

# **Customer Meetings**

## **Preliminary Proposal Operations Consolidation**

**February 12 - Phoenix**

**February 14 - Loveland**

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- **What led to the creation of this effort**
- **Proposal development – early in the process**
- **What the existing operations structure looks like**
- **What the preliminary proposal consists of**
  - Operations technical information
  - Rates information
  - Timeline
- **Summary/Next steps**
- **Open forum**

## *What Led To The Creation Of This Effort*

- **Through strategic planning process realized that :**
    - **Operations workload** – needs to be addressed due to continuously new FERC/NERC requirements
    - **Same and separate reporting taking place** – in each Western region that is registered as a Balancing Authority (BA), Transmission Owner (TO), Transmission Planner (TP), Transmission Operator (TOP), Planning Authority (PA)
    - **Each Operations Center** - is having to stay abreast of all FERC/NERC/WECC regulations for both operations and transmission services
    - **Resource strained operations centers** - having difficulty accomplishing workload and need additional staff
- Given the above, decided to look at our options to address the issues.**

# NERC Functional Entity Types

Function Type	Acronym	Definition/Discussion
Balancing Authority	BA	The responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a BA area, and supports Interconnection frequency in real-time.
Planning Authority	PA	The responsible entity that coordinates and integrates transmission facility and service plans, resource plans, and protection systems.
Transmission Owner	TO	The entity that owns and maintains transmission facilities.
Transmission Operator	TOP	The entity responsible for the reliability of its local transmission system and operates or directs the operations of the transmission facilities.
Transmission Planner	TP	The entity that develops a long-term (generally one year and beyond) plan for the reliability (adequacy) of the interconnected bulk electric transmission systems within its portion of the PA area.
Transmission Service Provider	TSP	The entity that administers the transmission tariff and provides transmission service to transmission customers under applicable transmission service agreements.

Source: <http://www.nerc.com/~filez/functionalmodel.html>

## *Proposal Development – early in the process*

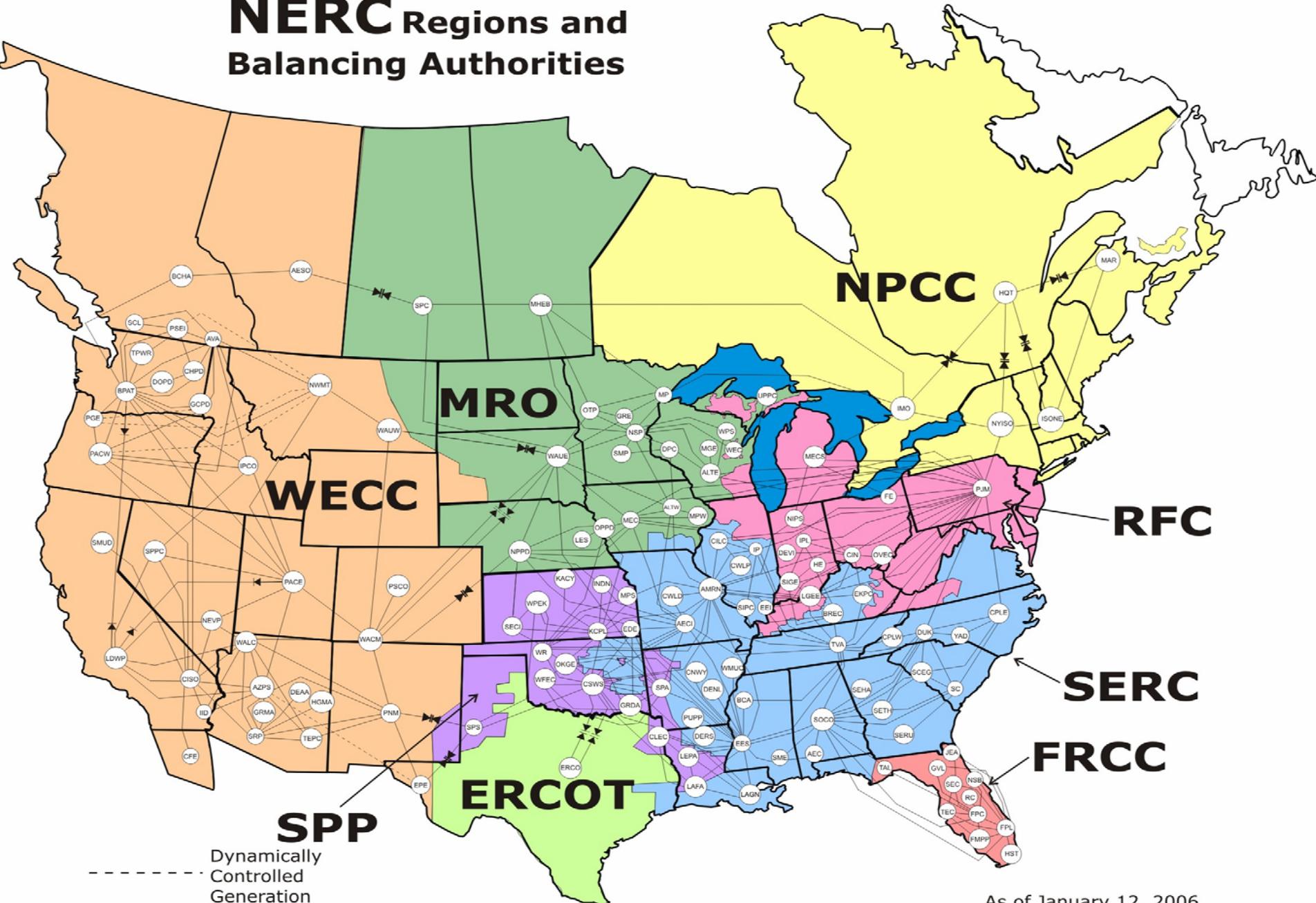
**Nov/Dec 2007** - performed a technical feasibility analysis that found consolidation is technically feasible (12-14-07 Operations Consolidation Project Report)

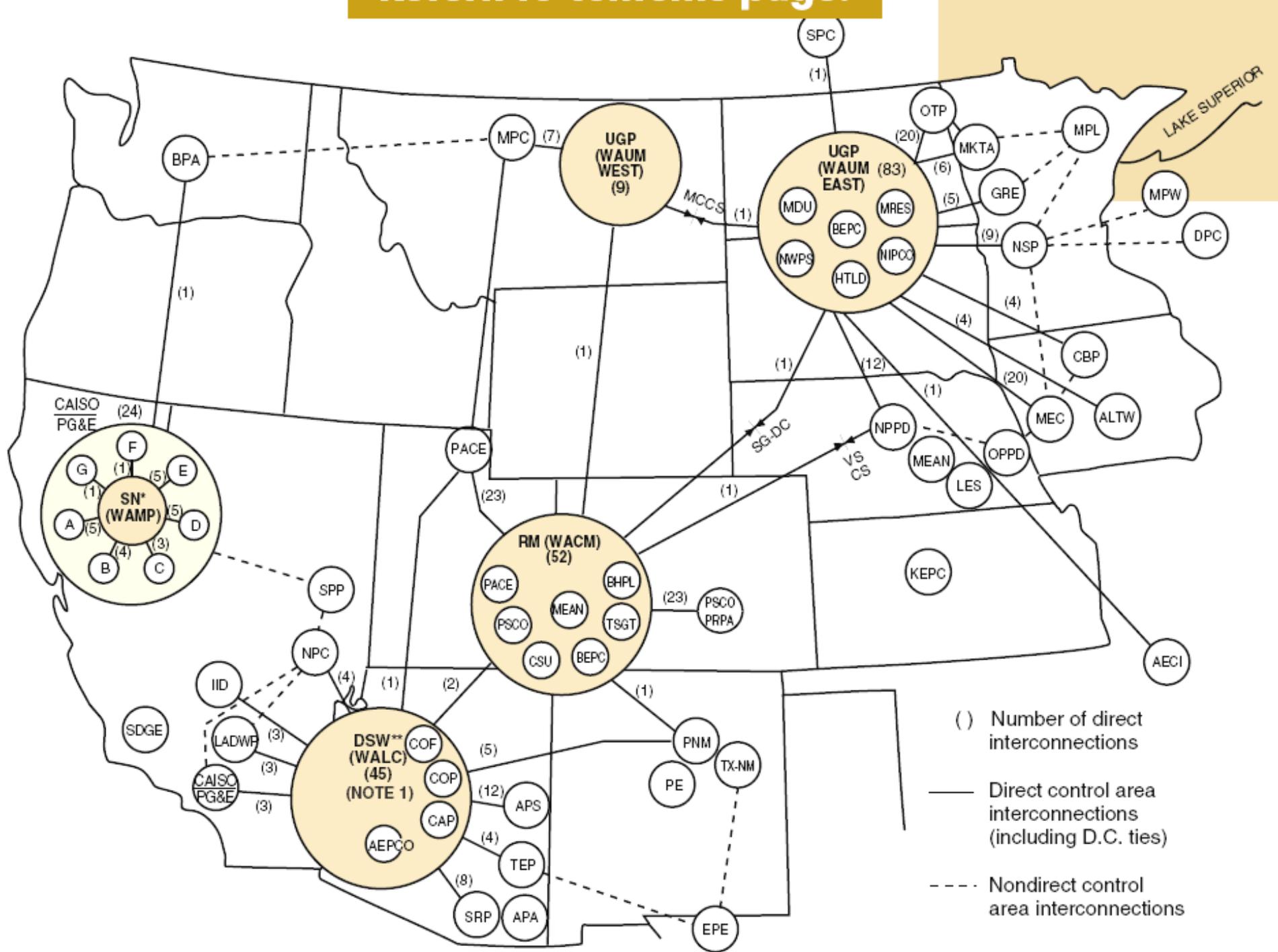
**Late Dec 2007** - seniors discussed technical findings and recommendations, decided to seek customer input while further studying cost, technical and schedule analysis, sufficient to develop a high level proposal

**Feb 2008** – customer meetings and open forum Feb 12 in Phoenix, AZ and Feb 14 in Loveland, CO



# NERC Regions and Balancing Authorities



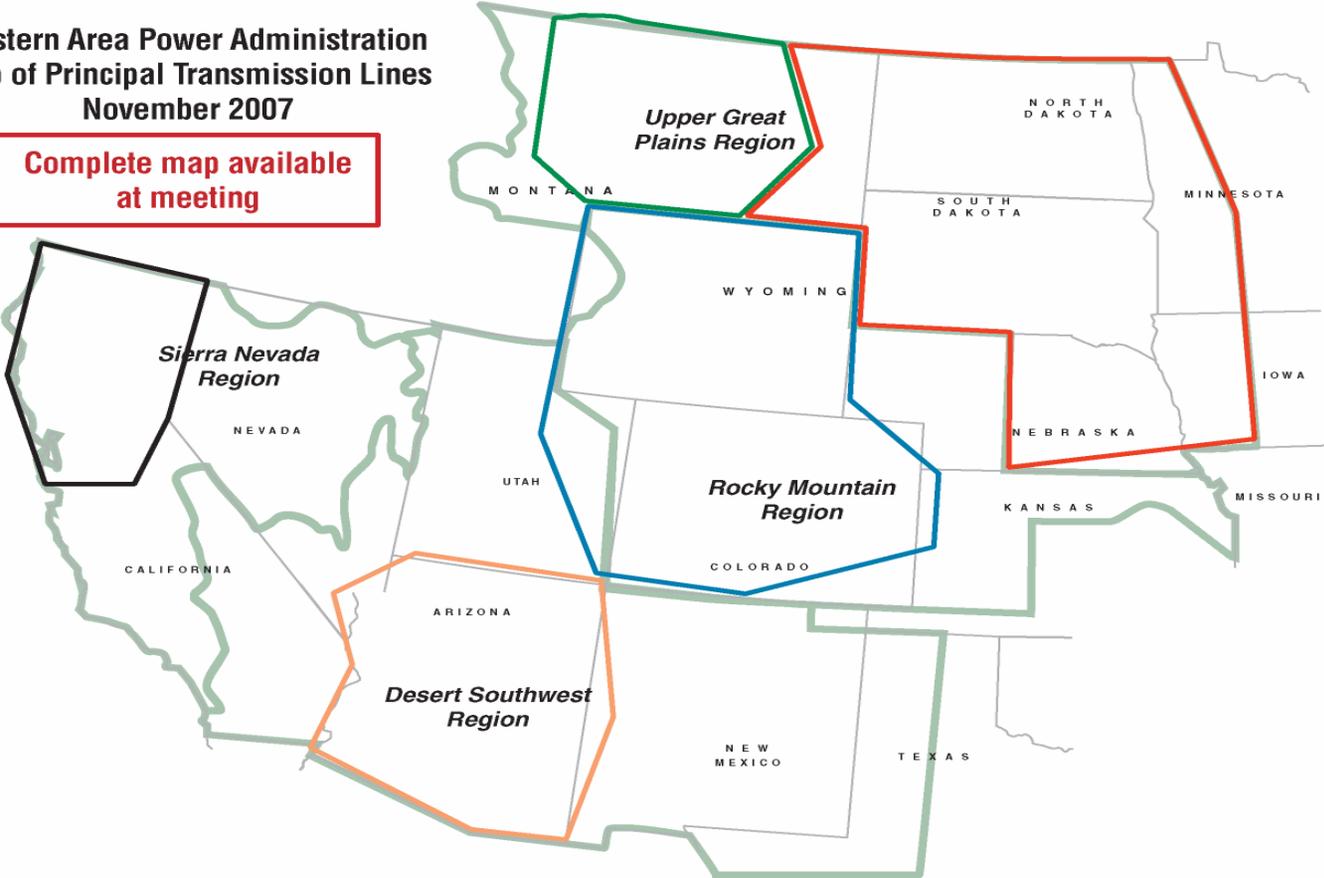


# Existing Western Balancing Authorities

Western Area Power Administration  
Map of Principal Transmission Lines  
November 2007

Complete map available  
at meeting

SNR is



## ***Operations Centers – existing and future***

### **Existing Centers**

- Phoenix Primary (24x7), Coolidge Backup (non-24x7)
- Loveland Primary (24x7), Cheyenne Backup (non-24x7)

### **Future**

- Western is facing increased workload related to the ever increasing regulatory requirements the industry is facing

### **If we do nothing**

- Results in continued operation of two primary centers and two backup centers
- Results in significant staffing increases

# ***Consolidation - operations centers and organizations***

## **In-house feasibility analysis on consolidating Operations Centers**

- Technically feasible to consolidate Operations Centers of DSW and RMR
  - Some additional communications facilities needed, but minimal
  - DSW and RMR already split CRSP facilities
- Register as one BA, TO, TOP, TP, PA
- Report as one BA, TO, TOP, TP, PA

## **In-house feasibility analysis on consolidating Operations Organizations**

- Presently Operations Managers focus on both Operations and Transmission services
- Efficiencies can be gained by consolidating DSW and RMR operations organizations
- Under this structure,
  - Operations Manager can focus on operating the system
  - Transmission Services Manager can focus on transmission services

## ***Operations Consolidation - Preliminary Proposal***

- **Consolidate Operations utilizing existing RMR and DSW staff and Control Centers (24x7)**
- **Organizational consolidation**
- **Eliminate two existing backup control centers at Coolidge and Cheyenne substations**

## •In-house feasibility analysis combining Balancing Authorities

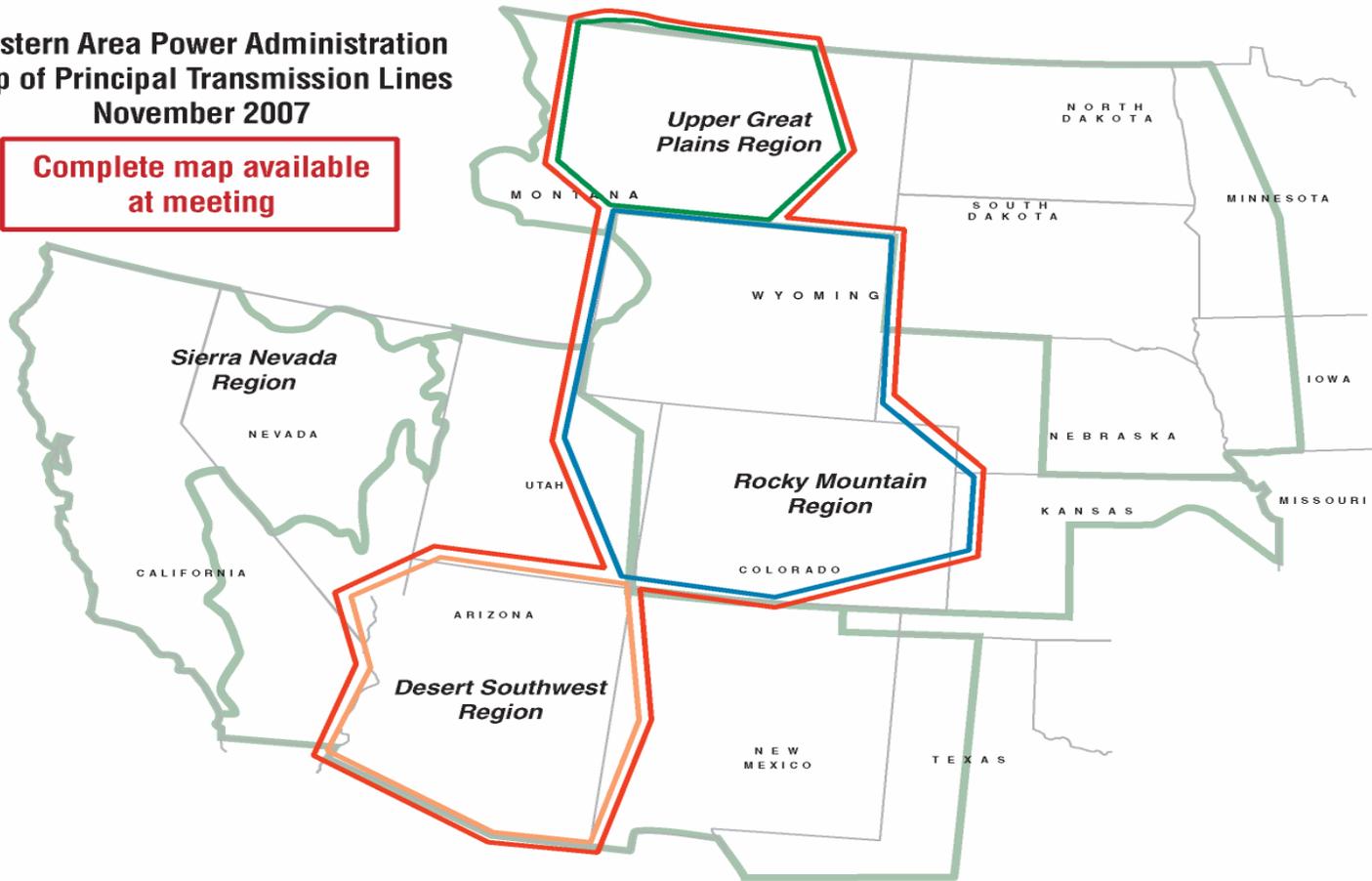
- Focused on BA's in WECC that are interconnected
  - WALC Desert Southwest Region (Phoenix)
  - WACM Rocky Mountain Region (Loveland)
  - WAUW Upper Great Plains Region-West (Watertown)
- WAUE (Upper Great Plains Region-East) is in the Midwest Reliability Organization (MRO), and WASN (Sierra Nevada Region) is not interconnected with the rest of Western.
- One larger BA instead of three to run
- Greater efficiencies of labor and resources

## •Combination of consolidating operations centers and BA's address staffing issue

# Proposed New Balancing Area

Western Area Power Administration  
Map of Principal Transmission Lines  
November 2007

Complete map available  
at meeting



# Facility Information

Control Area Info	DSW/WALC	RMR/WACM	UGP/WAUW	Total
Substations	64	98	8	170
Transformers	54	92	6	152
Fed Generators	33	22	1	56
Gen Capacity (MW) Fed	4,150	842	110	5,102
Gen Capacity (MW) non-Fed	1,680	4,758	40	6,442
Net Gen (GWh) Fed	20,385	1,711	375	22,471
T-Lines Total	3,429	5,215	561	9,205
500 kV	373	0	0	373
345 kV	942	391	0	1,333
230 kV	1,300	1,451	151	2,902
161 kV	358	0	283	641
115/138 kV	333	2,836	113	3,282
69 kV & under	123	536	14	673

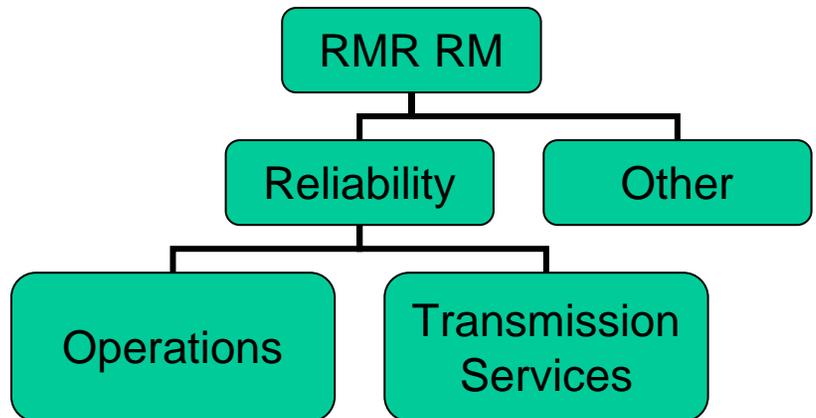
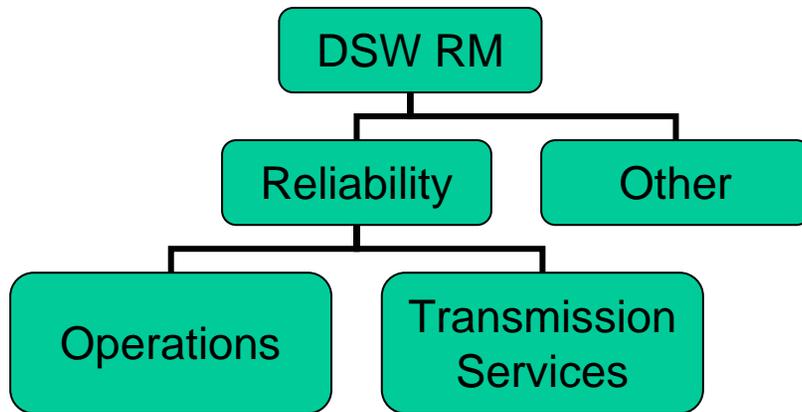
# Balancing Authority Information

	DSW	RMR	UGP	
Control Area Info	WALC	WACM	WAUW	Total
# of LSE's	18	16	5	39
LSE Generator Units	46	31	4	81
LSE Generation Capacity, MW	3,547	4,874	114	8,535
SCADA Points (total points)	56,826	67,479	2,676	126,981
# of RTUs	120	155	22	297
# of points/RTU	2,100	435	121	2,656
# of Control Area Interconnections	45	118	9	172
# of Load Serving Interconnections	241	293	47	581
Control Area Peak Load	2,300	3,481	131	5,912
Control Area Peak Gen	5,830	5,600	95	11,525
# Switching Programs/Year	2,820	1,665	250	4,735
# of Processed Tags/Year	193,084	222,767	4,269	420,120

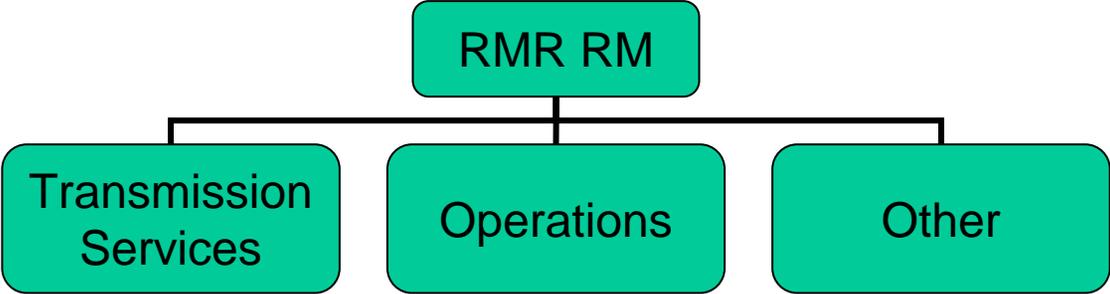
## *Options Analyzed*

- A) Existing structure, DSW and RMR are primary BA's with their own non-24x7 backup centers**
- B) Existing structure plus additional staffing necessary to comply with all regulatory requirements**
- C) Two BA's - RMR and DSW are primaries and function as each others' backup centers**
- D) Consolidated BA (RMR, DSW and UGP-W)- Consolidated Operations in RMR using existing RMR and DSW Control Centers (24x7)**

# Existing Organizational Structure



# Proposed Operations/Transmission Services Structure



# Staffing Comparisons

Option	A	B	C	D
	<b>Existing Structure</b>	<b>Existing plus regulatory staff</b>	<b>RMR, DSW back each other up</b>	<b>RMR &amp; DSW Consolidated</b>
<b>Comm (additional only)</b>			2	2
<b>SCADA</b>	18	18	16	16
<b>IT</b>	12.6	12.6	14	14
<b>Operations</b>	81	89	84	84
RMR Dispatch Desks	5	5	5	5
DSW Dispatch Desks	5	5	4	4
<b>Transmission Services</b>	36.5	42.5	42.5	38
<b>Total</b>	<b>148.1</b>	<b>162.1</b>	<b>158.5</b>	<b>154</b>
<b>Difference from A</b>	<b>Base</b>	<b>14</b>	<b>10.4</b>	<b>5.9</b>
<b>Difference from B</b>	<b>-14</b>	<b>Base</b>	<b>-3.6</b>	<b>-8.1</b>

# Preliminary Cost Analysis

	<b>Change in Annual Costs from <u>Existing Structure</u></b>	<b>Change in One-Time Costs from <u>Existing Structure</u></b>
<b>A. Existing Structure</b>	<b>\$0</b>	<b>\$0</b>
<b>B. Existing plus regulatory staff</b>	<b>+\$1.9M</b>	<b>\$0</b>
<b>C. RMR, DSW back each other up</b>	<b>+\$1.8M</b>	<b>+\$6.9M</b>
<b>D. RMR and DSW Consolidated</b>	<b>+\$1.2M</b>	<b>+\$6.6M</b>

## ***Financial Implications***

- **Currently each BA has their own set of transmission and ancillary service rates; unique methodologies exist now**
- **Goal is to have one methodology for Ancillary Services rate designs, but rates in the north and south may be different**
- **In general, BA operations costs are included in transmission service rates**
- **Cost allocations (when unable to direct charge) primarily based on SCADA analog points**

## ***Financial Implications, cont.***

- **Project transmission rates will remain separate**
- **Project transmission losses will not change at this time**
- **We have not calculated new rates, just estimates**
- **Rates would be determined in a formal public process**

## Operations Cost Allocations - comparison

**Current:**

**Costs allocated largely on SCADA analog points by Region (by project)**

<b>WACM</b>	<b>WACM - CRSP</b>	<b>WALC</b>	<b>WALC- CRSP</b>	<b>TOTAL</b>
<b>17,834</b>	<b>5,819</b>	<b>16,000</b>	<b>2,964</b>	<b>42,615</b>
<b>41.85%</b>	<b>13.65%</b>	<b>37.54%</b>	<b>6.96%</b>	

**Under Consolidation:**

**Use similar allocations largely based on SCADA (analog only) points by Region (by project)**

<b>WACM</b>	<b>WACM- CRSP</b>	<b>WALC</b>	<b>WALC- CRSP</b>	<b>WAUW</b>	<b>TOTAL</b>
<b>17,834</b>	<b>5,819</b>	<b>16,000</b>	<b>2,964</b>	<b>400</b>	<b>43,015</b>
<b>41.45%</b>	<b>13.53%</b>	<b>37.2%</b>	<b>6.89%</b>	<b>.93%</b>	

## *Upper Great Plains - West*

# • **New services to be supplied to UGP-West**

## ■ Watertown (UGP) will continue to provide

- Scheduling, System Control and Dispatch

## ■ New BA will provide

- Reactive Supply and Voltage Control
- Regulation and Frequency Response
- Energy Imbalance
- Reserves (Spin and Supplemental)

## • Estimated Costs of New BA Services

- AGC is new service

- Cost of new BA AGC services (approximately 1/7<sup>th</sup> of BA SSCD revenue requirements)

- Est. total revenue requirement = \$8.1M

- 1/7<sup>th</sup> = \$1.1M

- SCADA Point ratio = 0.93%

- Estimated annual WAUW costs = \$10,600

- Benefit: estimated ½ FTE annual savings (~\$60k) in WAUE that may be re-deployed for regulatory needs

## Scheduling, System Control and Dispatch

	Rate Design Expires	Current Rate	Applicable
<b>WACM</b>	<b>Feb 2009</b>	<b>\$31.82/ tag/day</b>	<b>Charge applies to those that don't take Western Transmission</b>
<b>WALC</b>	<b>June 2011</b>	<b>\$26.92/ tag/day</b>	
<b>WAUW</b>	<b>Sept 2010</b>	<b>*\$28.60/ tag/day</b>	
<b>BA</b>		<b>Avg Rate \$29.42/ tag/day</b>	

**\*WAUW actual rate is \$57.20/schedule/day. Converted to tag/day for display purposes. Avg Rate assumes no change to the WACM and WALC revenue requirements or tags. Does not include reduced tag count for WACM/WALC tags or changes (+/-) in WACM/WAUM tags.**

## *Reactive Supply and Voltage Control*

	<b>Rate Design Expires</b>	<b>Current Rate</b>	<b>Applicable</b>
<b>WACM</b>	<b>Feb 2009</b>	<b>\$.150 per kW-mo</b>	<b>Customer must purchase this service from the BA. Credit given to Customers with generators providing VAR.</b>
<b>WALC</b>	<b>June 2011</b>	<b>\$.041 per kW-mo</b>	
<b>WAUW</b>	<b>Sept 2010</b>	<b>\$.080 per kW-mo</b>	

# Regulation and Frequency Response

	<b>Rate Design Expires</b>	<b>Current Rate</b>	<b>Applicable</b>
<b>WACM</b>	<b>May 2011</b>	<b>\$.292 per kW-mo or \$.000417/kWh</b>	<b>Load Based, Exporting Intermittent, and Self-Provision Assessments</b>
<b>WALC</b>	<b>June 2011</b>	<b>.1231 mills/kWh or \$.000123/kWh</b>	<b>Energy Based</b>
<b>WAUW</b>	<b>Sept 2010</b>	<b>\$.060 per kW-mo</b>	

# Ancillary Services - comparison

## •Regulation

### ■ Existing:

➤ DSW	65 MW
➤ RMR	70 MW
➤ UGP-W	6 MW
➤ Total	141 MW

### ■ Under one BA: (conservative estimate)

- Approximately 80%
- Total 113 MW

•Spin and Non-Spin requirements remain basically the same

•Voltage control requirements remain basically the same

## Energy Imbalance

	<b>Rate Design Expires</b>	<b>Current Rate</b>
<b>WACM</b>	<b>Feb 2009</b>	<p>+/- 5% bandwidth for Load, +/- 2% bandwidth for Generators, 4 MW minimum deviation</p> <p>25% penalty, LAP weighted average hourly purchase/sales price</p> <p>Settled financially</p>
<b>WALC</b>	<b>June 2011</b>	<p>+/- 1.5% bandwidth, 5 MW minimum deviation</p> <p>Payment – Within payback, outside 110% under delivery, 90% over delivery</p> <p>Settled with energy</p>
<b>WAUW</b>	<b>Sept 2010</b>	<p>-3%, right to charge 100 mills/kWh. Positive excursions outside the bandwidth will be lost to the system.</p> <p>Settled financially</p>

## ***Energy Imbalance Under FERC 890***

**First Tier: +/-1.5% (minimum 2 MW) netted monthly and the remainder, if any, settled at incremental/decremental costs**

**Second Tier: 1.5%-7.5% (+/-) settled at 90%/110% incremental/decremental cost**

**Third Tier: greater than +/-7.5% settled at 75%/125% incremental/decremental cost**

**Incremental Cost: in 890 defined as transmission provider's actual average hourly cost of the last 10 MW dispatched to supply the transmission provider's native load, based on the replacement cost of fuel, unit heat rates, start-up costs, incremental operation and maintenance costs, and purchased and interchange power costs, as applicable.**

**Also could entertain proposals for using market pricing to determine costs on a case-by-case basis.**

# Operating Spinning / Supplemental Reserves

	Rate Design Expires	Current Rate
<b>WACM</b>	<b>Feb 2009</b>	<b>Pass through cost plus administrative cost of service</b>
<b>WALC</b>	<b>June 2011</b>	
<b>WAUW</b>	<b>Sept 2010</b>	<b>Pass through cost. If resource available, \$.14/kW-mo of customer load</b>

## ***Typical Rate Process Timeline***

<b>1<sup>st</sup> set of Informal Meetings</b>	<b>5 months</b>
<b>2<sup>nd</sup> set of informal Meetings</b>	<b>2 months</b>
<b>Publish FRN</b>	<b>2 months</b>
<b>Public Information Forum</b>	<b>1 month</b>
<b>Comment Forum</b>	<b>1 month</b>
<b>Close of Comment and Consultation</b>	<b>1 month</b>
<b>Develop Rate Order</b>	<b>3 months</b>
<b>Review Process</b>	<b>4 months</b>
<b>30 Day Notification</b>	<b><u>1 month</u></b>
<b>Expected Months for Process</b>	<b>20 months</b>

## Summary

- **New FERC/NERC requirements are causing increased workload**
- **Western needs to address the new workload by**
  - Keeping the existing org structures
    - Just add more people
    - Continue to duplicate work
  - Address it by strategic planning
    - Consolidate Operations Centers
    - Consolidate Western BAs where feasible
    - Try to consolidate other functions (TO, TOP, etc)
- **Early in the process, open to ideas**

## *What's next? Give us your input.*

### **Comment dates:**

**Feb 12 and 14** – customer meeting discussions

**Feb 29** – submit comments to DSW or RMR Regional Manager

**Mar 31** – customers receive Western's responses to comments

**April 9** - follow-up customer meeting (if needed)

**Spring** – Western decides next steps, if/how to proceed

# *Open forum – questions and discussion*