medium
Bonneville	Spilling Basin Erosion Probable Failure Mode Analysis, P&S for Repairs and Replacements	4,050	4,050	The condition of the spilling basin has eroded over the years of use for ESA fish passage spill and for dissolved gas levels. The erosion if left untreated can impact the spillway structure causing monoliths to move which could lead to catastrophic failure during a flood event. Possible life safety consequences downstream, impacts safe and functional spillway use, loss of river control, causing large economic impacts.	High
Green Peter	Spillway Gates Repair Trunnion & Gate Strengthening. deformation in the strut arms.	680	680	Bearing materials were identified as being the same as those that failed at Foster causing deformation in the strut arms. At GPR, the entire bearing is of this same material and therefore friction is assumed quite high. If used under load, structure could fail.	High
McNary	Stilling Basin Erosion Report (Dam Safety)	300	300	Dam Safety Issue. If stilling basin erosion is severe, not known and not immediately corrected, the integrity of the spilling basin and dam monoliths will be at high risk of failure during flood events. This would be Catastrophic - possible life safety, impacts safe and functional spillway use, loss of river control, large economic impacts.	Medium
McNary	Rehab Extended Submerged Bar Screens (ESBSs)	2500	2,500	If fish screens are not functioning, then the associated turbine units cannot be operated resulting in loss of power generation. If turbine units cannot be used, then flow must be passed over the spillway resulting in high total dissolved gas levels and associated impact to EPA listed fisheries.	Medium
McNary	Replace Discharge Ring U1-14	1000	1,000	Turbine discharge rings are currently damaged due to corrosion and cavitation. Lack of repairs will impact turbine unit operation resulting in lost generation.	Medium
Dworshak	Failed Waterstops (dam safety)	1850	1,850	A failed water stop may result in high leakage and erosion of the monoliths. Extreme erosion of the monoliths could create catastrophic downstream flooding and damage to powerhouse equipment.	High
Little Goose	Replace Iso Phase Bus & Insulators	750	750	A failure of the Iso Phase bus or insulators will result in failure of associated electrical systems and immediate shutdown of turbine generators. This would result in lost generation and expensive repairs to equipment.	Medium
	Total Unfunded FY13 Needs to Date	22,900		Note: Additional NREX work items have been identified and will be prioritized and added to the master listing.	



Colville Generation Settlement



Colville Generation Settlement

Operating Generation Settlement Payments	2009 Actuals	2010 SOY	2011 WP-10 Rate Case	2011 IPR	2012 IPR	2013 IPR
COLVILLE GENERATION SETTLEMENT	18,169,699	21,327,665	21,754,219	21,754,219	21,928,253	22,147,535
Total	18,169,699	21,327,665	21,754,219	21,754,219	21,928,253	22,147,535

Program Description

- On April 24, 1994, the Confederated Tribes of the Colville Reservation and the United States of America entered into a Settlement Agreement, resulting in an annual payment amount to the Colville Tribes, for their share of revenue from the Grand Coulee project. The first payment, covering BPA fiscal year 1995, was in the amount of \$15.25 million, paid by BPA to the Tribe no later than March 1, 1996. Not later than March 1 of each succeeding year, BPA pays to the Tribe for the preceding BPA fiscal year, a sum computed per the calculation outlined in the Settlement Agreement. The calculation is based on inputs from BPA power sales revenue and MWh, the Consumer Price Index (CPI), and the Grand Coulee Net Generation amounts.

Strategic Objectives

- S1 – Policy and Regional Actions
- S3 – Tiered Power Rates
- S9 – Stakeholder Satisfaction
- I6 – Collaboration

Key Products and Outputs

- Calculation and payment of the annual amounts paid to the Confederated Tribes of the Colville Reservation. The estimated payment amounts are included in this program.

FY 2012-13 Program Spending Drivers

- The calculation is based on inputs from BPA power sales revenue and MWh, the Consumer Price Index (CPI), and the Grand Coulee Net Generation amounts, as required and specified in the Settlement Agreement.



Next Steps



Detailed Workshop Schedule

2010 Integrated Program Review (IPR) Workshop Schedule

All workshops are subject to change as necessary

	Workshop Topic	Date	Time
-	Asset Management Overview <i>Pre-IPR meeting held at the Quarterly Business Review</i>	May 3, 2010	3:00-4:00 PM
1	Executive Welcome and Overview <i>Executive Welcome, Introductions, Process Overview Power, Transmission, Corporate overview</i>	May 10, 2010	9:00-1:00 PM
2	Federal Hydro Asset Strategy & Capital Discussion <i>FCRPS Hydro Asset Strategy Federal Hydro Capital Program for FY 2012-17</i>	May 13, 2010	9:00-12:00 PM
3	Transmission Asset Strategies & Capital Discussion <i>Transmission Asset Strategies Transmission Capital Programs for FY 2012-17</i>	May 17, 2010	9:00-4:00 PM
4	Transmission Expense <i>Transmission Expense Programs for FY 2012-13</i>	May 18, 2010	9:00-12:00 PM
5	Transmission Overflow <i>Discuss Remaining Topics, Follow Ups, Etc.</i>		1:00-4:00 PM
6	Power Internal Operating Costs, Acquisition/Ancillary Services & Residential Exchange <i>Power Internal Operating Cost for FY 2012-13 Power Acquisition and Ancillary Services for FY 2012-13 Residential Exchange Program for FY 2012-13</i>	May 19, 2010	9:00-12:00 PM
7	Columbia Generating Station (CGS) <i>CGS Expense and Capital Program for FY 2012-17</i>		1:00-4:00 PM



Detailed Workshop Schedule

2010 Integrated Program Review (IPR) Workshop Schedule

All workshops are subject to change as necessary

Workshop Topic		Date	Time
8	FCRPS Hydro Operation & Maintenance Program and Cultural Resources <i>FCRPS Hydro O&M Program for FY 2012-13</i> <i>Cultural Resources Program</i>	May 20, 2010	9:00-12:00 PM
9	Fish & Wildlife, Lower Snake River Comp (LSRC) and Northwest Power Planning Council (NWPPC) <i>F&W Expense & Capital Program for FY 2012-17</i> <i>LSRC Program for FY 2012-13</i> <i>NWPPC Expense Program for FY 2012-13</i> <i>Columbia River Fish Mitigation (CRFM) FY 2012-17</i>		1:00-4:00 PM
10	Power Overflow <i>Discuss Remaining Topics, Follow Ups, Etc.</i>	May 24, 2010	9:00-12:00 PM
11	Energy Efficiency & Renewable Resources <i>Energy Efficiency Expense & Capital Program for FY 2012-17</i> <i>Renewable Resources for FY 2012-13</i>		1:00-4:00 PM
12	Facilities Asset Strategy <i>Facilities Asset Strategy</i>	May 25, 2010	9:00-10:30 AM
13	Information Technology (IT) Asset Strategy <i>IT Asset Strategy</i>		10:30-12:00 PM
14	Agency Services <i>Agency Services Expense & Capital Programs for FY 2012-2017</i>		1:00-4:00 PM
15	General Manager Meeting	June 8, 2010	9:00-12:00 PM
16	General Manager Meeting	July 13, 2010	9:00-12:00 PM



Ways to Participate

- All forums are open to the public and will be noticed on the Integrated Program Review (IPR) external website at: <http://www.bpa.gov/corporate/Finance/IBR/IPR/>.
- Representatives from the Corps of Engineers, Bureau of Reclamation and Energy Northwest will be participating in the IPR process including presentations.
- All technical and managerial workshops will be held at BPA Headquarters.
- If participating by phone please dial into the bridge at 503-230-5566, then any time during or after the message and the double beep, enter 3981#. Presentation material will be posted on the IPR external website prior to the workshop taking place.
- The IPR process will include a public comment period for proposed program spending levels. The comment period opens May 10, 2010 and will close on July 29, 2010.
- Comments can be submitted at any of the scheduled workshops or submitted in writing to:
 - Bonneville Power Administration, P.O. Box 14428, Portland, OR 97293-4428,
 - Email to comment@bpa.gov,
 - Faxed to (503) 230-3285



BPA's Financial Disclosure Information

- All FY 2010-2017 information has been made publicly available by BPA on May 14, 2010 and does not contain Agency-approved Financial Information.
- All FY 2009 information has been made publicly available by BPA and contains Agency-approved Financial Information.
- All FY 2011 Rate Case data has been developed for publication in rates proceeding documents and is being provided by BPA.

