FOCUS ON DISTRIBUTION

Business Planning 2018-2022

INFORMATIONAL ONLY – NO ACTION REQUIRED

September 18, 2017
KEY MESSAGES

History of system reliability

Challenges ahead

» Expected Growth
» Reactive maintenance
» Compliance requirements
» Resource (staffing) constraints
» Struggling to replace assets to maintain reliability

Preparing today for tomorrow
DISTRIBUTION GOALS

Continue Asset Management Maturity Compliance
  » Agency mandated and contractual obligations

Meet growth
  » Connect new customers
  » Don’t exceed 100% system rating
  » Install 10-13MW of wires/stations annually

Maintain reliability
  » ASAI 99.98%
  » 51,000 customer - hours out annually
BOARD OVERVIEW

Status update
  ➤ Distribution load growth
  ➤ Aging infrastructure: maintenance vs replacements

Customer Impact
  ➤ Reliability with aging assets

Business planning impact

Board Guidance
LOAD GROWTH

Set new all-time peak load of 500MW (1/2017)

Load growth occurring at higher rate than previous from commercial, industrial and high density loads
» Loads in “chunks”
  @ 25 – 30MW in queue
» 10-13MW peak growth expected annually

System capacity impacts:
» Line extensions
» Need for new substation capacity
» Larger lines required to hold loads
GROWTH = NEW SUBSTATIONS NEEDED

13 of 34 substations exceed 80% capacity

» North Shore Chelan – 2018/19 (88%)
» Leavenworth/Chumstick – 2018/19 (93%)
» Olds Station/Stemilt – 2018/19 (81%)
» Wenatchee/Pybus – 2018/20 (100%)
» Cashmere/Simmer – 2019/20 (81%)
» Wenatchee/Castlerock – 2020/22 (99%)
» South Shore Chelan – 2020/22 (88%)

One new 28MW substation every other year
AGING INFRASTRUCTURE

11 substations > 40 years old
250 miles of direct-buried underground cable
300 miles of overhead lines > 30 years old
Top 10 worst performing feeders require hardening to reduce outages
# CUSTOMER IMPACTS

## Distribution Outages

Outage analytics from 2014-2016 not including Major Event Days (Storms)

<table>
<thead>
<tr>
<th>Strategy Group</th>
<th>Outages</th>
<th>Customer Hours</th>
<th>Restoration Cost</th>
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<tbody>
<tr>
<td>Feeder Devices</td>
<td>343</td>
<td>35,293.8</td>
<td>494,657</td>
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<td>Weather</td>
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<td>Vegetation Mgmt</td>
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<td>Cables</td>
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<td>3rd Party</td>
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<td>Other</td>
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<td>Redosers</td>
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<td>Secondary Lines, Dev</td>
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<td>Operations</td>
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<td>175.5</td>
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FORECASTED RELIABILITY

Goals: ASAi 99.98 and 51,000 customer hours
ASSET MANAGEMENT & SYSTEM PLANNING

Asset Management
» Complete picture of key elements:
  • Substation (reliability impact forecasting)
  • Overhead lines
  • Underground cable

System Replacement/Growth Planning
» 1 substation biennial growth
» 1 substation replacement annually
» 3-6 miles of underground cable replacement annually
» 1 circuit feeder hardening annually
2018 – 2022 PLAN

• Evaluate financial resource requirements & mature asset management

• Optimize planned replacements
  » Underground cables
  » Feeder hardening
  » New substations & substation equipment replacements

• Maintain compliance rigor

• Increase capability to contract now @ 50/50

• Ensure reliability & reduce customer impacts e.g. AMI and Outage Management

• Meet anticipated system capacity needs for new and existing customer growth
QUESTIONS?