



TPU Asset Management

October 8, 2025



Who We Are & Why We Are Here

Purpose

Share current state overview of TPU Asset Management, asset types, and investment strategies; goals and key features of future state of Asset Management at TPU.

Introductions

- Julie DeYoung, Tacoma Power
- Joy Sage, Technology Services
- Jenni Chadick, Tacoma Water
- Daniel McCabe, Tacoma Rail
- Daniel Key, Information Technology Department



Current State of Asset Management at TPU



What Does Asset Management at TPU Look Like?

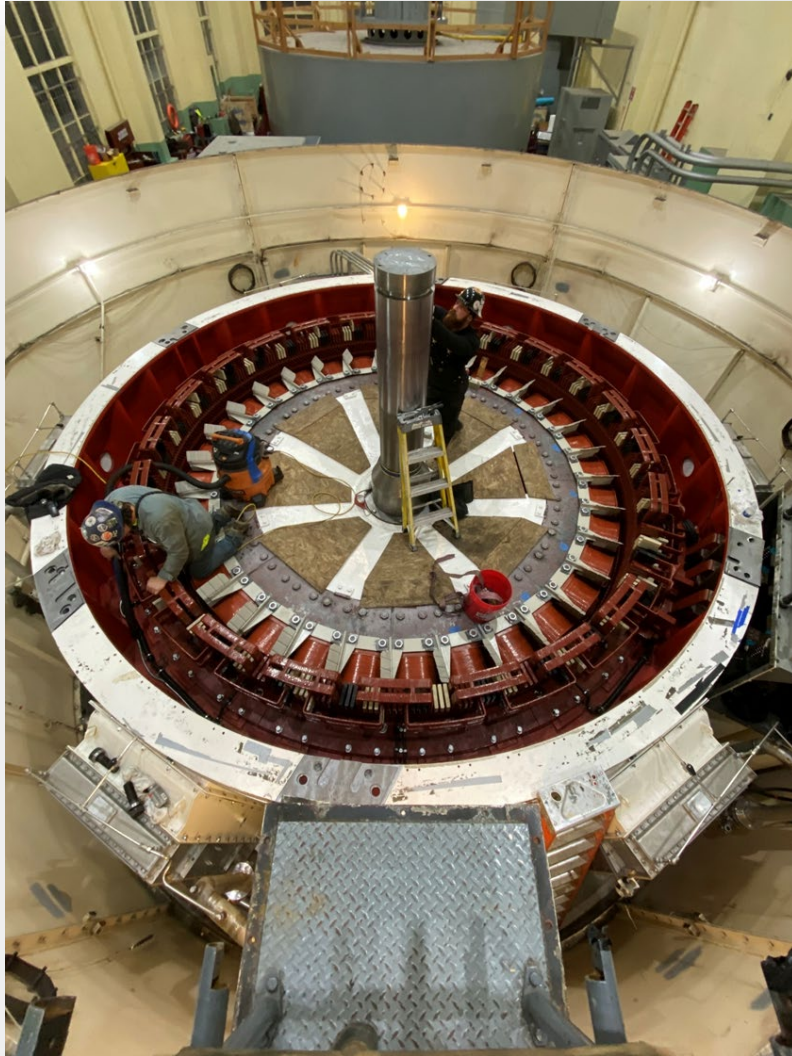


We will share more about:

- Our Assets
- Keeping our Infrastructure Strong
- Asset Data & Collection Methods
- Right Work, Right Time
- Long-Term Asset Planning



Power: Our Assets



Generating Power

- Seven dams and spillways
- 22 hydro generators and turbines
- 8 hydroelectric facilities

Delivering Service to our Customers

- 2,386 miles of power lines
- 50,000+ wooden poles; ~700 steel towers
- 113 substations and switchyards

Caring for our Land and Resources

- Four fish hatcheries
- Fish passage & fish facilities
- Four parks and campgrounds
- 2,000+ acres of wildlife habitat
- 400+ buildings; 1,000+ fleet assets

Value of our Fixed Assets:

\$1 Billion+



Power: Keeping our Infrastructure Strong



Power: Asset Data & Collection Methods

Asset Data Types:

- Inventory records in Computerized Maintenance Management System
- Inspection outcomes
- Testing measurements (examples below)
 - Dissolved Gas Analysis
 - Vibration measurements
 - Temperature, electrical & mechanical measurements
- Failure data from corrective actions
- Subject Matter Expert estimations
- Financial data from SAP

Data Collection Methods:

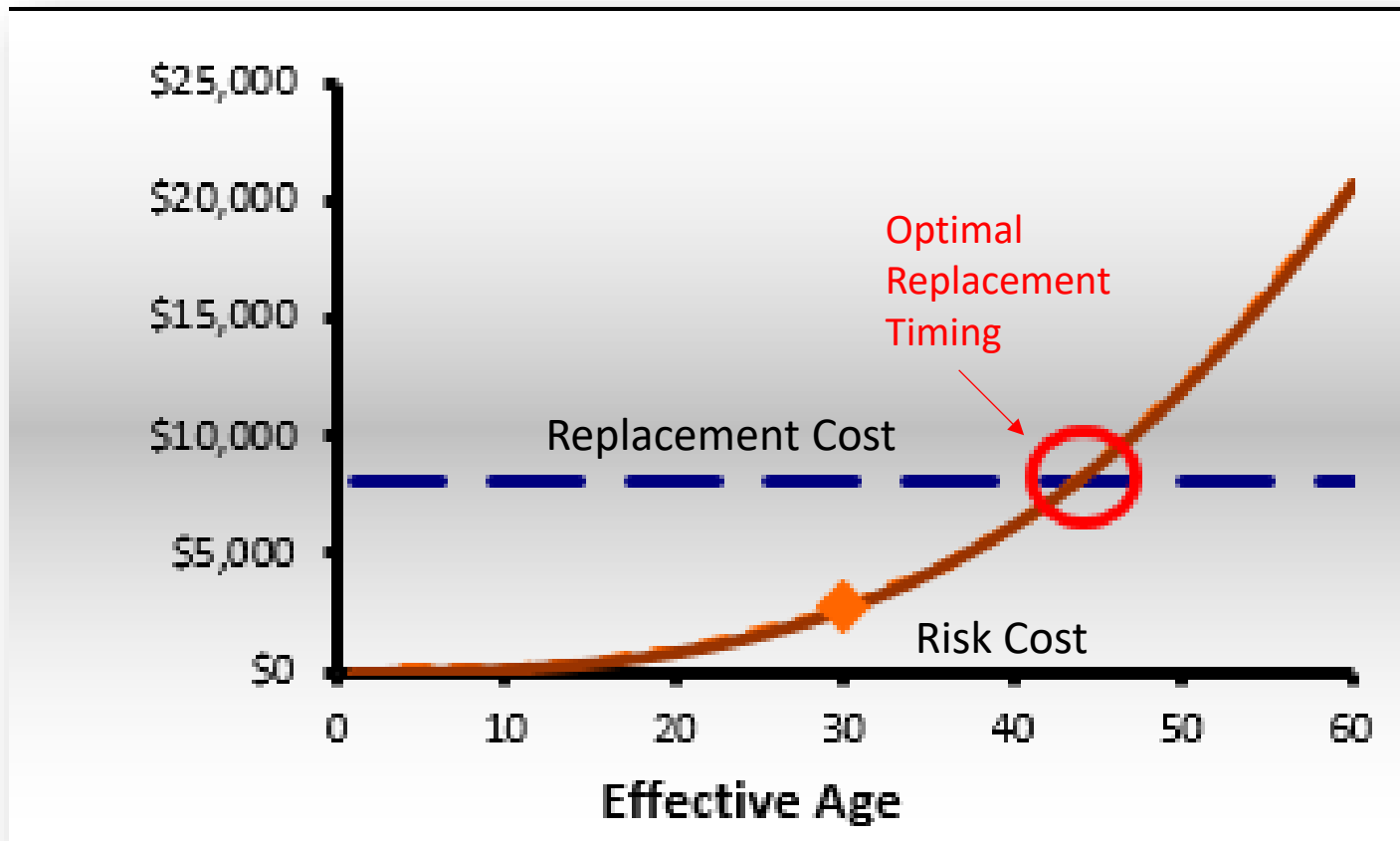
- Field condition assessments
- Manual/automated data flow from SAP, AMI system, SCADA, GIS and other systems
- Review of historical/legacy logs
- Input from staff and stakeholders



Power: Right Work, Right Time

Asset Strategies: Data-driven work projections for key parts of the infrastructure

Asset Class Expert Teams: Subject Matter Experts who understand our equipment best



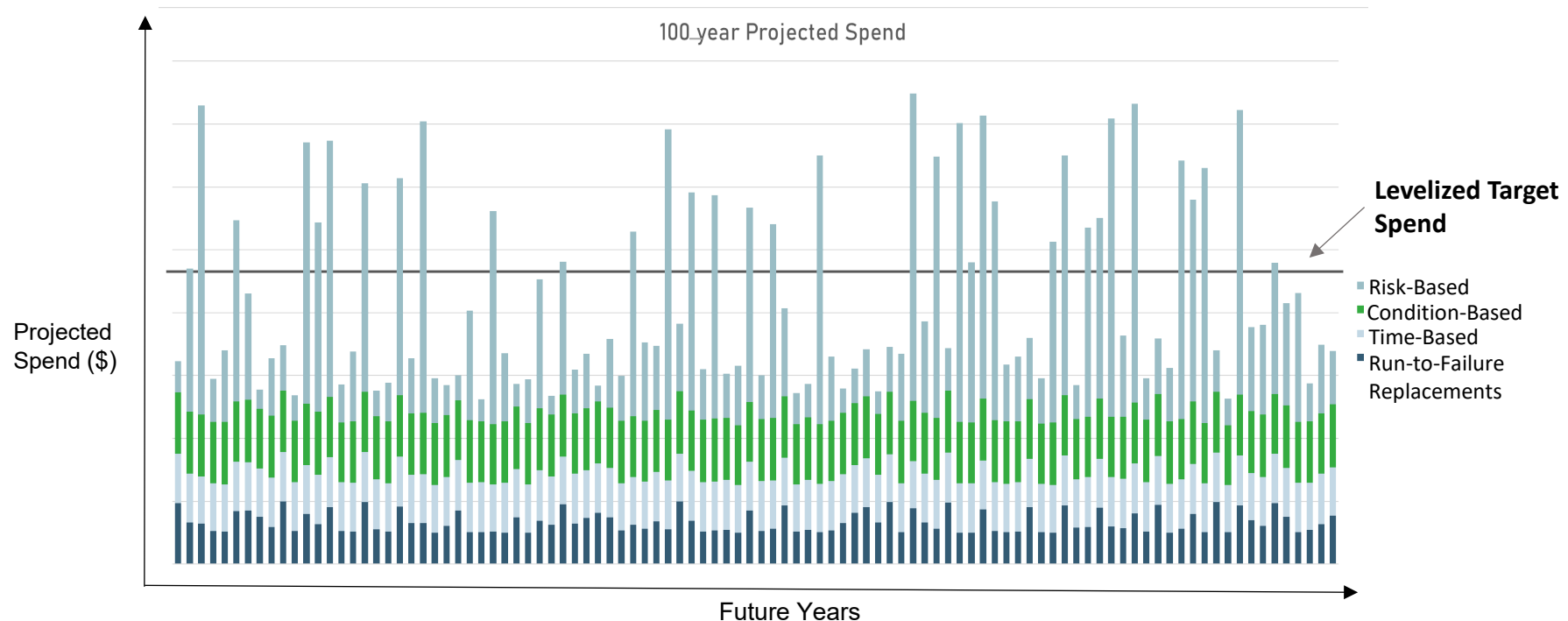
Economic Models:

- Lifecycle cost models
- Incorporate risk costs
- Predict the optimal replacement time for critical assets
- Help determine upgrade and maintenance timing recommended in Asset Strategies



Power: Long-Term Asset Planning

Levelized Investments: Prioritized infrastructure planning helps us predict necessary spending so we can spread costs out over time – caring for our infrastructure for future generations, while avoiding cost spikes that could impact our customers



Value Framework: In 2019, we developed a Value Framework with our Senior Leadership Team to prioritize projects that specifically enhance:

- Safety
- Compliance & Stewardship
- Customer & Employee Experience
- Reliability & Resiliency
- Rate Affordability and Economic Development



UTS: Technology Serving TPU Ops

Our Assets: Three Main Categories

- **Infrastructure**

Data center, network & transport assets connecting TPU Main Campus & various TPU Facilities in 6 counties

- **Systems**

Such as: Radio, Telephone, Physical Access Control, etc.

- **Platforms**

Such as: AML, GIS ESRI Utility Net, Contact Center, etc.

Keeping Our Infrastructure Strong & Secure

- TPU Configuration Change Management & ITSM tool
- Vulnerability Management Program
- Software & hardware support agreements with vendors

Right Work, Right Time

- Monitoring vendor/manufacture releases
 - Inputs from other processes
- Vulnerability mgmt., compliance processes, etc.*

Long Term Asset Planning

- Plan for lifecycles generally 7-10 years
- Coordination with business partners & Division strategies
- Vendor product lifecycle plans/recommendations



Value of Technology Assets:
\$ 100 Million+



Water: Our Assets



- 1,428 miles of Water Mains
- 11,500 fire hydrants
- 24 Active wells
- 28 pump stations
- 76 pressure reducing valve stations
- McMillin Reservoir, 67.6 million gallons
- 17 other reservoirs and standpipes, 69.9 million gallons
- 14 Asset Classes

**Value of Our Fixed Assets:
Nearly \$1.3 Billion**



Water: Our Assets

Age Based Asset Lifecycles

- **Expected Useful Life (EUL) varies** by asset material and type, even within a class
- Asset replacement strategy varies based on the cost of replacement, planning required, and resourcing available
- **EUL is a starting point** for analyzing asset replacement strategy

Asset Class	Avg EUL
Buildings, Structures, and Grounds	Varies
Cathodic Protection	30
Distribution Mains	150
Generators / GenSets	40
Hydrants	75
Meters	15
PRV Stations	50
Pump Stations	100
Services	100
Storage	150
Transmission Mains	150
Treatment & Monitoring	Varies
Valves	50
Wells	100



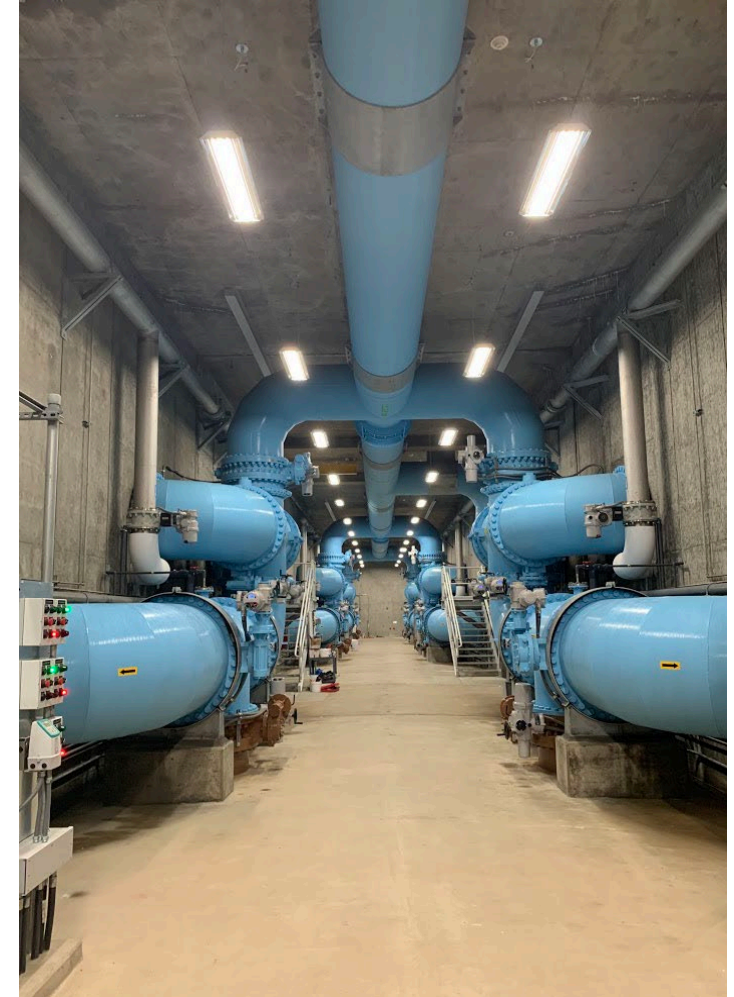
Water: Keeping Our Infrastructure Strong

Governance Structure for Decision Making

- Asset Management Steering Team and Core Team align program objectives with TPU strategy
- **Resilient and adaptive** to staffing changes

Long Term Asset, System, and Financial Planning

- A consistent **collaborative methodology** for identifying capital and O&M projects as part of the budget process
- Considers both asset lifecycle modeling and system needs to identify the right work at the right time



Water: Asset Data Information Systems

Foundational Asset Management Data Information Systems

- **SAP** Computerized Maintenance Management System (CMMS) to organize asset demographic data, work history, and cost
- **Esri** GIS to display asset data and information
- **SCADA Historian** to understand system performance

Key Asset Data Processes

- **Planning & Scheduling** preventative and corrective maintenance work in SAP Work Orders including cost and associated activities, led by the Planning & Scheduling work group in Maintenance & Construction
- **Distribution Economic Model** utilizing GIS and SAP to identify the Benefit/Cost ratio for partner projects with Environmental Services and Public Works, documented in our budget development process
- **Asset Lifecycle Models** utilizing SAP data to model age-based asset replacement estimates 150+ years to support the long-range financial planning process



Water: Right Work, Right Time

Leveraging Cross-Functional Subject Matter Expertise

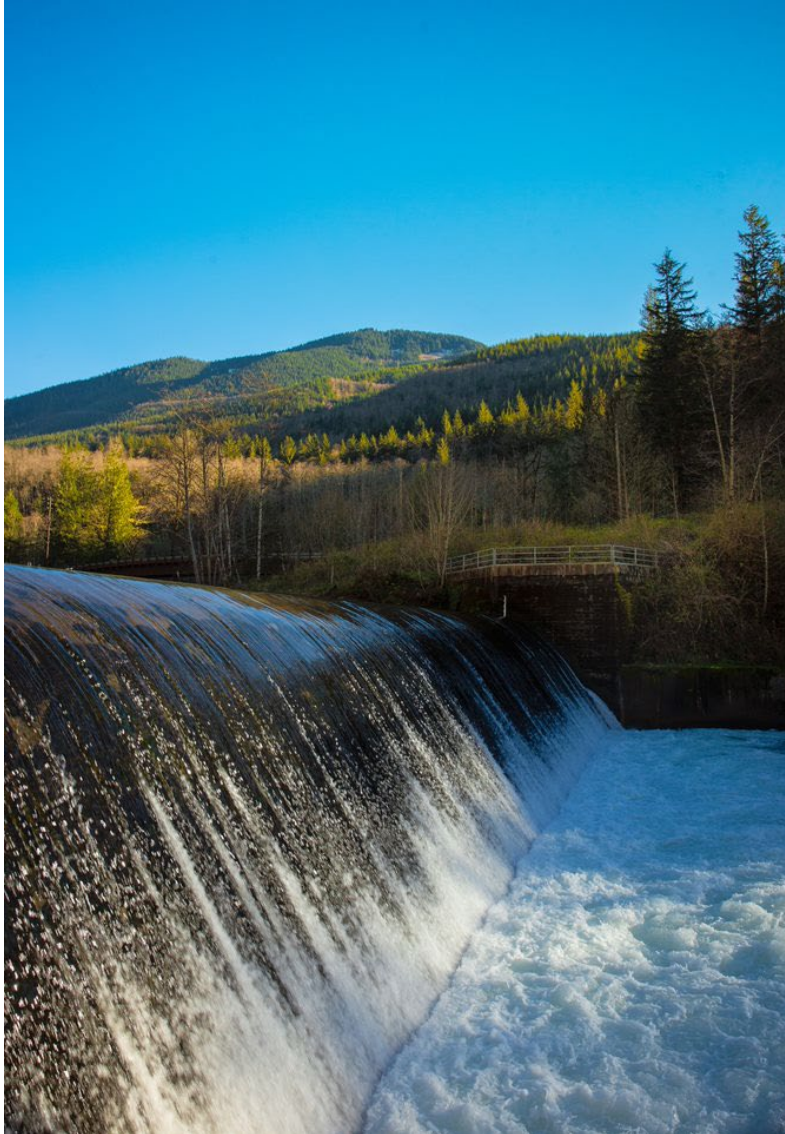
- Age-based asset lifecycle models for wells, pump stations, storage (reservoirs) generators, distribution and transmission mains look out 150 years for financial planning baselining
- Informed by cross-functional Asset Management Planning (AMP) teams

Robust Long-Term Capital and O&M Planning

- Asset lifecycle model **supports our 10-year CIP** including investing in our largest transmission system Pipeline 1, and continued investment in pump station renewal and well master plan



Water: Long Term Asset Planning



Maturing Lifecycle Models

- Continue to leverage best available asset data to inform lifecycle planning, incorporating work order history and condition assessment, in addition to age, to determine **optimal asset replacement**

Integrated System and Asset Planning

- Developing Water **Levels of Service** such as System Redundancy or Fire Flow
- Modeling water supply and demand changes to better understand the path of delivery and assets required to support this path



Rail: Our Assets

TMBL – Tideflats

- 33 Miles of Track
- 176 Track Switches
- 148 Grade Crossings
 - 7 signalized
- 3 Bridges
- 14 Locomotives
- 1K – 2K railcars in custody any given time



Locomotive Maintenance Facility:

- Maintain our own fleet
- Serviced 4,766 foreign locomotives in 2024



Rail: Keeping our Infrastructure Strong

Bridge Safety Management Policy

- Regulation implemented in 2011 requires detailed inventory including load capacity calculations, documented inspection program, repair/maintenance procedures, QA/QC record keeping, and program auditing processes.

Sustained and ongoing improvements and maintenance based on routine track, bridge, and locomotive inspections

- Between 2010-2021, the remaining ~8 miles of pre-WWII forged rail was replaced with new 115lb rail in the Tidelands.
- 6 of 14 locomotives have been re-powered, modernizations are ongoing.

Ultrasonic Rail Flaw Testing

- Voluntary non-destructive inspection tool used to identify internal rail flaws in advance of track failure.



Rail: Right Work, Right Time

Track renewal projects are based on a combination of visual inspections, geometry data and annual railcar traffic analysis.

As rail customer needs evolve, track reconfigurations help optimize operational efficiencies.

Locomotives are improved or replaced as new technology is developed.

Foreign locomotive servicing

- Generate additional revenue
- Assists with regional emissions reductions
- Mitigate operational disruptions resulting from global trade imbalances.



Rail: Long-Term Asset Planning

- Electronic Track Mapping
- Electric Locomotive
- Diesel Locomotive repowers
- Use rail customer forecasts to inform track upgrades, reconfigurations and additional infrastructure
- Consider employee recommendations to improve safety, ergonomic convenience and efficiencies



Future State of Asset Management at TPU



Future State

- **Goals**

- Improve Asset Lifecycle Analysis to better capture total cost of ownership, including operating and capital expenses
- Align business processes and technology systems when possible to minimize technical debt, leverage institutional knowledge and skills training

- **Key Features**

- Standard configuration of technology systems, limiting customization
- Mobile Access for maintainers and technicians to enable capturing maintenance data from the field, connected to ESRI/GIS for more accurate location of assets and tracking
- Streamlined asset data collection processes such as drop-down menus limiting long-text entries



How Asset Information Could Be Utilized

- **Documenting Total Cost of Ownership**
 - Consistent recording and tracking of time, labor, and resources required for maintenance and operation activities
 - Whole lifecycle modeling vs asset replacement modeling
- **Improving Operational Awareness**
 - Utility Modernization efforts have enabled possibilities to access operational SCADA data historically only accessible to a limited group of analysts
 - Integrating data systems could allow the utility to better predict asset failures based on operational data collected from remote sensors and devices





Asset Management Considerations





SAP Now!

Background

- SAP is the City's Enterprise System of Record for activities such as:
 - Finance
 - Asset Management
 - Procurement
 - Materials Management
 - Sales & Distribution
 - Utility Billing & Invoicing
 - HR & Payroll Processing
- Our current SAP version sunsets in 2027 and will be out of standard support.
- In 2021, ISGB approved a multi-year program to migrate SAP to the S/4HANA platform establishing a roadmap to leverage new/improved functionality

Governance

- Structure
 - Business Advisory Committee (BAC)
 - Executive Steering Committee (ESC)
- BAC proposes the Roadmap based on business needs and resourcing, following vision and guiding principles
- ESC reviews and approves Roadmap
- Project funding follows existing capital/enhancement budgeting process



SAP Now! Program Vision and Principles

Shared mission first!

Keep it simple & safe!

Fit to Standard

Stewardship

Innovative Approach

Continuous Improvement

Vision Statement: Tacoma strives to maintain a modern, sustainable, integrated SAP platform for managing core elements of the City's business operations that embrace Public Sector and Utility Best Practices.

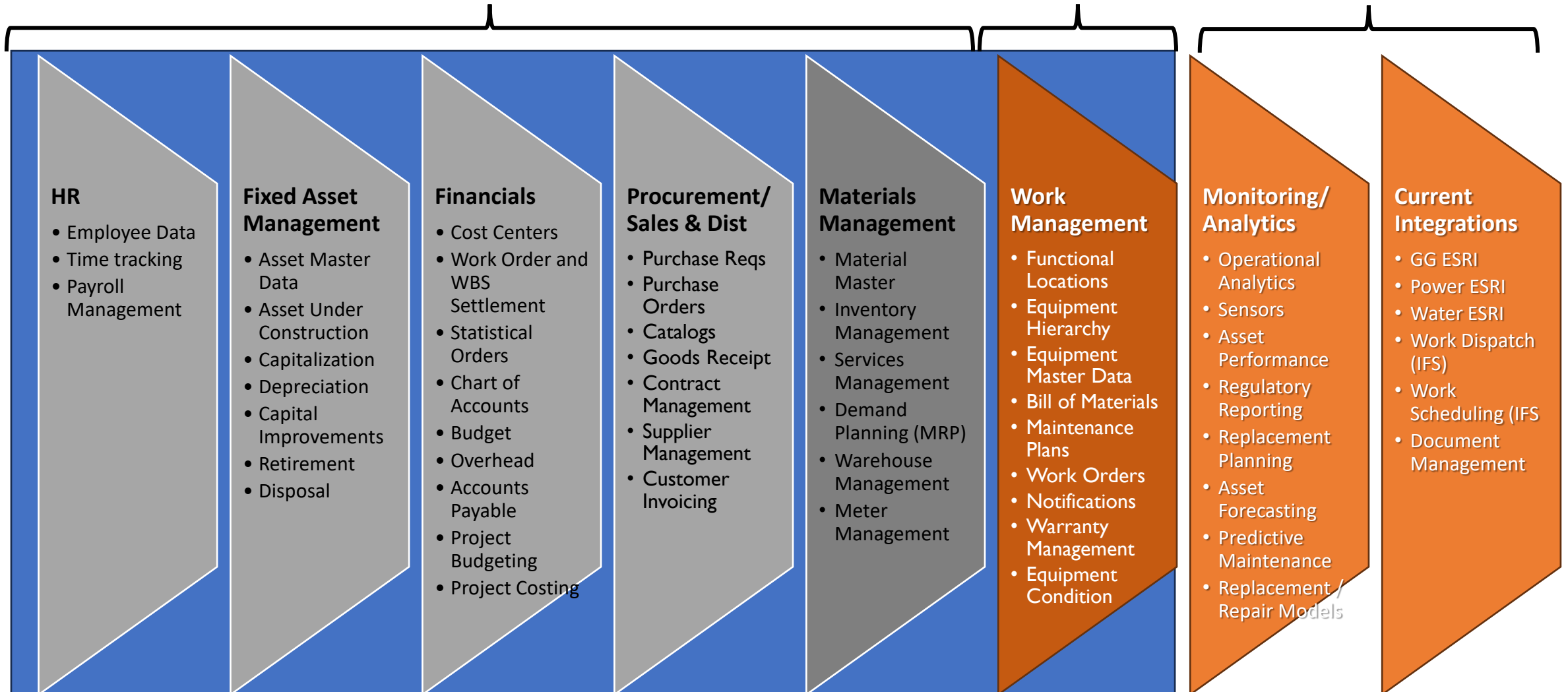


WORK AND ASSET MANAGEMENT

Currently done in SAP

Most of these activities are done in SAP

Done in SAP, with specialty software, or manual
*Only non-financial integration



Asset Work Management for SAP Phase 2

- ITD/UTS effort now
- ITD plan for Asset/Work Management technology solution



Questions?

