

# Webex Etiquette Guidelines

- Participants will be muted upon entering the Webex meeting
- If you have a question you can press \*6 on your telephone and you will be unmuted
- After your question has been addressed press \*6 again to re-mute your line
- It is encouraged to wait for a “Question” slide to ask questions, but if a question or need for clarification is urgent then they may be asked at any time
- Thank you for helping us provide an accessible presentation for all attendees

# Intertie & Parker-Davis Project Formal 10-Year Plan Meeting

October 28, 2020

Desert Southwest Region  
Phoenix, AZ

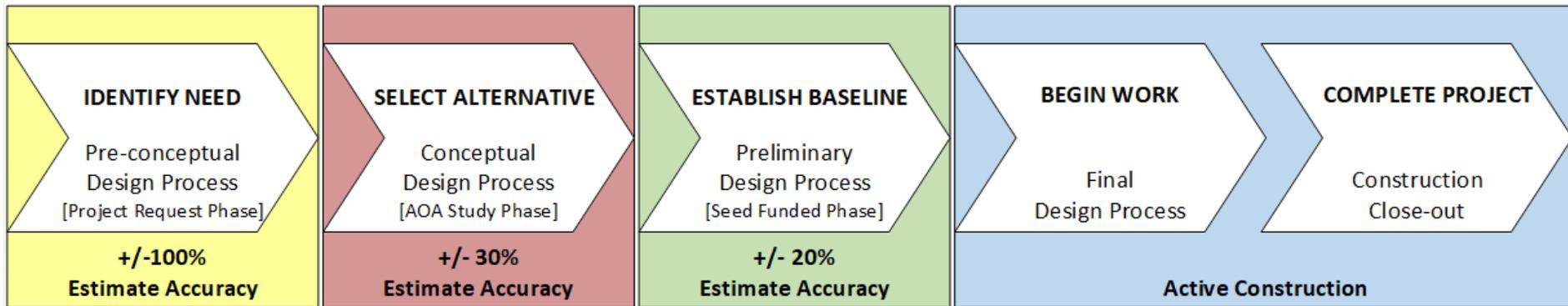
# Agenda

- Welcome
- Delayed Execution
- Final 10-Year Plan
- Seed Project Update
- Analysis of Alternatives (AOA) Studies
- Estimated Rate Impact
- Next Steps
- Prepayment Vote - Preview

# Delayed Execution

- WAPA continues to address the impacts of COVID-19 regarding active construction and capital planning
- As a risk mitigation measure WAPA is exploring options for optimizing fiscal year execution by re-evaluating project priorities
- This may include shifting future projects from 3+ years out into the budget formulation window
- The overall objective is to match funding forecasts outlined in the previous year's budget formulations
- As the full impacts and expected timeline of COVID-19 becomes clearer, these strategies will be refined and updated
- The 10-Year Plan is retaining its original sequence of project priorities as much as feasible for project continuity

# Estimate Accuracy & Financial Reporting Explanations



As a reminder, the 10-Year Plan is color coded for the following criteria

- Yellow – Project Request Phase – Pre-Conceptual Design
- Red – AOA Study Phase – Conceptual Design
- Green – Seed Funded Phase – Preliminary Design
- Blue – Active Construction Phase – Final Design, Construction and Closeout

Financial figures in tables are reported in thousands (1,000) throughout this presentation, with the exception of the AOA

# Draft 10-Year Plan July 2020

## PARKER-DAVIS PROJECT

PROJECT NAME	PROJECTED TOTAL	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Gila-Wellton Mohawk I-8 Crossing Rebuild	\$ 7,623	\$ 40										
Gila Substation 161-kV Rebuild	\$ 25,070	\$ 2,565	\$ 1,655	\$ 102								
Dome Tap-Gila 161-kV Rebuild	\$ 5,630	\$ 1,074	\$ 1,840	\$ 102								
Coolidge-Valley Farms 115-kV Rebuild	\$ 2,543	\$ 932	\$ 25									
Kofa-Dome Tap 161-kV Rebuild	\$ 5,138	\$ 1,850	\$ 1,200	\$ 1,064	\$ 650	\$ 50						
Bouse-Kofa 161-kV Rebuild	\$ 26,520	\$ 614	\$ 113	\$21,502	\$ 1,919	\$ 1,937	\$ 20					
Bouse Upgrade Project	\$ 45,967	\$ 100	\$ 1,087	\$10,300	\$12,219	\$13,002	\$ 6,945	\$ 856				
Crossman Peak Microwave Facility	\$ 4,525	\$ 25	\$ 2,534	\$ 333	\$ 145							
Parker-Blythe 161-kV #2 Rebuild Phase-1	\$ 30,000		\$ 7,500		\$ 4,500	\$ 4,500	\$ 4,500	\$ 4,500	\$ 4,500			
Gila Substation 69-kV Rebuild	\$ 10,500				\$ 800	\$ 100	\$ 100	\$ 7,875	\$ 1,125	\$ 500		
Yuma Area Maintenance Building	\$ 6,000		\$ 6,000									
Gila-Knob Remaining Rebuild	\$ 23,000					\$ 800	\$ 100	\$ 100	\$19,000	\$ 2,500	\$ 500	
Cochise Substation Remediation	\$ 3,600					\$ 500	\$ 100	\$ 100	\$ 2,400	\$ 500		
Blythe-Headgate Rock #1 161-kV Rebuild	\$ 23,900						\$ 1,195	\$ 100	\$ 100	\$ 9,560	\$11,711	\$ 1,234
Gila Substation 34.5 / 14KV	\$ 15,250						\$ 800	\$ 100	\$ 100	\$12,300	\$ 1,450	\$ 500
Parker Substation 161-kV Replacements	\$ 16,850						\$ 800	\$ 100	\$ 100	\$13,550	\$ 1,800	\$ 500
Wellton New Control Building	\$ 3,800						\$ 500	\$ 100	\$ 100	\$ 2,600	\$ 500	
Parker Substation 230-kV Replacements	\$ 12,100							\$ 800	\$ 100	\$ 100	\$ 9,800	\$ 1,300
Oracle-Tucson 115kV Rebuild	\$ 9,060							\$ 800	\$ 100	\$ 100	\$ 7,560	\$ 500
Bouse-Headgate Rock 161-kV Rebuild	\$ 8,995							\$ 800	\$ 100	\$ 100	\$ 7,495	\$ 500
<b>New Draft 10-Year Plan (2020) FY Totals</b>	<b>\$ 286,071</b>	<b>\$ 7,200</b>	<b>\$21,954</b>	<b>\$33,403</b>	<b>\$20,233</b>	<b>\$20,889</b>	<b>\$15,060</b>	<b>\$16,231</b>	<b>\$27,725</b>	<b>\$41,810</b>	<b>\$40,816</b>	<b>\$ 4,534</b>
<b>Final 10-Year Plan (2019) FY Totals</b>	<b>\$ 278,995</b>	<b>\$13,664</b>	<b>\$24,813</b>	<b>\$13,308</b>	<b>\$30,379</b>	<b>\$31,106</b>	<b>\$27,750</b>	<b>\$ 2,306</b>	<b>\$ 1,264</b>	<b>\$18,560</b>	<b>\$22,111</b>	

## INTERTIE PROJECT

PROJECT	PROJECTED TOTAL	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Liberty Series Capacitor Bank Replacement	\$ 9,835	\$ 1,598	\$ 25									
<b>New Draft 10-Year Plan (2020) FY Totals</b>		<b>\$ 1,598</b>	<b>\$ 25</b>									
<b>Final 10-Year Plan (2019) FY Totals</b>		<b>\$ 1,598</b>	<b>\$ 25</b>									

# Project Manager: Roger Wright

## Projects

Coolidge Valley Farms 115-kV Rebuild  
Liberty Series Capacitor Bank Replacement

## Contact Info

Wright@WAPA.gov  
(602) 605-2498

# Coolidge-Valley Farms 115-kV Rebuild

CONSTRUCTION  
PHASE  
+/- 5%  
ESTIMATE ACCURACY

## 2019 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21
\$ 2,543	\$ 932	\$ 25



## 2020 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21
\$ 2,066	\$ 455	\$ 25

### Previous Status

- The line was energized 4/13/2020
- No changes to project budget

### Current Status

- Project will be completed under budget by ~\$480,000
- A request for reprogramming of ~\$394,000 to the Gila Substation 161-kV Rebuild project will occur at the Prepayment Vote meeting

# Liberty Series Capacitor Bank Replacement

CONSTRUCTION PHASE  
+/- 5% ESTIMATE ACCURACY

## 2019 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21
\$ 9,835	\$1,598	\$ 25



## 2020 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21
\$ 9,417	\$1,180	\$ 25

### Previous Status

- The project is in financial close-out
- No changes to project budget

### Current Status

- Project will be completed under budget by ~\$418,000
- A request for reprogramming of ~\$394,000 to the Gila Substation 161-kV Rebuild project will occur at the Prepayment Vote meeting

# Project Manager: Mike Garcia

## Projects

Kofa-Dome Tap 161-kV Rebuild  
Crossman Peak Microwave Facility

## Contact Info

MGarcia@WAPA.gov  
(602) 605-2561

# Kofa-Dome Tap 161-kV Rebuild

CONSTRUCTION PHASE  
+/- 5% ESTIMATE ACCURACY

## 2019 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21	FY22
\$ 5,138	\$4,634	\$ 130	\$ 50



## 2020 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21	FY22	FY23	FY24
\$ 5,138	\$1,839	\$ 1,200	\$ 1,075	\$ 650	\$ 50

### Previous Status

- Due to delays caused by COVID-19, this project was adjusted to include two additional years
- No changes to total project budget

### Current Status

- No changes from previous status

# Project Manager: Tony Gagajewski

## Projects

Gila-Wellton Mohawk I-8 Crossing  
Gila Substation 161-kV Rebuild  
Bouse-Kofa 161-kV Rebuild  
Dome Tap-Gila 161-kV Rebuild  
Seed: Bouse Upgrade Alternative

## Contact Info

Gagajewski@WAPA.gov  
(602) 605-2629

# Gila-Wellton Mohawk I-8 Crossing Rebuild

CONSTRUCTION PHASE  
+/- 5% ESTIMATE ACCURACY

## 2019 Final 10-Year Plan

PROJECTED TOTAL	FY20
\$ 7,623	\$ 40



## 2020 Final 10-Year Plan

PROJECTED TOTAL	FY20
\$ 7,623	\$ 40

### Previous Status

- Project will closeout successfully in FY20 and will be removed from the 10-Year Plan in October 2020
- No changes to project budget

### Current Status

- The project is closed out and has been removed from the 10-Year Plan

# Gila Substation 161-kV Rebuild

## 2019 Final 10-Year Plan

CONSTRUCTION PHASE  
+/- 5% ESTIMATE ACCURACY

PROJECTED TOTAL	FY20	FY21
\$ 23,873	\$3,100	\$ 25

## 2019 Prepayment Vote Meeting

PROJECTED TOTAL	FY20	FY21
\$ 24,284	NA	NA

## 2020 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21	FY22
\$ 25,070	\$2,565	\$ 1,655	\$ 102

### Current Status

- The budget increased between the 2019 Final 10-Year Plan meeting and the 2019 Prepayment Vote meeting due to modifications to the construction contract
- The budget increased in 2020 due to delays caused by COVID-19
- An additional \$787,000 is required; WAPA proposes the reprogramming of remaining funds on completed projects to cover this budget increase

# Bouse-Kofa 161-kV Rebuild

CONSTRUCTION PHASE  
+/- 5% ESTIMATE ACCURACY

## 2019 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21	FY22	FY23	FY24
\$ 26,520	\$ 614	\$21,095	\$ 2,556	\$ 1,800	\$ 40



## 2020 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21	FY22	FY23	FY24	FY25
\$ 26,520	\$ 380	\$ 114	\$21,502	\$ 2,152	\$ 1,937	\$ 20

### Previous Status

- Design has reached 50% and is working toward 75%
- Due to delays caused by COVID-19, this project was extended by one year
- No changes to total project budget

### Current Status

- The project has reached 90% design
- An updated estimate will be shared in future meetings

# Dome Tap-Gila 161-kV Rebuild

CONSTRUCTION PHASE  
+/- 5% ESTIMATE ACCURACY

## 2019 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21
\$ 5,630	\$2,966	\$ 50



## 2020 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21	FY22	FY23
\$ 5,630	\$ 470	\$ 2,444	\$ 92	\$ 10

### Previous Status

- Due to delays caused by COVID-19, this project was adjusted to include an additional fiscal year
- No changes to total project budget

### Current Status

- An explanation of the financial table above is included in the Estimated Rate Impact section of this presentation

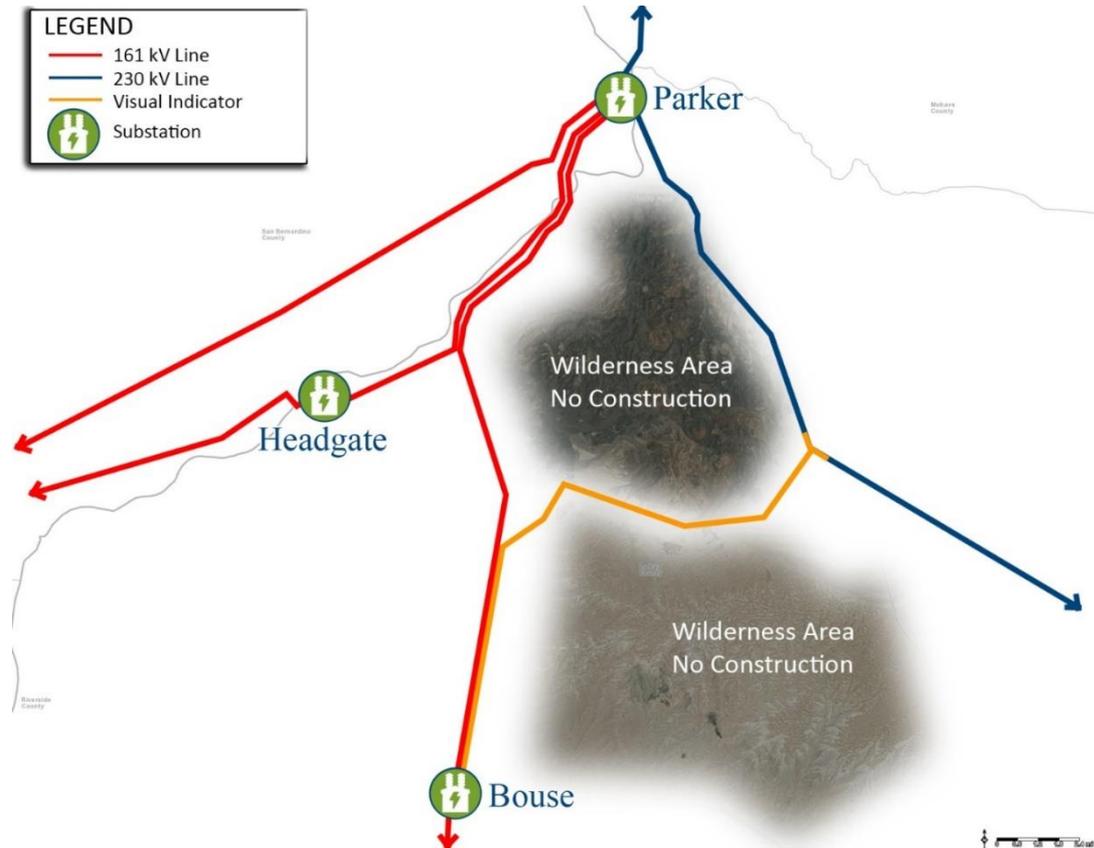
Questions? Press \*6 to Unmute

# Seed Project Update



# Bouse Upgrade Alternative History

- Parker-Bouse and Parker-Headgate transmission lines require replacement
- The original replacement project was placed on hold and a new alternative path was studied and shared with stakeholders
- The alternative path entered the Seed Funded Phase, in which appropriations are used for preliminary design work
- The work on the preliminary design continues, to ensure the project is constructable and meets the needs of all stakeholders prior to a request for prepayment vote



# Bouse Upgrade Alternative Update

- Preliminary environmental and lands activities are being performed
- Conversations with regional stakeholders successfully held in September, and seed design is progressing
- The physical location of the interconnection point between the existing Parker-Headgate and Parker-Bouse lines will be determined by stakeholders and public scoping
- The vote for the Bouse Upgrade Alternative is currently scheduled for December 2021 due to delays in design progress experienced this year

# Bouse Upgrade Project Budget

SEED FUNDING PHASE  
+/- 20% ESTIMATE ACCURACY

## 2019 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21	FY22	FY23	FY24	FY25	FY26
\$ 45,916	\$1,208	\$ 704	\$ 9,658	\$ 11,493	\$12,925	\$ 7,950	\$ 537



## 2020 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27
\$ 45,916	\$ 100	\$ 700	\$ 995	\$ 9,775	\$11,493	\$12,925	\$7,950	\$ 537

Questions? Press \*6 to Unmute

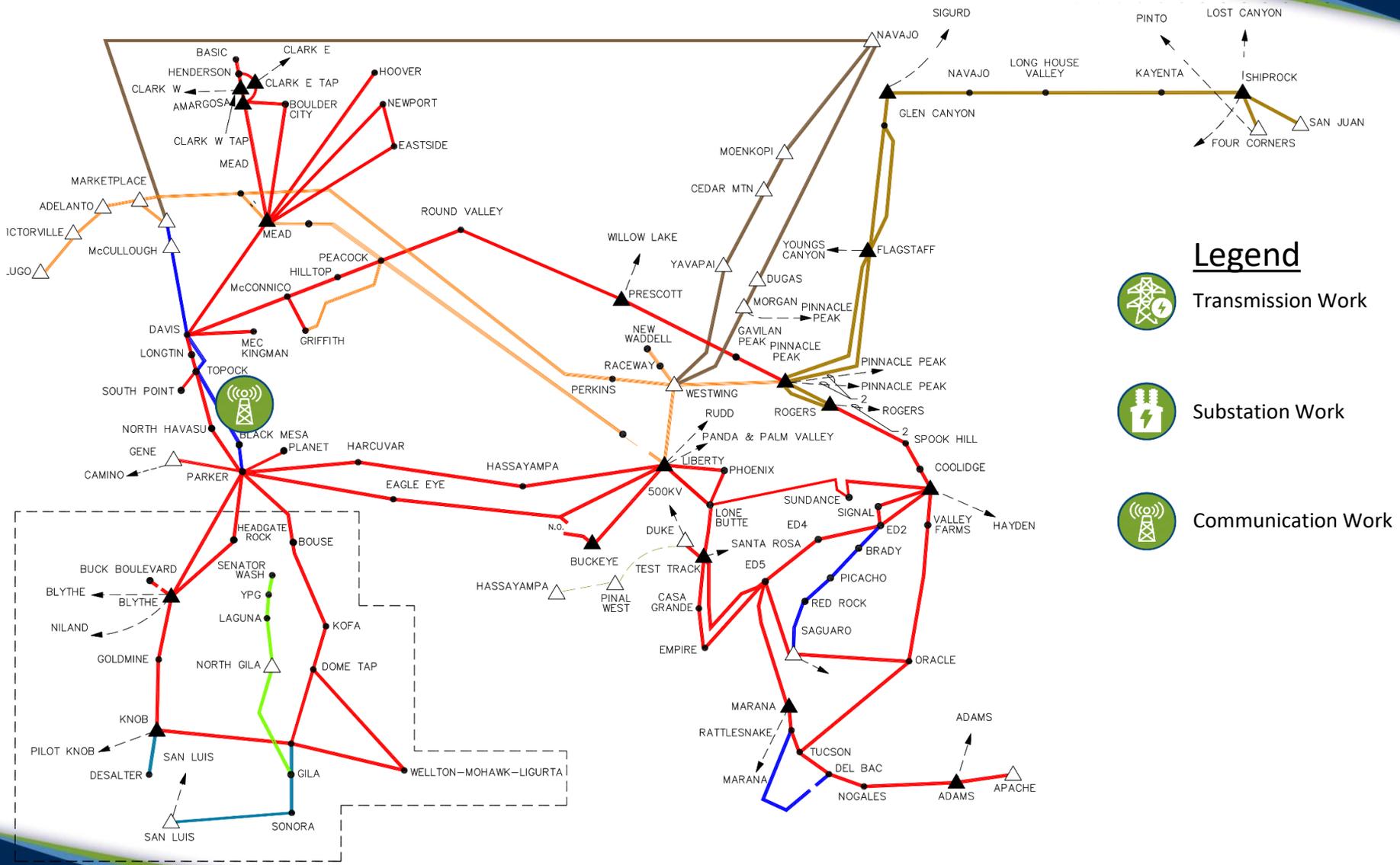
# Analysis of Alternatives Studies



# Analysis of Alternative Studies

- Internally identified alternatives for active studies were presented in the 2020 Active Construction meeting
- Comments were solicited on the alternatives presented, as well as requests for new proposed alternatives from customers
- A status update on the in-progress studies was shared during the 2020 Draft 10-Year Plan meeting, and additional comments were solicited
- Several studies are now complete with recommended alternatives and anticipated next steps

# Crossman Peak Microwave Facility



# Crossman Peak Microwave Facility Need

- WAPA's microwave system operates within a specific frequency band regulated by the Federal Communications Commission
- Legislation was passed in 2010 that reallocates this frequency band to a higher bandwidth
- Analysis has determined that when the microwave path between Christmas Tree Pass and Metal Mountain is upgraded to the higher frequency, there is an interruption to the signal
  - This interruption severs the microwave path between these two communication sites
- The original analysis did not identify any potential alternative locations aside from Crossman Peak, however a review is being performed as part of the current restudy effort

# Crossman Peak Study Progress

## **Alternative 1: Renewable energy with battery storage**

- Study is complete

## **Alternative 2: Propane generator**

- Study is complete

## **Alternative 3: Distribution line (funded by WAPA)**

- Study is complete

## **Alternative 4: Distribution line (funded through partnerships)**

- Currently in progress
- COVID-19 has caused delays on this project, further outreach will be performed through 2021

## **Alternative 5: New locations**

- Currently in progress
- Additional site details are being researched and estimates are in progress

# Crossman Peak Budget

CONSTRUCTION PHASE
+/- 5% ESTIMATE ACCURACY
AOA STUDY PHASE
+/- 30% ESTIMATE ACCURACY

## 2019 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21	FY22
\$ 4,525	\$170	\$2,534	\$333



## 2020 Final 10-Year Plan

PROJECTED TOTAL	FY20	FY21	FY22	FY23	FY24
\$ 4,525	\$ 25	\$ 25	\$ 2,509	\$ 333	\$ 145

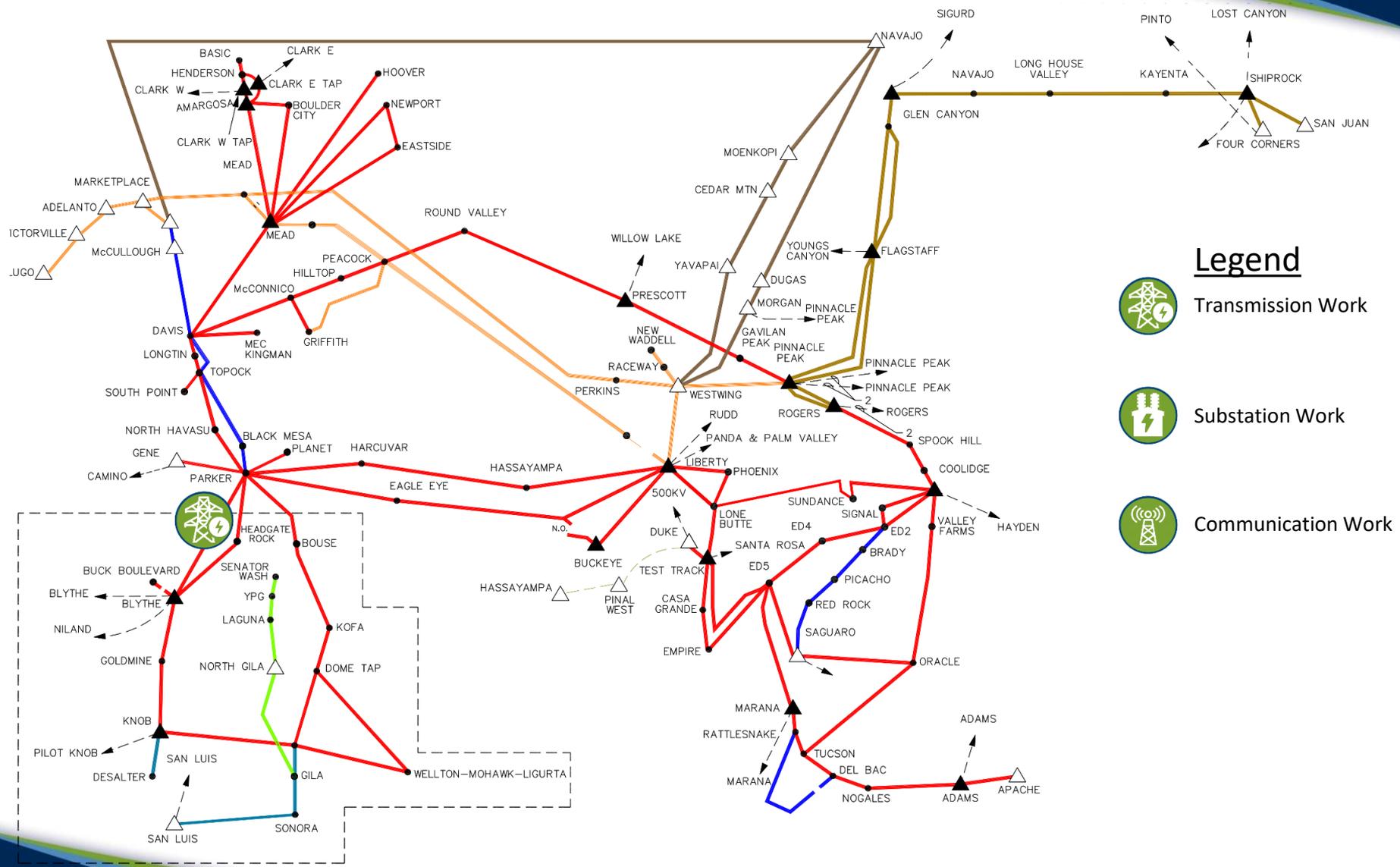
### Current Status

- The Crossman Peak AOA study continues as a parallel effort to the outreach with regional stakeholders
- Due to COVID-19 coordination delays have occurred
- The study effort will continue into FY21 and the project financials have been updated accordingly

# Project Next Steps

- The exploration of solutions on the Crossman Peak project will continue
- Updates will be provided through the next year as the final aspects of the study are completed
- Once all alternatives have been fully investigated the findings will be shared

# Parker-Blythe 161-kV Rebuild



- Legend**
-  Transmission Work
  -  Substation Work
  -  Communication Work

# Parker-Blythe 161-kV Rebuild Need

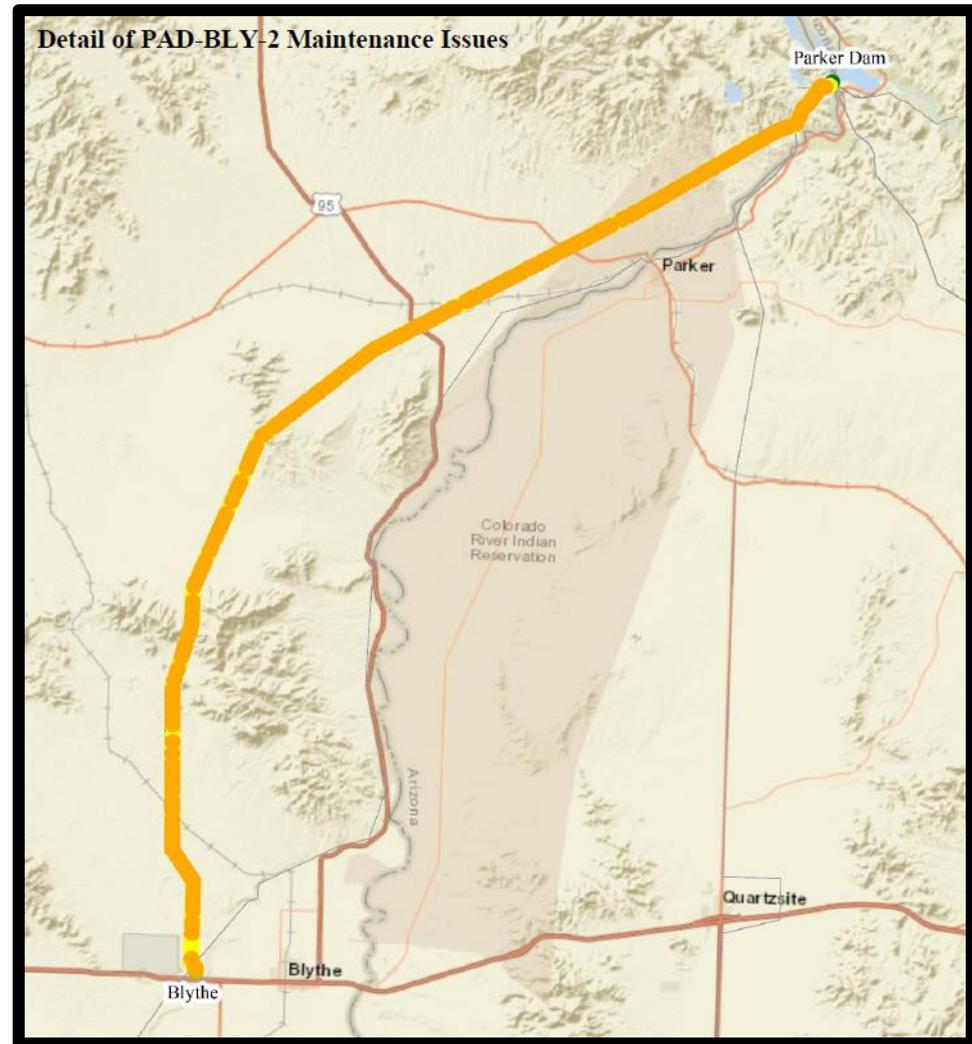
- Degraded wood poles require replacement along 64-mile transmission line
  - ~880 out of 920 poles require repair or replacement
  - ~400 of those 880 have serious defects
- Phase-to-ground clearance violations require an engineering solution
- Repair and reclaim right-of-way access
- ~20% of the structures (100+) require dozer tow-in for access
- New fiber optic communication capabilities

# Parker-Blythe Current Status

- The Parker-Blythe rebuild project was originally intended to be a full rebuild of the transmission line with an upgrade from wood poles to light duty steel
- Based on stakeholder feedback obtained during a working session held in August 2019, it was decided that a more cost-effective solution for the degraded poles would be pursued
- The vote was delayed while a second study was performed

## Maintenance Priority Codes

<b>A</b>	Good or like new. No action required.
<b>B</b>	Minor defect. Monitor degradation.
<b>C</b>	Moderate defect. Rehabilitation or replacement recommended as scheduled maintenance.
<b>D</b>	Serious defect. Repair, reinforce, or replace as soon as possible.
<b>E</b>	Risk to public safety or system reliability.



# Parker-Blythe Study Results

- The original intent of the AOA study was to generate estimates for each identified alternative with either contract labor, in-house forces, or a combination
- During the estimating phase of the study it was determined that internal resource restrictions made utilization of in-house forces infeasible
- As a result of this restudy effort, a new alternative utilizing contractor forces that also meets the criteria outlined in the purpose of the restudy was identified as the preferred alternative
- For the purposes of this presentation, the alternatives showcased consist of the primary alternatives only
- Estimates are shown with the project as a single phase, with the final preferred alternative in three phases

# Parker-Blythe Alternative 1

## Alternative 1: Rebuild with light duty steel to 230-kV standards, operated at 161-kV

- This alternative was the preferred alternative in 2019, but the high cost of the project initiated a restudy effort
- This alternative is no longer recommended but it is being included to have a basis for a comparison to the new alternatives
- This estimate has been updated with current labor rates and revised cost assessments based on current cost trending



# Alternative 1 Full Scope

- New conductor, insulators, and hardware
- Upgrade all wood pole structures to light duty steel H-frame structures
- Install steel dead-end structures as required by design
- Add optical overhead ground wire (OPGW)
- Repair/reclaim right-of-way access
- Design using 230-kV standards/specifications operated at 161-kV to help standardize maintenance and improve availability of replacement/equipment

# Alternative 1 Analysis

## Pros

- The Parker Blythe transmission line would be restored to good condition (“A” ranking)
- All clearance violations would be corrected
- System protection, control, communication, and security would be enhanced with the addition of OPGW
- Future maintenance costs would be reduced
- New higher capacity conductor would allow future load growth

## Cons

- Higher material and installation costs for steel 230-kV construction

# Alternative 1 Analysis

ALTERNATIVE #1 CONCEPTUAL ESTIMATE	
PAD-BLY #2 SINGLE PHASE REBUILD	
	TOTAL
Administrative	\$1,108,728
EVMS	\$0
Design	\$583,961
Environmental	\$4,872,360
Land and Land Rights	\$316,187
Government Furnished Equipment (GFE)**	\$15,661,286
Construction	\$31,288,244
Commissioning Activity	\$2,482,637
<b>Subtotal</b>	<b>\$56,313,404</b>
Management Reserve (5%)	\$2,815,670
<b>Total Project Budget</b>	<b>\$59,129,074</b>

## Assumptions

- Construction time estimated to be 3 years to replace 525 structures
- OPGW costs to terminate, splice and test
- Environmental and Lands costs from based on estimates for other alternatives

# Parker-Blythe Alternative 2

## **Alternative 2: Replace only failing wood structures in-kind utilizing contractor labor**

- This alternative would only replace the structures rated “C” or below
- This would encompass approximately 445 structures (85% of the line based on most recent Cartopac and inspection results)
- Many of the poorly rated structures are located in difficult to access locations, particularly in the northern stretch of the line



# Alternative 2 Full Scope

- New insulators and hardware
- Perform in-kind replacement on all wood poles falling inside the replacement criteria window
- Install dead-end structures every 10 miles
- Partial mitigation of clearance violations
- Repair/reclaim right-of-way access
- Design using 161-kV standards/specifications to match existing transmission line configuration

# Alternative 2 Analysis

## Pros

- Replacing wood structures with wood dead end structures every 10 miles will reduce the risk of cascading failure
- Some clearance violations would be corrected (depending on location)
- Portions of the Parker-Blythe transmission line would be restored to good condition (“A” Ranking)
- Future maintenance costs will be reduced
- Least expensive path forward aside from status quo

## Cons

- The new wood poles would still be susceptible to insects, fungi, wood rot and other environmental factors that will cause degradation of the structures that are being replaced
- Maintenance costs for the life of the refurbished line would continue at a higher rate than if all structures were replaced
- System protection, control, communication, and security would not be enhanced without the addition of OPGW

# Alternative 2 Analysis

ALTERNATIVE #2 CONCEPTUAL ESTIMATE	
PAD-BLY #2 SINGLE PHASE REBUILD	
	TOTAL
Administrative	\$683,728
EVMS	\$0
Design	\$462,680
Environmental	\$2,787,001
Land and Land Rights	\$316,187
Government Furnished Equipment (GFE)**	\$0
Construction	\$25,129,105
Commissioning Activity	\$202,863
<b>Subtotal</b>	<b>\$29,581,564</b>
Management Reserve (5%)	\$1,479,078
<b>Total Project Budget</b>	<b>\$31,060,642</b>

## Assumptions

- This estimate was not produced as a standalone item, it is a modification of a full line rebuild estimate that was also produced for this study
- Reduced construction time to 2.5 years and Government Furnished Equipment costs to replace 445 structures
- Removed OPGW costs
- Environmental and Lands costs assumed unchanged

# Parker-Blythe Alternative 3

## **Alternative 3: Replace all wood structures in-kind utilizing contractor labor, and add one OPGW**

- This alternative would replace all the wood structures
- Use existing 954 kcmil conductor
- The addition of OPGW will strengthen WAPA communications in the region



# Alternative 3 Full Scope

- New insulators and hardware
- Perform in-kind replacement on all wood poles
- Install dead-end structures every 10 miles
- Mitigate all clearance violations
- Add optical overhead ground wire (OPGW)
- Repair/reclaim right-of-way access
- Design using 161-kV standards/specifications to match existing transmission line configuration

# Alternative 3 Analysis

## Pros

- The Parker-Blythe transmission line would be restored to good condition (“A” Ranking)
- Replacing wood structures with wood dead end structures every ~10 miles will reduce the risk of cascading failure
- All clearance violations would be corrected
- System protection, control, communication, and security would be enhanced with the addition of OPGW
- Future maintenance costs will be reduced

## Cons

- The new wood poles would still be susceptible to insects, fungi, wood rot and other environmental factors that will cause degradation of the structures that are being replaced
- Capacity of the conductor will not allow future load growth with upgrade of substations
- Maintenance costs for the life of the refurbished line would continue at a higher rate than that for light-duty steel

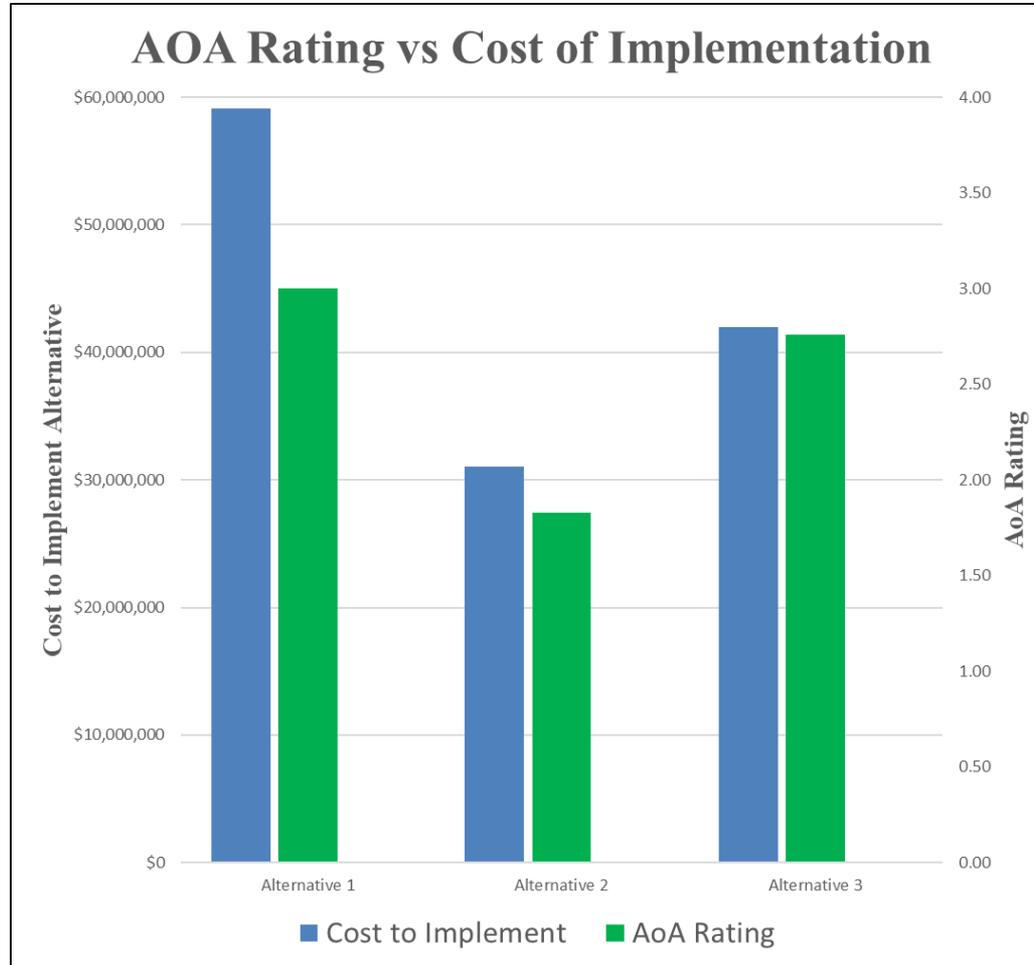
# Alternative 3 Analysis

ALTERNATIVE #3 CONCEPTUAL ESTIMATE	
PAD-BLY #2 SINGLE PHASE REBUILD	
	TOTAL
Administrative	\$1,108,728
EVMS	\$0
Design	\$482,915
Environmental	\$4,872,360
Land and Land Rights	\$316,187
Government Furnished Equipment (GFE)**	\$0
Construction	\$30,699,891
Commissioning Activity	\$2,482,637
<b>Subtotal</b>	<b>\$39,962,719</b>
Management Reserve (5%)	\$1,998,136
<b>Total Project Budget</b>	<b>\$41,960,855</b>

## Assumptions

- Construction contract phased into three separate construction bids
- Contractor cost for all OPGW costs to terminate, splice and test, and add required equipment in both control rooms

# All Alternatives Comparison



Alt 1 – Light-duty steel replacement of all poles and OPGW - \$59,130,000

Alt 2 – Wood replacement of failing poles no OPGW - \$31,060,000

Alt 3 – Wood replacement of all poles and OPGW - \$41,961,000

# Parker-Blythe Preferred Alternative

## Alternative 3 – Wood in-kind replacement with one OPGW (contractor labor)

### 2019 Final 10-Year Plan

PROJECTED TOTAL	FY21	FY22	FY23	FY24	FY25	FY26	FY27
\$ 18,542	\$ 250	\$ 237	\$17,086	\$ 805	\$ 164		
\$ 18,542		\$ 237		\$ 17,336	\$ 805	\$ 164	
\$ 18,542		\$ 237			\$17,336	\$ 805	\$ 164



### 2020 Final 10-Year Plan

PROJECTED TOTAL	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
\$ 14,209	\$ 808	\$ 376	\$10,791	\$ 1,543	\$ 680	\$ 11		
\$ 13,876			\$ 254	\$ 10,981	\$ 1,734	\$ 887	\$ 21	
\$ 13,876				\$ 254	\$10,981	\$ 1,734	\$ 887	\$ 21

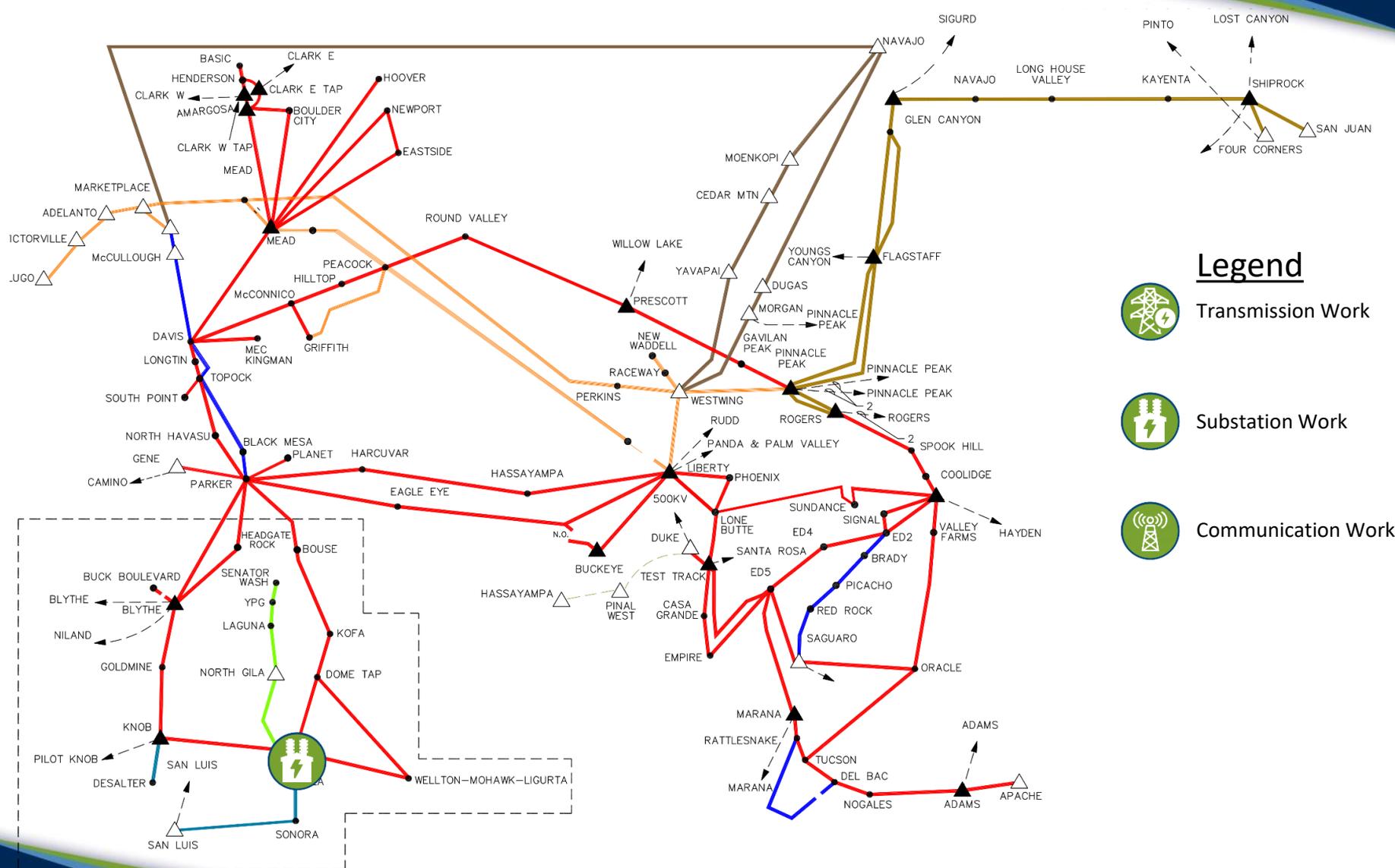
- 2019 proposed rebuild using light-duty steel at \$55.6M. That estimate was updated to \$59.1M using current labor/material cost
- 2020 proposes in-kind wood pole replacement with one OPGW at ~\$42M
- This represents a 29% reduction in total project cost

AOA STUDY PHASE  
+/- 30% ESTIMATE ACCURACY

# Project Next Steps

- The preferred alternative will be recommended for prepayment funding this December
- The project will not go through a seed funding phase, and will move directly into active construction
- Project updates will be provided through the completion of the project

# Gila 69-kV Substation Rebuild



## Legend

-  Transmission Work
-  Substation Work
-  Communication Work

# Gila 69-kV Substation Rebuild Need

- Most of the equipment is operating beyond its service life and appears on WAPA's Asset Management Risk Registry
- The advanced age of assets has resulted in an increased frequency of failures
- Reliability is impacted due to extended outage times caused by old and worn equipment, for which spare parts are not readily available or require custom manufacturing



# Gila 69-kV Substation Current Status

- The 69-kV yard feeds the 34.5-kV yard through two paralleled 7.5 MVA, 69/34.5-kV transformers
- These transformers were manufactured in 1956 and are in very poor condition
- The transformers leak oil in numerous locations and the control wires inside the transformers are extremely brittle
- From an asset management perspective the 34.5-kV yard is in worse condition than the 69-kV yard
  - Due to the congestion and difficult access to the 34.5-kV yard, the 69-kV yard must be addressed first

# Gila 69-kV Substation Alternative 1

## Alternative 1: Status Quo

- Continuation of maintenance on components as they fail
- Age of hardware makes finding replacement parts difficult or impossible
- Most of the equipment is showing age related deterioration and would require piecemeal replacement over time



# Alternative 1 Analysis

## Pros

- No upfront costs
- Resources would be available for other projects

## Cons

- Does not correct the 34.5-kV yard maintenance access issues
- Reliability would remain as a concern
- Safety would remain as a concern
- Maintenance costs would continue to rise
- The probability of prolonged outages would increase
- Abandoned 161-kV equipment remains on site
- The environmental concerns would go unaddressed

# Gila 69-kV Substation Alternative 2

## **Alternative 2: Replace failing equipment in place**

- This alternative would rebuild the yard in its current position
- Does not address access to 34.5-kV yard or take advantage of the new space generated by the Gila 161-kV rebuild project



# Alternative 2 Full Scope

- Construct a new bay in the existing lattice structure to allow for the paralleled transformers KZ5A and KZ5B each to be fed from different circuit breakers
- Replace capacitor bank PZ7A and associated switches and instrument transformers with new equipment
- Working one bay at a time, replace breakers, disconnect switches, and associated instrument transformers with new equipment
- Replace all conductors rated less than 2000A with new conductor
- Install new relay and control panels in the control house in the new 161-kV Switchyard
- Install new control cables from equipment in each bay to new control panels
- Replace 69/34.5-kV transformers KZ5A and KZ5B

# Alternative 2 Analysis

## Pros

- Avoids removal costs of the abandoned 161-kV yard, though this would have to be addressed with a future project
- Does not require re-routing 69-kV transmission lines
- Corrects existing 69-kV equipment maintenance issues

## Cons

- Does not correct the 34.5-kV yard maintenance access issues
- Adds another bay to existing lattice structure in an already congested area
- Many outages will need to be scheduled and coordinated for this alternative
- Potential environmental contaminants remain in the abandoned 161-kV switchyard

# Alternative 2 Analysis

ALTERNATIVE #2 CONCEPTUAL ESTIMATE	
GILA 69KV REBUILD	
	TOTAL
Administrative	\$484,992
EVMS*	\$0
Design	\$469,587
Environmental	\$188,856
Land and Land Rights	\$12,100
Government Furnished Equipment (GFE)**	\$3,047,501
Construction	\$2,948,283
Commissioning Activity	\$1,337,152
<b>Subtotal</b>	<b>\$8,488,471</b>
Management Reserve (5%)	\$424,424
<b>Total Project Budget</b>	<b>\$8,912,895</b>

## Assumptions

- Existing foundations and support structures are adequate and will support new equipment
- Existing electromechanical relays and associated protective devices will be replaced

# Gila 69-kV Substation Alternative 3

## **Alternative 3: Build 69-kV main-and-transfer in 161-kV footprint**

- Rebuild in previous 161-kV footprint using main-and-transfer configuration
- Provides a location for future 34.5-kV rebuild in the current 69-kV yard location
- Alleviates maintenance access issues
- Main-and-transfer configuration will negatively impact outage availability

# Alternative 3 Full Scope

- Remove all existing decommissioned in place 161-kV equipment, structures, conductors, control cables, control panels, and foundations
- Complete sitework needed for construction of new 69-kV switchyard
- Construct new 69-kV switchyard with eight bays in a main-and-transfer bus configuration
- Install new capacitor bank and associated switches and instrument transformers
- Remove of existing capacitor bank PZ7A and associated equipment
- Install two new 69/34.5 transformers
- Remove and dispose of transformers KZ5A and KZ5B
- Install new control panels in control house located in new 161-kV switchyard
- Install new control cables from 69-kV equipment to new control panels located in new control house

# Alternative 3 Analysis

## Pros

- Maintenance issues will be addressed by replacing all deteriorated and failing 69-kV equipment
- Space will be made available to rebuild the 34.5-kV switchyard
- Reliability of the 69-kV switchyard will improve
- Replacing KZ5A and KZ5B will have a positive impact on the reliability of the 34.5-kV system serving irrigation and drainage loads

## Cons

- A main-and-transfer bus configuration may make it difficult to obtain an outage of the main bus or any equipment directly connected to it

# Alternative 3 Analysis

ALTERNATIVE #3 CONCEPTUAL ESTIMATE	
GILA 69KV REBUILD	
	TOTAL
Administrative	\$613,685
EVMS*	\$0
Design	\$983,081
Environmental	\$286,635
Land and Land Rights	\$12,100
Government Furnished Equipment (GFE)**	\$3,120,478
Construction	\$7,953,740
Commissioning Activity	\$1,337,152
<b>Subtotal</b>	<b>\$14,306,871</b>
Management Reserve (5%)	\$715,344
<b>Total Project Budget</b>	<b>\$15,022,215</b>

## Assumptions

- Demolition of the existing 69-kV switchyard will occur with the rebuild of the 34.5-kV switchyard

# Gila 69-kV Substation Alternative 4

## **Alternative 4: Build 69-kV breaker-and-a-half in 161-kV footprint**

- Rebuild in previous 161-kV footprint using breaker-and-a-half configuration
- Provides a location for the future 34.5-kV rebuild in the current 69-kV yard's position
- Alleviates maintenance access issues
- Provides greatest flexibility for maintenance and operations activities
- Is the most expensive option

# Alternative 4 Full Scope

- Remove all existing 161-kV equipment and foundations
- Complete sitework needed for construction of new 69-kV switchyard
- Construct new 69-kV switchyard with four bays in a breaker-and-a-half configuration
- Install new capacitor bank and associated switches and instrument transformers
- Remove existing capacitor bank PZ7A and associated equipment
- Install two new 69/34.5 transformers
- Remove and dispose of transformers KZ5A and KZ5B
- Install new control panels and cables
- Tie in new yard

# Alternative 4 Analysis

## Pros

- A breaker-and-a-half configuration will provide the greatest flexibility for operation and maintenance of the 69-kV switchyard of any of the alternatives considered
- Space will be made available to rebuild the 34.5-kV switchyard
- Reliability of the 69-kV switchyard will improve
- Replacing KZ5A and KZ5B will have a positive impact on the reliability of the 34.5-kV system serving customer's irrigation and drainage loads
- Removes all existing decommissioned 161-kV facilities and mitigates any potential environmental contaminants

## Cons

- Highest cost of the alternatives studied

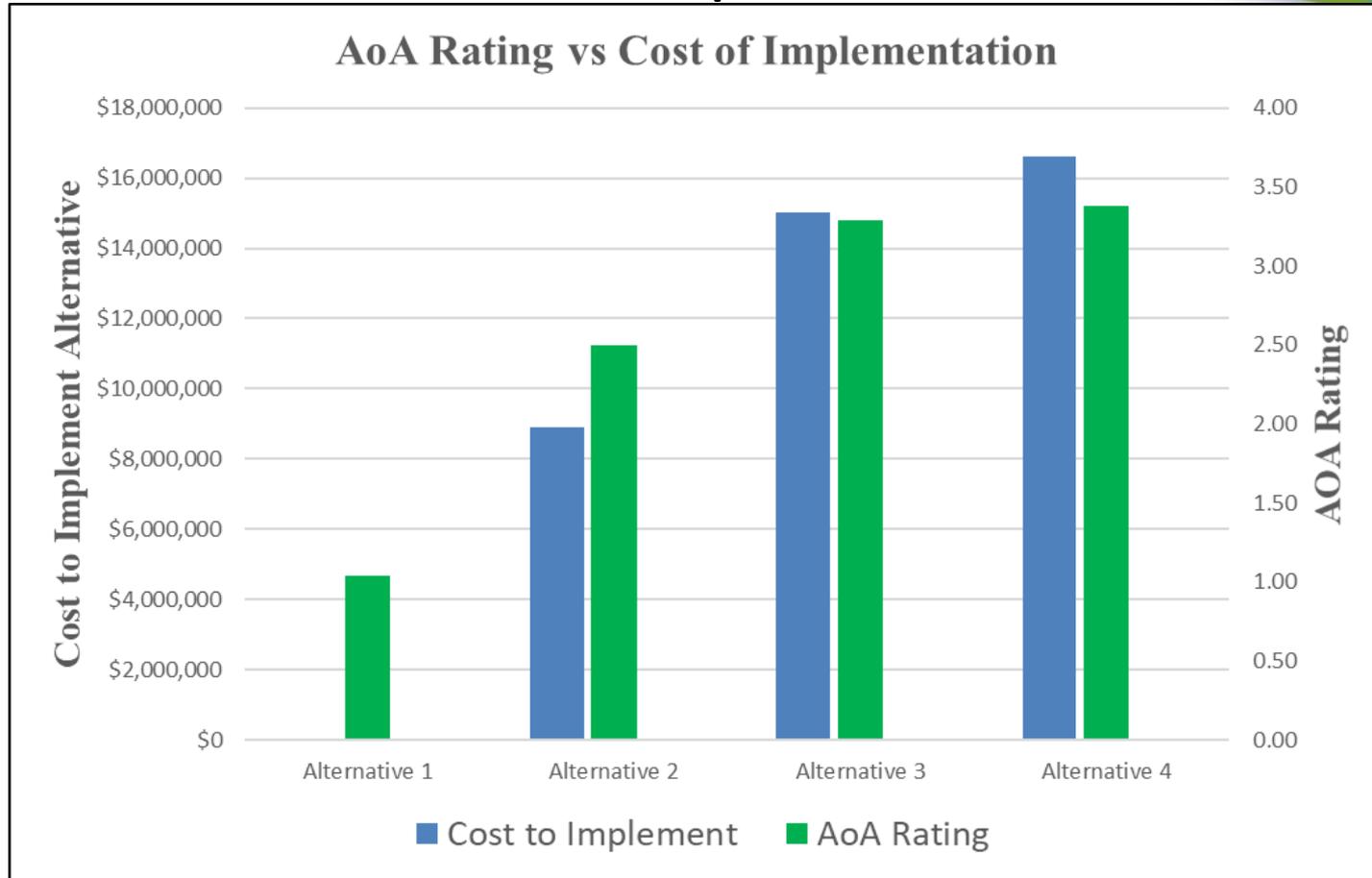
# Alternative 4 Analysis

ALTERNATIVE #4 CONCEPTUAL ESTIMATE	
GILA 69KV REBUILD	
	TOTAL
Administrative	\$953,685
EVMS*	\$0
Design	\$983,081
Environmental	\$286,635
Land and Land Rights	\$12,100
Government Furnished Equipment (GFE)**	\$3,650,444
Construction	\$8,924,260
Commissioning Activity	\$1,337,152
<b>Subtotal</b>	<b>\$16,147,357</b>
Management Reserve (5%)	\$807,368
<b>Total Project Budget</b>	<b>\$16,954,725</b>

## Assumptions

- Demolition of the existing 69-kV switchyard will occur with the rebuild of the 34.5-kV switchyard

# All Alternatives Comparison



Alt 1 – Status quo - \$0 Upfront

Alt 2 – Rebuild yard in place - \$8,912,895

Alt 3 – Build new main-and-transfer yard in 161-kV footprint - \$15,022,215

Alt 4 – Build new breaker-and-a-half yard in 161-kV footprint - \$16,954,725

# Gila 69-kV Preferred Alternative

## Alternative 4 Build 69-kV breaker-and-a-half in 161-kV footprint

**PROJECT REQUEST PHASE**  
+/-100% ESTIMATE ACCURACY

**AOA STUDY PHASE**  
+/- 30% ESTIMATE ACCURACY

### 2019 Final 10-Year Plan

PROJECTED TOTAL	FY27	FY28	FY29
\$ 10,500	\$ 800	\$ 100	\$ 100



### 2020 Final 10-Year Plan

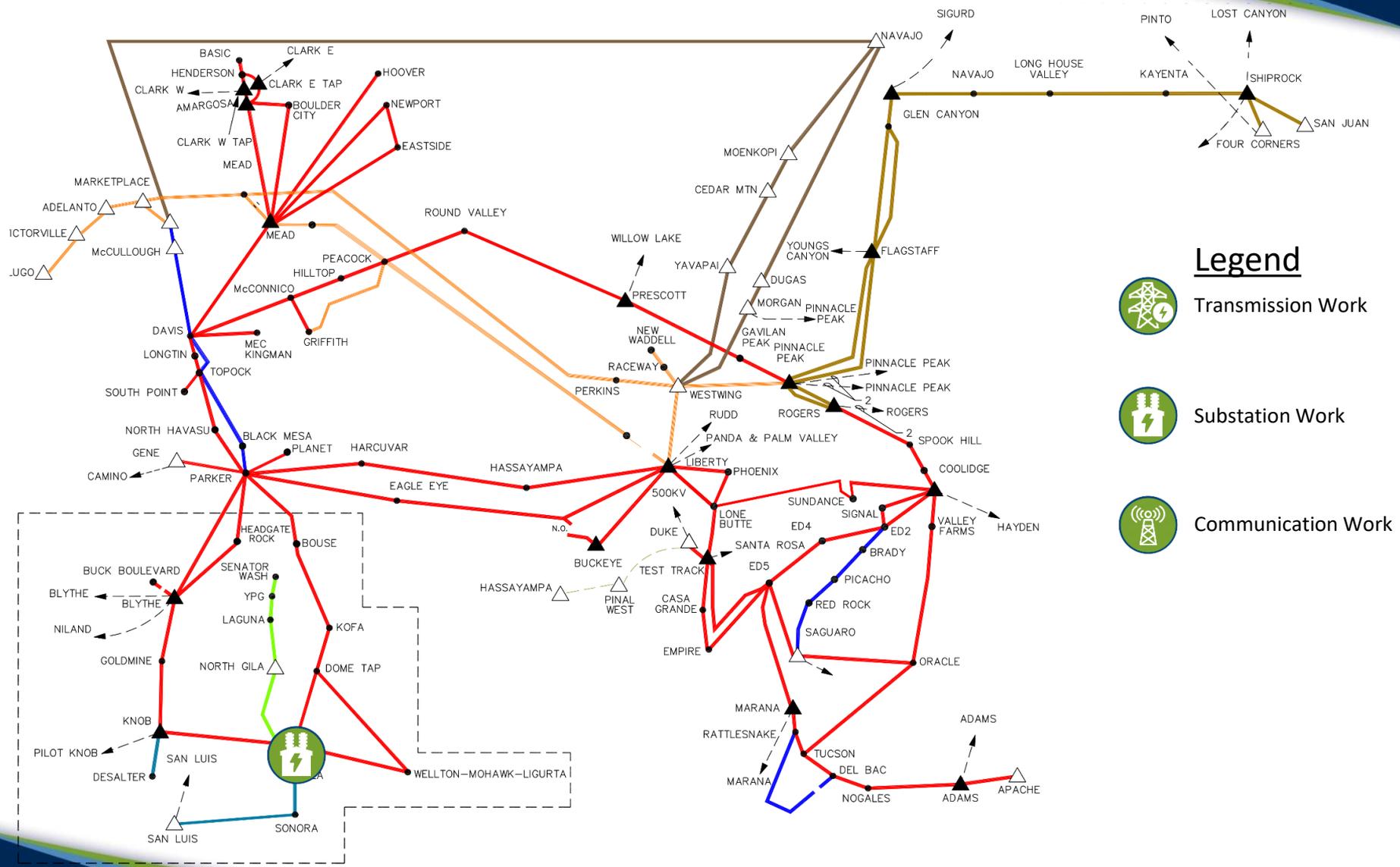
PROJECTED TOTAL	FY21	FY22	FY23	FY24	FY25	FY26
\$ 16,955	\$1,032	\$ 112	\$ 142	\$ 13,406	\$ 2,026	\$ 236

- Reduction in required outages will have long-term financial benefits over the life of the yard as well as provide the greatest availability for priority use power
- Future expansion potential exists if required
- Alleviates the clearance issues regarding access to the 34.5-kV yard
- The existing 69-kV infrastructure can remain in service during construction

# Project Next Steps

- With customer support, the project will move forward into the Seed Funding Phase to further explore the breaker-and-a-half option of the 69-kV Gila yard
- During the Seed Funding Phase the estimate will be further refined, with the intent of presenting updated figures for a vote in December 2021
- Status updates will be shared as the project progresses through the Seed Funding Phase

# Yuma Area Maintenance Building



## Legend

-  Transmission Work
-  Substation Work
-  Communication Work

# Yuma Area Maintenance Building

- The Yuma Area Maintenance Building Project was identified as a candidate for immediate inclusion into the 10-Year Plan
- This will bring the execution of funds in FY21 closer to forecasted amount that would deviate due to COVID-19
- The inclusion of this project in the 10-Year Plan is the result of an accelerated study effort
- Three potential alternatives for a maintenance facility in the region have been identified

# Transmission Lines & Substations Maintenance Manager: Michael Simonton

## **Projects**

Yuma Area Maintenance Building

## **Contact Info**

Simonton@WAPA.gov

(602) 605-2675

# Yuma Area Maintenance Building Need

- **Repositioning Staff** – To better serve Yuma area customers, in 2016, the Transmission and Substation Maintenance Division was approved to reposition a line crew at Gila Substation (~6 linemen & associated equipment)
- **Short Term Solution** – Since 2016, have been renting a mobile office trailer with poor quality and conditions. Purchased trailer in FY19 as stop gap measure.
- **Existing Facilities Shortcomings:**
  - Gila lacks sufficient space to accommodate all area employees
  - Septic system undersized for needs
  - Equipment is exposed to elements – premature failures
  - No wash bay to service vehicles
  - Limited storage for materials, tools, and equipment
  - Warehouse and shop – Poor condition with sand penetration, undersized, and does not meet DOE code compliance

# Yuma Area Maintenance Building Alternatives

Alternative 1 – Status Quo “Do Nothing”

Alternative 2 – Build Additional Building(s) On-Site at Gila

Alternative 3 – Buy Existing Building in Area

\* Lease / Lease-to-Buy options were investigated and deemed not viable due to WAPA’s lack of authority, timing, and mechanics

# Yuma Area Maintenance Building Alternative 1

## Alternative 1: Status Quo

- This alternative would continue utilizing the mobile trailers located at Gila Substation



# Alternative 1 Analysis

## Pros

- No up-front cost

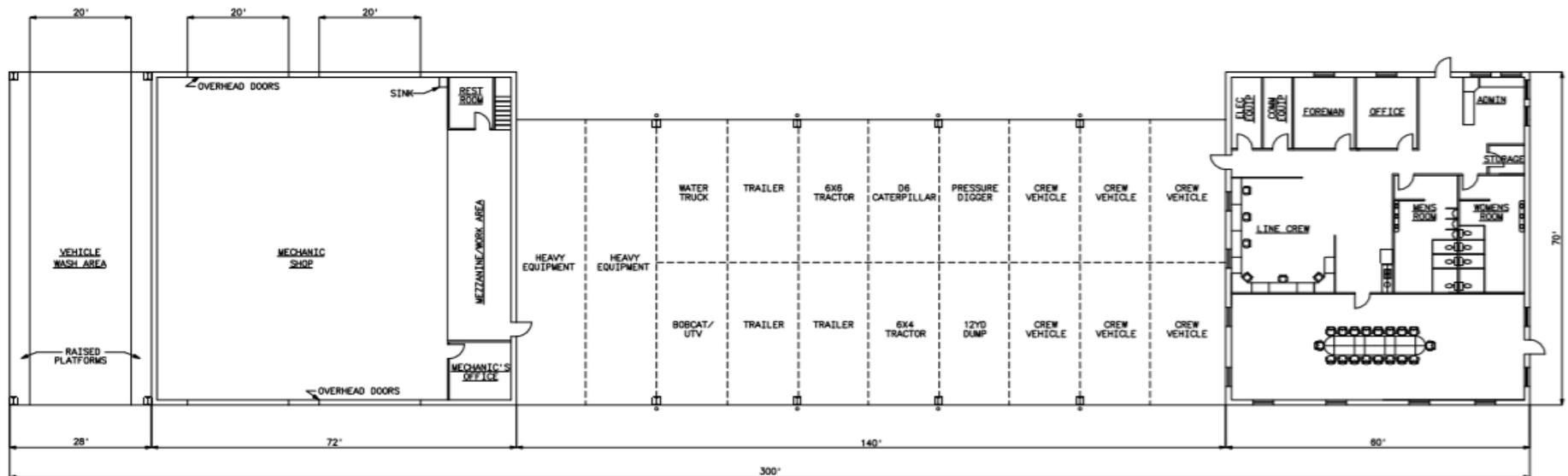
## Cons

- Does not solve current space and capability issues
- Inefficient operations leading to costly repairs of area infrastructure, equipment and facilities
- Requires retention, maintenance, and periodic replacement of portable office trailers and sewer pumping services
- Sub-par facility conditions reduce employee morale leading to increased turnover rates and inability to compete for qualified craft workforce
- Limits maintenance capabilities in the Yuma area which could lead to negative customer service impacts

# Yuma Area Maintenance Building Alternative 2

## Alternative 2: Build new facilities at Gila Substation

- This alternative would provide additional space for personnel at Gila Substation
- Additional enclosed parking and warehouse space are also included
- Design was scaled down to minimum projected requirements to reduce cost



# Alternative 2 Full Scope

- 4,200 sq ft Office – Foreman office space, conference room, linemen bullpen/office space, 2 bathrooms (men/women), and storage room (sensitive testing equipment)
- 8,400 sq ft Warehouse / Parking (enclosed) – 18 designated parking spots for equipment and work trucks
- 5,040 sq ft Mechanic – Welding/Fabrication area, DOE required fire suppression and air handling system, eye wash, frequently needed parts storage, and testing area/tools
- 1,960 sq ft Wash Bay
- Miscellaneous items
  - Security Requirements – Compliant with all security regulations
  - Telephone/Communications established in the office areas
  - Septic system upgrades
  - Water and power supply upfits
  - Recycle oil tank

# Alternative 2 Analysis

## COMPARISON OF TOTAL PROJECT COSTS OF STEEL BUILDINGS

Description	Building Footprint Sq Ft	FY16 Total Project Cost FY16	FY23 Escalation Factor 3% Per Year	Total Project Cost FY23	Cost Per Sq Ft FY23
Davis Maintenance Building	5,040	\$ 1,232,542	1.240	\$ 1,528,352	\$ 303
New Redding Garage	8,750	\$ 2,273,118	1.240	\$ 2,818,666	\$ 322

## CONCEPTUAL COST ESTIMATE FOR YUMA AREA MAINTENANCE BUILDING

Description	Building Footprint Sq Ft	Est Cost Per Sq Ft FY23	Est Total Project Cost FY23	Est Total Project Cost + Management Reserve
Yuma Area Maintenance Building	19,600	\$ 315	\$ 6,174,000	\$ 6,482,700

## Assumptions

- Recently constructed maintenance facilities were utilized as a reference to establish an assumed cost per square foot
- Cost escalator factor of 3% a year used to account for inflation
- Mid-range estimate of \$315/sq ft applied to building footprint to project alternative cost

# Alternative 2 Analysis

## Pros

- Service life and maintenance costs
- Located on existing WAPA owned property – minimized environmental concerns
- Provides minimum facilities and space to meet line crew's needs
- Additional building designed and constructed to conform with all applicable codes and standards

## Cons

- Most expensive option
- Delayed in-service date – late FY23
- Gila Substation congestion
- Upfits needed for water, power, and septic
- Spend plan spans several years minimizing positive impact to TYP execution
- Possible scope changes as design progresses

# Yuma Area Maintenance Building Alternative 3

## **Alternative 3: Purchase an existing facility in Yuma Area**

- This alternative would provide additional space for personnel nearby Gila Substation
- Preliminary inspections and assessments have taken place with regards to a specific location
- In the event purchase of the location that is currently being assessed does not occur, a facility with similar criteria would be pursued



# Alternative 3 Full Scope

## Front Office Building

- 5,000 SF – 2 levels
- 1,500 SF Warehouse / Storage
- Security System and Gate
- Two Conference Rooms / Break Room



## Warehouse Building

- 10,500 SF
- Two levels of office space
- Warehouse with 8 grade level doors with 16' door height
- Four drive through bays
- 3 bathrooms and 1 shower
- Insulated and Air Conditioned
- Breakroom and Wash Rack



# Alternative 3 Analysis

ALTERNATIVE #3 CONCEPTUAL ESTIMATE	
YUMA AREA MAINTENANCE BUILDING	
	TOTAL
Assessment Costs	\$250,000
Facility Acquisition	\$4,000,000
Facility Improvements	\$1,315,000
<b>Subtotal</b>	<b>\$5,565,000</b>
Management Reserve (5%)	\$278,250
<b>Total Project Budget</b>	<b>\$5,843,250</b>

## Assumptions

- Appraised value of \$3.3M sets a minimum purchase price
- Owner initially seeking \$4.2M; preliminary non-binding negotiations underway
- Improvements include federal ADA compliance, security measures, comm/IT, and facility conditions as necessary

# Alternative 3 Analysis

## Pros

- Timeline – Available in FY21
- Functionality – Most robust option, enhances maintenance capabilities now and into the future
- Cost and value
- Anticipate increased employee morale and less employee turnover
- Located within four miles of Gila Substation
- Opportunity to repurpose existing facilities for on-site work needs
- Phase I Environmental identified no toxic materials or sites

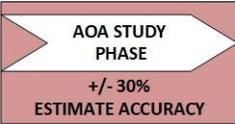
## Cons

- Property is on the open market with time intensive due diligence risks
- Prospect property lacks As-Built information and/or Code Requirements
- ADA, Fire Code, OSEM Security, safety, site, communications work will be needed per WAPA policies/standards
- Starting point would be ~13 years old compared to new building
- Evaluations are still underway

# Yuma Area Maintenance Building

## DSW Preferred Alternative

### Alternative 3 – Purchase an existing facility in Yuma area



#### 2020 Draft 10-Year Plan

PROJECTED TOTAL	FY21
\$ 6,000	\$6,000



#### 2020 Final 10-Year Plan

PROJECTED TOTAL	FY21
\$ 6,100	\$6,100

- This option provides the best return on investment for maintenance capabilities now and into the future
- Due to the timing of cost estimates, the current estimate on the 10-Year Plan is slightly higher than the anticipated actual cost
- For the purposes of the prepayment vote, the higher estimate of \$6.1M will be used but the final cost is anticipated to be closer to \$5.8M
- The project may run into FY22, but the bulk of the spending should occur in FY21 with some remaining facility upgrades occurring later

# Project Next Steps

- The project will be voted on this December for prepayment funding
- Project updates will be provided throughout FY21 and into FY22 if necessary

Questions? Press \*6 to Unmute

# Final 10-Year Plan October 2020

## PARKER-DAVIS PROJECT

PROJECT NAME	PROJECTED TOTAL BUDGET	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Gila Substation 161-kV Rebuild	\$ 25,070	\$ 1,655	\$ 102								
Dome Tap-Gila 161-kV Rebuild	\$ 5,630	\$ 2,444	\$ 92	\$ 10							
Coolidge-Valley Farms 115-kV Rebuild	\$ 2,066	\$ 25									
Kofa-Dome Tap 161-kV Rebuild	\$ 5,138	\$ 1,200	\$ 1,075	\$ 650	\$ 50						
Bouse-Kofa 161-kV Rebuild	\$ 26,520	\$ 114	\$ 21,502	\$ 2,152	\$ 1,937	\$ 20					
Bouse Upgrade Project	\$ 45,916	\$ 700	\$ 995	\$ 9,775	\$ 11,493	\$ 12,925	\$ 7,950	\$ 537			
Crossman Peak Microwave Facility	\$ 4,525	\$ 25	\$ 2,509	\$ 333	\$ 145						
Parker-Blythe 161-kV #2 Rebuild Phase-1	\$ 14,209	\$ 808	\$ 376	\$ 10,791	\$ 1,543	\$ 680	\$ 11				
Parker-Blythe 161-kV #2 Rebuild Phase-2	\$ 13,876			\$ 254	\$ 10,981	\$ 1,734	\$ 887	\$ 21			
Parker-Blythe 161-kV #2 Rebuild Phase-3	\$ 13,876				\$ 254	\$ 10,981	\$ 1,734	\$ 887	\$ 21		
Gila Substation 69-kV Rebuild	\$ 16,955	\$ 1,032	\$ 112	\$ 142	\$ 13,406	\$ 2,026	\$ 236				
Yuma Area Maintenance Building	\$ 6,100	\$ 6,100									
Gila Substation 34.5 / 14KV	\$ 15,250			\$ 800	\$ 100	\$ 100	\$ 12,300	\$ 1,450	\$ 500		
Cochise Substation Remediation	\$ 3,600			\$ 500	\$ 100	\$ 100	\$ 2,400	\$ 500			
Gila-Knob Remaining Rebuild	\$ 23,000				\$ 800	\$ 100	\$ 100	\$ 19,000	\$ 2,500	\$ 500	
Blythe-Headgate Rock #1 161-kV Rebuild	\$ 23,900					\$ 1,195	\$ 100	\$ 100	\$ 9,560	\$ 11,711	\$ 1,234
Parker Substation 161-kV Replacements	\$ 16,850					\$ 800	\$ 100	\$ 100	\$ 13,550	\$ 1,800	\$ 500
Wellton New Control Building	\$ 3,800					\$ 500	\$ 100	\$ 100	\$ 2,600	\$ 500	
Parker Substation 230-kV Replacements	\$ 12,100						\$ 800	\$ 100	\$ 100	\$ 9,800	\$ 1,300
Oracle-Tucson 115kV Rebuild	\$ 9,060						\$ 800	\$ 100	\$ 100	\$ 7,560	\$ 500
Bouse-Headgate Rock 161-kV Rebuild	\$ 8,995							\$ 800	\$ 100	\$ 100	\$ 7,495
<b>2020 FISCAL YEAR TOTALS</b>		<b>\$ 14,103</b>	<b>\$ 26,763</b>	<b>\$ 25,407</b>	<b>\$ 40,809</b>	<b>\$ 31,161</b>	<b>\$ 27,517</b>	<b>\$ 23,694</b>	<b>\$ 29,031</b>	<b>\$ 31,971</b>	<b>\$ 11,029</b>
2019 OCFO/Final TYP Totals		\$ 24,813	\$ 13,308	\$ 30,379	\$ 31,106	\$ 27,750	\$ 2,306	\$ 1,264	\$ 18,560	\$ 22,111	
Delta		\$ (10,710)	\$ 13,455	\$ (4,972)	\$ 9,703	\$ 3,411	\$ 25,211	\$ 22,430	\$ 10,471	\$ 9,860	\$ 11,029

## INTERTIE PROJECT

PROJECT NAME	PROJECTED TOTAL BUDGET	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Liberty Series Capacitor Bank Replacement	\$ 9,417	\$ 25									
<b>2020 FISCAL YEAR TOTALS</b>		<b>\$ 25</b>	<b>\$ -</b>								
2019 OCFO/Final TYP Totals		\$ 25									
Delta		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

# Estimated Rate Impact



# Rate Impacts

## PARKER-DAVIS PROJECT TOTAL BUDGET AT YEAR OF COMPLETION

PROJECT	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Prior Year Projects (Pending Closeout)										
RRADS										
Coolidge-Valley Farms 115-kV Rebuild	\$ 2,066									
Gila Substation 161-kV Rebuild		\$ 25,070								
Dome Tap-Gila 161-kV Rebuild			\$ 5,630							
Kofa-Dome Tap 161-kV Rebuild				\$ 5,138						
Bouse-Kofa 161-kV Rebuild					\$ 26,520					
Bouse Upgrade Project							\$ 45,916			
Yuma Area Maintenance Building	\$ 6,100									
Crossman Peak Microwave Facility				\$ 4,525						
Gila Substation 69KV Rebuild						\$ 16,955				
Parker-Blythe 161kV Rebuild Phase 1						\$ 14,209				
Parker-Blythe 161kV Rebuild Phase 2							\$ 13,876			
Parker-Blythe 161kV Rebuild Phase 3								\$ 13,876		
Cochise Substation Remediation							\$ 3,600			
Gila Substation 34.5 / 14KV								\$ 15,250		
Gila-Knob Remaining Rebuild									\$ 23,000	
Wellton New Control Building									\$ 3,800	
Blythe-Headgate Rock 161-kV Rebuild										\$ 23,900
Parker Substation 161-kV Replacements										\$ 16,850
Parker Substation 230-kV Replacements										
Oracle-Tucson 115kV Rebuild										\$ 9,060
Bouse-Headgate Rock 161-kV Rebuild										
<b>Total Project Budgets (Completed)</b>	\$ 8,166	\$ 25,070	\$ 5,630	\$ 9,663	\$ 26,520	\$ 31,164	\$ 63,392	\$ 29,126	\$ 26,800	\$ 49,810
<b>Previous Year (Reported in 2019)</b>	\$ 32,046	\$ 9,663	\$ -	\$ 26,520	\$ 18,542	\$ 64,509	\$ 18,542			

- The Dome Tap-Gila 161-kV Rebuild was originally scheduled to be complete in FY22, but to smooth the rate impact the project will extend into FY23
- The Bouse Upgrade Project will be broken into phases, which will also assist in rate smoothing in future 10-Year Plans

**Projects**

10-Year Plan Rate Estimate

**Contact Info**

Ramsey@WAPA.gov

(602) 605-2565

# Rate Impacts

## PARKER-DAVIS PROJECT FINAL 10-YEAR PLAN RATE ESTIMATE

FY21 Rate without Future Capital

\$ 19.92 / kW-Year

\$ 1.66 / kW-Month

PROJECT	In Service Date	Interest Rate	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Prior Year Projects (Pending Closeout)/Capital O&M	2020 +	various	\$ 0.23	\$ 0.51	\$ 0.70	\$ 0.90	\$ 1.05	\$ 1.12	\$ 1.12	\$ 1.19	\$ 1.25	\$ 1.32
Coolidge-Valley Farms 115-kV Rebuild	2021	3.000%		\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.05
Gila Substation 161-kV Rebuild	2022	3.000%			\$ 0.45	\$ 0.45	\$ 0.45	\$ 0.45	\$ 0.45	\$ 0.45	\$ 0.45	\$ 0.45
Dome Tap-Gila 161-kV Rebuild	2023	3.000%				\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10
Kofa-Dome Tap 161-kV Rebuild	2024	3.000%					\$ 0.09	\$ 0.09	\$ 0.09	\$ 0.09	\$ 0.09	\$ 0.09
Bouse-Kofa 161-kV Rebuild	2025	3.000%						\$ 0.49	\$ 0.49	\$ 0.49	\$ 0.49	\$ 0.49
Bouse Upgrade Project	2027	3.000%								\$ 0.84	\$ 0.84	\$ 0.84
Yuma Area Maintenance Building	2021	3.000%		\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10	\$ 0.10
Crossman Peak Microwave Facility	2024	3.000%					\$ 0.08	\$ 0.08	\$ 0.08	\$ 0.08	\$ 0.08	\$ 0.08
Gila Substation 69-kV Rebuild	2026	3.000%							\$ 0.30	\$ 0.30	\$ 0.30	\$ 0.30
Parker-Blythe 161-kV #2 Rebuild Phase-1	2026	3.000%							\$ 0.26	\$ 0.26	\$ 0.26	\$ 0.26
Parker-Blythe 161-kV #2 Rebuild Phase-2	2027	3.250%								\$ 0.27	\$ 0.27	\$ 0.27
Parker-Blythe 161-kV #2 Rebuild Phase-3	2028	3.375%									\$ 0.27	\$ 0.27
Cochise Substation Remediation	2027	3.250%								\$ 0.07	\$ 0.07	\$ 0.07
Gila Substation 34.5 / 14KV	2028	3.250%									\$ 0.29	\$ 0.29
Gila-Knob Remaining Rebuild	2029	3.375%										\$ 0.44
Blythe-Headgate Rock #1 161-kV Rebuild	2031	3.500%										
Parker Substation 161-kV Replacements	2030	3.500%										
Wellton New Control Building	2029	3.500%										
Parker Substation 230-kV Replacements	2031	3.500%										
Oracle-Tucson 115kV Rebuild	2030	3.500%										
Bouse-Headgate Rock 161-kV Rebuild	2032	3.500%										
<b>Total /kW-Year</b>			<b>\$ 0.23</b>	<b>\$ 0.66</b>	<b>\$ 1.30</b>	<b>\$ 1.60</b>	<b>\$ 1.93</b>	<b>\$ 2.48</b>	<b>\$ 3.05</b>	<b>\$ 4.29</b>	<b>\$ 4.91</b>	<b>\$ 5.41</b>
<b>Total /kW-Month</b>			<b>\$ 0.02</b>	<b>\$ 0.06</b>	<b>\$ 0.11</b>	<b>\$ 0.13</b>	<b>\$ 0.16</b>	<b>\$ 0.21</b>	<b>\$ 0.25</b>	<b>\$ 0.36</b>	<b>\$ 0.41</b>	<b>\$ 0.45</b>

P-DP 5-year Rate Window

## INTERTIE PROJECT FINAL 10-YEAR PLAN RATE ESTIMATE

PROJECT	In Service Date	Interest Rate	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Prior Year Projects (Pending Closeout)/Capital O&M	2020 +	3.000%	\$ 0.08	\$ 0.20	\$ 0.32	\$ 0.39	\$ 0.52	\$ 0.59	\$ 0.65	\$ 0.71	\$ 0.77	\$ 0.83
Liberty Series Capacitor Bank Replacement	2021	3.000%		\$ 0.28	\$ 0.28	\$ 0.28	\$ 0.28	\$ 0.28	\$ 0.28	\$ 0.28	\$ 0.28	\$ 0.28
<b>Total /kW-Year</b>			<b>\$ 0.08</b>	<b>\$ 0.49</b>	<b>\$ 0.61</b>	<b>\$ 0.67</b>	<b>\$ 0.80</b>	<b>\$ 0.87</b>	<b>\$ 0.93</b>	<b>\$ 0.99</b>	<b>\$ 1.06</b>	<b>\$ 1.12</b>
<b>Total /kW-Month</b>			<b>\$ 0.01</b>	<b>\$ 0.04</b>	<b>\$ 0.05</b>	<b>\$ 0.06</b>	<b>\$ 0.07</b>	<b>\$ 0.07</b>	<b>\$ 0.08</b>	<b>\$ 0.08</b>	<b>\$ 0.09</b>	<b>\$ 0.09</b>

Questions? Press \*6 to Unmute

# Next Steps



# Next Steps



We are here today

**March 25**  
**Active Projects**  
**Meeting**

- Meeting Focus**
- Active Construction Projects Update
- AOA Feedback Opportunity**
- DSW Identified Alternatives
  - Additional Alternatives

**July 29**  
**Draft Plan**  
**Meeting**

- Meeting Focus**
- Draft 10-Year Plan Presented
  - RRADs Projects Update
- AOA Feedback Opportunity**
- WIP Study Materials

**October 28**  
**Formal Plan**  
**Meeting**

- Meeting Focus**
- Formal 10-Year Plan Presented
  - Estimated Rate Impacts Presented
- AOA Feedback Opportunity**
- Preferred Alternative Selection

**December 2**  
**Prepayment Vote**  
**Meeting**

- Meeting Focus**
- Prepayment Vote
  - Financial Reporting
- AOA Feedback Opportunity**
- AOA Look Ahead

# Prepayment Vote - Preview



# Prepayment Vote - Preview

Project	Funds Available to Transfer
Coolidge Valley Farms 115-kV Rebuild	\$ 394,000
Liberty Series Capacitor Bank Replacement	\$ 394,000
Total Funds for Transfer to Gila 161-kV	\$ 788,000

Project	Prepayment Funds Required
Parker-Blythe 161-kV #2 Rebuild	\$ 41,960,855
Yuma Area Maintenance Building	\$ 6,100,000
Total Prepayment Dollars Vote	\$ 48,060,855

# Contacts

Jack Murray, VP Transmission System Asset Management

[JMurray@WAPA.gov](mailto:JMurray@WAPA.gov) / (602) 605-2440

Tony Guinane, 10-Year Plan Manager

[Guinane@WAPA.gov](mailto:Guinane@WAPA.gov) / (602) 605-2548

Teresita Amaro, Engineering & Construction Manager

[Amaro@WAPA.gov](mailto:Amaro@WAPA.gov) / (602) 605-2756

Michael Simonton, Transmission Lines & Substation Maint. Mgr.

[Simonton@WAPA.gov](mailto:Simonton@WAPA.gov) / (602) 605-2675

Tina Ramsey, Rates Manager

[Ramsey@WAPA.gov](mailto:Ramsey@WAPA.gov) / (602) 605-2565