



Resource Adequacy Engagement Workshop

January 27, 2022

1 to 3 p.m.



Agenda

Time	Topic	Presenter
1:00 – 1:15	Safety Moment and Introduction	Rachel Dibble
1:20 – 1:35	Consideration of Customer Feedback	Mai Truong, Tim Johnson
1:35 – 2:35	BPA & Resource Adequacy Today	Steve Bellcoff, Ryan Egerdahl
2:40 – 2:50	WRAP Updates	Rachel Dibble
2:50 – 3:00	Questions and Next Steps	Rachel Dibble



Safety Moment and Introduction

Rachel Dibble



Cardiovascular Health

7 risk factors that people can improve through lifestyle changes to help achieve ideal cardiovascular health:

- **Manage Blood Pressure**

- High blood pressure is a major risk factor for heart disease and stroke. When your blood pressure stays within healthy ranges, you reduce the strain on your heart, arteries, and kidneys which keeps you healthier longer.

- **Control Cholesterol**

- High cholesterol contributes to plaque, which can clog arteries and lead to heart disease and stroke. When you control your cholesterol, you are giving your arteries their best chance to remain clear of blockages.

- **Reduce Blood Sugar**

- Most of the food we eat is turned into glucose (or blood sugar) that our bodies use for energy. Over time, high levels of blood sugar can damage your heart, kidneys, eyes and nerves.

From American Heart Association website: <https://www.heart.org/en/>

Cardiovascular Health Continued

- **Get Active**

- Living an active life is one of the most rewarding gifts you can give yourself and those you love. Simply put, daily physical activity increases your length and quality of life.

- **Eat Better**

- A healthy diet is one of your best weapons for fighting cardiovascular disease. When you eat a heart-healthy diet, you improve your chances for feeling good and staying healthy – for life!

- **Lose Weight**

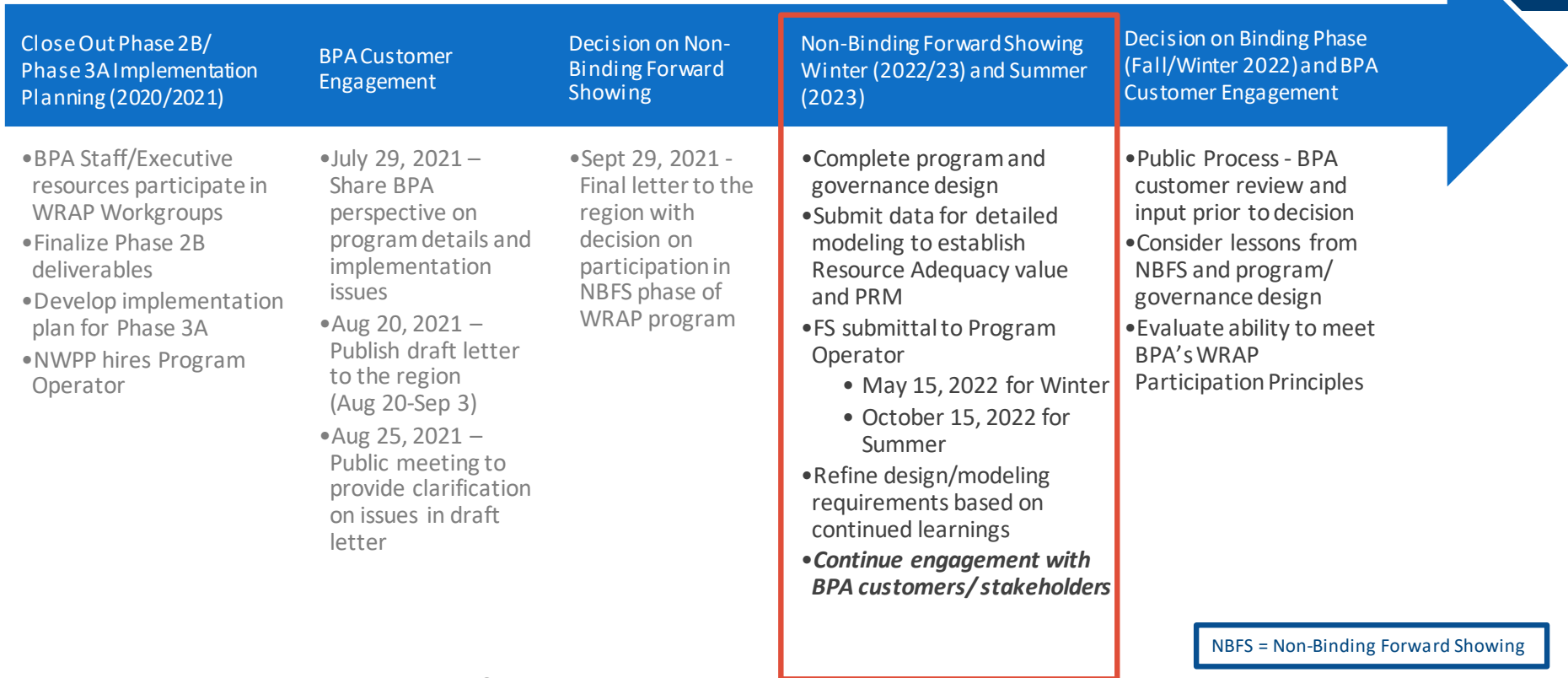
- When you shed extra fat and unnecessary pounds, you reduce the burden on your heart, lungs, blood vessels and skeleton. You give yourself the gift of active living, you lower your blood pressure and you help yourself feel better, too.

- **Stop Smoking**

- Cigarette smokers have a higher risk of developing cardiovascular disease. If you smoke, quitting is the best thing you can do for your health.

From American Heart Association website: <https://www.heart.org/en/>

BPA Milestones – 3A Engagement

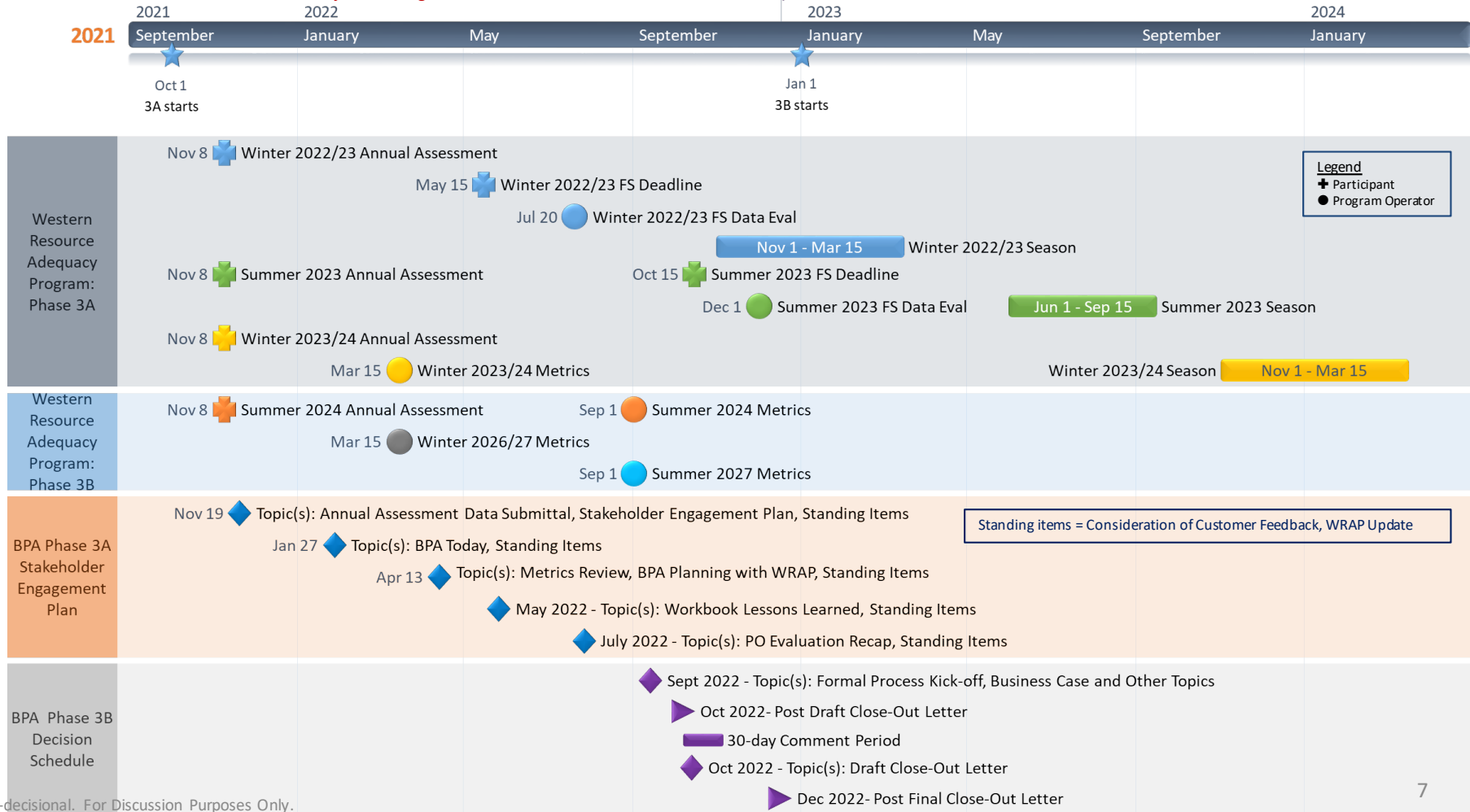


NBFS = Non-Binding Forward Showing

Tentative BPA Phase 3A Stakeholder Engagement Schedule – as of 01/19/2022

Schedule is based on WRAP timelines and is subject to change

▶ Dec - BPA Phase 3B Decision



Western Resource Adequacy Program

Participation Principles for Binding Program

1. BPA's participation is consistent with its statutory, regulatory and contractual obligations.
2. BPA will maintain reliable delivery of power and transmission to its customers.
3. BPA's participation is consistent with a sound business rationale.
4. BPA's participation is consistent with the objectives of Bonneville's Strategic Plan.
5. BPA's evaluation of WRAP participation includes transparent consideration of the commercial and operational impacts on its products and services.



Consideration of Customer Feedback

Mai Truong
Tim Johnson



Addressing Phase 3A Letter Commitments

- BPA is fulfilling its commitment to work with customers and stakeholders made in the Phase 3A Letter to the Region
- Managing a “WRAP Public Considerations” tracking spreadsheet (posted on the BPA Resource Adequacy webpage) to resolve the open questions and key considerations in order for BPA to make a well informed decision on participation in Phase 3B


Considerations Tracking Update

- Added four items in response to comments received following the November workshop
- Two primary categories:
 - Transmission
 - BPA Products and Services
- “WRAP public considerations” tracking spreadsheet is posted on the BPA Resource Adequacy webpage

Q/C#: 66, 67, 68, 69

Guide to Reading These Slides

Theme	BPA Response
<ul style="list-style-type: none">• High level or summarized themes BPA captured from comments/feedback.	<ul style="list-style-type: none">• BPA's response to themes or specific comments.• May have a single response for multiple comments.
<ul style="list-style-type: none">• May include specific comments as beneficial to the conversation.	



Indicates the specific comment IDs being addressed for the topic, as captured in the considerations tracking spreadsheet

Q/C#: 2, 3, 5, etc.

Guide to Reading These Slides

Considerations Tracking Sheet Example

ID#	Submitter	Topic/Theme	Question/Consideration
2	AMTC	Logistics	Proposed timing of 3B decision and implementation is to flesh out rate impacts/cost allocation
3	AMTC	Logistics	BPA should commit to potentially conducting a mini period prior to issuing a final decision on Phase 3B p All initial program costs and benefits should accrue may be the appropriate place in the near term.
5	NRG	Cost Allocation/Rates	LF customers only

Q/C#: 2, 3, 5, etc.

Program Implementation

Theme	BPA Response
<p>Consider how customer-side resources (energy efficiency, demand response, distributed generation, storage) can contribute to the program</p>	<ul style="list-style-type: none">• The WRAP allows customer resources to be included in a participant's forward showing portfolio.• See section "2.5.6 Customer Resources" of the WRAP Detailed Design document on how customer resources are included in the forward showing program.

Legal

Theme	BPA Response
<p>Would participation in a FERC jurisdictional program expand FERC's jurisdiction over any existing BPA rates or products? What are some of the key considerations for BPA in determining whether a FERC jurisdictional program would work for the agency?</p>	<p>No, BPA's firm power sales and rates (both power and transmission) are offered, established, and implemented pursuant to the Northwest Power Act and other governing statutes applicable to BPA. FERC has limited authority to review (to approve or disapprove) BPA's rates to assure such rates recover BPA's costs. In addition, Bonneville currently supplies firm power products and services under its long term Regional Dialogue power sales contracts. Such statutory sales of federal power are not subject to FERC jurisdiction. WRAP design relies on existing OATTs and would not change OATT obligations. Any change to BPA's Tariff would only happen through a tariff proceeding meeting the requirements in Section 9 of BPA's Tariff.</p>

Legal

Theme	BPA Response
<p>How will BPA respect statutory preference rights in both the forward and operational timeframes while simultaneously meeting its commitments in the program?</p>	<p>BPA does not need to change its current process to statutory preference rights. BPA is obligated to provide notice to preference customers regarding proposed offers to sell available surplus capacity or energy. BPA’s notice obligation to preference customers will not be affected by participation in the Western Resource Adequacy Program. BPA will provide notice to preference customers if BPA determines that it has surplus capacity or energy that can be offered for sale, as it does today. As it does today BPA meets its requirements in a three-part manner:</p> <ol style="list-style-type: none"> 1. Posting a Daily Notice on its website and mailing an Annual Notice. These notices alert PNW customers to contact BPA to find out what is available and request a purchase. 2. By selling a standardized product. This allows PNW customers to know the basic “terms” of the contracts that BPA sells because BPA’s product is standard HLH or LLH energy or capacity for each hour. If a product is not standard, BPA includes the non-standard terms in the Annual Notice or issued RFO. 3. BPA’s business practice of always having the same products available. This allows PNW customers to know that, when BPA has products available to sell, they can buy from BPA. <p>If BPA is determined to have surplus capacity and there is a competing request for that surplus between a preference entity and a non-preference entity, BPA will supply such capacity to the preference entity in accordance with section 4(a) of the Bonneville Project Act. The Western Resource Adequacy Program itself does not establish offers of power between buyers and sellers. Similarly, regional preference will be adhered to if there is a competing request between a regional preference customer, which can be a public body customer, investor or-owned utility customer, or a Direct Service Industrial customer, and a non-regional entity.</p>

BPA & Resource Adequacy Today

Steve Bellcoff

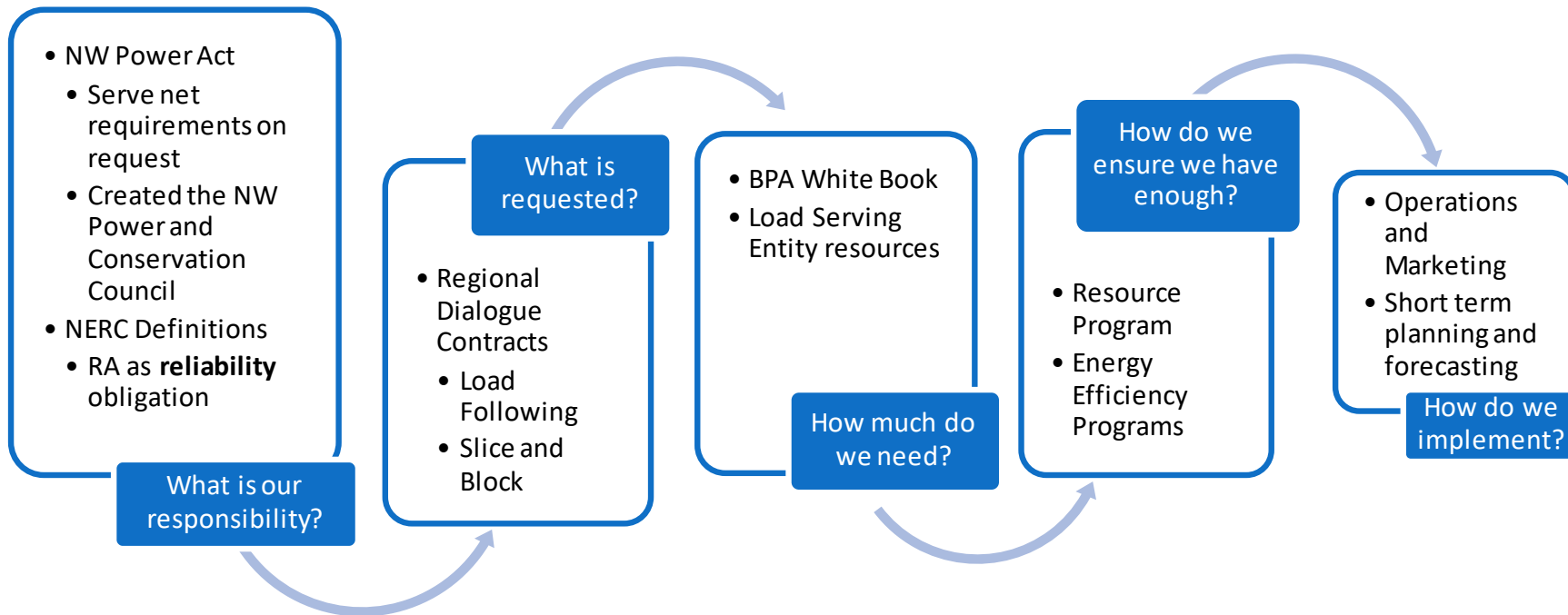
Ryan Egerdahl



BPA & Resource Adequacy Today

- Presentation provides an overview on BPA's current power planning activities performed today
 - Lays the groundwork for the upcoming presentation topic “BPA Planning with WRAP” at the April 13, 2022 BPA RA Engagement Workshop
- BPA's participation in WRAP is additive to the power planning activities BPA performs today
 - Does not replace any current power planning activities

BPA Power Planning



What is Our Responsibility / What is Requested?

- Supply firm power net of customer's non-federal resource(s)
 - Whenever requested by a regional public body, electric cooperative, investor owned utility
 - Authority to acquire resources on a long term basis to assure adequate supply of power to meet contract obligation
 - Meet future load growth if contractually obligated
- The Regional Dialogue Contracts established the current product set, which customers elected
 - Load Following
 - Block
 - Slice

How Much Do We Need?

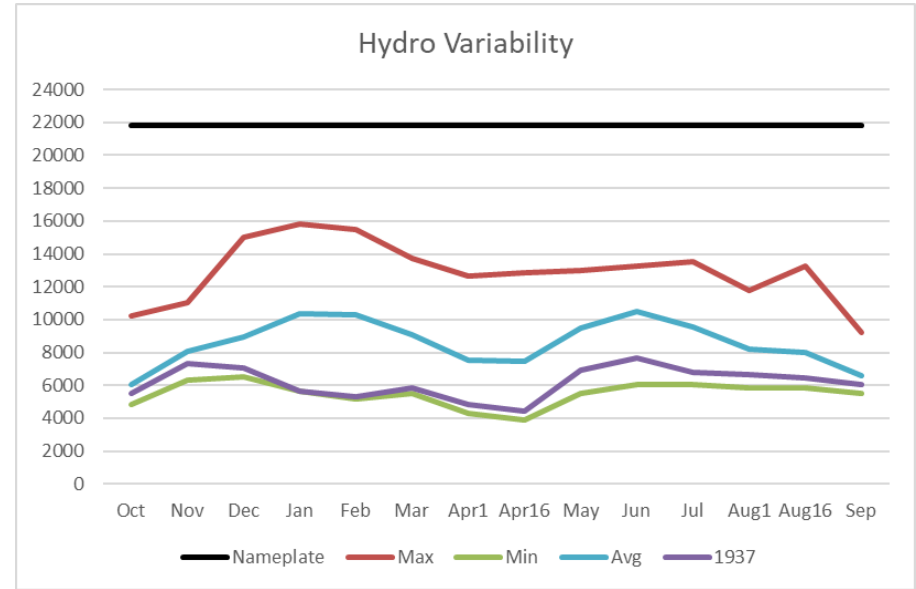
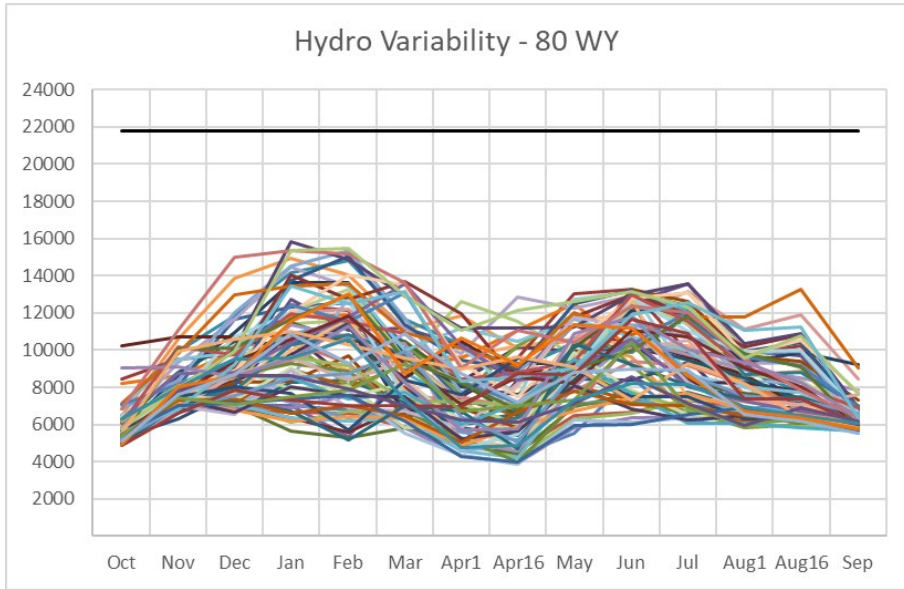
- Annual load forecasting of elected Regional Dialogue products establish BPA's loads
 - Load Following
 - Block
 - Slice
- Additional Loads from
 - Treaty/Settlement Agreements
 - Surplus Sales (long-term and short term)
- Forecast of Loads published annually in White Book

How Much Do We Need / How Do We Ensure We Have Enough?

- Resources - Annual Studies forecast fleet capabilities
 - Hydro
 - Thermal
 - Renewable
 - Contract purchases
- Regulated hydro is modeled every year
 - Historical water year record
 - Current constraints
 - Current operational expectations

How Much Do We Need / How Do We Ensure We Have Enough?

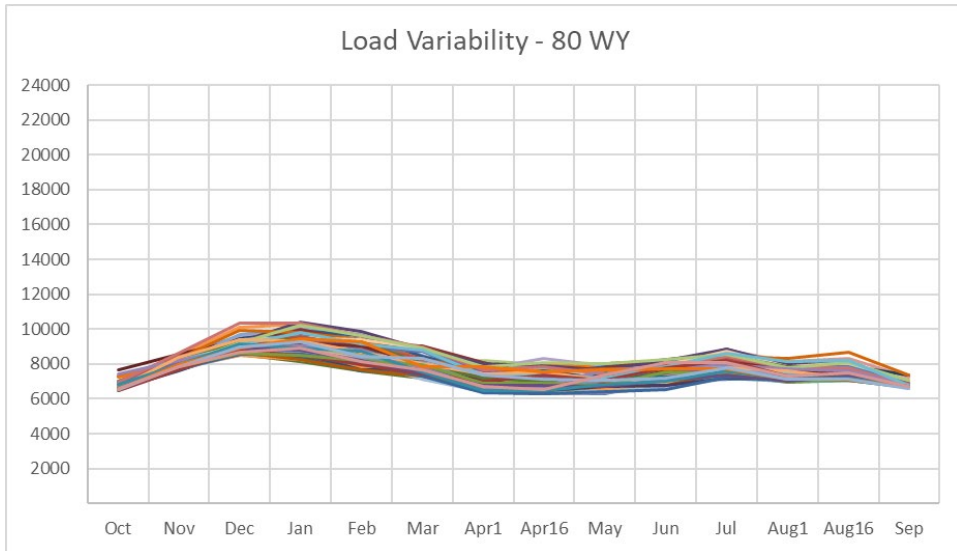
- Modeled Variability of Hydro Fleet (aMW)



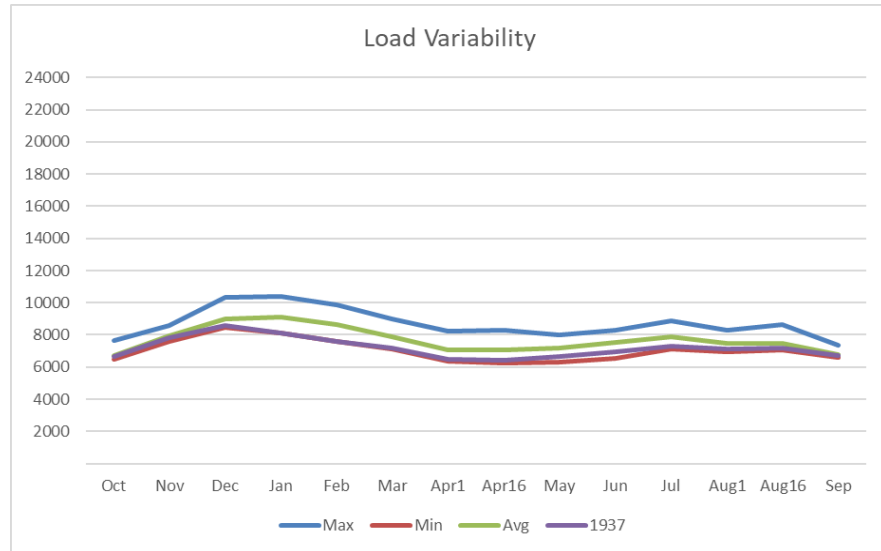
How Much Do We Need / How Do We Ensure We Have Enough?

- Modeled Variability of Load (aMW)

Load Variability - 80 WY



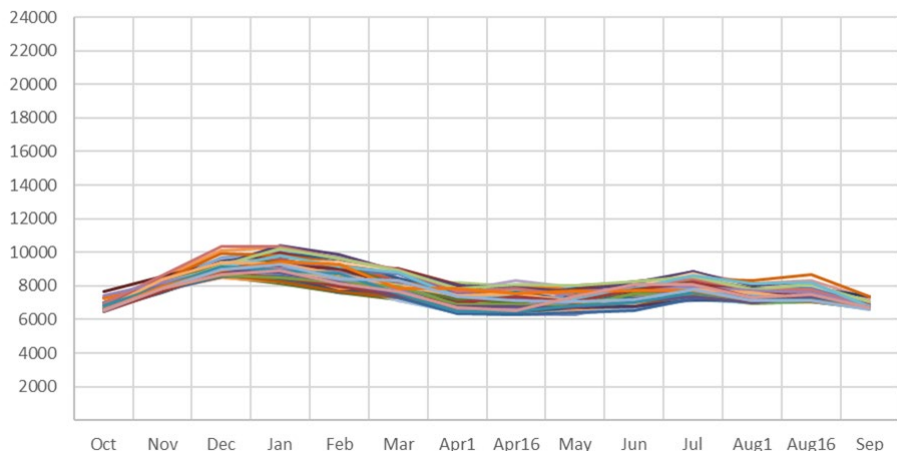
Load Variability



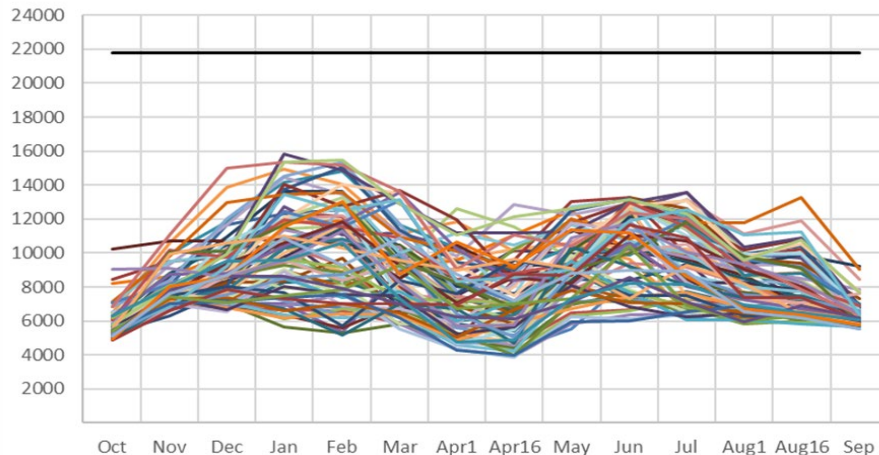
How Much Do We Need / How Do We Ensure We Have Enough?

- Comparing Load vs Resource Variability (aMW)

Load Variability - 80 WY



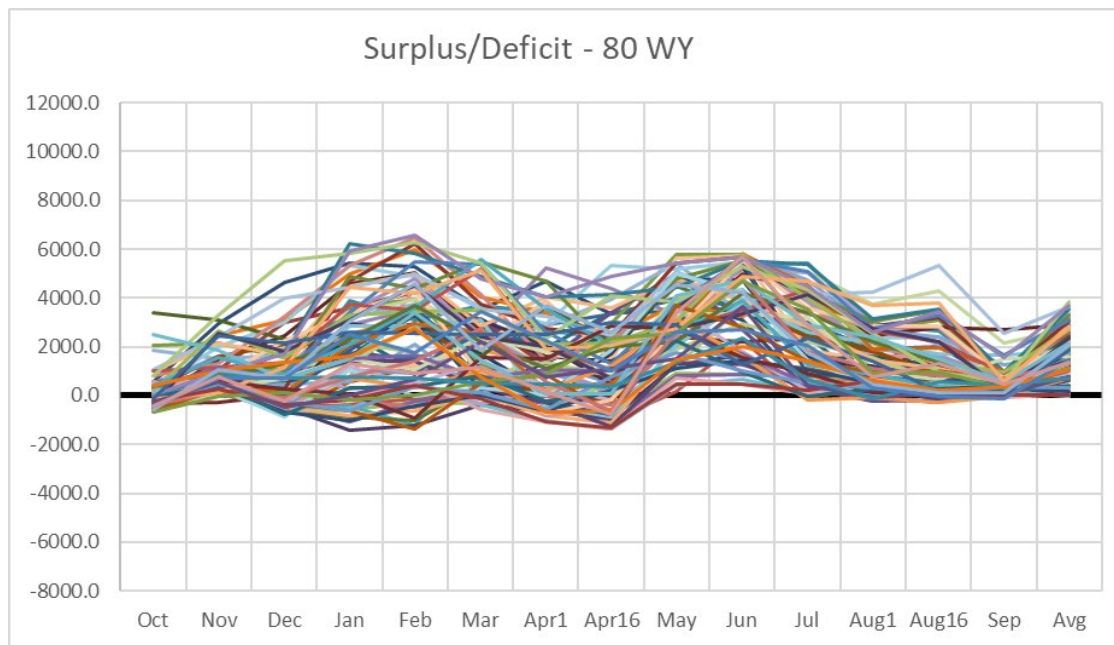
Hydro Variability - 80 WY



- Long Term planning sees Hydro Variability as the constraint
 - Energy Limited System (Fuel Supply) – not a capacity limited system (machines)

How Do We Ensure We Have Enough?

- Surplus/Deficit Analysis (aMW) – Combining Expected load with Resource variability



How Do We Ensure We Have Enough?

- BPA Plans for how to meet Deficits in Long Term
- Needs Assessment
 - The Needs Assessment measures the Federal Columbia River Power System, in relative isolation, against Bonneville's obligations to supply power to show whether any long-term energy and/or capacity shortfalls exist over a 10-year study horizon.
 - Analysis informs the Resource Program, where resource optimization techniques are used to evaluate and select potential solutions for meeting Bonneville's long-term needs based on cost and risk trade-offs.

How Do We Ensure We Have Enough?

Does not
match
CCHs used
in WRAP

- **Needs Assessment Metrics –**

- **Annual Energy:** Evaluates the annual energy surplus/deficit under 1937 critical water conditions, using forecasted load obligations and expected Columbia Generating Station (CGS) output
- **P10 Heavy Load Hour:** Evaluates the 10th percentile (P10) surplus/deficit over heavy load hours, by month, given variability in hydropower generation, load obligations, and CGS output
- **P10 Superpeak:** Evaluates the P10 surplus/deficit over the six peak load hours per weekday by month, given variability in hydropower generation, load obligations, and CGS output
- **18-Hour Capacity:** Evaluates the surplus/deficit over the six peak load hours per day during three-day extreme weather events and assuming median water conditions and variability in CGS output. Winter and summer extreme weather events, such as cold snaps or heat waves, are analyzed for February and August

How Do We Ensure We Have Enough?

Resource Program

Resource Program

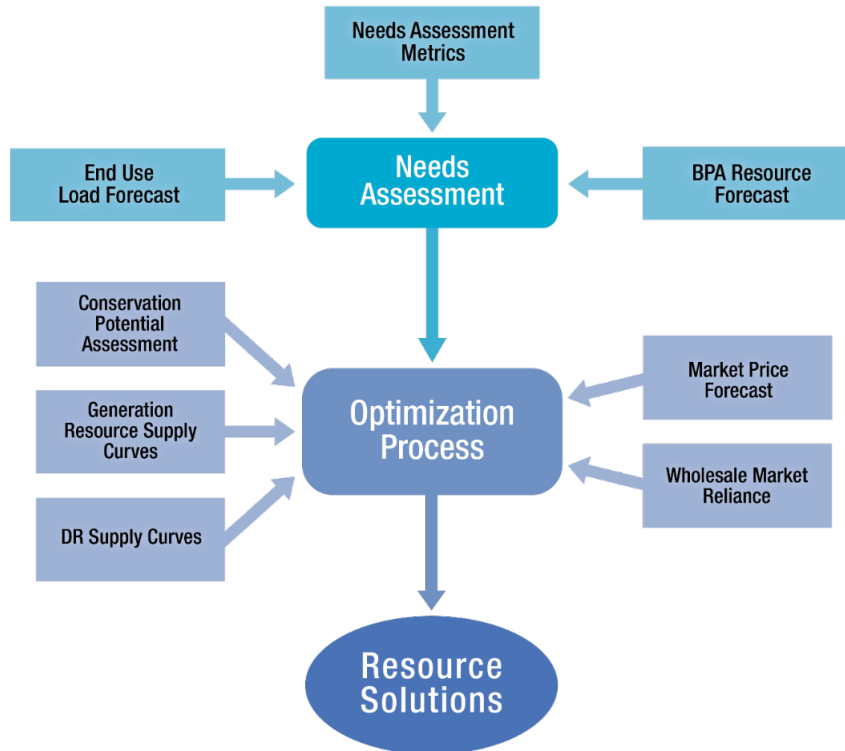
The Resource Program is:

- A forecast/planning tool
- Begins with the Needs Assessment
- Identifies and evaluates potential solutions to meeting those needs
 - Examples: energy efficiency, demand response, market purchases, wind, solar, capacity resources, etc.
- Identifies an optimal cost/risk method of meeting future needs

The Resource Program is not:

- A decision to acquire a resource or final agency action
- A requirement of law or overseen by a regulating body such as FERC or NERC

Resource Program



- Bonneville's Resource Program involves coordinating many individual planning processes
- Different work groups produce necessary components, either as part of their normal routine, or by special request
- From start to finish, the process takes around 18 months

Resource Program

Historically, planned actions to address adequacy at BPA include:

- Acquiring a steady amount of energy efficiency
- Planning for market purchases to balance out hydro variability

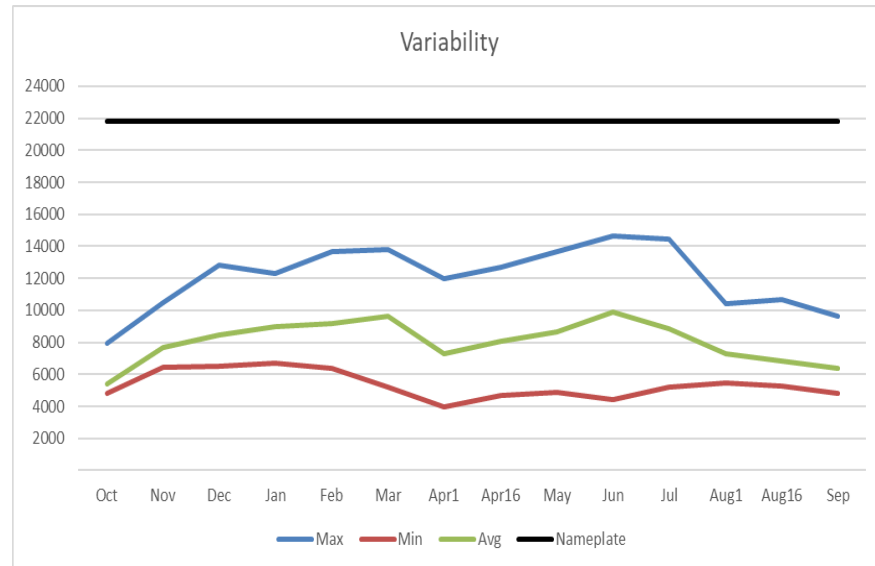
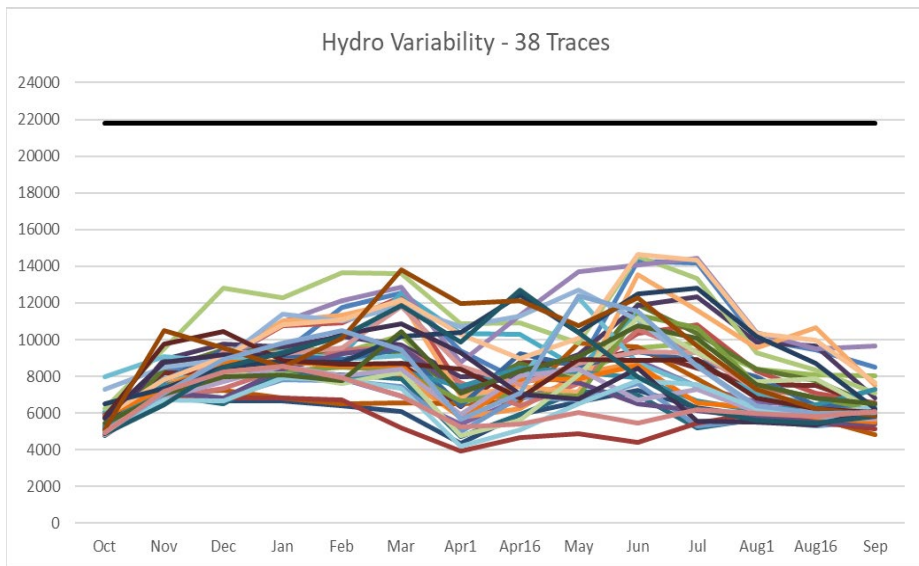
How Do We Implement?

Transition From Long Term To Mid-Term

Aka – ‘Out Year’ to ‘Within Year’

How Do We Implement?

- Modeled Variability of Hydro Fleet (aMW)



- Mid-term planning look at Hydro Variability as the constraint
 - Energy Limited System (Fuel Supply) – not a capacity limited system (machines)

Pre-decisional. For Discussion Purposes Only.

How Do We Implement?

- BPA Power Operations and Trading Floor staff work together to identify and implement marketing strategies to address Surplus and Deficit energy and capacity positions
- Trading Floor participates in the monthly, daily, hourly and intra-hour energy markets across WECC and CAISO
- Energy products include unspecified and specified power
- Transactions are scheduled on Firm and Non-Firm Transmission

How Do We Implement?

Transition to Real Time

Within Day/Within Week

How Do We Implement?

- **Near Perfect Hydro Knowledge**
 - Hydro within Operational Control
 - Hydro Energy and Capacity modeled
- **Loads forecasted**
 - Daily forecasts based on pre-schedule
 - Load forecast updated hourly
- **Trading Floor and Operations work together to balance system**

Transmission Acquisition for Federal Resources

- Transmission for the federal power sales contract is accounted for by customers (load serving entities or load responsible entities) under their NT and PTP agreements with transmission service providers
 - Customers are responsible for acquiring transmission for both federal and non-federal resources under their NT or PTP agreements with transmission service providers.
 - BPA Power Services acquires firm transmission from third party transmission service providers to secure deliverability for serving transfer loads
- Any short term purchases made are scheduled on secondary NT to NT loads under the NT MOA
- BPA designates long term purchases under the NT MOA



WRAP Update

Rachel Dibble



Western RA Program Updates

- 26 Phase 3A Participants
- Technical Design
 - Design task forces working through outstanding design elements from Phase 2B
 - Public webinar providing an update held yesterday, Jan 26, 2022
 - First compliance showing is for Winter 2022/23 on May 15, 2022
- Governance
 - Governance version 4 published as a stand-alone document on Jan 13, 2022. Public webinar on governance will be held on Feb 4, 2022
 - Filing with FERC is expected in Spring 2022
 - In the process of standing up the Program Review Committee (PRC) and Nominating Committee (NC)
 - Public meeting to stand up sectors for PRC and NC was held on Jan. 12, 2022
- WRAP Engagement Opportunities & More Information
 - NWPP will host on-going public webinars
 - See NWPP website for information on the public webinars, Governance version 4, and the latest WRAP updates @ www.nwpp.org/wrap

QUESTIONS?

Next Steps

- Please submit your feedback @ www.bpa.gov/comment by February 10, 2022.
- Next workshop is on April 13, 2022 from 10 a.m-12 noon.
- For more information on BPA's participation in the Western Resource Adequacy Program:





Appendix



Considerations Tracker Update

Items Added to the Considerations Tracker in Response to Comments Received Following the November 19, 2021 Workshop

Q/C#	Question/Consideration (May be summarized)
66	<ul style="list-style-type: none"> How will new long-term transmission requests intended to support the program be studied since they would be going to Mid-C (given current restrictions on hubbing requests in long-term studies)?
67	<ul style="list-style-type: none"> What will the process be for entities redirecting their existing transmission rights to the centroid?
68	<ul style="list-style-type: none"> Will the centroid be used for all transmission rights used to demonstrate adequacy under the program? Or only for generation that is made available to others during the operational showing period?
69	<ul style="list-style-type: none"> Follow-up on BPA's response to item #20 (conduct business case sensitivities for post-2028 including LF for all preference customers). Customers selecting different power products post-2028 could impact BPA's business case for participating in WRAP. Some assessment of how varying levels of obligation under the program effect BPA's business case for participation should be conducted, possibly including a scenario where assuming BPA is responsible for all preference customer obligation post-2028.