
Advanced Distribution Management System is a Foundation for Grid Modernization

A Changing Power Environment and Grid Modernization Strategy Informs the Path for the OMS Replacement and Implementation of an ADMS.

Presentation Topics

- 1** Background: Outage Management System (OMS) /Advanced Distribution Management System (ADMS)
- 2** Alternatives
- 3** Financials
- 4** Recommendation and Upcoming Approval Requests

Tacoma Power Grid Modernization

Prepare for current & future challenges

- Aging Infrastructure
- Electrification & Growth
- Cybersecurity Threats

Manage a fast-changing landscape

- Climate Change
- Resource Adequacy
- Changing Policy

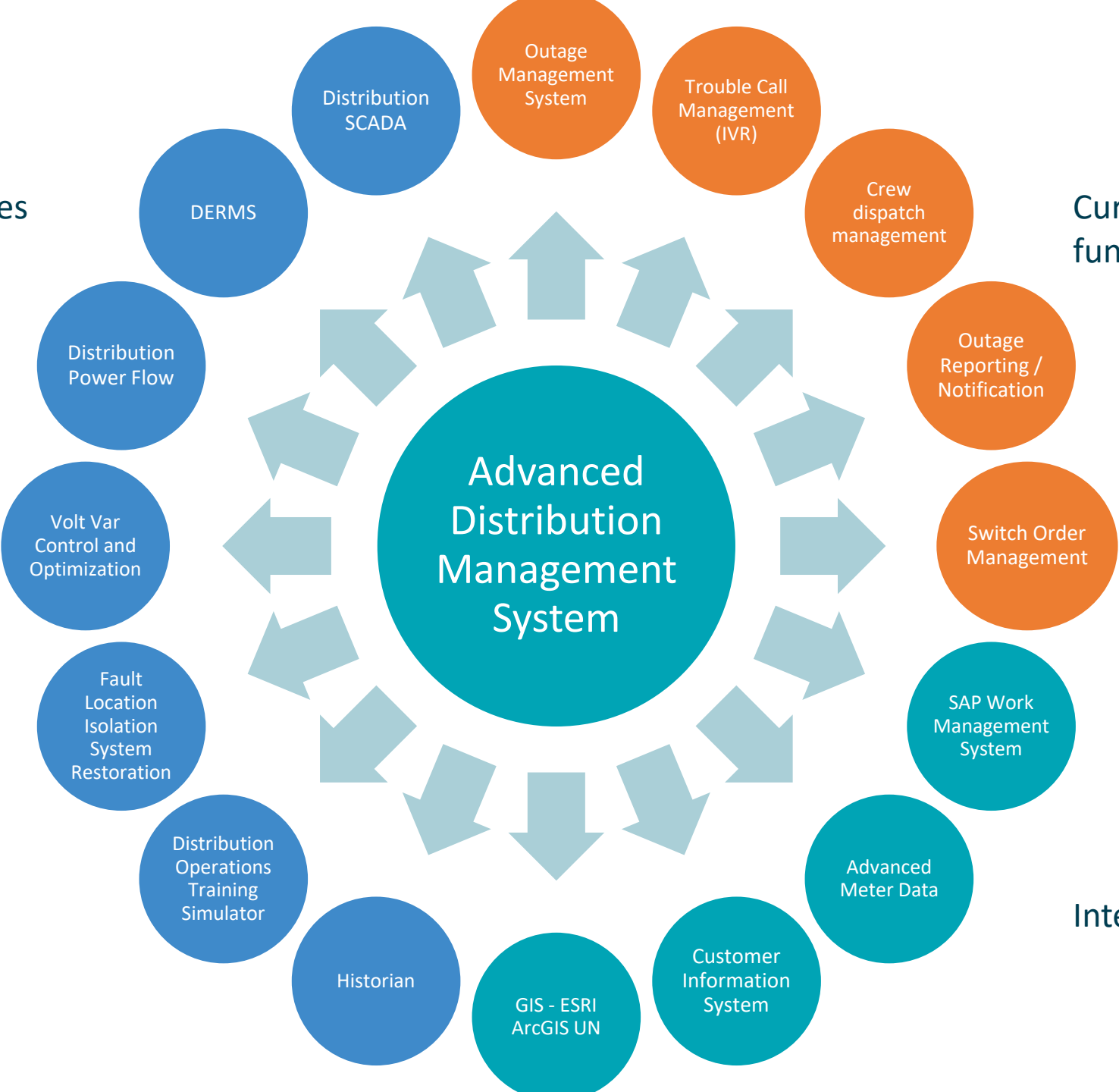
Enable our customers and create opportunities

- Cost Pressure
- Customer Expectations & Experience
- Economic Development
- Equity

Background

New ADMS capabilities

Current OMS
functionality



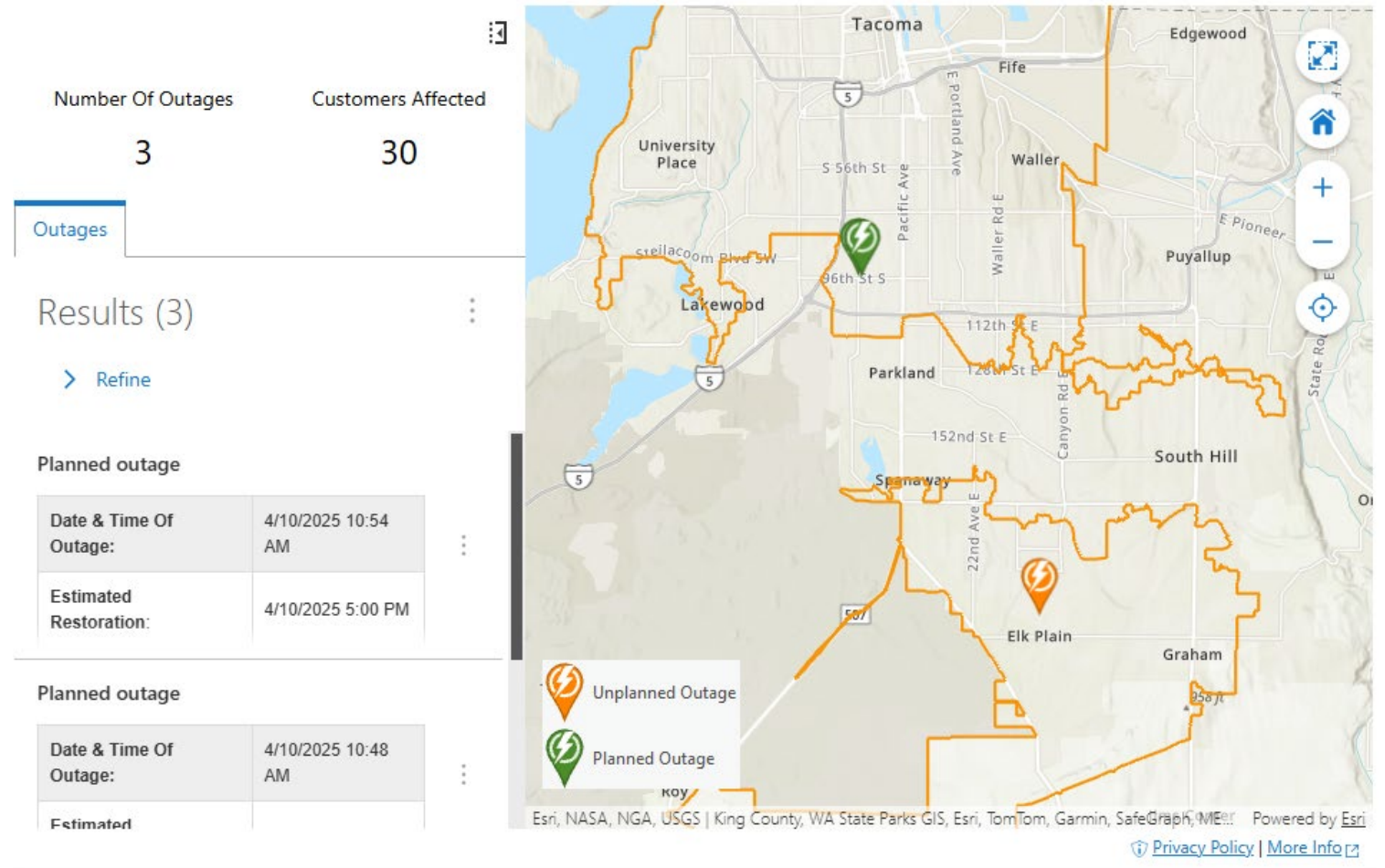
Integrations

What is an Outage Management System (OMS)

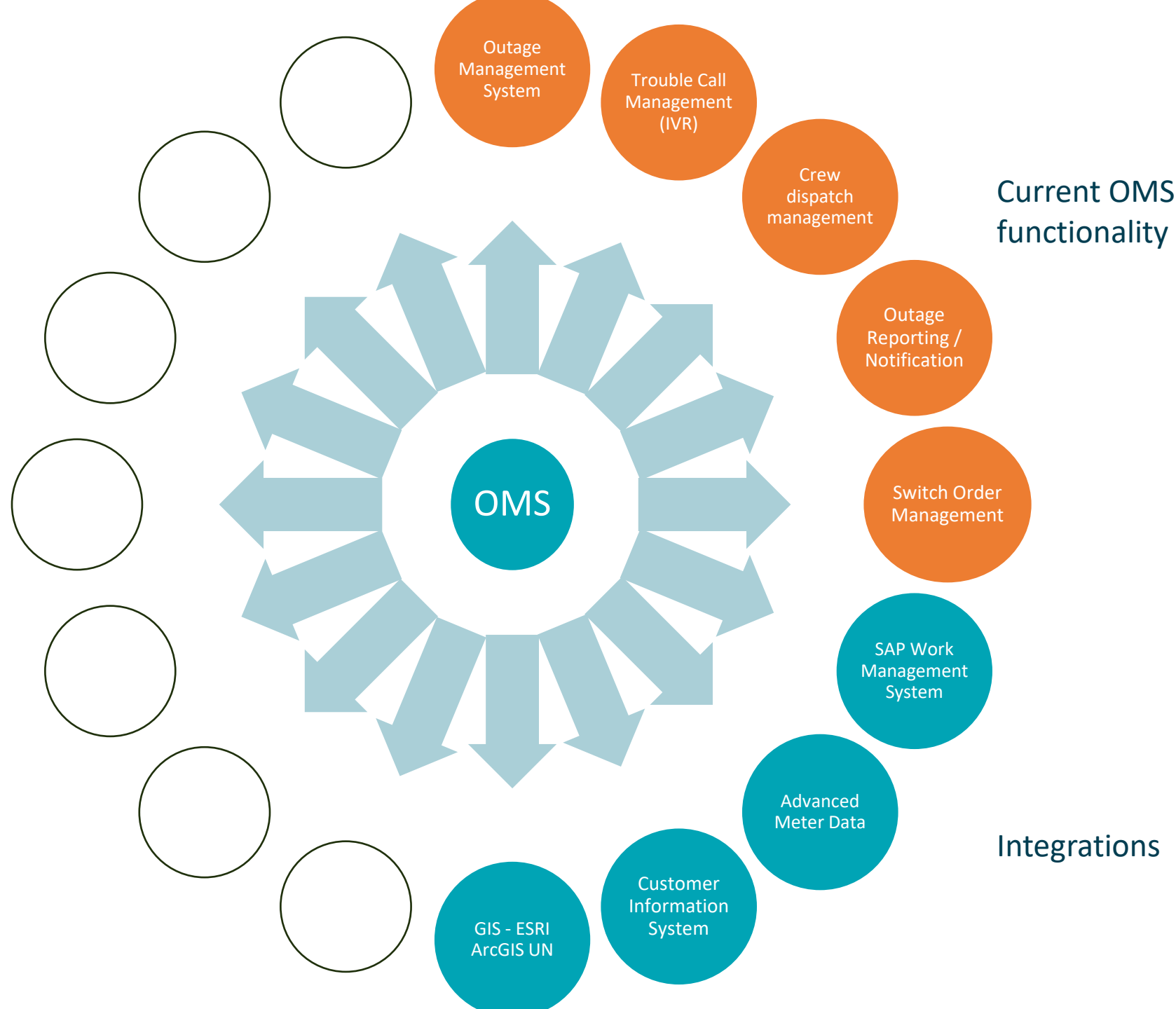
A software platform used by utility operators to:

- Predict where outages are occurring
- Track the number of customers impacted
- Dispatch and coordinate repair crews
- Communicate outage status and restoration timelines to customers

Why it matters: Tacoma Power's current system is outdated and struggles during large or complex outages.



Background



Outage Management System at End of Life

OMS and ADMS Comparison

Outage Management System

Stand alone system

Limited capability to adapt or scale

No field control capability

Customer outage only

Less capable without advanced tools

Advanced Distribution Management System

Provides a Foundation

Ability to scale

Enhances cybersecurity

Provides real-time system visibility

Improves system resilience

ADMS Benefits



Ability to defer upgrades and/or builds to substations and feeders



Safety benefits of ADMS



Voltage Management



Improved Cyber Security



Cut customer outage numbers in half for automated switched feeders



Implement automation for operational business workflow improvements



Reduce wait times for customer response on outages.



Provide system intelligence to System Operators



Other benefits (e.g., fewer truck rolls, quicker dispatch, less overtime, historian replacement) make up the rest of the benefits

Quantifiable Annual Benefits of ADMS - \$3.9M



Ability to defer substation or feeder upgrades or builds



Safety benefits of ADMS



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Updated Alternative Analysis

Value of Ownership over 15 years	OMS (\$Millions)	ADMS (\$Millions)
Implementation Costs	\$16.9	\$42.3*
Maintenance and Sustainment Costs	\$21.6	\$35.4
Quantified Benefits	\$2.2	\$46.9
Net Value of Ownership present value of raw totals above (excludes A&G)	\$(33.2)	\$(25.8)

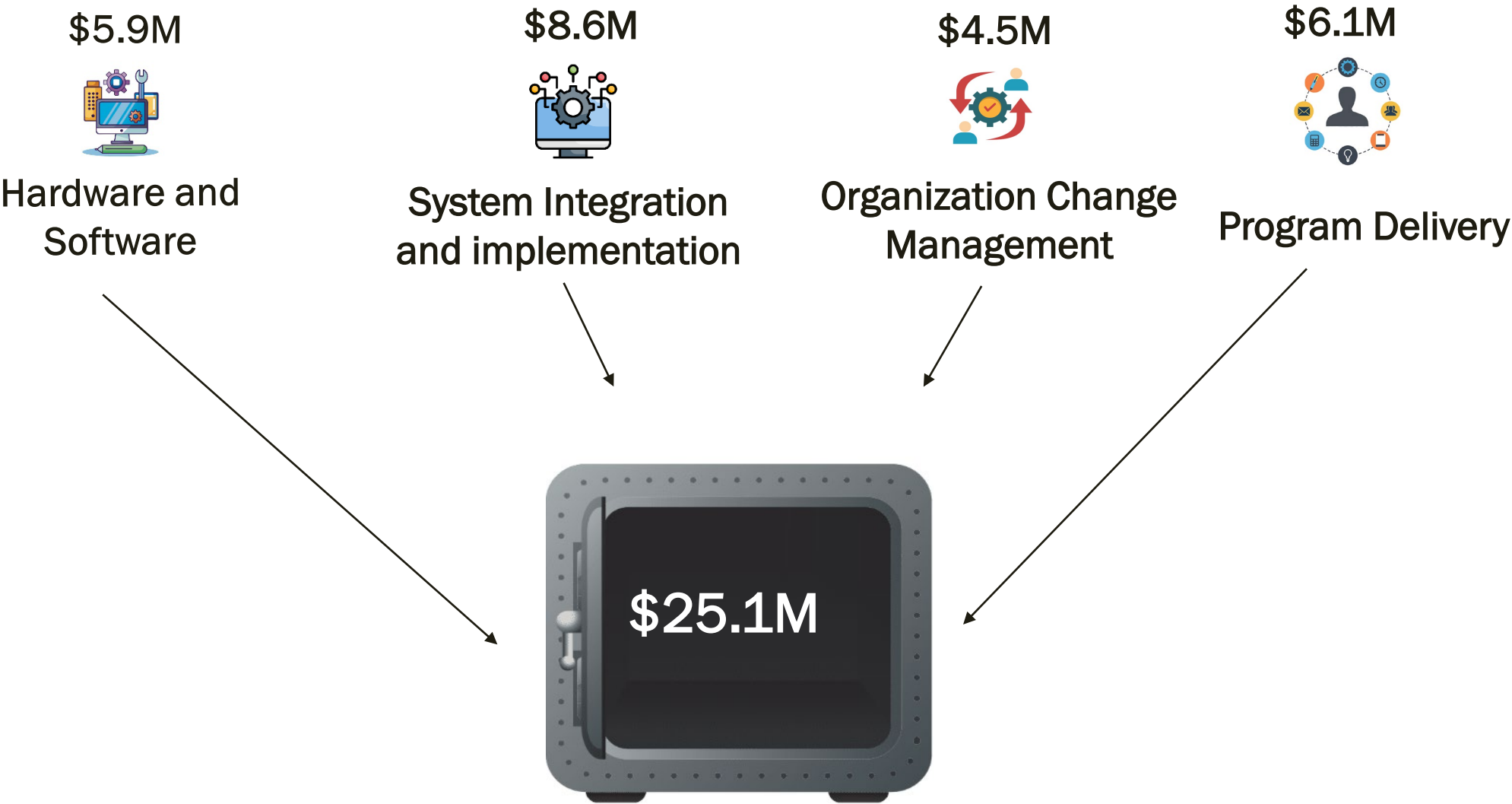
The updated alternative analysis aligns with the 2023 recommendation and confirms ADMS is forecast to provide the best value.

*See next slide for breakdown

ADMS Implementation 2025-2029

Category	Cost (Millions)
Contracts & Professional Services	\$25.1*
Internal Labor	\$8.5
Contingency	\$4.4
Capitalized Administrative & General	\$4.3
Total	\$42.3

Implementation Contracts & Professional Services



Contracts Coming for PUB Consideration



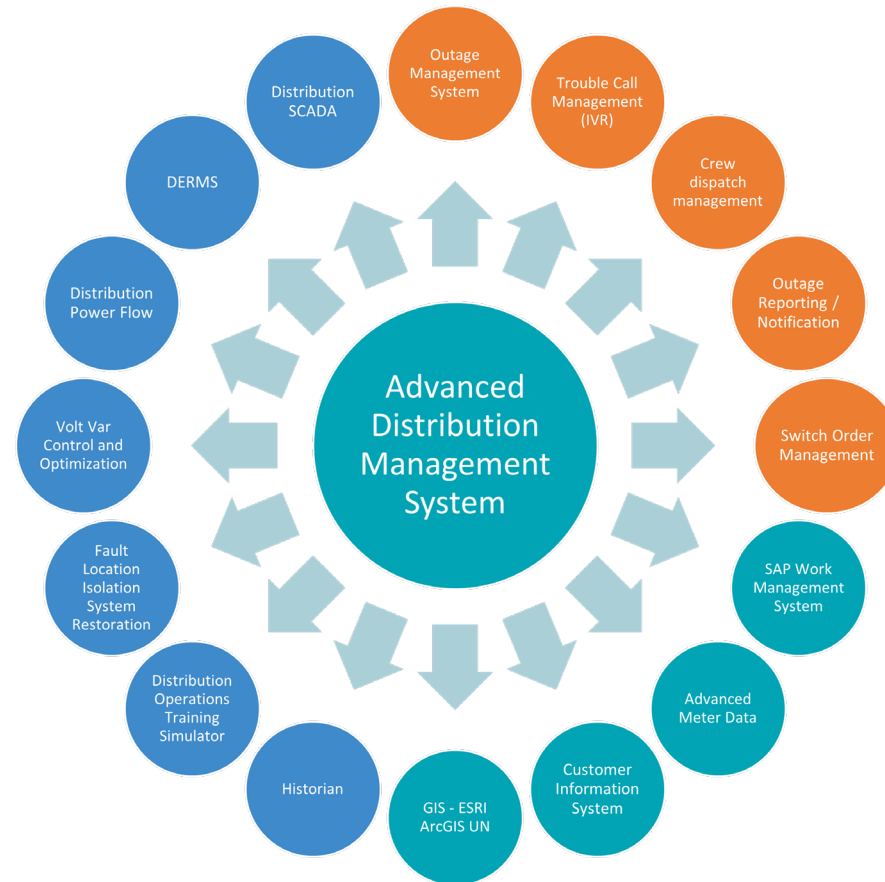
Vendors	Purpose	Amount* (Millions)
ADMS SI	System integrator leading the configuration of our new ADMS and integration with our supporting systems	4.25
Mosaic	Organizational Change Management support (OCM)	3.54
Cerium	Hardware to provide a safe, resilient and scalable environment for the servers and systems that will comprise the ADMS, OMS and Historian systems.	3.17
Toba Consulting	Overall program management for ADMS and associated workstreams.	1.86
Aspen Tech Services	Software vendor implementation services for our selected ADMS	1.80
Sun-Net	Software provides switching and logging functionality for both Transmission and Distribution	1.39
AVEVA PI System	Industry standard Historian solution	0.72

*does not include contingency

Request

Confirm alignment to proceed with recommended ADMS program approach.

Questions?



Forthcoming Approval Requests

ADMS SI

- Full Cost of Contract*
 - Lead vendor bid: \$4.25M
- Purpose
 - This vendor will be an experienced system integrator that will lead the configuration of our new ADMS and integration with our supporting systems. This vendor will provide Project Management, Development, Testing and other project based roles to alleviate impact to TPU resources.
- Scope*
 - Lead System Integrator on ADMS (OMS Replacement)
 - Lead Design Sessions
 - Lead Requirements Gathering
 - Development of Integrations
 - Configuration of OMS
- Timeline*
 - 24-30 months from Kick Off (est. June 2025)

Forthcoming Approval Requests

Mosaic OCM

- Full Cost of Contract*
 - NTE \$3.54M
- Purpose
 - Mosaic provides a specialized Organizational Change Management service for Utilities. Utilizing Mosaic and their familiarity with utility System Operations should provide higher quality communication as well as require less time from our System Operators during creation of technical documents.
- Scope*
 - Organizational Change Management
 - Business Process
 - UAT Test Scripts
 - Training Course Development, Training Management, and Delivery
 - Stakeholder Network
- Timeline*
 - Until October 20, 2027

Cerium

- Full Cost of Contract*
 - \$3.17M
- Purpose
 - These will be environments in both the ECC and the BUCC. We will be using virtualized environments to comply with the strategic direction from our Enterprise Architect. The costs of these environments have increased with the purchase of VMWare by Broadcom, but we believe we got a very good price with this quote.
- Scope*
 - Full list of equipment/licensing procured:
 - Servers and server licensing
 - Operating System licensing
 - Network equipment and licensing
 - Data Protection
 - Workstations for OMS/ADMS
- Timeline*
 - Part of the procurement is term licensing and support contracts that are a mixture of 3 and 5 years terms
 - Projected O&M cost for years 4&5: \$83,000
 - Projected annual O&M cost for years 5 and beyond: \$505,000

Forthcoming Approval Requests

Toba Consulting

- Full Cost of Contract*
 - \$1.86M
- Purpose
 - Overall Program Management for ADMS and associated workstreams
 - Including Historian, ORCAS, EMS Refresh
- Scope*
 - Champion and advocate for the successful outcomes of the program/workstreams on behalf of TPU
 - Exercise financial discipline and accountability across the programs and workstreams.
 - Alignment with other TPU internal programs, project processes and efforts.
- Timeline*
 - 30 months starting June 2025 (total of 39 months)

Forthcoming Approval Requests

Aspen Tech ADMS Services

- Full Cost of Contract*
 - NTE \$1.80M
- Purpose
 - AspenTech is the software vendor for our selected ADMS and OMS. AspenTech provides installation of their base software and also provides support to our System Integrator during configuration of the ADMS.
- Scope*
 - Assist TPU and SI on:
 - Network Model Development
 - System and Application Configuration
 - System Interface Implementation
 - Building and Testing environments
- Timeline*
 - Phase 1 (OMS): 24 months
 - Phase 2 (DSCADA): 12 months
 - Phase 3 (Advanced Features): 12 months

Sun-Net (iTOA)

- Full Cost of Contract*
 - Perpetual License (6 modules)
 - Release 1 (Transmission) Professional Services
 - Release 2 (Distribution) Professional Services
 - Total \$1.39 (not including service contract)
- Purpose
 - iTOA is a best of breed solution that provides switching and logging functionality for both Transmission and Distribution systems. Our current Transmission switching and logging is a custom configuration of our existing CGI OMS
- Scope*
 - Implement iTOA for Logging and Switching (ORCAS) on
 - Transmission
 - Get data from OSI Chronus first
 - Get data from PI Historian once in production
 - Distribution
 - Get data from PI Historian (ADMS) once in production
- Timeline*
 - 12 months - Release 1
 - 24 months (from kick off) Release 2 – To go LIVE with OMS

Forthcoming Approval Requests

AVEVA

- Full Cost of Contract*
 - Term License for 3 years - \$0.72M
- Purpose
 - The PI Historian is the industry standard historian solution. As the predominant Historian employed across the utility sector, the PI Historian is viewed as a more robust and product compared to Chronus (current Historian with known challenges).
- Scope*
 - Term license for 50k tags in PI system.
 - Includes a High Availability (HA) node
- Timeline*
 - 3 years