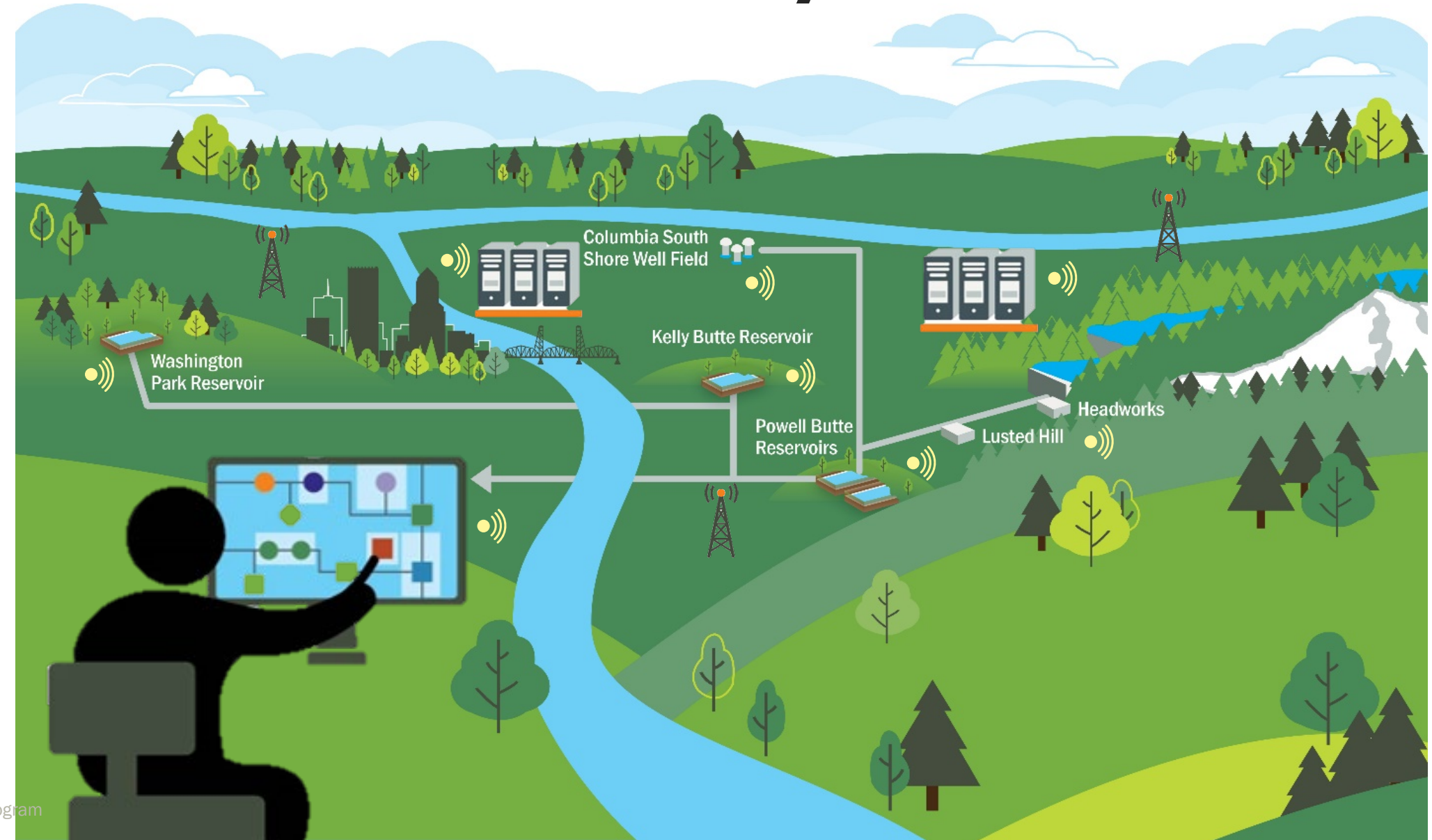
Bull Run TREATMENT PROJECTS | Filtration

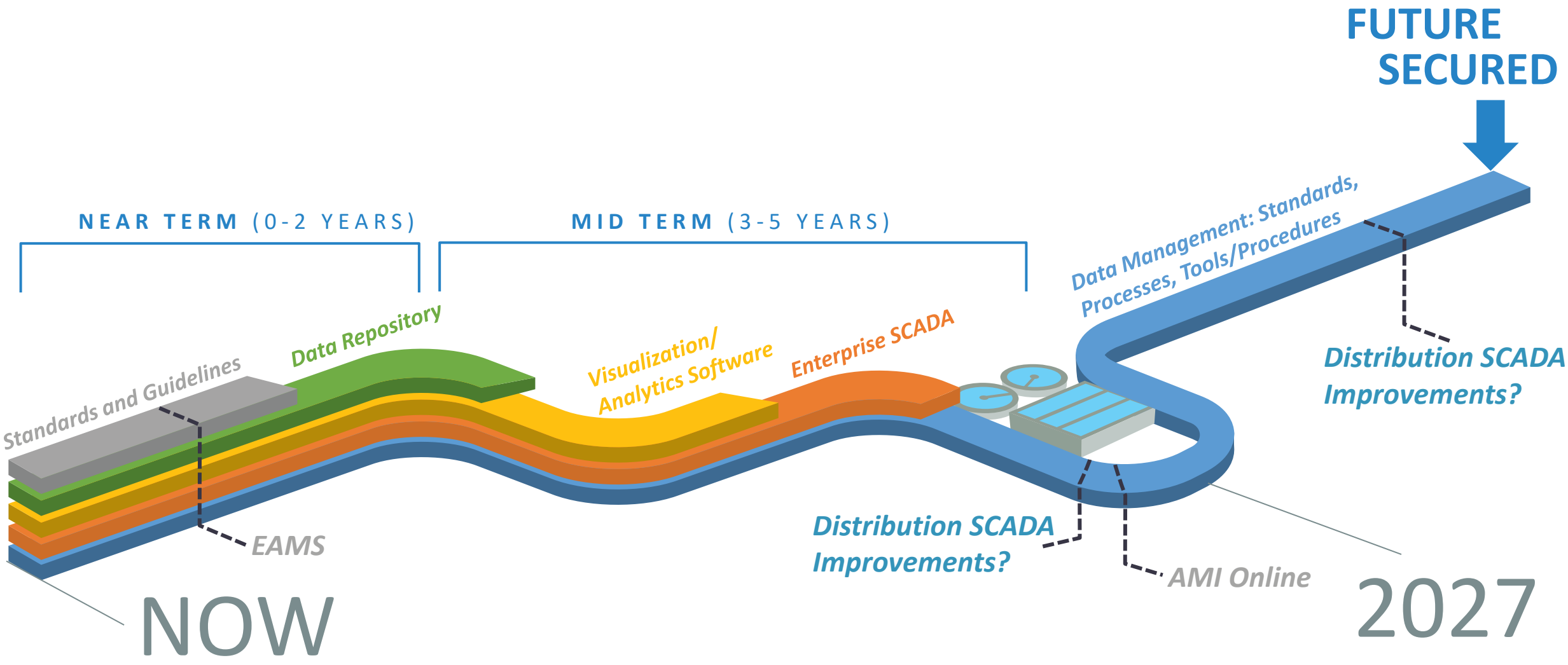
Navigating the Challenges of Defining Portland Water Bureau's Future SCADA System

PNWS-AWWA Conference | October 28 | 2021

PWB's current SCADA system



Smart Utility Roadmap: Where does SCADA fit in?



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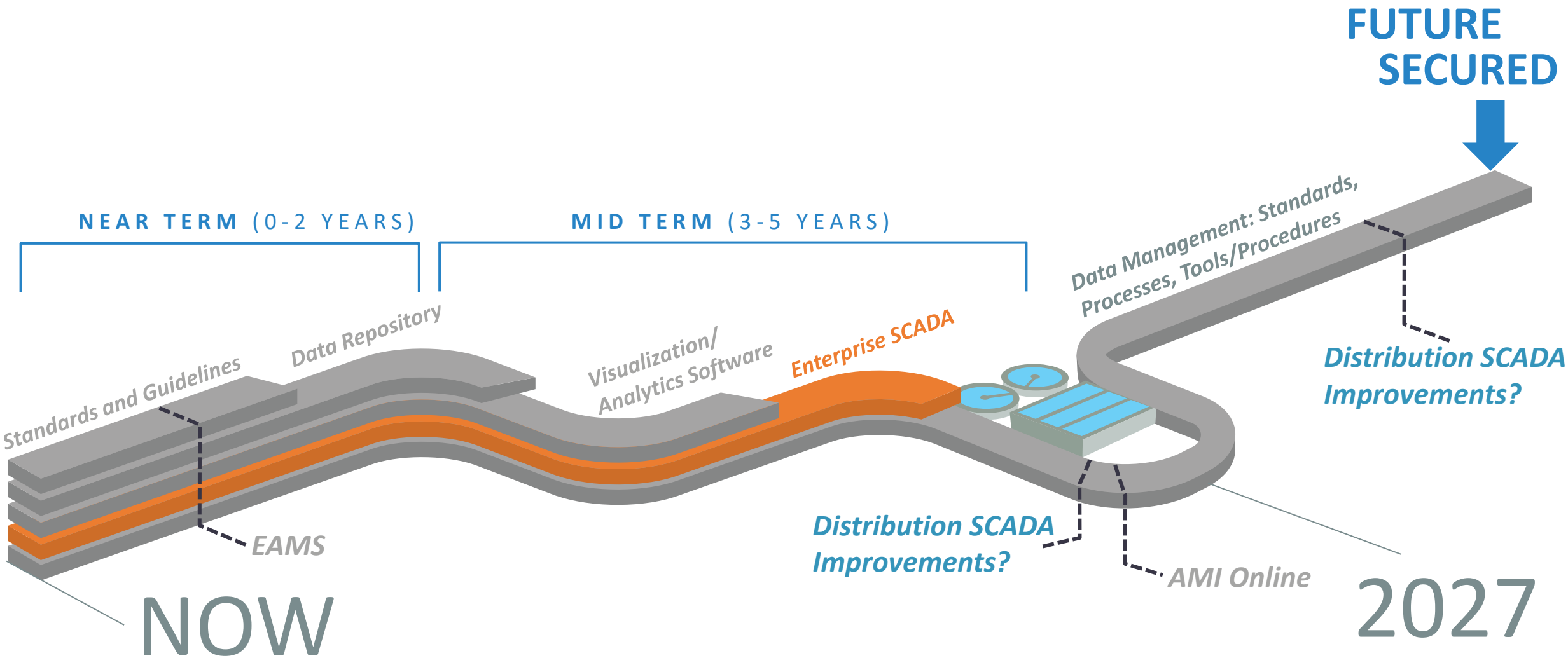
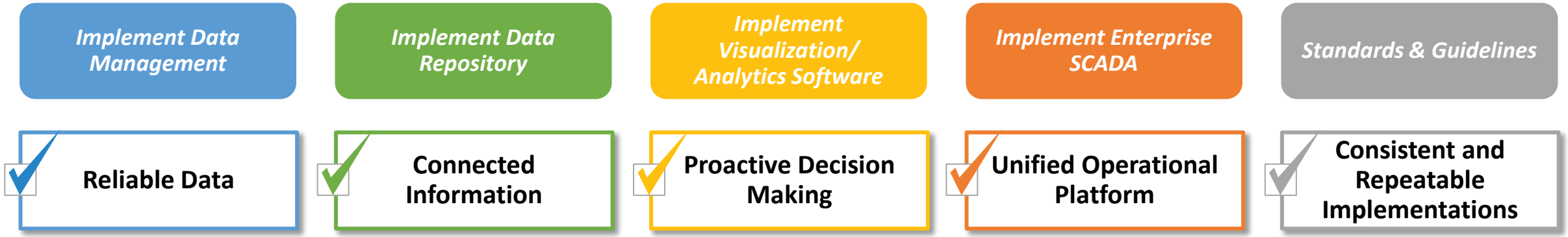


Smart Utility Foundational Initiatives



Smart Utility Foundational Initiatives

Implement Data Management	*Implement Data Repository*	*Implement Visualization/ Analytics Software*	*Implement Enterprise SCADA*	*Standards & Guidelines*
Reliable Data	**Connected Information**	**Proactive Decision Making**	**Unified Operational Platform**	**Consistent and Repeatable Implementations**

- Ability to gather information from all parts of system
- Supports system-wide operational reporting
- Provides historical operational data through enterprise historian

SCADA Roadmap: Why now?

Plan for the Future

- Provide a path for updating the SCADA system to align with the Smart Utility program and its initiatives

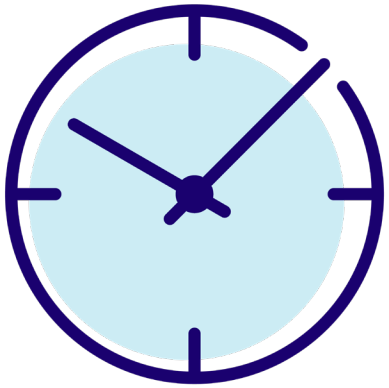
New Filtration Facility

- Desire for common SCADA platform
- Need for SCADA/technology design guidance
- Update to current industry standards

Impact of Filtration Facility on SCADA

Increase in data

More complex operations



Response time criticality

Right tools to align with needs

Developing the SCADA Roadmap

Identify operational, maintenance, and organizational requirements

Document current conditions of the distribution SCADA system

Perform a gap analysis, identify improvements, and prioritize those on critical path

Evaluate and select SCADA technology

Develop a roadmap to implement improvements using selected technologies

Identify Requirements: Exercise Flow

Workshop 1

HOMEWORK QUESTIONS

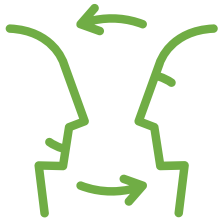
- ✓ Q1
- ✓ Q2
- ✓ Q3
- ✓ Q4
- ✓ Q5
- ✓ Q6

Workshop 2

VIRTUAL POSTER QUESTIONS "IDEAS TO GO"

- ✓ Q1
- ✓ Q2
- ✓ Q3

BRAINSTORMING



- ✓ Facilitated Q&A
- ✓ Silent brainstorming
- ✓ Review ideas and elaborate

Workshop 3

SUMMARIZE REQUIREMENTS

- ✓ Group and summarize requirements

PRIORITIZE

- ✓ Vote on Requirements
- ✓ Review requirements in order or priority

Identify Requirements: Brainstorming

What important SCADA system functions, features, or tools would make your day-to-day life better?

Operations

Maintenance & Construction

How should staff be able to access, view, control, and maintain the SCADA system in order to do their job?

What is currently working well?

What is not working well?

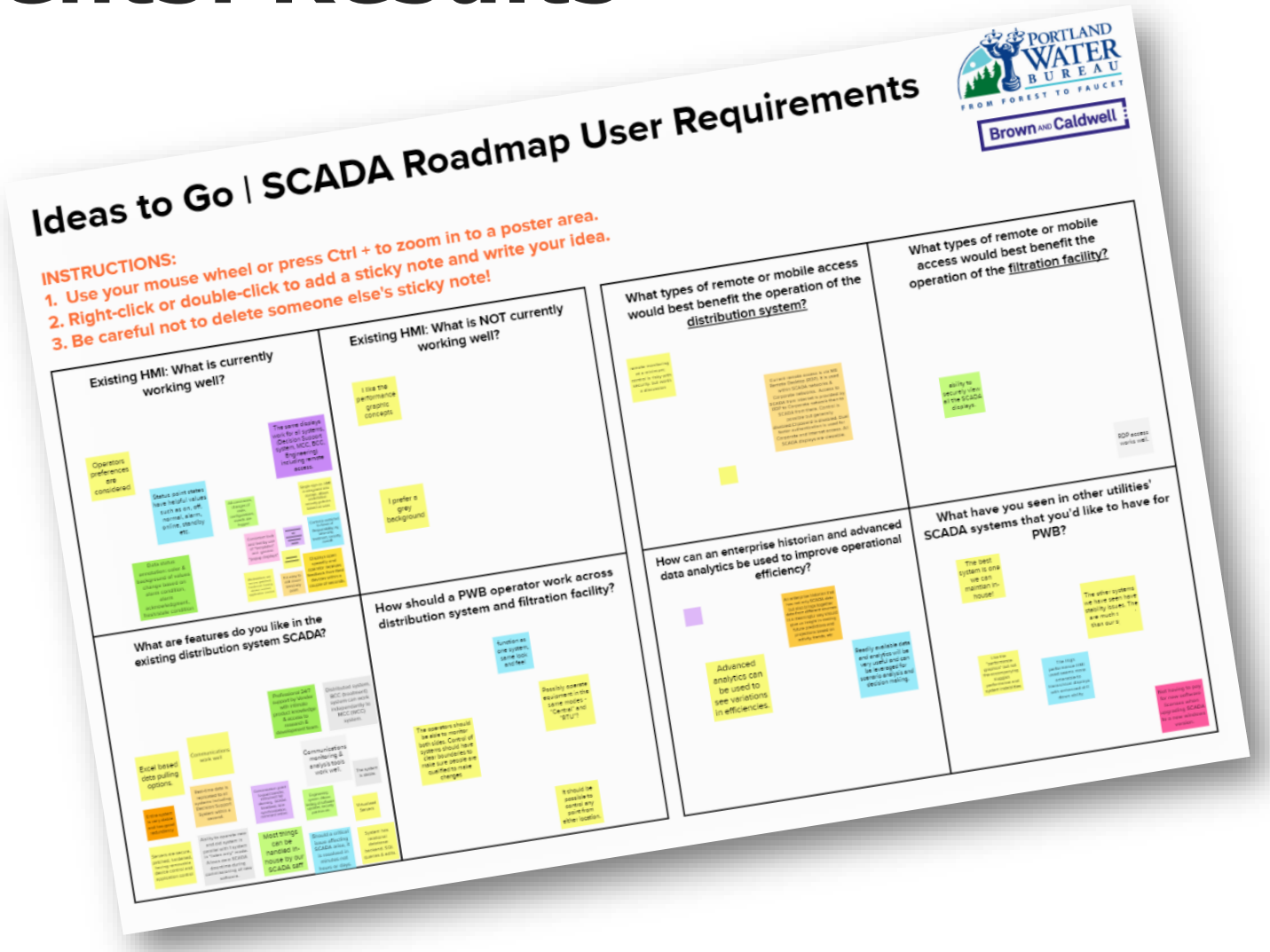
Engineering Services

Management

What data, reporting, and analytics are needed for operations, maintenance, engineering, and management?

Identify Requirements: Results

- Key requirements identified
  - In-house maintainability
  - Stable and reliable
  - High performance HMI
  - Right level of redundancy
  - Easy access to historical data
  - Able to meet security standards



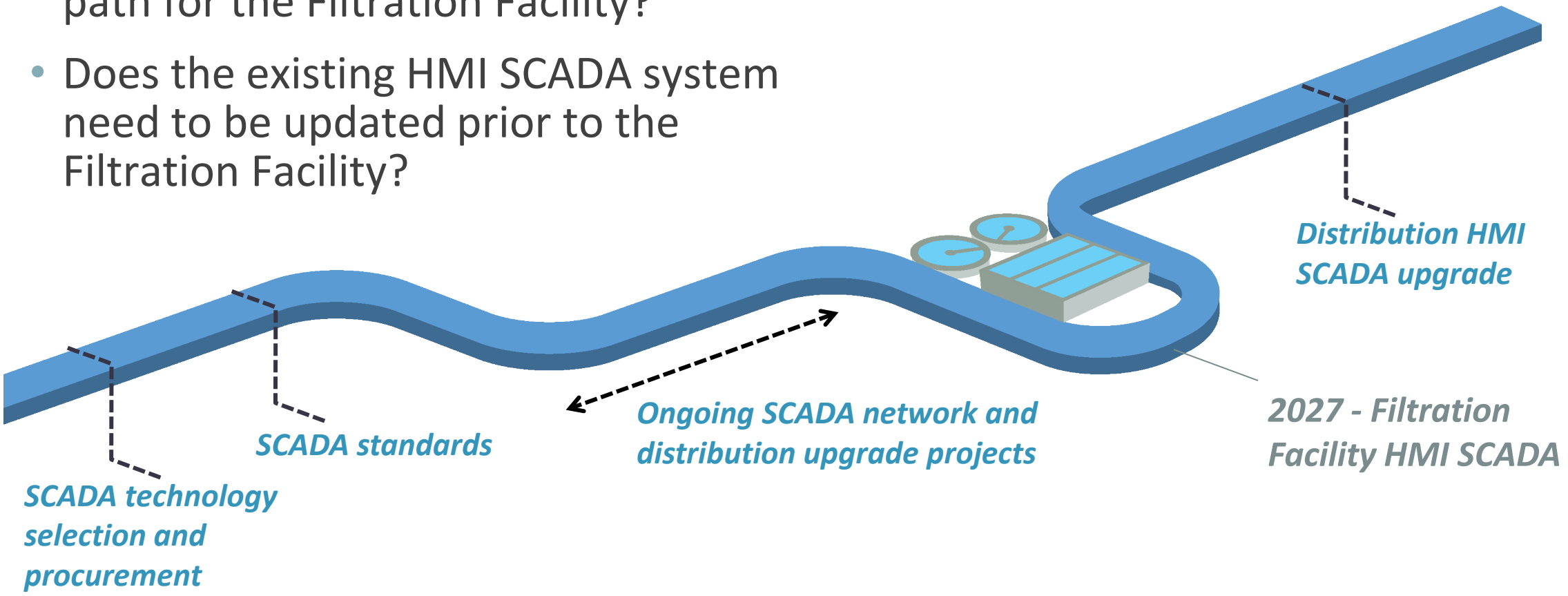
Evaluate Current System and Identify Projects

Document Existing System → **Perform Gap Analysis** → **Identify Improvement Projects**

Understand key risks and technology obsolescence

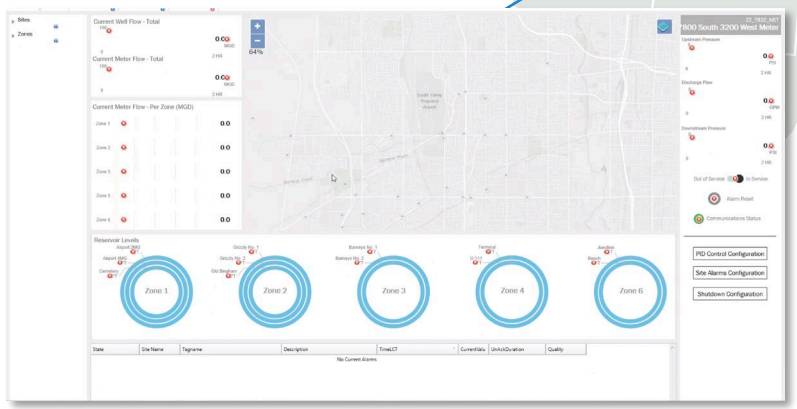
Prioritize Projects

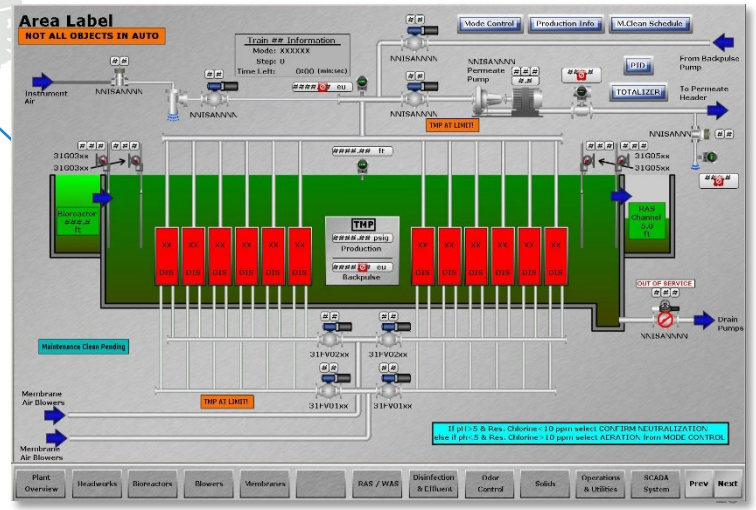
- What SCADA Projects are on the critical path for the Filtration Facility?
- Does the existing HMI SCADA system need to be updated prior to the Filtration Facility?



Evaluate and Select Technology: Virtual "Site Visits"

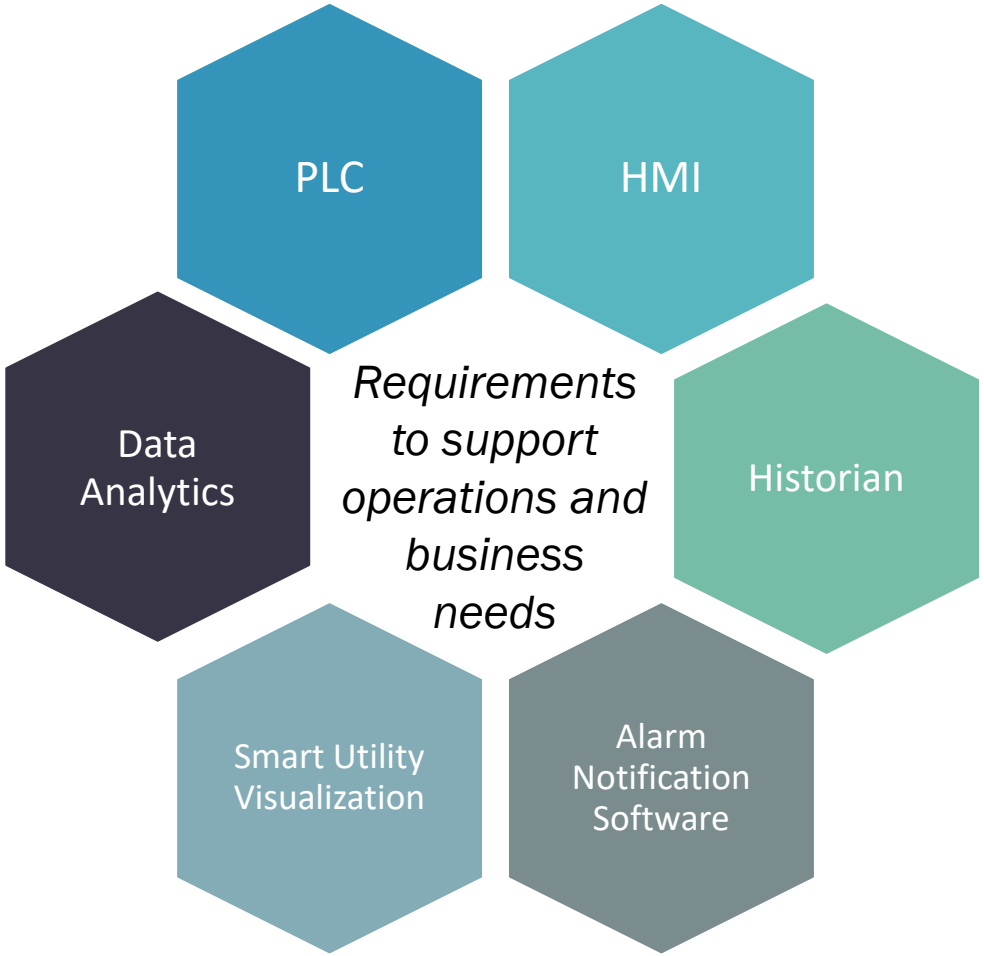
- SCADA system platform evaluation of other utilities





Align Requirements with Technology Selection

- Technology Procurement
  - Part 1: Technical review
  - Part 2: Live demonstration



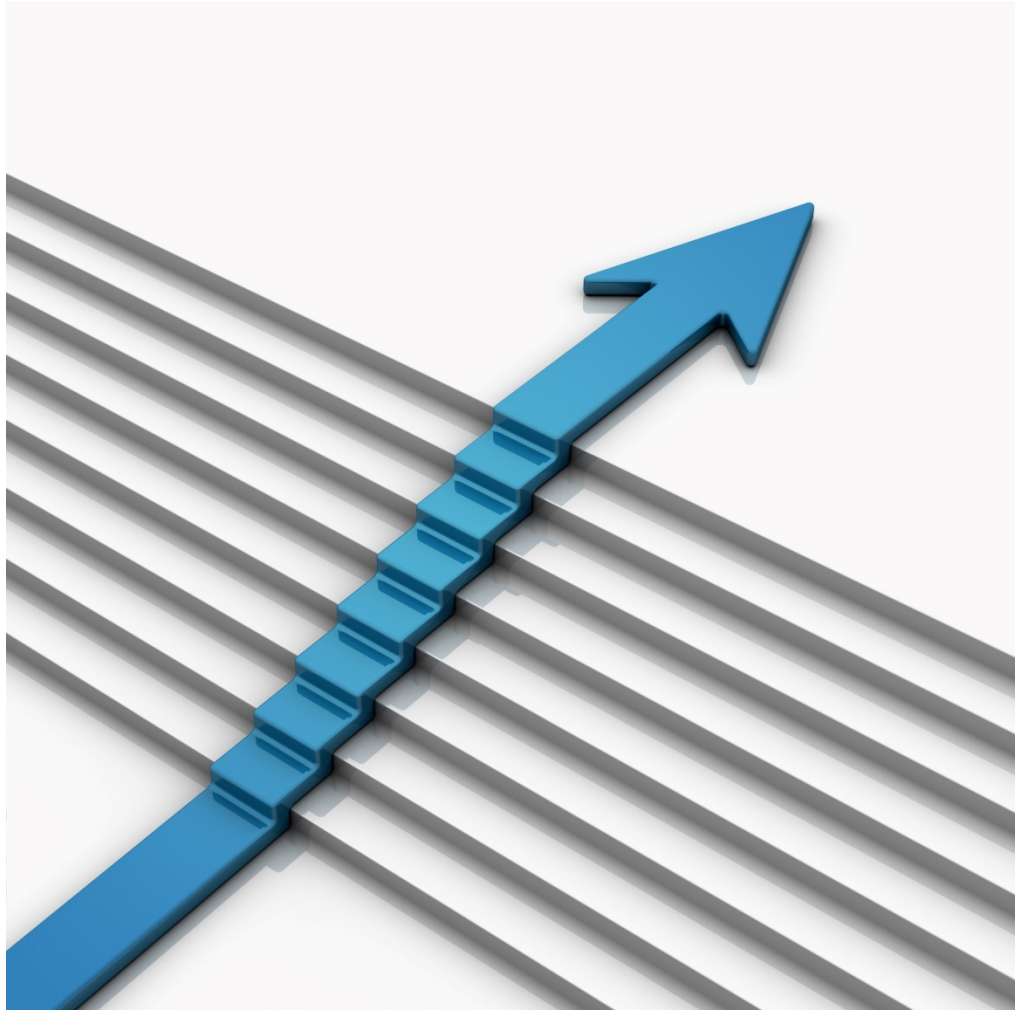
Document the Results

SCADA Roadmap

- ✓Design and implementation
- ✓Risks and dependencies
- ✓Installation alternatives
- ✓Planning level cost estimates
- ✓Implementation schedule

Where do we go from here?

- Current State
  - Select and procure SCADA technology
- Next Steps
  - Finalize SCADA Roadmap document
  - Develop SCADA standards



SCADA is foundational to the Bureau's Smart Utility Vision

The Bureau's Smart Utility implementation will support our mission, vision and values by using innovative technology-based tools to guide operational and business decisions as the Bureau adapts to the future.

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

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Questions?

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