Shared Integrated Grid
Connected energy future

AGILE

INTEGRATED

RESPONSIVE

CONNECTED

RESILIENT

ENGAGED
Strategic Roadmap 2024

- Evolution of Services
- Mutually Beneficial Partnerships
- Powering the Energy Frontier
- Business, Technology and Organizational Excellence
It worked, yet...
Why the cloud?

• Vendors switching software to cloud
• Better use of computing resources
• Help manage costs
• On-site servers eventually obsolete
• Expand ability to deliver value
• Increase agility, collaboration & productivity
Common SCADA vendor

• Does not equal one SCADA across WAPA
• Equals one SCADA vendor
• Expected benefits
  – Improve operational flexibility
  – Increase reliability
  – Avoid future support and administrative costs due to cross training and supporting multiple contracts
Network expansion

WAPA Networked Locations
(10% year-over-year average growth)
Internet use

WAPA Internet Use

(29% year-over-year average growth)
Power System Change Control

• CPI project
• System changes not being incorporated into business processes
• Risks
  – Worker safety
  – Grid reliability
  – Limits power marketing capabilities
  – Poor decision making
Physical Security update

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

North American Energy Resilience Model

Electric

Gas

Comms

US long-haul fiber map
# Work with DOE

<table>
<thead>
<tr>
<th>Initiative</th>
<th>DOE-provided non-reimbursable funding</th>
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<tbody>
<tr>
<td>Geomagnetic disturbance study</td>
<td>$1.2 million</td>
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<tr>
<td>Electro-magnetic pulse study</td>
<td>$88,787</td>
</tr>
<tr>
<td>Fiber partnership</td>
<td>$750,000 (pending)</td>
</tr>
<tr>
<td>Cybersecurity for Protective Relays</td>
<td>$200,000</td>
</tr>
<tr>
<td>IT equipment and licenses</td>
<td>~1.25 million</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>~$3.48 million</strong></td>
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Fiber update

• To date
  – Established Fiber Optic Partnerships feasibility assessment team
  – Submitted plan for Feasibility Assessment to DOE
  – Held initial meeting with work group

• June-September: Regional outreach

• December: Submit feasibility assessment

• Report progress quarterly using performance metrics
Evolving with industry, customers

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

Preparing for a connected energy future.
Stay flexible to meet industry changes.
Preserve and strengthen ability to complete mission.
Contact/follow me

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