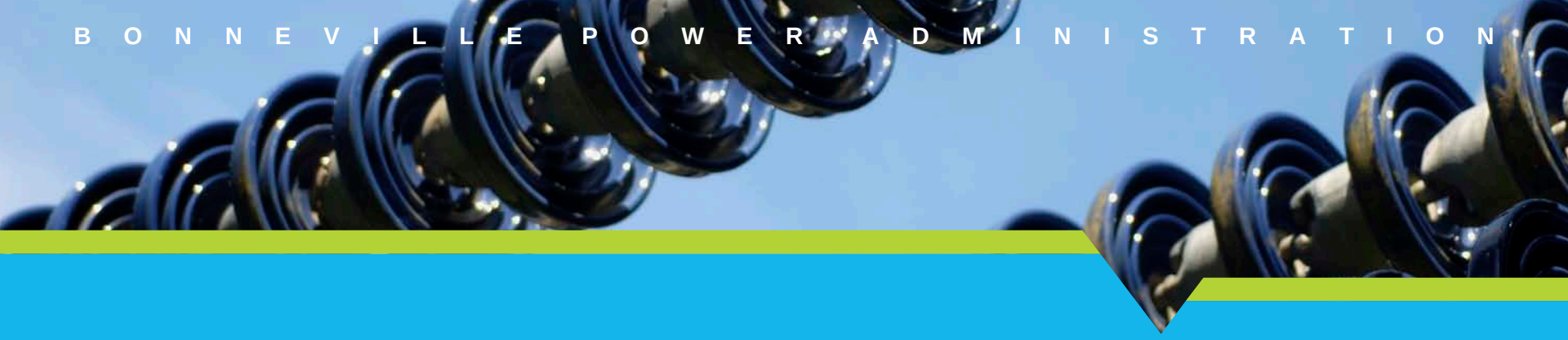


Transmission Load Service

Expand Program

Asset Management Strategy

Jim Hallar, Program Manager

March 2012

Table of Contents - Load Service Strategy

Executive Summary

Background

- The Load Service Strategy represents the capital strategy for BPA's projects in the "Main Grid" and "Area and Customer Service" category. Other Expansion strategies are contained within the:
  - Regional Planning Asset Strategy
  - Communications/PSC Asset Strategy
  - Generation and Line/Load Interconnection Asset Strategy
  - Control Centers Strategy
- Customer requirements as well as regulatory compliance play a major role in determining annual expenditures for these categories.
- The addition of significant new wind generation in the Northwest has necessitated the need for numerous large capital projects to both connect and integrate new resources into the grid. Our strategies to manage wind generation are listed separately in the Generation Integration Strategy.
- Main Grid projects typically represent 35% to 45% of Transmission's capital while Area and Customer service typically represents about 3%.
- The overall strategy for Load Service remains unchanged from what was submitted but the accomplishments and project lists have been updated.

Executive Summary-Main Grid

Accomplishments to date:

- Have completed and received approval for the following Main Grid Business Cases at the CAB level.
  - Seattle Puget Sound Area Reinforcement (PSANI Upgrade)
  - Central Oregon Transformer Addition
  - Monroe Shunt Capacitor Addition
  - Big Eddy-Knight 500Kv Project
  - Central Ferry Lower Monumental
  - Numerous Miscellaneous Main Grid Project

* See appendix for Main Grid history and details (slide 36-38)

Executive Summary-Area and Customer Service

Accomplishments to date

- Have initiated/continued work on the following Area and Customer Service projects:
  - Longview and Cowlitz Sub-115Kv
  - Longview Sub Sectionalizing Breaker
  - Caribou and Hooper Sub Projects
  - Rogue SVC
  - Miscellaneous smaller projects

* See appendix for Area and Customer Service history and details (slide 39-41)

Goal and Objectives

Goal

- Load service obligations and customer service requests are met with solutions that are:
  - Directed at meeting reliability and other standards at the least life-cycle cost.
  - Implemented consistent with tariff timelines and requirements and with customer requirements.

Objective

- Develop long-term expansion plans for BPA's load service areas where system reinforcement is necessary, by improving forecasting ability and conducting studies to determine feasible alternatives (including non-wires alternatives).

Overview and Background

Description of Transmission Assets

- BPA's transmission system serves an area of the Pacific Northwest which spans approximately 300,000 square miles and four states (with service to portions of 4 others).
- BPA provides service to a population of more than 12 million.
- BPA owns, maintains and operates over 15,000 circuit miles of transmission lines and approximately 260 substations, representing about three-fourths of the high-voltage transmission in the service territory.
- These facilities operate at voltages ranging from 500 kV to below 69 kV and include both AC transmission and 1000 kV DC transmission facilities.

Overview and Background

ASSET CATEGORIES

Assets are grouped into categories when they serve common functional and business purposes. Within the Expansion program, assets are grouped into the following categories:

- **Inter-Regional Paths** – This asset category consists of 500 kV and some lower voltage lines and facilities that interconnect with other transmission providers and generating resources outside the Pacific Northwest. These are also commonly referred to as interties. The primary inter-regional paths on BPA's system are COI (AC), PDCI, Montana-Northwest, Idaho-Northwest, and the Northern Intertie.
- **Main Grid** – This asset category consists of 500 kV transmission and substation facilities as well as some 345 kV and a few 230 kV facilities. These facilities serve the large load areas in BPA's system. This category can be further sub-divided into geographic areas.
- **Area and Customer Service** – This asset category consists of facilities, typically 230 kV and below, which function primarily to serve customer loads. This category can be further sub-divided into geographic areas.
- **Grid Operations** – This asset category consists of hardware and software system investments to expand control center capabilities.
- **PFIA** – Project Funded In Advance. This includes facilities and/or equipment where Bonneville retains control or ownership but which are funded or financed by a third-party or with revenues, either in total or in part.

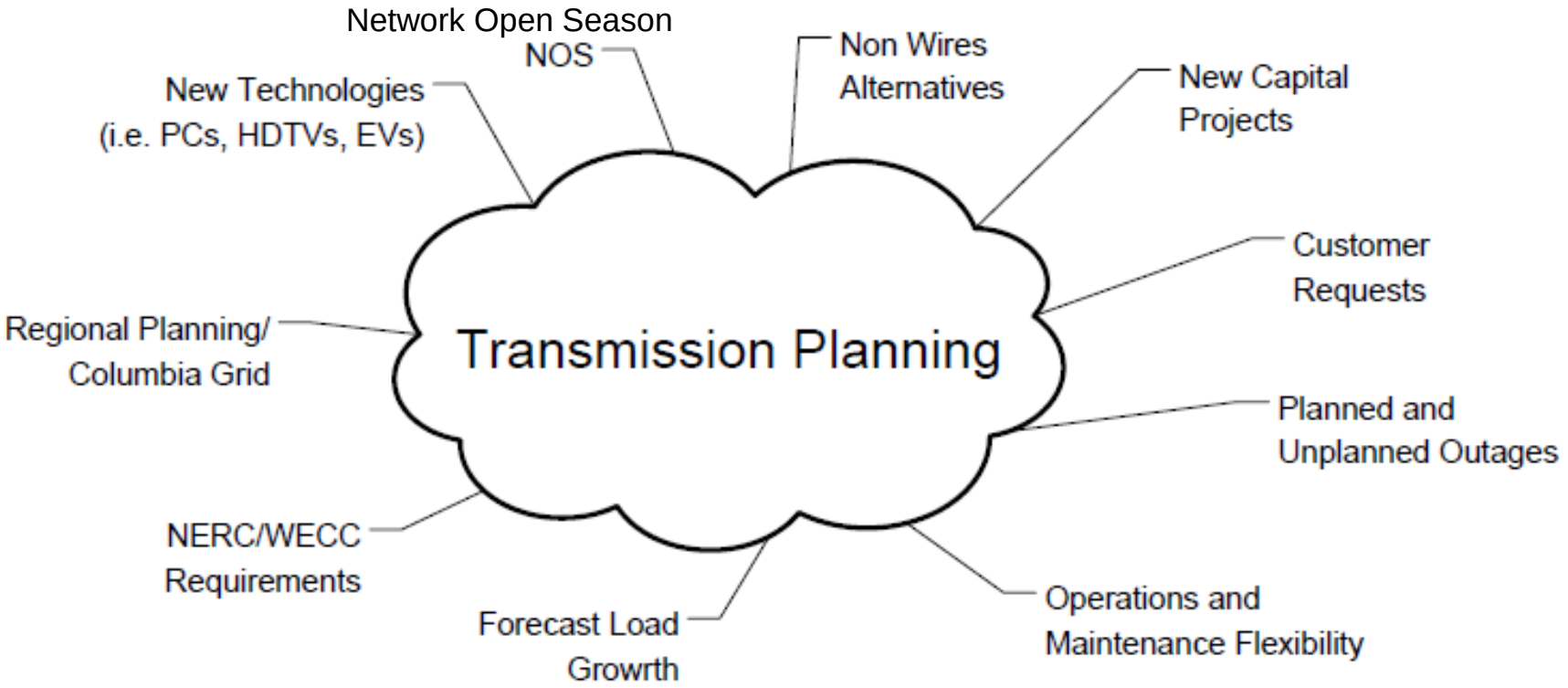
Overview and Background

Customers and Stakeholders

- BPA's transmission system provides service to:
  - 352 customers which include Public Utility Districts, Investor-owned utilities, Cooperatives, Municipalities, other Federal Agencies, Direct-service industries, Port Districts and Tribes.
  - In addition, 72 Power marketers utilize BPA's transmission system to market their power.
- The majority of BPA's customers are seeking what BPA was first established to provide: reliable service to loads at the most cost effective (low) rates.
- In addition, the Power marketers are seeking low cost access to transmission (wheeling rates) in order to market their power to other consumers.
- Along with these primary functions, BPA also provides a number of ancillary services including reactive reserves, and serving as the balancing authority for several customers.

Overview and Background

Inputs to Transmission Planning



Present State

LOAD GROWTH

- Loads throughout the Northwest continue to grow, although at a somewhat slower rate than in previous years, due to the present economic downturn/situation. This economic slowdown may result in temporary deferrals of projects intended to serve additional loads. Projects in this category are reviewed annually and adjustments made to their schedule if necessary.
- Historically, the Pacific Northwest has been a winter peaking system. This means that the highest loads typically occur during the winter when cold weather causes increased usage of electric heating equipment.
- Over time, however, in many parts of the Northwest, peak summer load levels are catching up with the winter levels. This is primarily due to a greater percentage of air conditioning being installed in homes and businesses.
- This shift presents new challenges: (1) because equipment typically has lower capacity under warm summer conditions, and (2) air conditioners have different load characteristics than heaters, which affects the models used for expansion Planning.

Present State

REGULATORY STANDARDS

- BPA plans the grid to comply with NERC and WECC Reliability Standards.
- Over time, the NERC standards have evolved to cover a wider range of contingencies than the system was originally planned for.
- Compliance with these standards requires significant remediation costs.
- Keeping the existing transmission system up to the present reliability standards and ensuring that all new facilities are also in compliance, drives significant investments.

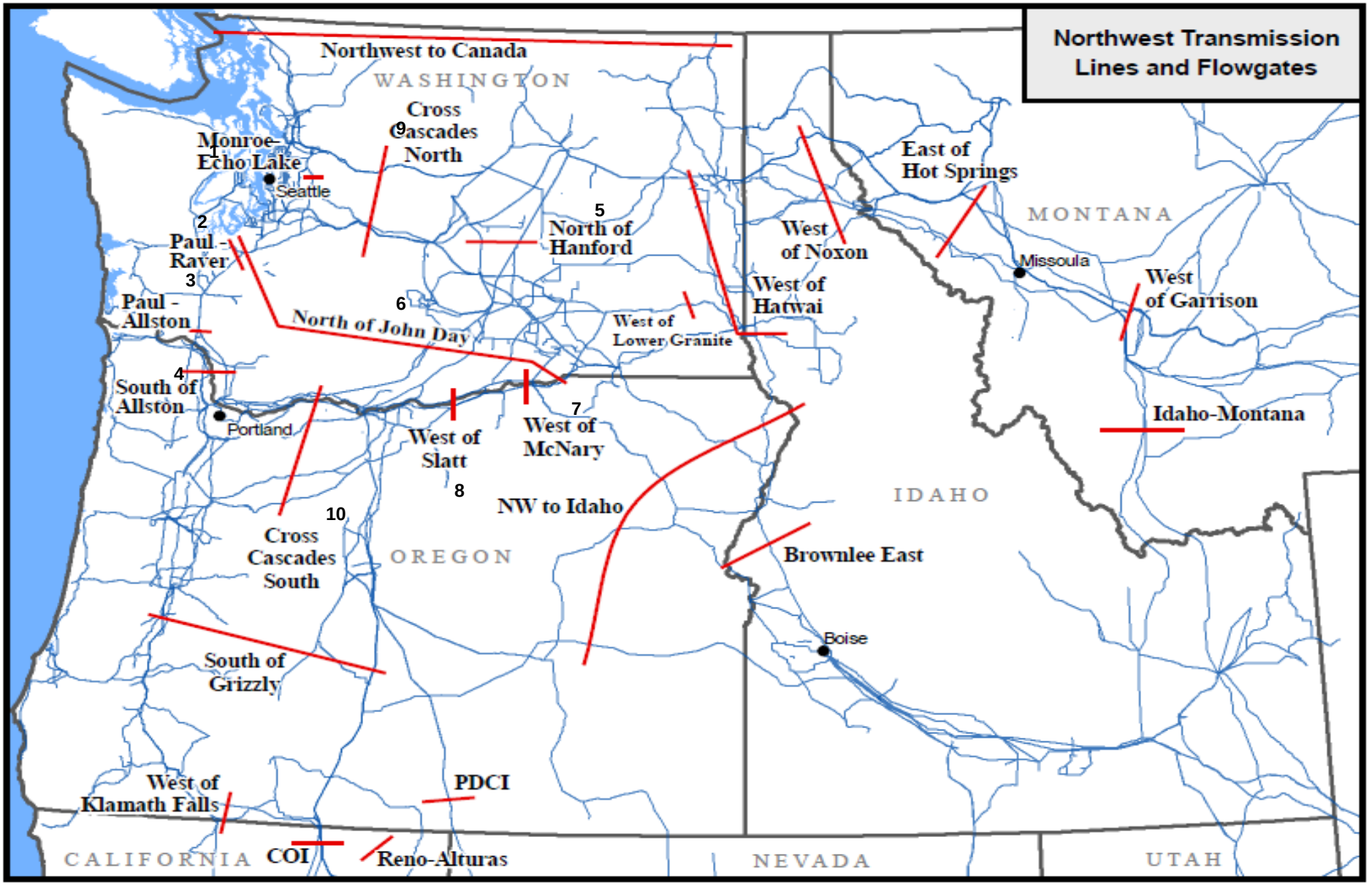
OTHER FACTORS

- Other factors that drive investments for system expansion, include efforts to meet customer expectations, Network Open Season (NOS) commitments and Transmission Adequacy Guidelines when appropriate.
- BPA must also meet the requirements of the Biological Opinion, which restricts the operation of the Federal Columbia River Power System (hydroelectric plants). All of these factors increase the complexity of expansion planning.

Present State

CONGESTION

- Similar to a busy freeway, there are sections of BPA's transmission system which have bottlenecks due to limited capacity and heavy usage.
- A transmission path consists of a single line or multiple facilities used to transport bulk electric power through the system.
- On BPA's system, several paths are at or near their capacity limits and these are often referred to as congested paths. This congestion typically occurs during certain seasons or operating conditions, which limits transmission inventory (Available Transmission Capacity - ATC).
- BPA monitors congestion on major paths by means of metrics that show the total time that transmission flows are close to reaching System Operating Limits (SOL). Among other effects, congestion can force a change in the optimal dispatch of generating resources which can lead to higher costs for delivered power.
- Congestion also affects the ability to move power from the sources (especially renewables) to serve the loads. Therefore, it is a consideration in the load service strategy.


Northwest Transmission Lines and Flowgates
Northwest to Canada
WASHINGTON
1
Monroe-Echo Lake
Seattle
9
Cross Cascades North
2
Paul - Raver
3
Paul - Allston
4
South of Allston
Portland
5
North of Hanford
6
North of John Day
West of Lower Granite
7
West of McNary
West of Slatt
8
NW to Idaho
10
Cross Cascades South
OREGON
South of Grizzly
West of Klamath Falls
PDCI
COI
Reno-Alturas
CALIFORNIA
NEVADA
UTAH
West of Noxon
East of Hot Springs
MONTANA
Missoula
West of Hatwai
West of Garrison
Idaho-Montana
IDAHO
Brownlee East
Boise

Present State

Congested Flowgates and Type of Limitation

1. Monroe-Echo Lake - Thermal
2. Raver-Paul - Thermal
3. Paul-Allston – Thermal and Voltage Stability
4. South of Allston - Thermal
5. North of Hanford - Thermal
6. North of John Day - Thermal
7. West of McNary - Thermal
8. West of Slatt - Thermal
9. Cascades North – Thermal and Voltage Stability
10. Cascades South – Thermal and Voltage Stability

Present State-Constraint Mitigation

Main Grid Capital Projects Impacting Constrained Paths

From the Main Grid Capital Budget, the following projects have an impact on some of the congested flowgates described earlier. The projects and the corresponding impacted paths are shown below:

PROJECT	CONGESTED PATH
Big Eddy-Knight 500 kV Project (NOS 08)	West of McNary
I-5 Corridor Reinforcement Project (NOS 08)	South of Allston, Paul-Allston
West of McNary Reinforcement Project (NOS 08)	West of McNary
Colstrip Upgrade Project (aka CUP) (NOS10)	Montana to Northwest
Raver-Paul Path Upgrades Project (NOS10)	Raver-Paul
Northern Intertie Project (NOS10)	Northwest to Canada

Future State

REGULATORY STANDARDS

- The NERC and WECC Reliability Standards are evolving and changes are expected to continue.
- Over time, the NERC standards have evolved to cover a wider range of contingencies than the system was originally planned for.
- Compliance with these standards requires significant remediation costs.
- Changes to the Standards will continue to drive investments in the Expand program.
- In addition to regulations, other factors that will continue to drive investments in the future are customer expectations and market pressures.

Future State

EVOLVING ENERGY POLICIES

- The overall electric utility industry is going through a major shift in terms of resource development.
  - Traditionally, fuel sources for Power Plants have been largely hydro, nuclear, or fossil fuels such as gas and coal.
  - Now, the emphasis has shifted toward more environmentally friendly, although more costly, primarily renewable resources.
- Federal and State energy policies are establishing Renewable Portfolio Standards (RPS) which mandate that utilities should serve specific percentages of their loads with renewable resources.
- There are tighter restrictions on greenhouse gas emissions and targets for reduced emissions which affects generating resources which supply the loads.
- Climate change and the resulting new initiatives places pressure on Operations as well as the transmission infrastructure to maintain reliable load service.

Future State

ECONOMIC CONSIDERATIONS

- Economic considerations impact load service planning. Fluctuations in the economy are reflected in the demand for power and therefore affect the load forecasts. Load service projects can be accelerated or deferred based on these changes in the load forecasts.

Assessment of Transmission Expansion Risks

Twenty-nine risks were identified and defined by program managers and lead expansion program staff under the guidance of ERM. Thirteen SMEs were then asked to score the impact and likelihood of the risks. The green-shaded cells are the risks which have the most impact on meeting the objectives of the Load Service Strategy.

Risk	Risk Description
Lack of skilled staffing	Lack of staffing (BFTE & CFTE) compared to staffing needs leads to delays or errors in work products
Evolving NERC/WECC reliability standards	Evolving NERC/WECC reliability standards leads to the need to revise plans of service, delays in developing plans, or scope/cost increases in the plans to meet the new standards
Public resistance to transmission siting	Public resistance to transmission facility siting leads to unexpected project delays and cost over runs
Business/political pressure to revise project schedules	Business and/or political pressure to accelerate schedules on certain projects delays other projects, requires extensive project rescheduling, and increases overall annual costs of project execution
Uncertainties related to wind integration	Uncertainties surrounding the effects of wind generation integration on the power system and delays associated with development of policies and technical solutions for mitigating those operational effects leads to continued delays in executing LGIA contracts
Environmental constraints on siting	Environmental constraints on transmission facility siting leads to unexpected project delays and cost over runs
Uncertainty in generation development patterns	Lack of predictability in new generating resource development leads to an inability to develop accurate long-term plans for BPA's load service areas
Load forecast uncertainty	Uncertainty or inconsistency in load forecasts leads to an inability to develop accurate long-term plans for BPA's load service areas
Unexpected changes in renewable portfolio standards and tax incentives	Unexpected changes in renewable portfolio requirements leads to abrupt changes in renewable resource generator development patterns and transmission service demands.
Changes in transmission tariff requirements	Changes in transmission tariff requirements, such as ATC methodology, leads to inadequate plans, delays in developing the plans, or scope/cost increases in the plans to meet the new standards
Outage Scheduling	Outage constraints due to high wind - high water scenarios, congested paths, and efforts to maximize usage of the transmission system, create difficulties for completing expansion projects.

Risks to Meeting the Objectives

Evolving Regulations

- As regulatory standards for reliability evolve and change, so do the projects that are required to meet them. More stringent standards result in more investments in the expansion program in order to reinforce the grid. If standards evolve faster or to a greater extent than the ability to design reinforcements, there is a risk to meeting the load service objectives.

Risks to Meeting the Objectives

LOAD FORECASTS

There are a number of changes affecting the ability to accurately forecast loads and load growth.

- The locations and rates of economic growth vary across the region. These differences can complicate transmission planning. In addition, factors such as economic swings (sudden downturns or surges) create challenges to developing a long-range load forecast for planning purposes.
- In terms of load, the northwest is shifting from a primarily winter peaking system, to one which experiences summer peaks that are almost equivalent to winter in many areas. This increases the complexity of planning because both seasons must be considered in order to reinforce the system adequately.
- The composition of loads is changing and in many cases, the models are not fully developed to reflect this. This is particularly challenging for the summer season, with the high percentage of air conditioning loads. These loads require careful and accurate modeling, since the nature of this load can cause unique problems for transmission reliability.

Risks to Meeting the Objectives

LOAD FORECASTS – Continued

- There is a trend toward electrification of the transportation system. This is potentially a fundamental change in the usage of electricity and one that could dwarf the changes brought on by the advent of the personal computer.

- Plug-in hybrid vehicles and other technological innovations increase load factors on facilities, such as storage devices, and may change the way the transmission system is used. As electricity storage technologies develop, peak demand may be shaved but off-peak usage may increase. If plug-in electric vehicles become prevalent, this will create new demands on the transmission system which have not been studied or reflected in any previous Expansion program.

- The Northwest Power and Conservation Council, in its 6th Power Plan, claims that energy efficiency can meet most of the new demand for electricity in the Northwest over the next 20 years. BPA's Planning relies on information provided by the Energy Efficiency group, to factor conservation into the load forecasts used for expansion planning. ***However, conservation values are based on "average" MW (aMW) of demand and the NERC Reliability Standards require Planning for "peak" loads.*** Specific information is not available on where the load reductions will occur as a result of conservation, and how much it will reduce peak loads, and the degree of certainty associated with the information. Therefore, it is difficult to factor this into the studies.

Risks to Meeting the Objectives

RESOURCE FORECASTS

Traditionally, resources in the northwest have remained fairly stable (hydro and thermal plants) and new additions have occurred gradually over time, with multiple year's notice and a long lead time to implement. Therefore, expanding the transmission system to accommodate the resources happened in a fairly predictable manner. The challenges with resource forecasting in today's environment, is a combination of: predicting the addition of new resources, constraints on existing resources, dealing with intermittent resources, and modeling complexities. At present, we anticipate having a total of 3,850 MW of wind capacity installed by the end of 2011 and there is presently more than 24,000 MW of additional wind requests in the queue.

- New resources – Power plants can be constructed within a period of 2 years, which is shorter than the lead time for building the transmission facilities to accommodate them. Also, the plans for thermal plants which use natural gas as fuel, can rise and fall with market prices for gas. This results in a fluctuating plan for expanding the system as planned generation projects respond to current market conditions.

Risks to Meeting the Objectives

RESOURCE FORECASTS – Continued

- Constraints on existing resources – Hydro generation plants are operated to serve many needs as well as generating power. Some of the other needs are: flood control, recreation, irrigation, and spill requirements for endangered fish. This means that just because the resource exists, it cannot be counted on to serve loads under all conditions, especially when it conflicts with meeting the other needs.

- Intermittent resources – Similar to the problems stemming from resource constraints, wind generation output is a function of natural phenomenon which doesn't always synchronize with the times of peak electricity demand. Therefore, system expansion has to allow the flexibility to bring resources to serve the loads, from different locations on the system, depending on their availability. Also, if storage options are developed to help offset the intermittent nature of wind resources, adequate transmission needs to be in place to accommodate that as well.

- Uncertainty of Resources – With the emerging restrictions on carbon emissions, the future of many thermal plants (such as coal-fired generation) is uncertain. If these resources are shut down, where and how they are replaced, will impact transmission expansion needs.

Risks to Meeting the Objectives

RESOURCE FORECASTS - Continued

- Modeling Complexities –The recent surge in wind generation development has led to a need to develop new models to represent their performance. These models have been evolving as more actual data from the generators becomes available to benchmark against. In the meantime, a lack of accurate models is part of the resource risk that could hinder the development of the Expand program.

OUTAGE SCHEDULING

- Outage Constraints due to High Wind-High Water
- Outage Constraints due to constrained paths
- Competition for outage schedules from other Capital and Maintenance projects
- Lack of universal transparency for planned outages

Risks to Meeting the Objectives

REGIONAL PLANNING

- Coordinating with other utility's plans in the Region will require additional time in the Planning process. Although this should lead to a better overall plan of service, there is a risk of jeopardizing project schedules to achieve this. This could affect the ability to meet load service requirements.

ACCESS TO CAPITAL

- While BPA received a substantial increase in its authority to borrow from the US Treasury in 2009, there is no guaranteed long-term access to these levels of capital funds and current estimates are that BPA's ability to borrow capital will be at its limit by 2016. At those times when access to capital is limited, the result is scaling back the expansion program. This, in turn, limits the ability to make needed reinforcements to the grid for load service.

Risks to Meeting the Objectives

OTHER POTENTIAL RISKS

- Uncertainty of where the large quantity of renewable resources will be delivered (i.e. what loads they are serving)
- Increased system complexity:
  - load areas are rarely served radially as an isolated network. More often, they are tightly coupled networks with complex interactions. Expanding the system for load service in one area often has impacts on neighboring areas and utilities.
  - Also, efforts to maximize use of the existing system, over the years, has lead to more control and protection schemes (RAS) which also increases system complexity.
- Environmental and siting processes are growing longer and more complex. The increasing timelines for these processes impact project schedules.
- Interregional expansion projects require participation from multiple utilities. This affects project funding and schedules because of the additional coordination required among the affected parties.

Load Service Strategy

- **Load Forecasting**
  - Accurate and up-to-date load forecasts developed both centrally and from customer input
  - Energy Efficiency organization to provide detailed conservation levels for the load forecasts
- **Compliance**
  - Effort to anticipate changes in regulations
- **Plan of Service Development**
  - Ensure adequate facilities are in place to meet existing loads and expected/forecasted growth
  - Fuller, more optimal use is made of existing transmission capacity through technological, policy, and process change
  - Accomplishing all of the above, with projects which are cost effective, least life-cycle cost and flexible to fit in with the future needs of the transmission system

Load Service Strategy

- **Plan of Service Development - continued**
  - The Transmission and Energy Efficiency organizations will coordinate to provide an assessment of Non-Wires Alternatives
  - Projects that affect multiple utility's systems will be coordinated through ColumbiaGrid as necessary
- **Project Schedules / Adequate Lead Times**
  - Allow sufficient lead time to adequately address potential risks associated with the expansion plan and to meet project need dates.

Expand – Main Grid 2011-2014

Main Grid Capital Actual and Forecast 2011-2014

		FY11 Actuals	FY12 SOY	FY12 Budget	FY13 Budget	FY14 Budget
WEST OF MCNARY INTEGRATION PRO		50,804,130	6,122,365	7,969,130	68,000	
OLYMPIC PENINSULA REINFORCEMNT		15,335		206,000	1,639,000	3,869,000
I-5 CORRIDOR UPGRADE PROJECT		9,260,509	22,573,897	17,440,598	8,371,998	12,000,000
LIBBY-TROY LINE REBUILD		423,419	156,619	-118,759		
MISC. MAIN GRID PROJECTS		927,018	13,272,071	3,128,963	6,439,084	9,664,936
MID-COLUMBIA REINFORCEMENT		7,281,630	1,769	163,050		
BIG EDDY-KNIGHT 500kv PROJECT		11,423,030	85,597,949	116,000,000	63,850,000	6,650,000
CENTRAL FERRY- LOWER MONUMNTAL		3,640,885	30,108,469	30,283,922	38,670,000	13,950,000
CENTRAL OREGON REINFORCEMENT		10,103,517	14,413,030	23,722,651	4,252,478	2,353,000
SEATTLE-PUGET SOUND AREA					6,950,000	22,370,000
PORTLAND-VANCOUVER		23,956,090	10,534,984	10,126,543	1,545,561	2,717,000
WEST OF CASCADES NORTH				1,523,000	1,523,000	6,000,000
WEST OF CASCADES SOUTH						
NORTHERN INTERTIE					250,000	330,000
SALEM- ALBANY-EUGENE AREA		415,389	10,966,662	1,939,096	9,975,000	
TRI-CITIES AREA		8,590	2,952,663	2,685,000	6,098,000	4,102,000
IDAHO REINFORCEMENT						
MONTANA-WEST OF HATWAI		-80,700		1,000,000	3,000,000	22,600,000
NERC CRITERIA COMPLIANCE			556,866		5,655,350	6,000,000
		$118,178,842	$197,257,344	$216,069,194	$158,287,471	$112,605,936

Expand – Main Grid 2015-2021

Main Grid Capital Forecast 2015-2021

	FY15 Budget	FY16 Budget	FY17 Budget	FY18 Budget	FY19 Budget	FY20 Budget	FY21 Budget
WEST OF MCNARY INTEGRATION PRO							
OLYMPIC PENINSULA REINFORCEMNT	9,955,000	1,607,000		10,000,000	10,000,000	26,000,000	26,000,000
I-5 CORRIDOR UPGRADE PROJECT	20,000,000	86,000,000	100,000,000	95,000,000	5,000,000		
LIBBY-TROY LINE REBUILD							
MISC. MAIN GRID PROJECTS	9,540,046	12,690,806	22,000,000	22,000,000	22,000,000	22,000,000	22,000,000
MID-COLUMBIA REINFORCEMENT							
BIG EDDY-KNIGHT 500kv PROJECT							
CENTRAL FERRY- LOWER MONUMNTAL							
CENTRAL OREGON REINFORCEMENT							
SEATTLE-PUGET SOUND AREA	19,700,000	11,240,000					
PORTLAND-VANCOUVER	942,000	3,300,000					
WEST OF CASCADES NORTH		4,300,000				20,000,000	140,000,000
WEST OF CASCADES SOUTH							
NORTHERN INTERTIE	458,000	6,000,000	32,000,000	30,000,000			
SALEM- ALBANY-EUGENE AREA							
TRI-CITIES AREA	10,250,000	9,500,000					
IDAHO REINFORCEMENT							
MONTANA-WEST OF HATWAI	40,000,000	49,000,000					
NERC CRITERIA COMPLIANCE	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
	$116,845,046	**$189,637,806**	**$160,000,000**	**$163,000,000**	**$43,000,000**	**$74,000,000**	**$194,000,000**

Expand – Area & Customer Service 2011-2014

Area and Customer Service Capital Actual and Forecast 2011-2014

		FY11 Actuals	FY12 SOY	FY12 Budget	FY13 Budget	FY14 Budget
CITY OF CENTRALIA PROJECT		-2,612	157,048	74,919		
SOUTHERN IDAHO - LOWER VALLEY		5,394,150	7,299,507	6,739,460	5,815,410	
MISC. AREA & CUSTOMER SERVICE		4,894,318	4,195,289	2,477,153	3,111,000	9,524,000
ROGUE SVC ADDITION		1,224,256	1,602,698	1,561,204		
LONGVIEW AREA REINFORCEMENT		1,229,087	1,857,618	1,906,959	16,034,800	5,912,000
KALISPELL-FLATHEAD VALLEY		209,275	1,501,172	397,424	2,337,662	2,022,000
		$12,948,474	**$16,613,332**	**$13,157,119**	**$27,298,872**	**$17,458,000**

Expand – Area & Customer Service 2015-2021

Area and Customer Service Capital Forecast 2015-2021

	FY15 Budget	FY16 Budget	FY17 Budget	FY18 Budget	FY19 Budget	FY20 Budget	FY21 Budget
CITY OF CENTRALIA PROJECT							
SOUTHERN IDAHO - LOWER VALLEY							
MISC. AREA & CUSTOMER SERVICE	11,306,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
ROGUE SVC ADDITION							
LONGVIEW AREA REINFORCEMENT							
KALISPELL-FLATHEAD VALLEY	750,000						
	$12,056,000	**$10,000,000**	**$10,000,000**	**$10,000,000**	**$10,000,000**	**$10,000,000**	**$10,000,000**

APPENDIX

Expand – Main Grid 5 Year History

	FY07 Actuals	FY08 Actuals	FY09 Actuals	FY10 Actuals	FY11 Actuals
WEST OF MCNARY INTEGRATION PRO	$223,181	$284,257	$25,298,880	$62,228,142	$50,804,130
OLYMPIC PENINSULA REINFORCEMENT	$636,054	$4,518,394	$20,423,791	$2,568,858	$15,335
I-5 CORRIDOR UPGRADE PROJECT	$3,124	$105,201	$780,381	$6,552,788	$9,260,509
LIBBY-TROY LINE REBUILD	$3,535,961	$1,323,513	$9,353,633	$2,652,614	$423,419
MISC. MAIN GRID PROJECTS	$8,860,143	-$210,133	$536,280	$305,564	$927,018
MID-COLUMBIA REINFORCEMENT			$65,411	$4,247,354	$7,281,630
BIG EDDY-KNIGHT 500kV PROJECT		$34,925	$713,969	$5,697,607	$11,423,030
CENTRAL FERRY-LOWER MONUMENTAL			$566,102	$3,231,376	$3,640,885
CENTRAL OREGON REINFORCEMENT		$0	$149,629	$4,544,726	$10,103,517
SEATTLE-PUGET SOUND AREA					
PORTLAND-VANCOUVER				$447,624	$23,956,090
WEST OF CASCADES NORTH					
WEST OF CASCADES SOUTH					
NORTHERN INTERTIE					
SALEM-ALBANY-EUGENE AREA			$12,543	$354,948	$415,389
TRI-CITIES AREA			$21,953	$1,371,812	$8,590
IDAHO REINFORCEMENT					
MONTANA-WEST OF HATWAI	$4,037	-$209,524	$58,883	$8,522	-$80,700
NERC CRITERIA COMPLIANCE					
	$13,262,500	$5,846,633	$57,981,455	$94,211,935	$118,178,842

FY10 Main Grid Details

Description	Approved Funding	WO Actual	Work Planned	Work Accomplished	Explanation for Variance
WEST OF MCNARY INTEGRATION PRO	$62,228,142	$62,228,142	Construction Underway	Construction Underway	No Variance
OLYMPIC PENINSULA REINFORCEMNT	$2,568,858	$2,568,858	Construction Underway	Construction Underway	No Variance
I-5 CORRIDOR UPGRADE PROJECT	$6,552,788	$6,552,788	NEPA Work Underway	NEPA Work Underway	No Variance
LIBBY-TROY LINE REBUILD	$2,652,614	$2,652,614	Construction Underway	Construction Underway	No Variance
MISC. MAIN GRID PROJECTS	$351,126	$305,564	Construction Underway	Construction Underway	No Variance
MID-COLUMBIA REINFORCEMENT	$4,247,354	$4,247,354	Construction Underway	Construction Underway	No Variance
BIG EDDY-KNIGHT 500kv PROJECT	$12,097,607	$5,697,607	NEPA Work Underway	NEPA Work Underway	+$6M Variance due to slower than planned start
CENTRAL FERRY- LOWER MONUMENTAL	$3,231,376	$3,231,376	NEPA Work Underway	NEPA Work Underway	No Variance
CENTRAL OREGON REINFORCEMENT	$4,544,726	$4,544,726	Construction Underway	Construction Underway	No Variance
PORTLAND-VANCOUVER	$447,624	$447,624	Construction Underway	Construction Underway	No Variance
SALEM- ALBANY-EUGENE AREA	$354,948	$354,948	Construction Underway	Construction Underway	No Variance
TRI-CITIES AREA	$1,371,812	$1,371,812	Construction Underway	Construction Underway	No Variance
MONTANA-WEST OF HATWAI	$0	$8,522	No work planned	Not applicable	No Variance
	$100,648,975	**$94,211,934**			

FY11 Main Grid Details

Description	Approved Funding	WO Actual	Work Planned	Work Accomplished	Explanation for Variance
WEST OF MCNARY INTEGRATION PRO	$50,804,131	$50,804,130	Construction Underway	Construction Underway	No Variance
OLYMPIC PENINSULA REINFORCEMNT	$15,335	$15,335	Construction Underway	Construction Underway	No Variance
I-5 CORRIDOR UPGRADE PROJECT	$9,260,509	$9,260,509	NEPA Work Underway	NEPA Work Underway	No Variance
LIBBY-TROY LINE REBUILD	$423,420	$423,419	Construction Underway	Construction Underway	No Variance
MISC. MAIN GRID PROJECTS	$506,529	$927,018	Construction Underway	Construction Underway	+$420K -variance due to increase in # of projects.
MID-COLUMBIA REINFORCEMENT	$7,218,235	$7,281,630	Construction Underway	Construction Underway	+$80K-Normal Variance
BIG EDDY-KNIGHT 500kv PROJECT	$11,085,069	$11,423,030	NEPA Work Underway	NEPA Work Underway	+$338K due to need to accelerate work
CENTRAL FERRY- LOWER MONUMENTAL	$4,967,066	$3,640,885	NEPA Work Underway	NEPA Work Underway	-$1.3M due to slow start and deferral
CENTRAL OREGON REINFORCEMENT	$10,103,517	$10,103,517	Construction Underway	Construction Underway	No Variance
PORTLAND-VANCOUVER	$23,690,926	$23,956,090	Construction Underway	Construction Underway	+$265K due to wetlands issue
SALEM- ALBANY-EUGENE AREA	$415,389	$415,389	Construction Underway	Construction Underway	No Variance
TRI-CITIES AREA	$16,235	$8,590	Construction Underway	Construction Underway	-$8K due to resource availability
MONTANA-WEST OF HATWAI	$0	($80,700)	No Work Planned	No Work Planned	-$80K due to accounting credit
	$122,833,716	**$118,178,841**			

Expand –Area and Customer Service 5 Year History

	FY07 Actuals	FY08 Actuals	FY09 Actuals	FY10 Actuals	FY11 Actuals
CITY OF CENTRALIA PROJECT	$61,055	$2,885,596	$4,300,519	$2,928,190	-$2,612
SOUTHERN IDAHO-LOWER VALLEY	$75,094	$108,509	$1,971,336	$8,278,880	$5,394,150
MISC. AREA & CUSTOMER SERVICE	$2,102,318	$6,498,799	$3,247,951	$6,151,801	$4,894,318
ROGUE SVC ADDITION	$24,848	$3,672,342	$1,078,016	$3,909,643	$1,224,256
LONGVIEW AREA REINFORCEMENT			$11,515	$882,990	$1,229,087
KALISPELL-FLATHEAD VALLEY				$1,375,756	$209,275
	$2,263,315	$13,165,246	$10,609,337	$23,527,260	$12,948,474

FY10 Area and Customer Service Details

Description	Approved Funding	WO Actual	Work Planned	Work Accomplished	Explanation of Variance
CITY OF CENTRALIA PROJECT	$2,960,746	$2,928,190	Centralia Chehalis #2 Line	Centralia Chehalis #2 Line	-$42K-Normal Variance
SOUTHERN IDAHO - LOWER VALLEY	$7,836,105	$8,278,880	Hooper Springs /Caribou Sub Transformer	Hooper Springs /Caribou Sub Transformer	+$443K-Variance due to higher costs than anticipated at Hooper Springs Sub
MISC. AREA & CUSTOMER SERVICE	$6,105,643	$6,151,801	Numerous Sites	Numerous Sites	+$46K-Normal Variance
ROGUE SVC ADDITION	$3,910,067	$3,909,643	Construction of Rogue SVC	Construction of Rogue SVC	Minimal Variance
LONGVIEW AREA REINFORCEMENT	$882,990	$882,990	Cowlitz, Cardwell and Longview Sub Work	Cowlitz, Cardwell and Longview Sub Work	No Variance
KALISPELL-FLATHEAD VALLEY	$1,375,756	$1,375,756	Flathead and Libby Sub Work	Flathead and Libby Sub Work	No Variance
Totals:	**$23,191,307**	**$23,527,260**			

FY11 Area and Customer Service Details

Description	Approved Funding	WO Actual	Work Planned	Work Accomplished	Explanation for Variance
CITY OF CENTRALIA PROJECT	$12,097	($2,612)	Centralia Chehalis #2 Line	Centralia Chehalis #2 Line	-$14.7K variance due to credits
SOUTHERN IDAHO LOWER VALLEY	$4,901,238	$5,394,150	Hooper Springs/Caribou Sub Transformer	Hooper Springs/Caribou Sub Transformer	+$688K variance due to higher costs than Estimated for Lower Valley Spare Trf
MISC. AREA & CUSTOMER SERVICE	$5,664,972	$4,894,318	Numerous Sites	Many but not all sites were completed	-$771K due to resource constraints
ROGUE SVC ADDITION	$1,225,000	$1,224,256	Construction of Rogue SVC	Construction of Rogue SVC	No Variance
LONGVIEW AREA REINFORCEMENT	$1,280,726	$1,229,087	Cowlitz/Cardwell and Longview Substation Work	Cowlitz/Cardwell and Longview Substation Work	-$51K due to some work remaining at Washington Way
KALISPELL-FLATHEAD VALLEY	$222,839	$209,275	Flathead and Libby Substation Work	Flathead and Libby Substation Work	Minimal Variance
Totals:	**$13,112,167**	**$12,948,474**			