10-Year Plan Pivot Strategy

Special Working Session Customer Meeting

February 27th, 2018

Desert Southwest Region
Phoenix, AZ
AGENDA

1. Welcome & Introduction
2. Why a “Special” meeting?
3. Seed Funding Updates
4. 10-Year Plan Pivot Strategy
5. 10 Minute Break
6. FY19 Proposed Projects/ AOA Summary
7. FY20 Proposed Projects/ AOA Summary
8. Next Steps
WELCOME & INTRODUCTION
Why a “Special” Meeting?

• Set 10-Year Plan meeting schedule for 2018
• Outline DSW’s plan to “Pivot” the 10-Year Plan Program forward
• Establish objectives for 2018 “Pivot” year
• Review proposed projects for FY19-20
• Establish new baseline for 2019, which consists of 4 Customer CORE Meetings
Customer CORE Meetings

• Scheduled every quarter with all customers
• Routine, predictable topics, shorter durations
• Each CORE meeting will have a focus topic and an update on AOA STUDIES/PLANNING

- MARCH: Active Projects
- JUNE: Draft 10-Year Plan
- SEPTEMBER: Formal 10-Year Plan
- DECEMBER: Prepayment Vote
Customer “FOCUS” Meetings

• Between each quarterly CORE meeting, optional “focus” meetings may be scheduled
• The purpose would be to deep dive into a specific active/proposed project or topic
• Targeted discussions and customer groups
• Non routine topics
• Held at request of Customer or WAPA as needed to meet the annual 10-Year plan objectives
SEED FUNDING UPDATES
Presented in August of 2017 DSW proposed the following projects for FY18 starts

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>PRE-DESIGN TOTAL PROJECT COST</th>
<th>APPROPRIATED SEED FUNDS FY2018</th>
<th>PRE-PAYMENT SEED FUNDS FY2018</th>
<th>PRE-PAYMENT FUNDS REQUEST FY2019</th>
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<tbody>
<tr>
<td>Kofa-Dome Tap Rebuild</td>
<td>$5,360,022</td>
<td>~$500,000</td>
<td>$0</td>
<td>TBD Fall 2018</td>
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<tr>
<td>Dome Tap-Gila Rebuild</td>
<td>$7,401,431</td>
<td>~$500,000</td>
<td>$0</td>
<td>TBD Fall 2018</td>
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<tr>
<td>Coolidge-Valley Farms Rebuild</td>
<td>$4,815,696</td>
<td>$0</td>
<td>~$800,000</td>
<td>TBD Fall 2018</td>
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<td><strong>TOTAL</strong></td>
<td><strong>$12,761,453</strong></td>
<td><strong>~$1,000,000</strong></td>
<td><strong>$800,000</strong></td>
<td><strong>TBD Fall 2018</strong></td>
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</table>
Status of Continuing Resolution

• These projects were subject to Seed Funding to develop >50% design package and a revalidated project budget

• The Continuing Resolution limits WAPA’s available appropriated funds

• February 9th, 2018 Congress extended the CR through March 23rd, 2018
Status of Continuing Resolution

• Fiscal year budget approval is unknown beyond current CR
• To date only Coolidge-Valley Farms has moved forward into the design
• Currently WAPA is awaiting sufficient appropriations to Seed fund Kofa-Dome Tap and Dome-Tap Gila
Seed Funding Project Delays

• WAPA estimates that approximately six months is required to develop >50% design package and a revalidated project budget

• Current delays to design kick-off could impact the presentation of these project for full Prepayment funding in December of this year.
10-YEAR PLAN PIVOT STRATEGY
What is the Pivot?

• Onetime effort to shift 10-Year Plan in alignment with Government's Budget Formulation

• Involves ambitious plan this calendar year to shift from FY19 project approvals, to FY21 approvals.

• A successful Pivot concludes in December of 2018 with a Prepayment Voting Meeting
Why Do We Need to Pivot?

• Federal Government Budget Formulation process occurs two fiscal years prior to execution year

• Current 10-Year Plan hosts the Prepayment Funding vote during the execution year (current fiscal year)
Why Do We Need to Pivot?

• Pivot will provide needed time for customer engagement into DSW’s capital planning and AOA studies

• Customer concurrence on budget formulation planning will create predictability in the 10-Year Plan

• Aligning capital planning with budget formulation is imperative to a successful and inclusive process
Customer Benefits

- Customer meetings focus on input into budget formulation
- AOA studies are performed in advance of budget formulation
- Customer engagement in AOA planning
- New alignment will result in consistency from Budget Formulation to Execution year

Desert Southwest Region - Ten Year Capital Plan
Objectives to Execute the Pivot?

• AOA’ for FY19, FY20, & FY21 are complete
• Preferred alternative (scope) for each proposed project must be reviewed and approved
• Budgets for proposed projects must approved by customers in advance of Prepayment vote.
Objectives to Execute the Pivot?

- Look ahead at the next three projected Prepayment voting projects

<table>
<thead>
<tr>
<th>PREPAYMENT VOTING MEETINGS</th>
<th>START</th>
<th>PROPOSED PROJECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECEMBER 18'</td>
<td>FY18</td>
<td>Coolidge-Valley Farms 115kV Rebuild</td>
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<tr>
<td></td>
<td>FY18</td>
<td>Kofa-Dome Tap 161kV Rebuild</td>
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<tr>
<td></td>
<td>FY18</td>
<td>Dome-Gila 161kV Rebuild</td>
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<tr>
<td></td>
<td>FY19</td>
<td>Bouse-Kofa 161kV Rebuild Ph:I</td>
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<tr>
<td></td>
<td>FY19</td>
<td>Bouse-Kofa 161kV Rebuild Ph:II</td>
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<tr>
<td></td>
<td>FY20</td>
<td>Parker-Blythe 161kV Rebuild Ph: I</td>
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<tr>
<td></td>
<td>FY21</td>
<td>Parker-Blythe 161kV Rebuild Ph: II</td>
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<td>DECEMBER 19'</td>
<td>FY22</td>
<td>Parker-Blythe 161kV Rebuild Ph: III</td>
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<td></td>
<td>FY22</td>
<td>TBD</td>
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<td>DECEMBER 20'</td>
<td>FY23</td>
<td>Blythe-Headgate Rock 161kV Rebuild</td>
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<tr>
<td></td>
<td>FY23</td>
<td>TBD</td>
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</table>
10 MINUTE BREAK
FY19 PROPOSED PROJECT: Bouse-Kofa 161kV Rebuild Phase I & II
Bouse-Kofa 161kV AOA Breakdown

Project Overview
• AOA study completed in summer 2016
• 84 mile segment of the Parker-Gila transmission line built in 1943
• Single circuit transmission line
• Mix of wood H-Frame structures and light duty steel H-frame structures
  • 82 wood structures remain
  • 211 Light duty steel H-frame structures added in early 2000’s
  • In 2006 a 8.4 mile portion of the line was rerouted around town of Quartzite with 954 ACSR on steel monopoles
Bouse-Kofa 161kV AOA Breakdown

Project Justification
• 106 NERC/NESC violations require corrective action/engineering fix
• Significant deteriorated and unsafe wood structures
• Vintage 1943 300 kcmil hollow core copper conductor experiencing significant sag
• Access roads and ROW require rehabilitation
• 20-30% of wood poles require replacement today
• Additional communication bandwidth is required via Fiber optic ground wire to meet current and future protection, control, communication and security requirements
Checking / Heat Rot

Lineman Climbing Safety Concerns
WASH THROUGH ROW CAUSING ACCESS CONSTRAINTS

NERC/NESC VIOLATION
Bouse-Kofa 161kV AOA Breakdown

Proposed Rebuild Scope

• Reconductor with 336.4 kcmil ACSS to reduce sag, eliminating most of the 106 NERC/NESC violations

• Upgrade 82 wood structures to light duty steel H-frames
  • Of these, ~5-10 will be steel dead-end structures

• Install new steel structures as needed to correct NERC/NESC clearance issues not corrected by stringing new conductor

• Add Optical Overhead Ground Wire (OPGW)

• Repair/Reclaim ROW access

• Copper conductor has an estimated salvage value of ~$1.7M
Bouse-Kofa 161kV AOA Breakdown

Alternatives Studies

- Alternative 1 - Status Quo (Maintenance only)
- Alternative 2 - Reconducto + Replace failing wood poles in-kind
- Alternative 3 - Reconducto + Replace all wood poles with Light Duty Steel H-Frame Structures
- Alternative 4 - Rebuild to 230-kV Standards operated at 161kV using Light Duty Steel H-Frame Structures
- Alternative 5 - Install 107 Inset Structures as needed to mitigate NERC/NESC violations
Bouse-Kofa 161kV AOA Breakdown

AoA Rating vs Cost of Implementation for Potential Alternatives

Cost to Implement: Alternative 1, $10,000,000; Alternative 2, $25,000,000; Alternative 3, $40,000,000; Alternative 4, $60,000,000; Alternative 5, $20,000,000

AoA Rating: Alternative 1, 0.5; Alternative 2, 1.0; Alternative 3, 2.5; Alternative 4, 4.0; Alternative 5, 2.0

Desert Southwest Region - Ten Year Capital Plan
Bouse-Kofa 161kV AOA Breakdown

Proposed Alternative 3 – Reconductor & Replace Wood with Light Duty Steel H-Frame Structures

<table>
<thead>
<tr>
<th>Preferred Alternative #3 Conceptual Estimate</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>Rebuild With Light Duty Steel H-Frame Structures</td>
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<tr>
<td>Administrative (Inc. Project Management)</td>
<td>$986,000</td>
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<tr>
<td>EVMS*</td>
<td>$2,418,000</td>
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<td>Design</td>
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<tr>
<td>Construction Contract</td>
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<tr>
<td>Government Furnished Equipment (GFE)**</td>
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<td>Contingency (20%)</td>
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<td>Phase I &amp; II Total Project Budget</td>
<td>$31,913,000</td>
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Bouse-Kofa 161kV AOA Breakdown

FY19 Proposed Projects: Phase I & II - Alternative 3

WAPA to design BSE-KOF as single design with two solicitation packages for procurement of separate construction contracts for Phase I and II.

• **Phase I**
  • ~44 miles of rebuild from Kofa Substation heading north
  • Approximately $15M total Phase I cost

• **Phase II**
  • ~31 miles of rebuild from Bouse Substation heading south
  • Approximately $15M total Phase II cost
FY20-21 PROPOSED PROJECT: Parker-Blythe #2 161kV Rebuild
Parker-Blythe 161kV AOA Breakdown

Desert Southwest Region - Ten Year Capital Plan
Parker-Blythe 161kV AOA Breakdown

Project Overview
• 64 miles of wood pole transmission line built in 1969
• Single circuit 954 kcmil ACSR
• H-Frame wood pole structures with 3-pole angle structures
• ROW crosses Arizona and California state lines
Parker-Blythe 161kV AOA Breakdown

**Project Justification**

- 80% of the wood poles are rejected/require replacement
- 5 NERC/NESC clearance violations requiring engineering fix
- Repair/Reclaim ROW access.
- 20% of the structures (100+) require dozer tow-in for access to structures
- Additional communication bandwidth is required via Fiber optic ground wire to meet current and future protection, control, communication and security requirements
Parker-Blythe 161kV AOA Breakdown
Parker-Blythe 161kV AOA Breakdown
Proposed Rebuild Scope

• New conductor, insulators, and hardware
• Upgrade all wood poles 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 ROW access
• Design using 230kV standards/specifications operated at 161kV
Parker-Blythe 161kV AOA Breakdown

Alternatives Studies

• Alternative 1- Status Quo (Maintenance only)
• Alternative 2- Replace wood poles in kind and add steel structure dead-ends every <10 miles
• Alternative 3- Rebuild with light duty steel H-Frame structures using 161-kV specifications and standards
• Alternative 3a- Rebuild with light duty steel H-Frame structures using 230-kV specifications and standards
• Alternative 4- Rebuild with steel monopoles using 161-kV specifications and standards
• Alternative 5- Rebuild with steel monopoles using 230-kV specifications and standards (operated at 161kV)
Parker-Blythe 161kV AOA Breakdown

Desert Southwest Region - Ten Year Capital Plan
Parker-Blythe 161kV AOA Breakdown

50 Year Maintenance Costs Comparison

Cost of 50 Years of Inspection and Maintenance

- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 3a
- Alternative 4
- Alternative 5

Desert Southwest Region - Ten Year Capital Plan
Parker-Blythe 161kV AOA Breakdown

Proposed Alternative 3a – Rebuild with light duty steel H-frame structures using 230kV specifications, operated at 161kV

<table>
<thead>
<tr>
<th>Preferred Alternative #3a Conceptual Estimate</th>
<th>TOTAL</th>
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<td>Rebuild With Light Duty Steel H-Frames</td>
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<td>Phase I, II, III Total Project Budget</td>
<td><strong>$60,179,718</strong></td>
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Parker-Blythe 161kV AOA Breakdown

FY20 Proposed Project: Phase I of III – Alternate 3a

WAPA to design PAD-BLY as single design with three solicitation packages for procurement of separate construction contracts for each phase.

- **Phase I**
  - Proposed for FY20
  - ~21 miles of rebuild from Parker Substation heading south
  - Approximately $20M total phase cost
- **Phase II**
  - Proposed for FY21 start
- **Phase III**
  - Proposed for FY22 start
Next Steps
### DECEMBER 2018 PROJECTED PREPAYMENT VOTE (PIVOT YEAR)

<table>
<thead>
<tr>
<th>Start Project</th>
<th>FY18</th>
<th>FY19</th>
<th>FY20</th>
<th>FY21</th>
<th>FY22</th>
<th>FY23</th>
<th>FY24</th>
<th>FY25</th>
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<th>Project Total</th>
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<td>FY18 Coolidge-Valley Farms 115kV Rebuild</td>
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<td>$ 1,138</td>
<td>$ 205</td>
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<td>$ 4,816</td>
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<td>FY18 Kofa-Dome Tap 161kV Rebuild</td>
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<td>$ 4,630</td>
<td>$ 500</td>
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<td>$ 5,130</td>
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<td>$ 6,901</td>
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<td>$ 15,085</td>
<td>$ 15,550</td>
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<td>$ 14,184</td>
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<td>$ 86,017</td>
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10-Year Plan Core Customer Meetings

- **Customer CORE meeting**
  - **MARCH 29TH**
  - Active Projects

- **Customer CORE meeting**
  - **JUNE**
  - Draft 10-Year Plan

- **Customer CORE meeting**
  - **SEPTEMBER**
  - Formal 10-Year Plan

- **Customer CORE meeting**
  - **DECEMBER**
  - Prepayment Vote
Customer CORE Meeting: March 29th, 2018

• Agenda Focus:
  • Update/Status of all active projects
  • RRADs updates
  • Follow-up on 10-Year Plan Pivot Strategy
THANK YOU