

**Western Area Power Administration**  
CRSP Management Center  
10-Year Planning Meeting  
October 20, 2017

RMR Projects  
Jason Groendyk



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**Rocky Mountain Region Ten Year Plan Version Control**

- **R0**-version of Ten Year Plan submitted to customers and to headquarters for consolidation of WAPA-wide budget; late October-November
- **R1**-version of Ten Year Plan with any corrections or changes after customers and senior management review; mid-January
- **RFINAL**-final version submitted to headquarters for consolidation of WAPA-wide budget submission to the Dept. of Energy; April



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**FY 18-27 Rocky Mountain Region Ten Year Plan**

- Completed Projects
- Changed/Ongoing Projects
- New Projects



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**Completed Projects**



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**FY 2017 Rocky Mountain Region Completed Projects**

- **Ault Station Service**
  - In-service Date: Q4 FY17
  - Actual Cost: \$956k (\$195k CRSP)
  - Budget: \$940k (\$183k CRSP)
- **Curecanti KZ1A Transformer Replacement**
  - In-service Date: Q2 FY17
  - Actual Cost: \$2.308M (\$2.05M CRSP)
  - Budget: \$2.308M (\$2.05M CRSP)



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**FY 2017 Rocky Mountain Region Completed Projects**

- **Hayden 230 kV breaker replacements**
  - In-service Date: Q2 FY17
  - Actual Cost: \$539k
  - Budget: \$539k
- **Waterflow Phase Shifter and breaker replacements**
  - In-service Date: Q1 FY17
  - Actual Cost: \$17.04M (including accrued interest during construction)
  - Budget: \$16.06M as presented Nov 2016. Initially 20M+



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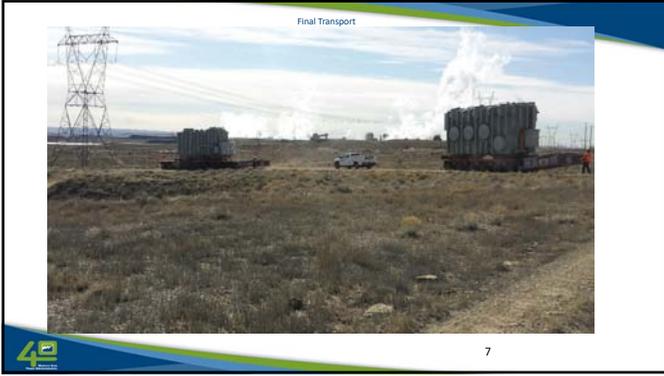
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**FY 2017 Rocky Mountain Region Completed Projects**

- **Collbran 115-kV breaker replacement**
  - In-service Date: Q4 FY17
  - Actual Cost: \$195k
  - Budget: \$187k
- **Ault-Weld West OPGW**
  - In-service Date: Q3 FY17
  - Actual Cost: \$841k
  - Budget: \$774k

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**FY 2017 Rocky Mountain Region Completed Projects**

- **Montrose Operations Center Station Service Upgrade**
  - In-service date: Q4 FY17
  - Actual Cost: \$663k
  - Budget: \$1.113M
- **Montrose Operations Center Video Surveillance Upgrade**
  - In-service date: Q2 FY17
  - Actual Cost: \$170k (\$146k CRSP)
  - Budget \$231k (\$199k CRSP)

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**FY 2017 Rocky Mountain Region Completed Projects**

- **PMOC UPS Upgrade**
  - In-service date: Q4 FY17
  - Actual Cost: \$1.246M (\$387k CRSP)
  - Budget: \$1.314M (\$408k CRSP)

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**FY 2017 Rocky Mountain Region Completed Projects**

- **WCMO Snow Cat and Trailer**
  - Purchased June 2017
  - Actual Cost: \$143k
  - Budget \$150k
- **Craig 72' bucket truck**
  - Purchased January 2017
  - Actual Cost: \$502k
  - Budget: \$475k

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**FY 2017 Rocky Mountain Region Completed Projects**

- **Montrose wire/conductor reel trailers**
  - Purchased September 2017
  - Actual Cost: \$94k
  - Budget \$120k

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**Changes in Transmission Line Projects**

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**FY 18-27 Rocky Mountain Region Changes in Transmission Line Projects**

- **Pleasant View-Ruin Canyon 24.9-kV UG T-line replacement**
  - Construction contract award Q4 FY16
    - Project suspended May-Sep 2017 to serve irrigation load
  - Overall budget reduced from \$750k to \$440k
    - Low bid approx. 60% of construction estimate
  - Anticipated ISD: **Q1 FY18**

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**Changes in Substation Projects**

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**FY 18-27 Rocky Mountain Region Changes in Substation Projects**

- **Clean Path Energy Interconnection (Shiprock)**
  - Construction start anticipated for **FY21**
    - Includes control building addition for additional panels and separate battery room
  - Overall project budget \$7.5M (**100% Trust funded**)
  - Anticipated ISD: **Moved from FY20 to FY23**

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### FY 18-27 Rocky Mountain Region Changes in Substation Projects

- **Archer KV2A Transformer Replacement**
  - Project construction complete – commissioning ongoing
  - In-service Date: Delayed from Q3 FY17 to Q1 FY18 due to resource limitations
  - Actual Cost to date: \$2.622M
  - Budget: \$3.369M




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### FY 18-27 Rocky Mountain Region Changes in Substation Projects

- **Weld 115-kV & 230-kV breaker replacements**
  - Construction complete, commissioning ongoing
  - In-service Date: Delayed from Q4 FY17 to Q1 FY18 due to resource limitations
  - Actual cost to date: \$1.561M
  - Budget: \$1.611M




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### Changes in Communication Projects




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### FY 18-27 Rocky Mountain Region Changes in Communication Projects

- **Colorado Fiber Ring**
  - Anticipated in-service date: **Moved from FY17 to FY18**
    - GPP-WGP portion needed for complete “ring”
  - Initial budget: \$1.473M (\$592 CRSP)
  - Increased budget: **\$1.693M (\$641 CRSP)**
    - Budget when first proposed in 2013 was \$1.75M



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### New Transmission Line Projects



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### FY 18-27 Rocky Mountain Region New Transmission Line Projects

- **South Canal Underground line rebuild**
  - \$1.8M in FY27



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**New Substation Projects**



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**FY 18-27 Rocky Mountain Region New Substation Projects**

- **Archer Circuit Breakers and Switches**
  - \$710K IN FY18 and FY19
  - Total project cost of \$1.97M as this completes previous breaker install project
- **Flaming Gorge Breaker 4032 & 4132**
  - \$239k in FY20
- **Hayden Transfer Breaker 1886 & relays**
  - \$244k (\$122k CRSP) in FY20
- **Poncha Breakers 386 & 1186**
  - \$600k in FY20



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**FY 18-27 Rocky Mountain Region New Substation Projects**

- **Shiprock 138kV Breaker 5322**
  - \$213k in FY20
- **Montrose Equipment Storage Building modification**
  - \$245k in FY20
- **Montrose Warehouse & Machine Shop Transformer**
  - \$335k (\$288k CRSP) in FY18
- **Blue Mesa Transformer replacement and 30 MVAR Reactors**
  - ~\$5.0M from FY22-FY25



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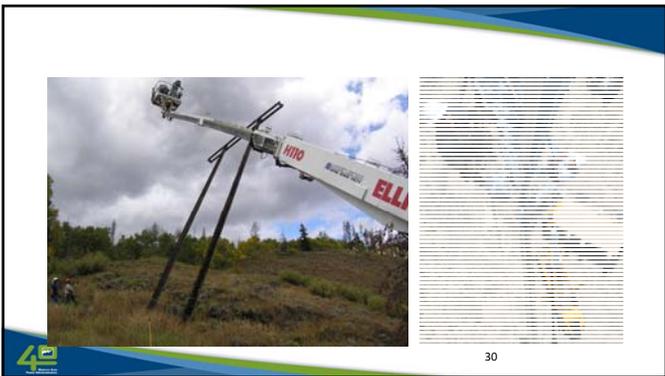
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### FY 18-27 Rocky Mountain Region New Mobile and Heavy Equipment

Craig Digger Derrick Replacement	FY18	\$350k
Montrose 95' Bucket Truck Replacement	FY18	\$650k
Craig Scissor Lift	FY20	\$70k
Craig & Montrose Med. Duty Truck Replacements (2)	FY20	\$90k
Montrose Semi Tractor Class 7 Replacement	FY20	\$110k
Montrose Mini Excavator Replacement	FY20	\$40k
Montrose Skid Steer	FY20	\$30k
Shiprock Electrician Test Trailer	FY20	\$35k
Shiprock Tracked Skid Steer	FY20	\$90
Craig Bulldozer Replacement	FY21	\$350k
Mobile Transformer Replacement	FY23	\$2.25M (\$700 CRSP)

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Questions?

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### Western Area Power Administration

CRSP Management Center  
10-Year Planning Meeting  
October 20, 2017

WAPA Reclamation Joint Project  
Amy Cutler




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### Two Joint Projects



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Presentation title | 37

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### Page Warehouse

- 60 years old, structurally sound
- Requires updating and modification to meet current needs



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Presentation title | 38

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Presentation title | 39

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## Metering Project

- Joint assessment effort based on SPP metering protocol
- Current Plan (now – 2019)
  - Assess all generation sites
  - Ensure planned replacement efforts meet SPP metering standard

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Presentation title | 40




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## Western Area Power Administration

CRSP Management Center  
10-Year Planning Meeting  
October 20, 2017

DSW Projects  
DSW Team




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## Desert Southwest Region AGENDA

1. Communication Projects
  - Completed, Active, & New
2. Protection & Control Projects
  - Completed, Active, & New
3. Maintenance & Construction Projects
  - Completed, Active, & New
4. Integrated Vegetation Management Program

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## Desert Southwest Region Communication Projects



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## Completed Communication Projects

**WIN/CIPS**

- Location(s): Pinnacle Peak, Flagstaff, Long House Valley, Glen Canyon
- Driven by compliance requirements
  - Provided remote access to interrogate devices at the Medium Impact sites and meet CIPV5 requirements
- Completed: Q3 FY17
- Total budget: \$30,000
- Actual cost to date: \$30,942



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## Active Communication Projects



APS Tower at Jacks Peak



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### Active Communication Projects

#### Microwave System Upgrades

- Project establishes a new communication path and increases reliability
- Preston Mesa – Jacks Peak (APS)
- Significant cost savings (property & tower structure) was achieved at Jack's Peak as DSW negotiated use of existing APS tower
- Anticipated ISD: Q4 FY18
- Total budget: \$117,100 (FY17:\$57,100, FY18:\$60,000)
- Actual cost to date: \$82,441




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### Active Communication Projects

#### Glen Canyon Communication Tower Replacement (New Project)

- Requirement for dual redundant routes to Glen Canyon and bigger antennas to increase capacity adds additional loading to the tower
- Tower Purchased: Q4 FY17
- Equipment to Purchase: Q1 FY18
- Specification into Procurement: Q1 FY18
- Work to commence: Q2 FY18
- Anticipated ISD: Q1 FY19
- FY18 budget: \$352,000
- Total Budget: \$482,309
- FY17 cost to date: \$130,309




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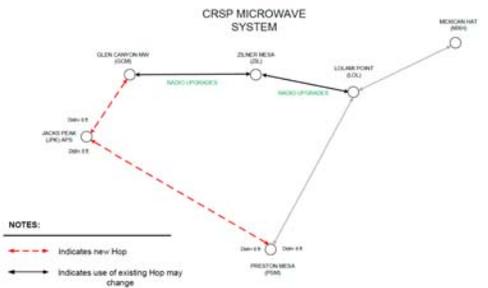
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#### CRSP MICROWAVE SYSTEM




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**Active Communication Projects**

**Microwave System Upgrades (New Project)**

- Jacks Peak (APS) – Glen Canyon
- Work Plan/Out Years – this relates to the Glen Canyon Tower Project
- Government furnished equipment purchased: Q2 FY18
- Anticipated ISD: Q4 FY18
- Total Budget: \$170,000 (FY17: \$0, FY18: \$170,000)
- Actual cost to date: \$10,574



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**Active Communication Projects**

**Radio Equipment Upgrades**

- Communication Path portions on hold pending the completion of Glen Canyon communication tower project:
  - Ziliner Mesa – Glen Canyon
  - Ziliner Mesa – Lolami
  - Jacks Peak – Glen Canyon
  - Jacks Peak – Preston Mesa
- Project increases bandwidth and reliability
- Bandwidth requirements in accordance with NERC
- Anticipated ISD: Q1 FY19
- Total Budget: \$210,000
- Actual cost to date: \$85,564



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**FY18 Communication Projects**

**WIN/CIP**

- Location: Kayenta Substation
- Remote access to interrogate relays and meet compliance requirements
- Anticipated ISD: Q4 FY18
- Total budget: \$20,000



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### FY18 Communication Projects

**Mingus Mountain Communication Building**

- Building was analyzed by engineering and deemed structurally unsound.
- Project was pushed back based upon reprioritization of the Glen Canyon Comm Tower replacement
- DSW is repurposing the existing ED5 10'x24' building for relocation to Mingus Mountain, savings will be realized in the repurposing
- Funding carried over from FY16 to FY17 to FY18
- Funding used to start work for Glen Canyon Comm Tower in FY17
- Anticipated ISD: Q4 FY19
- Total Budget: \$100,000 (FY18)



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### New Communication Projects

**“Towers” Mountain Communication Building Replacement**

- \$1M across FY20-FY21

**Mingus Microwave Replacement**

- \$72,983 across FY18-FY19  
(construction to install existing ED5 building)

**Communication Battery/Charger System Replacements**

- \$50,000 per FY in FY20-FY27

**Remote Terminal Unit (RTU) Replacements**

- \$85,000 per FY in FY20-FY27



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### Desert Southwest Region Protection & Control Projects



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### Completed Protection & Control Projects

**Glen Canyon Visitor Center Revenue Meter Replacement**

- Added a demand meter at Glen Canyon Substation to meter the Visitor Center electrical load
- Load previously unmetered
- ISD: February 2017
- Total budget: \$50,000
- Actual cost to date: \$68,000



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### Active Protection & Control Projects

**Pinnacle Peak Relay Replacement -Transformer KU1A and KU2A**

- Completed protection and control panel design work in FY17
- Four relay panels were fabricated, constructed and wired in FY17
- Cost drivers: Increased cost due to FY18 labor rate increase & installation and commissioning constraint discovered during design phase.
- Anticipated ISD: Q3 FY18
- Total budget: \$263,519 (FY18 Budget: \$200,000)
- Actual cost to date: \$63,519



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### Active Protection & Control Projects

**Glen Canyon Remedial Action Scheme (RAS)**

- Previously in the 10-Year Plan
- Cost drivers:
  - Completion of the RAS scheme for Path A/B being contingent upon integration of Bureau of Reclamation portion of the scheme.
  - FY18 WAPA labor rate increase
- Anticipated ISD: Q4 FY2018
- Total budget: \$443,000 (FY18 Budget: \$120,000)
- Actual cost to date: \$323,000



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### Active Protection & Control Projects

**Pinnacle Peak Digital Monitoring Equipment (DME) Upgrades**

- Driven by compliance requirements; both 230-kV & 345-kV to be monitored.
- FY18 Scope:
  - Program DME & RTU programing
  - Build network and storage for DME data collection
  - Field install and commissioning
- Anticipated ISD: Q4 FY18
- Total estimated budget: \$345,000 (FY18 Budget: \$175,000)
- Total Cost to date: \$162,417



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### FY18 Protection & Control Projects

**Pinnacle Peak Relay Replacement**

- Transfer Breaker & Bus Differential
  - Scope: Upgrade transfer line protection along with breaker failure Protection. Replace E/M north & south 230kV bus differential Protection.
- Anticipated ISD: Q4 FY2019
- Total Budget: \$475,000  
(FY18 Budget: \$90,000, FY19 Budget: \$385,000)



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### FY18 Protection & Control Projects

**Glen Canyon Relay Replacement**

- 69/24 kV Protection upgrade at GCS
- Replace electro-mechanical relays-line, breaker and bus protection on the 69-kV and 24-kV elements.
- Anticipated ISD: Q4 FY19
- Total Budget: \$600,000  
(FY18 Budget: \$150,000, FY19 Budget: \$450,000)



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### New Protection & Control Projects

- Kayenta Relay & RTU Line Replacement**
  - \$150,000 - \$300,000 in FY20 (Contingent on GC-SHR Reactor Project)
- Pinnacle Peak/Glen Canyon/Kayenta Relay Replacement**
  - \$200,000 per FY; FY20-26
- Pinnacle Peak/Glen Canyon/Long House Valley/Kayenta Meter Replacement Revenue & Panel FY20 – FY26**
  - \$50,000 per FY; FY20-26
- Glen Canyon/Kayenta Communication Digital Monitoring Equipment Upgrades**
  - \$200,000 per FY; FY19-23



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### Desert Southwest Region Maintenance/Construction Projects



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### Completed Maintenance Projects

**Substation HVAC Replacement Program**

- As HVAC systems approach/exceed their engineered life span assessments and replacements are initiated
- Replacement units are more energy efficient & lower routine maintenance
- Locations:
  - Pinnacle Peak ISD: Q4 FY16
  - Glen Canyon ISD: Q4 FY17
  - Long House Valley ISD: Q4 FY17
  - Kayenta ISD: Q4 FY17
- Total budget: 190,656 (all locations)
- Actual cost to date: \$136,207 (all locations)
  - Pinnacle Peak \$42,637, Glen Canyon \$50,886, Long House Valley \$21,551, Kayenta \$21,133



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### Completed Construction Projects

**Pinnacle Peak-Rogers 230-kV Install Inset Structures  
Double circuit inset structures on Line 1 and Line 2**

- Project addressed a phase-ground clearance violation
- Install steel pole mid-span to mitigate line sag
- Work performed in conjunction with Parker Davis Power system
- ISD: Q2 FY17
- CRSP Financials
  - Total budget: \$500,000
  - Actual cost to date: \$209,892



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### Active Maintenance Project

**Pinnacle Peak Breaker 2982 -Emergency Replacement**

- Excessive leaking on the breaker was observed during routine maintenance, requiring urgent replacement
- Spare breaker was utilized from the Parker-Davis Power System, this reduced procurement/response time
- Anticipated ISD: Q3 FY18
- FY18 Budget: \$200,000
- Total Budget: \$350,000
- Actual cost to date: \$122,403



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### Active Maintenance Project

**Pinnacle Peak 230-kV Disconnect Switches**

- Replacements Bays 23 & 33
- Switches purchased FY14, Assembled in FY16
- Work was delayed for outage coordination & labor resource prioritization
- Anticipated ISD: Q1 FY19
- Total budget: \$460,000
- Actual cost to date: \$175,448



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### Active Construction Projects

**Glen Canyon Erosion & Waterline Project Phase II**

- Phase I – Emergency repairs, completed Q1 FY17



Phase I Channel Stabilization



Phase I Drainage Repair

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### Active Construction Projects

**Glen Canyon Erosion Aerial**



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### Active Construction Projects

**Glen Canyon Erosion and Waterline Project – Phase II**

- Scope:
  - Drainage and drainage capacity study
  - Remaining waterline replacement.
  - Driveway resurfacing
- Anticipated ISD: Q1 FY2019
- Total budget: \$2.6M
  - Hydrology Study & design: \$300,000
  - Construction: \$2,300,000
- Actual cost to date: \$164,774

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### Active Construction Projects

#### Physical Security & Remediation Plans

- Scope: Security Assessments, install cameras, card readers, and upgrade physical security to FIPS-201 compliance
- All equipment awarded in FY17
- FY2018 Locations: Glen Canyon, Flagstaff, Pinnacle Peak
  - Anticipated ISD: Q3 FY2018
- FY2019 Locations: Kayenta and Long House Valley
  - Anticipated ISD: Q4 FY2019
- FY17 Budget: \$1,300,000
- FY18 Budget: \$450,000
- Total Budget: \$1,750,000
- Actual cost to date: \$1,020,722




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### FY18 Construction Projects

#### Shiprock – Glen Canyon Reactor Project

- Previously in 10-Year Plan
- System voltage study showed voltage disturbances resulting in operational issues and station equipment risks.
- An addition of 60 MVAR of shunt reactance is needed to reduce post disturbance voltages.
- Evaluated alternatives in reactor types: air coil, oil filled, and variable shunt reactors (VSR).




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### FY18 Construction Projects

#### Shiprock – Glen Canyon Reactor Project

- An Analysis of Alternatives (AOA) Study was completed FY17 Q4




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### FY18 Construction Projects

**Shiprock – Glen Canyon Reactor Project**  
Recommended conceptual design includes installing one 30MVar Variable Shunt Reactor (VSR) at Kayenta and one 30MVar VSR at Long house.



Kayenta – North Side      Long House Valley – West Side

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### FY18 Construction Projects

**Shiprock – Glen Canyon Reactor Project**



Typical VSR Oil Filled Reactor      Typical Air Coil Reactor

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### FY18 Construction Projects

- AOA Study Alternatives Investigated
  - Alternative 1- Status Quo
  - **Alternative 2- One VSR at KAY, and one VSR at LHV. – Recommended**
  - Alternative 3- One VSR at KAY and two air coil shunt reactors at LHV.
  - Alternative 4- Four air coil reactors at KAY substation.
  - Alternative 5- One VSR at KAY and two oil filled shunt reactors at LHV.

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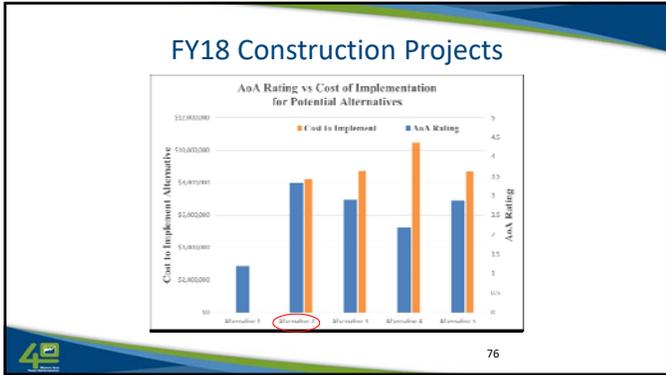
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### FY18 Construction Projects

- Glen Canyon KV2D 24/4-kV Transformer Replacement**
  - Driven by age and condition. Oil is contaminated and showing signs of internal degradation
  - Anticipated ISD: Q4 FY18
  - Total Estimated Budget \$500,000

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### New Construction and Maintenance Projects

- Pinnacle Peak 345kV Breaker 2199, 2299, 1196**
  - \$2,700,000 in FY20-FY22
- Glen Canyon 230kV Breaker 7482, 7282, 8082**
  - \$1,500,000 in FY21-FY23
- Pinnacle Peak 345kV Breaker 1596 & 1692**
  - \$1,350,000 in FY21 - FY23
- Flagstaff 345kV Breaker 194 & 594**
  - \$1,350,000 in FY23 - FY25

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**New Construction and Maintenance Projects**

- **Glen Canyon** 345kV Breaker 1092, 1196, 3292
  - \$2,025,000 in FY24-26
- **Glen Canyon** 230kV Breaker 7682, 7982
  - \$1,000,000 in FY24 - FY26
- **Glen Canyon** 345kV Breaker 1292, 3492, 5596, 5682
  - \$2,700,000 in FY26-FY27



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**New Construction and Maintenance Projects**

**Pinnacle Peak Shunt Capacitor Banks**

- Previously in 10-Year Plan \$6,814,756 across FY19-FY22
- Analysis of Alternatives Study initiated in FY17 Q4
- Due to a capacitor bank failure, a breaker was lost to damaged in FY17
- Due to the degraded condition, the equipment cannot be utilized to its full design capacity



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**Desert Southwest Region Integrated Vegetation Program**



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### Integrated Vegetation Program Completed Projects

Five Task Orders Issued – 83 Miles of Right-of-Way Cleared

- Contract awarded: Q4 FY14
- Total project costs to date: \$3,778,575
  - Flagstaff-Pinnacle Peak 1 - \$1,890,543
  - Flagstaff-Pinnacle Peak 2 - \$1,702,327
  - Glen Canyon –Flagstaff 1 - \$37,011
  - Glen Canyon –Flagstaff 2 - \$110,849
  - Pinnacle Peak-Rogers 1 & 2 - \$37,845
- All work completed by FY 2016



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### Integrated Vegetation Program Completed Projects



**Snake Ridge Fire @ 15,333 acres consumed w/no impact to reliability**





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### Integrated Vegetation Program Completed Projects

Work Completed in FY 2017

- Project costs to date: \$167,108
  - Flagstaff-Pinnacle Peak 1 & 2
  - Pinnacle Peak-Rogers 1 & 2
- Corrective “hotspotting” removing incompatible vegetation in pinyon pine-juniper areas south of the Verde River at the Fossil Creek and urbanized areas along the PPKRGS 1& 2



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### Integrated Vegetation Program Active Projects



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### Integrated Vegetation Management Next Steps



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### Integrated Vegetation Management Next Steps



Western Area Power Administration 87

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**Integrated Vegetation Management  
Next Steps**

New contract to be awarded for final two task orders: Flagstaff-Pinnacle Peak-Glen Canyon 345kV lines

- Locations:
  - Verde River (Fossil Creek) South to Pinnacle Peak
  - Bloody Basin Road south to Pinnacle Peak
- Work to begin: Q1 FY18
- Anticipated completion date: Q2 FY18
- Cost drivers: remote, rugged terrain requiring extensive hand clearing



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**Integrated Vegetation Management  
Next Steps**

Herbicide for Flagstaff, Glen Canyon, Pinnacle Peak, and Rogers substations (approximately 60.8 acres)

- Contract awarded: Q2 FY17
- Total project cost estimated: \$46,800 (All sites)
- Rebooted substation vegetation program with existing contracted technicians.
- Anticipated completion date: Q1 FY18



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**Integrated Vegetation Management  
Next Steps**

**Herbicide and Road Access**

- Estimated award date: Q3 FY18
- Total estimated budget: \$1 million for approximately 17,980 acres
- Anticipated completion date: Q4 FY18

**Pinnacle Peak-Rogers Line 1 & 2 230kV**

- Continue removing incompatible vegetation within urbanized portion of circuit
- Follow-up with an herbicide application



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## Integrated Vegetation Management Next Steps

Once in Maintenance Mode, 5-year cycle;  
• Herbicide treatment & corrective hotspotting for;

Circuit	kV	Herbicide (per cycle)	Corrective (per year)
FLGPPK 1 & 2	345	\$225,455	\$23,222
GCFLG 1 & 2	345	\$205,455	\$21,162
PPKRG 1 & 2	230	\$40,000	\$4,120

- Annual substation treatment (2 apps/year) @ estimated \$46,800/year
  - Pinnacle Peak
  - Flagstaff
  - Rogers
  - Glen Canyon




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## Questions for Desert Southwest Region Office?



Thank you




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## Western Area Power Administration

CRSP Management Center  
10-Year Planning Meeting – Power Marketing Updates  
October 20, 2017

Brent C. Osiek  
Power Marketing Manager




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### Power Marketing Updates

- Mountain West Transmission Group Update
- SLCA/IP Marketing Plan Update/Contracts
- Olmsted Marketing Plan Update/Rates
- New PRS software – customer training



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### Mountain West Updates

- Federal Register Published October 12 – Vol 82, No. 196, 47505
  - “Recommendation for the Western Area Power Administration Loveland Area Projects and Colorado River Storage Project to Pursue Final Negotiations Regarding Membership in a Regional Transmission Organization.”
- Steve Johnson sent notification e-mail that morning
  - Upcoming CRSP Customer Meetings for this FRN:
    - November 9, 2017, 10 a.m. DSW Office in Phoenix
    - November 14, 2017, 10 a.m., CRSP Office in Salt Lake City
- Comments Due November 27, 2017
  - Send Comments to Rodney Bailey (SPP-Comments@wapa.gov)



95      Presentation title | 95

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### Olmsted and SLCA/IP Marketing Plan Updates




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### Olmsted Replacement Project

- Final Marketing Plan and Call for Applications FRN published October 11, 2017
- Call for Applications on-going
- Please submit applications for an Olmsted allocation by December 11, 2017
- Energy production will average 27,000 MWh/year
- Proposed allocations will be developed and published in Federal Register
  - 30 day comment period
  - Final allocations published afterwards


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Presentation title | 97

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### Proposed Olmsted Rate

- Federal Register Notice Published October 12
- Public Information and Comment Forum
  - November 17, 2017, at CRSP MC office
  - Begins at 10:00 a.m. MST
- Comments due by January 10, 2018
- Olmsted in commercial operation July 2018


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Presentation title | 98

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### SLCA/IP Contracts

**Final SLCA/IP Power Marketing Plan**

- Published November 29, 2016, at 81 FR 85946
- 2025 FES Contracts
  - Provide existing Contract Rate of Delivery (CROD) commitments with associated energy to current SLCA/IP customers
  - Essentially the same contract as the amended Post-89 Contracts with some necessary conforming changes


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Presentation title | 99

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## SLCA/IP Contracts

**2025 FES Contract**

- Signature phase
  - First contracts sent September 22, 2017
  - About 135 contracts
  - Working through the various delivery points
  - Should be finished this week or next

100 Presentation title | 100

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## New PRS Software

- New WAPA-wide rate and repayment system is a single platform, secure software solution that ensures accuracy, transparency and consistency for all 15 WAPA power and transmission projects.
- WAPA rates staff have working with Utilities International Inc. (UII), have completed much of the PRS development

Presentation title | 101

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## New PRS Software

**Building out: Now – January 2018** UII will continue programing and will build the customer portal and request comments from the customers

**Training and Documentation: February 2018 - March 2018**  
UII will prepare training materials and deliver training sessions for WAPA staff.

**Parallel Studies: March 2018** Studies in the old system and the new system for the Final 2016, Preliminary and Final 2017 and Preliminary 2018 project studies.

**Go Live: April 2018** WAPA will convert to the upgraded PRS for the Preliminary 2018 and Final 2018 studies.

Presentation title | 102

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**Western Area Power Administration**

CRSP Management Center  
10-Year Planning Meeting  
October 20, 2017

Transformer Risk Strategy  
Chris Lyles




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### Topics

- ◆ Transformer Spare Need
- ◆ Objectives
- ◆ Events and Quantities
- ◆ Strategies for short lead time spares
  - ◆ WAPA Inventory
  - ◆ WAPA System Robustness – In-Service “Spares”
  - ◆ Grid Assurance
- ◆ Customer Feedback

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### Why are Spare Transformers Needed?

- ◆ WAPA has a commitment to its customers and the bulk electric system to be prepared for the loss of transformers.
  - Operational failures.
  - Catastrophic event – high impact, low likelihood.
- ◆ The unanticipated loss of a transformer in the bulk electric system directly impacts the resiliency/reliability of the system.
- ◆ High Voltage Power Transformers typically have an acquisition lead time of 18-24 months.
  - Unique characteristics of transformers require custom build.
  - Transformer can weigh up to 100 tons and contain 25,000 gallons of oil. Transportation requires multiple specialized vehicles, road permits, and task specific crews.

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### Typical WAPA High Voltage Transformer



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### Specialized Transportation



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### Analysis Objectives

- ◆ Develop and analyze alternatives for response to high impact events resulting in loss of multiple transformers.
  - Reduce/eliminate acquisition interval of transformers.
  - Complementary to existing sparing strategies.
- ◆ Solicit Feedback from WAPA SMEs and WAPA Customers.
- ◆ Develop recommendation incorporating customer feedback and regional expertise.
- ◆ Initiative is a WAPA-wide strategy intended to produce a recommendation that most efficiently uses WAPA's entire fleet of transformer options.

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**Alternatives Currently Under Evaluation**

- ◆ WAPA Warehoused Alternative
- ◆ WAPA System Enhancement Alternative
- ◆ Grid Assurance Alternative
- ◆ Hybrid Alternative
- ◆ No Action – Status Quo



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**WAPA Warehoused Alternative**

- ◆ WAPA Spare Transformers
  - Will warehouse in existing WAPA locations.
    - Event impact zones must be considered.
    - Locations TBD.
  - May inventory more than one unit per voltage class.
    - Use multiple locations.
    - May use different specifications.
  - Will maintain and test on periodic basis.
  - Need to define refresh of inventory method.
- ◆ WAPA Responsibilities
  - Carry full cost of investment and maintenance.
  - Disassembly, assembly, installation and commissioning.
  - Logistics from warehouse to location.
- ◆ Method for funding and cost allocation will need to be defined.



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**WAPA System Enhancement Alternative**

- ◆ WAPA Spare (Re-deployable) Transformers
  - Will be placed in-service in WAPA's system.
    - Event impact zones must be considered.
    - Locations TBD.
    - Should bring operational benefit to system.
  - May inventory more than one unit per voltage class.
    - Use multiple locations.
    - May use different specifications.
  - Will maintain as an operational unit.
- ◆ WAPA Responsibilities
  - Carry full cost of investment and maintenance.
  - Disassembly, assembly, installation and commissioning.
  - Logistics from location to location.
- ◆ Method for funding and cost allocation will need to be defined.



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### Grid Assurance Alternative

- ◆ Grid Assurance Subscription Service.
  
- ◆ Method for funding and cost allocation will need to be defined...for all the options where assets may cross regional boundaries.



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### Feedback

- We want your feedback. We are in the beginning stages of assessing the various options and customer feedback is critical to our success.
  - Mr. Todd Rhoades. 720-962-7214. [Rhoades@wapa.gov](mailto:Rhoades@wapa.gov)
  - Mr. John Quintana. 720-962-7296. [Quintana@wapa.gov](mailto:Quintana@wapa.gov)
  
- A copy of this presentation can be found on The Source.  
[www.wapa.gov](http://www.wapa.gov)



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