

# 2006 Capital Planning Review

Kick off for fiscal years 2007-2012



# Meeting agenda

- Chief Financial Office
- Transmission
- Power
- Corporate



# Overall planning picture

- In 2008 BPA will be transitioning to the “One BPA” regional expense and capital cost review process.
- By 2008, BPA intends to align the timing of the power and transmission rate cases.
- This Capital Planning Review (CPR) will examine capital programs that are most likely to affect post-FY 2009 rates.



# Capital planning picture

- First step at responding to stakeholders requests to understand BPA's capital planning process.
- How and why the agency makes capital investment plans involves obtaining stakeholder priorities for the different investment categories.

PFR FY 2007-FY 2009



\*detail - capital and expense

\*in the near term

PIR FY 2008-FY 2009

\*seeks comments on specific funding levels

CPR FY 2007-FY 2012



\*long-term and one time period

\*high level, policy, general overview

\*combined agency, corporate spending shown as total entity

\*how and why investments are planned

- By understanding the capital planning process, stakeholders should be able to influence future capital decisions by knowing:
  - when comments are timely
  - to whom to make comments
  - the right level of comment for the purpose



# Capital planning picture

- BPA is seeking to inform stakeholders on its long-term capital planning process for FY 2007-FY 2012 and asking for comments and suggestions on how the future capital review process should involve customers and interested parties to result in a meaningful and transparent capital and expense review.
- BPA's intent is that this discussion will ultimately inform BPA's policy choices involving capital planning

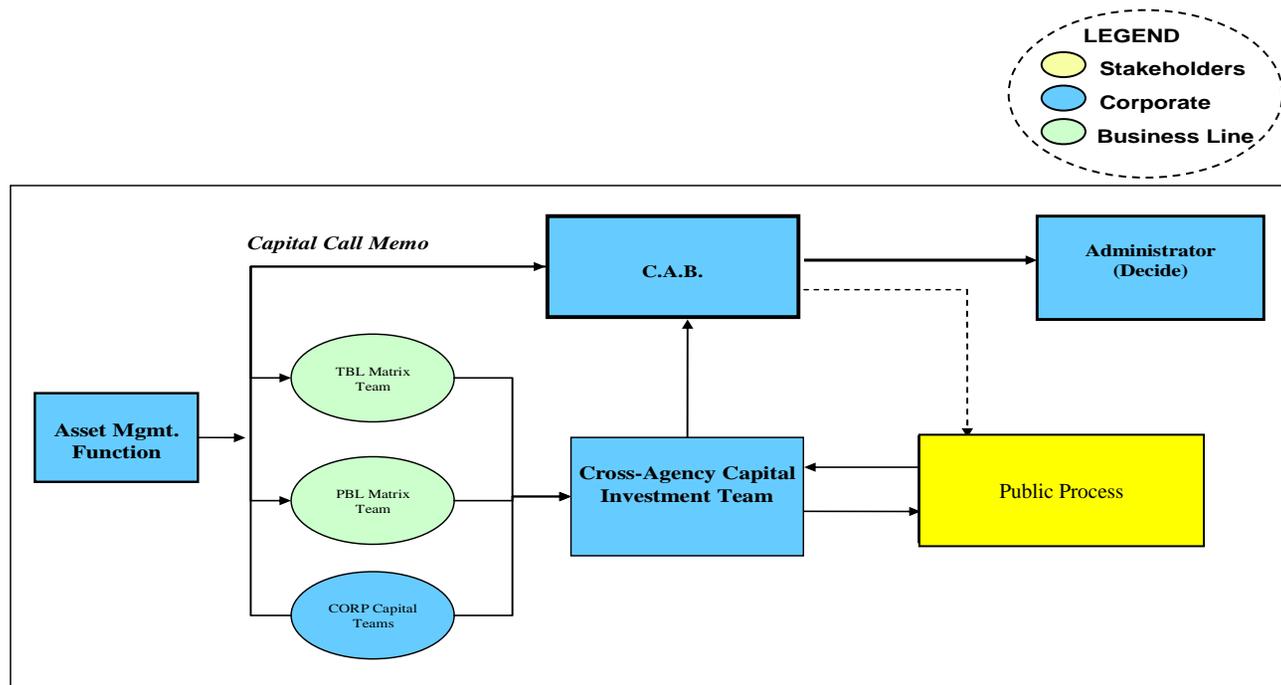


# Capital planning process

- During the next two years, BPA will implement a new integrated agency capital and expense planning process.
- This year's Capital Planning Review is an interim step aimed at giving the stakeholders a consolidated view of and high-level input into BPA's capital investments. To accomplish this, BPA will combine the capital review processes for the power, transmission and corporate capital programs.



# Capital allocation decision process



# Capital influence on BPA rates

- With input from stakeholders, and taking into consideration BPA's access to capital, future capital investments are planned.
- A capital investment will proceed through several stages on its way to completion and implementation:
  - Planning stage
    - where BPA gives customers opportunities for input into BPA's long-term capital investment strategy.
  - Plant-in-Service stage
  - Rates stage



# Planning stage

- In the Planning Stage BPA has not made any financial commitments.
- Projects that emerge from the Capital Planning Review and are approved by the Administrator will be authorized to proceed.
- Both Business Lines utilize a multi-phased planning approach
  - consisting of three phases:
    - 1) design
    - 2) survey
    - 3) National Environmental Protection Act (NEPA) review
  - the plan can be modified or changed at any point in this process



# Plant-in-Service stage

- By this stage BPA has made financial commitments.
- During construction all financing costs, including interest, that are funded through borrowing or other forms of non-rates capital sources use the Allowance for Funds Used During Construction (AFUDC) accounting approach.
- When construction is complete the plant is put into operation and is considered **used and useful**.
- The moment the plant goes into operation the AFUDC stops and depreciation begins on the plant.



# Rates stage

- Once the plant is operational and the asset is providing benefits, the depreciation expense associated with the plant is recovered through rates.
- In addition to recovering the costs associated with existing assets the rate setting processes include an estimate of the costs of future investments including plant-in-service timing, amounts, and financing costs of the construction.



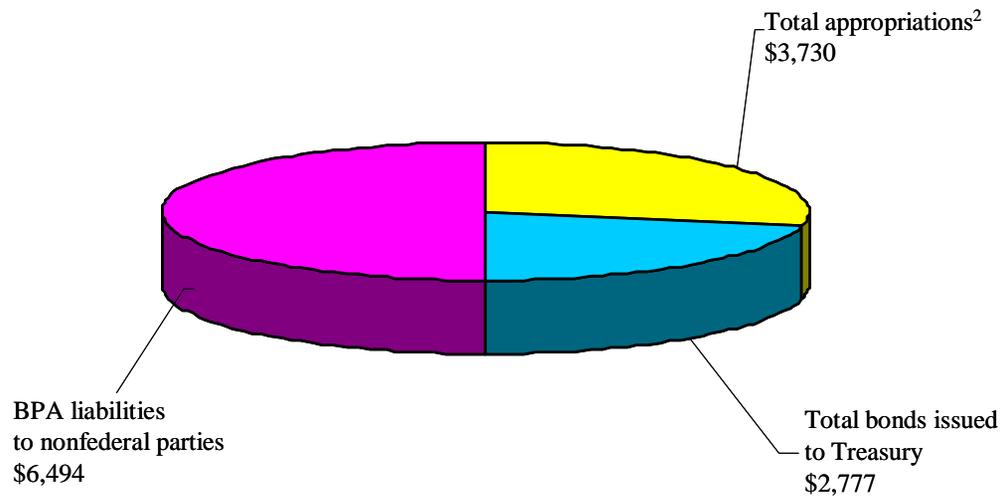
# Factors driving current rates

- About 40 percent of the total annual expenses of both functions (power & transmission) relate to capital cost recover:
  - depreciation,
  - federal net interest expense, and
  - nonfederal debt service (principal and interest payments).
- The main factor driving depreciation expense is the cost related to assets acquired prior to 2006. Capital levels currently forecast for FY 2007-FY 2009 have a relatively smaller impact on BPA's depreciation expense, and therefore on rates, compared to the historical component.



# Liabilities

## Total liabilities to federal and nonfederal parties FY 2005<sup>1</sup> (\$ million)



1 Does not include irrigation assistance liability of \$722 million at 0 percent interest (\$53.9 million of this amount is for Lower Teton, for which the BPA administrator has no obligation to recover costs). "Liabilities" do not directly relate to "liabilities" as reflected in the Combined Statement of Capitalization and Long-Term Liabilities.

2 Appropriation amounts exclude appropriations for construction work still in progress (CWIP). 2005 CWIP for appropriations was \$572 million.

Total liabilities do not include the \$2 billion capitalization adjustment for refinancing of the appropriations.



# Liabilities

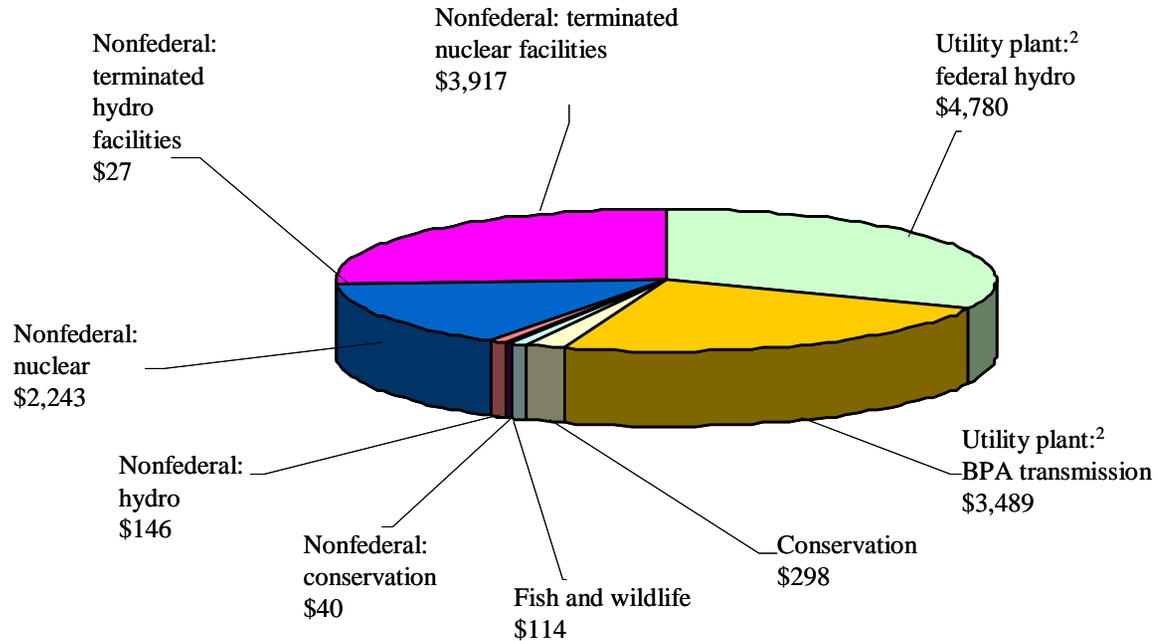
- BPA's liabilities can be divided into three categories:
  - **Congressional Appropriations** – Federal generation and transmission appropriations are repaid to the US Treasury within the weighted average service lives of the associated investments (maximum 50 years) from the time each facility is placed in service.
  - **Bonds Issued to US Treasury** – BPA is authorized by Congress to have outstanding with the U.S. Treasury up to \$4.45 billion of interest-bearing debt with terms and conditions comparable to debt issued by U.S. government corporations.
  - **Nonfederal Projects Debt** – This debt includes funding for Shultz-Wautoma transmission line, Columbia Generating Station, and three other non-operating nuclear projects. These projects comprise the bulk of the nonfederal debt.



# Assets/depreciation

## Total federal and nonfederal assets

**FY 2005<sup>1</sup>**  
(\$ millions)



<sup>1</sup> The asset categories on this page do not directly relate to the asset categories displayed on the Combined Statements of Assets.

<sup>2</sup> Utility plant amount excludes construction work still in progress (CWIP). 2005 CWIP for utility plant was \$1.15 billion.



# Assets/depreciation

- As of the end of FY 2005, BPA is responsible for recovering through rates over \$15 billion in assets.
  - Almost \$9 billion of this amount are federal assets.
  - The remaining \$6 billion are nonfederal projects.
- Federal assets are depreciated over the life of the plant and BPA recovers the annual depreciated amount in rates.
- Nonfederal assets are recovered through the equivalent of the principal payments that are made each year for the debt associated with these projects



# Rate discussion

- Additional capital investments do not necessarily mean that a rate increase is assured because some of these investments add revenues or reduce annual expenses.
- Moreover, other financial management factors and additional revenues could more than offset the need for additional revenues needed to cover new capital investments.
- The following tables illustrate a basic rule-of-thumb for estimating the potential effect a capital investment could have on transmission or power rates.
- Estimates using the rule of thumb are for the first full year an asset is operational.



# Rate rules of thumb

## Sample Capital Investment and Associated Annual Costs

(\$Millions)

Investment	Interest %	Interest Cost/yr	Depreciation Life	Depreciation Cost/yr	Total Annual Cost
\$ 200.0	5.30%	\$ 10.6	5	\$ 40.0	\$ 50.6
\$ 200.0	5.30%	\$ 10.6	15	\$ 13.3	\$ 23.9
\$ 200.0	5.30%	\$ 10.6	40	\$ 5.0	\$ 15.6
\$ 200.0	5.30%	\$ 10.6	75	\$ 2.7	\$ 13.3

**Sample Investment of \$200M @ 5yrs**  
**Sample Investment of \$200M @ 15yrs**  
**Sample Investment of \$200M @ 40yrs**  
**Sample Investment of \$200M @ 75yrs**

\$Value (\$Millions)	\$/MWH	Illustrative Rate	Rate % Change
\$ 6.4	N/A	N/A	1.0%
\$ 15.6	N/A	N/A	2.4%
\$ 59.0	1.00	30	3.3%
\$ 50.6	0.86	30	2.8%
\$ 23.9	0.41	30	1.3%
\$ 13.3	0.22	30	0.7%

**Transmission Rate Rule of Thumb**  
**Sample Investment of \$200M @ 40yrs**

**Power Rate Rule of Thumb \***  
**Sample Investment of \$200M @ 5yrs**  
**Sample Investment of \$200M @ 15yrs**  
**Sample Investment of \$200M @ 75yrs**

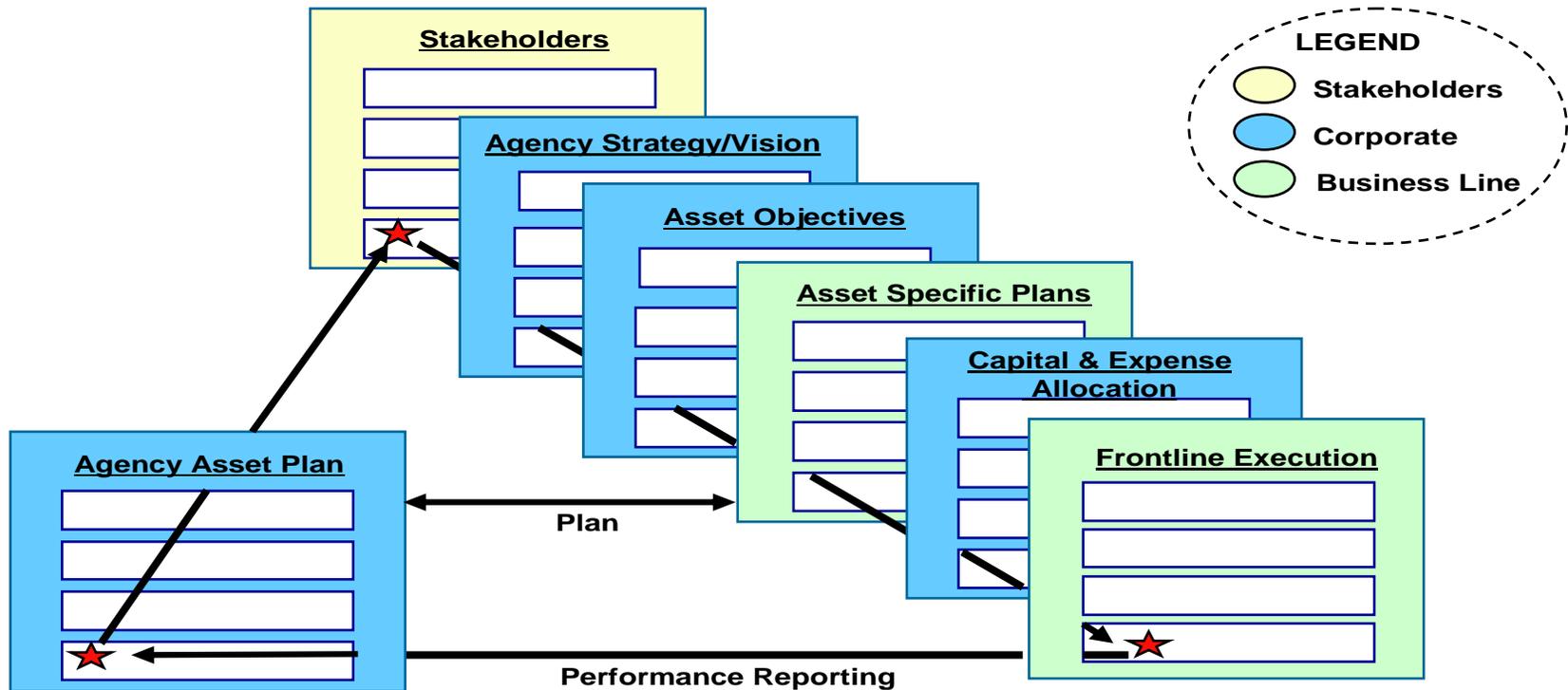
\* Power rate rule of thumb based on FY2007-FY2009 rate period.

# BPA's integrated capital planning process

- Led by BPA's Chief Financial Officer
  - Provides management oversight
  - Heads cross-organization team reviewing capital investments consistent with standards of conduct
- BPA's business units developed the following information shown here consistent with BPA's balanced scorecard.
- The Administrator will make a final decision in early August.



# Asset planning and decision making line of sight



# Capital management objectives

- BPA seeks to maintain a balance among its various programs while continuing to implement strategic objectives. Examples of these are:
  - dealing with congestion management;
  - being prepared to meet the Administrator's load service obligation;
  - ensuring that system reliability criteria are met;
  - funding for non-wires, renewable energy and other alternative energy sources;
  - promoting energy efficiency; and
  - fish and wildlife responsibilities.
- BPA uses a Least Cost principle in its selection of capital projects.

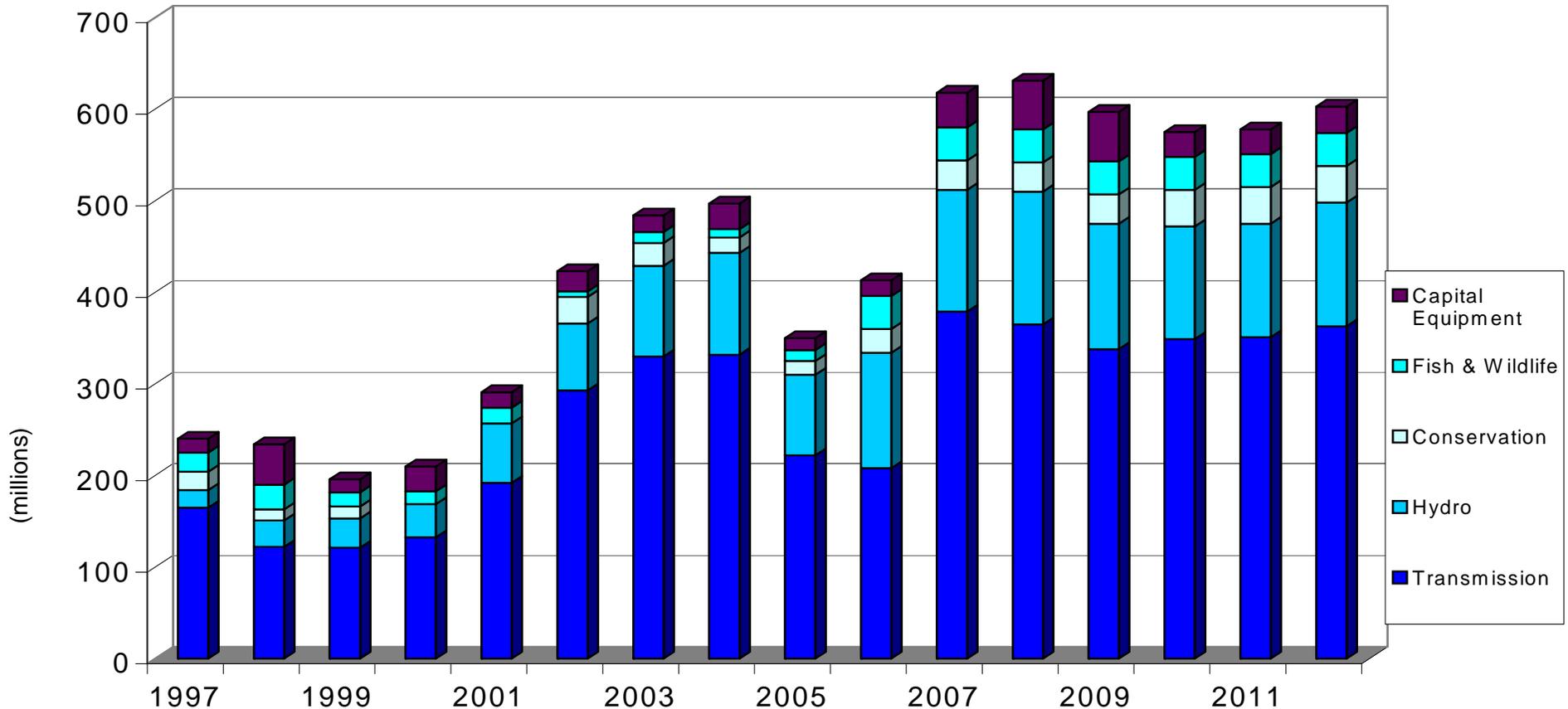


# Capital Planning Review outcomes

- Through the Capital Planning Review, BPA is involving stakeholders in capital management and giving stakeholders the opportunity to influence how the agency makes capital investments that affect future power and transmission rates.
- The most important opportunity for stakeholder influence is before financial commitments are made.



# Annual capital investments



**Notes**

- \* Capital Equipment includes investment for security
- \* Transmission includes PFIA and other customer funded projects
- \* FY1997-FY2005 number are actuals as reported in BPA's Congressional Budget
- \* FY2006 numbers are the 2<sup>nd</sup> Quarter Review end of year forecast
- \* FY2007-FY2012 numbers are May 2006 estimate
- \* Does not include CGS (Columbia Generating Station) or CRFM (Columbia River Fish Mitigation)



# Annual capital investments

Agency Totals (millions)	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Transmission	\$ 165	\$ 122	\$ 121	\$ 133	\$ 192	\$ 293	\$ 330	\$ 332
Hydro	\$ 19	\$ 29	\$ 32	\$ 36	\$ 65	\$ 73	\$ 99	\$ 111
Conservation	\$ 20	\$ 12	\$ 13	\$ -	\$ -	\$ 29	\$ 25	\$ 17
Fish & Wildlife	\$ 21	\$ 27	\$ 15	\$ 14	\$ 17	\$ 6	\$ 12	\$ 9
Capital Equipment	\$ 15	\$ 44	\$ 14	\$ 27	\$ 17	\$ 22	\$ 18	\$ 28
<b>Agency Total</b>	<b>\$ 240</b>	<b>\$ 234</b>	<b>\$ 196</b>	<b>\$ 210</b>	<b>\$ 291</b>	<b>\$ 423</b>	<b>\$ 484</b>	<b>\$ 497</b>

Agency Totals (millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Transmission	\$ 222	\$ 208	\$ 379	\$ 365	\$ 338	\$ 349	\$ 351	\$ 363
Hydro	\$ 88	\$ 126	\$ 133	\$ 145	\$ 137	\$ 123	\$ 124	\$ 135
Conservation	\$ 15	\$ 26	\$ 32	\$ 32	\$ 32	\$ 40	\$ 40	\$ 40
Fish & Wildlife	\$ 12	\$ 36	\$ 36	\$ 36	\$ 36	\$ 36	\$ 36	\$ 36
Capital Equipment	\$ 13	\$ 17	\$ 38	\$ 53	\$ 54	\$ 27	\$ 27	\$ 29
<b>Agency Total</b>	<b>\$ 350</b>	<b>\$ 413</b>	<b>\$ 618</b>	<b>\$ 631</b>	<b>\$ 597</b>	<b>\$ 575</b>	<b>\$ 578</b>	<b>\$ 603</b>

Notes

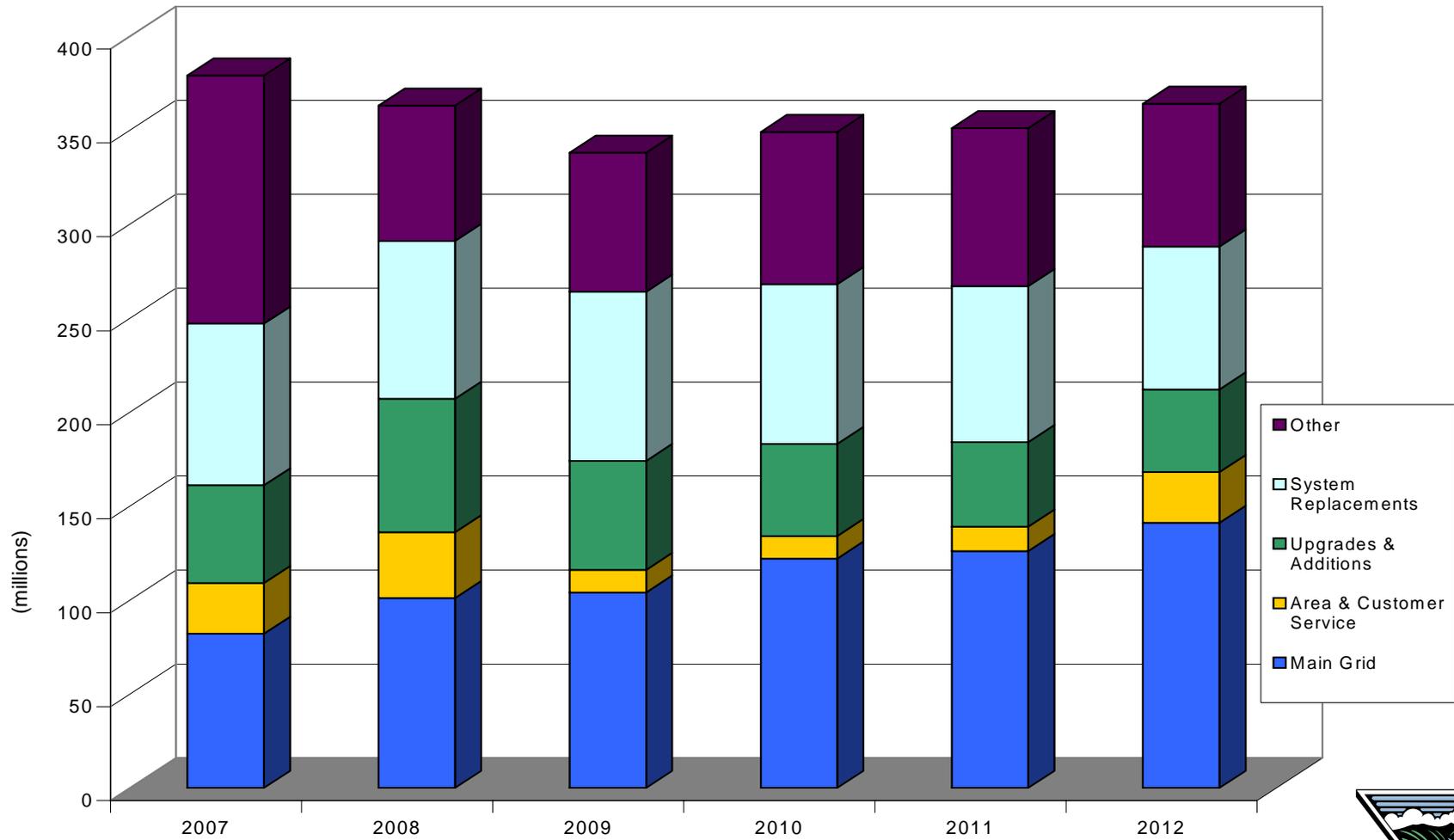
- \* Capital Equipment includes investment for security
- \* Transmission includes PFIA and other customer funded projects
- \* FY 1997-FY 2005 number are actuals as reported in BPA's Congressional Budget
- \* FY 2006 numbers are the 2nd Quarter Review end of year forecast
- \* FY 2007-FY 2012 numbers are May 2006 estimate
- \* Does not include Columbia Generating Station Columbia River Fish Mitigation



# Transmission



# Projected Transmission capital investments



**Note**

\* "Other" includes Environment, PFIA, and other customer funded projects



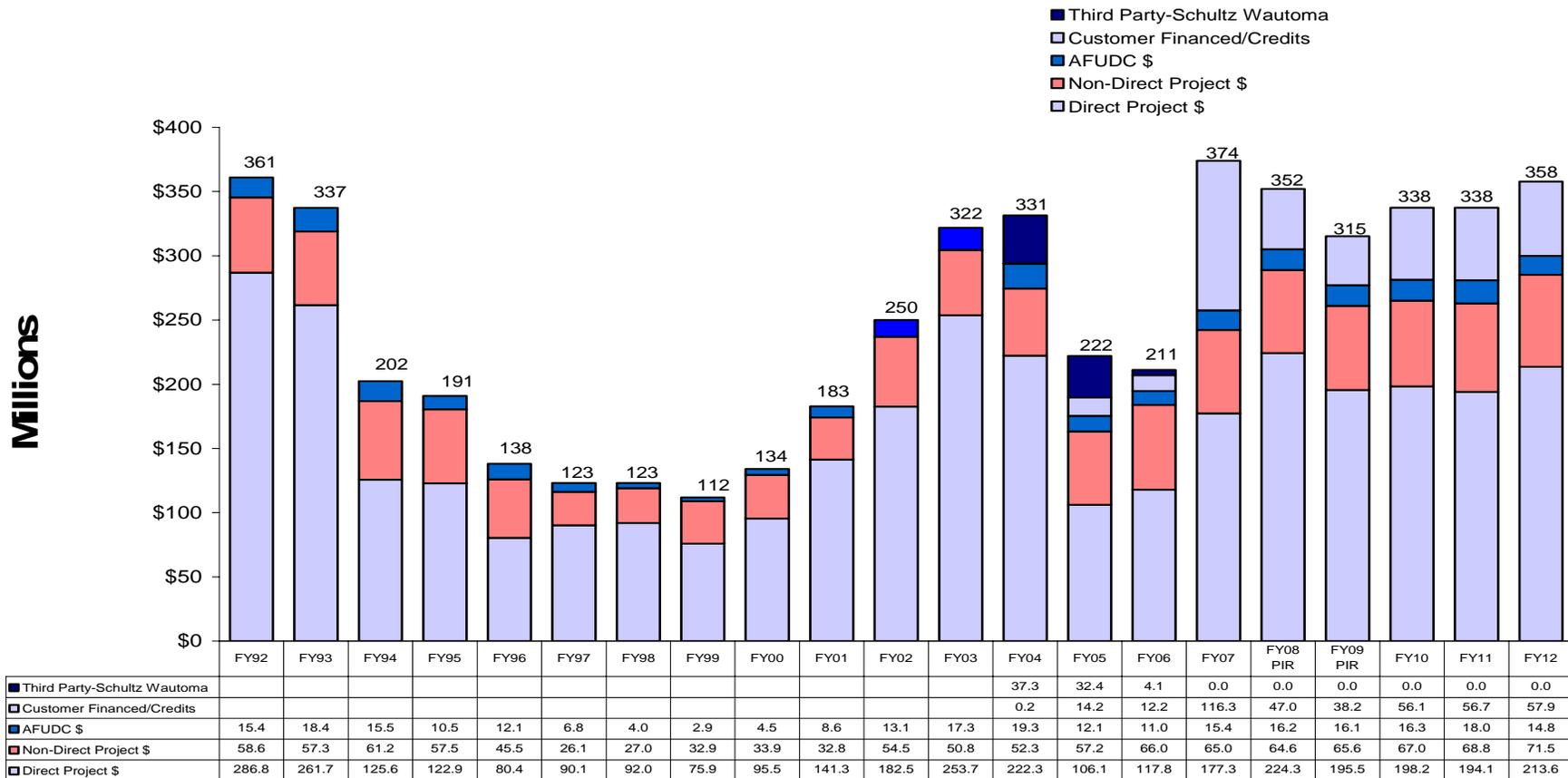
# Projected Transmission capital investments

Transmission Total (millions)	2007	2008	2009	2010	2011	2012
Main Grid	\$ 82	\$ 101	\$ 104	\$ 122	\$ 126	\$ 141
Area & Customer Service	\$ 27	\$ 35	\$ 12	\$ 12	\$ 13	\$ 27
Upgrades & Additions	\$ 52	\$ 71	\$ 58	\$ 49	\$ 45	\$ 44
System Replacements	\$ 86	\$ 84	\$ 90	\$ 85	\$ 83	\$ 76
Other						
Environment	\$ 8	\$ 7	\$ 8	\$ 8	\$ 9	\$ 8
Miscellaneous	\$ 3	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5
PFIA and other customer funded projects	\$ 121	\$ 60	\$ 61	\$ 68	\$ 70	\$ 63
Transmission Total	\$ 379	\$ 365	\$ 338	\$ 349	\$ 351	\$ 363

Notes

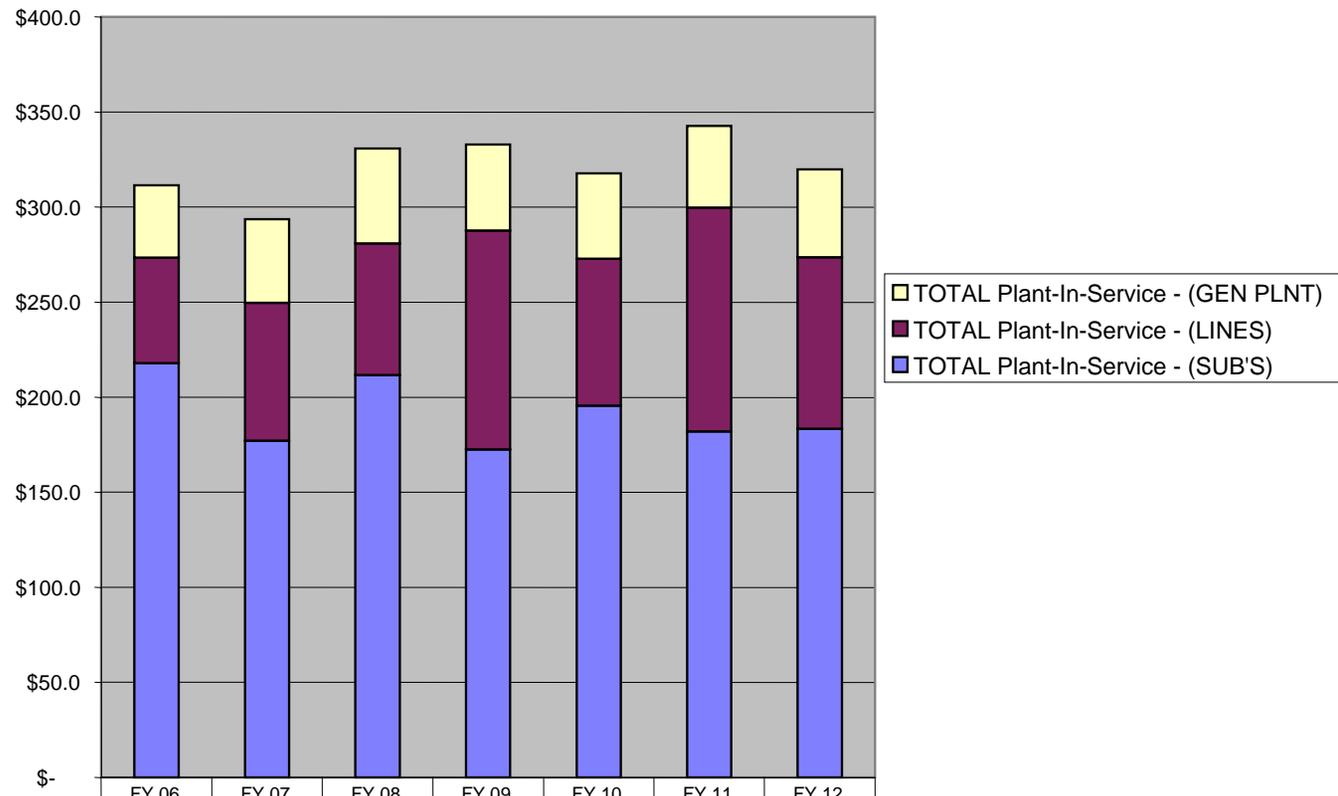
•May not add do to rounding

# Transmission capital history FY 1992-FY 2012



# Transmission Plant-in-Service 2006-2012

(\$ in Millions)



TOTAL Plant-In-Service - (GEN PLNT)	\$38.0	\$44.0	\$49.9	\$45.3	\$44.7	\$43.0	\$46.2
TOTAL Plant-In-Service - (LINES)	\$55.6	\$72.6	\$69.2	\$115.2	\$77.3	\$117.9	\$90.2
TOTAL Plant-In-Service - (SUB'S)	\$217.8	\$177.1	\$211.7	\$172.5	\$195.6	\$181.8	\$183.3



# Transmission's focus on capital

- **Reliability** – Continue to maintain and replace aging system equipment and make cost-effective investments in new transmission where needed for reliable load service or congestion relief.
- **Compliance** – Comply with mandatory Reliability standards established by NERC and WECC.
- **New Resources** – Enable the integration of new generation (wind generation) into the Northwest transmission grid.
- **Congestion Management** – Maintain and enhance the system's total transfer capability to facilitate reliable load service and transmission transactions.
- **People and Process** – Ensure that all BPA employees have the necessary tools and equipment to perform their jobs safely and efficiently.



# Transmission FY 2007 capital investment drivers - reliability

- **Grid Reliability** – Operates and maintains a reliable transmission system. Invests in the transmission grid to prevent cascading outages. This includes investments for new facilities/equipment and for replacement of existing facilities/equipment that meet established replacement policy/criteria.
- **Availability** – Ensures the availability of the transmission grid such that transmission users are able to use the currently configured transmission grid in accordance with their contract rights. Makes investments to minimize planned outages and avoid path de-ratings. This includes investments for new facilities/equipment and for replacement of existing facilities/equipment that meet established replacement policy/criteria.
- **N-2 Contingencies** – All entities responsible for planning, operating, and using the bulk electric system must comply with NERC reliability standards. To meet this requirement, BPA participates in WECC's Annual Compliance Enforcement Program. As part of this program, system performance must be assessed for N-2 (double contingencies). These are contingencies which involve the loss of two or more bulk system elements. BPA's system performance for N-2 must meet the applicable Reliability Standards (NERC and WECC) in order to remain in compliance.



# Transmission capital investment focus - compliance

- The National Energy Policy Act of 2005 mandated the creation of a new Electric Reliability Organization.
- The ERO will have the ability through FERC to enforce mandatory reliability standards.
- 102 existing and new standards will be mandatory January 2007 and enforceable with sanctions after six months.
- BPA, and other asset owners, will need to make infrastructure investments and operation and maintenance improvements.
- Specific impacts are not fully known at this time but BPA is actively participating in the public comment process to address issues of concern to the North West customers and constituents.
- BPA has incorporated estimated increases in PIR programs.



# Transmission FY 2007 capital investment drivers - compliance

## ■ Environment

- Manages hazardous substances in the environment consistent with regulatory guidelines and to minimize risk to the environment from BPA transmission facilities.
- Makes investments to prevent or reduce the release of hazardous substances such as PCB's and oil discharges; to replace equipment/facilities with more environmentally compatible equipment/facilities; and to protect or prevent degradation of ground and surface water resources.
- Makes investments to minimize the environmental effect of access road, culverts and BPA facilities. Make investments to provide or maintain access to BPA transmission facilities while maintaining or improving environmental conditions and achieving regulatory compliance.



# Transmission FY 2007 capital investment drivers - new resources

- **Sufficiency/Adequacy**

- Ensures grid transmission sufficiency and adequacy to comply with open access requirements. Makes investments as required by new or existing contract demands. This includes investments for new facilities/equipment and for replacement of existing facilities/equipment that meet established replacement policy/criteria.



# Transmission capital investment focus - congestion management

- Increasing loads, changing load composition, and new generation resources connecting to the transmission system are contributors to network congestion.
- Consequences of congestion:
  - Reliability risk
  - Non Compliance with Reliability standards and Tariffs
  - Reduced economic efficiency
- Transition of BPA approach from a reactive to *proactively managed* network congestion solution.



# Transmission FY 2007 capital investment drivers - people and process

- Safety

- Assures that employee and public safety is not compromised in the operation, maintenance, and construction of BPA's transmission system. Makes investments in replacements or additions that minimize risk to employees or the public, and investments in tools and work equipment necessary for employees to safely perform their duties.

- Internal Operations

- The TBL will provide the necessary vehicles, tools, workspace, and equipment to improve the overall workplace environment and efficiency.



# Transmission new starts

Year	Projects approved and under way	New Starts
2007	\$152 million	\$227 million
2008	\$146 million	\$219 million
2009	\$135 million	\$203 million
2010	\$140 million	\$210 million
2011	\$140 million	\$211 million
2012	\$145 million	\$218 million



# Transmission capital planning process

- Stakeholders will have the opportunity to meet with BPA during the design phase through technical workgroups.
- These workgroups will enable stakeholders to have input in the design to maximize the collective utility and value of the project.
- Matrix Team reviews all proposals and ranks projects according to strategies, necessity, consequences and business analysis.
- Matrix Team members are represented by a cross section of BPA's Transmission organization.
- Based on the Matrix Team ranking and Transmission Finance risk analysis, the Matrix Team Chair submits portfolio to Transmission executive management for review and approval.



# Transmission decision factors

- The criteria addresses both the likelihood and consequence of event

## Likelihood Score

- 4 Known that it will definitely occur this year
- 3 High probability of occurrence or need this year
- 2 Medium probability of occurrence or need
- 1 Low probability of occurrence or need

## Consequence Score

- 4 Unacceptable
- 3 Highly unwanted
- 2 Unwanted
- 1 Minimal impact

- The total ranking of a project proposal is the sum of the two scores. It has a range of 2 (lowest priority) to 8 (highest priority).



# Transmission capital categories

<p>➤ <b>Main Grid:</b></p> <ul style="list-style-type: none"> <li>▪ NERC Compliance</li> <li>▪ Specific Projects</li> <li>▪ System Reactive Facilities</li> </ul>	<p>➤ <b>Area &amp; Customer Service:</b></p> <ul style="list-style-type: none"> <li>▪ Misc. Capital Additions for Wind Projects</li> <li>▪ Specific Projects</li> </ul>
<p>➤ <b>System Replacements:</b></p> <ul style="list-style-type: none"> <li>▪ Aircraft/Helicopter Replacements</li> <li>▪ Communication Replacements</li> <li>▪ Misc. Substation Replacements</li> <li>▪ Non-Electric Plant</li> <li>▪ Spacer Damper Replacements</li> <li>▪ Tools/Equipment</li> <li>▪ Transmission Line replacements</li> <li>▪ Wood Pole Replacements</li> </ul>	<p>➤ <b>Upgrades &amp; Additions:</b></p> <ul style="list-style-type: none"> <li>▪ Communications</li> <li>▪ Misc. Line Additions</li> <li>▪ Misc. Sub. Additions</li> <li>▪ Security Enhancements</li> <li>▪ Specific Projects</li> <li>▪ System Controls</li> </ul>
<p>➤ <b>Environment:</b></p> <ul style="list-style-type: none"> <li>▪ Restoration &amp; Remediation</li> <li>▪ Spill Control</li> </ul>	



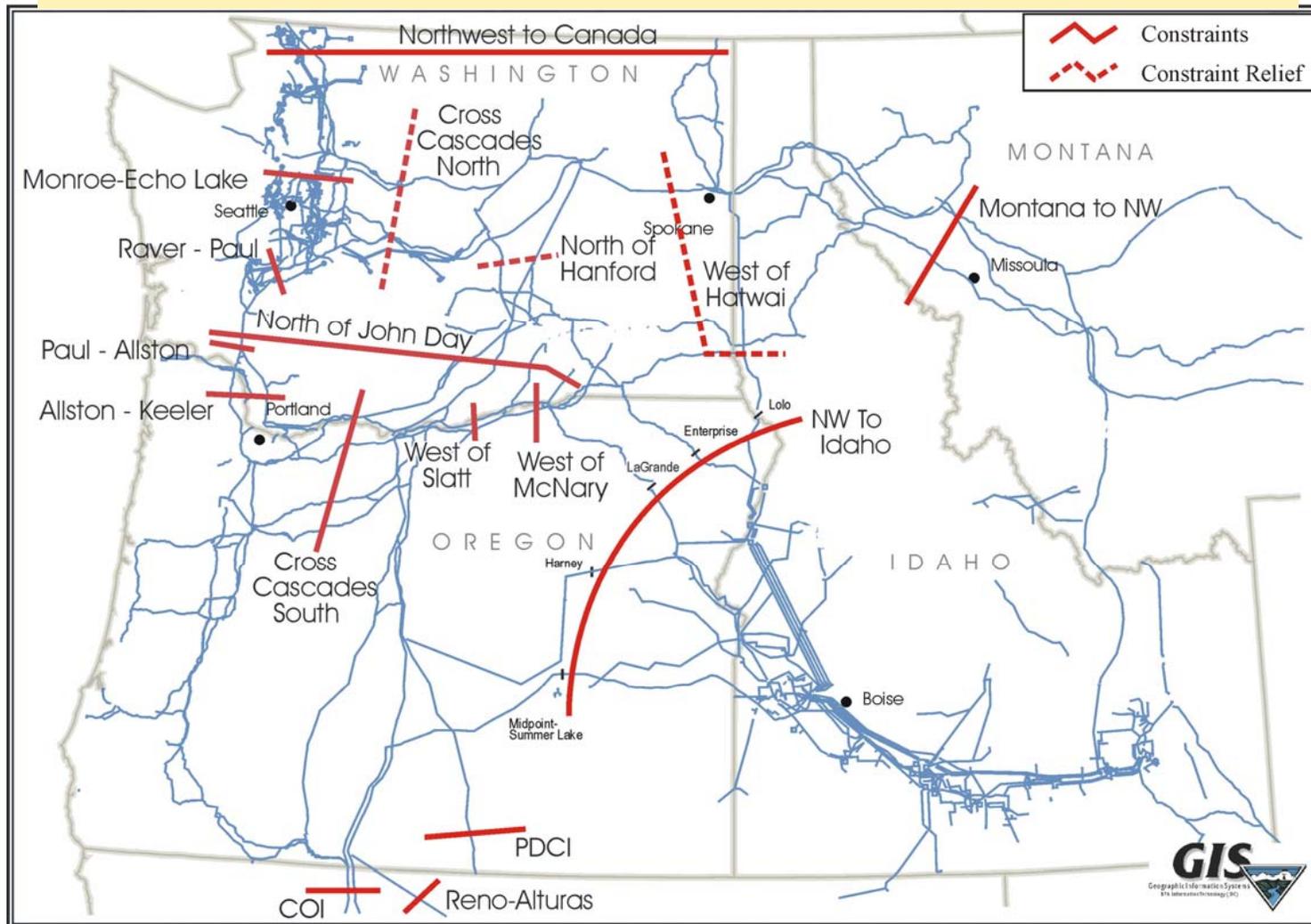
# Transmission main grid

- Strategic objectives:
  - To provide:
    - voltage support
    - a reliable transmission system for open access per FERC criteria
    - relief of transmission system congestion
  - To assure compliance with:
    - the National electrical Reliability Council (NERC)
    - Western Electric Coordinating Council (WECC) and
    - BPA reliability standards.
- Projects are planned that will provide voltage support to major load areas that are primarily west of the Cascade mountains, and to provide for transmission access for new generation projects.
- Minor reinforcements in the Portland/Seattle corridor are also planned.

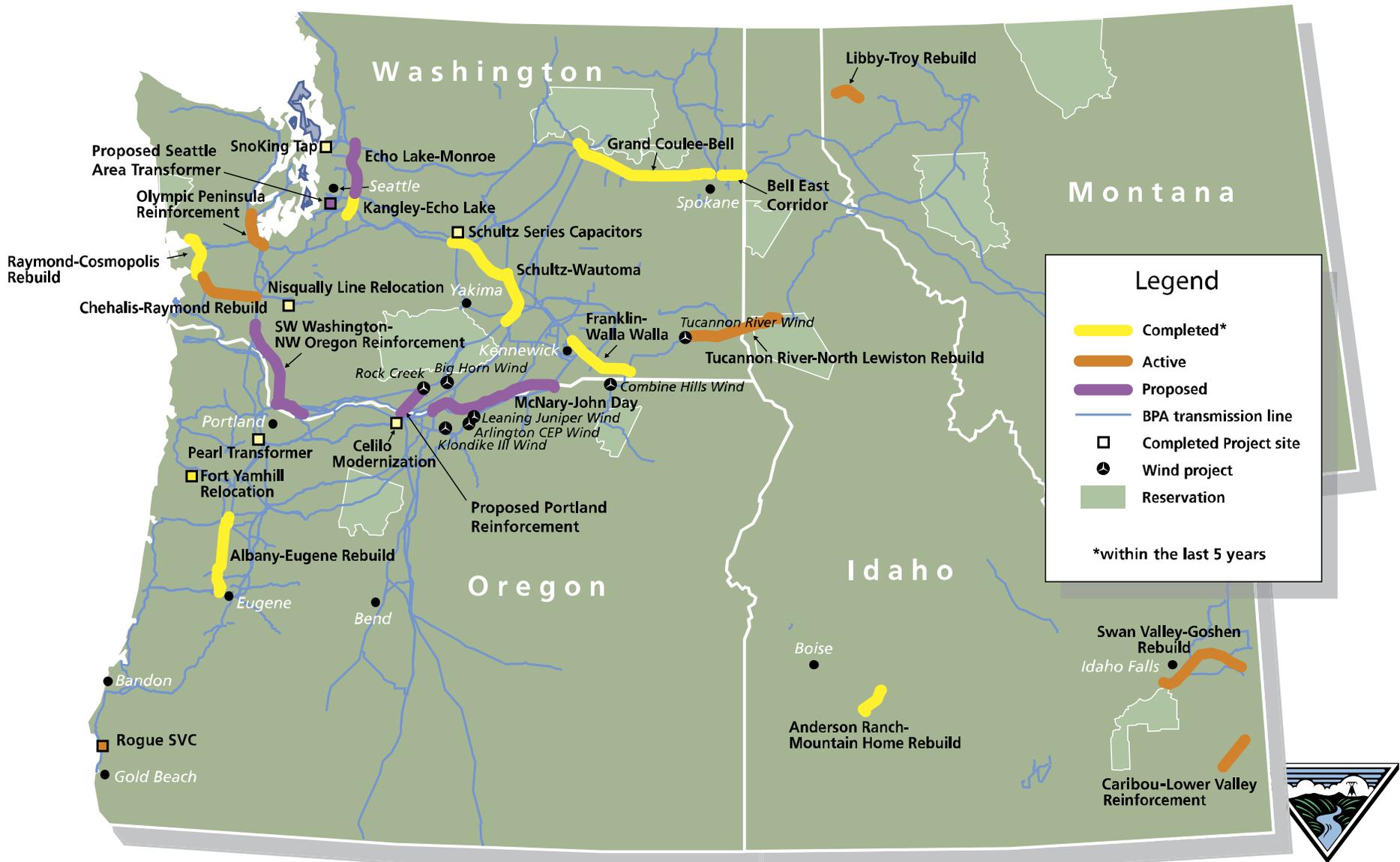


# Constrained Paths - Now

## 2005-06 NW Constraints



# Transmission infrastructure



# Transmission - area and customer service

- Strategic objective:
  - Assure that BPA meets the reliability standards and the contractual obligations we have to our customers for serving load.



# Transmission - system replacements

- Strategic objectives:
  - Replace high-risk, obsolete, and maintenance-intensive facilities and equipment and to reduce the chance of equipment failure by replacing:
    - high voltage transformers and power circuit breakers which are at or near the end of their useful life
    - risky, outdated and obsolete control and communications equipment and systems; and now includes mandated replacements due to legislation
    - all other existing high-risk equipment and facilities affecting the safety and reliability of the transmission system



# Transmission - upgrades & additions

- Strategic objectives:
  - Replace older communications with new technology, which includes fiber optics in order to maintain and enhance the transmission system.
  - Implement remedial action schemes in order to accommodate new generation, mitigate operational and market constrained paths.

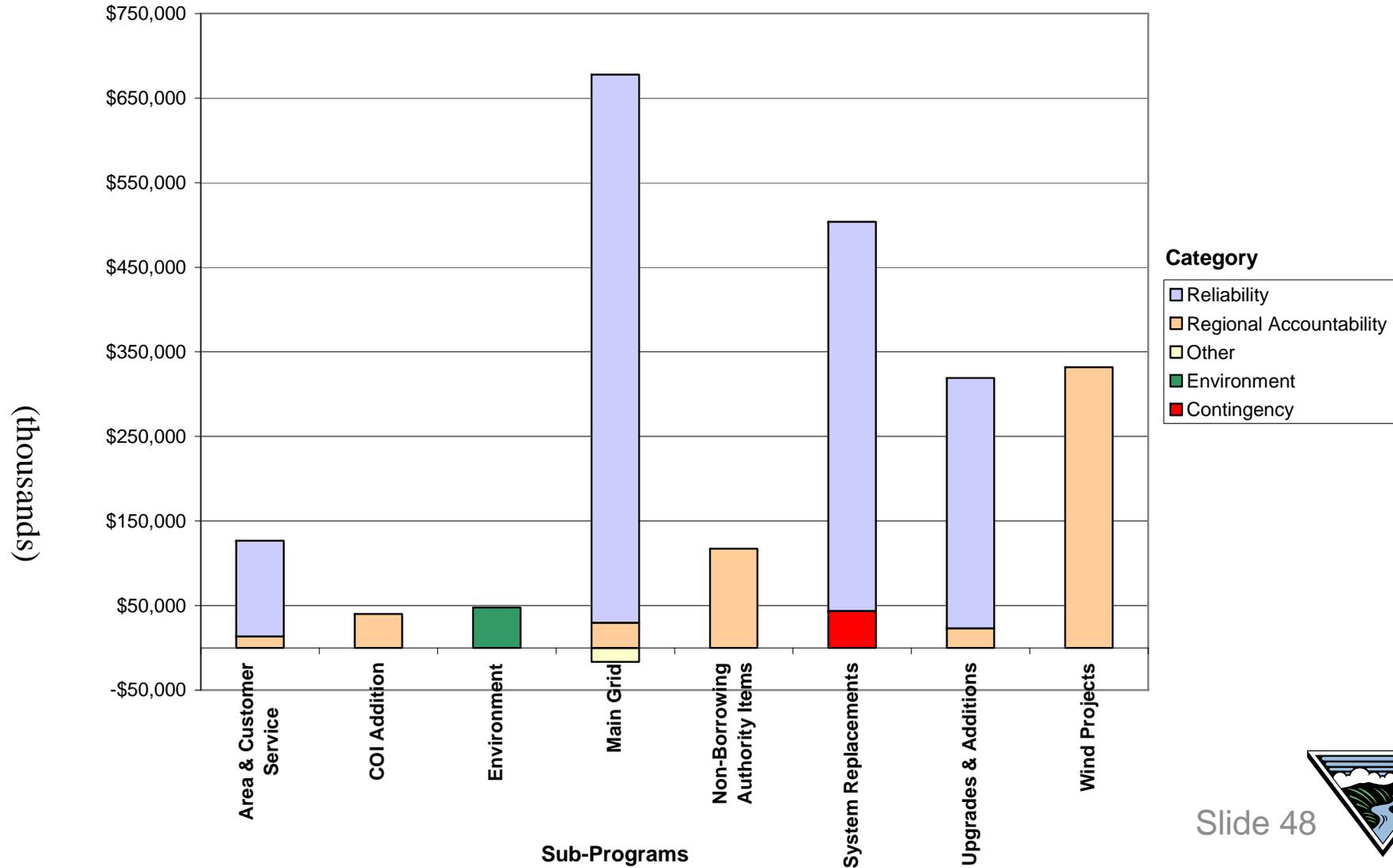


# Transmission - other

- Strategic objectives:
  - Enable renewable energy projects and other generation projects in the region.



# Total Transmission capital FY 2007-FY 2012

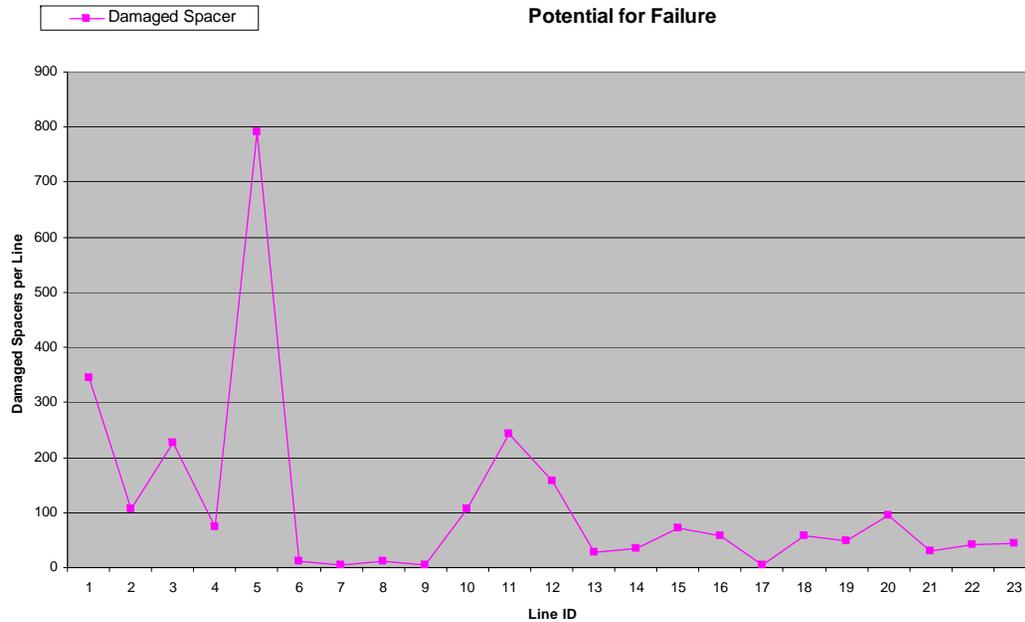


# Transmission sustaining investments

- BPA is focused on using sound business practices to ensure the best use of and investment in its transmission system.
- Currently Transmission has an emphasis on replacing aging system (e.g. spacer-dampers and wood poles).



# Transmission - damaged spacers on critical paths



Damaged spacer



Conductor damage caused by spacers



1	Ashe-Marion #2	9	Echo Lake-Monroe #1	17	Schultz-Echo Lake
2	Ashe-Slatt #1	10	Hanford-John Day #1	18	Schultz-Raver #1
3	Broadview-Garrison #1	11	Hanford-Ostrander #1	19	Schultz-Raver #2
4	Buckley-Marion-Ashe-Marion	12	John Day-Marion #1	20	Schultz-Raver #4
5	Chief Joseph-Monroe	13	Keeler Allston #1	21	Schultz-Wautoma
6	Coyote Springs-Slatt #1	14	Napavine-Allston #1	22	Slatt-Buckley #1
7	Custer-Ingledow #1	15	Paul-Allston #2	23	Slatt-John Day #1
8	Custer-Ingledow #2	16	Raver-Paul #1		



# Transmission - spacer damper

- Photo shows damage to transmission conductor from failing spacer-damper equipment.



# Transmission - Libby (FEC) to Troy Project

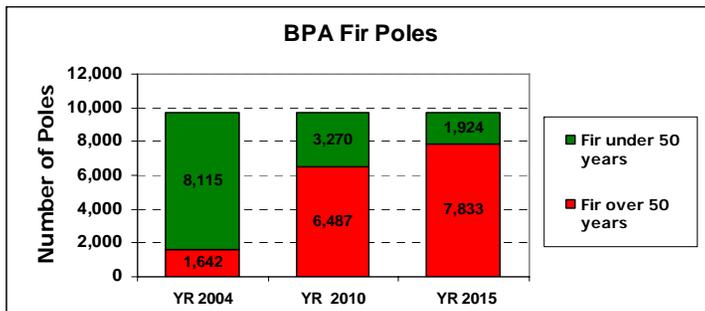
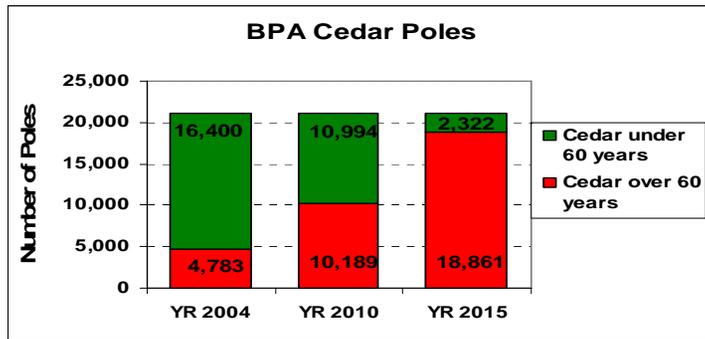


This project would replace transmission line that runs west from Flathead Electric Cooperative's (FEC) Libby Substation in the town of Libby, to BPA's Troy Substation, east of Troy, Mont.

- BPA is proposing to rebuild 17 miles of 115-kilovolt transmission line.
- Many of the poles and structures are aging and decaying.



# Transmission - number of poles on the system



NESC requires wood pole replacement when 1/3 of the original design strength is lost through age, rot or other degradation.

On average, 60 year old cedar and 50 year old fir poles are estimated to retain 55% of original design strength.

The current BPA standard wood pole installation is a fully treated, through-bored Douglas fir pole.



# Transmission - effects on aging wood poles

Decay



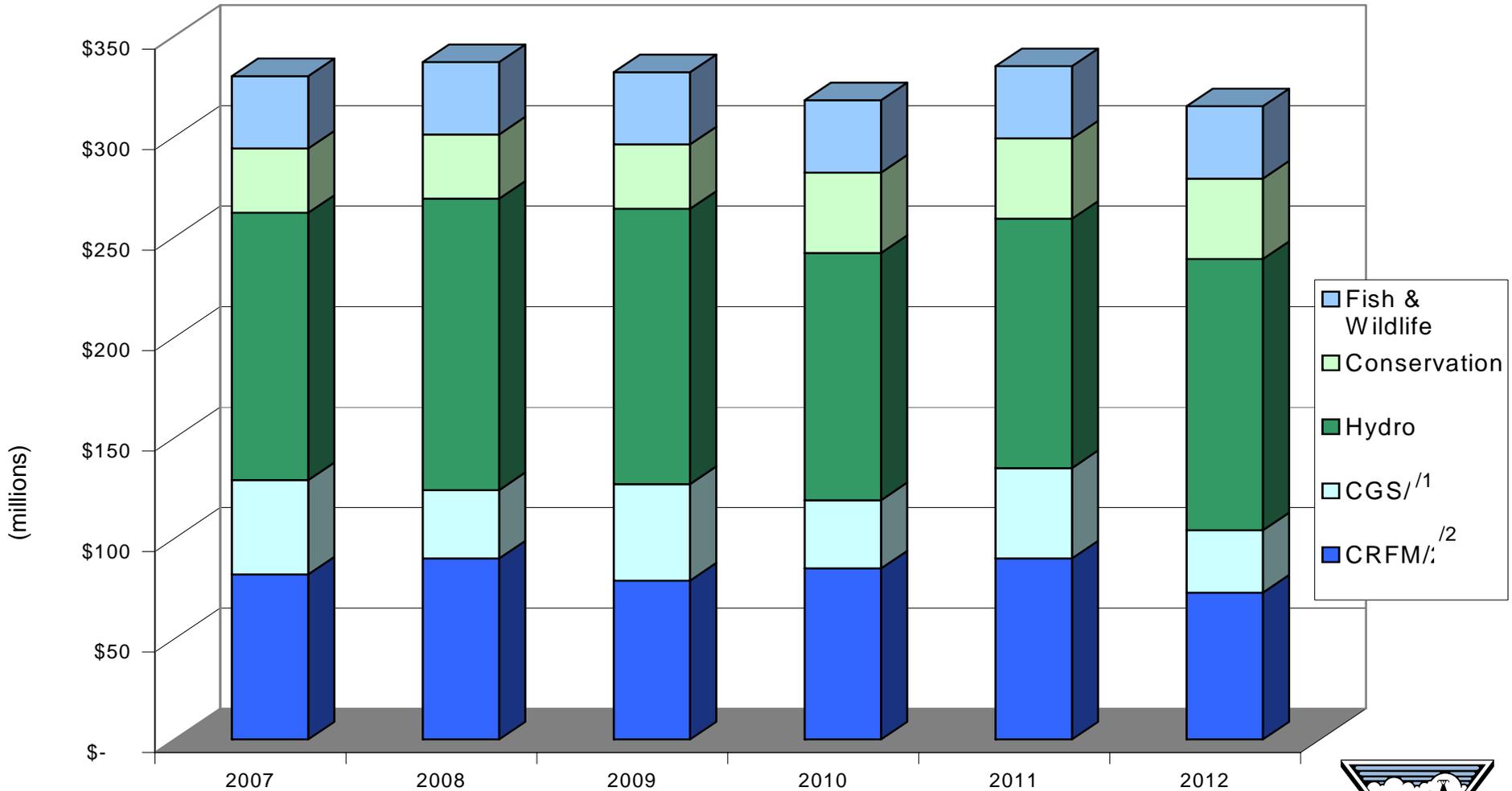
Shelling



# Power



# Projected Power capital investments



<sup>/1</sup> Columbia Generating Station  
<sup>/2</sup> Columbia River Fish Mitigation



# Projected Power capital investments

For FY 2007-FY 2009 these amounts are consistent with BPA's Power Function Review and Power Function Review II (CRFM capital investments were not shared in PFR II)

<b>Power Total (millions)</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Fish & Wildlife Conservation	\$ 36	\$ 36	\$ 36	\$ 36	\$ 36	\$ 36
Hydro	\$ 133	\$ 145	\$ 137	\$ 123	\$ 124	\$ 135
CGS <sup>/1</sup>	\$ 47	\$ 34	\$ 48	\$ 34	\$ 45	\$ 31
CRFM <sup>/2</sup>	\$ 82	\$ 90	\$ 79	\$ 85	\$ 90	\$ 73
<b>Power Total</b>	<b>\$ 330</b>	<b>\$ 337</b>	<b>\$ 332</b>	<b>\$ 318</b>	<b>\$ 335</b>	<b>\$ 315</b>

Notes

•Totals may not add due to rounding

/1 Columbia Generating Station

/2 Columbia River Fish Mitigation



# Power capital categories

- **Fish & Wildlife** – BPA's portion of the fish and wildlife capital.
- **Conservation** – BPA's conservation capital program helps acquire BPA's share of the of the Council's conservation target for the FY 2007-FY 2012 period.
- **Hydro** – The scope of the program encompasses the entire Pacific Northwest but is focused at 31 hydroelectric projects located in the region. The projects are owned and operated by the Corps of Engineers (Corps) or the Bureau of Reclamation (Reclamation).
- **Columbia Generating Station** – Energy Northwest is the owner/operator of Columbia Generating Station (CGS) and as such makes the decisions regarding operating and capital expense levels, in consultation with BPA.
- **Columbia River Fish Mitigation** – Corps of Engineers portion of fish and wildlife capital and is appropriated by Congress every year.



# Power -

## Why does invest in hydro assets?

- The Federal Columbia River Power System (FCRPS) consists of **31 hydroelectric plants** with **209 turbine-generating units**.
- About **80%** of PBL generation is from the hydro system.
- The FCRPS's median unit age = 48 years.
- Without further investments, history indicates that unit availability will decline.
- In order to meet the Administrator's statutory load service obligation at least cost, BPA continues to invest in existing hydroelectric facilities to maintain and/or

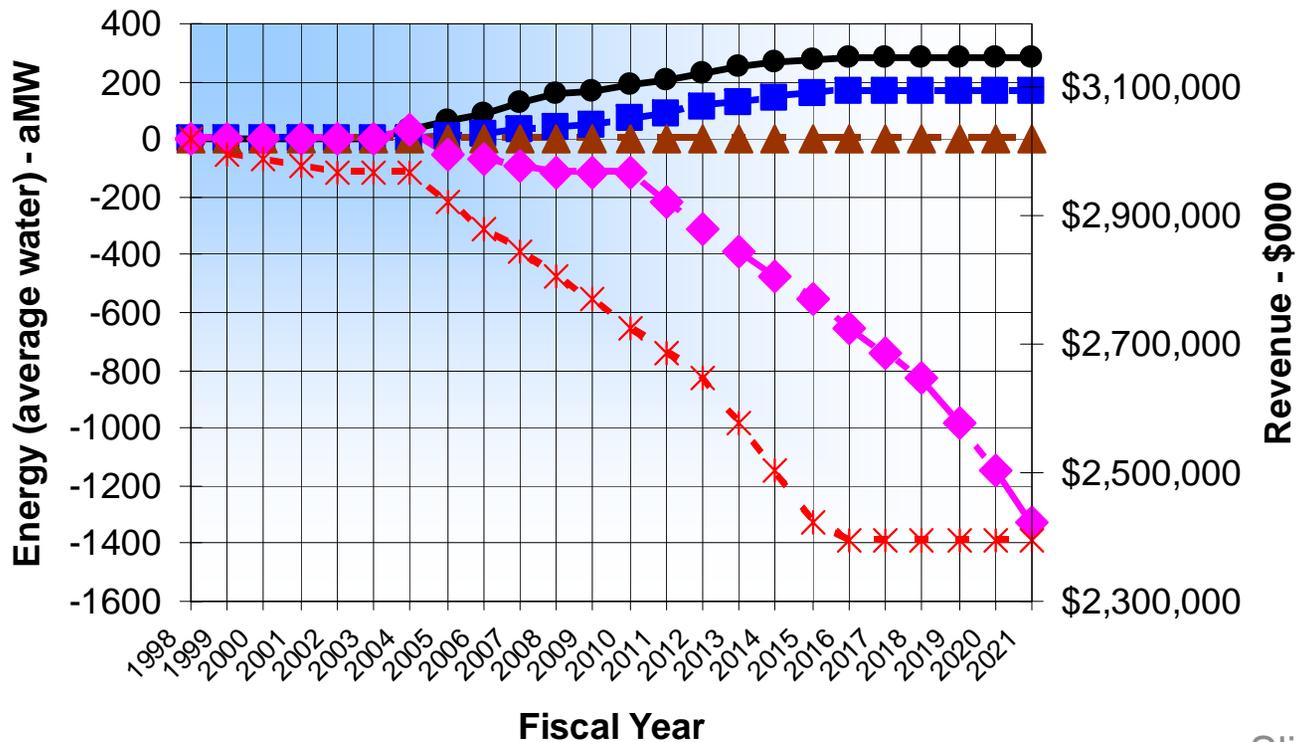
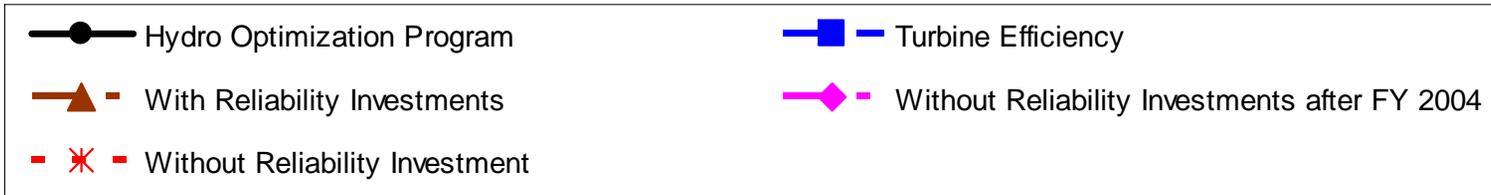


# Power - types of capital investments

- Generation Reliability Investments
  - Operations and Maintenance – Small Capital
  - Generation Equipment Upgrades, Replacements and Refurbishments
    - Governors, Turbines, Generators, Exciters, Breakers, Transformers, Control Systems, Relays & Station Service and Miscellaneous
  - Powerhouse Auxiliary Equipment Upgrades, Replacements and Refurbishments
    - Cranes, HVAC (Heating/Ventilation/Air Conditioning), Dam/Flow Structures, Powerhouse & Grounds and Miscellaneous
- Generation Efficiency/Optimization Investments
  - Turbine Efficiency Improvements:
    - Grand Coulee, McNary, and Chief Joseph
  - Hydro Optimization Project:
    - Scheduling generation base points so that units are operated at more efficient points along performance curve
    - Unit control system improvements



# Power capital investment program - energy benefits



# Power - hydro capital program investment

<b>Year</b>	<b>Projects approved and underway</b>	<b>New Investments</b>	<b>Total</b>
<b>2007</b>	<b>\$133 million</b>	<b>\$0 million</b>	<b>\$133 million</b>
<b>2008</b>	<b>\$122 million</b>	<b>\$23 million</b>	<b>\$145 million</b>
<b>2009</b>	<b>\$106 million</b>	<b>\$31 million</b>	<b>\$137 million</b>
<b>2010</b>	<b>\$81 million</b>	<b>\$42 million</b>	<b>\$123 million</b>
<b>2011</b>	<b>\$60 million</b>	<b>\$64 million</b>	<b>\$124 million</b>
<b>2012</b>	<b>\$79 million</b>	<b>\$56 million</b>	<b>\$135 million</b>

\* Changes to spending levels in 2007–2009 will have no effect on 2007-2009 base rates and minimal effect on effective rates. If levels change as a result of input rates in 2010 and beyond will be most impacted.



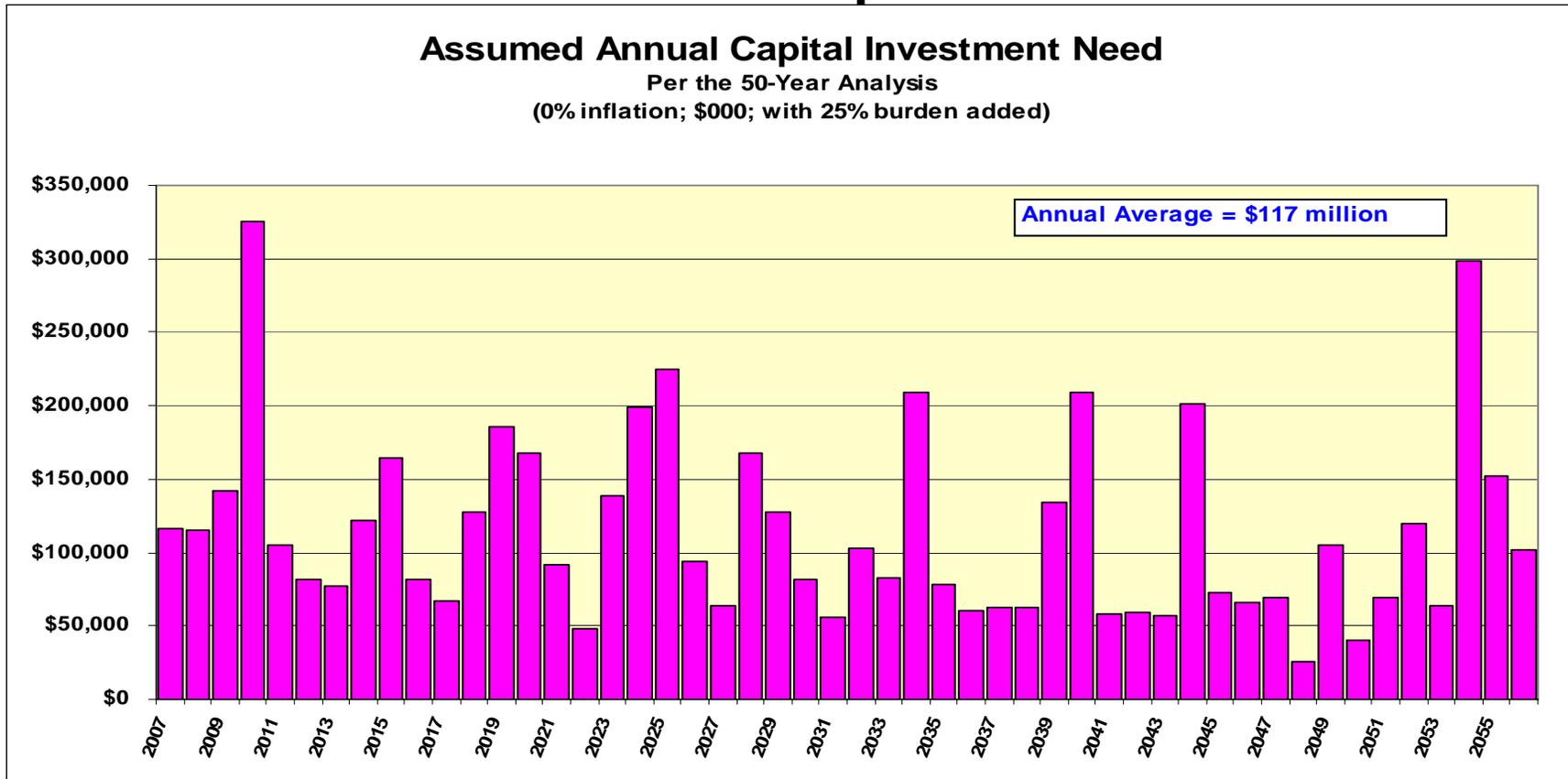
# Power - rate effects of the hydro investment program

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
<b>Annual Projected Investment (\$000)</b>	\$60,099	\$89,625	\$110,999	\$131,151	\$127,534	\$133,000	\$145,000	\$137,000
<b>Borrowing Interest Rate</b>	5.60%							
<b>Annual Interest &amp; Depreciation Expense</b>	\$3,602	\$2,994	\$5,214	\$7,837	\$10,388	\$13,048	\$15,948	\$18,688
<b>Incremental Revenue Requirement (Interest &amp; Depreciation)</b>	\$2,073	\$7,212	\$14,051	\$22,248	\$30,923	\$39,566	\$48,714	\$57,896
<b>Cumulative Rate Effect (FY02-06 \$65 million = 1 mill) (FY07-11 \$59 million = 1 mill)</b>	0.03 mills	0.11 mills	0.22 mills	0.34 mills	0.48 mills	0.67 mills	0.83 mills	0.98 mills
<b>Lost Revenue w/o Investment Program</b>	-\$19,451	-\$36,818	-\$37,208	-\$78,983	-\$109,289	-\$121,896	-\$157,378	-\$189,854
<b>Cumulative Rate Effect (FY02-06 \$65 million = 1 mill) (FY07-11 \$59 million = 1 mill)</b>	-0.30 mills	-0.57 mills	-0.57 mills	-1.22 mills	-1.68 mills	-2.07 mills	-2.67 mills	-3.22 mills
<b>Net Rate Effect</b>	-0.27 mills	-0.46 mills	-0.36 mills	-0.87 mills	-1.21 mills	-1.40 mills	-1.84 mills	-2.24 mills

	FY 2010	FY 2011	FY 2012
<b>Annual Projected Investment (\$000)</b>	\$123,000	\$124,000	\$135,000
<b>Borrowing Interest Rate</b>			
<b>Annual Interest &amp; Depreciation Expense</b>	\$21,148	\$23,628	\$26,328
<b>Incremental Revenue Requirement (Interest &amp; Depreciation)</b>	\$66,215	\$73,987	\$82,082
<b>Cumulative Rate Effect (FY02-06 \$65 million = 1 mill) (FY07-11 \$59 million = 1 mill)</b>	1.12 mills	1.25 mills	1.39 mills
<b>Lost Revenue w/o Investment Program</b>	-\$234,804	-\$280,188	-\$318,986
<b>Cumulative Rate Effect (FY02-06 \$65 million = 1 mill) (FY07-11 \$59 million = 1 mill)</b>	-3.98 mills	-4.75 mills	-5.41 mills
<b>Net Rate Effect</b>	-2.86 mills	-3.49 mills	-4.02 mills



# Power - assumed replacement based on expected life



- Amounts in graph are used for long range planning purposes, not annual budgeting (i.e., FY10 projected capital investment = \$123 million and not the ~\$325 million shown on the graph).

- Assumes replacement of major powertrain and auxiliary equipment based on remaining life expectancy.



# Power - hydro program processes

## Performance Assessment

### Tracking Results

- Progress towards meeting performance targets
- Forecast for getting back on target

### Products

- Monthly reports
- Periodic reviews

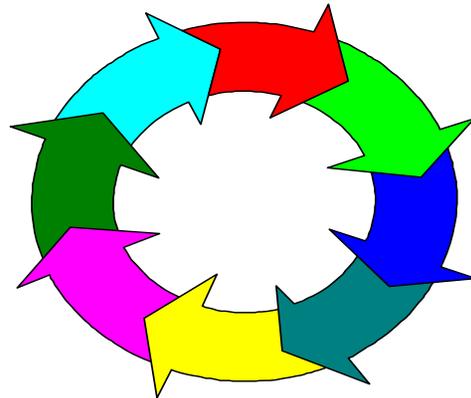
## Resource Management

### Allocating Resources

- Budgeting
- Program integration
- Managing to the plan

### Products

- Annual budgets
- Capital work catalog
- Staffing plans
- Outage plans



## Strategic Planning

### Defining Direction

- What is our business?
- What is our view of the market (landscape)?
- What are our business goals?
- Risk strategy
- Performance expectations

### Products

- Business strategy

## Asset Planning

### Describing Actions

- Strategic intent (role) of each plant
- Internal and external risks
- Performance targets
- Action plan for achieving expected performance

### Products

- Condition assessments
- Resource requirements
- Asset plans

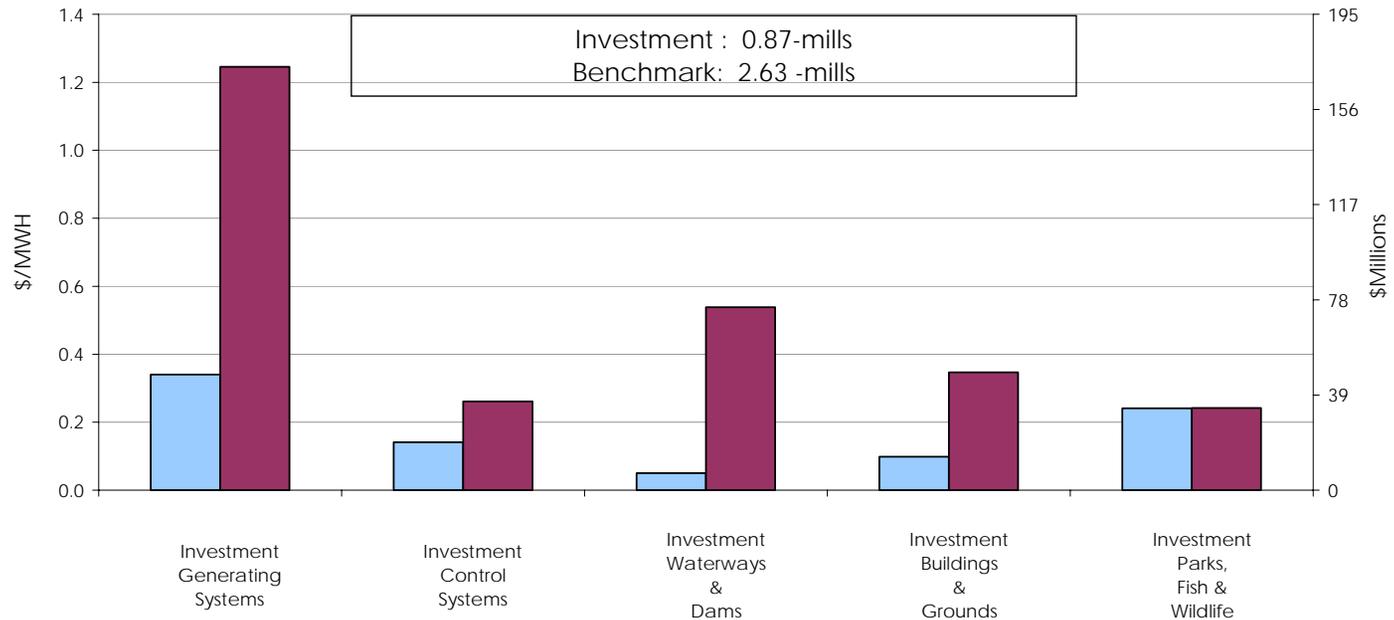


# Power

## Cost Benchmarks - Investment

August 2005

\* Includes Corps and Reclamation costs for hydropower, recreation and joint-use purposes, and BPA costs for coordination, planning, scheduling, dispatch, and fish & wildlife.



FCRPS Cost *	0.34	0.14	0.05	0.10	0.24
Benchmark	1.25	0.26	0.54	0.35	0.24
% of Benchmark	27%	54%	9%	28%	100%
FCRPS Cost (\$000) *	26,013	10,807	3,874	7,557	18,451

% of Total Investment	39%	16%	6%	11%	28%
-----------------------	-----	-----	----	-----	-----

Slide 66



# Power - benchmark study

- Rehabilitation investment rates for other utility systems:

HJA Benchmarking 75,000 MW > \$12.26 per kw/year 2.63 mills

Vattenfall, Sweden 7,514 MW \$4.66 per kw/year 1.00 mills

Seattle City Light 1,051 MW \$7.42 per kw/year 1.70 mills

Hydo Quebec 29, 119 MW \$10.04 per kw/year 1.94 mills

B.C. Hyrdo 11,000 MW \$10.30 per kw/year 2.33 mills

TVA 2,740 MW \$14.20 per kw/year 3.89 mills

Duke Power 1,634 MW \$16.52 per kw/year 3.77 mills

Ontario Power 7,200 MW \$16.67 per kw/year 3.38 mills

BPA 22,059 MW \$4.72 per kw/year 1.31 mills



# Fish and Wildlife

- The Fish and Wildlife capital program supports land acquisitions and easements, construction of hatcheries, and tributary passage facilities such as screens and fish ladders.
  - Land acquisitions and easements provide habitat units (HUs) for wildlife and protect habitat for resident fish to fulfill the legal obligation of the FCRPS.
  - Hatchery facilities provide benefit such as salmon conservation, captive broodstock and ESA recovery programs as well as benefits to other threatened or endangered species.
- BPA is placing greater emphasis on projects that are performance based and deliver tangible results on-the ground for fish and wildlife such as land acquisitions and easements, tributary passage, screening and hatchery efforts.
- Capital project selections are guided by the Subbasin Plan priorities in the Council's Fish and Wildlife Program and by BPA's ESA responsibilities as identified in the FCRPS Biological Opinions from the USFWS and NOAA Fisheries.



# Fish and Wildlife capital investment

- Projects of \$1M or greater and have a lifetime of 15 years
- Projects must meet BPA's Capital Policy and provide credit towards BPA's obligation for Fish and Wildlife
- Project examples for upcoming period include:
  - Chief Joe and NE Oregon Hatcheries
  - Wildlife land acquisitions/easements
  - Resident fish habitat acquisitions and easements in Montana
  - Lower Granite Dam fish trap construction
  - Manashtash Fish screens in Washington.

Year	Capital Investment
2007	\$36 million
2008	\$36 million
2009	\$36 million
2010	\$36 million
2011	\$36 million
2012	\$36 million
Total	\$216 million



# Conservation Acquisition

- BPA and its customers have made investments in conservation consistent with the Northwest Power Act and with Power Plans developed by the Northwest Power and Conservation Council.
- The most recent power plan calls for BPA to develop 52 aMW of conservation per year for 2005-2009 and 60 aMW per year for 2010-2012.
- BPA plans for this conservation acquisition budget to be 40% capitalized and 60% expensed.
- BPA proposes to ensure development of the cost-effective conservation in the load BPA serves while keeping the costs and rate impacts of doing so as low as possible.
- To achieve BPA's share of the of the Council's conservation target for 2007-2012, BPA anticipates an annual capital program budget with an associated contribution to BPA's share of the Council's target to be as listed below:



# Conservation Acquisition capital investment

There are currently 20 signed contracts for Conservation Acquisition funding.

<b>Year</b>	<b>Signed Contracts for Funding</b>	<b>Uncommitted Funding</b>	<b>Total Investment</b>	<b>Projected Savings</b>
<b>2007</b>	<b>\$7 million</b>	<b>\$25 million</b>	<b>\$32 million</b>	<b>22 aMW</b>
<b>2008</b>	<b>\$7 million</b>	<b>\$25 million</b>	<b>\$32 million</b>	<b>22 aMW</b>
<b>2009</b>	<b>\$7 million</b>	<b>\$25 million</b>	<b>\$32 million</b>	<b>22 aMW</b>
<b>2010</b>	<b>\$0 million</b>	<b>\$40 million</b>	<b>\$40 million</b>	<b>27 aMW</b>
<b>2011</b>	<b>\$0 million</b>	<b>\$40 million</b>	<b>\$40 million</b>	<b>27 aMW</b>
<b>2012</b>	<b>\$0 million</b>	<b>\$40 million</b>	<b>\$40 million</b>	<b>27 aMW</b>



# Columbia Generating Station

- Energy Northwest is the owner/operator of CGS and as such makes the decisions regarding operating and capital expense levels.
- BPA reviews Energy Northwest's capital expenditures and per the Project Agreement approves Capital additions exceeding \$50,000 in any contract year.
- Energy Northwest has recently increased its capital expenditure forecasts as a result of its increased focus on reliability, plant maintenance and equipment replacements. Examples of projects include:
  - the condenser project
  - digital electro-hydraulic upgrade
  - Independent Spent Fuel Storage Cask Loading
  - feedwater heaters replacement
  - large pumps and motors work
  - process radiation monitoring system
  - plant life extension
  - main condenser replacement
  - main transformer work



# Columbia Generating Station capital investment

Year	Capital Investment
2007	\$47 million
2008	\$34 million
2009	\$48 million
2010	\$34 million
2011	\$45 million
2012	\$31 million
Total	\$239 million

\*Investment amounts are in BPA fiscal years



# Columbia River Fish Mitigation program

- The purpose of the Columbia River Fish Mitigation (CRFM) Program is to mitigate for impacts to anadromous fish passage at the eight mainstream Columbia and Snake River dams operated by the Corps of Engineers.
  - This program began in 1991 and is funded through Congressional appropriations
  - Estimated completion date is 2014
  - Estimated total cost is \$1.5 – \$1.83 billion
- The primary focus of the program is on improvements to fish passage facility configurations and operations at the dams. Projects within the program include:
  - Fish passage and survival evaluations at the eight dams
  - System survival evaluations
  - Developing, designing, and constructing new fish passage improvements
- In the 2007-2012 period, significant efforts will be directed toward:
  - Providing surface-oriented passage
  - Increasing spillway passage through construction of removable spillway weirs (RSW) and behavioral guidance structure;
  - Increasing spillway survival
  - Evaluating the effectiveness of the transportation program



# Columbia River Fish Mitigation program

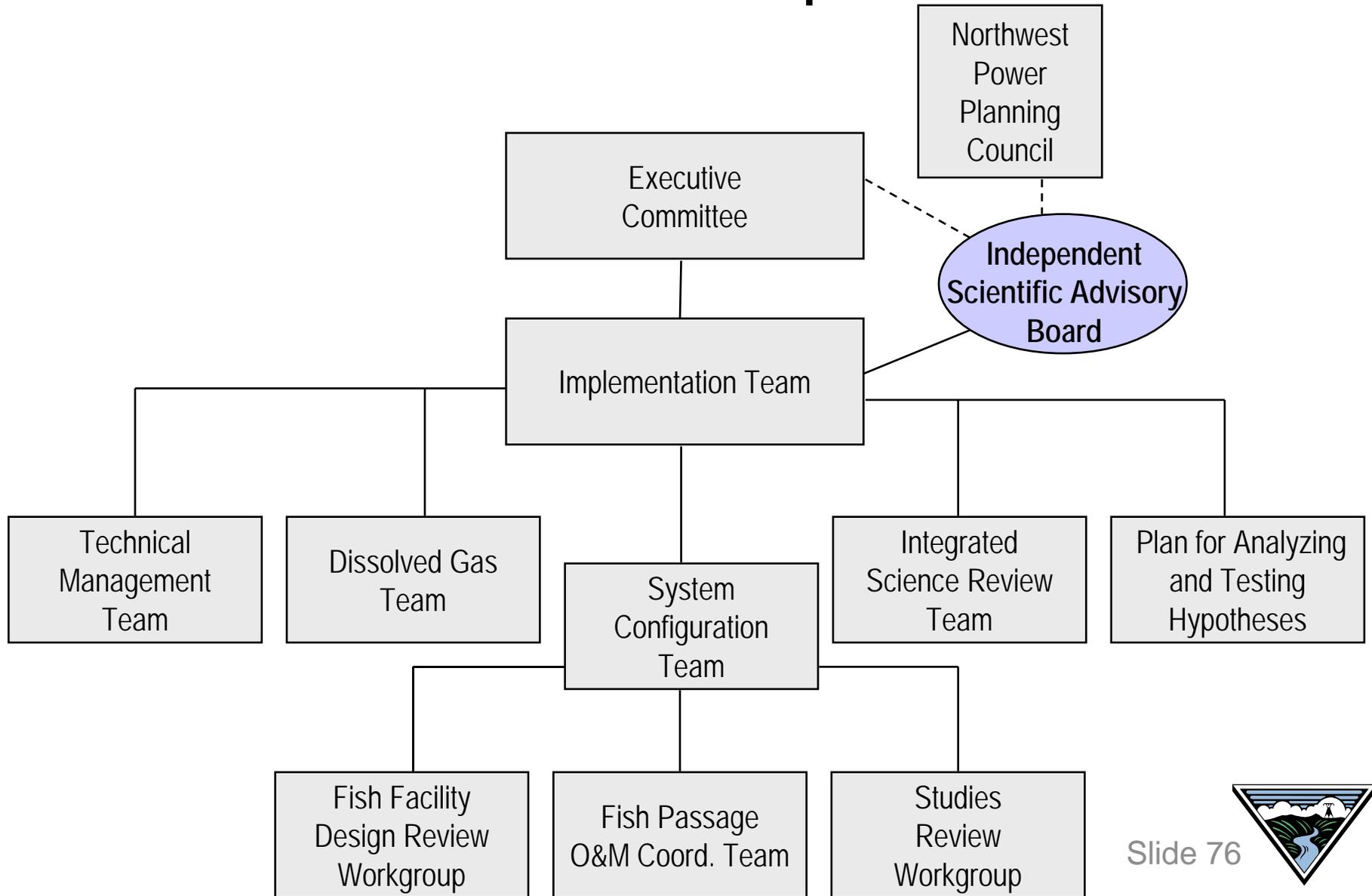
- There will typically be about 50 different projects underway within the CRFM program with a total average annual appropriation of approximately \$80 million. Specific projects include:
  - Avian predation measures
  - Turbine improvement
  - Removable Spillway Weir at Lower Monumental and John Day
  - Behavior Guidance Structure (BGS) at The Dalles
  - Research Study on delayed mortality of juveniles

<b>Year</b>	<b>Estimated New Investment*</b>	<b>Projected Plant In Service</b>
<b>2007</b>	<b>\$82 million</b>	<b>\$83 million</b>
<b>2008</b>	<b>\$90 million</b>	<b>\$60 million</b>
<b>2009</b>	<b>\$79 million</b>	<b>\$63 million</b>
<b>2010</b>	<b>\$85 million</b>	<b>\$114 million</b>
<b>2011</b>	<b>\$90 million</b>	<b>\$71 million</b>
<b>2012</b>	<b>\$73 million</b>	<b>\$135 million</b>

\*Working estimates. All numbers are subject to change.



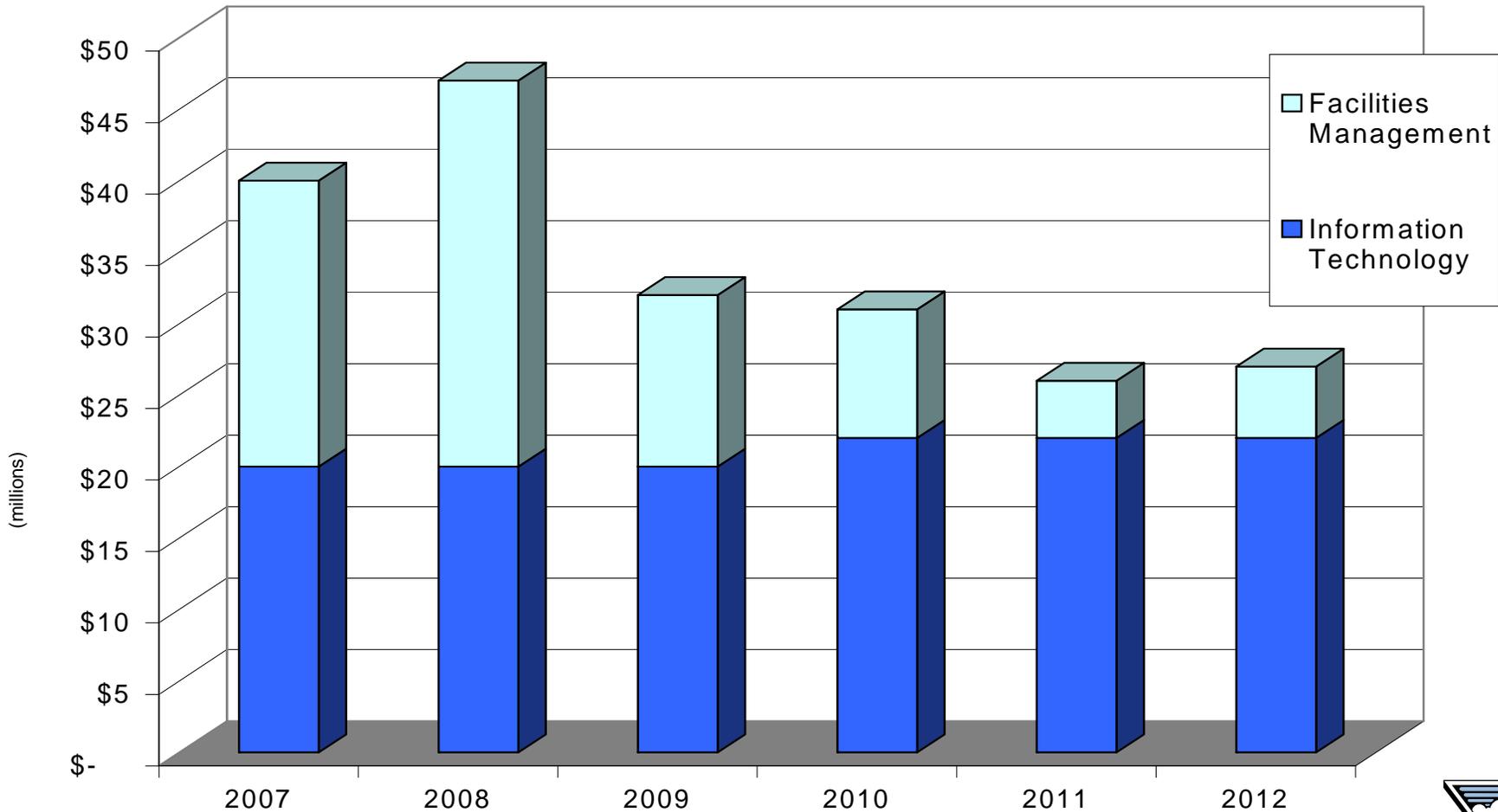
# CRFM decision process



# Corporate



# Projected corporate capital investments



# Projected corporate capital investments

<b>Corporate Total (millions)</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Information Technology						
Applications	\$ 15	\$ 15	\$ 15	\$ 17	\$ 17	\$ 17
Infrastructure	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5
Facilities Management						
Security	\$ 10	\$ 25	\$ 10	\$ 7	\$ 2	\$ 3
Corporate Facilities	\$ 2	\$ 2	\$ 2	\$ 2	\$ 2	\$ 2
Network Reconstruction	\$ 8	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Corporate Total</b>	<b>\$ 40</b>	<b>\$ 47</b>	<b>\$ 32</b>	<b>\$ 31</b>	<b>\$ 26</b>	<b>\$ 27</b>

Notes

\* May not add do to rounding

# Corporate Facilities Management - security

- The Security and Emergency Management program provides support for facility enhancements, protection of personnel, and mitigation of risks to BPA's physical assets and systems consistent with U.S. Department of Energy requirements, Presidential Decision Directives, and U.S. Department of Justice Guidelines, including U.S. Department of Homeland Security Directives, FERC, and NERC Guidelines.
- BPA is placing emphasis on capital projects for its field sites, including substations, maintenance and Regional Headquarters, dispatch centers, as well as the corporate and business-line headquarters where large volumes of personnel are assigned.
- The capital projects identified address the physical security enhancements for BPA's Portland corporate headquarters (Federal Building), and voids identified within the emergency response capability, including contingency tools needed for the BPA wide Continuity of Operations Program.



# Corporate Facilities Management - security

- In conjunction with the BPA Safety and Security organizations, the Facilities organizations need to be able to respond to the requirements issued from the Department of Homeland Security by implementing projects that enhance the building and safeguard its occupants and business.

Year	Projects approved and under way	New Starts
2007	\$500 thousand	\$10 million
2008		\$25 million
2009		\$10 million
2010		\$7 million
2011		\$2 million
2012		\$3 million



# Corporate Facilities Management - facilities and network reconstruction

- Workplace Services, Office Facilities, is responsible for the operations and maintenance of the BPA headquarters building in Portland - the Ross Complex operations and maintenance function in Vancouver, WA will be moved to Workplace Services starting in FY 2007.
- The facilities capital program is designed to upgrade BPA facilities and to ensure continuous (24 x 7) operations of our mission critical functions, including power generation, scheduling, dispatching, and information technology.
- The network reconstruction facilities project will upgrade building mechanical systems to provide additional cooling and back-up power for key IT systems, in support of an IT project to reinforce the capacity of the main computer room.



# Corporate Facilities Management new starts

Year	Projects approved and under way	New Starts
2007	\$564 thousand	\$9 million
2008	\$200 thousand	\$2 million
2009		\$2 million
2010		\$2 million
2011		\$2 million
2012		\$2 million



# Corporate Information Technology

- The goal of the IT Project Management Office (IT PMO) is to provide structure and management controls for large IT projects. The criteria for what should be managed by the IT PMO are provided below.
  - Projects that require capital. Since the APSC (Agency Prioritization Steering Committee) must approve all expenditures of capital funds, these projects must be managed by the IT PMO and its processes.
  - Projects that exceed \$250,000 in life-cycle cost.
  - Projects that exceed three person-months in labor (approximately \$30,000).
  - Projects that management deems appropriate for inclusion in the IT PMO process.

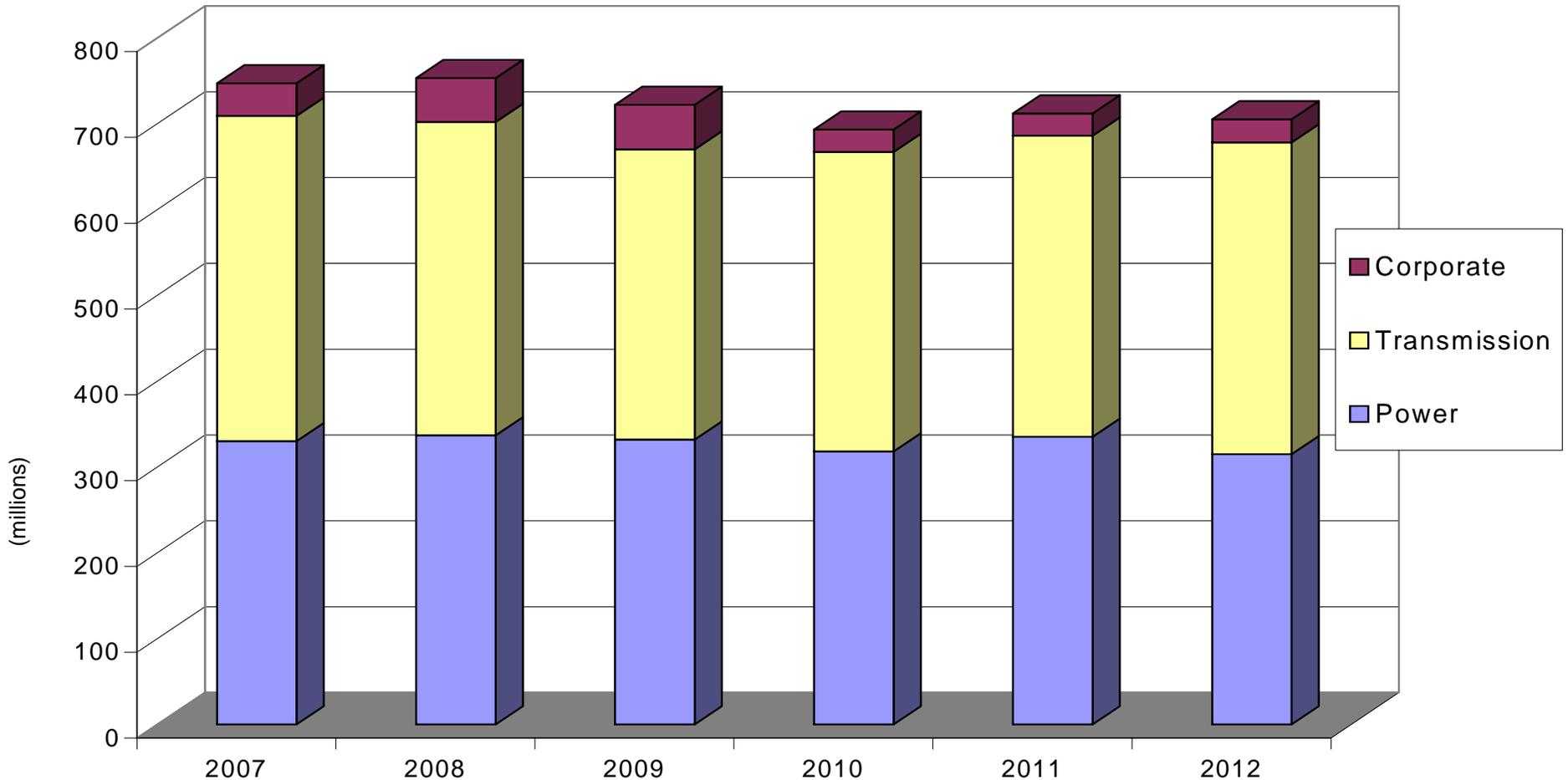


# Corporate IT project ranking

- The business requirements for these projects fall into three categories:
- Mandatory
  - Regulatory (Department of Energy, Federal Energy Regulatory Commission, Western Electricity Coordinating Council, North American Electric Reliability Council, contract)
  - Public/personnel safety
- Reliability of power generation/distribution
  - Physical IT infrastructure
  - Application/data or network security
- Improved business operations



# Projected agency capital investment



**Notes**

\* Power includes CRFM and CGS

\* Transmission includes PFIA and other customer funded projects



# Capital Funding Sources

- Tools used historically:

**Treasury:** BPA is allowed to borrow from the Treasury and have up to a maximum limit of \$4.45 billion outstanding. Currently BPA finances most its FCRPS federal investments by borrowing from Treasury.

**Third party financings:** Third parties fund, own, and operate the facilities, (such as EN and the CGS plant), from which BPA purchases the output but has no ownership rights.

**Debt Optimization:** Refinancing EN debt as it comes due, and paying down a similar amount of Treasury debt.

**Capital Leases:** Third parties fund and own the facilities; BPA leases the facilities but retains exclusive operating rights.



# Capital funding sources

(continued)

**Customer Financed Projects:** Customers fund projects by prepaying the project cost to Bonneville. Customers receive credits from Bonneville equal to the amount of funds they prepaid, plus interest earned. Bonneville then gives customers credit on their bills until the credits equal the amount of the prepayment and any interest accrued.

**Appropriations:** Originally financed the hydro and transmission system investments and replacements. Currently, appropriations fund only-fish related investments at the Federal dams.

**Revenue Financing:** Investments are funded directly by revenues recovered through rates.



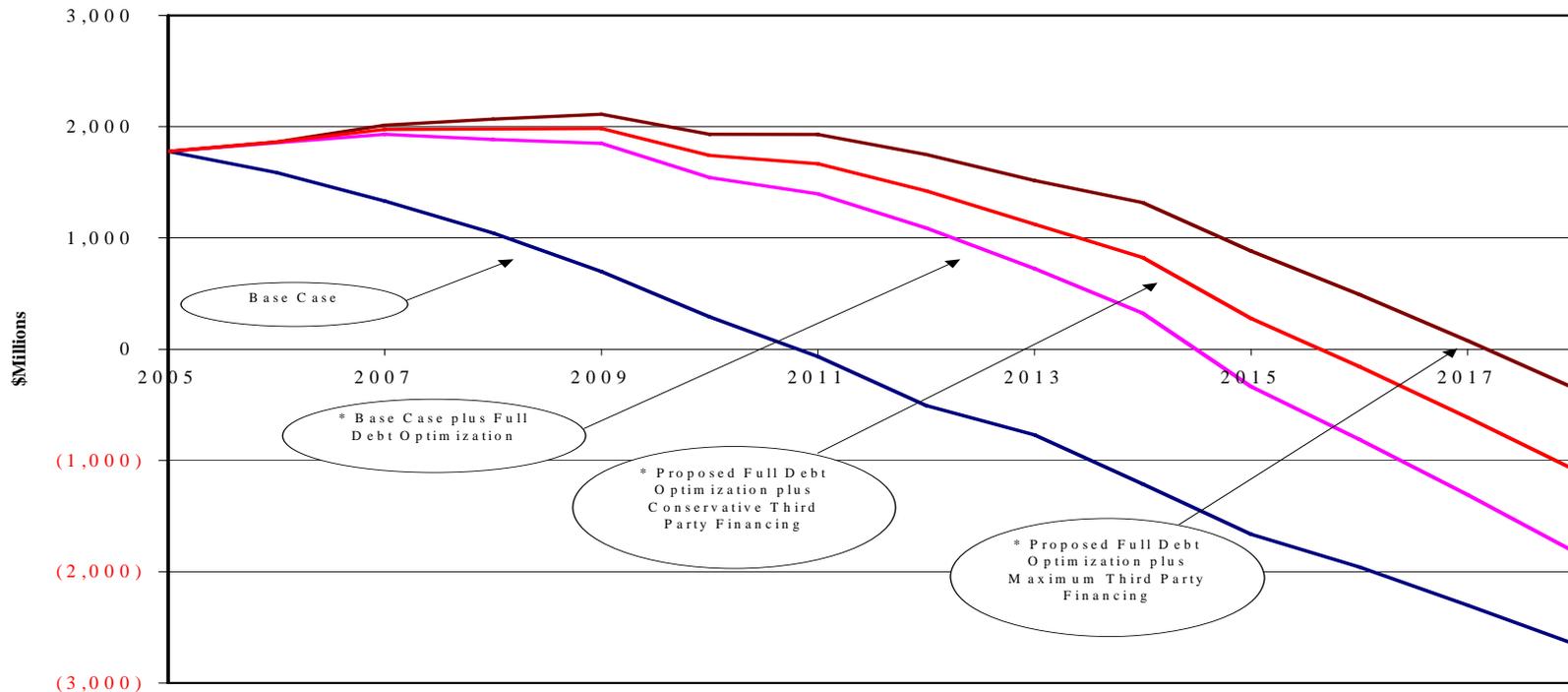
# BPA's access to capital

- A significant source of capital for BPA is its ability to borrow from the United States' Treasury.
- Outstanding bonds issued to the Treasury are limited to \$4.45 billion.
- In its FY 2007 Congressional Budget, BPA forecast that with the projections in that document BPA would reach the borrowing limit in FY 2011, excluding the effects of the President's proposal regarding the disposition of net secondary revenues and the continuation of the debt optimization program.
- With the completion of the full debt optimization program, BPA could extend its ability to borrow from the Treasury into FY 2014, however, there is no assurance that the debt optimization program will be completed.
- BPA currently has the ability to access third-party sources of capital; if BPA also were to take maximum advantage of this ability, it may be able to extend its ability to borrow from the Treasury into FY 2018, but there is no assurance that BPA could achieve this result.
- These figures are subject to change as new information becomes available.



# Amount remaining of BPA's ability to borrow from the U.S. Treasury

based on BPA's FY 2007 Congressional Budget



**Notes**

- \* The base case does not include the effects of the President's proposal regarding the application of net secondary revenues to retire debt early
- \* There is no assurance that the debt optimization program will be fully implemented
- \* There is no assurance that BPA will be able to achieve its maximum potential for using third-party financing
- \* The figures are subject to change as new information becomes available
- \* This table does not contain the proposals presented in the CPR



# Feedback needed from participants

- First step at responding to stakeholders requests to understand BPA's capital planning process.
- How and why the agency makes capital investment plans involves obtaining stakeholder priorities for the different investment categories.
- By understanding the capital planning process, it is expected that stakeholders will be able to influence decisions by knowing:
  - when comments are timely
  - to whom to make comments
  - the right level of comment for the purpose
- BPA is seeking comments on the FY 2007-FY 2012 investment plans and is seeking comment on the public process to involve stakeholders in order to inform and design the "One BPA" process in 2008.
- BPA's intent is that this discussion will ultimately inform BPA's policy choices involving capital planning
- Close of comment is July 7, 2006



# BPA Financial Disclosure Form

- 1) All FY 2007-FY 2012 information was provided in June 2006 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 2006 information was provided in June 2006 and is consistent with BPA 2<sup>nd</sup> Quarter Review year end forecasts.
- 3) All FY 1997-FY 2005 information was provided in June 2006 and is consistent with actuals that contain BPA-approved Agency Financial Information.

