



Western
Area Power
Administration

Customer Meeting

Colorado River Storage Project Management Center

June 20, 2019

Salt Lake City, Utah





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**Welcome to the
CRSP Annual Customer Meeting
June 20, 2019
11:00 am – 3:00 pm**

The meeting will begin at **11:00 am MDT**

Please stand-by until the meeting begins.

Please remember to place your phone on mute.

Presentation -

Within the SOURCE: <https://www.wapa.gov/About/the-source/Pages/Presentations-Speeches.aspx>

CRSP-MC Site: <https://www.wapa.gov/regions/CRSP/Pages/crsp.aspx>

Full Binder Handout - <https://www.wapa.gov/regions/CRSP/rates/Pages/rates.aspx>



CRSP-MC Annual Customer Meeting
June 20, 2019
11:00 am – 3:00 pm

Welcome and Introductions



Agenda

CRSP-MC Annual Customer Meeting June 20, 2019 11:00 am – 3:00 pm

Time	Topic	Speaker
11:00, 5 min	Welcome and Introductions	Steve Johnson, Senior VP and CRSP Manager
11:05, 30 min	Investing in a connected future, Fiber Update	Mark Gabriel, Administrator and Chief Executive Officer
11:35, 25 min	WAPA Information Technology Update	Mike Montoya, Acting Senior VP and Chief Information Officer
12:00, 20 min	Environmental Update (Bug Flows, ESA Activities)	Craig Ellsworth, CRSP Biologist
12:20, 25 min	Chief Financial Officer Update	Dennis Sullivan, Senior VP and Chief Financial Officer
12:45	Break - 15 minutes	
1:00, 45 min	Rate Update	Thomas Hackett / Tony Henriquez - CRSP Rates
1:45, 30 min	WEIS/Markets update	Tim Vigil, CRSP MC VP of Power Marketing
2:15, 20 min	Regional Manager Updates	Steve Johnson, Senior VP and CRSP Manager Ron Moulton, Senior VP and DSW Regional Manager
2:35, 25 min	Questions and Closing	Tim Vigil, CRSP MC VP of Power Marketing





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Investing in a Connected Future

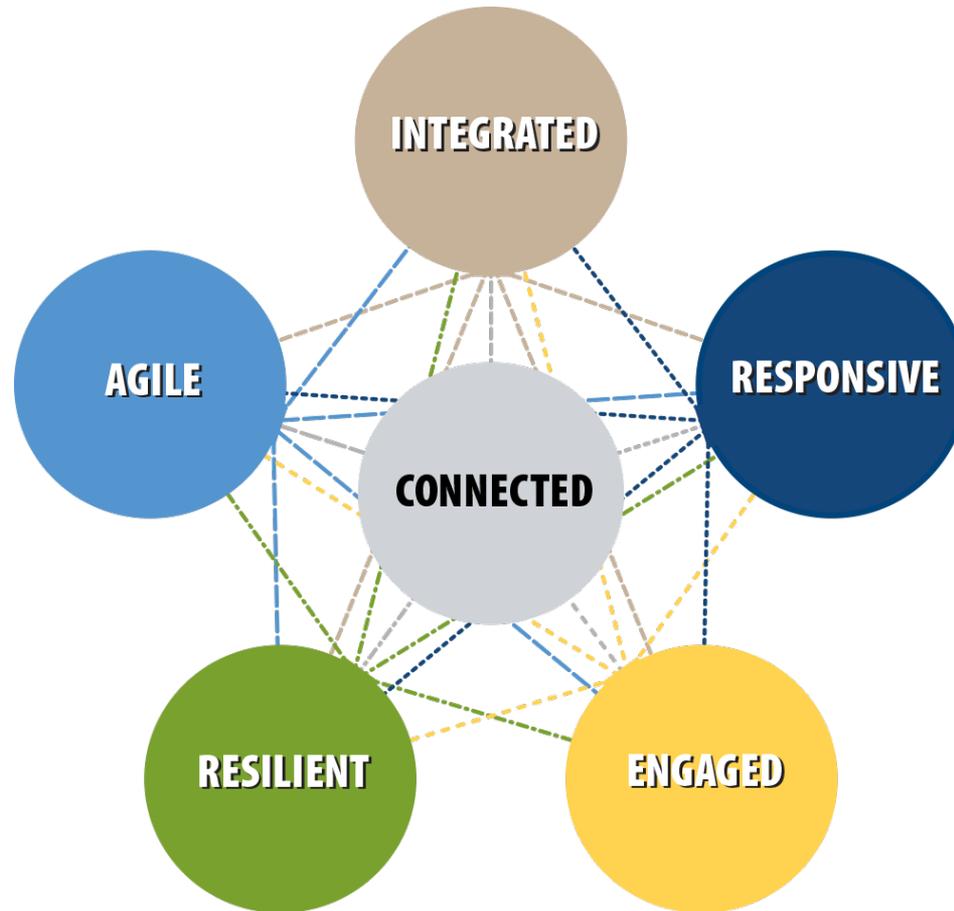
Administrator and CEO Mark A. Gabriel



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Salt Lake City, UT

A connected WAPA



Shared Integrated Grid



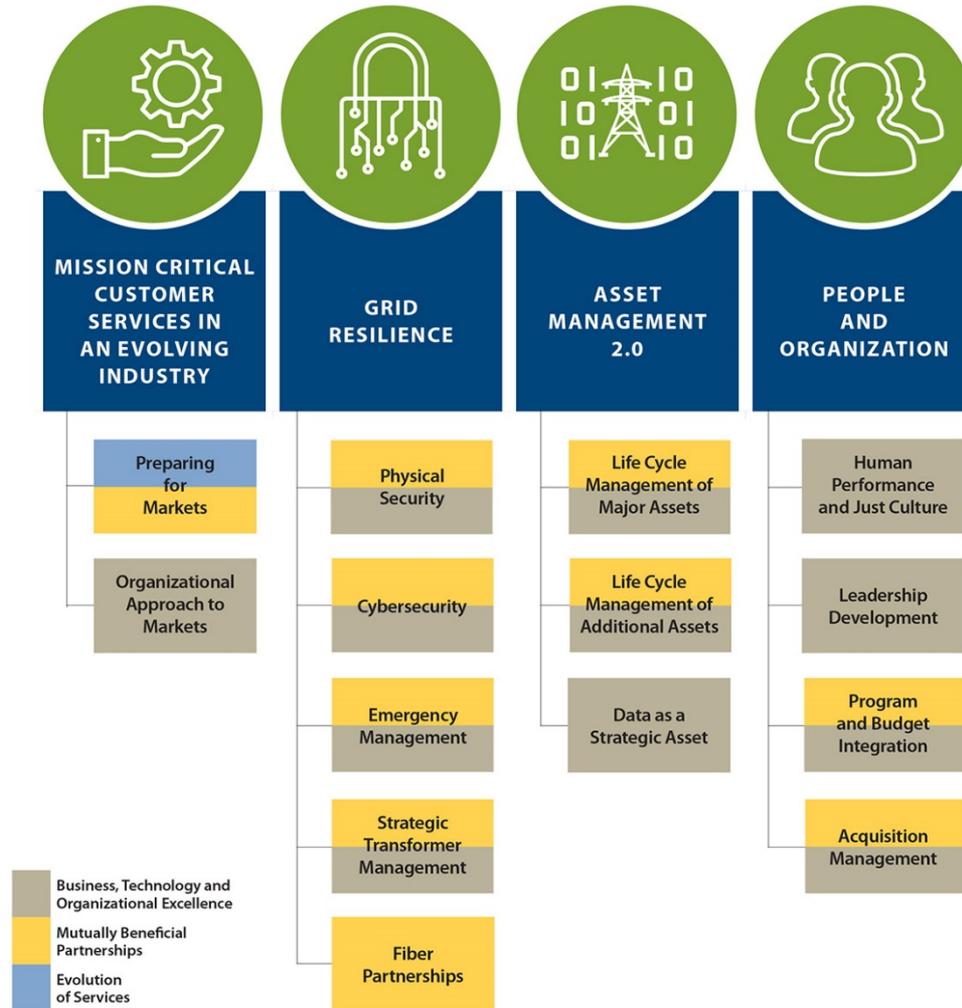
Preparing for the future



Connected world

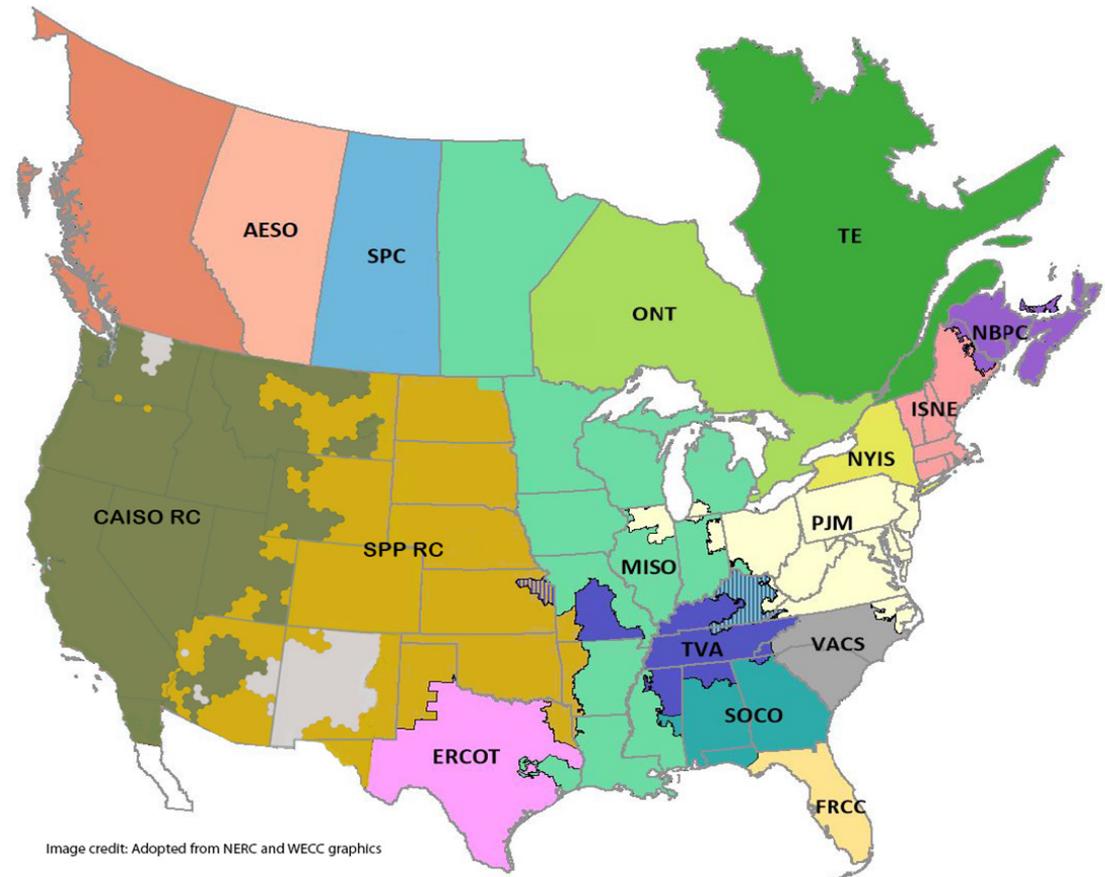


Tactical Action Plan



Mission-critical services

- Exploring energy imbalance options
- Organizational Approach to Markets
- Reliability coordinator transition



Evolving with industry, customers

- Energy Imbalance Markets
 - **Ensure reliable delivery of our hydropower while adjusting to a changing energy mix**
- Integrated Resource Plans
- RC transition
- Vegetation management
- Northwest Power Pool



Grid resilience

- Increasing regulations
- Internet of Things
- OT/IT convergence
- Asset management nexus
- “Smart” technology
- Continuing communications



Grid resilience



Physical Security update

- Implemented tiered security protection levels to focus resources on more critical sites
 - 1,000+ tasks reduced to ~450
- Expect 94 site assessments to be complete by year's end
- 72% of planned security tasks to be complete for FY 2019
- FY 2020 tasks: 103
- FY 2021 tasks: 72



Fiber update

- **To date**
 - Established Fiber Optic Partnerships feasibility assessment team
 - Submitted plan for Feasibility Assessment to DOE
 - Held initial meeting with work group
- **June-September:** Regional outreach
- **December:** Submit feasibility assessment
- Report progress quarterly using performance metrics



Asset Management 2.0

- Published 2019 almanac in May
- Data-driven insight supports decision making
- Next asset classes
 - station batteries
 - current transformers
 - capacitive voltage transformers
 - IT network equipment



VALUE OF
ASSET MANAGEMENT

Western Area
Power Administration 



People and Organization

- Human Performance and Just Culture
- Leadership development
- Program and budget integration
- Acquisition management



CRSP MC accomplishments

- Paid-off Dolores' original investment in FY 2018
 - Final repayment of original investments in SLIP
- Expecting rate decrease next year after decade of stable rates



*McPhee Dam
Courtesy of USBR*



Key takeaways

Preparing for a connected energy future.

Stay flexible to meet industry changes.

Preserve and strengthen ability to complete mission.



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Mark Gabriel



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Information Technology overview and update

Mike Montoya, Acting SVP and CIO



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Mission

Enable WAPA's mission by working in partnership with employees, customers and stakeholders to deliver technology services that are:

- Cost effective
- High quality
- Accessible
- Innovative
- Reliable
- Secure



Operating principles

Innovation

We model an innovative spirit and leverage technology that enables mission delivery amid a changing industry.

Keeps WAPA relevant, resilient, agile



Stewardship

We value operational excellence and cost management in all we do, as we provide secure and reliable services.

Keeps WAPA efficient, focused, responsible



Prepared for future



Continued public trust

Partnership

We partner with stakeholders to provide strategic and technology solutions that create business value across the organization.

Keeps WAPA connected, engaged, responsive



Transparency

We operate transparently and make information available to promote trust and maintain integrity with all stakeholders.

Keeps WAPA accessible, open, trustworthy



Delivering strategic business value

Solve business problems

Help identify efficiencies

Align with 12/14 TAP initiatives



IT Evolution

Why

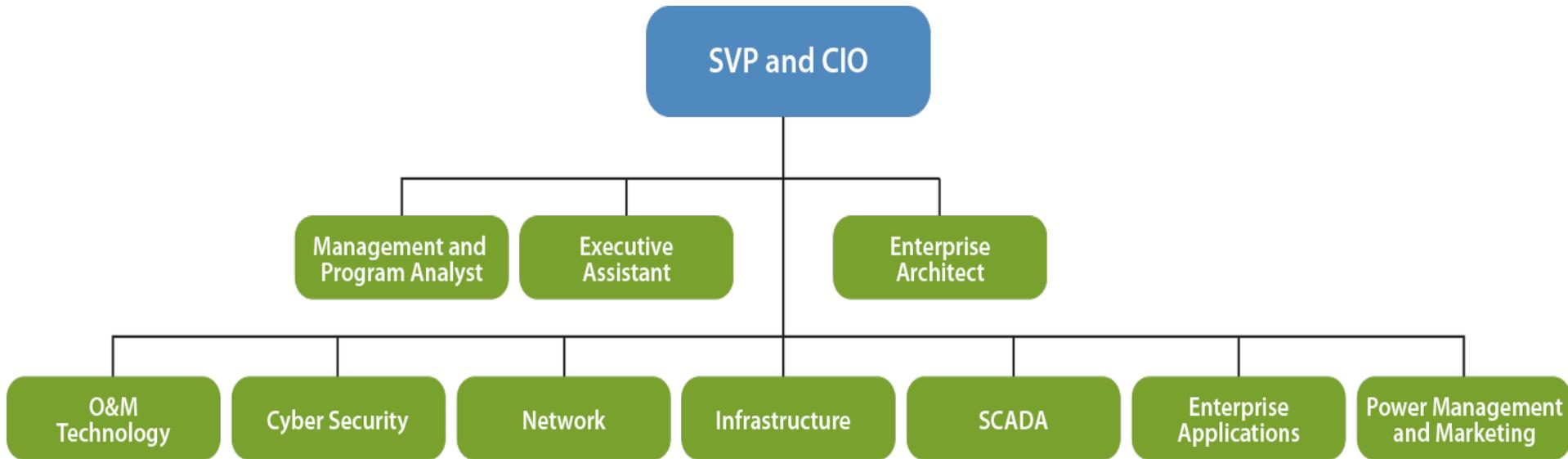
- Prior structure was 20yrs old
- Changing industry and IT landscape
- Increased complexity of operations

Outcomes

- Reduced risk
- Increased control of spending
- Apply WAPA-wide focus
- Increased efficiency
(solve problems once, not five times)
- Experts across organization
- Increased agility



How we are organized



Accomplishments

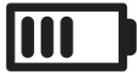
- Lifecycle management strategy
- Software inventory
- 10-year capital planning
- Focus on transparency / IT spend
- Budget process improvements



Primary IT cost drivers



Strategic initiatives



Lifecycle management



Regulatory obligations



IT priority projects

Common SCADA vendor

Network enhancements

Records Management

Reliability Coordinator services



Looking ahead: Megatrends

- Cloud computing
- AI and machine learning
- Cybersecurity





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CRSP Environmental Group Update

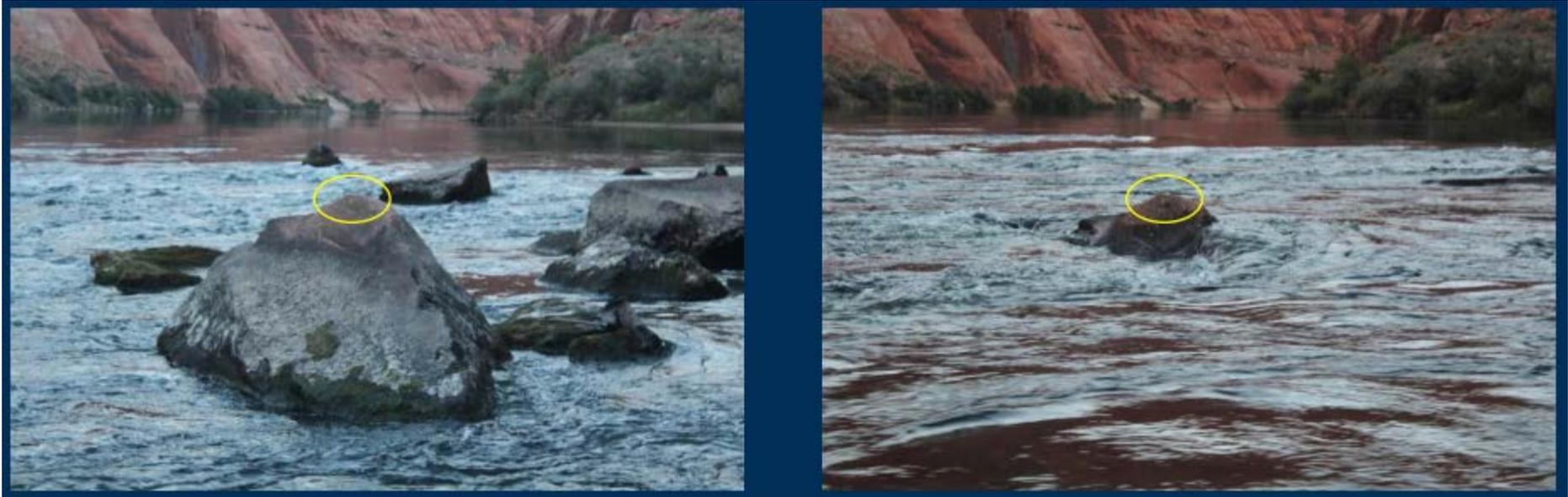
Craig Ellsworth, Fishery Biologist

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Bugflow Experiment at Glen Canyon Dam



Ephemeroptera (mayflies)

Plecoptera (stoneflies)

Trichoptera (caddisflies)

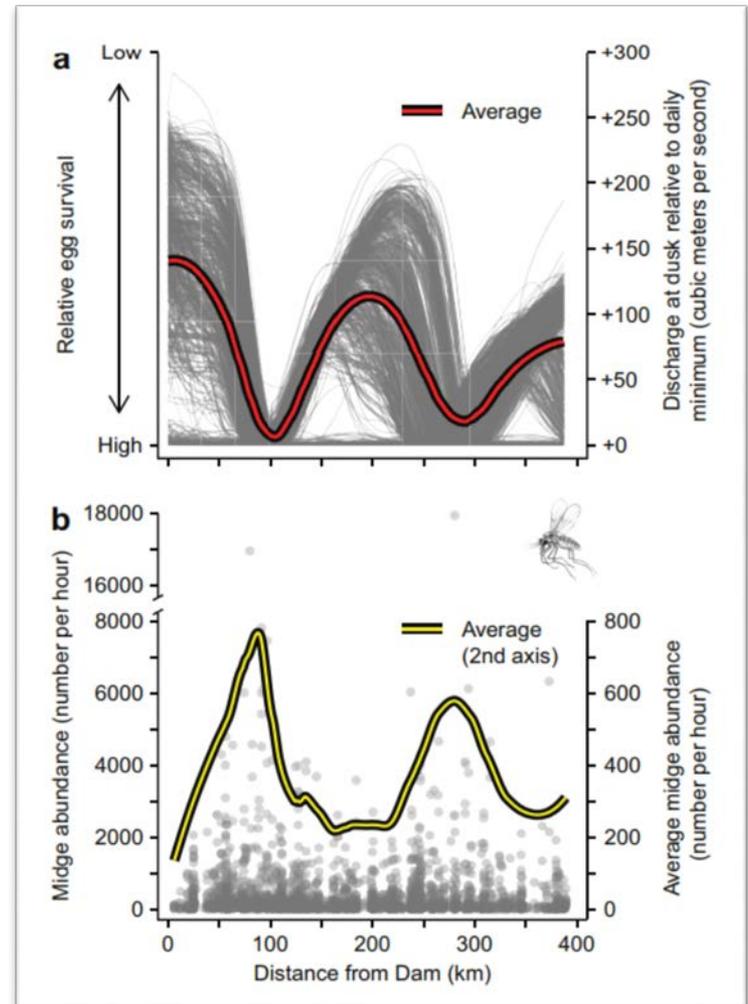


Hypothesis

- Daily fluctuations were drying out eggs laid by these aquatic insects



Figure 2. Three different types of aquatic macroinvertebrate eggs found attached to the bottom of a rock in the Green River below FGD.



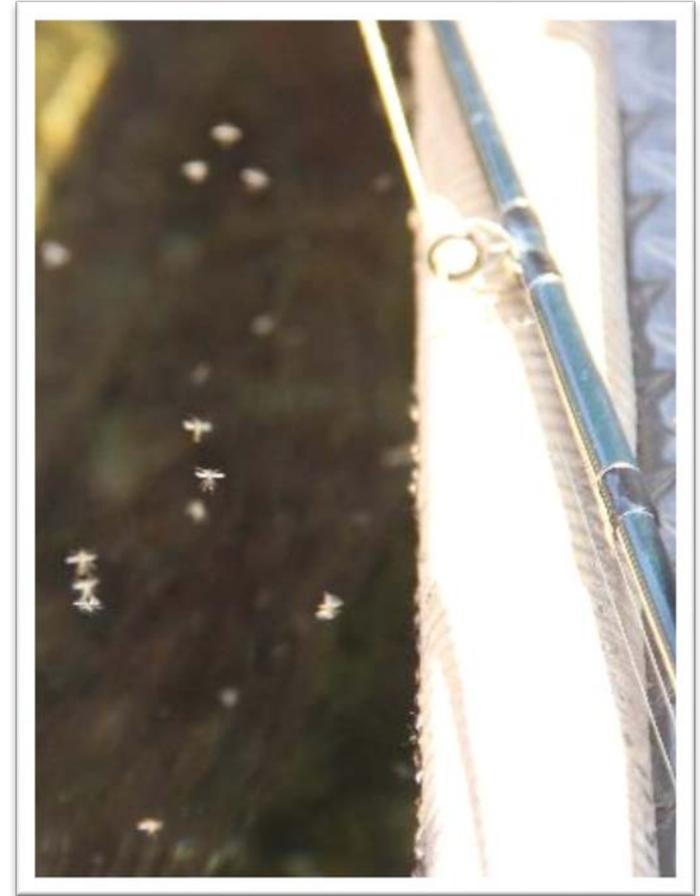
Bugflow Experiment at Glen Canyon Dam

- **Test:**

Two days of low, steady flows per week
- **Objective:**

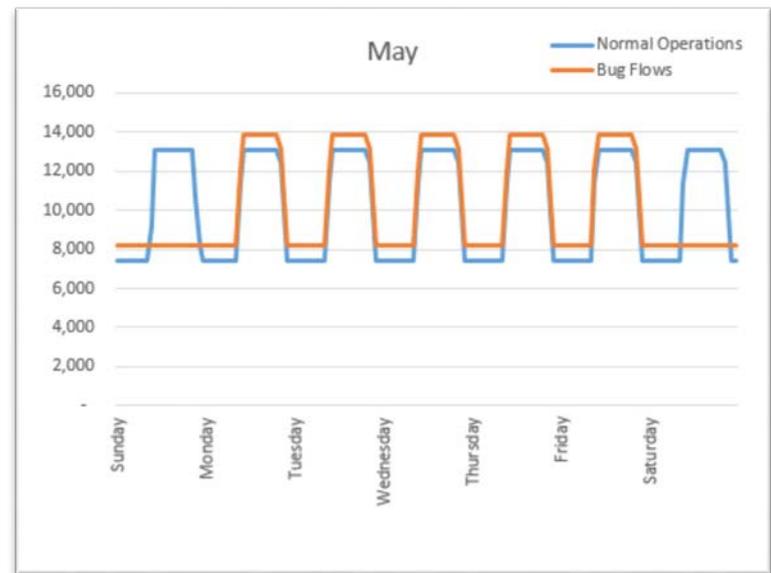
Increase production and diversity of aquatic bugs
- **Why:**

More food for the Lees Ferry rainbow trout fishery and native fish downstream like endangered humpback chub



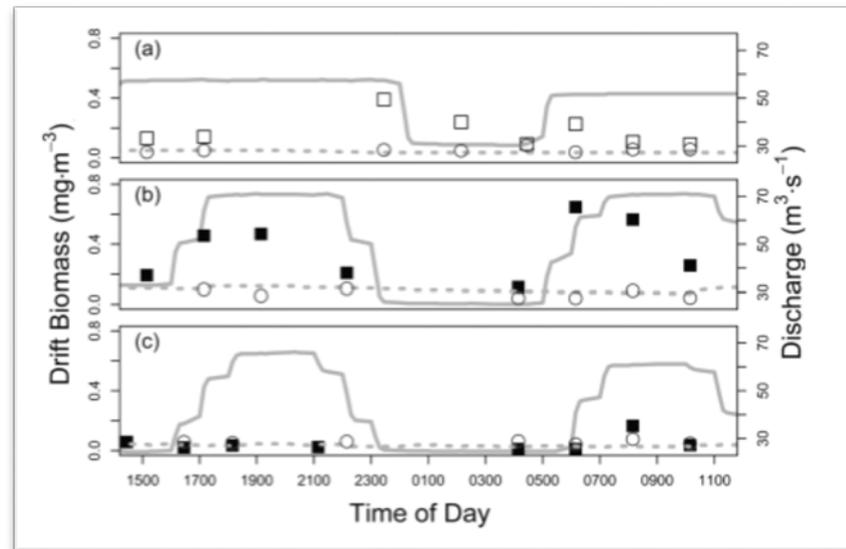
Coordination with GCMRC scientists in experimental design

- Scientists had a working hypothesis
- How to test?
- Coordinated with WAPA on a hydrograph that met study needs while reducing impacts to hydropower
 - Two days = weekend
 - Move weekend water to on-peak on weekdays
 - Increased capacity
 - Financial benefit/costs depends on difference between on-peak and off-peak prices



Additional monitoring done at WAPA's request

- Flaming Gorge and double peaking
 - Studies showed that double peaking was not adversely affecting the fishery
 - Drift (food) is linked to flow fluctuations
- Would two days of low, steady flows at Glen Canyon adversely affect the rainbow trout fishery (and possibly humpback chub)?



Weekday/weekend drift monitoring

- Bug production, food availability, and fish
 - Bugflows are expected to increase production and diversity
 - Low, steady flows may decrease drift
 - Lower flows clarify the water and may concentrate food
 - How will the fish respond?
- Catchability
 - Fluctuating flows stir up food and increase feeding (on the ascending limb)
 - Lower flows make access to good fishing spots easier



Weekday/weekend drift monitoring

- Insect monitoring

- Drift
- Light traps
- Sticky traps

- Fish diet

- Fullness
- Contents
- Quality

- Angler success

- Guides
- Stakeholders
- Scientists



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Weekday/weekend drift monitoring

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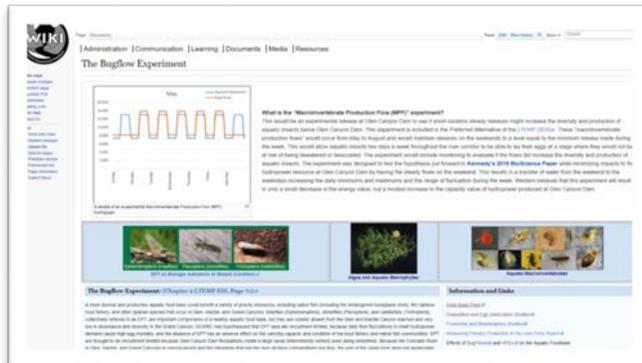
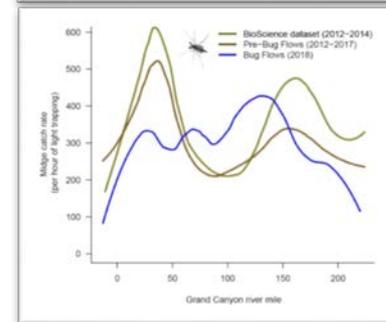
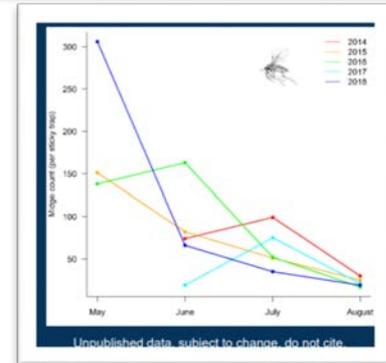
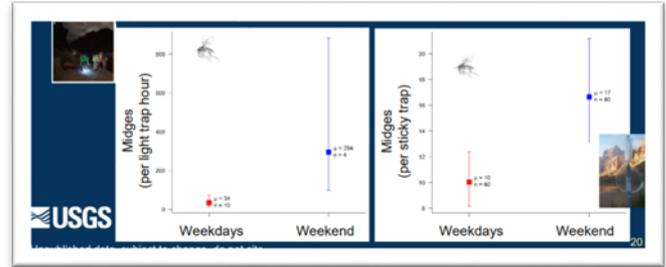
- Angler success

- Guides
- Stakeholders
- Scientists



Preliminary Results

- Increased midge emergence on weekends
- Higher catch rates of trout on weekends
- Shift in midge abundance in Grand Canyon
- Increase in caddisflies in lower Grand Canyon
- Follow along with the GCDAMP wiki site:
 - The Bugflow Experiment page



http://gcdamp.com/index.php?title=The_Bugflow_Experiment





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Chief Financial Officer Update

Dennis R. Sullivan, CFO



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FY19 WAPA-wide Financial Execution

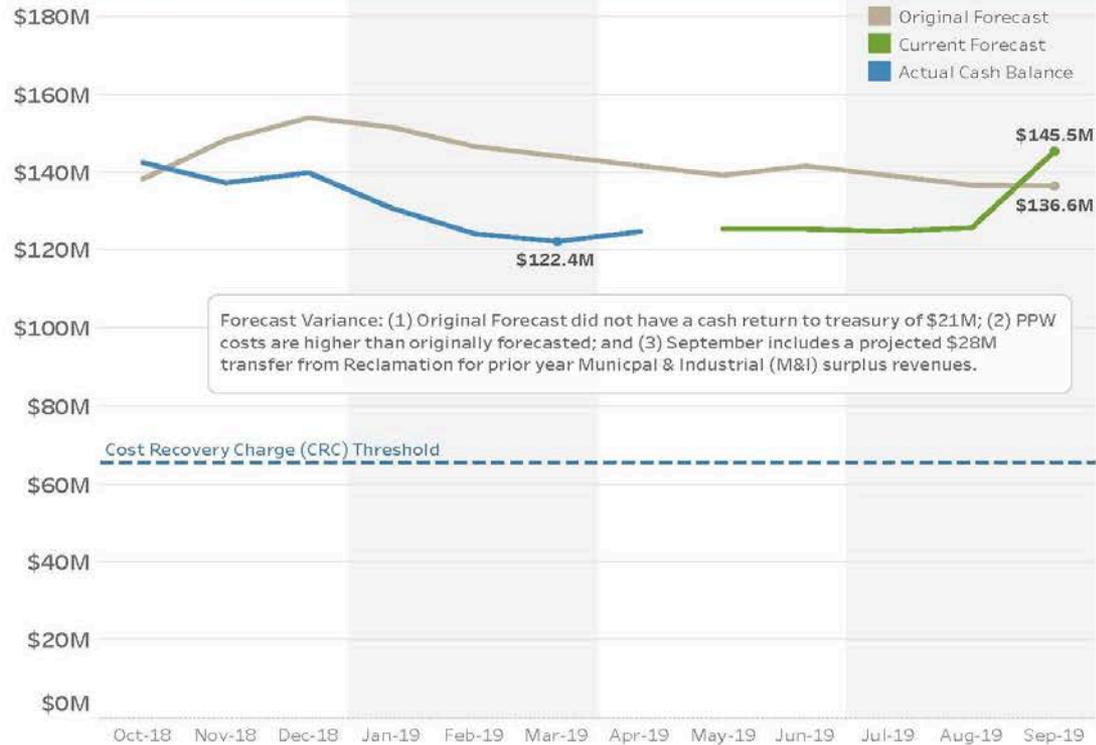


- **Purchase Power & Wheeling:** Forecasting +\$39M reserves
- **Annual O&M:** Forecasting \$1.4M over work plan
- **Appropriations:** Forecasting \$1.6M under work plan
- **Total Capital:** Forecasting \$27.9M under work plan
- **Return to Treasury:** Forecasting \$226M



FY 2019 CRSP Basin Fund: Forecast of Cash Reserve and FYE Return to Treasury

Data as of April 30, 2019



Current Year Projection

Sept 2019 Projected Return to Treasury (including constructive returns):

\$23 million

Table Summary (\$ in millions)												
Original Forecast	138.4	148.5	154.2	151.7	146.8	144.3	141.8	139.3	141.8	139.3	136.8	136.6
Current Forecast	142.6	137.4	140.0	130.9	124.4	122.4	124.9	125.6	125.5	125.0	125.9	145.5
Variance (\$)	4.2	(11.1)	(14.2)	(20.8)	(22.4)	(21.9)	(16.9)	(13.8)	(16.2)	(14.3)	(11.0)	8.9
Variance (%)	3.0%	-7.5%	-9.2%	-13.7%	-15.3%	-15.2%	-11.9%	-9.9%	-11.4%	-10.3%	-8.0%	6.5%

Source: CRSP Regional Office



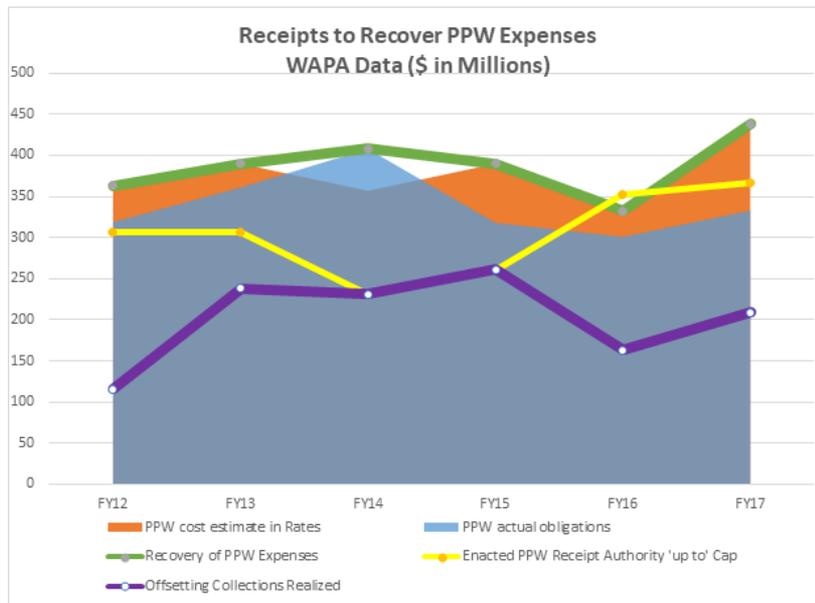
Basin Fund – Environmental Programs Funds Transfer



- Fiscal Year 2019
 - OMB administrative direction to return \$23M to Treasury
 - USBR secured appropriations
- Fiscal Year 2020
 - DRAFT House EWD bill
 - \$21.4M shall be transferred to USBR
- Sustainable solution?



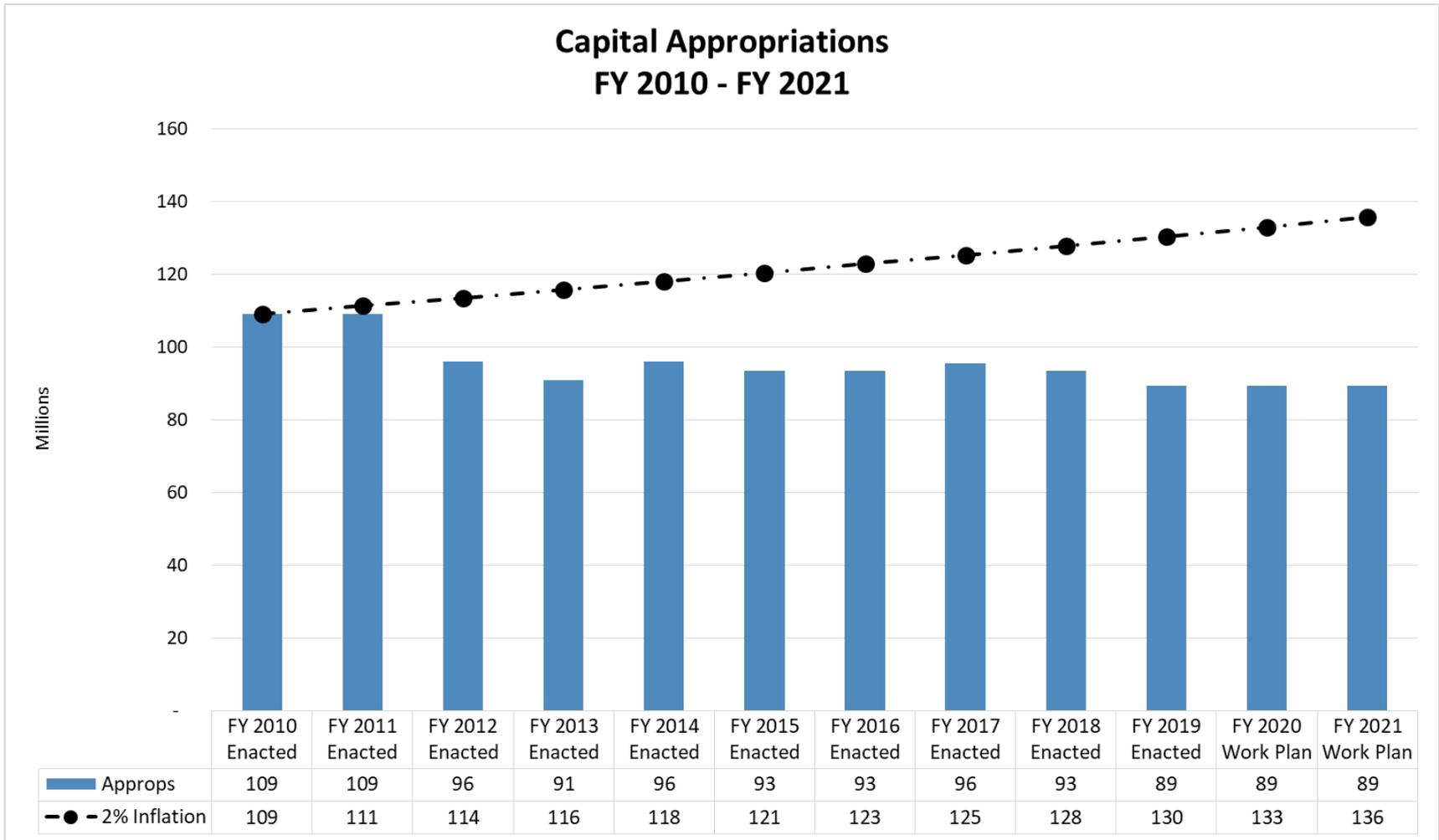
Purchase Power & Wheeling



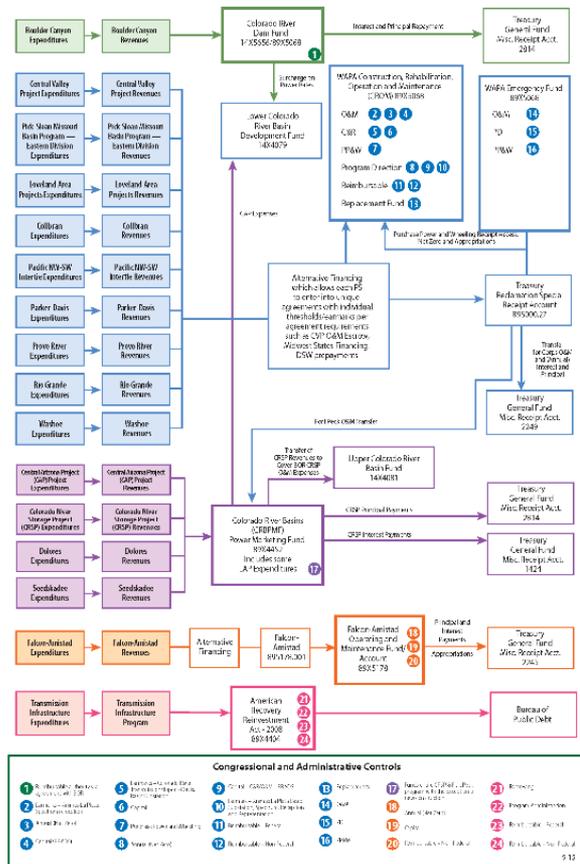
- FY18 Congressional report status
- The greater of:
 - Actual PPW obligations in current year, or ...
 - PPW estimate in PRS
- Reserve strategy progress
 - FY18 reserve: \$291m
 - FY19 projection : +\$39M
 - FY20 budget markup: -\$90M
- FY20 Congressional report request
 - Options for new PPW account structure



Capital Appropriations Status



Symptoms of a broader problem



- “Cobbled together” legislative authorities
 - Not well understood
 - Reinterpretation risk
- 100% reliant on cash
 - All receipts not discretionary
 - Alternative financing approach
- No borrowing mechanism
- Sub-optimal decisions
- Complexity implications



Financial Transparency / Program Collaboration

Financial Transparency



- Sharing historical and planned budget/execution
 - Provide opportunity for input/feedback
 - Answers: what, why, how much, value-delivered
- Results:** Common understanding of investment drivers

- Enhanced financial reviews
 - Work plans
 - Execution reviews
 - HQ 10YP
 - WAPA program leaders
- Expanded “The Source”
 - Access to historical data
- Technology & Security Symposium
- Financial transparency vs. Programmatic insight?



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Rates Update

Thomas Hackett and Tony Henriquez
CRSP-MC Rates

June 20, 2019

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SLCA/IP Rate

1. Transmission Rate
2. Status of Repayment
3. Current SLCA/IP Firm Power Rate (SLIP-F10)
4. SLCA/IP Annual Revenue Requirement & Firm Power Rates Comparison
5. Rate Action



Transmission Rate

5 Year Historical

Fiscal Year	kW-month	
2015	\$1.11	
2016	\$1.28	
2017	\$1.48	
2018	\$1.45	
2019	\$1.63	
2020	\$1.58	Projected, pending final



Calculate True-Up FY2019 Transmission Rate

	<u>Projected (FY18)</u>	<u>Actual (FY18)</u>	<u>Difference</u>
Plant	\$702,352,887	\$676,031,999	(\$26,320,888)
% of Plant to Transmission			(0.17%)
After Calculations: True-Up to ATRR for FY20 =			(\$108,578)



Pending FY2020 Transmission Rate

Pending For FY 2020

	ATRR:		kW-Month:
Annual Transmission Revenue Requirement (ATRR): \$	87,754,860	\$	1.581
True-Up: \$	(108,578)	\$	0.002
Updated Attr: \$	87,646,282	\$	1.579

Rate Change 2020-2019:

FY2020	\$	1.579
- FY2019	\$	1.629
Change (kW-Month):	\$	(0.050)



SLCA/IP Rate



SLCA/IP Rate

SLCA/IP Status of Repayment [\(tab 2\)](#)

As of September 30, 2018

Project	Investment (\$million)	Investment Repaid			
		Amount (\$million)	FY2018 Percent	FY2017 Percent	Variance
CRSP (Power Only)	1,374.515	1,205.178	87.68%	87.98%	-0.30%
CRSP Irrigation/Aid	1,174.515	208.792	17.78%	17.20%	0.58%
Collbran	27.023	23.191	85.82%	85.62%	0.20%
Dolores	38.986	38.167	97.90%	34.43%	63.47%
Rio Grande	29.651	24.758	83.50%	97.07%	-13.57%
Seedskadee	12.527	9.699	77.42%	93.00%	-15.58%





Aid to Participating Projects

May 2019 Update

Values in 1,000's

FY 2018 PRS

year	Colorado 46% Incremental		New Mexico 17% Incremental		Utah 21.5% Incremental		Wyoming 15.5% Incremental		Total Incremental		Cumulative		Parents to date
	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available	
2015	-	-	-	-	-	-	-	-	-	-	-	-	158,261
2016	-	3,961	-	1,464	8,610	1,851	-	1,335	8,610	8,610	8,610	8,610	Repaid
2017	3,192	2,031	-	751	-	949	1,224	684	4,416	4,416	13,026	13,026	Repaid
2018	-	-	-	-	-	-	-	-	-	-	13,026	13,026	
2019	-	-	-	-	-	-	-	-	-	-	13,026	13,026	
2020	-	2,984	-	1,103	6,486	1,394	-	1,005	6,486	6,486	19,512	19,512	Repaid
2021	13,590	6,251	-	2,310	-	2,922	-	2,106	13,590	13,590	33,102	33,102	Repaid
2022	-	-	-	-	-	-	-	-	-	-	33,102	33,102	
2023	-	10,050	21,847	3,714	-	4,697	-	3,386	21,847	21,847	54,949	54,949	Repaid
2024	-	-	-	-	-	-	-	-	-	-	54,949	54,949	
2025	-	47,524	-	17,563	103,312	22,212	-	16,013	103,312	103,312	158,261	158,261	Repaid
2029	5,482	36,797	-	13,599	-	17,199	12,399	12,399	17,881	79,994	176,142	238,255	
2032	-	-	7,580	-	-	-	-	-	7,580	-	183,722	238,255	
2034	-	-	-	-	4,978	-	-	-	4,978	-	188,700	238,255	
2035	-	70,668	-	26,116	-	33,030	23,812	23,812	23,812	153,626	212,512	391,880	
2038	50,537	-	-	-	-	-	-	-	50,537	-	263,049	391,880	
2040	5,188	-	-	-	-	-	-	-	5,188	-	268,237	391,880	
2042	2,308	-	-	-	-	-	-	-	2,308	-	270,545	391,880	
2045	101,975	58,025	-	21,444	-	27,120	-	19,552	101,975	126,142	372,520	518,022	
2048	78,650	78,650	-	29,066	-	36,760	-	26,502	78,650	170,978	451,170	689,000	
2049	23,302	23,302	-	8,612	-	10,891	-	7,852	23,302	50,657	474,472	739,657	
2050	-	-	-	-	72,897	-	-	-	72,897	-	547,369	739,657	
2052	80,853	80,853	-	29,880	-	37,790	-	27,244	80,853	175,767	628,222	915,424	
2054	-	24,902	-	9,203	96,554	11,639	-	8,391	96,554	54,135	724,776	969,559	
2055	-	30,987	-	11,452	14,483	14,483	-	10,441	14,483	67,363	739,259	1,036,921	
2057	22,703	25,822	-	9,543	12,069	12,069	-	8,701	34,772	56,135	774,031	1,093,056	Balance
Total	387,780	502,806	29,427	185,820	319,389	235,007	37,435	169,424	774,031	1,093,056			934,795

Note: Boxed yellow amounts trigger apportionment. Boxed green amounts indicate total available with apportionment. **319,025**



SLCA/IP Firm Power Rate

- Current Firm Power Rate (SLIP-F10, [Tab 3](#))
 - Effective Oct. 1, 2015
 - Energy: 12.19 mills/kWh
 - Capacity: \$5.18 kW/month
 - Composite Rate: 29.42 mills/kWh
- Expires September 30, 2020
- Cost Recovery Charge ([Tab 17](#))
 - 0.00 mills/kWh



History of SLIP Rates

Effective	Capacity	Energy	Composite
<u>Date (CY)</u>	<u>\$/kW</u>	<u>mills/kWh</u>	<u>mills/kWh</u>
1993	3.54	8.40	18.70
1995	3.83	8.90	20.17
1998	3.44	8.10	17.57
2002	4.04	9.50	20.72
2005	4.43	10.43	25.28
Step 1 { 2008	4.70	11.06	26.80
Step 2 { 2009 (FY10)	5.18	12.19	29.62
2015	5.18	12.19	29.42



SLCA/IP Energy Generated

Percentages Based on FY 2018 Data

	Generated - GWh	% of Generation
CRSP	5,547,972	97.49%

Glen Canyon	4,050,661	71.18%
Flaming Gorge	628,820	11.05%
Aspinall	868,491	15.26%

Participating / Integrated Projects:	142,858	2.51%
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Dolores	13,875	0.24%
Seedskafee	66,662	1.17%
Collbran	22,796	0.40%
Rio Grande	39,524	0.69%

Total Generation:	5,690,829.56	100.00%
--------------------------	---------------------	----------------



SLCA/IP Energy Generated

5 Year Average per Project

Generated - GWh

	2014	2015	2016	2017	2018	5-yr Average
CRSP	4,059,817	5,089,414	5,266,922	5,459,474	5,547,972	5,084,720

Glen Canyon	3,109,906	3,863,803	4,016,226	3,969,625	4,050,661	3,802,044
Flaming Gorge	361,789	504,135	495,226	781,596	628,820	554,313
Aspinall	588,123	721,475	755,470	708,253	868,491	728,362

Participating / Integrated Projects

Dolores	21,364.85	21,118.76	22,923.04	23,200.48	13,875.26	20,496.48
Seedskaadee	58,587.86	75,558.54	51,886.36	31,917.51	66,662.49	56,922.55
Collbran	43,754.13	39,247.68	41,069.46	37,760.25	22,795.62	36,925.43
Rio Grande	12,767.88	37,642.42	43,432.61	45,218.30	39,524.26	35,717.10

Total Generation:	4,196,292	5,262,981	5,426,234	5,597,570	5,690,830	5,234,781
--------------------------	------------------	------------------	------------------	------------------	------------------	------------------



Annual Revenue Requirements

Comparison Table (Tab 5)

Values in 1,000's

Item	Unit	WAPA 169	FY 2019	Change	
		2017 Workplan	2021 Workplan	Amount	Percent
Rate Setting Period:					
Beginning year	FY	2016	2021		
Pinchpoint year	FY	2025	2029		
Number of rate setting years	Years	10	9		
Annual Revenue Requirements:					
<i>Expenses</i>					
Operation and Maintenance:					
Western	1,000	\$52,630	\$60,190	\$7,560	14%
Reclamation	1,000	\$34,535	\$35,420	\$885	3%
Total O&M	1,000	\$87,165	\$95,610	\$8,445	10%
Purchased Power 1/	1,000	\$10,280	\$5,034	(\$5,246)	-51%
Transmission	1,000	\$10,421	\$8,208	(\$2,213)	-21%
Integrated Projects requirements	1,000	\$8,610	\$6,447	(\$2,163)	-25%
Interest	1,000	\$4,706	\$5,069	\$363	8%
Other 2/	1,000	\$14,587	\$10,474	(\$4,113)	-28%
Total Expenses	1,000	\$135,769	\$130,842	(\$4,927)	-4%
<i>Principal payments</i>					
Deficits	1,000	\$0	\$0	\$0	0%
Replacements	1,000	\$30,037	\$39,841	\$9,804	33%
Original Project and Additions	1,000	\$3,937	\$3,922	(\$15)	0%
Irrigation 3/	1,000	\$14,130	\$8,521	(\$5,609)	-40%
Total principal payments	1,000	\$48,104	\$52,284	\$4,180	9%
Total Annual Revenue Requirements	1,000	\$183,873	\$183,126	(\$747)	0%
<i>(Less Offsetting Annual Revenue:)</i>					
Transmission (firm and non-firm)	1,000	\$19,640	\$21,662	\$2,022	10%
Merchant Function 4/	1,000	\$9,918	\$9,487	(\$431)	-4%
Other 5/	1,000	\$5,118	\$4,799	(\$319)	-6%
Total Offsetting Annual Revenue	1,000	\$34,676	\$35,948	\$1,272	4%
Net Annual Revenue Requirements	1,000	\$149,197	\$147,178	(\$2,019)	-1%
Energy Sales 6/	MWH	5,071,804	5,223,885	152,081	3%
Capacity Sales	kW	1,407,920	1,423,900	15,980	1%
		0	0		
Composite Rate	mills/kWh	29.42	28.17	-1.25	-4.2%



Expenses

May 2019 Update
 Values in 1,000's

Item	WAPA 169	FY 2019	Change	
	2017 Workplan	2021 Workplan	Amount	Percent
Annual Revenue Requirements:				
<u>Expenses</u>				
Operation and Maintenance:				
Western	\$52,630	\$60,190	\$7,560	14%
Reclamation	<u>\$34,535</u>	<u>\$35,420</u>	<u>\$885</u>	<u>3%</u>
Total O&M	\$87,165	\$95,610	\$8,445	10%
Purchased Power 1/	\$10,280	\$5,034	(\$5,246)	-51%
Transmission	\$10,421	\$8,208	(\$2,213)	-21%
Integrated Projects requirements	\$8,610	\$6,447	(\$2,163)	-25%
Interest	\$4,706	\$5,069	\$363	8%
Other 2/	<u>\$14,587</u>	<u>\$10,474</u>	<u>(\$4,113)</u>	<u>-28%</u>
Total Expenses	\$135,769	\$130,842	(\$4,927)	-4%





Repayment

May 2019 Update
 Values in 1,000's

Item	WAPA 169	FY 2019	Change	
	2017 Workplan	2021 Workplan	Amount	Percent
<i>Principal payments</i>				
Deficits	\$0	\$0	\$0	0%
Replacements	\$30,037	\$39,841	\$9,804	33%
Original Project and Additions	\$3,937	\$3,922	(\$15)	0%
Irrigation 3/	<u>\$14,130</u>	<u>\$8,521</u>	<u>(\$5,609)</u>	<u>-40%</u>
<i>Total principal payments</i>	\$48,104	\$52,284	\$4,180	9%
Total Annual Revenue Requirements	\$183,873	\$183,126	(\$747)	0%





Offsetting Revenues

May 2019 Update

Values in 1,000's

Item	WAPA 169	FY 2019	Change	
	2017 Workplan	2021 Workplan	Amount	Percent
<i>(Less Offsetting Annual Revenue:)</i>				
Transmission (firm and non-firm)	\$19,640	\$21,662	\$2,022	10%
Merchant Function 4/	\$9,918	\$9,487	(\$431)	-4%
Other 5/	<u>\$5,118</u>	<u>\$4,799</u>	<u>(\$319)</u>	<u>-6%</u>
Total Offsetting Annual Revenue	\$34,676	\$35,948	\$1,272	4%
Net Annual Revenue Requirements	\$149,197	\$147,178	(\$2,019)	-1%





Revenue Requirements

May 2019

Update

Values in 1,000's

Item	WAPA 169	FY 2019	Change		
	2017 Workplan	2021 Workplan	Amount	Percent	
Rate Setting Period:					
Beginning year	2016	2021			
Pinchpoint year	2025	2029			
Number of rate setting years	10	9			
<i>Total Expenses</i>	\$135,769	\$130,842	(\$4,927)	-4%	
<i>Total principal payments</i>	\$48,104	\$52,284	\$4,180	9%	
Total Annual Revenue Requirements	\$183,873	\$183,126	(\$747)	0%	
<i>Less Total Offsetting Annual Revenue</i>	\$34,676	\$35,948	\$1,272	4%	
Net Annual Revenue Requirements	\$149,197	\$147,178	(\$2,019)	-1%	
Energy Sales 6/	MWH	5,071,804	5,223,885	152,081	3%
Capacity Sales	kW	1,407,920	1,423,900	15,980	1%
Composite Rate	mills/kWh	29.42	28.17	-1.25	-4.2%



WAPA-169 Expires 30 September, 2020

- Same billing rates since 1 October, 2009
- Memorandum of Agreement Concerning the Upper Colorado River Basin Fund (FY 2011)
- Glen Canyon Cost Reallocation (FY 2013)
- FRN Changes under WAPA-169 (FY 2016):
 - CRC – WAPA Discretion and New Table with Tiers
 - Transmission – Forward Looking Investments
 - Unreserved Use Rate Schedule



Changes - FY2019 Preliminary PRS

- Unfunded Retirement Benefits, Actuary Adjustments:
 - FERS & CSRS
 - FEGLI (Life Insurance)
 - Health Benefits

Total Unrecovered Retirement/FEGLI/Health Benefit Costs	FY14	FY15	FY16	FY17	FY18	5-yr Avg
VMF-GGCR Colorado River Storage	65,733.06	67,712.71	0.00	0.00	0.00	26,689.15
VMF-JJCR CRSP	1,034,417.37	908,189.78	1,067,283.47	875,211.70	1,326,950.06	1,042,410.48
VMF-GGCR Colorado River Storage	333,338.36	295,323.49	233,069.51	174,640.77	282,360.55	263,746.54
WFF-LLAF Amistad/Falcon	825.29	694.45	1,127.63	801.23	1,197.25	929.17
WMA-LLCO Collbran	523.06	464.43	469.84	333.85	498.85	458.01
VMF-LLCR CRSP	446,321.70	396,283.12	400,214.39	284,372.24	424,922.11	390,422.71
VMF-LLDO Dolores	523.06	464.43	563.82	400.62	598.62	510.11
WMA-LLPR Provo River	627.68	557.32	563.82	400.62	598.62	549.61
WMA-LLRG Rio Grande	523.06	464.43	563.82	400.62	598.62	510.11
VMF-LLSE Seedskafee	485.26	478.79	563.82	400.62	598.62	505.42
Consolidated CRSP - JJCR+GGCR+LLCR	1,879,810.49	1,667,509.10	1,700,567.37	1,334,224.71	2,034,232.72	1,723,268.88



Changes - FY2019 Preliminary PRS

- \$4M per-year for Energy Management Office
 - Year 6 of Purchase Power through end of study
 - Removed
 - New projection tools for Purchase Power remove the need for this
 - Will document in upcoming Federal Register Notice



Rate Action Changes

- Transmission Rate
 - Currently – Only Forecasts Investments
 - Investments are projected through the current year
 - O&M and depreciation are based on prior year
 - Proposed Change
 - Forecast Operations & Maintenance
 - Pull data thru May and extrapolate thru fiscal year end
 - Forecast Depreciation
 - Sample – Build FY2021 rate off Projected FY2020 instead of Actual FY2019



Rate Action Changes

- Cost Recovery Charge (CRC)
 - Modify formula to include collection of revenue lost by decreasing allocations
 - Reductions to Capacity added
 - Plain Language Effort
 - Provide “Understandable” format in Customer Brochure
- Surplus Sales Rate Schedule



Rate Action Changes

- Purchase Power
 - 2 + 5 Projections (normal year)
 - 1 + 5 Final Rate (FY2021 – FY2025)
- Projections Methodology
 - Year 1 August 24-Month Study
 - Year 2-7 August Colorado River Simulation System (CRSS)



Proposal FRN Schedule (est.)

- Announce Rate Action – June 20, 2019
- Start routing - September 10, 2019
- DOE Review - October 21, 2019 (30 Days)
- Administrator Signs - January 6 - 8, 2020
- Publish Proposal FRN - January 14, 2020
- Start 90-day Customer Comment Period - January 14, 2020
- Public Information & Customer Comment Forums March 12, 2020
- End Customer Comment Period April 13, 2020



Next Steps

- Provo River Proposal FRN WAPA -189
 - In Process
 - Administrator signs in about 2-3 weeks
 - 30 day customer comment period (no forums)
- Revisit Provo River and Olmsted FY2020 Installments
- FY2020 Rates sent out by August 30, 2019
 - Transmission
 - Installments (Provo River, Olmsted, Falcon-Amistad)
 - WRP/CDP



CRSP MC Rates Team

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<https://www.wapa.gov/regions/CRSP/rates/Pages/rates.aspx>

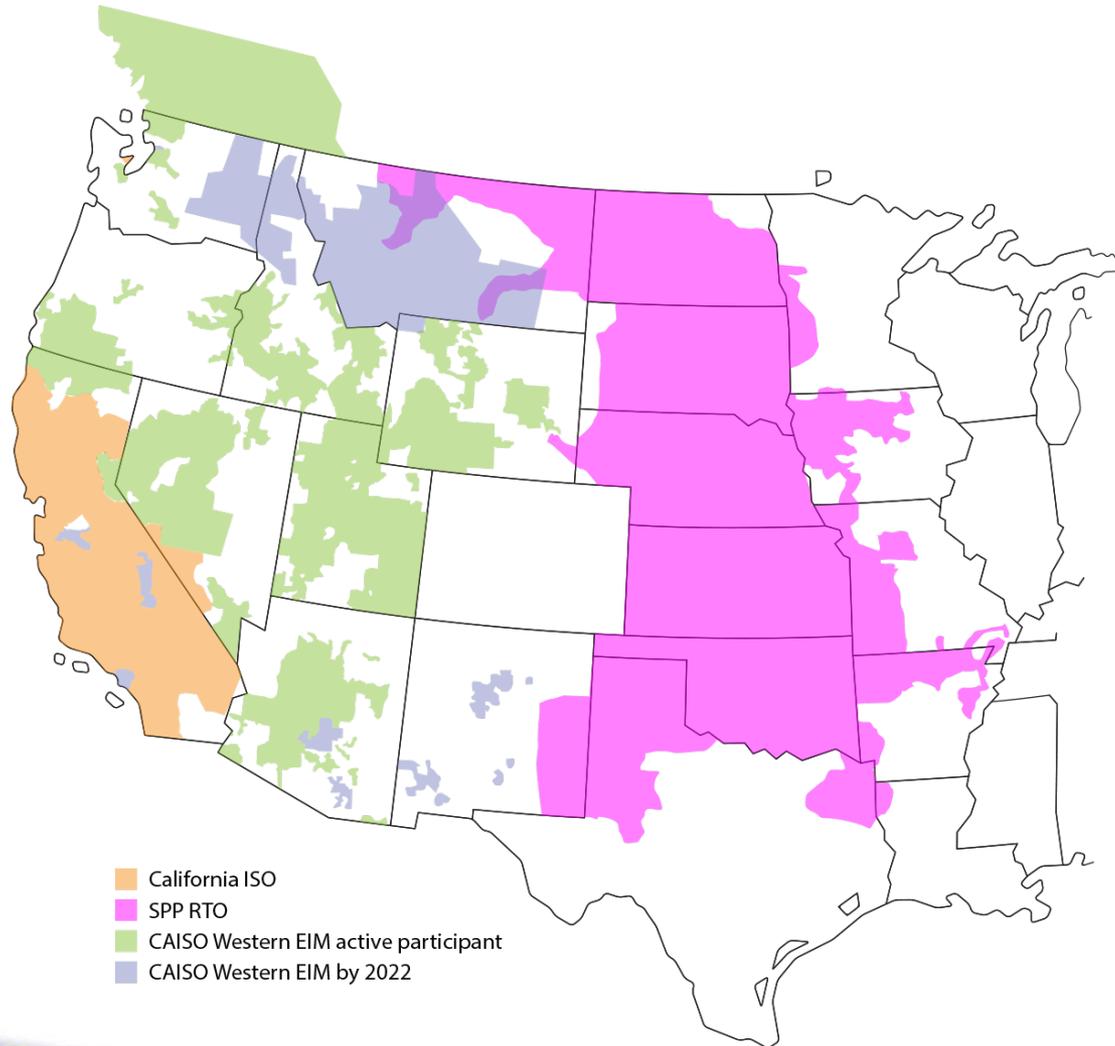


Energy Imbalance Markets in the West

June 20 | Salt Lake City, UT

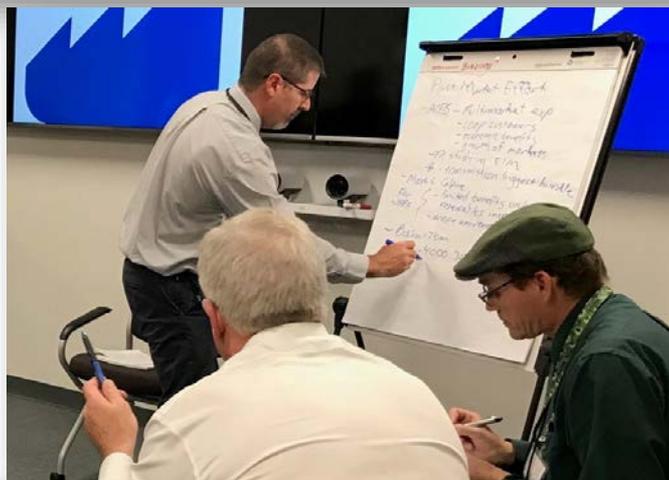
Tim Vigil
VP of Power Marketing

Markets are here

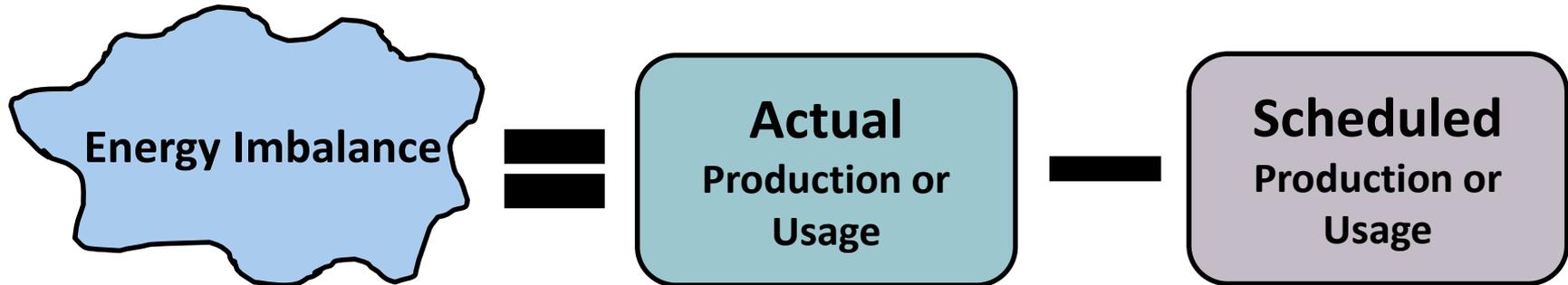


- California ISO
- SPP RTO
- CAISO Western EIM active participant
- CAISO Western EIM by 2022

Markets in the West Workshop, April 9-10



Energy Imbalance & Energy Imbalance Markets



Today: WAPA handles imbalance for its balancing authorities

- We use either hydro or bilateral agreements to handle EI
- EI calculated and priced hourly
- Region settles and bills each customer

Possible EIS Market Future: Market Operator handles imbalance

- Market Operator optimizes market resources to supply EI
- EI calculated and Locational Marginal priced every 5 minutes
- Market Operator does some or all settlement and billing

Why is WAPA interested in EIM?

Ensure reliable delivery of our hydropower while adjusting to a changing energy mix

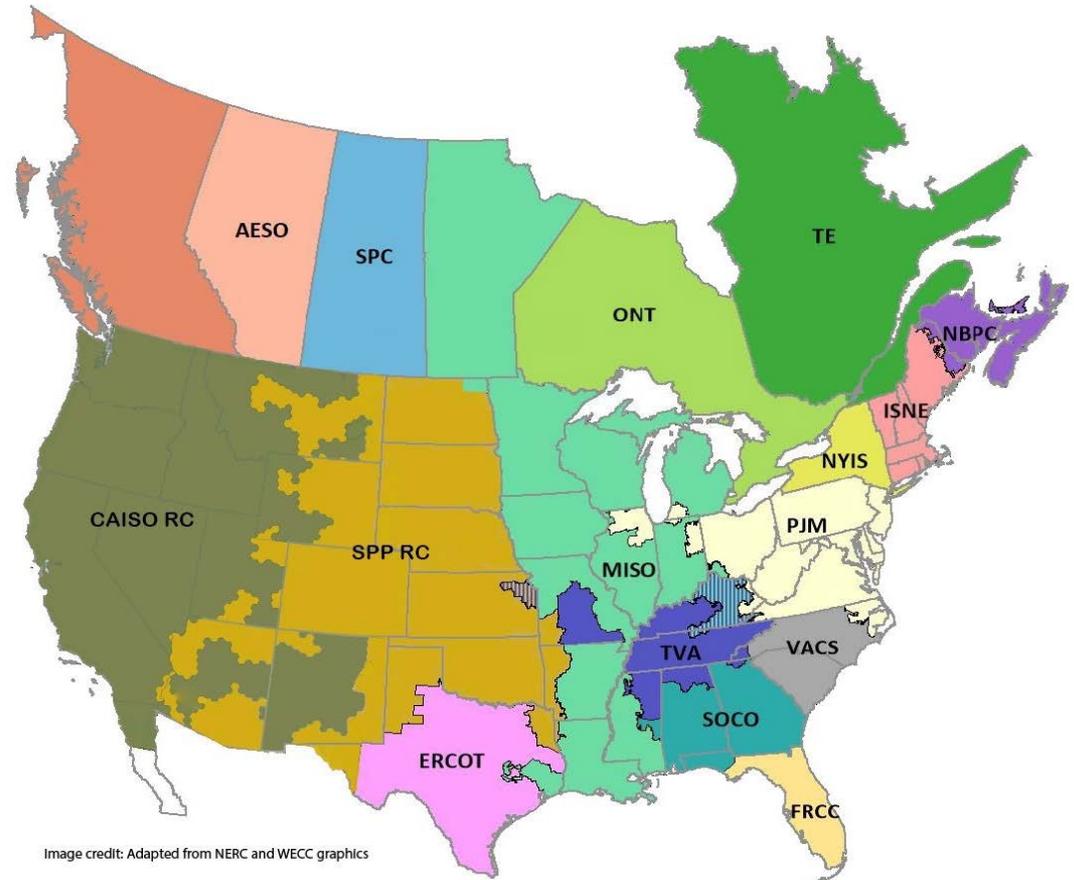
- Respond to customer feedback requesting WAPA to lead organized market discussions
- Mitigate energy imbalance resource constraints
- Facilitate integration of variable resources
- Enable participants who want to optimize their resources

Energy Imbalance Service

- WAPA reviewed CAISO's EIM in 2013
- WAPA received EIS proposal from SPP this week
 - Need to ensure reliable delivery of our hydropower in a changing energy landscape.
 - We are NOT joining a full market; we are looking at participation in an energy imbalance service.
 - Focus on longer-term solutions to meet our needs in a rapidly changing environment.
 - We will engage with stakeholders and document our decisions.
- WAPA's considering CAISO's EIM as well
 - Especially for Sierra Nevada

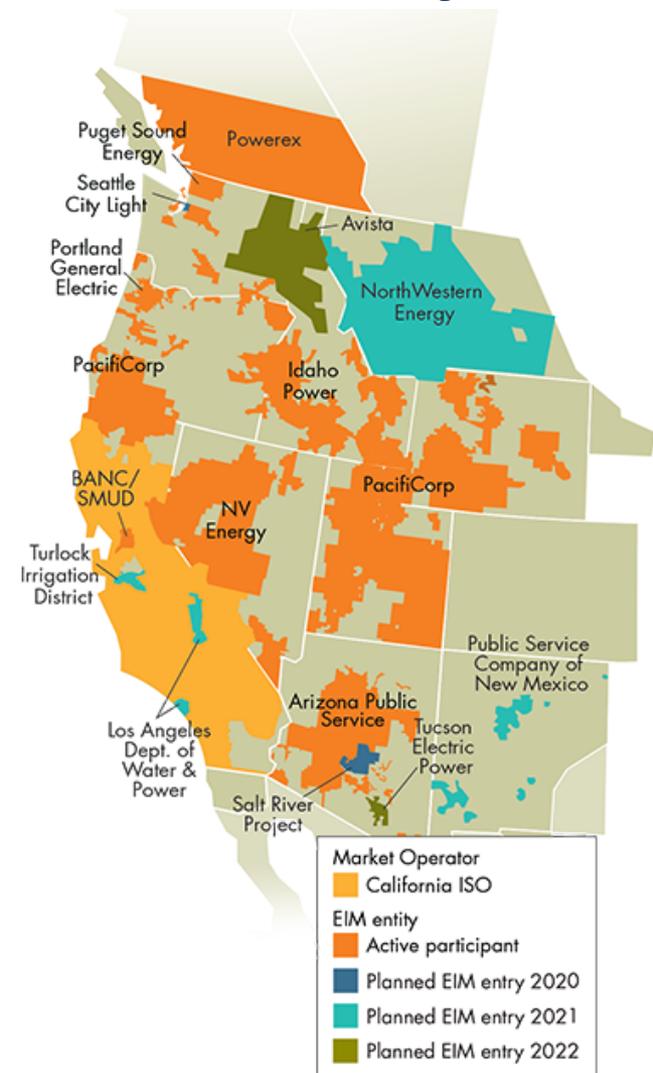
SPP Reliability Coordinator

- PEAK RC terminating RC services
- Parallel RC operations October and November
- SPP RC takes over Dec. 3, 2019
- Enables SPP to readily add market



California ISO EIM (Western EIM)

- BANC became active participant this year
- SN's sub-BA within BANC is evaluating options



SPP Western Energy Imbalance Service (WEIS)

June 17, 2019

SPP proposes Western Energy Imbalance Service Market to bring cost savings and grid modernization to the west

Southwest Power Pool (SPP) has announced to western utilities its proposal for the Western Energy Imbalance Service market (WEIS) it intends to launch in December 2020. The wholesale electricity market will balance generation and load regionally and in real time. SPP's previous energy imbalance market went live in 2007 and provided participants with \$103 million in benefits in its first year of operation.

[READ MORE](#)

SPP WEIS proposal

- Two meetings in spring 2019 on high-level design of WEIS
- SPP proposed market “go-live” Dec. 1, 2020
 - One year after RC “go-live”
- Additional market participants may be added at approximate 6-month intervals after go-live



SPP WEIS implementation cost

- \$9.5M spread over 8 years; integrated into admin fee to all participants
- 4-year commitment
- Load ratio share of entire startup cost part of commitment (including years 5-8)
- Those that commit are obligated for startup costs expended if efforts fails
- If all of WACM, PSCO and WAUW BAs commit
 - CRSP MC admin fee estimated at ~\$200k/year



Possible impacts to BA EI service

- Potential changes to Schedule 4 and 9 of OATT or BA contracts
 - EI ancillary rate changes would involve a *Federal Register* notice process and customer meeting
- Depending on implementation, this could entail a cost change of BA administration

WEIS Follow up Call

- WebEx call on June 25th, 1:00 to 3:00 MDT to discuss initial proposal for WEIS with SPP
- To receive an email invitation for the call, please contact:
 - Don Martin - Supervisor of Customer Relations
 - Phone: 501-614-3309
 - Email: DMartin@spp.org or customerrelations@SPP.org

Feedback desired

Send comments or concerns to:

Tim Vigil

VP of Power Marketing

TVigil@wapa.gov

(970) 252-3005



Glen Canyon



Western
Area Power
Administration

Regional Managers' Update

Steve Johnson, Senior VP and CRSP Manager

Ron Moulton, Senior VP and DSW Regional Manager

June 20, 2019

CRSP Annual Customer Meeting
Salt Lake City, UT



Discussion & Comments



Thank you!



SLCA/IP Repayment Milestones
as of September 30, 2018
units: \$1,000

Project	Replacements		Original Projects and Additions		Main Stem Irrigation Assistance		Participating Projects Irrigation Assistance		Total Unpaid Balance
	Year Paid Off	Currently Unpaid	Year Paid Off	Currently Unpaid	Year Paid Off	Currently Unpaid	Year Paid Off	Currently Unpaid	
Collbran	2003	\$ -	2065	\$ 3,832	2011	\$ -	N/A	N/A	\$ 3,832
CRSP	2028	\$ 127,797	2024	\$ 41,540	2024	\$ 30,928	2045	\$ 934,795	\$ 1,135,060
Dolores	2022	\$ 606	2021	\$ 214	N/A	N/A	N/A	N/A	\$ 819
Rio Grande	2012	\$ -	2052	\$ 4,893	1997	\$ -	N/A	N/A	\$ 4,893
Seedskadee	2015	\$ -	2033	\$ 2,828	N/A	N/A	N/A	N/A	\$ 2,828

FINAL STATUS OF REPAYMENT

COLLBRAN PROJECT

(Dollars in thousands)

	Cumulative 2017 ¹	Adjustment	Annual 2018 ²	Cumulative 2018
Revenue:				
Gross Operating Revenue	70,531.491	221.961 ³	1,312.594	72,066.046
Income transfers (net)	35.916	0.000	0.000	35.916
Total Operating Revenue (A)	70,567.407	221.961	1,312.594	72,101.962
Expenses:				
O & M and other	34,892.040	0.000	1,417.653	36,309.693
Purchase power and other	0.000	0.000	0.000	0.000
Interest				
Federally financed	12,484.319	0.000	116.902	12,601.221
Non-Federally financed	0.000	0.000	0.000	0.000
Total Interest	12,484.319	0.000	116.902	12,601.221
Total Expense (B)	47,376.359	0.000	1,534.555	48,910.914
(Deficit)/Surplus revenue (C)	0.001	221.961	(221.961)	0.001
Investment:				
Federally financed power	22,027.837	0.000	(64.222)	21,963.615
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	5,059.020	0.000	0.000	5,059.020
Total Investment (D)	27,086.857	0.000	(64.222)	27,022.635
Investment repaid:				
Federally financed power	18,132.028	0.000	0.000	18,132.028
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	5,059.020	0.000	0.000	5,059.020
Total Investment repaid (E)	23,191.048	0.000	0.000	23,191.048
Investment unpaid:				
Federally financed power	3,895.809	0.000	(64.222)	3,831.587
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment unpaid (F)	3,895.809	0.000	(64.222)	3,831.587
Fund Balances:				
Colorado River Development (G)	0.000	0.000	0.000	0.000
Working capital (H)	0.000	0.000	0.000	0.000
Percent of investment repaid to date:				
Federal	82.31%			82.55%
Non-Federal	N/A			N/A
Nonpower	0.00%			100.00%

¹ This column ties to the cumulative FY 2017 numbers on page 122 of the FY 2017 Annual Report Statistical Appendix.

² Based on FY 2018 audited financial statements.

³ Revenue transfer from CRSP to Collbran.

FINAL STATUS OF REPAYMENT
COLORADO RIVER STORAGE PROJECT
(Dollars in thousands)

	Cumulative 2017 ¹	Adjustment	Annual 2018 ²	Cumulative 2018
Revenue:				
Gross Operating Revenue	6,141,216.920	(6,944.261) ³	191,803.003	6,326,075.662
Income transfers (net)	(57,257.691)	0.000	6,093.000	(51,164.691)
Total Operating Revenue (A)	6,083,959.229	(6,944.261)	197,896.003	6,274,910.971
Expenses:				
O & M and other	2,107,935.722	(28,334.199) ⁴	129,641.924	2,209,243.447
Purchase power and Wheeling	1,819,058.869	(1,150.000) ⁵	43,413.386	1,861,322.255
Interest				
Federally financed	772,434.373	2,253.604 ⁶	8,191.489	782,879.466
Non-Federally financed	6,950.036	0.000	545.796	7,495.832
Total Interest	779,384.409	2,253.604	8,737.285	790,375.298
Total Expense (B)	4,706,379.000	(27,230.595)	181,792.595	4,860,941.000
(Deficit)/Surplus revenue (C)	0.000	20,286.334	(20,286.336)	(0.002)
Investment:				
Federally financed power	1,331,256.727	0.000	43,258.445	1,374,515.172
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	1,149,887.589	0.000	24,627.477	1,174,515.066
Total Investment (D)	2,481,144.316	0.000	67,885.922	2,549,030.238
Investment repaid: ⁴				
Federally financed power	1,179,770.691	0.000	25,407.723	1,205,178.414
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	197,809.538	0.000	10,982.021	208,791.559
Total Investment repaid (E)	1,377,580.229	0.000	36,389.744	1,413,969.973
Investment unpaid:				
Federally financed power	151,486.036	0.000	17,850.722	169,336.758
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	952,078.051	0.000	13,645.456	965,723.507
Total Investment unpaid (F)	1,103,564.087	0.000	31,496.178	1,135,060.265
Fund Balances:				
Colorado River Development (G)	0.000	0.000	0.000	0.000
Working capital (H)	0.000	0.000	0.000	0.000
Percent of investment repaid to date:				
Federal	88.62%			87.68%
Non-Federal	N/A			N/A
Nonpower	17.20%			17.78%

¹ This column ties to the cumulative FY 2016 numbers on page 122 of the FY 2016 Annual Report Statistical Appendix.

² Based on FY 2017 audited financial statements.

³ Unexpended Revenues from Seedskaadee & additional transfer to Rio Grande

⁴ Gains & Losses for 2017 (CRSP Losses on Disposition of Assets) /Unexpended MOA Revenue

⁵ Purchase Power not reclassified as non reimbursable before closeout

⁶ Resolution of Poncha Substation Interest

FINAL STATUS OF REPAYMENT

DOLORES PROJECT

(Dollars in thousands)

	Cumulative 2017 ¹	Adjustment	Annual 2018 ²	Cumulative 2018
Revenue:				
Gross Operating Revenue	67,784.552	6,726.660 ⁴	26,917.963	101,429.175
Income transfers (net)	7,659.007	0.000	(4,978.000)	2,681.007
Total Operating Revenue (A)	75,443.559	6,726.660	21,939.963	104,110.182
Expenses:				
O & M and other	14,279.912	(1,536.530) ³	3,763.840	16,507.222
Purchase power and other	0.000	0.000	0.000	0.000
Interest				
Federally financed	47,944.533	0.001	1,491.654	49,436.188
Non-Federally financed	0.000	0.000	0.000	0.000
Total Interest	47,944.533	0.001	1,491.654	49,436.188
Total Expense (B)	62,224.445	(1,536.529)	5,255.494	65,943.410
(Deficit)/Surplus revenue (C)	0.000	0.000	0.000	0.000
Investment:				
Federally financed power	38,389.572	0.002	596.678	38,986.252
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment (D)	38,389.572	0.002	596.678	38,986.252
Investment repaid:				
Federally financed power	13,219.114	8,263.189	16,684.469	38,166.772
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment repaid (E)	13,219.114	8,263.189	16,684.469	38,166.772
Investment unpaid:				
Federally financed power	25,170.458	(8,263.187)	(16,087.791)	819.480
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment unpaid (F)	25,170.458	(8,263.187)	(16,087.791)	819.480
Fund Balances:				
Colorado River Development (G)	0.000	0.000	0.000	0.000
Working capital (H)	0.000	0.000	0.000	0.000
Percent of investment repaid to date:				
Federal	34.43%			97.90%
Non-Federal	N/A			N/A
Nonpower	N/A			N/A

¹ This column ties to the cumulative FY 2017 numbers on page 123 of the FY 2017 Annual Report Statistical Appendix.

² Based on the FY 2018 audited financial statements.

³ MOA Reduction

⁴ Revenue transfer from CRSP to Dolores.

FINAL STATUS OF REPAYMENT

Rio Grande Project (Dollars in thousands)

	Cumulative 2017 ¹	Adjustment	Annual 2018 ²	Cumulative 2018
Revenue:				
Gross Operating Revenue	119,135.741	(2,176.370) ⁴	4,949.369	121,908.740
Income transfers (net)	0.026		0.000	0.026
Total Operating Revenue (A)	119,135.767	(2,176.370)	4,949.369	121,908.766
Expenses:				
O & M and other	74,547.898	(46.897) ³	2,797.398	77,298.399
Purchase power and other	4,774.405	0.000	0.000	4,774.405
Interest				
Federally financed	15,055.835	0.000	22.498	15,078.333
Non-Federally financed	0.000	0.000	0.000	0.000
Total Interest	15,055.835	0.000	22.498	15,078.333
Total Expense (B)	94,378.138	(46.897)	2,819.896	97,151.137
(Deficit)/Surplus revenue (C)	0.001	(2,129.473)	2,129.473	0.001
Investment:				
Federally financed power	19,704.532	0.000	4,144.557	23,849.089
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	5,801.911	0.000	0.000	5,801.911
Total Investment (D)	25,506.443	0.000	4,144.557	29,651.000
Investment repaid:				
Federally financed power	18,955.717	0.000	0.000	18,955.717
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	5,801.911	0.000	0.000	5,801.911
Total Investment repaid (E)	24,757.628	0.000	0.000	24,757.628
Investment unpaid:				
Federally financed power	748.815	0.000	4,144.557	4,893.372
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment unpaid (F)	748.815	0.000	4,144.557	4,893.372
Fund Balances:				
Colorado River Development (G)	0.000	0.000	0.000	0.000
Working capital (H)	0.000	0.000	0.000	0.000
Percent of investment repaid to date:				
Federal	96.20%			79.48%
Non-Federal	N/A			N/A
Nonpower	100.00%			100.00%

¹ This column ties to the cumulative FY 2017 numbers on page 123 of the FY 2017 Annual Report Statistical Appendix.

² Based on the FY 2018 audited financial statements.

³ Gains and losses

⁴ Reciprocating entry to FY17 Revenue transfer and FY18 Revenue transfer from CRSP to Rio Grande

FINAL STATUS OF REPAYMENT

SEEDSKADEE PROJECT

(Dollars in thousands)

	Cumulative 2017 ¹	Adjustment	Annual 2018 ²	Cumulative 2018
Revenue:				
Gross Operating Revenue	21,327.198	2,172.010 ³	44.753	23,543.961
Income transfers (net)	15,103.042	0.000	(1,261.000)	13,842.042
Total Operating Revenue (A)	<u>36,430.240</u>	<u>2,172.010</u>	<u>(1,216.247)</u>	<u>37,386.003</u>
Expenses:				
O & M and other	20,288.178	0.000	922.008	21,210.186
Purchase power and other	0.000	0.000	0.000	0.000
Interest				
Federally financed	6,442.949	0.000 ⁴	33.755	6,476.704
Non-Federally financed	0.000	0.000	0.000	0.000
Total Interest	<u>6,442.949</u>	<u>0.000</u>	<u>33.755</u>	<u>6,476.704</u>
Total Expense (B)	<u>26,731.127</u>	<u>0.000</u>	<u>955.763</u>	<u>27,686.890</u>
(Deficit)/Surplus revenue (C)	0.000	2,172.010	(2,172.010)	0.000 ³
Investment:				
Federally financed power	10,429.101	0.000	2,098.159	12,527.260
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment (D)	<u>10,429.101</u>	<u>0.000</u>	<u>2,098.159</u>	<u>12,527.260</u>
Investment repaid:				
Federally financed power	9,699.113	0.000	0.000	9,699.113
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment repaid (E)	<u>9,699.113</u>	<u>0.000</u>	<u>0.000</u>	<u>9,699.113</u>
Investment unpaid:				
Federally financed power	729.988	0.000	2,098.159	2,828.147
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment unpaid (F)	<u>729.988</u>	<u>0.000</u>	<u>2,098.159</u>	<u>2,828.147</u>
Fund Balances:				
Colorado River Development (G)	0.000	0.000	0.000	0.000
Working capital (H)	0.000	0.000	0.000	0.000
Percent of investment repaid to date:				
Federal	93.00%			77.42%
Non-Federal	N/A			N/A
Nonpower	N/A			N/A

¹ This column ties to the cumulative FY 2017 numbers on page 124 of the FY 2017 Annual Report Statistical Appendix.

² Based on the FY 2018 audited financial statements.

³ Revenue transfer from CRSP to Seedskadee

FINAL STATUS OF REPAYMENT

SALT LAKE CITY AREA INTEGRATED PROJECTS

(Dollars in thousands)

FOR REFERENCE ONLY

	Cumulative 2017	Adjustment	Annual 2018	Cumulative 2018
Revenue:				
Gross Operating Revenue	6,419,995.902	0.000	225,027.682	6,645,023.584
Income transfers (net)	(34,459.700)	0.000	(146.000)	(34,605.700)
Total Operating Revenue (A)	6,385,536.202	0.000	224,881.682	6,610,417.884
Expenses:				
O & M and other	2,251,943.750	(29,917.626)	138,542.823	2,360,568.947
Purchase power and Wheeling	1,823,833.274	(1,150.000)	43,413.386	1,866,096.660
Interest				
Federally financed	854,362.009	2,253.605	9,856.298	866,471.912
Non-Federally financed	6,950.036	0.000	545.796	7,495.832
Total Interest	861,312.045	2,253.605	10,402.094	873,967.744
Total Expense (B)	4,937,089.069	(28,814.021)	192,358.303	5,100,633.351
(Deficit)/Surplus revenue (C)	0.002	20,550.832	(20,550.834)	(0.000)
Investment:				
Federally financed power	1,421,807.769	0.002	50,033.617	1,471,841.387
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	1,160,748.520	0.000	24,627.477	1,185,375.997
Total Investment (D)	2,582,556.289	0.002	74,661.094	2,657,217.384
Investment repaid: ⁴				
Federally financed power	1,239,776.663	8,263.189	42,092.192	1,290,132.044
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	208,670.469	0.000	10,982.021	219,652.490
Total Investment repaid (E)	1,448,447.132	8,263.189	53,074.213	1,509,784.534
Investment unpaid:				
Federally financed power	182,031.106	(8,263.187)	7,941.424	181,709.343
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	952,078.051	0.000	13,645.456	965,723.507
Total Investment unpaid (F)	1,134,109.157	(8,263.187)	21,586.881	1,147,432.850
Fund Balances:				
Colorado River Development (G)	0.000	0.000	0.000	0.000
Working capital (H)	0.000	0.000	0.000	0.000
Percent of investment repaid to date:				
Federal	87.20%			87.65%
Non-Federal	N/A			N/A
Nonpower	17.98%			18.53%
				ERROR

FOR REFERENCE ONLY

**Salt Lake City Area Integrated Projects Firm Power, Transmission & Ancillary Services
FY2019 Rate/Charges Summary**

	Provided By	Rate/Charges	Rate Schedules Effective Through (or until superceded)
Firm Power Service			
Firm Sales (SLIP-F10)	SLIP		9/30/2020
	Composite:	29.42 mills/kWh	9/30/2020
	Demand:	5.18 \$/kW-month	9/30/2020
	Energy:	12.19 mills/kWh	9/30/2020
Transmission Service			
Firm Point-to-Point Transmission (SP-PTP-8)	CRSP	\$1.63kW-month	9/30/2020
Network Integration Transmission (SP-NW4)	CRSP	\$1.63kW-month	9/30/2020
Non-Firm Point-to-Point Transmission (SP-NFT7)	CRSP	\$1.63kW-month	9/30/2020
Unreserved Use Charge (SP-UU1)	CRSP	See Rate Schedule	9/30/2020
Ancillary Services (Provided by BA)			
Scheduling, System Control, & Dispatch (L-AS1)	LAP	\$22.55 sch/day	9/30/2020
Reactive Supply & Voltage Control (L-AS2)	LAP	\$0.078 kW-month	9/30/2020
Regulation & Frequency Response (L-AS3)	LAP	\$0.230 kW-month	9/30/2020
		170% (Wind Capacity Multiplier)	
		100% (Solar Capacity Multiplier)	
Energy Imbalance (L-AS4)	LAP	Imbalance between 1.5% and 7.5% is a 10% penalty imbalance greater than 7.5% is a 25% penalty weighted avg real-time hourly WACM purchase/sales pricing	9/30/2020
		Pass Through	
Spinning & Supplemental Reserves (L-AS5)	LAP	(purchase price, energy activation, plus administrative fee)	9/30/2020

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
SALT LAKE CITY AREA INTEGRATED PROJECTS**

**SCHEDULE OF RATES FOR FIRM POWER SERVICE
(Approved Under Rate Order No. WAPA-169)**

Effective:

Rate Schedule SLIP-F10 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Available:

In the area served by the Salt Lake City Area Integrated Projects.

Applicable:

To the wholesale power customer for firm power service supplied through one meter at one point of delivery or as otherwise established by contract.

Character:

Alternating current, 60 hertz, three-phase, delivered and metered at the voltages and points established by contract.

Monthly Rate:

DEMAND CHARGE: \$5.18 per kilowatt of billing demand.

ENERGY CHARGE: 12.19 mills per kilowatthour of use.

COST RECOVERY CHARGE:

To adequately recover and maintain a sufficient balance in the Basin Fund, Western uses a cost recovery mechanism, called a Cost Recovery Charge (CRC). The CRC is a charge on all SHP energy.

This charge will be recalculated before May 1 of each year, and Western will provide notification to the customers. The charge, if needed, will be placed into effect on the first day of the first full-billing period beginning on or after October 1, 2015, through September 30, 2020. If a Shortage Criteria is necessary, the CRC will be re-calculated at that time. (See Shortage Criteria Trigger explanation below.) The CRC will be calculated as follows:

**WESTERN HAS THE DISCRETION TO IMPLEMENT A CRC BASED ON
THE TIERS BELOW.**

TABLE: CRC Tiers

Tier	Criteria, If the BFBB is:	Review
i	Greater than \$150 million, with an expected decrease to below \$75 million	Annually
ii	Less than \$150 million but greater than \$120 million, with an expected 50-percent decrease in the next FY	
iii	Less than \$120 million but greater than \$90 million, with an expected 40-percent decrease in the next FY	
iv	Less than \$90 million but greater than \$60 million, with an expected 25-percent decrease in the next FY	Semi-Annual (May / November)
v	Less than \$60 million but greater than \$40 million with an expected decrease to below \$40 million in the next FY	Monthly

TABLE: SAMPLE CRC CALCULATION

		Description	Example	Formula
STEP ONE	Determine the Net Balance available in the Basin Fund.			
	BFBB	Basin Fund Beginning Balance (\$)	\$ 85,860,265	Financial forecast
	BFTB	Basin Fund Target Balance (\$)	\$ 64,395,199	BFBB – (Tier % *BFBB), or BFTB for Tier i and Tier v ¹
	PAR	Projected Annual Revenue (\$) w/o CRC	\$ 232,780,000	Financial forecast
	PAE	Projected Annual Expenses (\$)	\$ 226,649,066	Financial forecast
	NR	Net Revenue (\$)	\$ 6,130,934	PAR - PAE
	NB	Net Balance (\$)	\$ 91,991,199	BFBB + NR
STEP TWO	Determine the Forecasted Energy Purchase Expenses.			
	EA	SHP Energy Allocation (GWh)	4,952	Customer contracts
	HE	Forecasted Hydro Energy (GWh)	4,924	Hydrologic & generation forecast
	FE	Forecasted Energy Purchase (GWh)	504	EA – HE or anticipated
	FFC	Forecasted Average Energy Price per MWh (\$)	\$ 34.23	From commercially available price indices
	FX	Forecasted Energy Purchase Expense (\$)	\$ 17,262,512	FE * FFC *1000
STEP THREE	Determine the amount of Funds Available for firming energy purchases, and then determine additional revenue to be recovered. The following two formulas will be used to determine FA; the lesser of the two will be used.			
	FA1	Basin Fund Balance Factor (\$)	\$ 17,262,512	If (NB>BFBB,FX,FX -(BFTB - NB))
	FA2	Revenue Factor (\$)	\$ 17,262,512	If (NR>-(BFBB-BFTB), FX, FX+NR +(BFBB-BFTB))
	FA	Funds Available (\$)	\$ 17,262,512	Lesser of FA1 or FA2 (not less than \$0)
	FARR	Additional Revenue to be Recovered (\$)	\$ 0	FX - FA
STEP FOUR	Once the FA for purchases have been determined, the CRC can be calculated, and the WL can be determined.			
	WL	Waiver Level (GWh)	5428	If (EA<HE,EA,HE+(FE*(FA/FX))), but not less than HE
	WLP	Waiver Level Percentage of Full SHP	110%	WL/EA*100
	CRCE	CRC Energy (GWh)	0	EA - WL
	CRCEP	CRC Energy Percentage of Full SHP	0%	CRCE/EA*100
	CRC	Cost Recovery Charge (mills/kWh)	0	FARR/(EA*1,000)

Notes: 1- Use CRC Tiers Table to calculate applicable value

Narrative CRC Example

STEP ONE: Determine the net balance available in the Basin Fund.

BFBB – Western will forecast the Basin Fund Beginning Balance for the next FY.

$$\mathbf{BFBB = \$85,860,265}$$

BFTB – The Basin Fund Target Balance is based on the applicable tiered percentage, or minimum value, of the Basin Fund Beginning Balance derived from the **CRC Tiers** table with a minimum BFTB set at \$40 million.

$$\begin{aligned}\mathbf{BFTB} &= \text{BFBB less 25 percent, see Tier iv (BFBB < 90 million, BFBB > 60 million)} \\ &= \$85,860,265 - \$21,464,066 \\ &= \mathbf{\$64,395,199}\end{aligned}$$

PAR – Projected Annual Revenue is Western’s estimate of revenue for the next FY.

$$\mathbf{PAR= \$232,780,000}$$

PAE – Projected Annual Expenses is Western’s estimate of expenses for the next FY. The PAE includes all expenses plus non-reimbursable expenses, which are capped at \$27 million per year plus an inflation factor. **This limitation is for CRC formula calculation purposes only, and is not a cap on actual non-reimbursable expenses.**

$$\mathbf{PAE = \$226,649,066}$$

NR – Net Revenue equals revenues minus expenses.

$$\begin{aligned}\mathbf{NR} &= \text{PAR-PAE} \\ &= \$232,780,000 - \$226,649,066 \\ &= \mathbf{\$6,130,934}\end{aligned}$$

NB – Net Balance is the Basin Fund Beginning Balance plus net revenue.

$$\begin{aligned}\mathbf{NB} &= \mathbf{BFBB+NR} \\ &= \$85,860,265 + \$6,130,934 \\ &= \mathbf{\$91,991,199}\end{aligned}$$

STEP TWO: Determine the forecasted energy purchases expenses.

EA – The Sustainable Hydro Power Energy Allocation (from Customer contracts). This does not include Project Use customers.

$$\mathbf{EA = 4,952 (GWh)}$$

HE – Western’s forecast of Hydro Energy available during the next FY developed from Reclamation’s April, 24-month study.

$$\mathbf{HE = 4,924 (GWh)}$$

FE – Forecasted Energy purchases are the difference between the Sustainable Hydro Power allocation and the forecasted hydro energy available for the next FY or the anticipated firming purchases for the next year.

$$\begin{aligned}\mathbf{FE} &= \mathbf{EA-HE \text{ or anticipated purchases}} \\ &= \mathbf{504.33 (GWh, anticipated)}\end{aligned}$$

FFC - The forecasted energy price for the next FY per MWh.

$$\mathbf{FFC = \$34.23 \text{ per MWh}}$$

FX – Forecasted energy purchase power expenses based on the current year’s, April, 24-month study, representing an estimate of the total costs of firming purchases for the coming FY.

$$\begin{aligned}
 \mathbf{FX} &= \mathbf{FE*FFC*1000} \\
 &= 504.33 * \$34.23*1000 \\
 &= \mathbf{\$17,263,215.90}
 \end{aligned}$$

STEP THREE: Determine the amount of Funds Available (FA) to expend on firming energy purchases and then determine additional revenue to be recovered (FARR). The following two formulas will be used to determine FA; the lesser of the two will be used. Funds available shall not be less than zero.

A. Basin Fund Balance Factor (FA1)

If the Net Balance is greater than the Basin Fund Target Balance, use the value for forecasted energy purchase power expenses (FX). If the net balance is less than the Basin Fund Target Balance, reduce the value of the Forecasted Energy Purchase Power Expenses by the difference between the Basin Fund Target Balance and the Net Balance.

$$\begin{aligned}
 \mathbf{FA1} &= \text{If } (\mathbf{NB} > \mathbf{BFTB}, \mathbf{FX}, \mathbf{FX} - (\mathbf{BFTB} - \mathbf{NB})) \\
 &= \mathbf{\$91,991,199} \text{ (NB) is greater than } \mathbf{\$64,395,199} \text{ (BFTB) then:} \\
 &= \mathbf{\$17,263,215.90} \text{ (FX)}
 \end{aligned}$$

If the Net Balance is greater than the Basin Fund Target Balance, then **FA1=FX**.

If the Net Balance is less than the Basin Fund Target Balance, then **FA1=FX-(BFTB-NB)**.

B. Basin Fund Revenue Factor (FA2)

The second factor ensures that Western collects sufficient funds to meet the Basin Fund Target Balance so long as the amount needed does not exceed the forecasted purchase expense (FX):

In the situation when there is no projected revenue:

$$\mathbf{FA2} = \text{If } (NR > -(BFBB - BFTB)), \mathbf{FX}, \mathbf{FX} + \mathbf{NR} + (\mathbf{BFBB} - \mathbf{BFTB})$$

$$= \mathbf{\$6,130,934} (\mathbf{NR}) \text{ is greater than } (\mathbf{\$21,464,066}) \text{ then:}$$

$$= \mathbf{\$17,263,215.90} (\mathbf{FX})$$

If the Net Revenue (loss) value does not result in a loss that exceeds the allowable decrease value of the Basin Fund Beginning Balance $(-(BFBB - BFTB))$, then **FA2=FX**.

If the Net Revenue (loss) results in a loss that exceeds the allowable decrease value of the Basin Fund Beginning Balance $(-(BFBB - BFTB))$, then **FX + NR + (BFBB - BFTB)**.

FA – Determine the funds available for purchasing firming energy by using the lesser of FA1 and FA2.

FA1 and FA2 are equal, so:

$$\mathbf{FA} = \mathbf{\$17,263,215.90} (\mathbf{FX})$$

FARR – Calculate the additional revenue to be recovered by subtracting the Funds Available from the forecasted energy purchase power expenses.

$$\mathbf{FARR} = \mathbf{FX} - \mathbf{FA}$$

$$= \mathbf{\$17,263,215.90} (\mathbf{FX}) - \mathbf{\$17,263,215.90} (\mathbf{FA})$$

$$= \mathbf{\$ 0.00}$$

STEP FOUR: Once the funds available for purchases have been determined, the CRC can be calculated and the Waiver Level (WL) can be determined.

A. Cost Recovery Charge: The CRC will be a charge to recover the additional revenue required as calculated in Step 3. The CRC will apply to all customers who choose not to request a

waiver of the CRC, as discussed below. The CRC equals the additional revenue to be recovered divided by the total energy allocation to all customers for the FY.

$$\text{CRC} = \text{FARR} / (\text{EA} * 1,000)$$

$$= \$ 0.00 \text{ charge}$$

B. Waiver Level (WL): Western will establish an energy WL that provides Western the ability to reduce purchase power expenses by scheduling less energy than what is contractually required. Therefore, for those customers who voluntarily schedule no more energy than their proportionate share of the WL, Western will waive the CRC for that year.

After the Funds Available has been determined, the WL will be set at the sum of the energy that can be provided through hydro generation and purchased with Funds Available. The WL will not be less than the forecasted Hydro Energy.

$$\text{WL} = \text{If } (\text{EA} < \text{HE}, \text{EA}, \text{HE} + (\text{FE} * (\text{FA} / \text{FX})))$$

$$= 4,952 \text{ (EA) is not less than } 4,924 \text{ (HE) then:}$$

$$= 4,924 \text{ (HE)} + (504.33 \text{ (FE)} * (\$17,263,215.90 \text{ (FA)} / \$17,263,215.90 \text{ (FX)}))$$

$$= 5,428 \text{ (GWh) is the Waiver Level}$$

If SHP Energy Allocation is less than forecasted Hydro Energy available, then **WL=EA**

If SHP Energy Allocation is greater than the forecasted Hydro Energy available, then

$$\text{WL} = \text{HE} + (\text{FE} * (\text{FA} / \text{FX}))$$

PRIOR YEAR ADJUSTMENT:

The CRC PYA for subsequent years will be determined by comparing the prior year’s estimated firming-energy cost to the prior year’s actual firming-energy cost for the energy provided above the WL. The PYA will result in an increase or decrease to a customer’s firm energy costs over the course of the following year. The table below is the calculation of a PYA.

PYA CALCULATION			
		Description	Formula
STEP ONE	Determine actual expenses and purchases for previous year’s firming. This data will be obtained from Western’s financial statements at the end of the FY.		
	PFX	Prior Year Actual Firming Expenses (\$)	Financial Statements
	PFE	Prior Year Actual Firming Energy (GWh)	Financial Statements
STEP TWO	Determine the actual firming cost for the CRC portion.		
	EAC	Sum of the energy allocations of customers subject to the PYA (GWh)	
	FFC	Forecasted Firming Energy Cost – (\$/MWh)	From CRC Calculation
	AFC	Actual Firming Energy Cost – (\$/MWh)	PFX/PFE
	CRCEP	CRC Energy Percentage	From CRC Calculation
	CRCE	Purchased Energy for the CRC (GWh)	EAC*CRCEP
STEP THREE	Determine Revenue Adjustment (RA) and PYA.		
	RA	Revenue Adjustment (\$)	(AFC-FFC)*CRCE*1,000
	PYA	Prior Year Adjustment (mills/kWh)	(RA/EAC)/1,000

Narrative PYA Calculation

STEP ONE: Determine actual expenses and purchases for previous year’s firming. This data will be obtained from Western’s financial statements at end of FY.

PFX - Prior year actual firming expense

PFE - Prior year actual firming energy

STEP TWO: Determine the actual firming cost for the CRC portion.

EAC - Sum of the energy allocations of customers subject to the PYA

CRCE - The amount of CRC Energy needed

AFC - The Actual Firming Energy Cost are the PFX divided by the PFE

$$AFC = (PFX/PFE)/1,000$$

STEP THREE: Determine Revenue Adjustment (RA) and Prior Year Adjustment (PYA).

RA - The Revenue Adjustment is AFC less FFC times CRCE

$$RA = (AFC-FFC)*CRCE*1,000$$

PYA = The PYA is the RA divided by the EAC for the CRC customers only.

$$PYA = (RA/EAC)/1,000$$

The customer's PYA will be based on its prior year's energy multiplied by the resulting mills/kWh to determine the dollar amount that will be assessed. The customers will be charged or credited for this dollar amount equally in the remaining months of the next year's billing cycle. Western will attempt to complete this calculation by December of each year. Therefore, if the PYA is calculated in December, the charge/credit will be spread over the remaining 9 months of the FY (January through September).

Shortage Criteria Trigger:

In the event that Reclamation's 24-month study projects that Glen Canyon Dam water releases will drop below 8.23 MAF in a water year (October through September), Western will recalculate the CRC to include those lower estimates of hydropower generation and the estimated costs for the additional purchase power necessary. Western, as in the yearly projection for the CRC, will give the customers a 45-day notice to request a waiver of the CRC, if they do not want to have the CRC charge added to their energy bill. This recalculation will remain in effect for the remainder of the current FY.

In the event that hydropower generation returns to an 8.23 MAF or higher during the trigger implementation, a new CRC will be calculated for the next month, and the customers will be notified.

CRC Schedule for customers

Consistent with the procedures at 10 CFR 903, Western will provide its customers with information concerning the anticipated CRC for the upcoming FY in May. The established CRC will be in effect for the entire FY. The table below displays the time frame for determining the amount of purchases needed, developing customers’ load schedules, and making purchases.

CRC Schedule

Task	Respective Dates Under Table CRC Tiers¹		
	i, ii, and iii	iv²	v³
24-Month Study (Forecast to Model Projections)	April 1	April 1 October 1	Monthly Study
CRC Notice to Customers	May 1	May 1 November 1	Monthly
Waiver Request Submitted by Customers	June 15	Within 45 days	Within 30 days
CRC Effective	October 1	August 1 February 1	Updated Monthly

Notes:

¹ This schedule does not apply if the CRC is triggered by the Glen Canyon Dam annual releases dropping below 8.23 MAF.

² If it is determined during the additional reviews, under tier **iv**, that a CRC is necessary, customers will be notified that a CRC will be implemented in 90 days. Western will provide its customers with information concerning the anticipated CRC and give them 45 days to request a waiver or accept the CRC. The established CRC will be in effect for 12 months from the date implemented unless superseded by another CRC.

³ If it is determined during the additional reviews, under tier **v**, that a CRC is necessary, customers will be notified that a CRC will be implemented in 60 days. Western will provide its customers with information concerning the anticipated CRC and give them 30 days to request a waiver or accept the CRC. The established CRC will be in effect for 12 months from the date implemented unless superseded by another CRC.

Billing Demand:

The billing demand will be the greater of:

1. The highest 30-minute integrated demand measured during the month up to, but not more than, the delivery obligation under the power sales contract, or
2. The Contract Rate of Delivery.

Billing Energy:

The billing energy will be the energy measured during the month up to, but not more than, the delivery obligation under the power sales contract.

Adjustment for Waiver:

Customers can choose not to take the full SHP energy supplied as determined in the attached formulas for CRC and will be billed the Energy and Capacity rates listed above, but not the CRC.

Adjustment for Transformer Losses:

If delivery is made at transmission voltage but metered on the low-voltage side of the substation, the meter readings will be increased to compensate for transformer losses as provided in the contract.

Adjustment for Power Factor:

The customer will be required to maintain a power factor at all points of measurement between 95 percent lagging and 95 percent leading.

Adjustment for Western Replacement Power:

Pursuant to the contractor's Firm Electric Service Contract, as amended, Western will bill the contractor for its proportionate share of the costs of Western Replacement Power (WRP) within a given time period. Western will include in the contractor's monthly power bill the cost of the WRP and the incremental administrative costs associated with WRP.

Adjustment for Customer Displacement Power Administrative Charges:

Western will include in the contractor's regular monthly power bill the incremental administrative costs associated with Customer Displacement Power.

Rate Schedule SP-EI4

SCHEDULE 4 to Tariff
(Supersedes Schedule SP-EI3)

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

**ENERGY IMBALANCE SERVICE
(Approved Under Rate Order No. WAPA-169)**

Effective:

Rate Schedule SP-EI4 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

To all CRSP transmission customers receiving this service.

Formula Rates:

Provided through the Western Area Colorado Missouri (WACM) Balancing Authority under Rate Schedule L-AS4, or as superseded.

Rate Schedule SP-FR4

SCHEDULE 3 to Tariff
(Supersedes Schedule SP-FR3)

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

REGULATION AND FREQUENCY RESPONSE SERVICE
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-FR4 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

To all CRSP customers receiving this service.

Formula Rate:

Provided through the Western Area Colorado Missouri (WACM) Balancing Authority under Rate Schedule L-AS3 or as superseded. If the CRSP MC has regulation available for sale from Salt Lake City Area Integrated Projects resources, the rate will be calculated using the formula below.

$$\begin{array}{l} \text{Regulation} \\ \text{Service} \\ \text{Rate} \end{array} = \frac{\text{Total Annual Revenue Requirement for Regulation Service}}{\text{Regulating Plant Capacity}}$$

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

NON-FIRM POINT-TO-POINT TRANSMISSION SERVICE
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-NFT7 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

The transmission customer will compensate the Colorado River Storage Project each month for Non-Firm, Point-to-Point Transmission Service under the applicable Non-Firm, Point-to-Point Transmission Service Agreement and the formula rate described herein.

Formula Rate:

$$\begin{array}{l} \text{Maximum Non-Firm Point-To-Point} \\ \text{Transmission Rate} \end{array} = \begin{array}{l} \text{Firm Point-To-Point} \\ \text{Transmission Rate} \end{array}$$

A recalculated rate will go into effect every October 1 based on the above formula and updated financial and load data. Western will notify the transmission customer annually of the recalculated rate on or before September 1. Discounts may be offered from time-to-time in accordance with Western's Open Access Transmission Tariff.

Billing:

The formula rate above applies to the maximum amount of capacity reserved for periods ranging from 1 hour to 1 month, payable whether used or not. Billing will occur monthly.

Adjustment for Losses:

Power and energy losses incurred in connection with the transmission and delivery of power and energy under this rate schedule shall be supplied by the customer in accordance with the service contract. If losses are not fully provided by a transmission customer, charges for financial compensation may apply.

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

NETWORK INTEGRATION TRANSMISSION SERVICE
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-NW4 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

The transmission customer will compensate the Colorado River Storage Project Management Center each month for Network Integration Transmission Service under the applicable Network Integration Transmission Service Agreement and the formula rate described herein.

Formula Rate:

$$\text{Monthly Charge} = \frac{\text{Annual Transmission Revenue Requirement for Network Integration Transmission Service}}{12} \times \text{Transmission Customer's Load-Ratio Share}$$

A recalculated Annual Transmission Revenue Requirement for Network Integration Transmission Service will go into effect every October 1 based on the above formula and updated financial and operational data. Western will notify the transmission customer annually of the recalculated annual revenue requirement on or before September 1.

Billing:

Billing determinants for the formula rate above will be as specified in the service agreement.

Billing will occur monthly under the formula rate.

Adjustment for Losses:

Losses incurred for service under this rate schedule will be accounted as agreed to by the parties in accordance with the service agreement. If losses are not fully provided by a transmission customer, charges for financial compensation may apply.

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

FIRM POINT-TO-POINT TRANSMISSION SERVICE
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-PTP8 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

The transmission customer will compensate the Colorado River Storage Project each month for Reserved Capacity under the applicable Firm Point-To-Point Transmission Service Agreement and the formula rate described herein.

Formula Rate:

$$\text{Firm Point-To-Point Transmission Rate} = \frac{\text{Annual Transmission Revenue Requirement (\$)}}{\text{Firm Transmission Capacity Reservations} + \text{Network Integration Transmission Service Capacity (kW)}}$$

A recalculated rate will go into effect every October 1 based on the above formula and updated financial and operational data. Western will notify the transmission customer annually of the recalculated rate on or before September 1. Discounts may be offered from time-to-time in accordance with Western's Open Access Transmission Tariff.

Billing:

The formula rate above applies to the maximum amount of capacity reserved for periods ranging from 1 hour to 1 month, payable whether used or not. Billing will occur monthly.

Adjustment for Losses:

Losses incurred for service under this rate schedule will be accounted for as agreed to by the parties in accordance with the service agreement. If losses are not fully provided by a transmission customer, charges for financial compensation may apply.

Rate Schedule SP-RS4

SCHEDULE 2 to Tariff
(Supersedes Schedule SP-RS3)

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

**REACTIVE SUPPLY AND VOLTAGE CONTROL FROM GENERATION AND
OTHER SOURCES SERVICE**
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-RS4 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

To all CRSP transmission customers receiving this service.

Formula Rate:

Provided through the Western Area Colorado Missouri (WACM) Balancing Authority under Rate Schedule L-AS2, or as superseded.

Rate Schedule SP-SD4

SCHEDULE 1 to Tariff
(Supersedes Schedule SP-SD3)

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

SCHEDULING, SYSTEM CONTROL, AND DISPATCH SERVICE
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-SD4 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

Scheduling, System Control, and Dispatch service is required to schedule the movement of power through, out of, within, or into a control area. The transmission customer must purchase this service from the transmission provider. The charges for this service will be included in the CRSP transmission service rates.

Formula Rate:

Provided through the Western Area Colorado Missouri (WACM) Balancing Authority under Rate Schedule L-AS1, or as superseded.

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

**OPERATING RESERVES - SPINNING AND
SUPPLEMENTAL RESERVE SERVICES
(Approved Under Rate Order No. WAPA-169)**

Effective:

Rate Schedule SP-SSR4 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

To all CRSP transmission customers receiving this service.

Character of Service:

Spinning Reserve is defined in Schedule 5 of Western Area Power Administration's Open Access Transmission Tariff.

Supplemental Reserve is defined in Schedule 6 of Western Area Power Administration's Open Access Transmission Tariff.

Formula Rate:

The transmission customer serving loads within the transmission provider's balancing authority must acquire Spinning and Supplemental Reserve services from CRSP, from a third party, or by self-supply.

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

**UNRESERVED USE PENALTIES
(Approved Under Rate Order No. WAPA-169)**

Effective:

Rate Schedule SP-UU1 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

The transmission customer shall compensate the Colorado River Storage Project (CRSP) each month for any unreserved use of the transmission system (Unreserved Use) under the applicable transmission service rates as outlined herein. Unreserved Use occurs when an eligible customer uses transmission service that it has not reserved or a transmission customer uses transmission service in excess of its reserved capacity. Unreserved Use may also include a customer's failure to curtail transmission when requested.

Penalty Rate:

The penalty rate for a transmission customer that engages in Unreserved Use is 200 percent of CRSP's approved transmission service rate for point-to-point (PTP) transmission service assessed as follows:

- (i) The Unreserved Use Penalty for a single hour of Unreserved Use is based upon the rate for daily firm PTP service.
- (ii) The Unreserved Use Penalty for more than one assessment for a given duration (e.g., daily) increases to the next longest duration (e.g., weekly).
- (iii) The Unreserved Use Penalty for multiple instances of Unreserved Use (e.g., more than 1 hour) within a day is based on the rate for daily firm PTP service. The Unreserved Use Penalty charge for multiple instances of Unreserved Use isolated to 1 calendar week would result in a penalty based on the rate for weekly firm PTP service. The Unreserved Use Penalty charge for multiple instances of Unreserved Use during more than 1 week in a calendar month will be based on the rate for monthly firm PTP service.

A transmission customer that exceeds its firm reserved capacity at any point of receipt or point of delivery or an eligible customer that uses transmission service at a point of receipt or point of delivery that it has not reserved is required to pay for all ancillary services identified in Western's Open Access Transmission Tariff that were provided by the CRSP and associated with the Unreserved Use. The customer will pay for ancillary services based on the amount of transmission service it used and did not reserve.

Rate:

The rate for Unreserved Use Penalties is 200 percent of Western's approved rate for firm point-to-point transmission service assessed as described above. Any change to the rate for Unreserved Use Penalties will be listed in a revision to this rate schedule issued under applicable Federal laws and policies and made part of the applicable service agreement.

**Salt Lake City Area Integrated Projects
Annual Revenue Requirements and Firm Power Rates Comparison Table**

Item	Unit	WAPA 169	FY 2019	Change	
		2017 Workplan	2021 Workplan	Amount	Percent
Rate Setting Period:					
Beginning year	FY	2016	2021		
Pinchpoint year	FY	2025	2029		
Number of rate setting years	Years	10	9		
Annual Revenue Requirements:					
<u>Expenses</u>					
Operation and Maintenance:					
Western	1,000	\$52,630	\$60,190	\$7,560	14%
Reclamation	1,000	\$34,535	\$35,420	\$885	3%
Total O&M	1,000	\$87,165	\$95,610	\$8,445	10%
Purchased Power 1/	1,000	\$10,280	\$5,034	(\$5,246)	-51%
Transmission	1,000	\$10,421	\$8,208	(\$2,213)	-21%
Integrated Projects requirements	1,000	\$8,610	\$6,447	(\$2,163)	-25%
Interest	1,000	\$4,706	\$5,069	\$363	8%
Other 2/	1,000	\$14,587	\$10,474	(\$4,113)	-28%
Total Expenses	1,000	\$135,769	\$130,842	(\$4,927)	-4%
<u>Principal payments</u>					
Deficits	1,000	\$0	\$0	\$0	0%
Replacements	1,000	\$30,037	\$39,841	\$9,804	33%
Original Project and Additions	1,000	\$3,937	\$3,922	(\$15)	0%
Irrigation 3/	1,000	\$14,130	\$8,521	(\$5,609)	-40%
Total principal payments	1,000	\$48,104	\$52,284	\$4,180	9%
Total Annual Revenue Requirements	1,000	\$183,873	\$183,126	(\$747)	0%
(Less Offsetting Annual Revenue:)					
Transmission (firm and non-firm)	1,000	\$19,640	\$21,662	\$2,022	10%
Merchant Function 4/	1,000	\$9,918	\$9,487	(\$431)	-4%
Other 5/	1,000	\$5,118	\$4,799	(\$319)	-6%
Total Offsetting Annual Revenue	1,000	\$34,676	\$35,948	\$1,272	4%
Net Annual Revenue Requirements	1,000	\$149,197	\$147,178	(\$2,019)	-1%
Energy Sales 6/	MWH	5,071,804	5,223,885	152,081	3%
Capacity Sales	kW	1,407,920	1,423,900	15,980	1%
		0	0		
Composite Rate	mills/kWh	29.42	28.17	-1.25	-4.2%

1/ FY 2019-23 are projected costs using the April 2019 24-month study.

\$4 million in purchase power will be projected annually for the administrative merchant function activities

2/ Includes the cost of salinity, federal benefits costs, CME interest, reimbursable environmental costs, and MOA costs.

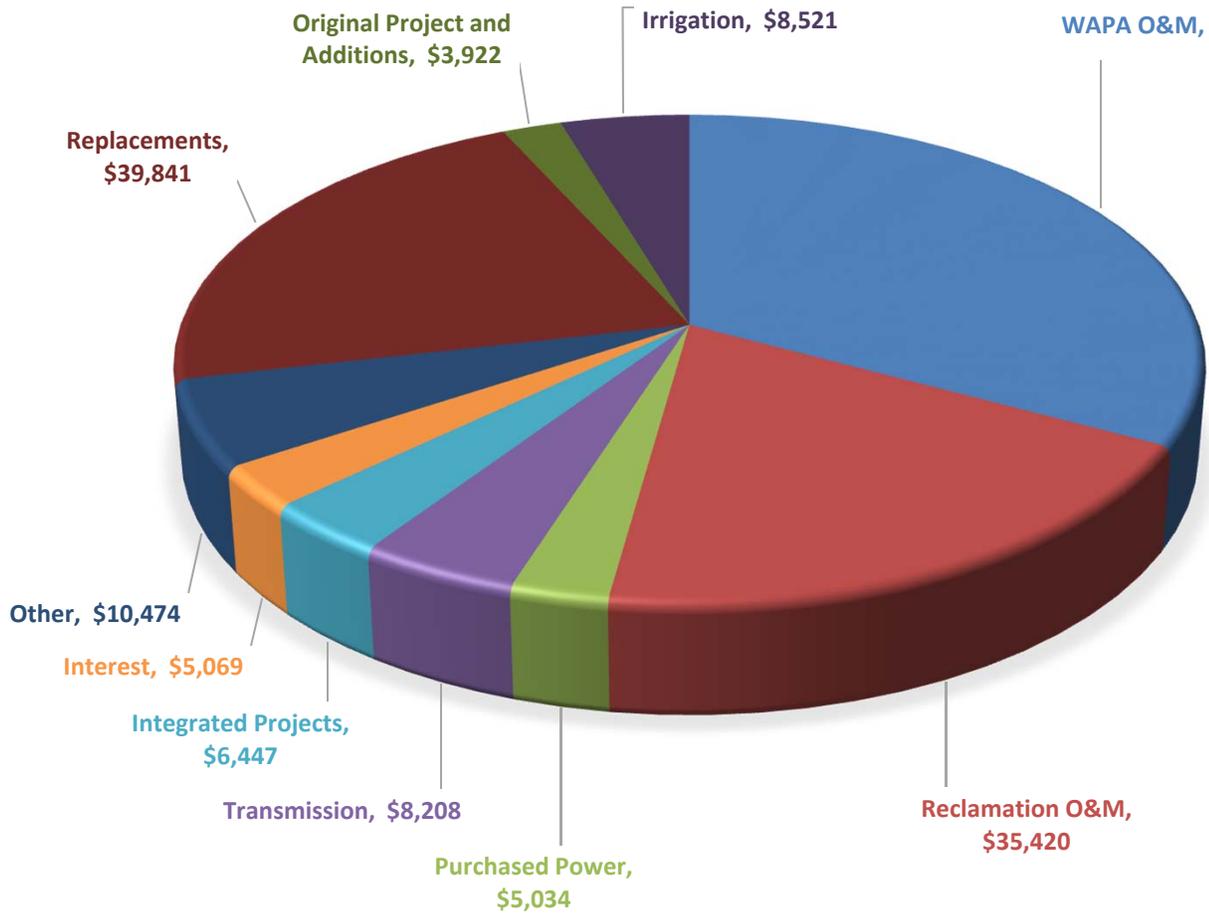
3/ Aid to Irrigation plus Aid to Participating Projects minus Annual Surplus M&I

4/ Includes transaction fees and resale energy.

5/ Other revenues include ancillary services such as spinning reserves, facility use charges, and other misc. service charges.

6/ April 2019 project use estimates from Reclamation. (Average MWH Annual Sales for 2021 - 2029 minus Other Energy Sales)

**REVENUE REQUIREMENTS FOR THE SALT LAKE CITY AREA
INTEGRATED PROJECTS
UNIT: \$1000**



Expense Category	\$1000's
WAPA O&M	\$ 60,190
Reclamation O&M	\$ 35,420
Purchased Power	\$ 5,034
Transmission	\$ 8,208
Integrated Projects	\$ 6,447
Interest	\$ 5,069
Other	\$ 10,474
Replacements	\$ 39,841
Original Project and Additions	\$ 3,922
Irrigation	\$ 8,521
Total Revenue Requirement:	\$ 183,126

COLORADO RIVER STORAGE PROJECT
AVERAGE O&M BUDGET PROJECTIONS COMPARISONS

FY 2019 PRS (FY 2021 Work Plans) v. WAPA 169 (FY 2017 Work Plans)

ITEM	TYPE	WAPA 169 2016-2025	FY2021 Workplans 2020-2029	Average per year Increase	Percent Increase
WESTERN *					
DESERT SOUTHWEST					
GWA	O&M	\$1,162,134	\$0	(\$1,162,134)	-100%
O&M TRANSMISSION LINES	O&M	\$1,914,732	\$1,207,172	(\$707,560)	-37%
O&M SUBSTATIONS	O&M	\$4,857,405	\$7,138,938	\$2,281,533	47%
OTHER EXP (except int)	O&M	\$457,698	\$671,142	\$213,444	47%
DEPRECIATION	Other	\$80,417	\$137,626	\$57,209	
RETIRE, REPLACE, ADDITIONS	Other	\$2,826,000	\$3,445,942	\$619,942	
POWER BILLING	O&M	\$140,198	\$21,198	(\$119,000)	-85%
C&RE	O&M	\$4,282	\$1,147	(\$3,135)	-73%
POWER MARKETING	O&M	\$14,281	\$6,751	(\$7,530)	-53%
SYSTEM OPERATION & LOAD DISP	O&M	\$410,863	\$383,466	(\$27,396)	-7%
DSW TOTAL BUDGET		\$11,868,009	\$13,013,382	\$1,145,373	
DSW PRS O&M		\$8,961,593	\$9,429,814	\$468,222	5%
ROCKY MOUNTAIN					
GWA	O&M	\$3,098,324	\$0	(\$3,098,324)	-100%
O&M TRANSMISSION LINES	O&M	\$5,687,098	\$7,814,181	\$2,127,083	37%
O&M SUBSTATIONS	O&M	\$13,270,951	\$16,046,609	\$2,775,658	21%
OTHER EXP (except int)	O&M	\$1,821,081	\$1,804,447	(\$16,633)	-1%
DEPRECIATION	Other	\$266,182	\$732,540	\$466,358	
RETIRE, REPLACE, ADDITIONS	Other	\$4,802,045	\$7,094,410	\$2,292,365	
PURCHASED POWER & WHEELING	Other	\$0	\$0	\$0	
POWER BILLING	O&M	\$148,162	\$210,073	\$61,910	42%
C&RE	O&M	\$5,324	\$0	(\$5,324)	-100%
POWER MARKETING	O&M	\$1,029,001	\$1,339,356	\$310,355	30%
SYSTEM OPERATION & LOAD DISP	O&M	\$7,855,834	\$9,511,248	\$1,655,414	21%
RM TOTAL BUDGET		\$37,984,001	\$44,552,864	\$6,568,862	
RM PRS O&M		\$32,915,775	\$36,725,914	\$3,810,139	12%
CRSP MC					
GWA	O&M	\$1,559,444	\$0	(\$1,559,444)	-100%
O&M TRANSMISSION LINES	O&M	\$0	\$0	\$0	0%
O&M SUBSTATIONS	O&M	\$0	\$0	\$0	0%
OTHER EXP (except int)	O&M	\$46,363	\$39,200	(\$7,163)	-15%
INTEREST	Other	\$4,552,693	\$1,392,853	(\$3,159,840)	
PURCHASED POWER & WHEELING	Other	\$92,816,206	\$112,740,826	\$19,924,621	
RETIRE, REPLACE, ADDITIONS	Other	\$13,600	\$959,030	\$945,430	
DEPRECIATION	Other	\$82,935	\$337,771	\$254,835	
POWER BILLING	O&M	\$0	\$0	\$0	
C&RE	O&M	\$199,112	\$127,893	(\$71,218)	-36%
POWER MARKETING	O&M	\$9,089,249	\$12,742,452	\$3,653,203	40%
Grand Canyon Protection Act (Non-reimb)	Environ	\$0	\$0	\$0	
Recovery Implementation Program (Non-reimb)	Environ	\$1,869,719	\$3,851,758	\$1,982,039	
SYSTEM OPERATION & LOAD DISP	O&M	\$0	\$0	\$0	\$0
STATE OF COLORADO (RIP) LOAN	O&M	(\$886,000)	\$0	\$886,000	\$0
CRSP MC TOTAL BUDGET		\$109,343,321	\$132,191,784	\$22,848,463	
CRSP MC PRS O&M		\$10,008,167	\$12,909,546	\$2,901,379	29%

ITEM	TYPE	WAPA 169 2016-2025	FY2021 Workplans 2020-2029	Average per year Increase	Percent Increase
TOTAL WESTERN					
GWA	O&M	\$5,819,902	\$0	(\$5,819,902)	-100%
O&M TRANSMISSION LINES	O&M	\$7,601,830	\$9,021,353	\$1,419,523	19%
O&M SUBSTATIONS	O&M	\$18,128,356	\$23,185,547	\$5,057,191	28%
OTHER EXPENSES	O&M	\$2,325,142	\$2,514,790	\$189,648	8%
INTEREST	Other	\$4,552,693	\$1,392,853	(\$3,159,840)	
PURCHASED POWER & WHEELING	Other	\$92,816,206	\$112,740,826	\$19,924,621	
Depreciation	Other	\$429,534	\$1,207,937	\$778,403	
RETIRE, REPLACE, ADDITIONS	Other	\$7,641,645	\$11,499,381	\$3,857,736	
POWER BILLING	O&M	\$288,360	\$231,270	(\$57,090)	-20%
C&RE	O&M	\$208,717	\$129,040	(\$79,677)	-38%
POWER MARKETING	O&M	\$10,132,531	\$14,088,559	\$3,956,028	39%
GCPA(Non-reimb)	Environ	\$0	\$0	\$0	
RIP (Non-reimb)	Environ	\$1,869,719	\$3,851,758	\$1,982,039	
SYSTEM OPERATION & LOAD DISP	O&M	\$8,266,697	\$9,894,714	\$302,825	4%
STATE OF COLORADO (RIP) LOAN	O&M	(\$886,000)	\$0	\$886,000	0%
Western Budget		\$159,195,332	\$189,758,030	\$30,562,698	
WESTERN TOTAL O&M		\$51,885,535	\$59,065,274	\$7,179,739	14%
CME DEPRECIATION		\$745,000	\$559,000	(\$186,000)	-25%
WESTERN PRS O&M		\$52,630,535	\$59,624,274	\$6,993,739	13%
BUREAU OF RECLAMATION **					
Water and Energy Mgmt and Dvlp	0.00%	\$1,987,771	\$1,951,420	(\$36,351)	
Land Mgmt and Dvlp	0.00%	\$659,035	\$673,634	\$14,599	
Fish and Wildlife Mgmt and Dvlp:		\$0	\$0		
GC Adaptive Mgmt Prg	0.00%	\$12,115,234	\$12,856,547	\$741,313	
Endangered fish (RIP) base funding	0.00%	\$9,205,899	\$9,769,217	\$563,318	
Endangered fish (RIP) capital	0.00%	\$0	\$0	\$0	
Flaming Gorge studies	90.00%	\$0	\$0	\$0	
Glen Canyon Studies	0.00%	\$0	\$0	\$0	
Navajo studies	83.00%	\$0	\$0	\$0	0%
Aspinall studies	97.00%	\$0	\$0	\$0	0%
Subtotal Bureau Budget		\$23,967,939	\$25,250,818	\$1,282,879	5%
Total PRS O&M		\$0	\$0	\$0	#DIV/0!
Water Operations:					
Subtotal Bureau Budget	0.00%	\$7,864,683	\$10,731,956	\$2,867,273	36%
Total PRS O&M		\$6,168,097	\$8,996,063	\$2,827,966	46%
Power Operations:					
Subtotal Bureau Budget		\$23,201,415	\$21,057,254	(\$2,144,162)	-9%
Total PRS O&M		\$23,201,415	\$21,057,254	(\$2,144,162)	-9%
Miscellaneous:	100.00%	\$736,588	\$860,658	\$124,069	17%
Security:	70.00%	\$2,775,699	\$3,009,830	\$234,132	8%
Extraordinary Maintenance Expensed:					
Navajo	83.00%	\$132,667	\$57,500	(\$75,167)	-57%
Blue Mesa	97.00%	\$147,764	\$100,000	(\$47,764)	-32%
Morrow Point	100.00%	\$128,917	\$82,500	(\$46,417)	-36%
Crystal	100.00%	\$150,083	\$26,250	(\$123,833)	-83%
Flaming Gorge	90.00%	\$132,667	\$12,500	(\$120,167)	-91%
Glen Canyon	100.00%	\$1,222,917	\$1,225,000	\$2,083	0%
Denver	97.00%	\$0	\$0	\$0	0%
Subtotal Bureau Budget		\$1,915,014	\$1,503,750	(\$411,264)	-21%
Total PRS O&M		\$1,874,761	\$1,489,725	(\$385,036)	-21%

ITEM	TYPE	WAPA 169 2016-2025	FY2021 Workplans 2020-2029	Average per year Increase	Percent Increase
Replacements Expensed:		This section expanded in FY15			
Blue Mesa	97.00%	\$0	\$0	\$0	0%
Morrow Point	100.00%	\$82,500	\$0	\$0	0%
Crystal	100.00%	\$0	\$0	\$0	0%
Curecanti	100.00%	\$27,500	\$15,000	\$0	0%
Flaming Gorge	100.00%	\$114,583	\$0	\$0	0%
Glen Canyon	62.20%	\$28,500	\$150,000	\$0	0%
Denver	50.00%	\$0	\$0	\$0	0%
Subtotal Bureau Budget		\$253,083	\$165,000	(\$88,083)	-35%
Total PRS O&M		\$238,875	\$108,300	(\$130,575)	-55%
Total Reclamation Budget		\$61,425,825	\$62,579,266	\$1,153,441	2%
Reclamation CME DEPRECIATION		\$0	\$0	\$0	0%
Reclamation Reimbursable by power		\$34,535,277	\$35,149,970	\$614,693	2%
Total PRS O&M		\$87,165,811	\$94,774,244	\$7,608,432	9%
Environmental Costs:					
Western					
GCPA (Non-reimb)	Environ	\$0	\$0	\$0	
RIP (Non-reimb)	Environ	\$1,869,719	\$3,851,758	\$1,982,039	
USBR					
Fish and Wildlife Mgmt and Dvlp:					
Nonreimbursable					
GC Adaptive Mtmt Prg	0.00%	\$12,115,234	\$12,856,547	\$741,313	
Endangered fish (RIP) base funding	0.00%	\$9,205,899	\$9,769,217	\$563,318	
Glen Canyon Studies	0.00%	\$0	\$0	\$0	
Total non-reimbursable		\$23,190,853	\$26,477,522	\$1,304,631	
Reimbursable					
Flaming Gorge studies	100.00%	\$0	\$0	\$0	0%
Navajo studies	100.00%	\$0	\$0	\$0	0%
Aspinall studies	100.00%	\$0	\$0	\$0	0%
Endangered fish (RIP) capital	0.00%	\$0	\$0	\$0	0%
Total reimbursable		\$0	\$0	\$0	0%

**COLORADO RIVER STORAGE PROJECT
O&M BUDGET PROJECTIONS
FY 2021 Work Plan**

* Western budget data from FY 2021 Work Plan dated 3/27/2019
** Bureau budget data from FY 2021 Preliminary Work Program Schedules dated 4/25/2019

ITEM	TYPE	Current Year					For Future 5 Year Projection	10 Year Annual Average	9 Year Annual Average	
		2019	2020	2021	2022	2023				2024
WESTERN *										
DESERT SOUTHWEST										
GWA	O&M	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0	\$0	\$0
O&M TRANSMISSION LINES	O&M	\$ 1,438,398	\$ 942,452	\$ 1,180,492	\$ 1,204,102	\$ 1,228,184	\$ 1,252,748	\$1,252,748	\$1,207,172	\$1,236,585
O&M SUBSTATIONS	O&M	\$ 6,044,633	\$ 6,212,319	\$ 6,913,396	\$ 7,051,664	\$ 7,192,697	\$ 7,336,551	\$7,336,551	\$7,138,938	\$7,241,896
OTHER EXPENSES	O&M	\$ 227,410	\$ 259,704	\$ 684,340	\$ 698,027	\$ 711,987	\$ 726,227	\$726,227	\$671,142	\$716,857
DEPRECIATION	Excluded	\$ 187,198	\$ 131,982	\$ 131,982	\$ 134,622	\$ 137,314	\$ 140,060	\$140,060	\$137,626	\$138,253
RETIRE, REPLACE, ADDITIONS	Excluded	\$ 7,980,000	\$ 6,570,000	\$ 7,253,416	\$ 5,912,000	\$ 2,982,000	\$ 1,957,000	\$1,957,000	\$3,445,942	\$3,098,824
POWER BILLING	O&M	\$ 11,320	\$ 22,973	\$ 20,048	\$ 20,449	\$ 20,858	\$ 21,275	\$21,275	\$21,198	\$21,001
C&RE	O&M	\$ 2,763	\$ 1,100	\$ 1,100	\$ 1,122	\$ 1,144	\$ 1,167	\$1,167	\$1,147	\$1,152
POWER MARKETING	O&M	\$ -	\$ -	\$ 7,161	\$ 7,304	\$ 7,450	\$ 7,599	\$7,599	\$6,751	\$7,501
SYSTEM OPERATION & LOAD DISP	O&M	\$ 385,374	\$ 247,000	\$ 380,547	\$ 388,158	\$ 395,921	\$ 403,840	\$403,840	\$383,466	\$398,629
DSW TOTAL BUDGET		\$16,277,096	\$14,387,530	\$16,572,482	\$15,417,447	\$12,677,556	\$11,846,467	\$11,846,467	\$13,013,382	\$12,860,699
DSW PRS O&M		\$8,109,898	\$7,685,548	\$9,187,084	\$9,370,826	\$9,558,242	\$9,749,407	\$9,749,407	\$9,429,814	\$9,623,622
ROCKY MOUNTAIN										
GWA	O&M	\$ (45,262)	\$ -	\$ -	\$ -	\$ -	\$ -	\$0	\$0	\$0
O&M TRANSMISSION LINES	O&M	\$ 6,707,191	\$ 7,035,174	\$ 7,542,352	\$ 7,693,199	\$ 7,847,063	\$ 8,004,004	\$8,004,004	\$7,814,181	\$7,900,738
O&M SUBSTATIONS	O&M	\$ 14,337,433	\$ 14,616,976	\$ 15,470,360	\$ 15,779,767	\$ 16,095,363	\$ 16,417,270	\$16,417,270	\$16,046,609	\$16,205,457
OTHER EXPENSES	O&M	\$ 1,527,802	\$ 1,636,736	\$ 1,740,385	\$ 1,775,193	\$ 1,810,697	\$ 1,846,911	\$1,846,911	\$1,804,447	\$1,823,082
DEPRECIATION	Excluded	\$ 602,400	\$ 602,400	\$ 747,000	\$ 747,000	\$ 747,000	\$ 747,000	\$747,000	\$732,540	\$747,000
RETIRE, REPLACE, ADDITIONS	Excluded	\$ 6,633,872	\$ 7,854,338	\$ 9,544,760	\$ 8,025,000	\$ 6,184,000	\$ 6,556,000	\$6,556,000	\$7,094,410	\$7,009,973
PURCHASED POWER & WHEELING	Excluded	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0	\$0	\$0
POWER BILLING	O&M	\$ 208,338	\$ 202,679	\$ 201,328	\$ 205,354	\$ 209,461	\$ 213,651	\$213,651	\$210,073	\$210,894
C&RE	O&M	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0	\$0	\$0
POWER MARKETING	O&M	\$ 755,637	\$ 780,618	\$ 1,337,867	\$ 1,364,625	\$ 1,391,917	\$ 1,419,755	\$1,419,755	\$1,339,356	\$1,401,438
SYSTEM OPERATION & LOAD DISP	O&M	\$ 8,680,553	\$ 8,793,181	\$ 9,155,974	\$ 9,339,093	\$ 9,525,875	\$ 9,716,393	\$9,716,393	\$9,511,248	\$9,591,033
RM TOTAL BUDGET		\$39,407,964	\$41,522,102	\$45,740,026	\$44,929,231	\$43,811,376	\$44,920,983	\$44,920,983	\$44,552,864	\$44,889,615
RM PRS O&M		\$32,171,692	\$33,065,364	\$35,448,266	\$36,157,231	\$36,880,376	\$37,617,983	\$37,617,983	\$36,725,914	\$37,132,642
CRSP MC										
GWA	O&M	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0	\$0	\$0
O&M TRANSMISSION LINES	O&M	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0	\$0	\$0
O&M SUBSTATIONS	O&M	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0	\$0	\$0
OTHER EXPENSES	O&M	\$ 49,960	\$ 35,580	\$ 35,926	\$ 36,445	\$ 58,974	\$ 37,513	\$37,513	\$39,200	\$39,603
INTEREST	Excluded	\$ 5,000,000	\$ 5,500,000	\$ 3,355,698	\$ 2,092,527	\$ 965,119	\$ 335,865	\$335,865	\$1,392,853	\$936,504
PURCHASED POWER & WHEELING	Excluded	\$ 95,940,000	\$ 86,075,454	\$ 106,210,644	\$ 111,312,911	\$ 110,866,640	\$ 118,823,769	\$118,823,769	\$112,740,826	\$115,703,645
RETIRE, REPLACE, ADDITIONS	Excluded	\$ 1,500,000	\$ -	\$ 263,130	\$ 277,170	\$ 50,000	\$ 1,500,000	\$1,500,000	\$959,030	\$1,065,589
Depreciation	Excluded	\$ 241,565	\$ 241,721	\$ 329,455	\$ 366,044	\$ 342,765	\$ 349,620	\$349,620	\$337,771	\$348,443
POWER BILLING	O&M	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0	\$0	\$0
C&RE	O&M	\$ 103,641	\$ 125,414	\$ 122,355	\$ 124,802	\$ 127,298	\$ 129,844	\$129,844	\$127,893	\$128,169
POWER MARKETING	O&M	\$ 11,197,959	\$ 13,064,543	\$ 12,119,448	\$ 12,337,884	\$ 12,584,642	\$ 12,886,334	\$12,886,334	\$12,742,452	\$12,706,664
GCPA(Non-reimb)	Environ	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0	\$0	\$0
RIP (Non-reimb)	Environ	\$ 4,320,177	\$ 3,584,098	\$ 3,774,365	\$ 3,818,833	\$ 3,865,209	\$ 3,912,513	\$3,912,513	\$3,851,758	\$3,881,498
SYSTEM OPERATION & LOAD DISP	O&M	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0	\$0	\$0
STATE OF COLORADO LOAN	O&M	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0	\$0	\$0
MC TOTAL BUDGET		\$118,353,302	\$108,626,810	\$126,211,021	\$130,366,616	\$128,860,647	\$137,975,458	\$137,975,458	\$132,191,784	\$134,810,115
MC PRS O&M		\$11,351,560	\$13,225,537	\$12,277,729	\$12,499,131	\$12,770,914	\$13,053,691	\$13,053,691	\$12,909,546	\$12,874,436

ITEM	TYPE	Current Year	1	2	3	4	5	For Future	10 Year	9 Year
		2019	2020	2021	2022	2023	2024	5 Year Projection 2025-2029	Annual Average 2020-2029	Annual Average 2021-2029
TOTAL WESTERN										
GWA	O&M	(\$45,262)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
O&M TRANSMISSION LINES	O&M	\$8,145,589	\$7,977,626	\$8,722,844	\$8,897,301	\$9,075,247	\$9,256,752	\$9,256,752	\$9,021,353	\$9,137,323
O&M SUBSTATIONS	O&M	\$20,382,066	\$20,829,295	\$22,383,756	\$22,831,431	\$23,288,060	\$23,753,821	\$23,753,821	\$23,185,547	\$23,447,353
OTHER EXPENSES	O&M	\$1,805,172	\$1,932,020	\$2,460,651	\$2,509,665	\$2,581,658	\$2,610,651	\$2,610,651	\$2,514,790	\$2,579,542
INTEREST	Exclude	\$5,000,000	\$5,500,000	\$3,355,698	\$2,092,527	\$965,119	\$335,865	\$335,865	\$1,392,853	\$936,504
PURCHASED POWER & WHEELING	Exclude	\$95,940,000	\$86,075,454	\$106,210,644	\$111,312,911	\$110,866,640	\$118,823,769	\$118,823,769	\$112,740,826	\$115,703,645
Depreciation	Exclude	\$1,031,163	\$976,103	\$1,208,437	\$1,247,666	\$1,227,079	\$1,236,680	\$1,236,680	\$1,207,937	\$1,233,696
RETIRE, REPLACE, ADDITIONS	Exclude	\$16,113,872	\$14,424,338	\$17,061,306	\$14,214,170	\$9,216,000	\$10,013,000	\$10,013,000	\$11,499,381	\$11,174,386
POWER BILLING	O&M	\$219,658	\$225,652	\$221,376	\$225,803	\$230,319	\$234,926	\$234,926	\$231,270	\$231,895
C&RE	O&M	\$106,404	\$126,514	\$123,455	\$125,924	\$128,442	\$131,011	\$131,011	\$129,040	\$129,321
POWER MARKETING	O&M	\$11,953,596	\$13,845,161	\$13,464,476	\$13,709,813	\$13,984,009	\$14,313,689	\$14,313,689	\$14,088,559	\$14,115,603
GCPA(Non-reimb)	Environ	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
RIP (Non-reimb)	Environ	\$4,320,177	\$3,584,098	\$3,774,365	\$3,818,833	\$3,865,209	\$3,912,513	\$3,912,513	\$3,851,758	\$3,881,498
SYSTEM OPERATION & LOAD DISP	O&M	\$9,065,927	\$9,040,181	\$9,536,521	\$9,727,251	\$9,921,796	\$10,120,232	\$10,120,232	\$9,894,714	\$9,989,662
STATE OF COLORADO LOAN	O&M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Western Budget		\$174,038,362	\$164,536,442	\$188,523,529	\$190,713,295	\$185,349,579	\$194,742,909	\$194,742,909	\$189,758,030	\$192,560,428
PRS O&M		\$51,633,150	\$53,976,449	\$56,913,079	\$58,027,188	\$59,209,532	\$60,421,081	\$60,421,081	\$59,065,274	\$59,630,699
CME Depreciation		\$559,000	\$559,000	\$559,000						
Total WESTERN PRS O&M		\$52,192,150	\$54,535,449	\$57,472,079	\$58,586,188	\$59,768,532	\$60,980,081	\$60,980,081	\$59,624,274	\$60,189,699

ITEM	TYPE	Current Year	1	2	3	4	5	For Future	10 Year	9 Year
		2019	2020	2021	2022	2023	2024	5 Year Projection 2025-2029	Annual Average 2020-2029	Annual Average 2021-2029
BUREAU OF RECLAMATION **										
Water and Egy Mgmt and Dvlp	0.00%	2,049,000	1,968,000	1,695,000	1,981,400	1,981,400	1,981,400	\$1,981,400	\$1,951,420	\$1,949,578
Land Mgmt and Dvlp	0.00%	598,000	615,940	634,418	653,451	673,054	693,246	\$693,246	\$673,634	\$680,044
Fish and WL Mgmt and Dvlp:								\$0	\$0	\$0
GC Adaptive Mtmt Prg	0.00%	11,413,047	11,755,438	12,108,102	12,471,345	12,845,485	13,230,849	\$13,230,849	\$12,856,547	\$12,978,892
Endangered fish (RIP) base funding	0.00%	8,672,355	8,932,526	9,200,501	9,476,516	9,760,812	10,053,636	\$10,053,636	\$9,769,217	\$9,862,183
Endangered fish (RIP) capital	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Flaming Gorge studies	90.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Glen Canyon Studies	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Navajo studies	83.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Aspinall studies	97.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Budget		\$22,732,402	\$23,271,904	\$23,638,021	\$24,582,712	\$25,260,751	\$25,959,132	\$25,959,132	\$25,250,818	\$25,470,697
Total PRS O&M		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water Operations:										
Navajo	83.00%	1,774,000	1,827,220	1,882,037	1,938,498	1,996,653	2,056,552	\$2,056,552	\$1,998,372	\$2,017,389
Blue Mesa	97.00%	1,521,000	1,566,630	1,613,629	1,662,038	1,711,899	1,763,256	\$1,763,256	\$1,713,373	\$1,729,678
Crystal	100.00%	790,000	813,700	838,111	863,254	889,152	915,827	\$915,827	\$889,918	\$898,386
Morrow Point	100.00%	924,000	951,720	980,272	1,009,680	1,039,970	1,071,169	\$1,071,169	\$1,040,866	\$1,050,771
Flaming Gorge	90.00%	1,849,000	1,904,470	1,961,604	2,020,452	2,081,066	2,143,498	\$2,143,498	\$2,082,858	\$2,102,679
Glen Canyon	62.20%	2,669,000	2,749,070	2,831,542	2,916,488	3,003,983	3,094,103	\$3,094,103	\$3,006,570	\$3,035,181
Subtotal Budget		\$9,527,000	\$9,812,810	\$10,107,194	\$10,410,410	\$10,722,722	\$11,044,404	\$11,044,404	\$10,731,956	\$10,834,083
Total PRS O&M (88%)		\$7,986,008	\$8,225,588	\$8,472,356	\$8,726,527	\$8,988,322	\$9,257,972	\$9,257,972	\$8,996,063	\$9,081,671
Power Operations:										
Subtotal Budget		18,693,000	19,253,790	19,831,404	20,426,346	21,039,136	21,670,310	\$21,670,310	\$21,057,254	\$21,257,639
Total PRS O&M		\$18,693,000	\$19,253,790	\$19,831,404	\$20,426,346	\$21,039,136	\$21,670,310	\$21,670,310	\$21,057,254	\$21,257,639
Miscellaneous:										
	100.00%	739,000	757,216	813,636	838,045	863,187	889,082	\$889,082	\$860,658	\$872,151
Security:										
Reimbursable	70.00%	3,871,000	3,983,080	4,053,158	4,170,703	4,291,774	4,416,477	\$4,416,477	\$4,299,758	\$4,334,944
		\$2,709,700	\$2,788,156	\$2,837,211	\$2,919,492	\$3,004,242	\$3,091,534	\$3,091,534	\$3,009,830	\$3,034,461
Additional OM&R (MOA Revenue)	0.00%	\$11,500,000	\$11,500,000	\$11,500,000	\$11,500,000	\$11,500,000	\$11,500,000	\$11,500,000	\$11,500,000	\$11,500,000
Total PRS O&M (Already in as Misc)	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Extraordinary Maintenance:										
Expensed										
Navajo	83.00%	115,000	80,000	150,000	0	0	57,500	\$57,500	\$57,500	\$55,000
Blue Mesa	97.00%	0	400,000	0	0	0	100,000	\$100,000	\$100,000	\$66,667
Morrow Point	100.00%	30,000	65,000	0	0	265,000	82,500	\$82,500	\$82,500	\$84,444
Crystal	100.00%	1,565,000	0	40,000	65,000	0	26,250	\$26,250	\$26,250	\$29,167
Flaming Gorge	90% / 100%	150,000	0	0	50,000	0	12,500	\$12,500	\$12,500	\$13,889
Glen Canyon	62.2% / 100%	100.00%	300,000	2,100,000	0	2,500,000	1,225,000	\$1,225,000	\$1,225,000	\$1,327,778
Denver	97.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Budget		\$2,160,000	\$845,000	\$2,290,000	\$115,000	\$2,765,000	\$1,503,750	\$1,503,750	\$1,503,750	\$1,576,944
Total PRS O&M		\$2,012,050	\$718,000	\$1,470,700	\$110,000	\$1,820,000	\$1,029,675	\$1,029,675	\$1,029,675	\$1,064,306

ITEM	TYPE	Current Year					For Future	10 Year	9 Year	
		2019	2020	2021	2022	2023	5 Year	Annual	Annual	
		2019	2020	2021	2022	2023	Projection	Average	Average	
							2025-2029	2020-2029	2021-2029	
Capitalized										
Navajo	83.00%	100,000	0	0	450,000	900,000	900,000	\$900,000	\$675,000	\$750,000
Blue Mesa	97.00%	0	0	0	0	0	0	\$0	\$0	\$0
Morrow Point	100.00%	10,000	0	0	0	0	0	\$0	\$0	\$0
Crystal	100.00%	0	0	0	0	0	0	\$0	\$0	\$0
Flaming Gorge	90% / 100%	90.00%	700,000	0	0	0	0	\$0	\$0	\$0
Glen Canyon	62.2% / 100%	100.00%	200,000	500,000	2,550,000	1,100,000	700,000	500,000	\$785,000	\$816,667
Denver	97.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Budget		\$1,010,000	\$500,000	\$2,550,000	\$1,550,000	\$1,600,000	\$1,400,000	\$1,400,000	\$1,460,000	\$1,566,667
Total PRS O&M		\$955,200	\$500,000	\$2,039,700	\$1,473,500	\$1,447,000	\$1,247,000	\$1,247,000	\$1,345,250	\$1,439,167
Replacements:										
Expensed										
Blue Mesa	97.00%	75,000	0	0	0	0	0	\$0	\$0	\$0
Morrow Point	100.00%	250,000	0	0	0	0	0	\$0	\$0	\$0
Crystal	100.00%	0	0	0	0	0	0	\$0	\$0	\$0
Curecanti	100.00%	0	0	150,000	0	0	0	\$0	\$15,000	\$16,667
Flaming Gorge	90% / 100%	100.00%	315,000	0	0	0	0	\$0	\$0	\$0
Glen Canyon	62.20%	300,000	150,000	150,000	150,000	150,000	150,000	\$150,000	\$150,000	\$150,000
Denver	50.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Budget		\$940,000	\$150,000	\$300,000	\$150,000	\$150,000	\$150,000	\$150,000	\$165,000	\$166,667
Total PRS O&M		\$801,600	\$93,300	\$243,300	\$93,300	\$93,300	\$93,300	\$93,300	\$108,300	\$109,967
Capitalized										
Blue Mesa	100.00%	4,050,000	980,000	8,100,000	4,175,000	2,000,000	2,000,000	\$3,550,833	\$3,500,917	\$3,781,019
Morrow Point	100.00%	3,712,000	3,020,000	4,010,000	5,075,000	2,680,000	2,720,000	\$3,536,167	\$3,518,583	\$3,573,981
Crystal	100.00%	255,000	55,000	1,000,000	75,000	2,000,000	2,000,000	\$897,500	\$961,750	\$1,062,500
Curecanti	100.00%	30,000	290,000	475,000	50,000	270,000	190,000	\$217,500	\$236,250	\$230,278
Flaming Gorge	90% / 100%	100.00%	310,000	850,000	2,400,000	3,640,000	3,600,000	\$1,800,000	\$1,949,000	\$2,071,111
Glen Canyon	62.2% / 100%	100.00%	11,440,000	14,200,000	1,640,000	1,740,000	8,440,000	6,740,000	\$7,366,667	\$6,959,333
Denver	50.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
UCPO Modernize Plant Controls	100.00%	\$6,000,000	\$4,000,000	\$4,000,000	\$4,000,000	\$4,000,000	\$4,000,000	\$4,333,333	\$4,166,667	\$4,185,185
Subtotal Budget		\$25,797,000	\$23,395,000	\$21,625,000	\$18,755,000	\$22,990,000	\$17,650,000	\$21,702,000	\$21,292,500	\$21,058,889
Total PRS O&M		\$25,795,104	\$23,378,500	\$21,031,880	\$18,093,280	\$21,803,080	\$17,634,880	\$21,289,454	\$20,838,889	\$20,556,710
Total Reclamation Budget		\$85,469,402	\$81,968,800	\$85,208,413	\$80,998,216	\$89,682,570	\$84,683,155	\$88,735,155	\$86,621,693	\$87,138,681
Reclamation CME DEPRECIATION		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total USBR O&M Reimbursable by power		\$32,941,358	\$31,836,050	\$33,668,606	\$33,113,710	\$35,808,187	\$36,031,874	\$36,031,874	\$35,149,970	\$35,481,362
Total WAPA and USBR PRS O&M		\$85,133,508	\$86,371,499	\$91,140,685	\$91,699,898	\$95,576,719	\$97,011,955	\$97,011,955	\$94,774,244	\$95,671,060
Environmental Costs:										
Western										
GCPA (Non-reimb)	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
RIP(Non-reimb)	0.00%	\$4,320,177	\$3,584,098	\$3,774,365	\$3,818,833	\$3,865,209	\$3,912,513	\$3,912,513	\$3,851,758	\$3,881,498
USBR										
Fish and Wildlife Mgmt and Dvlp:										
Nonreimbursable										
GC Adaptive Mgmt Prg	0.00%	\$11,413,047	\$11,755,438	\$12,108,102	\$12,471,345	\$12,845,485	\$13,230,849	\$13,230,849	\$12,856,547	\$12,978,892
Endangered fish (RIP) base funding	0.00%	\$8,672,355	\$8,932,526	\$9,200,501	\$9,476,516	\$9,760,812	\$10,053,636	\$10,053,636	\$9,769,217	\$9,862,183
Glen Canyon Studies	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total non-reimbursable		\$24,405,579	\$24,272,062	\$25,082,968	\$25,766,694	\$26,471,506	\$27,196,999	\$27,196,999	\$26,477,522	\$26,722,573
Reimbursable										
Flaming Gorge studies	90.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Navajo studies	97.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Aspinall studies	83.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Endangered fish (RIP) capital	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total reimbursable as O&M		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Note: Gray Shaded amounts are not included in PRS O&M.

O&M Budget Projections for Smaller Projects (BFIT Inputs)

Row Labels	Sum of FY19	Sum of FY20	Sum of FY21	Sum of Out Yr 1	Sum of Out Yr 2	Sum of Out Yr 3
LLCO	\$ 87,792	\$ 132,237	\$ 484,140	\$ 203,968	\$ 208,048	\$ 212,209
WMA	\$ 87,792	\$ 132,237	\$ 109,897	\$ 112,095	\$ 114,337	\$ 116,624
N/FLCO_GWAMM	\$ (112)	\$ -	\$ -	\$ -	\$ -	\$ -
N/FLCO_LINSM	\$ 66,634	\$ 103,130	\$ 89,192	\$ 90,976	\$ 92,796	\$ 94,652
N/FLCO_SUBSM	\$ 14,677	\$ 16,970	\$ 9,402	\$ 9,590	\$ 9,782	\$ 9,977
N/FLCO_MRKTM	\$ 6,594	\$ 12,137	\$ 11,303	\$ 11,529	\$ 11,759	\$ 11,994
N/FLCO_NDUE1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WMF	\$ -	\$ -	\$ 374,243	\$ 91,874	\$ 93,711	\$ 95,585
N/FLCO_SUBSB	\$ -	\$ -	\$ 374,243	\$ 91,874	\$ 93,711	\$ 95,585
LLDO	\$ 125,218	\$ 168,155	\$ 202,487	\$ 206,316	\$ 210,222	\$ 289,206
VMF	\$ 125,218	\$ 168,155	\$ 202,487	\$ 206,316	\$ 210,222	\$ 289,206
N/FLDO_GWAMM	\$ (172)	\$ -	\$ -	\$ -	\$ -	\$ -
N/FLDO_LINSM	\$ 101,596	\$ 89,393	\$ 90,424	\$ 92,233	\$ 94,078	\$ 170,959
N/FLDO_SUBSM	\$ 17,200	\$ 50,000	\$ 51,000	\$ 52,020	\$ 53,060	\$ 54,122
N/FLDO_NDUE1	\$ -	\$ -	\$ 11,031	\$ 11,031	\$ 11,031	\$ 11,031
N/FLDO_MRKTM	\$ 6,594	\$ 12,391	\$ 12,013	\$ 12,253	\$ 12,498	\$ 12,748
N/FLDO_MNSUB	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
N/FLDO_DEPRM	\$ -	\$ 16,371	\$ 38,019	\$ 38,779	\$ 39,555	\$ 40,346
LLRG	\$ 26,932	\$ 40,878	\$ 35,082	\$ 33,519	\$ 44,189	\$ 34,873
WMA	\$ 26,932	\$ 40,878	\$ 35,082	\$ 33,519	\$ 44,189	\$ 34,873
N/FLRG_GWAMM	\$ (45)	\$ -	\$ -	\$ -	\$ -	\$ -
N/FLRG_SUBSM	\$ 20,383	\$ 28,694	\$ 23,410	\$ 21,612	\$ 32,045	\$ 22,486
N/FLRG_MRKTM	\$ 6,594	\$ 12,184	\$ 11,673	\$ 11,906	\$ 12,144	\$ 12,387
N/FLRG_NDUE1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
LLSE	\$ 62,161	\$ 83,899	\$ 100,205	\$ 100,588	\$ 102,600	\$ 104,652
VMF	\$ 62,161	\$ 83,899	\$ 100,205	\$ 100,588	\$ 102,600	\$ 104,652
N/FLSE_SUBSM	\$ 52,894	\$ 27,425	\$ 47,190	\$ 48,134	\$ 49,097	\$ 50,079
N/FLSE_MRKTM	\$ 9,363	\$ 15,733	\$ 15,259	\$ 15,564	\$ 15,876	\$ 16,193
N/FLSE_NDUE1	\$ -	\$ -	\$ 1,589	\$ -	\$ -	\$ -
N/FLSE_COMMM	\$ -	\$ 24,925	\$ -	\$ -	\$ -	\$ -
N/FLSE_GWAMM	\$ (96)	\$ -	\$ -	\$ -	\$ -	\$ -
N/FLSE_DEPRM	\$ -	\$ 15,816	\$ 36,166	\$ 36,890	\$ 37,627	\$ 38,380
Grand Total	\$ 302,102	\$ 425,169	\$ 821,913	\$ 544,391	\$ 565,058	\$ 640,939

Salt Lake City Area Integrated Projects

Purchased Power Comparisons

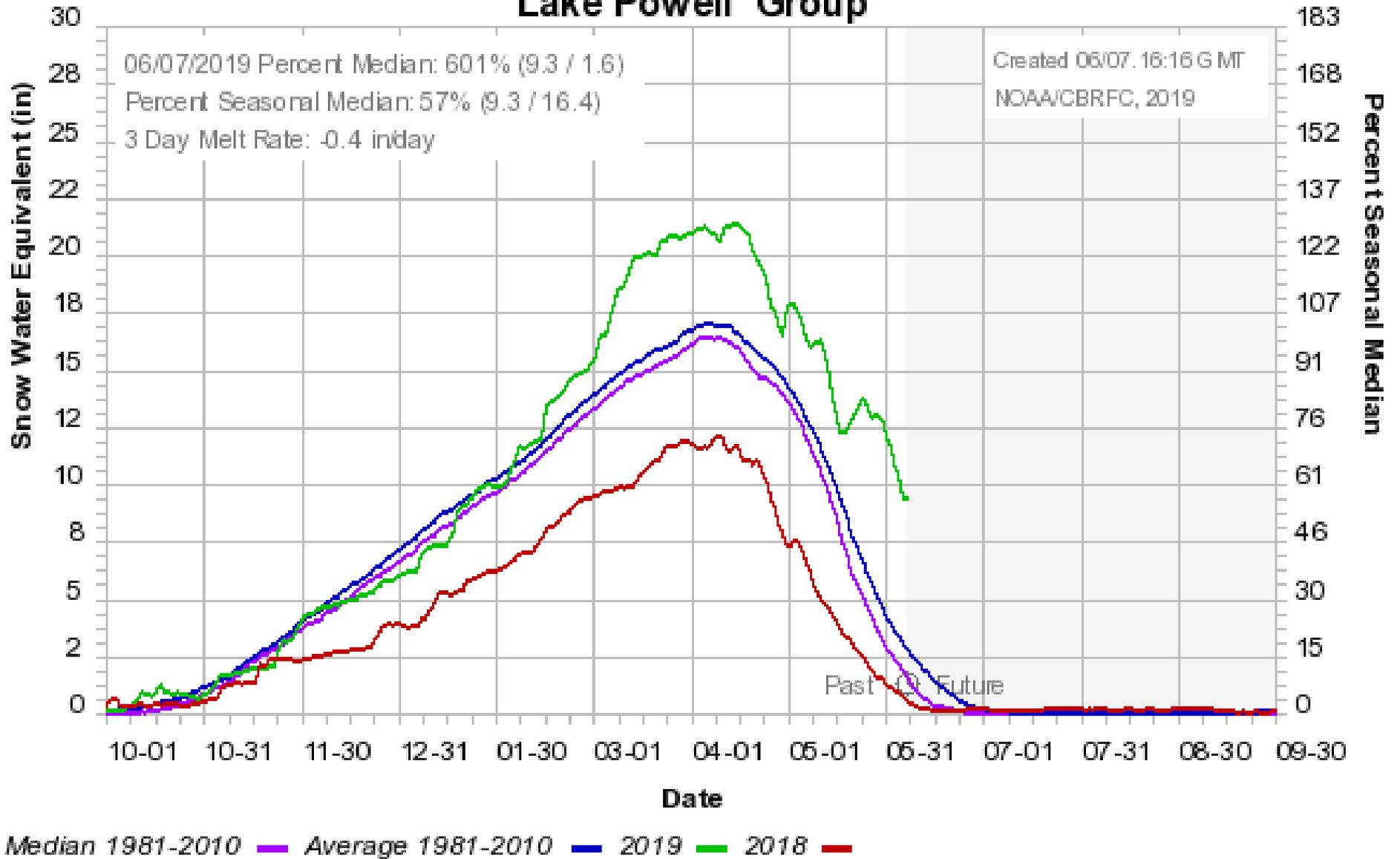
FY	WAPA-169 1/			FY 2019 Preliminary 2/			Expense Difference (\$1,000)
	Purchases (MWH)	Price (\$/MWH)	Expense (\$1,000)	Purchases (MWH)	Price (\$/MWH)	Expense 3/ (\$1,000)	
2016	1,030,922	\$ 27.59	\$ 28,440				
2017	609,284	\$ 29.54	\$ 18,000				
2018	518,408	\$ 31.13	\$ 16,140				
2019	490,748	\$ 33.03	\$ 16,210	461,670	\$ 32.64	\$ 15,068	\$ (1,142)
2020	N/A	N/A	\$ 4,000	192,144	\$ 32.10	\$ 6,168	\$ 2,168
2021	N/A	N/A	\$ 4,000	296,892	\$ 34.55	\$ 10,258	\$ 6,258
2022	N/A	N/A	\$ 4,000	425,870	\$ 20.89	\$ 8,895	\$ 4,895
2023	N/A	N/A	\$ 4,000	542,991	\$ 28.98	\$ 15,734	\$ 11,734
2024	N/A	N/A	\$ 4,000	N/A	N/A	\$ -	\$ (4,000)
2025	N/A	N/A	\$ 4,000	N/A	N/A	\$ -	\$ (4,000)
	Average 2016-2025		\$ 10,279	Average 2018-2025		\$ 8,017	\$ (2,262)

1/ 2016 2019 projections based on Reclamation's 2015 median hydrology.

2/ 2019-2023 based on projected costs using the April 2019 24-month study.

3/ Expenses based on projected Net Purchase Costs

Colorado Basin River Forecast Center Lake Powell Group



Salt Lake City Integrated Projects

unit: 1,000

Average Annual Transmission Expense Comparison

Item	WAPA-169 / SLIP-F10	FY 2019 Preliminary	Difference
Total Transmission Expense	\$ 10,421	\$ 8,208	\$ (2,213)

PROJECTED CRSP TRANSMISSION EXPENSE

Table consistently reviewed and updated. Last review April 2019

Customer	Contract Number	Contract Expiration Date	Unit	Year				
				2019	2020	2021	2022	2023
APS	14-06-400-3654	6/1/2046	kW	150,000	150,000	150,000	150,000	150,000
			\$	\$ -	\$ -	\$ -	\$ -	\$ -
Black Hills/Colorado Electric Utility Company, LP	13-SLC-0682	9/30/2024	kW	1,230	1,230	1,230	1,230	1,230
			\$	\$ 46,379	\$ 46,379	\$ 46,379	\$ 46,379	\$ 46,379
Black Hills/Colorado Electric Utility Company, LP	16-SLC-0730	9/30/2024	kW	5,000	5,000	5,000	5,000	5,000
			\$	\$ 177,420	\$ 177,420	\$ 177,420	\$ 177,420	\$ 177,420
Bridger Valley 1/	14-06-400-1011	9/30/2044 (or upon 3 years notice by either party) Rates revised yearly on March 1. Rate adjustments are based on operating cost of the transmission system. Currently at .0305/kWh.	kW	5,306,912	5,306,912	5,306,912	5,306,912	5,306,912
	9/30/2044		\$	\$ 15,655	\$ 15,655	\$ 15,655	\$ 15,655	\$ 15,655
Delta-Montrose 2/	14-06-400-4447	Expired in March 2003, but continuing on indefinitely, due to the inability to develop an agreeable alternative service plan. Delta-Montrose transmission charge equals CRSP firm transmission rate currently in effect.	kW	586	586	586	586	586
			\$ 1.48	\$ 10,407	\$ 10,407	\$ 10,407	\$ 10,407	\$ 10,407
Deseret G&T 3/ (Exhibit D)	2-07-40-P0716	6/1/2053, after June 1, 2022, either party can terminate by providing 5 years notice. Transmission Cost is variable. Transmission service request is usually for a 3-4 year period. Transmission request is handled in a revision to an Exhibit of this Contract. Revised effective 10/1/2013 Deseret will provide Western w/83MW of trans. & transfrmtn. Deseret will chg. Western their trans. Rate of \$30.8792/kW-year & \$2.22/kW-year for transformation.	kW	37,500	32,500	27,500	22,500	20,000
			2.5732667	\$ 1,157,970	\$ 1,003,574	\$ 849,178	\$ 694,782	\$ 617,584
DSWR (Intertie) 4/	88-BCA-10149	9/30/2017. However, CRSP MC can terminate with 30 days notice. Transmission charge is as set at the Intertie rate schedule (INT-FT4).	kW	134,000	134,000	134,000	134,000	134,000
			\$ 1.61	\$ 2,588,880	\$ 2,588,880	\$ 2,588,880	\$ 2,588,880	\$ 2,588,880
El Paso Electric	05-SLC-0578	9/30/2024 This is a pass-through for both rev & exp. through Holloman AFB	kW	2,000	2,000	2,000	2,000	2,000
			\$	\$ -	\$ -	\$ -	\$ -	\$ -

PROJECTED CRSP TRANSMISSION EXPENSE

Table consistently reviewed and updated. Last review April 2019

Customer	Contract Number	Contract Expiration Date	Unit	2019	2020	2021	2022	2023	
Empire Electric	91-SLC-0170	11/22/2041 Cost based rate revised yearly. Western pays an annual charge: 1/6 of the total each month from April to September.	kW	12,000	12,000	12,000	12,000	12,000	
			\$	\$ 23,486	\$ 23,486	\$ 23,486	\$ 23,486	\$ 23,486	
	7-07-40-P0752	5/15/2037 Cost based rate revised yearly. Western pays an annual charge: 1/6 of the total each month from April to September.	kW	7,666	7,666	7,666	7,666	7,666	
			\$	\$ 70,226	\$ 70,226	\$ 70,226	\$ 70,226	\$ 70,226	
Public Service Company of NM 6/	8-07-40-P0695	Contract expired on 6/1/1987. (Subject to 10 yr ext up to 2047) Western has option of six 10-year extensions. Western provides notice 3 years prior to the expiration of the contracts. This contract has been extended to 2017.	kW	99,000	99,000	99,000	99,000	99,000	
			\$	\$ 1,318,680	\$ 1,318,680	\$ 1,318,680	\$ 1,318,680	\$ 1,318,680	
		Rate is set in contract at PNM's tariff rate. Various credits are provided for seasonal scheduling diversity and credit for Western providing 50 MW of Intertie transmission. Rate revised based on current PNM formula rate which is updated in June of each year. Currently @ \$1.55/KW -month with an avg. of 107MW for Winter and 97MW for summer giving an avg. of 99MW for the year.	\$ 1.11						
			\$	\$ 1,318,680	\$ 1,318,680	\$ 1,318,680	\$ 1,318,680	\$ 1,318,680	
PacifiCorp 7/ - Looked through the last years invoices. Nothing over 330MW.	14-06-400-2436	Contract expired on 6/1/1987. (Subject to 10 yr ext up to 2047) Western has option of six 10-year extensions. Western provides notice 3 years prior to the expiration of the contracts. This contract has been extended to 2017.							
			Flat Charge	\$	\$ 600,000	\$ 600,000	\$ 600,000	\$ 600,000	\$ 600,000
			First Tier	kW	230,000	230,000	230,000	230,000	230,000
				\$ 4.20	\$ 966,000	\$ 966,000	\$ 966,000	\$ 966,000	\$ 966,000
			Second Tier	kW	100,000	100,000	100,000	100,000	100,000
				\$ 15.83	\$ 1,700,000	\$ 1,739,000	\$ 1,739,000	\$ 1,739,000	\$ 1,739,000
			Third Tier	kW	0	0	0	0	0
				\$	\$ -	\$ -	\$ -	\$ -	\$ -
			Total UP&L	kW	330,000	330,000	330,000	330,000	330,000
				\$	\$ 3,266,000	\$ 3,305,000	\$ 3,305,000	\$ 3,305,000	\$ 3,305,000
Salt River Project	08-SLC-0615	6/30/2018	kW	50,000	50,000	50,000	50,000	50,000	
			\$	\$ -	\$ -	\$ -	\$ -	\$ -	
Total transmission expense			\$	\$ 8,675,103	\$ 8,559,707	\$ 8,405,311	\$ 8,250,915	\$ 8,173,717	

Integrated Projects

Year UNIT---->	Collbran							RGP						
	Sales MWH	Revenues \$	Expenses \$	Interest \$	Repayment \$	RR \$	Surplus \$	Sales MWH	Revenues \$	Expenses \$	Interest \$	Repayment \$	RR \$	Surplus \$
1995	49,418	1,917,732	975,457	382,697	257,963	1,616,117	301,615	144,598	2,930,688	1,567,449	65,420	1,316,297	2,949,166	-18,478
1996	47,255	1,822,698	862,373	293,879	666,447	1,822,699	-1	97,292	2,730,425	1,370,024	6,346	1,354,054	2,730,424	1
1997	51,515	2,185,531	761,089	286,148	1,173,331	2,220,568	-35,037	116,457	2,470,909	(108,699)	64	1,975,500	1,869,865	601,044
1998	64,534	2,122,891	721,901	27,770	1,347,654	2,097,325	25,566	115,861	1,780,683	2,457,506	5,767	0	2,463,273	-682,590
1999	48,599	2,521,388	763,487	176,089	1,582,135	2,521,711	-323	102,195	2,110,804	1,782,481	19,555	225,390	2,027,426	83,378
2000	38,889	2,361,787	921,524	146,806	1,293,457	2,361,787	0	91,607	1,710,559	1,858,839	22,026	0	1,880,865	-170,306
2001	31,196	1,846,106	978,267	110,536	757,303	1,846,106	0	96,851	1,443,003	1,163,199	16,752	133,291	1,313,242	129,761
2002	27,246	1,364,587	1,087,012	90,374	187,201	1,364,587	0	83,625	1,797,329	1,739,513	55,269	70,281	1,865,063	-67,734
2003	26,439	1,613,733	1,080,147	95,801	437,703	1,613,651	82	31,935	2,032,800	1,721,227	36,717	277,402	2,035,346	-2,546
2004	40,404	2,136,600	874,673	80,182	1,181,745	2,136,600	0	27,631	2,045,939	1,611,105	57,455	109,698	1,778,258	267,681
2005	53,054	2,119,102	1,039,370	51,698	1,028,034	2,119,102	0	45,957	1,862,960	1,998,228	(23,511)	155,925	2,130,642	-267,682
2006	48,100	2,349,819	917,640	134,858	1,400,979	2,453,477	-103,658	33,856	1,921,691	1,656,103	337,610	0	1,993,713	-72,022
2007	44,339	2,335,119	1,029,796	10,129	1,295,194	2,335,119	0	56,003	2,700,055	1,581,069	116,015	930,949	2,628,033	72,022
2008	45,007	1,953,509	1,012,119	9,129	466,750	1,487,998	465,511	62,980	2,006,292	1,919,414	35,790	51,088	2,006,292	0
2009	32,000	1,567,035	909,015	(194)	1,123,724	2,032,545	-465,509	55,539	2,666,287	1,840,081	47,002	779,204	2,666,287	0
2010	37,095	2,685,104	1,006,212	9	1,678,883	2,685,104	0	67,489	1,813,739	2,204,217	7,971	(398,449)	1,813,739	0
2011	46,871	1,672,016	1,231,060	24,072	321,944	1,577,076	94,940	33,883	2,718,866	3,401,171	49,999	398,449	3,849,619	-1,130,753
2012	35,180	1,478,448	1,123,375	(1,534)	451,547	1,573,388	-94,940	28,861	4,021,042	2,548,637	76,118	265,533	2,890,288	1,130,754
2013	13,158	1,590,619	1,040,305	(6,735)	(408,169)	624,401	966,218	9,377,318	2,341,428	2,589,615	16,190	(0)	2,605,805	-264,377
2014	41,566	960,953	1,606,925	6,257	313,989	1,927,171	-966,218	12,768	2,526,616	2,080,496	116,193	65,550	2,262,239	264,377
2015	37,286	1,911,997	1,074,102	158,205	679,690	1,911,997	0	37,642	2,753,699	2,901,600	108,678	0	3,010,278	-256,579
2016	38,042	1,926,715	1,259,278	131,562	535,875	1,926,715	0	42,834	2,791,767	(130,665)	119,764	2,536,089	2,535,188	256,579
2017	35,872	1,752,551	1,313,142	116,623	322,786	1,752,551	0	45,218	4,996,329	4,944,887	30,993	20,449	4,996,329	0
2018	22,796	1,534,555	1,417,653	116,902	0	1,534,555	0	39,624	2,772,999	2,750,501	22,498	0	2,772,999	0
2019	35,842	1,326,154	1,192,250	114,948	18,956	1,326,154	0	37,373	2,391,872	1,919,442	146,801	325,629	2,391,872	0
2020	35,842	1,380,992	1,244,695	127,802	8,495	1,380,992	0	37,373	2,392,246	2,083,388	157,132	151,725	2,392,246	0
2021	35,842	1,380,992	1,083,355	127,547	170,090	1,380,992	0	37,373	2,392,246	2,147,592	244,381	273	2,392,246	0
2022	35,842	1,380,992	1,085,553	161,272	134,167	1,380,992	0	37,373	2,392,246	1,831,029	263,872	297,344	2,392,246	0
2023	35,842	1,380,992	1,087,795	160,003	133,194	1,380,992	0	37,373	2,392,246	1,841,699	254,952	295,595	2,392,246	0
2024	35,842	1,380,992	1,090,082	158,818	132,092	1,380,992	0	37,373	2,392,246	1,832,383	246,084	313,779	2,392,246	0
2025	35,842	1,380,992	1,090,082	157,723	133,187	1,380,992	0	37,373	2,392,246	1,832,383	236,671	323,192	2,392,246	0
2026	35,842	1,380,992	1,090,082	153,783	137,127	1,380,992	0	37,373	2,392,246	1,832,383	228,753	331,110	2,392,246	0
2027	35,842	1,380,992	1,090,082	149,669	141,241	1,380,992	0	37,373	2,392,246	1,832,383	221,706	338,157	2,392,246	0
2028	35,842	1,380,992	1,090,082	145,432	145,479	1,380,992	0	37,373	2,392,246	1,832,383	212,693	347,169	2,392,246	0
2029	35,842	1,380,992	1,090,082	141,067	149,843	1,380,992	0	37,373	2,392,246	1,832,383	206,326	353,537	2,392,246	0
2030	35,842	1,380,992	1,090,082	136,572	154,338	1,380,992	0	37,373	2,392,246	1,832,383	195,719	364,143	2,392,246	0
2031	35,842	1,380,992	1,090,082	132,135	158,775	1,380,992	0	37,373	2,392,246	1,832,383	186,477	373,386	2,392,246	0
2032	35,842	1,380,992	1,090,082	127,372	163,538	1,380,992	0	37,373	2,392,246	1,832,383	176,251	383,612	2,392,246	0
2033	35,842	1,380,992	1,090,082	122,466	168,444	1,380,992	0	37,373	2,392,246	1,832,383	165,753	394,110	2,392,246	0
2034	35,842	1,380,992	1,090,082	117,412	173,498	1,380,992	0	37,373	2,392,246	1,832,383	154,261	405,602	2,392,246	0
2035	35,842	1,380,992	1,090,082	112,208	178,703	1,380,992	0	37,373	2,392,246	1,832,383	149,046	410,817	2,392,246	0
2036	35,842	1,380,992	1,090,082	107,322	183,588	1,380,992	0	37,373	2,392,246	1,832,383	136,721	423,141	2,392,246	0
2037	35,842	1,380,992	1,090,082	101,814	189,096	1,380,992	0	37,373	2,392,246	1,832,383	124,170	435,693	2,392,246	0
2038	35,842	1,380,992	1,090,082	96,142	194,769	1,380,992	0	37,373	2,392,246	1,832,383	112,850	447,012	2,392,246	0
2039	35,842	1,380,992	1,090,082	90,298	200,612	1,380,992	0	37,373	2,392,246	1,832,383	149,629	410,234	2,392,246	0
2040	35,842	1,380,992	1,090,082	84,280	206,630	1,380,992	0	37,373	2,392,246	1,832,383	138,469	421,394	2,392,246	0
2041	35,842	1,380,992	1,090,082	79,620	211,290	1,380,992	0	37,373	2,392,246	1,832,383	134,775	425,088	2,392,246	0
2042	35,842	1,380,992	1,090,082	73,478	217,432	1,380,992	0	37,373	2,392,246	1,832,383	122,022	437,841	2,392,246	0
2043	35,842	1,380,992	1,090,082	66,955	223,955	1,380,992	0	37,373	2,392,246	1,832,383	108,887	450,976	2,392,246	0
2044	35,842	1,380,992	1,090,082	60,236	230,674	1,380,992	0	37,373	2,392,246	1,832,383	95,358	464,505	2,392,246	0
2045	35,842	1,380,992	1,090,082	53,316	237,594	1,380,992	0	37,373	2,392,246	1,832,383	81,423	478,440	2,392,246	0
2046	35,842	1,380,992	1,090,082	47,448	243,462	1,380,992	0	37,373	2,392,246	1,832,383	67,069	492,793	2,392,246	0
2047	35,842	1,380,992	1,090,082	40,558	250,353	1,380,992	0	37,373	2,392,246	1,832,383	60,555	499,307	2,392,246	0
2048	35,842	1,380,992	1,090,082	33,047	257,863	1,380,992	0	37,373	2,392,246	1,832,383	45,576	514,287	2,392,246	0
2049	35,842	1,380,992	1,090,082	25,311	265,599	1,380,992	0	37,373	2,392,246	1,832,383	30,147	529,715	2,392,246	0
2050	35,842	1,380,992	1,090,082	17,343	273,567	1,380,992	0	37,373	2,392,246	1,832,383	17,226	542,637	2,392,246	0
2051	35,842	1,380,992	1,090,082	9,136	281,774	1,380,992	0	37,373	2,392,246	1,832,383	25,045	534,817	2,392,246	0
2052	35,842	1,380,992	1,090,082	11,743	279,168	1,380,992	0	37,373	2,392,246	1,832,383	9,001	300,030	2,141,414	250,832
2053	35,842	1,380,992	1,090,082	12,754	278,157	1,380,992	0	37,373	2,392,246	1,832,383	0	0	1,832,383	559,863
2054	35,842	1,380,992	1,090,082	87,141	203,769	1,380,992	0	37,373	2,392,246	1,832,383	0	0	1,832,383	559,863
2055	35,842	1,380,992	1,090,082	81,028	209,882	1,380,992	0	37,373	2,392,246	1,832,383	0	0	1,832,383	559,863
2056	35,842	1,380,992	1,090,082	82,205	208,705	1,380,992	0	37,373	2,392,246	1,832,383	0	38	1,832,421	559,825
2057	35,842	1,380,992	1,090,082	76,182	214,728	1,380,992	0	37,373	2,392,246	1,832,383	0	2,060	1,834,443	557,803
2058	35,842	1,380,992	1,090,082	69,740	221,170	1,380,992	0	37,373	2,392,246	1,832,383	0	105,830	1,938,213	454,033
2059	35,842	1,380,992	1,090,082	63,105	227,805	1,380,992	0	37,373	2,392,246	1,832,383	0	11,993	1,844,376	547,869
2060	35,842	1,380,992	1,090,082	56,271	234,639	1,380,992	0	37,373	2,392,246	1,832,383	0	4,039	1,836,422	555,823
2061	35,842	1,380,992	1,090,082	49,232	241,678	1,380,992	0	37,373	2,392,246	1,832,383	0	0	1,832,383	559,863
2062	35,842	1,380,992</												

Participating Integrated Projects

Year UNIT---->	Dolores							Seedskadee						
	Sales	Revenues	Expenses	Interest	Repayment	RR	Surplus	Sales	Revenues	Expenses	Interest	Repayment	RR	Surplus
	MWH	\$	\$	\$	\$	\$	\$	MWH	\$	\$	\$	\$	\$	\$
1995	11,950	1,876,736	347,666	1,340,258	188,813	1,876,737	-1	52,322	1,424,991	504,249	(438,442)	0	65,807	1,359,184
1996	18,923	2,920,220	426,124	2,297,879	196,217	2,920,220	0	66,451	1,217,656	394,596	809,203	0	1,203,799	13,857
1997	9,052	2,866,476	469,106	2,285,064	446,717	3,200,887	-334,411	66,024	1,206,800	392,247	536,887	0	929,134	277,666
1998	17,337	2,911,559	178,317	2,336,580	164,256	2,679,153	232,406	74,063	2,248,405	380,281	470,577	171,056	1,021,914	1,226,491
1999	21,373	3,235,465	239,437	2,360,057	636,984	3,236,478	-1,013	70,862	1,511,203	300,069	319,795	887,112	1,506,976	4,227
2000	28,127	2,894,923	269,973	2,269,738	355,212	2,894,923	0	59,144	1,384,025	413,142	203,140	767,744	1,384,026	-1
2001	23,456	2,766,549	432,606	2,449,206	0	2,881,812	-115,263	27,335	937,996	445,909	89,220	402,868	937,997	-1
2002	5,959	2,948,763	335,235	2,306,448	191,817	2,833,500	115,263	22,579	1,301,665	398,287	124,779	778,599	1,301,665	0
2003	6,294	2,874,934	388,832	2,260,611	221,246	2,870,689	4,245	38,252	1,124,598	463,085	33,965	626,659	1,123,709	889
2004	17,885	2,988,795	251,627	2,237,536	499,634	2,988,797	-2	42,331	1,014,123	639,547	1,378	373,199	1,014,124	-1
2005	20,005	2,921,844	399,570	2,179,516	342,758	2,921,844	0	63,356	1,154,975	621,122	9,269	510,308	1,140,699	14,276
2006	15,431	2,845,475	213,197	2,177,325	480,771	2,871,293	-25,818	47,027	1,705,213	674,556	(325,105)	307,231	656,682	1,048,531
2007	8,249	2,959,291	207,826	2,096,781	654,684	2,959,291	0	37,494	1,082,246	702,400	(3,969)	(232,000)	406,431	675,815
2008	24,028	2,784,627	539,065	2,025,898	219,664	2,784,627	0	45,688	1,184,425	680,755	3,870	26,155	710,780	473,645
2009	19,152	3,214,372	446,834	2,169,152	598,386	3,214,372	0	55,245	(408,852)	601,098	(319)	(12,790)	587,989	-996,841
2010	18,391	3,850,995	800,106	2,090,005	960,884	3,850,995	0	34,348	929,572	673,746	187	1,152,596	1,826,529	-896,957
2011	21,019	3,158,541	1,010,691	2,189,874	0	3,200,565	-42,024	52,076	1,389,147	999,594	(31,308)	41,816	1,010,102	379,045
2012	19,660	3,328,365	2,355	2,019,915	1,304,912	3,327,182	1,183	53,693	455,410	918,833	(3,399)	(80,979)	834,455	-379,045
2013	9,545	3,047,401	862,788	1,829,803	333,875	3,026,466	20,935	33,461	3,002,908	931,825	2,673	318,497	1,252,995	1,749,913
2014	20,297	3,067,909	416,411	1,930,353	701,239	3,048,003	19,906	55,659	1,136,350	934,423	184,921	0	1,119,344	17,006
2015	20,253	8,061,201	4,989,415	1,798,702	1,273,084	8,061,201	0	71,781	1,384,595	920,683	(11,758)	368,988	1,277,913	106,682
2016	22,923	3,767,574	(323,894)	1,725,686	2,362,582	3,767,574	0	53,409	501,959	1,013,445	(731,968)	220,082	501,559	400
2017	22,040	3,933,382	1,328,267	1,519,736	1,085,379	3,933,382	0	30,322	1,689,591	952,404	713,921	23,266	1,689,591	0
2018	20,826	28,666,622	2,227,310	1,491,654	24,947,658	28,666,622	0	66,662	955,763	922,008	33,755	0	955,763	0
2019	20,852	1,045,582	722,357	41,468	281,757	1,045,582	0	52,657	1,685,551	1,173,893	130,115	410,411	1,714,419	-28,869
2020	20,852	1,151,135	766,833	26,203	358,099	1,151,135	0	52,657	1,738,366	1,058,652	190,718	460,127	1,709,497	28,869
2021	20,852	1,151,135	786,933	14,287	325,183	1,126,403	24,732	52,657	1,738,366	1,082,720	212,287	443,359	1,738,366	0
2022	20,852	1,151,135	809,003	0	0	809,003	342,132	52,657	1,738,366	1,114,562	198,843	424,960	1,738,366	0
2023	20,852	1,151,135	831,704	0	0	831,704	319,431	52,657	1,738,366	1,147,346	188,013	403,006	1,738,366	0
2024	20,852	1,151,135	930,055	0	75,000	1,005,055	146,080	52,657	1,738,366	1,181,103	413,268	143,995	1,738,366	0
2025	20,852	1,151,135	930,055	0	0	930,055	221,080	52,657	1,738,366	1,181,103	412,359	144,903	1,738,366	0
2026	20,852	1,151,135	930,055	0	0	930,055	221,080	52,657	1,738,366	1,181,103	407,144	150,118	1,738,366	0
2027	20,852	1,151,135	930,055	0	0	930,055	221,080	52,657	1,738,366	1,181,103	400,445	156,818	1,738,366	0
2028	20,852	1,151,135	930,055	0	0	930,055	221,080	52,657	1,738,366	1,181,103	392,960	164,303	1,738,366	0
2029	20,852	1,151,135	930,055	0	0	930,055	221,080	52,657	1,738,366	1,181,103	385,292	171,971	1,738,366	0
2030	20,852	1,151,135	930,055	0	0	930,055	221,080	52,657	1,738,366	1,181,103	377,451	179,812	1,738,366	0
2031	20,852	1,151,135	930,055	0	0	930,055	221,080	52,657	1,738,366	1,181,103	369,061	188,201	1,738,366	0
2032	20,852	1,151,135	930,055	0	0	930,055	221,080	52,657	1,738,366	1,181,103	377,687	179,575	1,738,366	0
2033	20,852	1,151,135	930,055	0	0	930,055	221,080	52,657	1,738,366	1,181,103	369,497	187,765	1,738,366	0
2034	20,852	1,151,135	930,055	0	0	930,055	221,080	52,657	1,738,366	1,181,103	363,573	193,689	1,738,366	0
2035	20,852	1,151,135	930,055	0	221,080	1,151,135	0	52,657	1,738,366	1,181,103	352,218	205,045	1,738,366	0
2036	20,852	1,098,859	930,055	112,654	56,149	1,098,859	0	52,657	1,738,366	1,181,103	365,588	191,674	1,738,366	0
2037	20,852	1,098,859	930,055	112,662	56,142	1,098,859	0	52,657	1,738,366	1,181,103	359,812	197,450	1,738,366	0
2038	20,852	1,098,859	930,055	110,365	58,438	1,098,859	0	52,657	1,738,366	1,181,103	352,581	204,681	1,738,366	0
2039	20,852	1,098,859	930,055	108,126	60,678	1,098,859	0	52,657	1,738,366	1,181,103	340,400	216,863	1,738,366	0
2040	20,852	1,098,859	930,055	105,598	63,206	1,098,859	0	52,657	1,738,366	1,181,103	331,337	225,926	1,738,366	0
2041	20,852	1,098,859	930,055	105,362	63,442	1,098,859	0	52,657	1,738,366	1,181,103	321,911	235,351	1,738,366	0
2042	20,852	1,098,859	930,055	102,762	66,042	1,098,859	0	52,657	1,738,366	1,181,103	312,093	245,170	1,738,366	0
2043	20,852	1,098,859	930,055	100,008	68,796	1,098,859	0	52,657	1,738,366	1,181,103	301,864	255,398	1,738,366	0
2044	20,852	1,098,859	930,055	158,865	9,938	1,098,859	0	52,657	1,738,366	1,181,103	291,209	266,053	1,738,366	0
2045	20,852	1,098,859	930,055	165,291	3,512	1,098,859	0	52,657	1,738,366	1,181,103	280,466	276,796	1,738,366	0
2046	20,852	1,098,859	930,055	168,703	100	1,098,859	0	52,657	1,738,366	1,181,103	268,926	288,337	1,738,366	0
2047	20,852	1,098,859	930,055	168,769	35	1,098,859	0	52,657	1,738,366	1,181,103	256,897	300,366	1,738,366	0
2048	20,852	1,098,859	930,055	168,769	35	1,098,859	0	52,657	1,738,366	1,181,103	244,366	312,897	1,738,366	0
2049	20,852	1,098,859	930,055	168,768	36	1,098,859	0	52,657	1,738,366	1,181,103	231,312	325,950	1,738,366	0
2050	20,852	1,098,859	930,055	168,766	38	1,098,859	0	52,657	1,738,366	1,181,103	217,714	339,549	1,738,366	0
2051	20,852	1,098,859	930,055	168,765	39	1,098,859	0	52,657	1,738,366	1,181,103	212,864	344,399	1,738,366	0
2052	20,852	1,098,859	930,055	252,772	0	1,182,827	-83,968	52,657	1,738,366	1,181,103	200,417	356,845	1,738,366	0
2053	20,852	1,045,582	930,055	0	0	930,055	115,527	52,657	1,738,366	1,181,103	237,037	320,225	1,738,366	0
2054	20,852	1,045,582	930,055	0	0	930,055	115,527	52,657	1,738,366	1,181,103	233,161	324,102	1,738,366	0
2055	20,852	1,045,582	930,055	0	0	930,055	115,527	52,657	1,738,366	1,181,103	234,807	322,455	1,738,366	0
2056	20,852	1,045,582	930,055	0	0	930,055	115,527	52,657	1,738,366	1,181,103	221,653	335,610	1,738,366	0
2057	20,852	1,045,582	930,055	0	0	930,055	115,527	52,657	1,738,366	1,181,103	207,657	349,606	1,738,366	0
2058	20,852	1,045,582	930,055	0	0	930,055	115,527	52,657	1,738,366	1,181,103	270,506	286,756	1,738,366	0
2059	20,852	1,045,582	930,055	0	0	930,055	115,527	52,657	1,738,366	1,181,103	280,687	276,575	1,738,366	0
2060	20,852	1,045,582	930,055	0	0	930,055	115,527	52,657	1,738,366	1,181,103	269,584	287,679	1,738,366	0
2061	20,852	1,045,582	930,055	0	0	930,055	115,527	52,657	1,738,366	1,181,103	257,591	299,672	1,738,366	0
2062	20,852	1,045,582	930,055	0	0	930,055	115,527	52,657	1,738,366	1,181,103	246,755	310,507	1,738,366	0
2063	20,852	1,045,582	930,055	0	0	930,055								

COLORADO RIVER BASIN SALINITY CONTROL PROGRAM TITLE II
Upper Colorado River Basin Fund
As of 9/30/2018

A	B	C	D	E	F	G	H	I	J
Fiscal Year	Up-front Cost Sharing							Total Repayment Transfer to Treasury	Total Annual Requirement
	Paradox Valley O&M	Grand Valley O&M	McElmo Creek (Dolores) O&M	Lower Gunnison O&M	Basinwide SCP	USDA NRCS BSP	Total Transfer to UC Region		
1987								6,918	6,918
1988								90,088	90,088
1989								110,531	110,531
1990								156,936	156,936
1991								200,047	200,047
1992								301,475	301,475
1993								451,325	451,325
1994								357,687	357,687
1995								1,934,454	1,934,454
1996								2,750,148	2,750,148
1997					222,505	(254,648)	(32,143)	285,643	253,500
1998	65,752	126,103	26,036	25,622	487,341	131,146	862,000	135,666	997,666
1999	80,561	50,013	21,423	17,195	803,533	244,275	1,217,000	87,604	1,304,604
2000	122,523	42,997	17,817	20,513	773,201	1,611,949	2,589,000	0	2,589,000
2001	104,192	25,425	19,707	20,202	693,579	(863,105)	0	0	0
2002	97,249	49,402	14,879	11,045	738,660	318,765	1,230,000	0	1,230,000
2003	73,375	42,882	23,278	(161)	549,268	271,358	960,000	0	960,000
2004	88,788	37,100	21,859	(89)	613,687	1,200,655	1,962,000	0	1,962,000
2005	95,089	32,359	27,996		529,948	1,256,756	1,942,148	0	1,942,148
2006	90,822	45,863	33,206		544,650	1,469,355	2,183,896	0	2,183,896
2007	98,721	50,252	18,809		574,676	3,274,556	4,017,014	2/	4,017,014
2008	135,786	42,183	25,118		513,236	(2,541,323)	(1,825,000)	0	(1,825,000)
2009	117,029	65,919	27,105		1,110,870	4,725,077	6,046,000	0	6,046,000
2010	141,167	38,278	30,396		430,984	1,289,302	1,930,127	0	1,930,127
2011	137,250	51,500	22,114		545,989	801,982	1,558,835	0	1,558,835
2012	121,350	48,336	21,592		533,448	861,682	1,586,408	0	1,586,408
2013	117,199	56,644	25,341		557,908	930,508	1,687,600	0	1,687,600
2014	131,600	70,700	21,536		450,964	1,603,400	2,278,200	0	2,278,200
2015	212,622	94,100	44,293		639,793	1,009,181	1,999,989	0	1,999,989
2016	188,820	119,230	31,050		583,265	1,005,454	1,927,819	0	1,927,819
2017	166,450	73,831	27,964		650,274	777,577	1,696,096	0	1,696,096
2018	143,736	63,895	21,691		699,612	896,715	1,825,649	0	1,825,649
Subtotal	2,530,081	1,227,012	523,210	94,327	13,247,391	20,020,617	37,642,638	6,868,522	44,511,160
2019	212,000	126,000	25,000		300,000	819,383	1,482,383	0	1,482,383
2020	212,000	117,400	25,000		350,000	772,278	1,476,678	0	1,476,678
2021	212,000	100,000	25,000		350,000	788,126	1,475,126	0	1,475,126
2022	212,000	100,000	25,000		350,000	625,000	1,312,000	0	1,312,000
2023	212,000	100,000	25,000		350,000	625,000	1,312,000	0	1,312,000
2024	212,000	100,000	25,000		350,000	625,000	1,312,000	0	1,312,000
2025	212,000	100,000	25,000		350,000	625,000	1,312,000	0	1,312,000
2026	212,000	100,000	25,000		350,000	625,000	1,312,000	1,384,314	2,696,314
2027	212,000	100,000	25,000		350,000	600,000	1,287,000	0	1,287,000
2028	212,000	100,000	25,000		350,000	600,000	1,287,000	0	1,287,000
2029	212,000	100,000	25,000		350,000	600,000	1,287,000	0	1,287,000
2030	212,000	82,500	25,000		350,000	600,000	1,269,500	0	1,269,500
2031	212,000	82,500	25,000		350,000	575,000	1,244,500	0	1,244,500
2032	212,000	82,500	25,000		350,000	575,000	1,244,500	0	1,244,500
2033	212,000	82,500	25,000		350,000	575,000	1,244,500	0	1,244,500
2034	212,000	82,500	25,000		350,000	550,000	1,219,500	0	1,219,500
2035	212,000	82,500	25,000		350,000	550,000	1,219,500	0	1,219,500
2036	212,000	82,500	25,000		350,000	550,000	1,219,500	0	1,219,500
2037	212,000	82,500	25,000		350,000	500,000	1,169,500	0	1,169,500
2038	212,000	82,500	25,000		350,000	500,000	1,169,500	0	1,169,500
2039	212,000	82,500	25,000		350,000	500,000	1,169,500	3,200,008	4,369,508
2040	212,000	82,500	25,000		350,000	400,000	1,069,500	64,747	1,134,247
2041	212,000	82,500	25,000		350,000	400,000	1,069,500	0	1,069,500
2042	212,000	82,500	25,000		350,000	400,000	1,069,500	347,605	1,417,105
2043	212,000	82,500	25,000		350,000	400,000	1,069,500	158,454	1,227,954
2044	212,000	82,500	25,000		350,000	400,000	1,069,500	0	1,069,500
2045	212,000	82,500	25,000		350,000	400,000	1,069,500	0	1,069,500
2046	212,000	82,500	25,000		350,000	400,000	1,069,500	1,071,189	2,140,689
2047	212,000	82,500	25,000		350,000	400,000	1,069,500	1,919,584	2,989,084
2048	212,000	82,500	25,000		350,000	400,000	1,069,500	0	1,069,500
Total	8,890,081	3,937,912	1,273,210	94,327	23,697,391	36,400,404	74,293,325	15,014,423	89,307,748

1/ In FY2003 \$1,103,000 was transferred from the Upper Basin Fund, but was not transferred into the Salinity Program until FY 2007.

The total amount was accounted for in the Basinwide Program portion.

2/ The actual amount transferred from the Upper Basin Fund to the UC Region for the Salinity Program was \$2,038,000, of which \$573,000 was for the Basinwide Program. Please see footnote 1/ for the explanation of the difference.

Other Expenses: Unfunded Benefits
5 Year Average

Total Unrecovered Retirement/FEGLI/Health Benefit Costs	FY14	FY15	FY16	FY17	FY18	5-yr Avg
VMF-JJCR CRSP	\$ 1,034,417	\$ 908,190	\$ 1,067,283	\$ 875,212	\$ 1,326,950	\$ 1,042,410
VMF-GGCR Colorado River Storage	\$ 399,071	\$ 363,036	\$ 233,070	\$ 174,641	\$ 282,361	\$ 290,436
VMF-LLCR CRSP	\$ 446,322	\$ 396,283	\$ 400,214	\$ 284,372	\$ 424,922	\$ 390,423
Consolidated CRSP - JJCR+GGCR+LLCR	\$ 1,879,810	\$ 1,667,509	\$ 1,700,567	\$ 1,334,225	\$ 2,034,233	\$ 1,723,269
WMA-LLCO Collbran	\$ 523	\$ 464	\$ 470	\$ 334	\$ 499	\$ 458
VMF-LLDO Dolores	\$ 523	\$ 464	\$ 564	\$ 401	\$ 599	\$ 510
WMA-LLRG Rio Grande	\$ 523	\$ 464	\$ 564	\$ 401	\$ 599	\$ 510
VMF-LLSE Seedskadee	\$ 485	\$ 479	\$ 564	\$ 401	\$ 599	\$ 505
Total All:	\$ 1,881,865	\$ 1,669,381	\$ 1,702,729	\$ 1,335,760	\$ 2,036,527	\$ 1,725,253

Aid to Irrigation data for the FY 2018 CRSP PRS

Aid to irrigation 1/

Irrigation allocation	114,172,665
Less other credits:	
Contributions	538,928
CRDF	118,265
Non-reimbursable	
Due from surplus power & M&I for 2018	<u>113,515,472</u>
Due from surplus power & M&I for 2017	<u>107,589,313</u>
Increase for FY 2018 (goes in PRS IFI)	<u>5,926,159</u>
M&I payments through 2018	32,056,755
M&I payments through 2017	28,709,957
FY18 Increase to Surplus M&I Revenues for PRS	<u>3,346,798</u>
Anticipated power repayment	<u>81,458,717</u>

Aid to Part Proj Irr

Construction 2/	774,031,000
Apportionment 3/	<u>319,025,349</u>
Total	<u>1,093,056,349</u>
FY 2018	<u>1,071,008,233</u>
FY 2017 increase for PRS	<u>22,048,116</u>
FY 2018 increase for PRS	

Total Non-power (2018) for SOR

2018	1,174,515,066
2017 /4	1,149,887,589
Increase	<u>24,627,477</u>

1/ Based on the 2017 SPCCR.

2/ Based on the USBR FY 2017 (61st Annual Report)revenues required Basin States for irrigation assistance.

3/ Based on the apportionment table.

4/ Based on the 2017 SOR.

ENTERED IN PRS

ENTERED IN SOR

Colorado River Storage Project (Initial Units) Irrigation
SPCCR for FY 2017

	Schedule	0622 Aspinall	0591 Flaming	0557 Glen	0594 O&M	0711 Navajo	0864 Trans	Total
<u>Costs</u>								
Multipurpose Land and Rights (SGL 1711)	A	1,415,126	2,730,583	2,940,104		3,855,634		10,941,447
Building	A	26,063	703,697	2,027,389		324,711		
Construction in Progress (CIP)			165	112,861		128,328		
Plant in Service (SGL 1740)	A	1,735,150	13,286,439	52,229,620		26,691,559		93,942,768
Property Transfers	B	18,779	1,728,356	2,249,103				3,996,238
Contributions - Visitor Center Remodel	B			280,509				
Expensed	B					52,429		52,429
Non-reimbursable	B							-
Retirements and Abandoned Plant	B		18,510	1,599,722		17,825		1,636,057
Transfer to Western	B							-
IDC Multipurpose	D							-
IDC Power	D							-
IDC Transferred to Western	D							-
Total Costs		3,195,118	18,467,750	61,439,308	-	31,070,486	-	114,172,662
<u>Repayment</u>								
Contributions	E	3,451	142,562	392,187		728		538,928
CRDF	E	9,305	34,398	18,842		55,720		118,265
Western	E	3,182,363		16,334,276		31,013,919		50,530,558
Surplus M&I Applied to Repayment	E		18,290,790	6,609,754				24,900,544
Future Power Repayment	F	-	-	38,084,251		119		38,084,370
Total Repayment		3,195,119	18,467,750	61,439,310	-	31,070,486	-	114,172,665

Salt Lake City Area Integrated Projects
 Irrigation Cumulative Repayment Obligations Comparisons
 Unit: \$1,000

Item	WAPA-169	FY 2018 Preliminary	2/	Difference
Aid to Main-stem Irrigation	107,590	113,515	2/	5,925
Aid to Participating Projects Irrigation: 1/				
Construction	778,431	774,031		(4,400)
Apportionment	316,630	319,025		2,395
Total Aid to Participating Projects	1,095,061	1,093,056	2/	(2,005)

1/ Includes only projects meeting the criteria of the 1983 CREDA agreement. Increase in construction mostly due to revision to cost allocations for Utah's Bonneville Unit. Decrease in apportionment due to MOA between BOR, WAPA, Upper Basin States & CREDA.

2/ Totals are equal to Historical Subtotals for Principle Payment plus Unpaid Balance in the Executive Summary

Colorado River Storage Project
Aid to Participating Projects Irrigation Repayment Obligations and Apportioned Revenues Applied
FY 2019 Preliminary PRS

Unit: \$ 1,000

year	Colorado 46%				New Mexico 17%				Utah 21.5%				Wyoming 15.5%				Total			
	Incremental		Cumulative		Incremental		Cumulative		Incremental		Cumulative		Incremental		Cumulative		Incremental		Cumulative	
	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor
2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2016	-	3,961	-	3,961	-	1,464	-	1,464	8,610	1,851	8,610	1,851	-	1,335	-	1,335	8,610	8,610	8,610	8,610
2017	3,192	2,031	3,192	5,992	-	751	-	2,214	-	949	8,610	2,801	1,224	684	1,224	2,019	4,416	4,416	13,026	13,026
2018	-	-	3,192	5,992	-	-	-	2,214	-	-	8,610	2,801	-	-	1,224	2,019	-	-	13,026	13,026
2019	-	-	3,192	5,992	-	-	-	2,214	-	-	8,610	2,801	-	-	1,224	2,019	-	-	13,026	13,026
2020	-	2,984	3,192	8,976	-	1,103	-	3,317	6,486	1,394	15,096	4,195	-	1,005	1,224	3,024	6,486	6,486	19,512	19,512
2021	13,590	6,251	16,782	15,227	-	2,310	-	5,627	-	2,922	15,096	7,117	-	2,106	1,224	5,131	13,590	13,590	33,102	33,102
2022	-	-	16,782	15,227	-	-	-	5,627	-	-	15,096	7,117	-	-	1,224	5,131	-	-	33,102	33,102
2023	-	10,050	16,782	25,277	21,847	3,714	21,847	9,341	-	4,697	15,096	11,814	-	3,386	1,224	8,517	21,847	21,847	54,949	54,949
2024	-	-	16,782	25,277	-	-	21,847	9,341	-	-	15,096	11,814	-	-	1,224	8,517	-	-	54,949	54,949
2025	-	47,524	16,782	72,800	-	17,563	21,847	26,904	103,312	22,212	118,408	34,026	-	16,013	1,224	24,530	103,312	103,312	158,261	158,261
2026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158,261	158,261
2027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158,261	158,261
2028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158,261	158,261
2029	5,482	36,797	5,482	36,797	-	13,599	-	13,599	-	17,199	-	17,199	12,399	12,399	12,399	12,399	17,881	79,994	176,142	238,255
2030	-	-	5,482	36,797	-	-	-	13,599	-	-	-	17,199	-	-	12,399	12,399	-	-	176,142	238,255
2031	-	-	5,482	36,797	-	-	-	13,599	-	-	-	17,199	-	-	12,399	12,399	-	-	176,142	238,255
2032	-	-	5,482	36,797	7,580	-	7,580	13,599	-	-	-	17,199	-	-	12,399	12,399	7,580	-	183,722	238,255
2033	-	-	5,482	36,797	-	-	-	13,599	-	-	-	17,199	-	-	12,399	12,399	-	-	183,722	238,255
2034	-	-	5,482	36,797	-	-	-	13,599	4,978	-	4,978	17,199	-	-	12,399	12,399	4,978	-	188,700	238,255
2035	-	70,668	5,482	107,465	-	26,116	7,580	39,715	-	33,030	4,978	50,228	23,812	23,812	36,211	36,211	23,812	153,626	212,512	391,880
2036	-	-	5,482	107,465	-	-	7,580	39,715	-	-	4,978	50,228	-	-	36,211	36,211	-	-	212,512	391,880
2037	-	-	5,482	107,465	-	-	7,580	39,715	-	-	4,978	50,228	-	-	36,211	36,211	-	-	212,512	391,880
2038	50,537	-	56,019	107,465	-	-	7,580	39,715	-	-	4,978	50,228	-	-	36,211	36,211	50,537	-	263,049	391,880
2039	-	-	56,019	107,465	-	-	7,580	39,715	-	-	4,978	50,228	-	-	36,211	36,211	-	-	263,049	391,880
2040	5,188	-	61,207	107,465	-	-	7,580	39,715	-	-	4,978	50,228	-	-	36,211	36,211	5,188	-	268,237	391,880
2041	-	-	61,207	107,465	-	-	7,580	39,715	-	-	4,978	50,228	-	-	36,211	36,211	-	-	268,237	391,880
2042	2,308	-	63,515	107,465	-	-	7,580	39,715	-	-	4,978	50,228	-	-	36,211	36,211	2,308	-	270,545	391,880
2043	-	-	63,515	107,465	-	-	7,580	39,715	-	-	4,978	50,228	-	-	36,211	36,211	-	-	270,545	391,880
2044	-	-	63,515	107,465	-	-	7,580	39,715	-	-	4,978	50,228	-	-	36,211	36,211	-	-	270,545	391,880
2045	101,975	58,025	165,490	165,490	-	21,444	7,580	61,159	-	27,120	4,978	77,349	19,552	-	36,211	55,763	101,975	126,142	372,520	518,022
2046	-	-	165,490	165,490	-	-	7,580	61,159	-	-	4,978	77,349	-	-	36,211	55,763	-	-	372,520	518,022
2047	-	-	165,490	165,490	-	-	7,580	61,159	-	-	4,978	77,349	-	-	36,211	55,763	-	-	372,520	518,022
2048	78,650	78,650	244,140	244,140	-	29,066	7,580	90,226	-	36,760	4,978	114,109	26,502	-	36,211	82,265	78,650	170,978	451,170	689,000
2049	23,302	23,302	267,442	267,442	-	8,612	7,580	98,837	-	10,891	4,978	125,000	7,852	-	36,211	90,116	23,302	50,657	474,472	739,657
2050	-	-	267,442	267,442	-	-	7,580	98,837	72,897	-	77,875	125,000	-	-	36,211	90,116	72,897	-	547,369	739,657
2051	-	-	267,442	267,442	-	-	7,580	98,837	-	-	77,875	125,000	-	-	36,211	90,116	-	-	547,369	739,657
2052	80,853	80,853	348,295	348,295	-	29,880	7,580	128,718	-	37,790	77,875	162,790	27,244	-	36,211	117,360	80,853	175,767	628,222	915,424
2053	-	-	348,295	348,295	-	-	7,580	128,718	-	-	77,875	162,790	-	-	36,211	117,360	-	-	628,222	915,424
2054	-	24,902	348,295	373,197	-	9,203	7,580	137,921	96,554	11,639	174,429	174,429	8,391	-	36,211	125,751	96,554	54,135	724,776	969,559
2055	-	30,987	348,295	404,184	-	11,452	7,580	149,372	14,483	14,483	188,912	188,912	10,441	-	36,211	136,192	14,483	67,363	739,259	1,036,921
2056	-	-	348,295	404,184	-	-	7,580	149,372	-	-	188,912	188,912	-	-	36,211	136,192	-	-	739,259	1,036,921
2057	22,703	25,822	370,998	430,006	-	9,543	7,580	158,915	12,069	12,069	200,981	200,981	8,701	-	36,211	144,893	34,772	56,135	774,031	1,093,056
2058	-	-	370,998	430,006	-	-	7,580	158,915	-	-	200,981	200,981	-	-	36,211	144,893	-	-	774,031	1,093,056
2059	-	-	370,998	430,006	-	-	7,580	158,915	-	-	200,981	200,981	-	-	36,211	144,893	-	-	774,031	1,093,056
2060	-	-	370,998	430,006	-	-	7,580	158,915	-	-	200,981	200,981	-	-	36,211	144,893	-	-	774,031	1,093,056
Total	387,780	502,806			29,427	185,820			319,389	235,007			37,435	169,424			774,031	1,093,056		

Note: Boxed yellow amounts trigger apportionment. Boxed green amounts indicate total available with apportionment. Boxed blue amounts indicate apportionment under MOA agreement

REVENUES REQUIRED BY THE UPPER COLORADO RIVER BASIN STATES
FOR IRRIGATION ASSISTANCE OF PARTICIPATING PROJECTS
USING FULL 50-YEAR REPAYMENT PERIOD FOR EACH BLOCK

Fiscal Year 2017 - 61st Annual Report
(Units = \$1,000)

Fiscal Year	Colorado		New Mexico		Utah		Wyoming		Total of Four States
	Project or Block	Amount Required	Project or Block	Amount Required	Project or Block	Amount Required	Project or Block	Amount Required	
2016					Vernal Unit	8,610			8,610
2017	Smith Fork	3,192					Seedskadee	1,224	4,416
2020					Emery County	6,486			6,486
2021	Florida	7,634							7,634
2021	Silt	5,956							5,956
2023			San Juan-Chama 1	21,847					21,847
2025					Duchesne	103,312			103,312
2029	Bostwick Park	5,482					Eden	12,399	17,881
2032			San Juan-Chama 2	943					943
2032			Hammond	6,637					6,637
2034					Jensen Unit	4,978			4,978
2035							Lyman	23,812	23,812
2038	Dolores 1	50,537							50,537
2040	Paonia	5,188							5,188
2042	Dallas Creek	2,308							2,308
2045	Dolores 4	101,975							101,975
2048	Dolores 6	78,650							78,650
2049	Dolores 7	23,302							23,302
2050					Heber-Francis	72,897			72,897
2052	Dolores 8	80,853							80,853
2054					Utah County	96,554			96,554
2055					Starvation Reservoir	14,483			14,483
2057	Animas-La Plata 1/	22,703			UBRP	12,069			34,772
SUBTOTAL:		387,780		29,427		319,389		37,435	774,031
2110	Fruitland Mesa				Uintah Unit		Savery-Pot Hook		
2110	West Divide				Upalco Unit		LaBarge		
2110	San Miguel								
2110	Savery-Pot Hook								
SUBTOTAL: 2/		0		0		0		0	0
TOTAL:		387,780		29,427		319,389		37,435	774,031

1/ Legal waiver of assistance for irrigation investigation costs still not available. Timing dated 50 years from construction completion estimated at year 2007.

2/ Apportioned revenues associated with those projects indefinitely deferred pursuant to the 1983 CREDA Agreement.

Salt Lake City Integrated Projects

unit: 1,000

Average Annual Transmission Revenue Comparison

Item	WAPA-169 / SLIP-F10	FY 2019 Preliminary	Difference
Total Transmission Revenue	\$ 19,640	\$ 18,222	\$ (1,418)

PROJECTED CRSP FIRM AND NON-FIRM WHEELING AND EXCHANGE REVENUE

Table consistently reviewed and updated. Last review April 2019

Customer	Contract Number	Contract Expiration Date	Rate Unit	\$1.579					
					2020	2021	2022	2023	2024
CRSP Energy Mngt. & Mktg Office (EMMO)									
FES Transmission Reservation	11-SLC-0659		kW		1,435,886	1,435,886	1,435,886	1,435,886	1,435,886
Total Merchant Service Agreements	07-SLC-0610	9/30/2024	kW		1,507,000	1,507,000	1,507,000	1,507,000	1,507,000
			\$	1.58	\$ -	\$ -	\$ -	\$ -	\$ -
	98-SLC-0372		kW		130,000	130,000	130,000	130,000	130,000
			\$	0.00	\$ -	\$ -	\$ -	\$ -	\$ -
	00-SLC-0439		kW		440,000	440,000	440,000	440,000	440,000
			\$	0.00	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL CRSP EMMO			kW		3,512,886	3,512,886	3,512,886	3,512,886	3,512,886
			\$		\$ -	\$ -	\$ -	\$ -	\$ -
Exchange Contracts									
APS		6/1/2046	kW		150,000	150,000	150,000	150,000	150,000
	14-06-400-3654		\$		\$ -	\$ -	\$ -	\$ -	\$ -
Salt River Project	14-06-400-2468	9/30/2024	kW		250,000	250,000	250,000	250,000	250,000
			\$	Set	\$ 4,432,500	\$ 4,432,500	\$ 4,432,500	\$ 4,432,500	\$ 4,432,500
Salt River Project 25MW Provided to SRP from Merchant Reservation (Counted in Load Sheet for VAR)	08-SLC-0615	6/30/2018	kW		0	0	0	0	0
			\$		\$ -	\$ -	\$ -	\$ -	\$ -
Public Service Company of New Mexico NO BILL - EXCHANGE (Add to 14-06-400-2425 Load for TransRate)	14-06-400-2425	6/1/2047	kW		84,000	84,000	84,000	84,000	84,000
	8-07-40-P0695		kW		50,000	50,000	50,000	50,000	50,000
			\$		\$ -	\$ -	\$ -	\$ -	\$ -
Tri-State G&T (Colorado-Ute) 16-SLC-0731, 0732, 0733 (50MW+15MW + 35MW)	91-SLC-0178	9/30/2053	kW		100,000	100,000	100,000	100,000	100,000
			\$	1.58	\$ 1,894,800	\$ 1,894,800	\$ 1,894,800	\$ 1,894,800	\$ 1,894,800
Total Exchange Contracts			kW		634,000	634,000	634,000	634,000	634,000
			\$		\$ 6,327,300	\$ 6,327,300	\$ 6,327,300	\$ 6,327,300	\$ 6,327,300

PROJECTED CRSP FIRM AND NON-FIRM WHEELING AND EXCHANGE REVENUE

Table constantly reviewed and updated. Last review April 2019

Customer	Contract Number	Contract Expiration Date	Rate Unit	\$1.579					
					2020	2021	2022	2023	2024
Firm Wheeling Contracts									
Delta Montrose Electric Assoc.	99-SLC-0407	3/31/2008	kW		20	20	20	20	20
			\$	1.58	\$ 379	\$ 379	\$ 379	\$ 379	\$ 379
Los Alamos County	14-RMR-2495	9/30/2024	kW		10,000	10,000	10,000	10,000	10,000
			\$	1.58	\$ 189,480	\$ 189,480	\$ 189,480	\$ 189,480	\$ 189,480
Municipal Energy Agency of NE (18-SLC-0961)	13-RMR-2411	5/1/2019	kW		2,000	2,000	0		
	19-SLC-0991	5/1/2021	\$	1.58	\$ 37,896	\$ 37,896	\$ -	\$ -	\$ -
	15-RMR-2636	4/30/2020	kW		5,000	5,000	5,000	5,000	5,000
			\$	1.58	\$ 94,740	\$ 94,740	\$ 94,740	\$ 94,740	\$ 94,740
Navajo Tribal Utility Authority 4/ The 30MW will change to 40MW under the new OAT agreement	14-06-400-4537	6/1/2023	kW		30,000	30,000	30,000	30,000	30,000
			\$	1.58	\$ -	\$ -	\$ -	\$ -	\$ -
PacifiCorp/APS To terminate in Jan 2021	94-SLC-0276	1/31/2021	kW		250,000	250,000	0	0	0
			\$	1.58	\$ 4,737,000	\$ 4,737,000	\$ -	\$ -	\$ -
Salt River Project (OATT)	15-SLC-0712	12/31/2020	kW		9,000	0	0	0	0
			\$	1.58	\$ 170,532	\$ -	\$ -	\$ -	\$ -
Tri-State G&T	03-SLC-0503	10/28/2037	kW		100,000	100,000	100,000	100,000	100,000
			\$	1.58	\$ 1,894,800	\$ 1,894,800	\$ 1,894,800	\$ 1,894,800	\$ 1,894,800
Total Firm Wheeling			kW		418,020	409,020	157,020	157,020	157,020
			\$		\$ 7,352,203	\$ 7,183,687	\$ 2,408,791	\$ 2,408,791	\$ 2,408,791
Network Contracts									
Aztec, City of Network contract	16-RMR-2760	6/30/2023	kW		4,262	4,262	4,262	4,262	4,262
			\$	1.58	\$ 80,756	\$ 80,756	\$ 80,756	\$ 80,756	\$ 80,756
APS Network contract	09-SLC-0628	12/31/2020	kW		53,015	53,015	53,015	53,015	53,015
			\$	1.58	\$ 1,004,528	\$ 1,004,528	\$ 1,004,528	\$ 1,004,528	\$ 1,004,528
Black Hills/Colorado Electric Utility Company, LP Network contract	11-SLC-0661	12/31/2022	kW		14,420	14,420	14,420	14,420	14,420
			\$	1.58	\$ -	\$ -	\$ -	\$ -	\$ -
Deseret (Garkane South) 17-RMR-2832 (28MW) Network contract	17-RMR-2832	12/31/2017	kW		9,288	9,288	9,288	9,288	9,288
			\$	1.58	\$ 175,989	\$ 175,989	\$ 175,989	\$ 175,989	\$ 175,989
Fredonia, AZ 3/ Network contract	08-SLC-0620	9/30/2028 Can terminate w/5yrs notice	kW		1,769	1,769	1,769	1,769	1,769
			\$	1.58	\$ 33,519	\$ 33,519	\$ 33,519	\$ 33,519	\$ 33,519
Municipal Energy Agency of NE 3/ Network contract	12-RMR-2321	9/30/2022	kW		3,612	3,612	3,612	3,612	3,612
			\$	1.58	\$ 68,440	\$ 68,440	\$ 68,440	\$ 68,440	\$ 68,440
Page, City of 3/ Network contract	12-DSR-12368	12/31/2022	kW		6,191	6,191	6,191	6,191	6,191
			\$	1.58	\$ 117,307	\$ 117,307	\$ 117,307	\$ 117,307	\$ 117,307
Total Network Contracts			kW		92,557	92,557	92,557	92,557	92,557
			\$		\$ 1,480,540	\$ 1,480,540	\$ 1,480,540	\$ 1,480,540	\$ 1,480,540

PROJECTED CRSP FIRM AND NON-FIRM WHEELING AND EXCHANGE REVENUE

Table consistently reviewed and updated. Last review April 2019

Customer	Contract Number	Contract Expiration Date	Rate Unit	\$1.579	2020		2021		2022		2023		2024	
TRANSFORMATION														
Farmington, NM														
			kW			100,000		100,000		100,000		100,000		100,000
	3-07-40-P0715	6/30/2022	Per Yr Chrg	1.975	\$	197,500	\$	197,500	\$	197,500	\$	197,500	\$	197,500
Navajo Tribal Utility Authority	14-06-400-4537	6/1/2023	kW			50,000		50,000		50,000		50,000		50,000
			\$		\$	-	\$	-	\$	-	\$	-	\$	-
Total Transformation			kW			150,000		150,000		150,000		150,000		150,000
			\$		\$	197,500	\$	197,500	\$	197,500	\$	197,500	\$	197,500
PASS THRU - NO REVENUE - NOT A LOAD														
Holloman Air Force Base 2/	05-SLC-0578	9/30/2024	kW			2,000		2,000		2,000		2,000		2,000
\$2.42/kWh = \$2.31 + .07Ans. Svs + .04 Sch. 2 Chg.			\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
OFFSETTING REVENUES														
Palo Verde Nuclear Generating Station Shutdown Power & Blackstart Services														
	09-DSR-12008	12/31/2018	\$		\$	534,230	\$	534,230	\$	534,230	\$	534,230	\$	534,230
Provo River Project (UAMPS, UMPA & Heber)*	94-SLC-0253 & 0254, 07-SLC-0601	9/30/2024	\$		\$	29,788	\$	29,788	\$	29,788	\$	29,788	\$	29,788
Western Systems Coordination Council			\$		\$	1,092,386	\$	1,092,386	\$	1,092,386	\$	1,092,386	\$	1,092,386
*This is phase shifter revenue,														
		5 year average												
Total Offsetting Revenues			\$		\$	1,656,404	\$	1,656,404	\$	1,656,404	\$	1,656,404	\$	1,656,404
Total Transmission System Load			kW			4,359,043		4,350,043		4,098,043		4,098,043		4,098,043
Total Transmission Revenue			\$		\$	20,526,833	\$	20,358,317	\$	15,583,421	\$	15,583,421	\$	15,583,421
ATRR to be redistributed in outyear rates								\$	3,186,000	\$	4,779,000	\$	4,779,000	
Total for PRS					\$	18,672,929	\$	18,504,413	\$	16,915,517	\$	18,508,517	\$	18,508,517

*Revenue CRSP charges UAMPS and UMPA to wheel PRP power, which is marketed separately from Integrated Projects Power.

1/ Farmington, NM, PNM, and Williams Energy Services all use the Shiprock Transformer. These contracts are listed on the PO&M under Firm Transmission.

2/ This contract is a pass-through expense - through El Paso Electric

3/ Avg. 12-CP for the past 12mos.

4/ Because NTUA received additional CROD capacity in the Post-2004 allocation process and additional capacity from the native American Power Pool/Benefit Crediting, they have no need for transmission capacity under this contract for the time being. Per Brent 7/26/05

Salt Lake City Area Integrated Projects

Offsetting Revenues Projections Comparisons

Unit: \$1,000

Revenue	WAPA-169 3/	FY 2019 Preliminary	Difference
Firm Transmission	\$ 16,400	\$ 18,222	\$ 1,822
Non-firm Transmission	\$ 3,240	\$ 3,440	\$ 200
Resale Energy 1/	\$ 7,737	\$ 7,068	\$ (669)
Transaction fees 1/	\$ 2,181	\$ 2,418	\$ 237
Other 2/	\$ 5,118	\$ 4,799	\$ (319)
Total	\$ 34,676	\$ 35,947	\$ 1,271

1/ Merchant function.

2/ Includes revenues from ancillary services, auxiliary services, spinning reserves, admin charges for WRP and CDP transactions, facility use, energy imbalance, and other misc. revenues.

3/ From WAPA-169 Final FRN

CRSP Offsetting Revenues Projections

as of Apr 2019

Year	Transmission Revenues			Merchant Function Revenue Transaction			Other Revenues 5/	Total Offsetting Revenues
	Firm 1/	Non-firm 2/	Total	Resale 3/	Fee 4/	Total		
2015		2,442,020		8,743,061	2,209,529	10,952,590	5,664,585	
2016		2,174,708		6,660,983	2,471,152	9,132,135	5,144,015	
2017		3,372,533		6,211,333	2,542,326	8,753,659	5,295,216	
2018		4,649,751		6,039,477	2,388,705	8,428,181	3,892,450	
2019		4,560,840		7,686,727	2,479,677	10,166,404	3,997,860	
5-yr AVG	18,221,978	3,439,970	21,661,948	7,068,316	2,418,278	9,486,594	4,798,825	35,947,367
		6/				7/	8/	

1/ Based on average-firm transmission contracts in the PRS, from 2020 through the "pinchpoint"

2/ Non-firm transmission revenues are taken off of the PO&M 60's

3/ Resale revenue is the difference between monthly sales and purchases. Does not include WRP sales or purchases.

4/ Transaction fees reflect the cost of real time merchant services, management and energy accounting support, and information technology costs.

5/ Includes revenues from ancillary services, auxiliary services, spinning reserves, admin charges for WRP and CDP transactions, facility use, energy imbalance, and other misc. revenues.

6/ Entered as Non-Firm Transmission column (S) in PRS

7/ Entered in Merchant Function column (U) in PRS

8/ Entered in Other Revs column (V) in PRS

CRSP STORAGE UNITS - HISTORIC AND PROJECT NET REVENUES FROM M&I WATER SALES - FY2015
(After Paying OM&R Costs -- Units = \$1,000)

Year	<i>Blue Mesa Reservoir</i>		<i>Navajo Reservoir</i>		<i>Glen Canyon Reservoir</i>		<i>Flaming Gorge Reservoir</i>		<i>CRSP Total</i>		Year
	<u>Acre-Feet</u>	<u>Revenue</u>	<u>Acre-Feet</u>	<u>Revenue</u>	<u>Acre-Feet</u>	<u>Revenue</u>	<u>Acre-Feet</u>	<u>Revenue</u>	<u>Acre-Feet</u>	<u>Revenue</u>	
2019	1,124	58.3	50	0.9	42,840	3,047.6	100	4.1	44,114	3,110.8	2019
2020	1,184	62.8	50	0.9	42,890	3,109.1	100	4.2	44,224	3,177.1	2020
2021	1,225	66.5	50	0.9	42,890	3,168.9	100	4.3	44,265	3,240.6	2021
2022	1,194	66.6	50	0.9	42,890	3,229.9	100	4.4	44,234	3,301.8	2022
2023	1,190	67.8	50	0.9	42,890	3,292.1	100	4.5	44,230	3,365.2	2023
2024	1,185	68.9	50	0.9	42,890	3,380.2	100	4.6	44,225	3,454.7	2024
2025	1,185	70.3	50	1.0	43,190	3,466.9	100	4.7	44,525	3,542.8	2025
2026	1,155	70.2	50	1.0	43,190	3,533.6	100	4.8	44,495	3,609.6	2026
2027	1,155	71.6	50	1.0	43,190	3,601.6	100	4.9	44,495	3,679.1	2027
2028	1,155	73.1	0	0.0	43,190	3,671.0	100	5.0	44,445	3,749.0	2028
2029	1,155	74.5	0	0.0	43,190	3,771.5	100	5.1	44,445	3,851.1	2029
2030	1,057	72.4	0	0.0	43,390	3,860.2	100	5.2	44,547	3,937.8	2030
2031	1,057	73.9	0	0.0	43,390	3,934.4	100	5.3	44,547	4,013.5	2031
2032	1,057	75.4	0	0.0	43,390	4,010.0	100	5.4	44,547	4,090.7	2032
2033	1,056	76.8	0	0.0	43,390	4,087.2	100	5.5	44,546	4,169.5	2033
2034	1,056	78.4	0	0.0	3,390	277.1	100	5.6	4,546	361.0	2034
2035	1,056	79.9	0	0.0	3,490	288.8	100	5.7	4,646	374.4	2035
2036	1,056	81.5	0	0.0	3,490	291.0	100	5.8	4,646	378.3	2036
2037	1,056	83.2	0	0.0	3,490	293.3	100	5.9	4,646	382.4	2037
2038	1,056	84.8	0	0.0	3,490	295.7	100	6.0	4,646	386.5	2038
2039	1,056	86.5	0	0.0	3,490	340.8	100	6.2	4,646	433.5	2039
2040	1,056	88.2	0	0.0	3,490	343.4	100	6.3	4,646	437.9	2040
2041	1,056	90.0	0	0.0	3,590	357.3	100	6.4	4,746	453.8	2041
2042	1,056	91.8	0	0.0	3,590	360.4	100	6.5	4,746	458.7	2042
2043	1,033	92.0	0	0.0	3,590	363.5	100	6.7	4,723	462.1	2043
2044	1,008	91.8	0	0.0	3,590	418.0	100	6.8	4,698	516.6	2044
2045	400	38.6	0	0.0	3,590	421.3	100	6.9	4,090	466.8	2045
2046	261	26.9	0	0.0	3,690	438.0	100	7.1	4,051	472.0	2046
2047	261	27.5	0	0.0	3,690	441.9	100	7.2	4,051	476.5	2047
2048	251	27.0	0	0.0	3,690	445.9	100	7.4	4,041	480.2	2048
2049	251	27.5	0	0.0	3,690	511.6	100	7.5	4,041	546.7	2049
2050	207	23.3	0	0.0	3,690	515.9	100	7.7	3,997	546.8	2050
2051	199	22.9	0	0.0	3,690	520.3	100	7.8	3,989	550.9	2051
2052	172	20.0	0	0.0	2,740	369.4	100	8.0	3,012	397.3	2052
2053	29	2.2	0	0.0	2,740	369.4	100	8.1	2,869	379.7	2053
2054	24	1.5	0	0.0	2,740	443.3	100	8.3	2,864	453.1	2054
2055	24	1.6	0	0.0	2,740	443.3	100	8.5	2,864	453.3	2055
2056	24	1.6	0	0.0	2,740	443.3	100	8.6	2,864	453.5	2056
2057	24	1.6	0	0.0	2,740	443.3	100	8.8	2,864	453.7	2057
2058	24	1.7	0	0.0	2,740	443.3	100	9.0	2,864	453.9	2058
2059	24	1.7	0	0.0	2,740	531.9	100	9.2	2,864	542.8	2059
2060	24	1.7	0	0.0	2,740	531.9	100	9.3	2,864	543.0	2060

2019 SLIP PRS Sales Projections
(Assuming Project Use Loads Variable thru 2028, Constant Beyond 2029)

Year	Energy			Capacity			Rounded (MW)
	Proj Use-Energy (MWH)	LT Firm Com	Total (MWH)	Proj Use-Cap (MW)	LT Firm Com	Total (MW)	
2019	183,520	4,951,786	5,135,306	41,720	1,360,778	1,402,498	1,402,500
2020	202,920	4,951,786	5,154,706	44,720	1,360,780	1,405,500	1,405,500
2021	204,920	4,951,786	5,156,706	45,510	1,360,780	1,406,290	1,406,300
2022	204,920	4,951,786	5,156,706	45,860	1,360,780	1,406,640	1,406,600
2023	210,220	4,951,786	5,162,006	51,110	1,360,780	1,411,890	1,411,900
2024	285,290	4,951,786	5,237,076	63,845	1,360,780	1,424,625	1,424,600
2025	297,490	4,951,786	5,249,276	69,120	1,360,780	1,429,900	1,429,900
2026	308,490	4,951,786	5,260,276	70,620	1,360,780	1,431,400	1,431,400
2027	308,490	4,951,786	5,260,276	70,620	1,360,780	1,431,400	1,431,400
2028	313,590	4,951,786	5,265,376	75,370	1,360,780	1,436,150	1,436,200
2029	315,480	4,951,786	5,267,266	76,040	1,360,780	1,436,820	1,436,800
2030	316,070	4,951,786	5,267,856	76,040	1,360,780	1,436,820	1,436,800
2031	316,070	4,951,786	5,267,856	76,540	1,360,780	1,437,320	1,437,300
2032	316,170	4,951,786	5,267,956	76,540	1,360,780	1,437,320	1,437,300
2033	316,170	4,951,786	5,267,956	76,540	1,360,780	1,437,320	1,437,300
Avg, 2020-29 (PinchPoint)	265,181	4,951,786	5,216,967	61,282	1,360,780	1,422,062	1,422,060

FY 2019 Project Use Summary

Year	MW							GWH			
	<u>Summer</u>			<u>Winter</u>			Average Used	Summer	Winter	Total	Total Used
	Total	Unassigned	Used	Total	Unassigned	Used					
2019	187	127.16	59.84	187	163.40	23.60	41,720	148.48	35.04	183.52	183,520
2020	187	124.16	62.84	187	160.40	26.60	44,720	158.18	44.74	202.92	202,920
2021	187	122.58	64.42	187	160.40	26.60	45,510	159.38	45.54	204.92	204,920
2022	187	122.58	64.42	187	159.70	27.30	45,860	159.38	45.54	204.92	204,920
2023	187	117.33	69.67	187	154.45	32.55	51,110	162.18	48.04	210.22	210,220
2024	187	104.36	82.64	187	141.95	45.05	63,845	199.75	85.54	285.29	285,290
2025	187	98.81	88.19	187	136.95	50.05	69,120	206.55	90.94	297.49	297,490
2026	187	95.81	91.19	187	136.95	50.05	70,620	215.05	93.44	308.49	308,490
2027	187	95.81	91.19	187	136.95	50.05	70,620	215.05	93.44	308.49	308,490
2028	187	91.06	95.94	187	132.20	54.80	75,370	217.65	95.94	313.59	313,590
2029	187	90.10	96.90	187	131.82	55.18	76,040	219.64	95.84	315.48	315,480
2030	187	90.10	96.90	187	131.82	55.18	76,040	219.64	96.43	316.07	316,070
2031	187	90.10	96.90	187	130.82	56.18	76,540	219.64	96.43	316.07	316,070
2032	187	90.10	96.90	187	130.82	56.18	76,540	219.64	96.53	316.17	316,170
2033	187	90.10	96.90	187	130.82	56.18	76,540	219.64	96.53	316.17	316,170

COLORADO RIVER STORAGE PROJECT
Participating Projects
Estimated Project Power Requirements (1)
Table 1

Monthly Summer Peak Demands (MW), typically from April to September (but may vary from contract to contract)

Year	Silt	(4)				(3)			Dutch John	(2) Animas-LaPlata (Durango)	Unassigned Total (MW)	Total (MW)
		Navajo (NAPI/NIIP)	Navajo/Gallup	NTUA	(Tyzak) Jensen	CUP	CUP	Dolores				
2019	0.60	27	4	12	0.93	3.24	10	0.20	1.87	(2)	127.16	187
2020	0.60	27	7	12	0.93	3.24	10	0.20	1.87	(2)	124.16	187
2021	0.60	28	7	12	0.93	3.24	10	0.20	2.45	(2)	122.58	187
2022	0.60	28	7	12	0.93	3.24	10	0.20	2.45	(2)	122.58	187
2023	0.60	28	7.5	12	0.93	7.99	10	0.20	2.45	(2)	117.33	187
2024	0.60	28	20	12	1.4	7.99	10	0.20	2.45	(2)	104.36	187
2025	0.60	28	25	12	1.4	7.99	10	0.20	3.00	(2)	98.81	187
2026	0.60	30	26	12	1.4	7.99	10	0.20	3.00	(2)	95.81	187
2027	0.60	30	26	12	1.4	7.99	10	0.20	3.00	(2)	95.81	187
2028	0.60	30	26	12	1.4	12.74	10	0.20	3.00	(2)	91.06	187
2029	0.60	30	26	12	1.86	12.74	10	0.20	3.50	(2)	90.10	187
2030	0.60	30	26	12	1.86	12.74	10	0.20	3.50	(2)	90.10	187
2031	0.60	30	26	12	1.86	12.74	10	0.20	3.50	(2)	90.10	187
2032	0.60	30	26	12	1.86	12.74	10	0.20	3.50	(2)	90.10	187
2033	0.60	30	26	12	1.86	12.74	10	0.20	3.50	(2)	90.10	187

Summer Energy Use (GWH) - Total for Six Month Period

Year	Silt	(4)				(3)			Dutch John	(2) Animas-LaPlata (Durango)	Total (GWH)
		Navajo (NAPI/NIIP)	Navajo/Gallup	NTUA	Jensen	CUP	CUP	Dolores			
2019	0.20	56	14.8	42	1.88	13.6	15.9	0.1	4.00	(2)	148.48
2020	0.20	56	24.5	42	1.88	13.6	15.9	0.1	4.00	(2)	158.18
2021	0.20	56	24.5	42	1.88	13.6	15.9	0.1	5.20	(2)	159.38
2022	0.20	56	24.5	42	1.88	13.6	15.9	0.1	5.20	(2)	159.38
2023	0.20	56	24.8	42	1.88	16.1	15.9	0.1	5.20	(2)	162.18
2024	0.20	56	62	42	2.25	16.1	15.9	0.1	5.20	(2)	199.75
2025	0.20	56	67.5	42	2.25	16.1	15.9	0.1	6.50	(2)	206.55
2026	0.20	62	70	42	2.25	16.1	15.9	0.1	6.50	(2)	215.05
2027	0.20	62	70	42	2.25	16.1	15.9	0.1	6.50	(2)	215.05
2028	0.20	62	70	42	2.25	18.7	15.9	0.1	6.50	(2)	217.65
2029	0.20	62	70	42	3.14	18.7	15.9	0.1	7.60	(2)	219.64
2030	0.20	62	70	42	3.14	18.7	15.9	0.1	7.60	(2)	219.64
2031	0.20	62	70	42	3.14	18.7	15.9	0.1	7.60	(2)	219.64
2032	0.20	62	70	42	3.14	18.7	15.9	0.1	7.60	(2)	219.64
2033	0.20	62	70	42	3.14	18.7	15.9	0.1	7.60	(2)	219.64

(1) Estimates do not include losses.

(2) Power requirements will be updated as project proponents refine their water development. Current projections assume full non-Ute Indian development after 2030. Full project development (Indian + Non-Indian) would require a Summer Peak demand of 17.0 MW and a Summer use of 42.0 GWH. Summer season now at two months.

(3) The capacity for the Dolores Project includes 1.5 MW for the Ute Mt Utes. The normal Dolores summer demand is 8.6 mw and add the 1.5 mw for Mt Ute results in 10.1 mw forecasted above.

(4) The major projects for CUP's use of CRSP power are in the early planning stages. An additional 0.5MW is anticipated starting in the year 2025, to meet Mitigation and Conservation commitments associated with the Provo River Delta Restoration Project.

(5) energy for NTUA computed on bases of 8 months (March 1 to Oct 31) at 60% load factor.

COLORADO RIVER STORAGE PROJECT
Participating Projects
Estimated Project Power Requirements (1)
Table 2

Monthly Winter Peak Demands (MW), typically from October to March (but may vary from contract to contract)

Year	Silt	(4)				(3)			Dutch John	(2) Animas LaPlata (Durango)	Unassigned (MW)	Total (MW)
		Navajo (NAPI/ NIIP)	Navajo/ Gallup	NTUA	(Tyzak) Jensen	Bonneville	Dolores					
2019	0	10	4	0	0.09	5.71	3.4	0.20	0.20	(2)	163.40	187
2020	0	10	7	0	0.09	5.71	3.4	0.20	0.20	(2)	160.40	187
2021	0	10	7	0	0.09	5.71	3.4	0.20	0.20	(2)	160.40	187
2022	0	10	7	0	0.09	5.71	3.4	0.20	0.90	(2)	159.70	187
2023	0	10	7.5	0	0.09	10.46	3.4	0.20	0.90	(2)	154.45	187
2024	0	10	20	0	0.09	10.46	3.4	0.20	0.90	(2)	141.95	187
2025	0	10	25	0	0.09	10.46	3.4	0.20	0.90	(2)	136.95	187
2026	0	10	25	0	0.09	10.46	3.4	0.20	0.90	(2)	136.95	187
2027	0	10	25	0	0.09	10.46	3.4	0.20	0.90	(2)	136.95	187
2028	0	10	25	0	0.09	15.21	3.4	0.20	0.90	(2)	132.20	187
2029	0	10	25	0	0.47	15.21	3.4	0.20	0.90	(2)	131.82	187
2030	0	10	25	0	0.47	15.21	3.4	0.20	0.90	(2)	131.82	187
2031	0	10	26	0	0.47	15.21	3.4	0.20	0.90	(2)	130.82	187
2032	0	10	26	0	0.47	15.21	3.4	0.20	0.90	(2)	130.82	187
2033	0	10	26	0	0.47	15.21	3.4	0.20	0.90	(2)	130.82	187

Winter Energy Use (GWH) - Total Six Month Period

Year	Silt	(4)				Dutch John	(2) Animas LaPlata (Durango)	Total (GWH)			
		Navajo (NAPI/ NIIP)	Navajo/ Gallup	NTUA	Jensen				Bonneville	Dolores	
2019	0	2.5	14.8	0.0	0.04	15.2	1.4	0.1	1.00	(2)	35.04
2020	0	2.5	24.5	0.0	0.04	15.2	1.4	0.1	1.00	(2)	44.74
2021	0	2.5	24.5	0.0	0.04	15.2	1.4	0.1	1.80	(2)	45.54
2022	0	2.5	24.5	0.0	0.04	15.2	1.4	0.1	1.80	(2)	45.54
2023	0	2.5	24.5	0.0	0.04	17.7	1.4	0.1	1.80	(2)	48.04
2024	0	2.5	62.0	0.0	0.04	17.7	1.4	0.1	1.80	(2)	85.54
2025	0	2.5	67.5	0.0	0.04	17.7	1.4	0.1	1.70	(2)	90.94
2026	0	2.5	70.0	0.0	0.04	17.7	1.4	0.1	1.70	(2)	93.44
2027	0	2.5	70.0	0.0	0.04	17.7	1.4	0.1	1.70	(2)	93.44
2028	0	2.5	70.0	0.0	0.04	20.2	1.4	0.1	1.70	(2)	95.94
2029	0	2.5	70.0	0.0	0.04	20.2	1.4	0.1	1.60	(2)	95.84
2030	0	2.5	70.0	0.0	0.63	20.2	1.4	0.1	1.60	(2)	96.43
2031	0	2.5	70.0	0.0	0.63	20.2	1.4	0.1	1.60	(2)	96.43
2032	0	2.5	70.0	0.0	0.63	20.3	1.4	0.1	1.60	(2)	96.53
2033	0	2.5	70.0	0.0	0.63	20.3	1.4	0.1	1.60	(2)	96.53

(1) Estimates do not include losses.

(2) Power requirements will be updated as project proponents refine their water development. Current projections assume full non-Ute Indian development after 2030. Full project development (Indian + Non-Indian) will require a Winter Peak Demand of 10.0 MW and a Winter use of 17.0 GWH. Winter season now at 10 months.

(3) The capacity for the Dolores Project includes 1.5 MW for the Ute Mt Utes. The normal Dolores winter demand is 2.0 mw and add the 1.5 mw for the Ute Mt Utes results in 3.5 mw forecasted above

(4) The major projects for CUP's use of CRSP power are in the early planning stages. An additional 0.5MW is anticipated starting in the year 2025, to meet Mitigation and Conservation commitments associated with the Provo River Delta Restoration Project.

(5) 12 MW transferred from NIIP to Western for NTUA under amendment 5 to 87-SLC-0013 is only from March 1 to October 31 (an 8 month period), therefore 0 demand and 0 energy is shown here for the winter season



Department of Energy
Western Area Power Administration
299 South Main Street, Suite 200
Salt Lake City, UT 84111

May 1, 2019

Sent via E-mail

Dear Salt Lake City Area Integrated Projects Customer:

Under your firm electric service contract, Western Area Power Administration (WAPA) assesses energy and demand charges as set forth in Rate Schedule SLIP-F10. Additionally, under this rate schedule, a Cost Recovery Charge (CRC) may also be assessed if WAPA determines it is necessary.

WAPA is required to notify its customers by May 1, 2019, if a CRC is needed in the next fiscal year. We have reviewed our financial situation compared to the anticipated hydropower generation levels and determined there will be no CRC for FY 2020. Because there is no CRC, there is no need for action on your part.

Had the CRC been necessary, each customer would have been provided with two sets of energy numbers for the next fiscal year. One set would have shown the full Sustainable Hydropower (SHP) energy allocation, and the other set would have shown a lower SHP allocation. Under this scenario, each customer would then decide whether to accept or decline the CRC. Customers accepting the CRC would receive the full SHP allocation and be charged the additional expense of the CRC. Those customers declining the CRC would avoid the charge, but receive less energy from WAPA in the next fiscal year.

Since a CRC is not necessary for FY 2020, WAPA will not be providing alternative energy and capacity allocations. WAPA will proceed as normal and provide your Winter Season attachment later this summer.

If there are any questions, please contact Tony Henriquez at (801) 524-6388 or THenriquez@wapa.gov.

Sincerely,

**TIMOTHY
VIGIL**

Tim Vigil

Vice President of Power Marketing
CRSP Management Center

Digitally signed by
TIMOTHY VIGIL
Date: 2019.05.01 16:30:01
-06'00'

Enclosure

FY 2020 Cost Recovery Charge Calculation

In order to mitigate extraordinary financial conditions, the CRSP-MC has a cost recovery mechanism called the Cost Recovery Charge (CRC) that may be implemented to maintain a sufficient balance in the Basin Fund (BF). The need for a CRC is based on the BF Balance at the beginning of the fiscal year and the projected decrease in the Basin Fund balance throughout the FY. The table on page two shows the criteria used to set the BF floor.

WAPA monitors the Basin Fund throughout the FY and the factors (net revenues and Purchase Power expenses) that can trigger a CRC.

April 2019 projections for triggering a CRC in FY2020:

STEP 1: Compute the maximum available decrease in the basin fund

The projected FY 2020 Basin Fund Beginning Balance (BFBB):		\$ 113,453,890
*The FY 2020 Beginning Balance falls within tier iii in the CRC table, and the allowable Percent decrease is:	-40%	\$ (45,381,556)
**The FY 2020 minimum value for the Basin Fund is:		\$ 68,072,334

STEP 2: Compute the projected increase (or decrease) in the basin fund

Basin Fund Beginning Balance:		\$ 113,453,890
Projected FY 2020 projected increase (or decrease):		
Projected net revenue (projected FY revenues - projected FY expenses):	\$190,628,380 - \$189,962,730 =	\$ 665,650
Projected FY 2020 end of year balance:		\$ 114,119,540

STEP 3: Compare max allowable decrease to projected increase (or decrease)

*****Amount that we need to recover using the CRC: NONE**

This value is equal to \$0 because the projected end of year Basin Fund Balance is greater than the allowed minimum balance: →

If a CRC were to be implemented, WAPA would also implement a Waiver Level that would reduce purchase power expense by delivering less energy than contractually required. Customers that choose to voluntarily schedule their reduced allocation would be exempt from the CRC. The Waiver Level will be set at the sum of the energy that can be provided through hydro generation and power purchased with monies in the Basin Fund. The Waiver Level will not be less than the forecasted Hydro Energy.

Waiver Level (GWh) equals the lesser of SHP allocation or Forecasted Energy:	5,340
Waiver Level Percent:	103.0%
CRC Energy (GWh):	0
CRC level percentage of full SHP:	0.0%
Cost Recovery Charge (mills/kWh):	0.00

* See CRC tier criteria on Pg. 2: Under CRC Tier iii, the allowable decrease is -40%, where BFBB is less than \$120,000,000 but greater than \$90,000,000

** Also known as the Basin Fund Target Balance (BFTB)

*** The CRC formulas are set up so that the maximum amount recovered is never greater than the purchase power expense.

CRC Based on the Tiers Below

Tier	Criteria, if the BFBB is:	Review
i	Greater than \$150 million, with an expected decrease to below \$75 million	Annually
ii	Less than \$150 million but greater than \$120 million, with an expected 50-percent decrease in the next FY	
iii	Less than \$120 million but greater than \$90 million, with an expected 40-percent decrease in the next FY	
iv	Less than \$90 million but greater than \$60 million, with an expected 25-percent decrease in the next FY	(May / November)
v	Less than \$60 million but greater than \$40 million, with an expected decrease to below \$40 million in the next FY	Monthly

FY 2020 CRC Calculation

Apr 2019

		FY 2020		
Step 1	BFBB	Basin Fund Beginning Balance (\$)	\$113,453,890	Projected beginning balance for FY per financial cash flow analysis (FY Beginning Bal * 1000)
	BFTB	Basin Fund Target Balance	\$68,072,334 *	Basin Fund Target Balance is Based on "tiered" criteria.
	PAR	Projected Annual Revenue (\$) w/o CRC	\$190,628,380	Per financial cash flow analysis, (=TOTAL REV *1000)
	PAE	Projected Annual Expense (\$) (Excludes WRP)	\$189,962,730	Per financial cash flow analysis, (=TOTAL EXP *1000)
	NR	Net Revenue (\$)	\$665,650	=PAR-PAE
	NB	Net Balance (\$)	\$114,119,540	=BFBB + NR
Step 2	EA	SHP Energy Allocation (GWh)	5,186.27	FY '16 SHP energy allocation excluding project use (=SHP DELIVERIES / 1MIL)
	HE	Forecasted Hydro Energy (GWh)	4,994.13	Projected generation from the most current 24-month study, does not include project use (=NET GEN / 1MIL)
	FE	Forecasted Energy Purchase (GWh)	346	Forecasted Energy Purchase (GWh) from the most current 24-month study (=FIRMING PURCHASES / 1MIL)
	Price	Average price per MWh for purchased power	\$31.65	Average price = 60% onpeak + 40% offpeak (=COMP PRICE)
	FX	Forecasted Energy Purchase Expense (\$)	\$10,960,393	Estimated purchased power costs based upon most current 24-month study (= PURCHASE COST)
	Step 3	FA1	Basin Fund Balance Factor (\$)	\$10,960,393
FA2		Revenue Factor (\$)	\$10,960,393	If NR is greater than -(1 - tiered percent) of BFBB then FX, if NR is less than -(1 - tiered percent) of BFBB then, FX+(NR+(tiered percent *BFBB)). Formula is: =IF(NR>-(1 - tiered percent *BFBB),FX,FX+(NR+(1 - tiered percent *BFBB)))
FA		Funds Available (\$) (Lesser of FA1 or FA2)	\$10,960,393	The lesser of FA1 or FA2 but not less than zero: if (min(FA1,FA2) >= 0, MIN(FA1,FA2),0)
FARR		Additional Revenue to be Recovered (FX-FA)	\$0	=FX-FA
Step 4		WL	Waiver Level (GWH)	5,340
	WLP	Waiver level percentage of full SHP	103%	Percent of waiver level to full SHP
	CRCE	CRC Energy GWh (EA-WL)	0	= EA-WL (Does not include losses projected at 7.81%)
	CRCEP	CRC level percentage of full SHP	0%	Percent of CRCE to full SHP or CRCE/EA
	CRC	Cost Recovery Charge (mills/kWh)	-	=FARR / (EA * 1000)

Note: Cash flow projections from the:
Apr 2019, 24-month study
* BFTB based on CRC tier iii: 60% of BFBB (40% decrease), where BFBB is less than \$120,000,000 but greater than \$90,000,000

Updated: April 25, 2019