



Western
Area Power
Administration

WAPA-wide 10-Year Plan and funding strategy discussion

December 5, 2016



2016 Review & 2017 Key Issues

Mark A. Gabriel | Administrator and CEO
WAPA



2016 Accomplishments

- Topped \$20 million in cost-savings through CPI
- Lowered rates for nearly 50% of customers
- 8th year of flat CRSP rates



2016 Accomplishments

WORKING WITH WAPA



THE SOURCE
Find recent operational data and financial information in one convenient location.

[VISIT THE SOURCE](#)



BUSINESS WITH WAPA
Learn more about how WAPA procures services, supplies and equipment.

[LEARN MORE](#)

- Enhanced communications and transparency
 - Expanded Meetings
 - Revamped wapa.gov
 - Created “The Source”
wapa.gov/thesource
- Moved to a consistent way of looking at capital across the enterprise
- Roadmap refresh



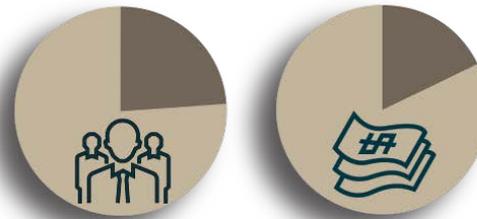
WAPA's people and dollars – FY 2016

Reliability



653 people and **28 percent**
of dollars invested in maintenance
and related areas

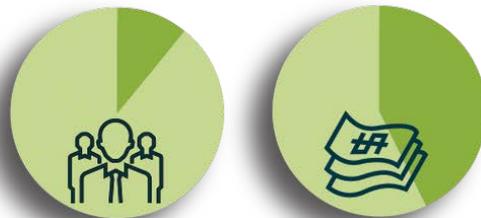
Delivery



354 people and **18 percent**
of dollars dedicated to power operations
and engineering areas

Marketing

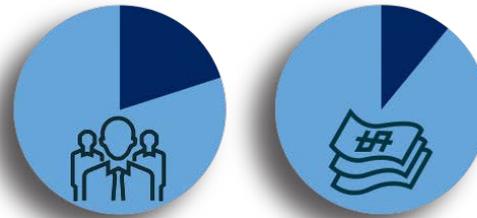
including purchase power and wheeling



164 people and **43 percent**
of dollars committed to power marketing areas

Cost-based

and related services

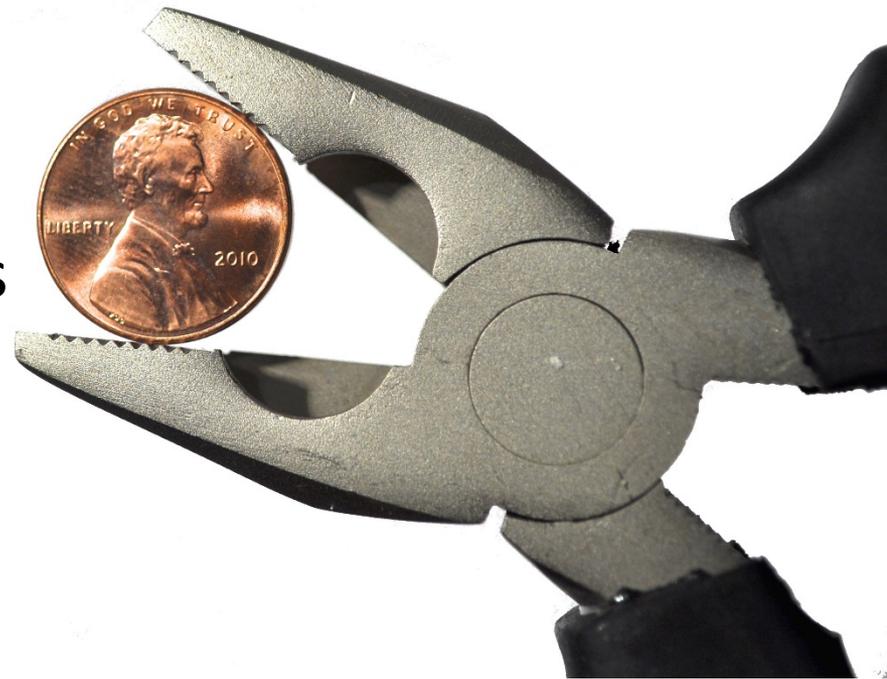


283 people and **11 percent**
of dollars applied to support the mission



2017 Key Issues

- Mature Asset Management
- Expand use of financial tools
- Align SCADA
- Physical and cyber security
- Congressional requirements
- Industry requirements



Roadmap in Action



WAPA-wide Combined 10-Year Capital Plans

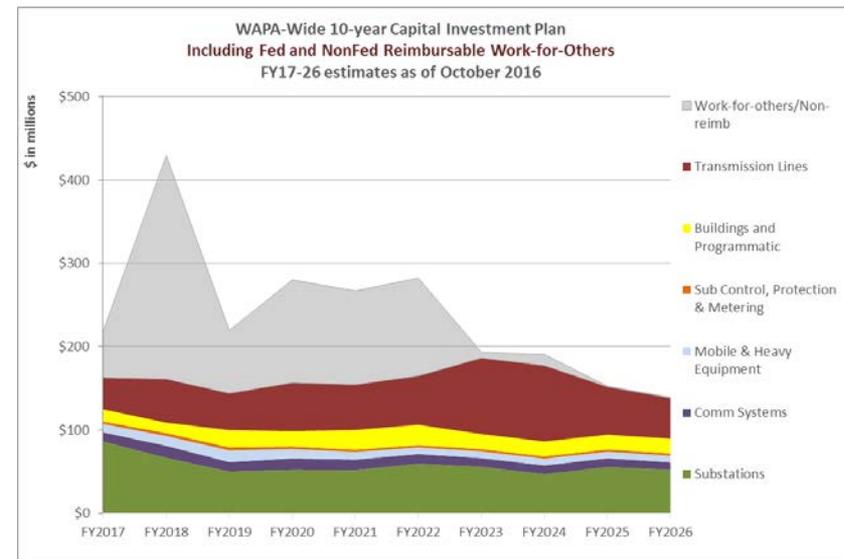
Dennis Sullivan | Acting Senior VP and CFO

WAPA



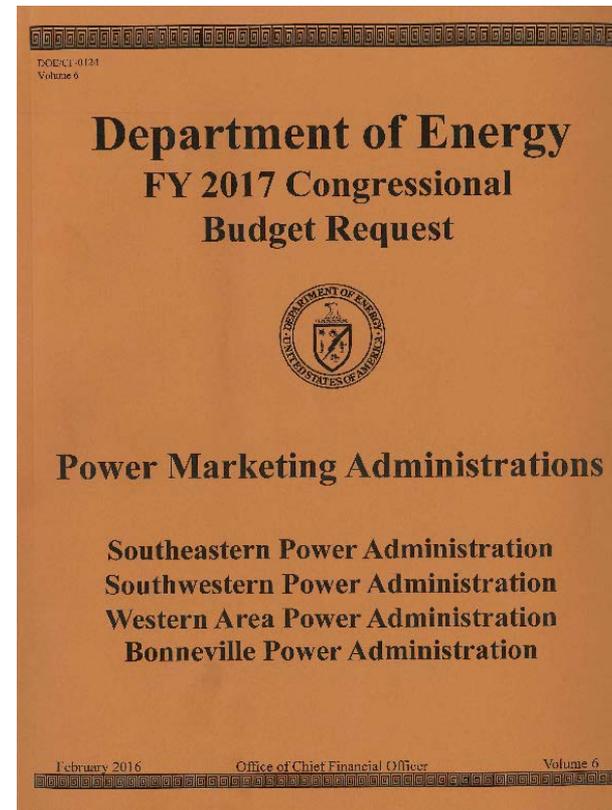
Significant Work-for-Others on the Horizon

- In addition to WAPA investment of \$1.6B, another **\$800M in Work-for-Others** is anticipated
- Two significant projects:
 - **Colusa Sutter** \$330M TPC, FY18 \$69M (SN)
 - **San Luis** \$350M TPC, FY18 \$178M (SN)



10-Year Planning and FY19 Budget Formulation

- FY19 capital **O&M** and **Program Direction** funding levels are consistent with prior appropriated budgets.
- Assuming similar appropriations for FY19, roughly **\$10M** may be available for the capital **C&R** program.
- WAPA will continue partnering efforts for financing the majority of the C&R program.



Regional/HQ 10-Year Capital Plans



Anthony Montoya

Executive Vice President and
Chief Operating Officer

Dawn Roth Lindell

Senior Vice President and
Chief Information Officer

Headquarters (WAPA-wide benefits)



Headquarters (WAPA-wide benefits)

Decreases **\$18M, or -18%** from the prior 10-year plan

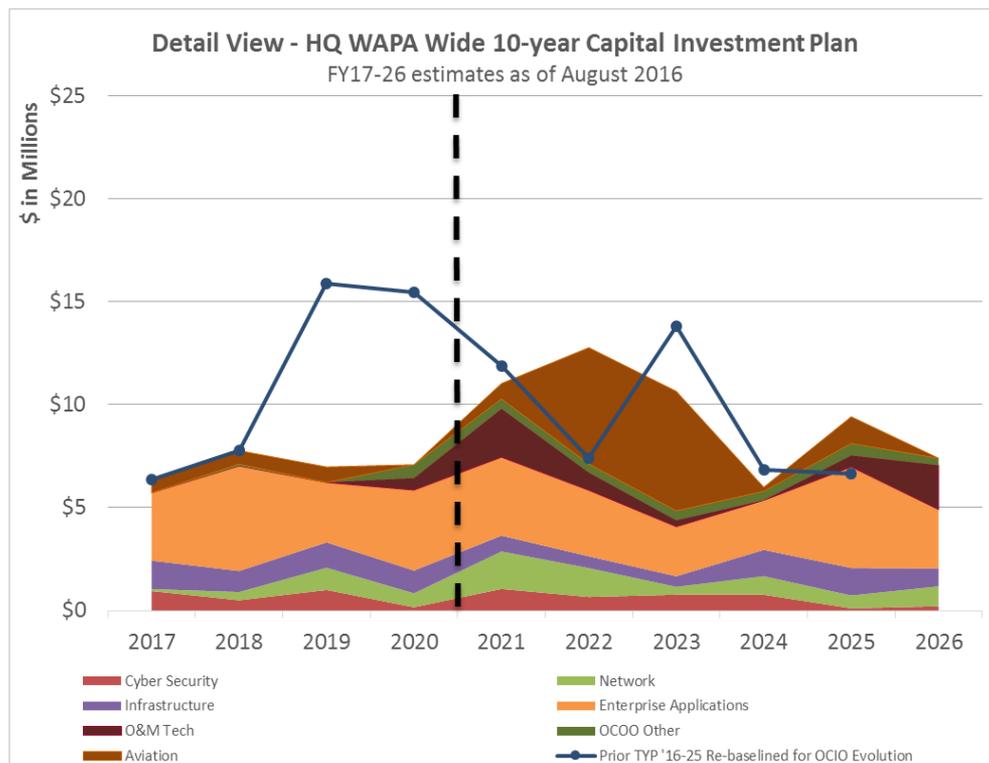
- Large investments reduced and smoothed out; rate window investment averages \$7M/year

Capital Investment Drivers:

- Lifecycle Replacements
 - Helicopter replacements moved out beyond rate window
- Cyber Security – Need to modernize old/unsecure software

Noteworthy Highlights:

- Completed 40,000+ hour NERC CIPv5 project
- Secure field enclaves, phase 1 avoids \$6.5M over 5 years
- SN marketing projects, saving \$1.8M
- Major upgrade to unsupported '97 billing system
- IT alignment, avoids \$5M in FY16, nears \$20M to date



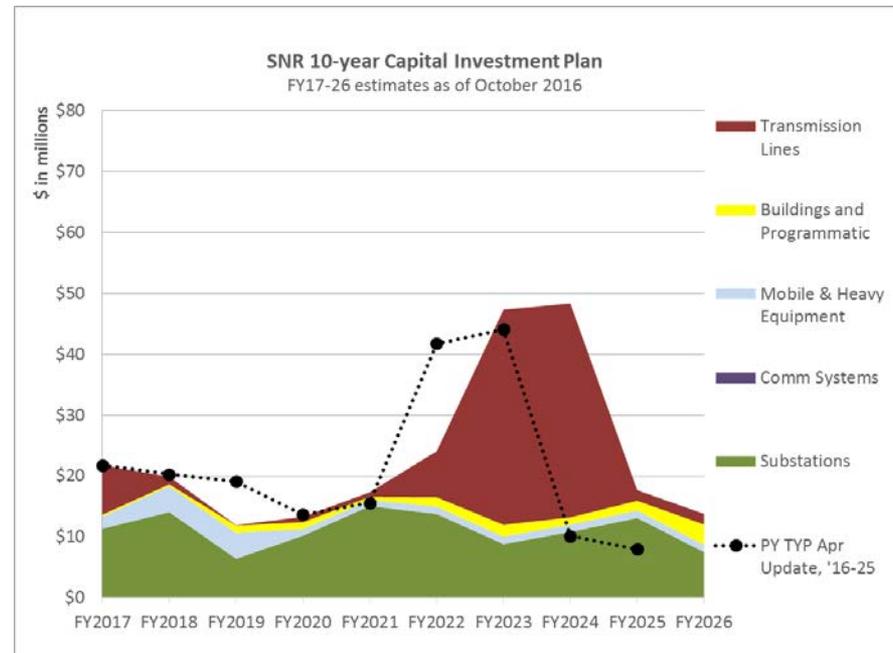
Subhash Paluru

Senior Vice President and Sierra Nevada
Regional Manager



Sierra Nevada

- Increases \$21M, or +10% over prior 10-year plan
- Noteworthy Highlights:
 - \$23M added for 5 projects
 - Carr disconnects
 - Elverta double breaker/double bus
 - Elverta Substation service
 - Keswick double breaker/double bus
 - Roseville CCVT upgrade
 - Two large projects shifted out:
 - Dos Amigos substation rebuild
 - Tracy-Hurley T-line reconductor



BREAK



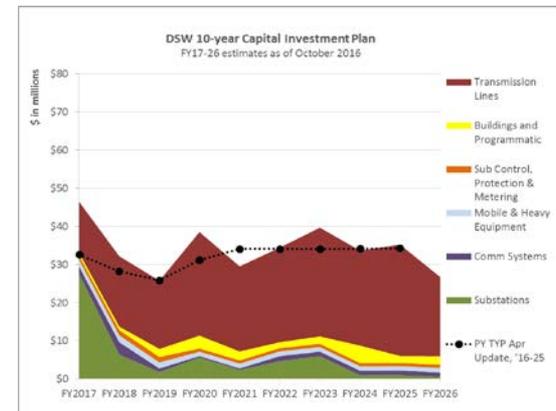
Ron Moulton

Senior Vice President and Desert Southwest
Regional Manager



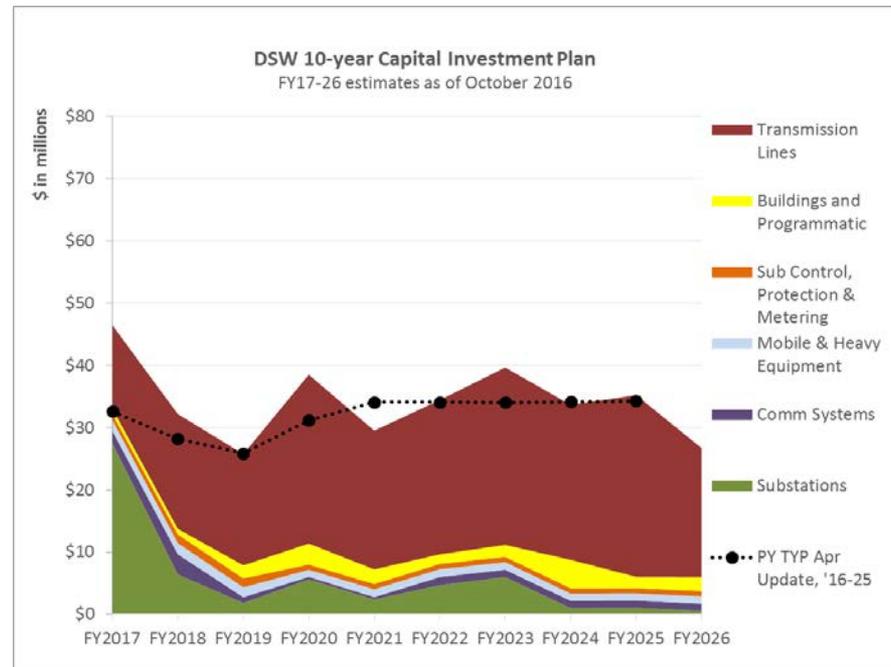
Desert Southwest – 10 Year Capital Plan Process

- Customer input and needs solicited through 10-year plan meetings throughout the year
- AoA Study Project Requests
- DSW VP Transmission System Asset Management initiates
- DSW Capital Planning Committee recommends
 - Technical Sub-team
 - Financial Sub-team
- DSW Regional Manager Approves
- Customers Approve



Desert Southwest

- Increases \$20M, or +6% from prior 10-year plan
- Noteworthy Highlights:
 - Extending Asset Management forecast for full 10 yrs, recommend \$20M increase principally for breaker replacements.
 - FY17 Cost Drivers
 - Mesa Substation rollover of \$2.5M unexecuted FY16 funds
 - Gila-Knob additional funding \$1.5M
 - Gila Substation additional funding \$6.3M
 - Three large projects added, replaced prior TYP placeholders:
 - Bouse-Kofa ~\$31M
 - Parker-Blythe #2 ~\$45M
 - Blythe-Goldmine Tap ~\$30M

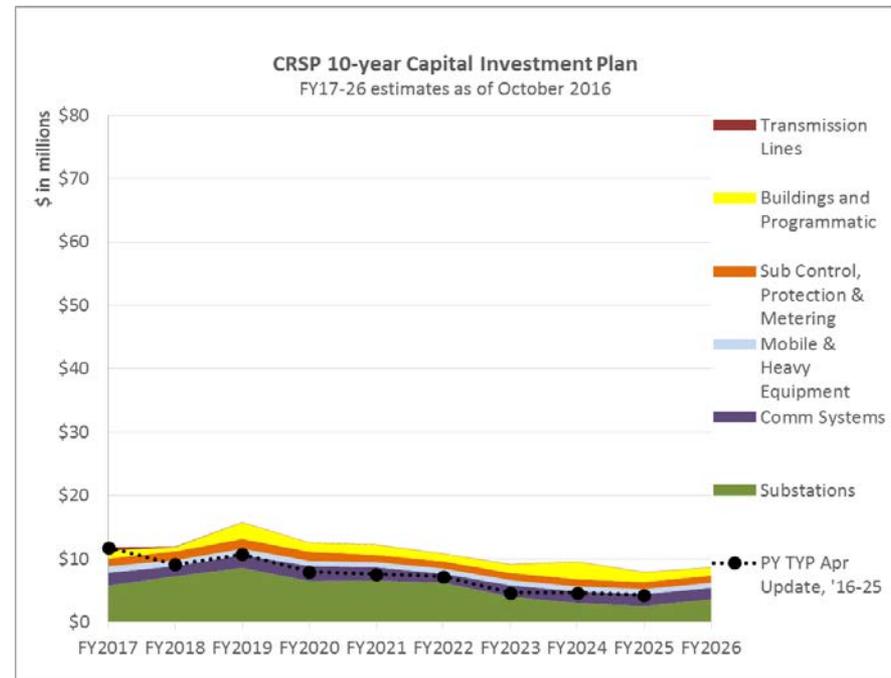


Brian Sadler
Administrative Officer
Colorado River Storage Project Management
Center Manager



Colorado River Storage Project Management Center

- Increases \$29M, or +36% from prior 10-year plan
- Noteworthy highlights:
 - Breaker Planning Strategy-DSW (\$16.8M FY19-FY26)
 - GC Warehouse/Workspace partnership with Reclamation (\$3.8M)
 - Midway transformer & Reactor Replacement (\$2.3M)
 - Shiprock 345-kV breakers (\$2.6M)



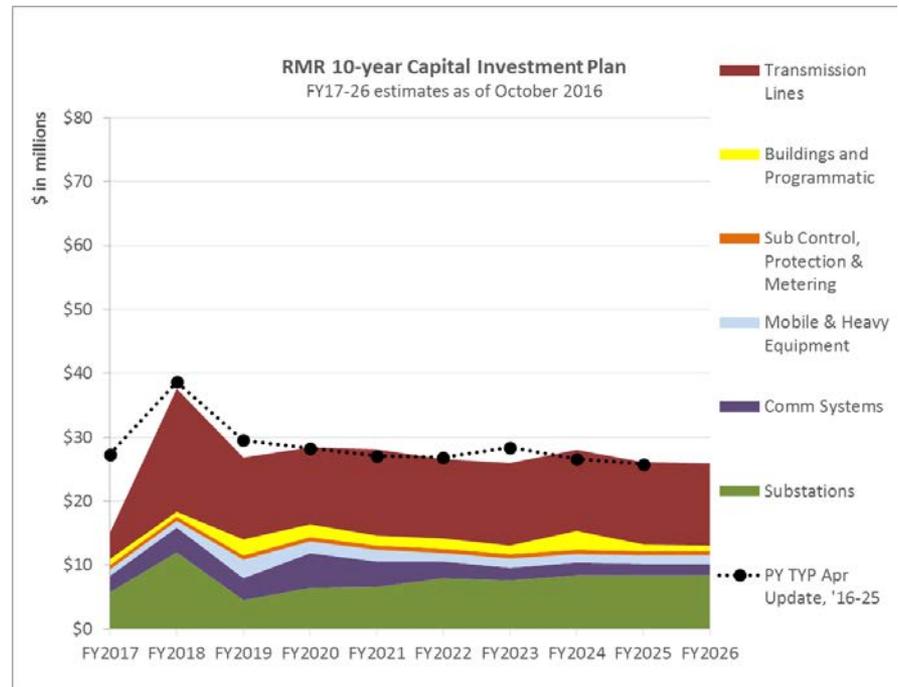
Brad Warren

Senior Vice President and Rocky Mountain
Regional Manager



Rocky Mountain

- Decreases by \$10M, or -4% from the prior 10-year plan
- Noteworthy Highlights:
 - Lovell-Yellowtail Phase 3 (\$9M) moved from FY17 to FY19
 - Last year's TYP included \$10M for unidentified transmission projects in FY19
 - PMOC UPS project in last year's plan for FY17 was awarded in FY16



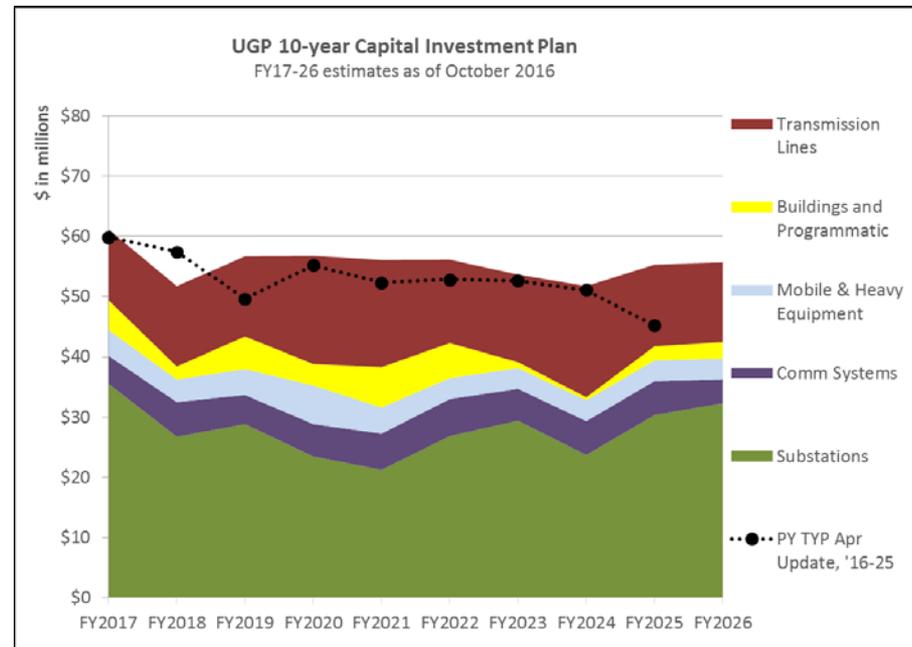
Bob Harris

Senior Vice President and Upper Great Plains
Regional Manager



Upper Great Plains

- Increases \$12M, or +2% from the prior 10-year plan
- Noteworthy Highlights:
 - Current plan is \$55M/yr average; past execution was \$57M/yr over 5 years, or \$67M in FY16.
 - Includes \$3M for Keystone XL in FY19. If Presidential permit is approved, additional funds will be required.



Update on Key Activities





Western
Area Power
Administration

WAPA-wide 10-Year Plan Funding Allocation Project

December 5, 2016

Jennifer Rodgers

Director, Continuous Process Improvement

Bob Harris

Senior Vice President & UGP Regional Manager

Dennis Sullivan

Acting Senior Vice President & Chief Financial Officer

WAPA-wide 10-Year Plan Funding Allocation Project

Purpose of Presentation: Informational

Discussion Points:

- Overview of Project
- Customer Feedback Received
- Next Steps



Purpose of this Project

To develop a process for determining the appropriated funding allocation on WAPA's 10-year Capital Improvement Plan (RRADS and Capital).



Why?

With the expectation of flat appropriations and an increase in RRADS and capital costs due to inflation, current projections indicate that within the next couple of budget formulation years, WAPA may not be able to continue its practice of fully funding RRADS requirements with appropriations.



Problem Statement

Currently, WAPA does not have a sustainable process to determine a funding allocation of appropriated funds for its capital and RRADs projects WAPA-wide. Given an expectation of flat appropriations and the increased costs of maintaining and upgrading our systems, WAPA needs to be prepared to make funding allocation decisions.

“HOW” not *“IF”* a project gets funded



Themes of Customer Feedback

Specific to this effort:

- Current system reliability should be the top priority
 - Decisions made based on asset historical and performance data along with system impact
- WAPA should leverage the use of appropriations to the maximum extent possible
- Customers prefer to fund projects with a direct regional impact; are open to funding programs/categories of projects when justified
- Want to fully understand the process prior to implementation and engage to maximum extent possible



Themes of Customer Feedback, cont'd.

To be addressed through other avenues:

- Want to play a larger role in determining which projects are selected, funded and track their progress (partnership, review committee, etc.)
- Want more information on project specifics and regular communications on project status (i.e., BOR Green Book)
- Want to better understand how WAPA makes decisions
- Want more information on WAPA's internal cost allocation process
- Would like to look at how WAPA merges 10-year plan into budget process and the overall budget process



Next Steps

Date	Action
Dec 12-16	Rapid Improvement Event
Jan 2017	Share proposed process with customers
Feb 2017	Deadline for customer feedback
Feb/Mar 2017	Project Team reviews feedback and finalizes process
Mar 2017	Implement for FY20 Formulation
Early 2018	Lessons Learned from FY20; adjustments for FY21



Contact – Continuous Process Improvement

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Western
Area Power
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Market Strategies

December 5, 2016



Rodney Bailey

Power Marketing Advisor

Market Strategies

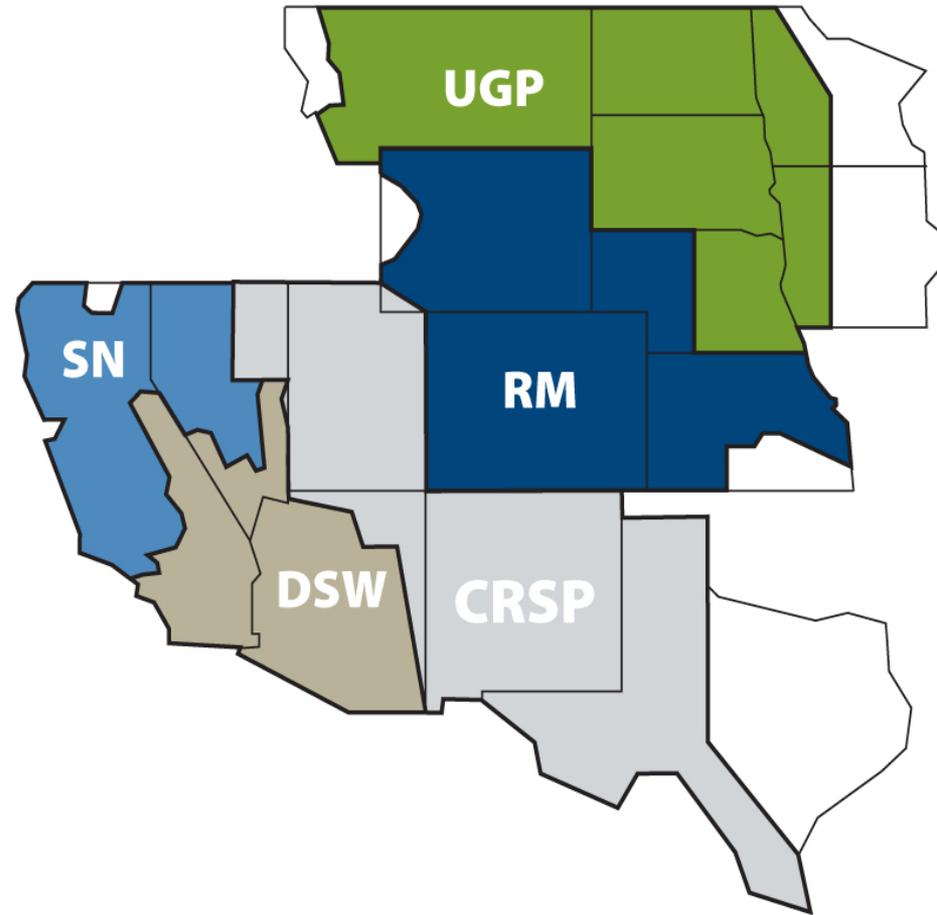
“If you don’t like change, you’re going to like irrelevance even less.”

- General Eric Shinseki, Secretary of Veterans Affairs



WAPA's position

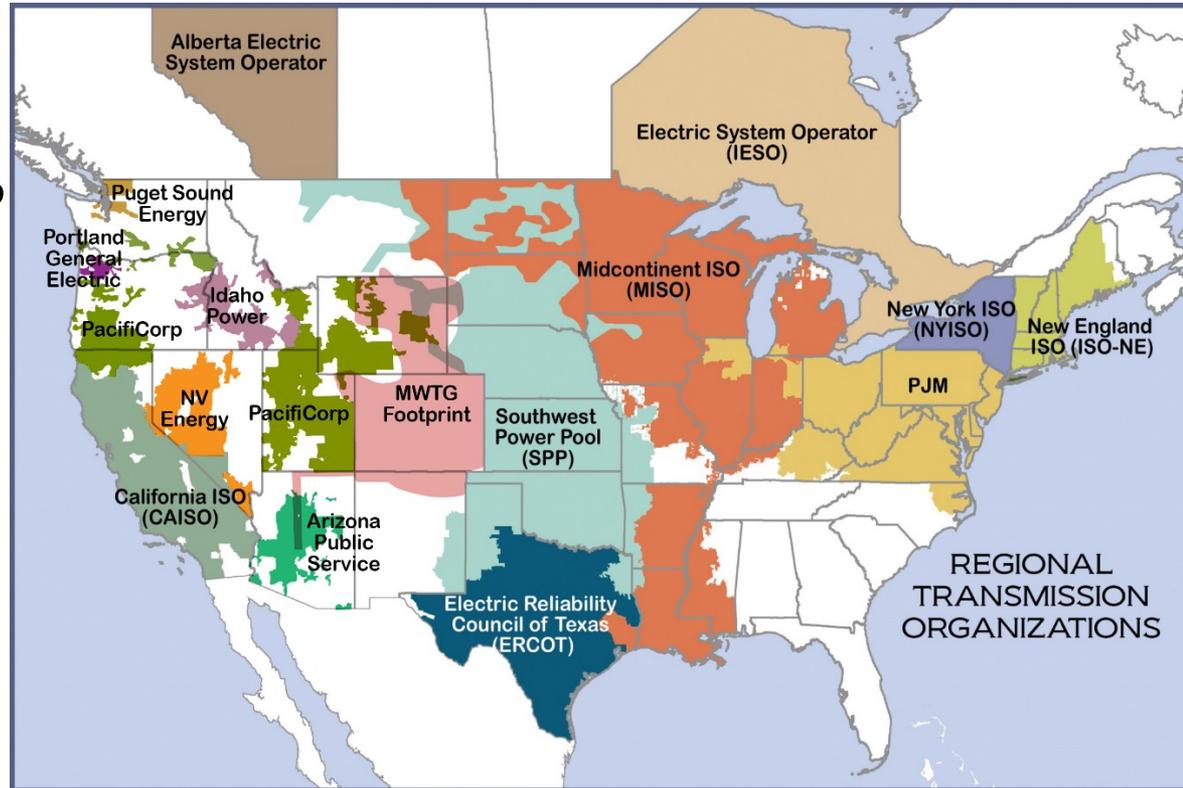
- Each region is unique and there will not be a 'one size fits all' solution.
- We are staying strategic, proactive, and in alignment with our mission.
- Goal: Create the best possible outcome for our customers and our organization.



Current RTO Landscape

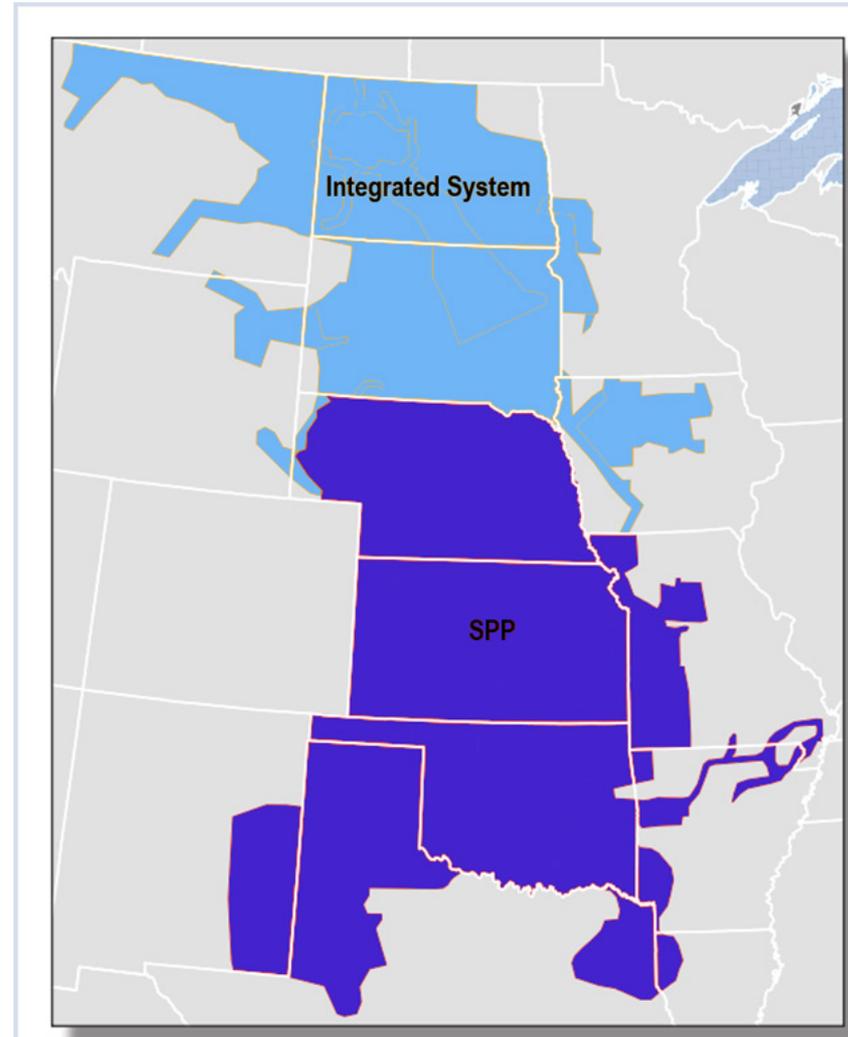
The Current Landscape:

- SPP/Market on East Border
- WAPA-UGP joined SPP
- Potential Regional CAISO Market with PacifiCorp
- CAISO EIM across West
- MWTG focus on RTO/Market



UGP joined Southwest Power Pool

- UGP joined SPP October 1, 2015.
- First PMA to join an organized market.
- First entity in the West outside of California to join a full market.
- SPP provides greater flexibility and creates more options for buying and selling.
- Projected net benefits for the first year were \$11.5 million.

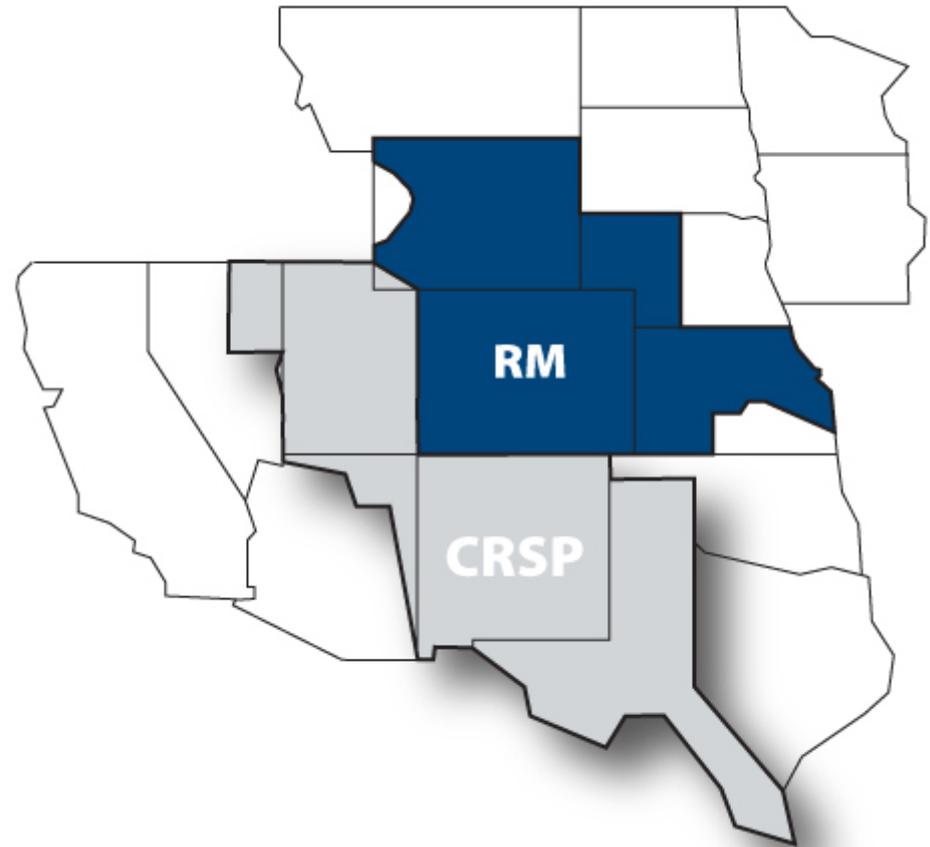


Source: SPP



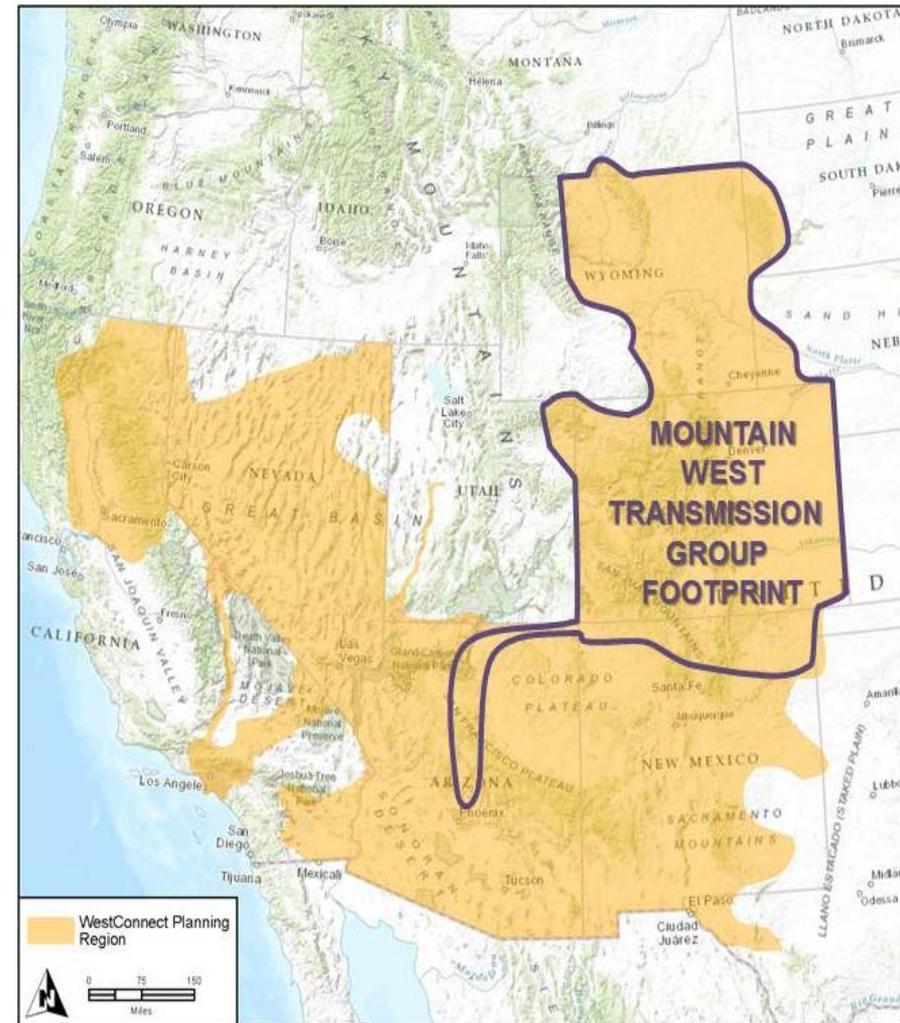
Rocky Mountain and Colorado River Storage Project

- RM/LAP and CRSP participating in Mountain West Transmission Group
- LAP SPP Market Participant in SPP since 2015



MWTG participation

- Goal: to create a common tariff or join an RTO
- MWTG participants include:
 - WAPA
 - TriState
 - Xcel
 - Black Hills Energy
 - Basin Electric
 - Platte River Power Authority
 - Colorado Springs Utilities



MWTG Key Decisions

1. Establish Joint Tariff?

- Yes – Foundation for Market
- No – Energy Market option

2. What level of Market?

- No Market
- Energy Only Market
- Full Market

3. Which RTO/ISO?

- Membership
- Contract Relationship



Analysis

- MWTG Transmission Cost Study
- MWTG Request For Information
- MWTG Market Study



MWTG Markets Study

- Group is conducting a two-phase production cost study
- Study Current Year 2016 (Phase I)
 - Status quo with nine tariffs
 - Remove pancaked transmission charges to simulate a joint tariff
 - Add full Day-Ahead market structure
- Future Year 2024 (Phase II)
 - Multiple scenarios, evaluations underway



MWTG Decision Timeline (Estimated)

Ongoing: Analysis

December 2016: MWTG Agreement on option to pursue

Winter 2017: WAPA FRN Proposing Direction to Pursue

Spring 2017: WAPA Customer Meeting(s)/Comment Period

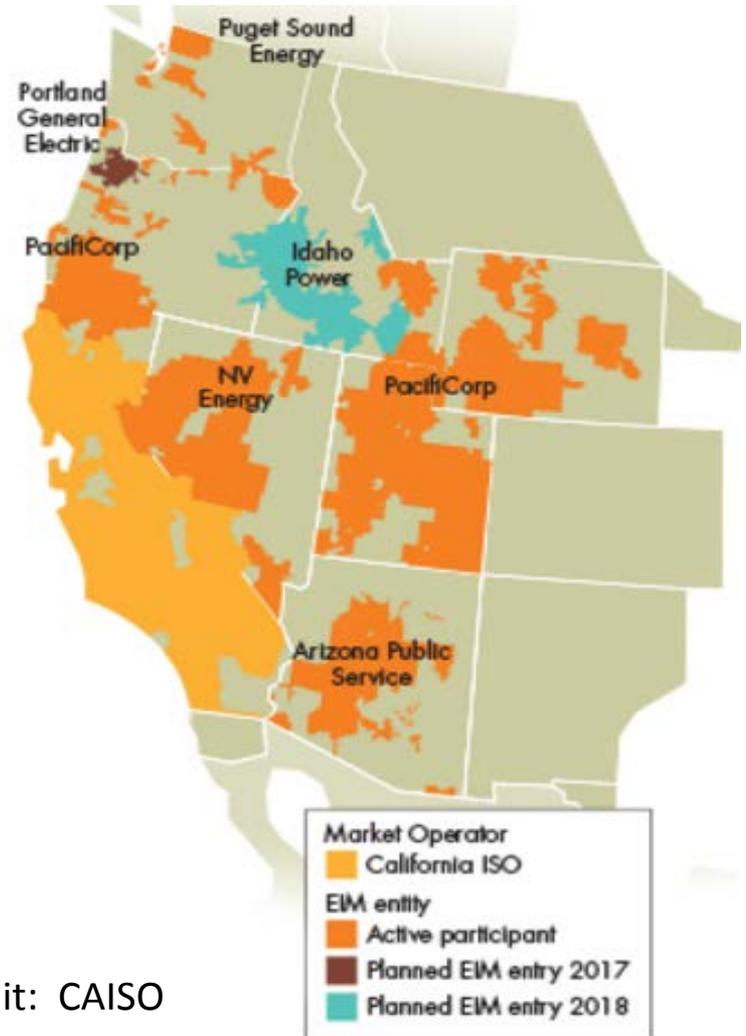
Summer 2017: WAPA Decision

2018/2019: Implementation



CAISO Energy Imbalance Market

- Currently includes CAISO, PacifiCorp, NV Energy, Arizona Public Service, and Puget Sound Energy
- Portland General Electric and Idaho Power scheduled to join in 2017 and 2018
- BANC and SMUD announced that they will begin negotiations with the CAISO.



Graphic Credit: CAISO



Balancing Authority of Northern California (BANC) EIM Evaluation

- SN participated in a BANC-led evaluation of CAISO EIM.
- EIM will benefit some but not all of BANC's six members.
 - The Sacramento Municipal Utility District (SMUD) estimates \$2.8 million per year in net benefits. SMUD has 1.4 million customers.
- On October 21, BANC and SMUD announced their intent to begin negotiations with the CAISO.
- SN does not intend to pursue EIM participation at this time, but will continue to collaboratively work with its customers to facilitate access to the market for those that choose to join.



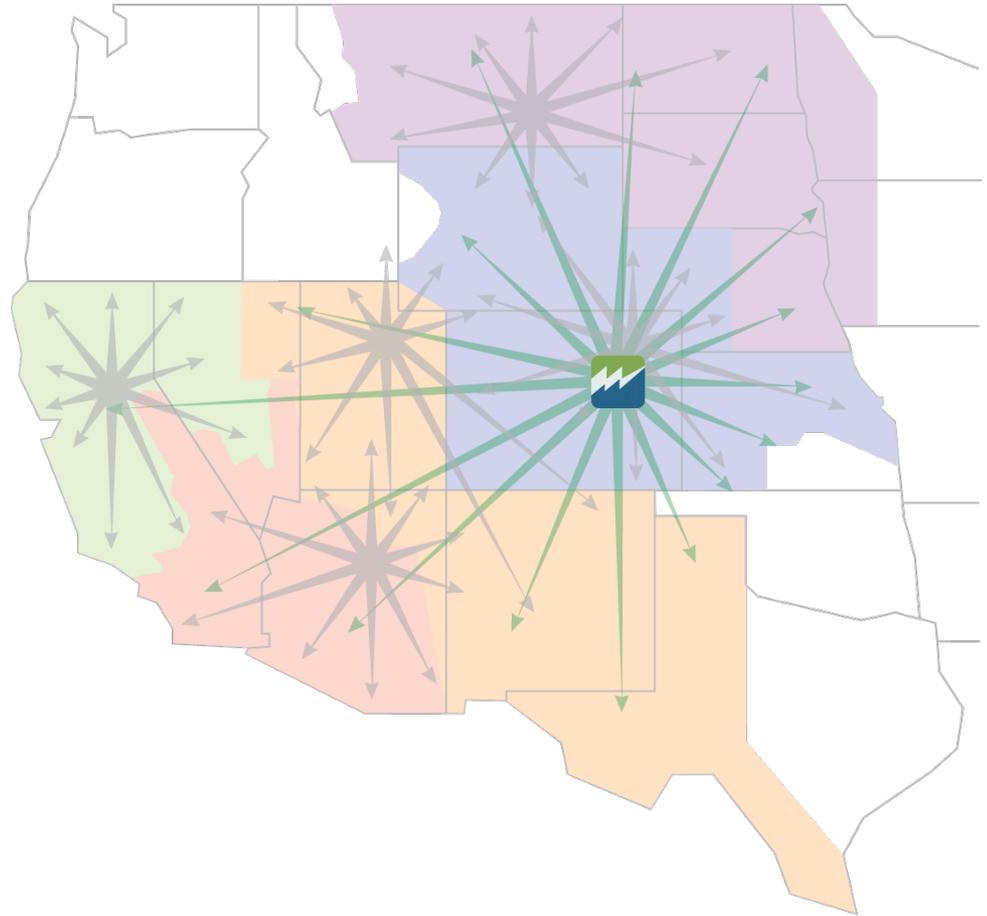
DSW Exploring Market Alternatives

- CAISO EIM and potential CAISO regional market expansion could have significant implications for Southwest.
- DSW working with neighboring electricity providers on evaluating market-based alternatives.
- Objective is to determine the potential risks to customers of the changing energy landscape and identify market-based strategies that would provide the greatest value to DSW customers.



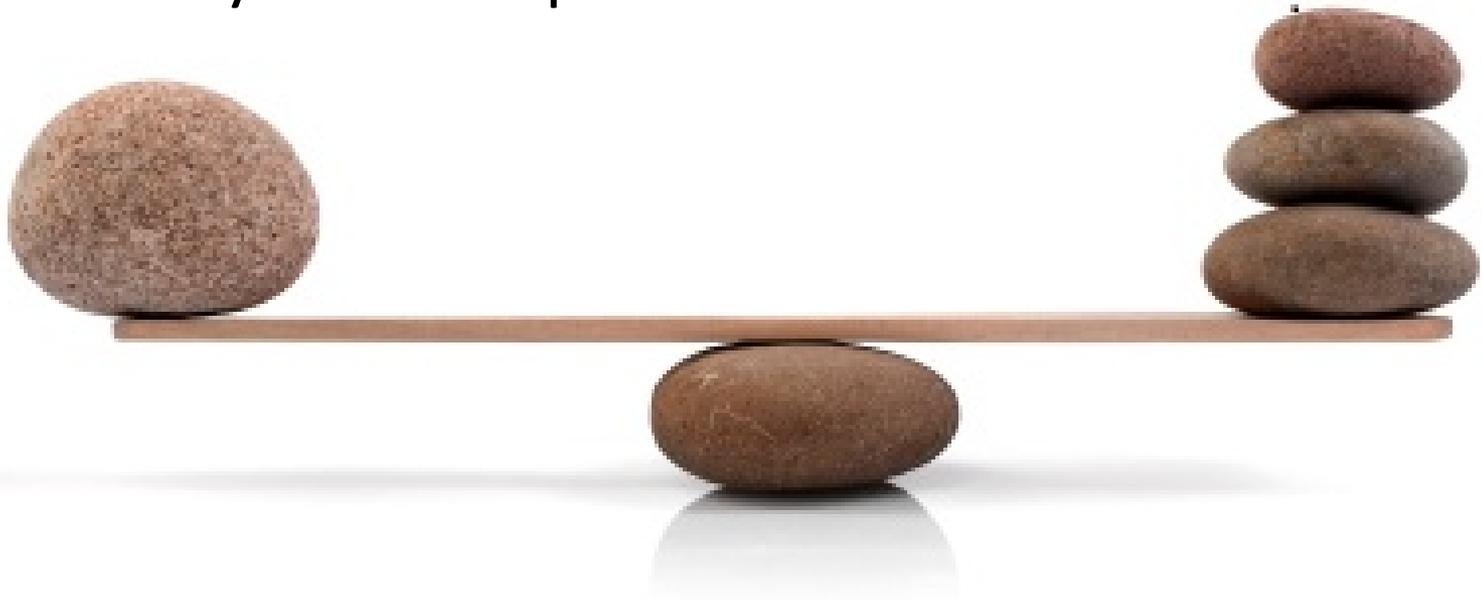
Summary

- The industry is changing.
- WAPA is being strategic and proactive in response.
- To *not* act would create significant risk.



It all comes down to...

- Costs
- Benefits
- Reliability and Compliance



Contacts – Market Strategies

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Q&A Discussion

Dennis Sullivan | Acting Senior VP and CFO
WAPA



Closing Remarks

Mark A. Gabriel | Administrator and CEO
WAPA



Key Take Away

The 10-year capital investment plans provide the basis for sustainable funding discussions with preference power customers to ensure the right funding tools are in place to sustain WAPA's needs.

Customer engagement is critical.



Contacts

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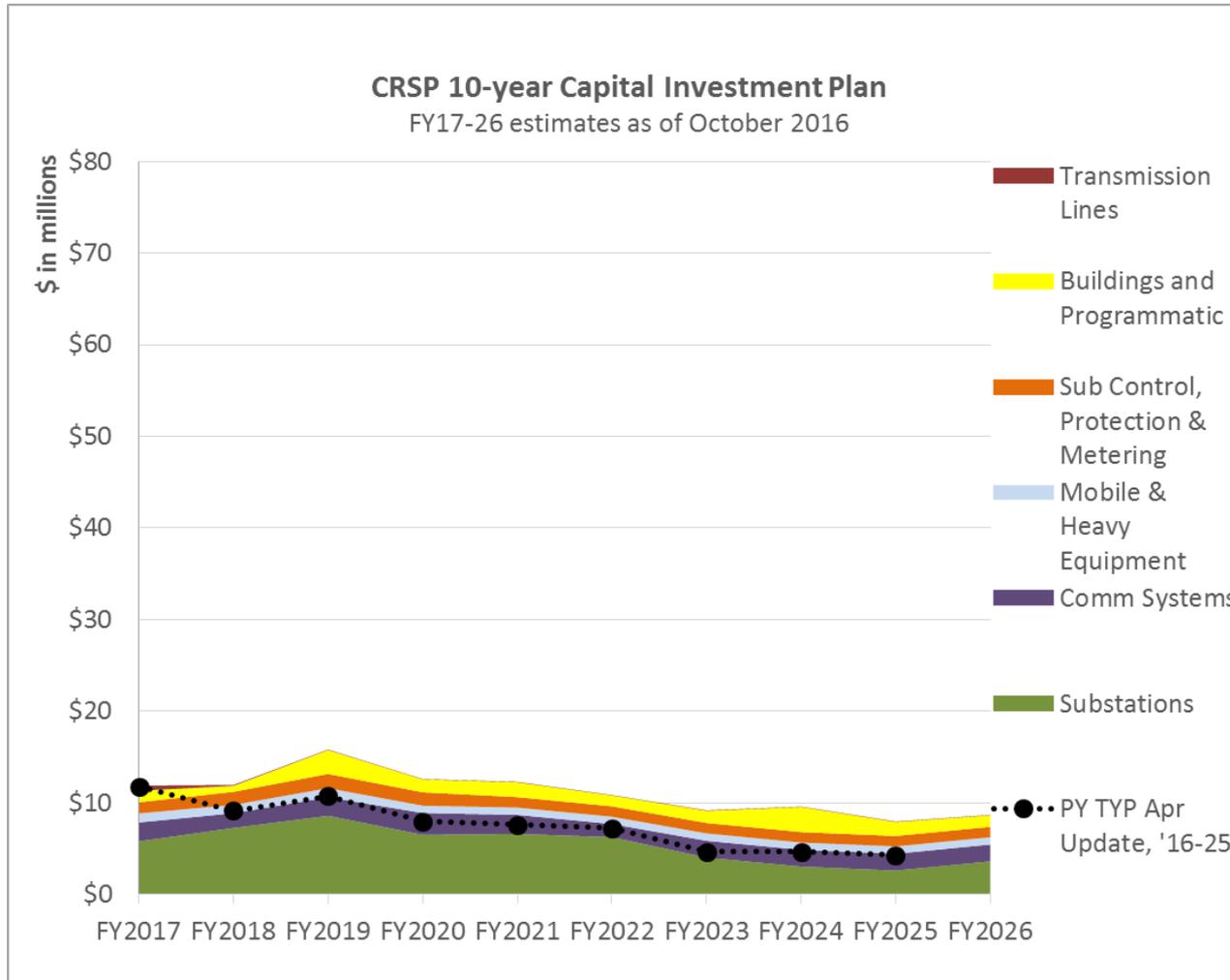
Reference Materials



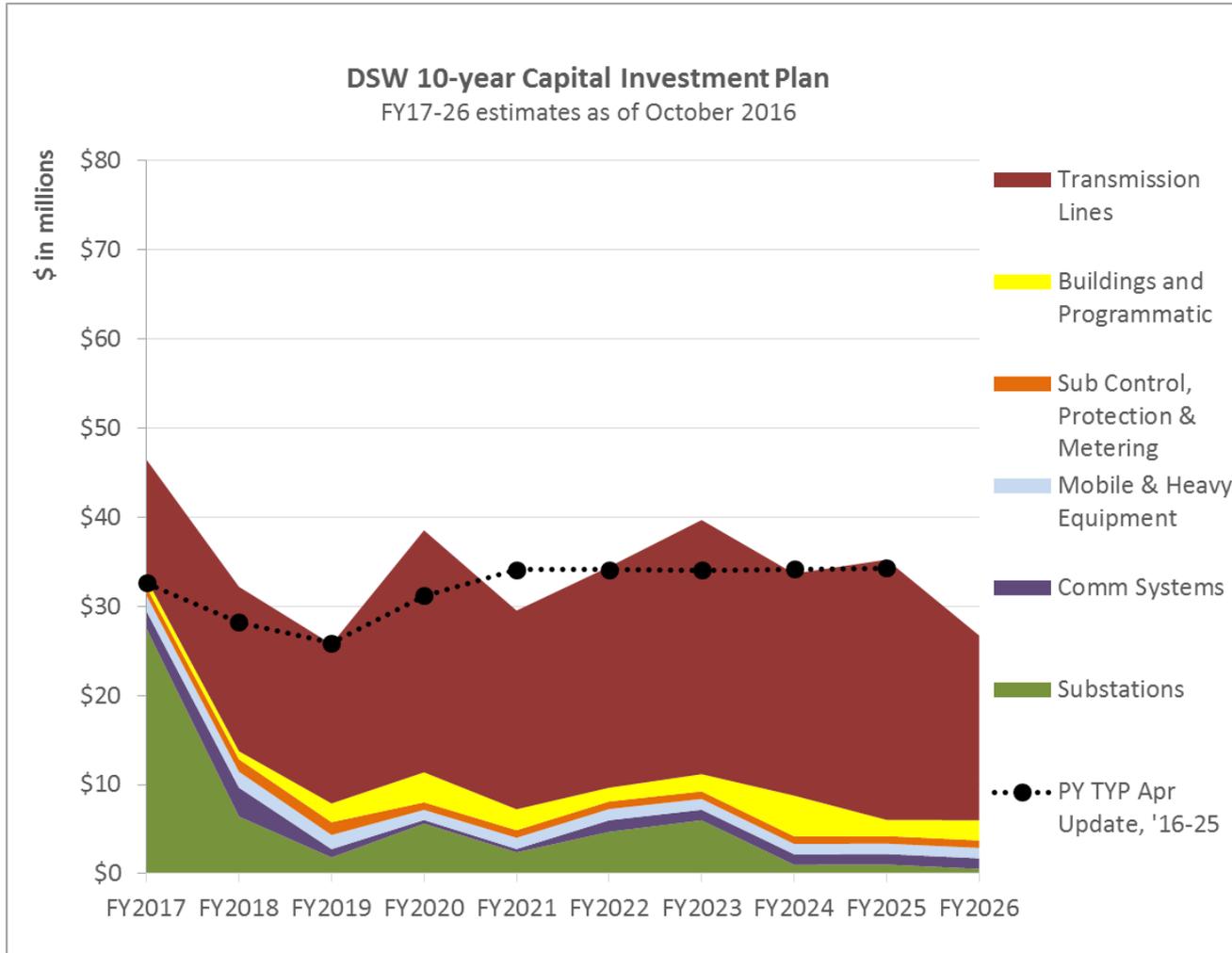
10-year Capital Investment Plan charts



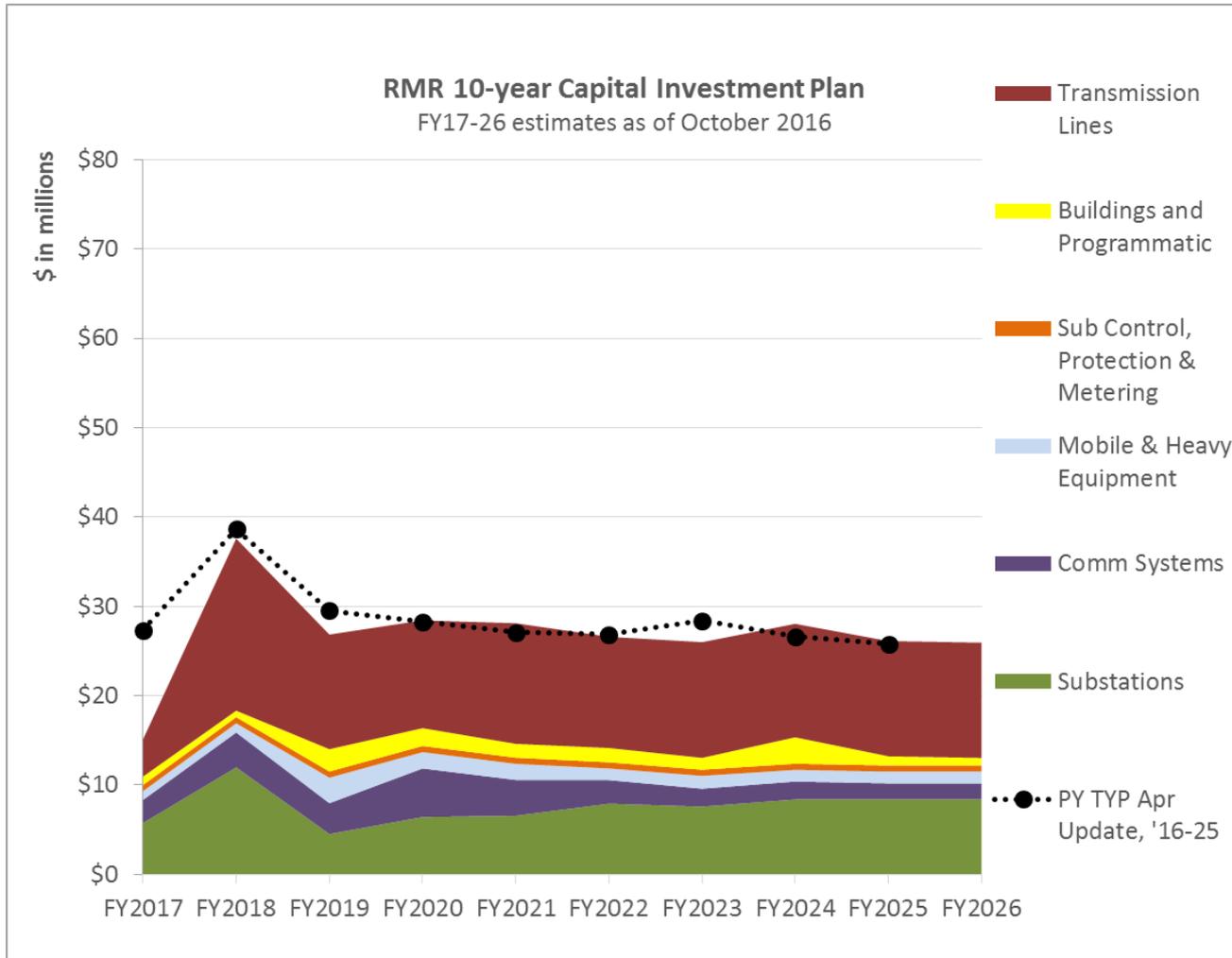
CRSP MC



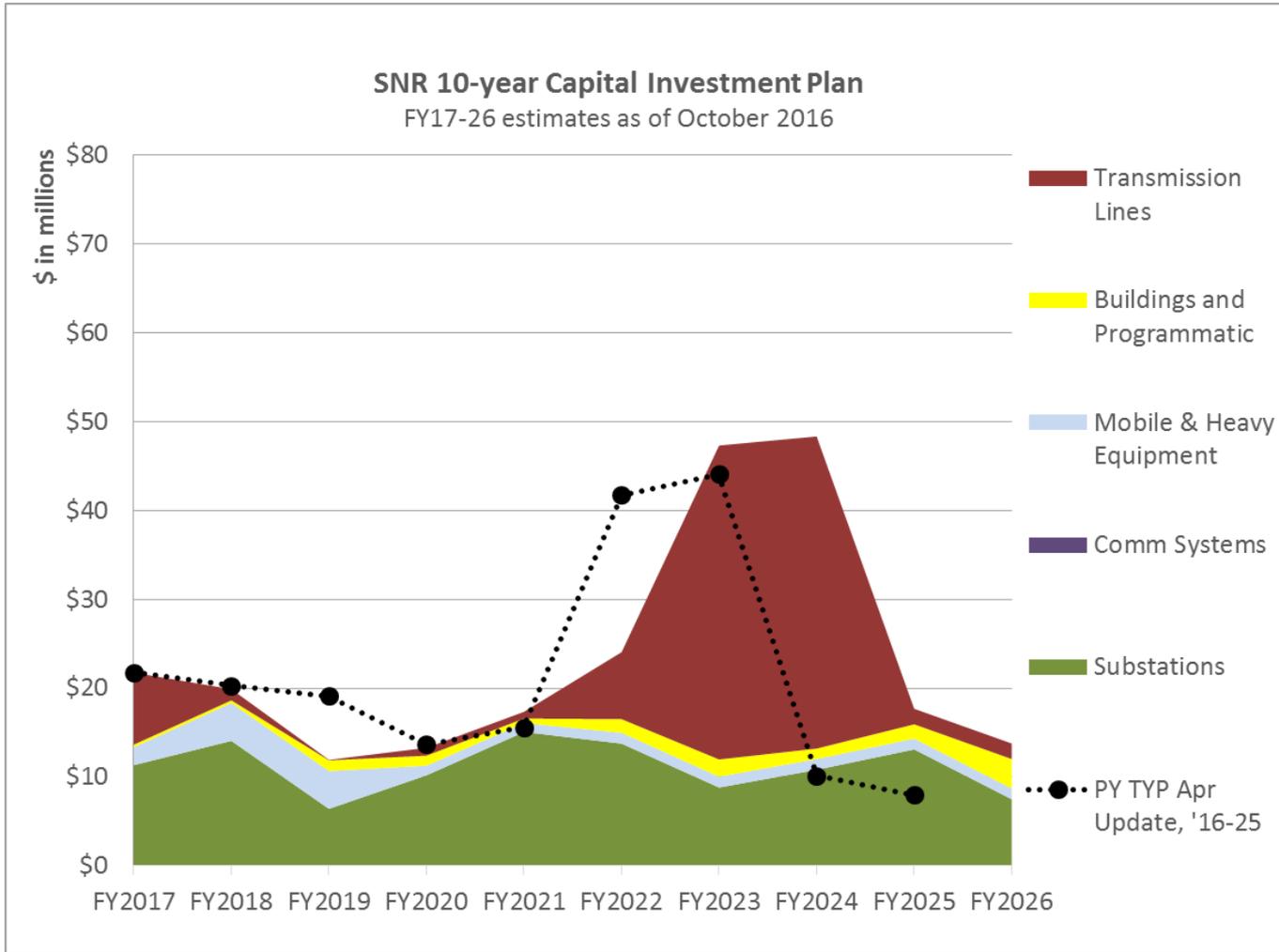
DSW



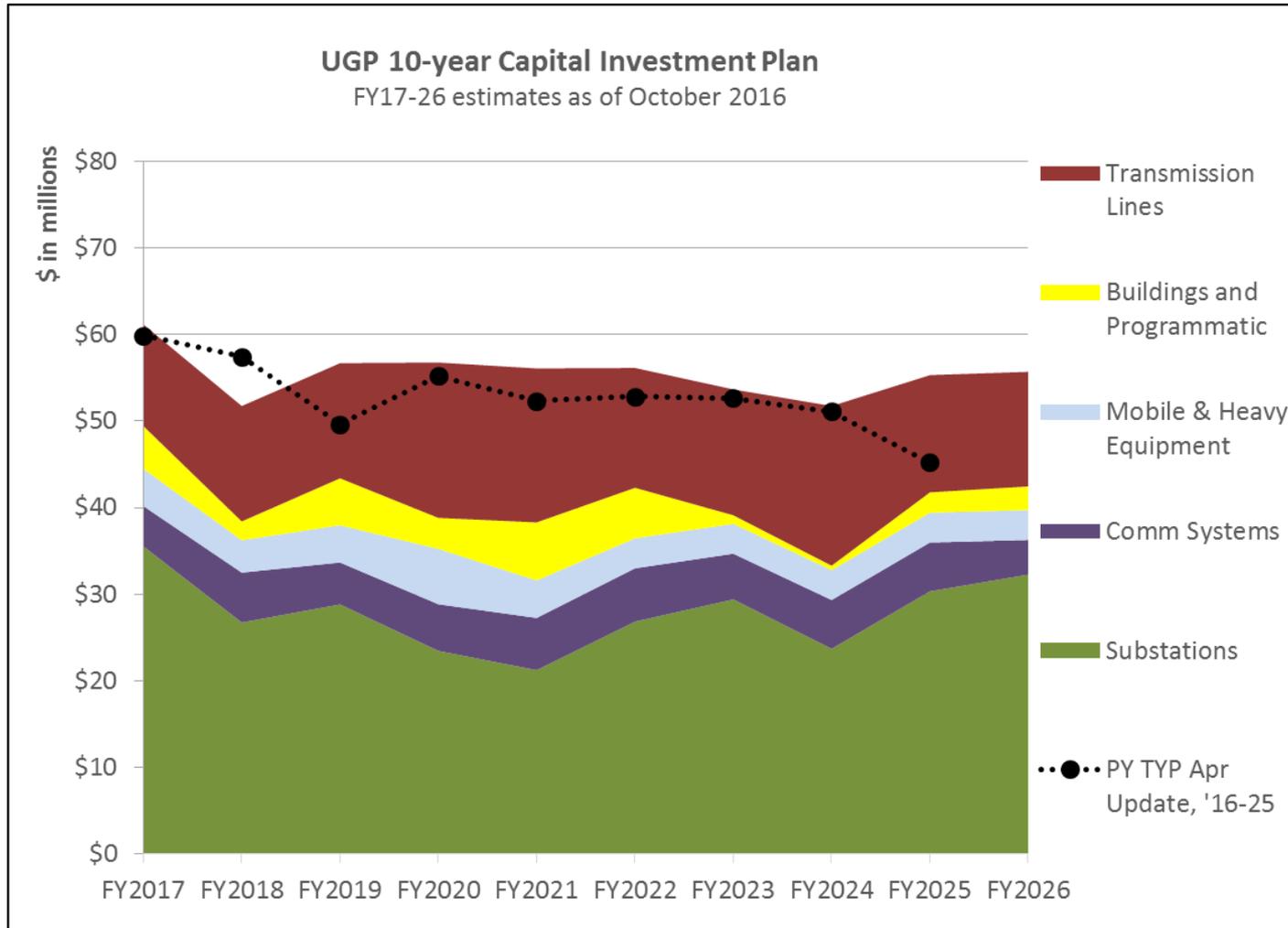
RM



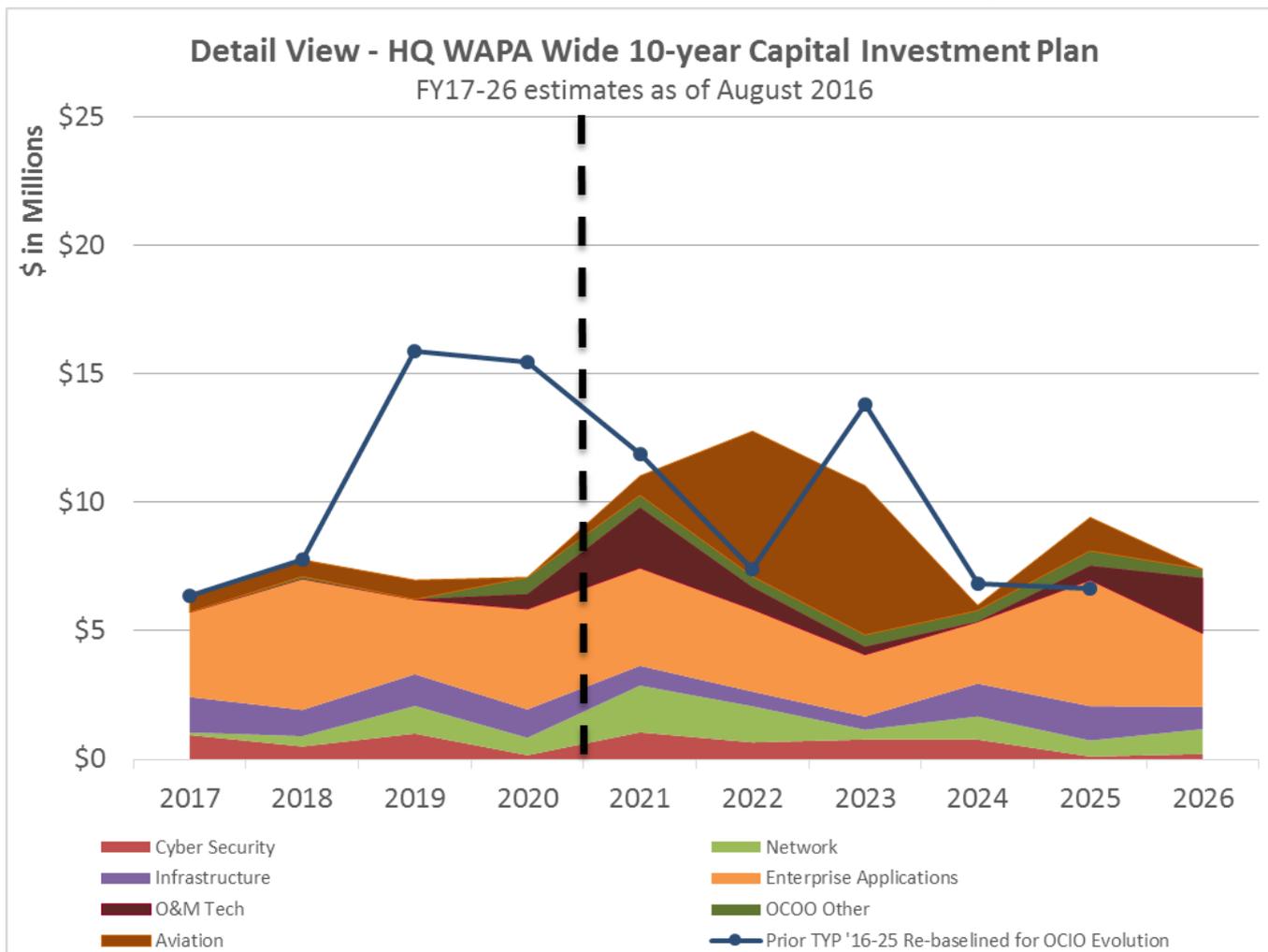
SN



UGP



HQ (WAPA-wide benefits)



Key Activity – WAPA-wide 10-Year Plan Funding Allocation Project



Proposed Project Scope

- In Scope: WAPA-wide 10-year plan appropriated funding allocation process to include framework, participants, requirements and schedule.
- Out of Scope: Regional/HQ 10-year plan processes; CRSP 10-year plan ; WAPA-wide Budget process and how 10-year plan integrates



Project Team Composition

- 8 team members
- Cross-regional and cross-functional representation
- Knowledge requirements:
 - Understands their region's internal budget and 10-year plan process
 - Understands external customer funding process
 - Specific functional knowledge



Project Solution Parameters

- Must be legal, moral and ethical, and pass the Washington Post test.
- Must be resource neutral – no new staff or significant expenditures.
- Must assume WAPA will request appropriations to fund programs within established parameters.
- Must balance WAPA-wide needs with Region-specific authorities and customer relationships.
- Must include collaboration with customers before a final decision is made.



Customer Feedback To Date

- Regional Managers reached out to customers to gather initial feedback for the process
- Received 5 responses
 - Arizona Municipal Power Users Association
 - City of Shasta Lake, CA
 - Irrigation and Electrical Districts of Arizona
 - Salt River Project Customers
 - Western States Power Corporation Board of Directors

