

Tualatin Valley Water District



Delivering the Best Water 💧 Service 💧 Value

Board Work Session Minutes

March 2, 2021

This meeting was held by phone and the internet.

WORK SESSION – 6:03 PM

CALL TO ORDER

Commissioners Present: Bernice Bagnall; Jim Doane, PE; Jim Duggan, PE; Todd Sanders; Dick Schmidt

Staff Present: Tom Hickmann, PE, Chief Executive Officer; Paul Matthews, Chief Financial Officer; Carrie Pak, PE, Chief Engineer; Dave Kraska, PE, Water Supply Program Director; Clark Balfour, General Counsel; Tim Boylan, IT Services Director; Andrea Watson, Communications and Public Affairs Supervisor; Andrew Carlstrom, Customer Service Manager; Joel Cary, Water Resources Division Manager; Pete Boone, PE, Water Operation Division Manager; Debbie Carper, District Recorder

Other Attendees: Norm Eder, CFM Strategic Communications

ANNOUNCEMENTS

Mr. Hickmann announced staff's forthcoming development of a debt collection plan and gave an update on the customer emergency assistance program (see attached memo). He said staff learned of an additional funding source for customers and will provide outreach when more information is known. Mr. Hickmann also included the latest update to the Board communications log with his memo.

Mr. Kraska gave the safety moment on calling 811 before digging.

1. DISCUSSION ITEMS

- A. Willamette Water Supply System Commission Update. *Staff Report – Dave Kraska*

Mr. Kraska reviewed the WWSS Commission March agenda, the current approvals and procurement forecast and recent Willamette Water Supply Program (WWSP) activities (see attached presentation).

After Mr. Kraska described possible cost reduction alternatives, Commissioners said they have appreciated staff analyses in developing the alternatives and staff time in keeping the Board updated.

In response to Commissioner questions, staff said:

- Rate projections based on the viable cost reduction alternatives will be available during the March 17 Board meeting consideration of financial strategy adoption.
- Each project within the WWSP has a cost share amongst partners that will enable staff to determine what the District's savings would be for each of the alternatives.
- Partners will all be contractually obligated to complete WWSP construction projects in the near future; therefore all parties want to select the most appropriate alternatives and move forward together.

B. Potential Impacts to TVWD from the Final Revisions to the Lead and Copper Rule (LCR). *Staff Report – Joel Cary*

Mr. Cary gave an overview of the current LCR and described revisions, the associated compliance timeline and staff's plans to approach development of the District's short- and long-term responses (see attached presentation).

In response to questions, staff said:

- There is a higher concentration of lead pipes in the Midwest and East Coast.
- The District will work with private property owners on location and replacement of lead service lines on the customer side of the water system.
- Galvanized pipe is exempt from the LCR updates if it is not downstream from a lead pipe.
- Staff hopes to start reviewing publicly available data to start the inventory process. Once that work has been completed, there will be a need to conduct digging and potholing to identify pipe materials unable to be identified in records.
- There are some provisions in the updated rule regarding requirements that utilities assist customers with replacement of pipes on the private property side of the system.

C. District Cyber Security Update. *Staff Report – Tim Boylan*

Mr. Boylan described some of the major cyber security incidents in the prior year, highlighting two attacks with most relevance to District operations (see attached presentation). He laid out the District's security framework, listed potential threats and presented a side-by-side comparison of how a recent water utility's security framework, which failed during a cyberattack, was not as robust as the District's.

ADJOURNMENT

There being no further business, President Bagnall adjourned the meeting at 8:07 p.m.

Bernice Bagnall, President

Todd Sanders, Secretary



MEMO

Date: March 2, 2021
To: TVWD Board of Commissioners
From: Tom Hickmann, CEO
Re: CEO Announcements

The following Announcements will be covered during the work session:

1. **Be Sure to Unmute and Mute** – Just a reminder to please be sure to unmute whenever you are speaking and mute yourself when you are done during the work session this evening.
2. **Collections Plan** – TVWD is developing a COVID debt collection plan, as we see a growing number of customers with unpaid balances. The pandemic continues to be an active health issue, and we are aware that many customers are experiencing an extended financial hardship.

We will present information to you at the March 17 Board Meeting, explaining what we have done to date and outlining the plan to move forward in our collection efforts. At the April 6 work session, we will present a progress report on our actions taken and a draft plan; guidance will also be sought from the Board.

The plan will focus on our most delinquent customers who, to date, have not responded to TVWD outreach efforts. It will include recommendations for temporary changes to our collections and customer assistance program until we can return to normal business operations.

3. **Customer Emergency Assistance** – TVWD is working to strengthen our customer assistance program. Community Action of Oregon is a valuable partner, making heroic efforts to process the requests for CARES Utility Assistance Program from August through December 2020. Our staff worked seamlessly with the employees at Community Action to serve 27% of our customers who were in shutoff status. Community Action is the regional leader in serving vulnerable community members, and TVWD hopes to transition our assistance program processing to this partner.

4. **Board Communications Log** – There was one update to the Board communications log this month. Please see the attached, updated log and the February 16, Finance Committee meeting notes.
5. **Safety Minute** – WWSP Director, Dave Kraska, will present tonight’s safety minute.

2021 Board Communications Log

Commissioner Questions/Topics: (includes research requests directed to staff via email or at Board meeting)

- Initial request sent to Tom (copy Board President)
- Tom responds with projected timeframe for response and any other logistical info
- Answer shared with the full Board during work sessions

Item Number	Requestor	Subject	Date Submitted	Response Date	Date Information Shared with Full Board
01-21					

Board Committee Information:

- Meeting notes/handouts shared with the full Board during work sessions

Meeting Date	Notes	Date Information Shared with the Full Board
Finance Committee		
February 16	Meeting synopsis prepared by Debbie Carper	March 2
Policy and Board Development Committee		
Strategic Planning Committee		
Water Supply Committee		

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Finance Committee Meeting
February 16, 2021 (meeting via Microsoft Teams)

Meeting Notes

The meeting started at 4:37 p.m.

Attendees: Commissioners Bagnall and Duggan

Staff Present: Tom Hickmann, PE, Chief Executive Officer; Dave Kraska, PE, Water Supply Program Director; Paul Matthews, Chief Financial Officer; Joe Healy, Senior Management Analyst; Debbie Carper, District Recorder

1. Identifying Financial Planning Strategies

Mr. Hickmann gave an overview of the meeting discussion topics and highlighted financial risks and recommendations based on a District management perspective (see attached presentation). Mr. Kraska added that Willamette Water Supply Program (WWSP) partner agencies are experiencing financial constraints.

Mr. Hickmann highlighted the interdependent components of the financial management process. He noted the WWSP is at a turning point and financial management options will become limited soon. Next, he described some of the challenges inherent in large public works projects in the current environment and acknowledged the inherent unpredictability of future projections.

Mr. Hickmann listed specific issues the District faces regarding revenues and costs. Mr. Matthews said the greater concern is on the revenue side.

Mr. Hickmann highlighted three strategies that staff analyzed in greater detail and said management staff recommends the third strategy. Mr. Matthews reiterated the uncertainties the District may face in future years.

Mr. Hickmann asked for feedback, including if Commissioners are ready to consider adopting the financial strategy at the March 17 regular Board meeting.

Commissioners expressed support with the recommended strategy, especially as it allows the District to be a responsive partner amidst partner agency concerns. There is a desire to see what WWSP projects would be delayed within this strategy and to consider the possibility that if the financial situation improves, if feasible, there could be a restoration of the original schedules to affected projects. Mr. Hickmann said all partners support the goal of overall system functionality in 2026. Until staff conducts more detailed financial analyses, he said it is

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unclear if shorter WWSP project delays of a few years will make a great difference in the financial situation.

Mr. Kraska said the WWSP is operating under a deadline of having the baseline budget approved by May at the latest. Twelve WWSP construction projects will be bid this year, which is nearly all of the remaining projects.

Mr. Hickmann concluded the presentation by listing the proposed schedule and asking Commissioners if there is a need for a future work session discussion on potential candidates for WWSP project postponement. The Commissioners said the schedule looks good, and they would like a more in-depth discussion regarding WWSP projects.

The meeting adjourned at 6:21 p.m.

Development of Financial Strategies

Board Finance Committee

February 16, 2021

Topic for Discussion

Identifying Financial Planning Strategies

- Evaluate the financial implications alternative financial strategies
- Identify approach that matches District's current financial situation with inherent risks
- Present the results of those strategies to the Board at its March 17, 2021 regular meeting
- Provide a basis for the requested CIP and rates for 2021-23 biennium
- Review schedule to complete the budget and financial planning

Management's Concern

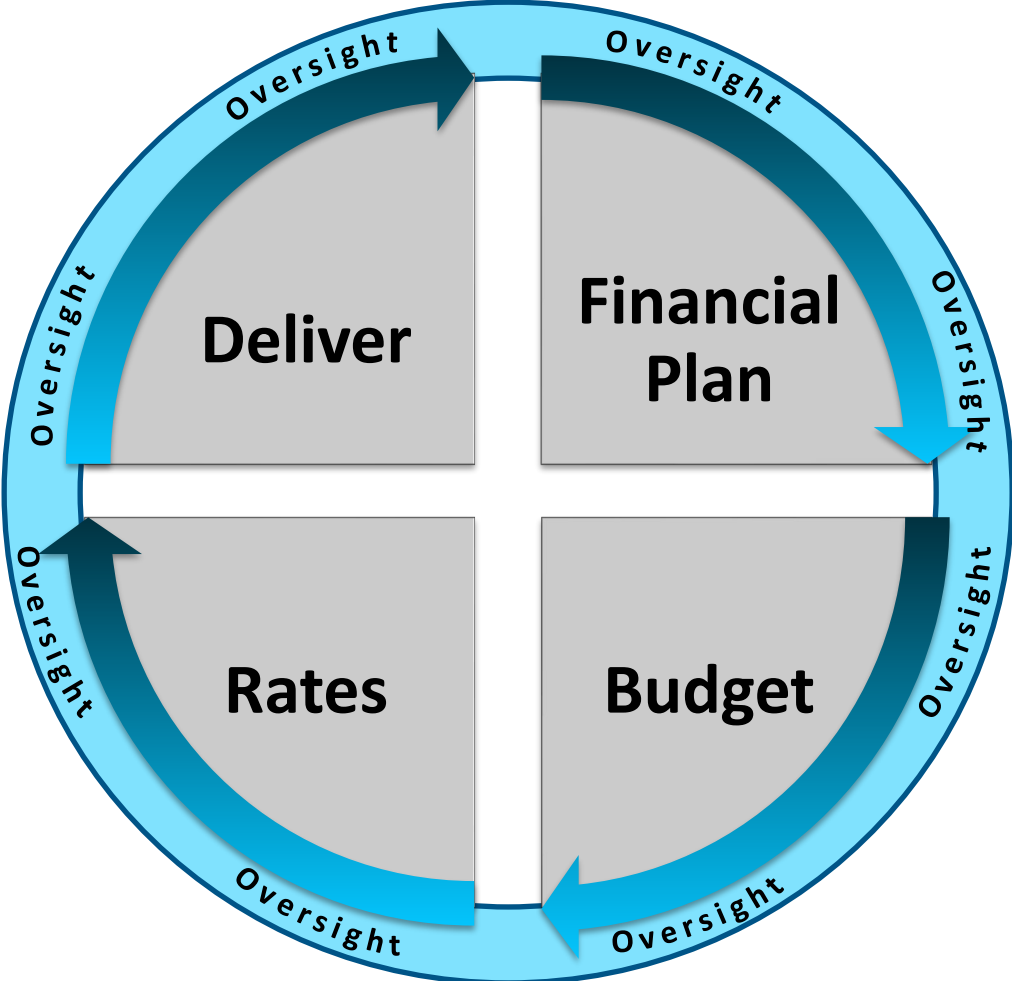
Risks

- Significant risk that future rate increases will be higher than planned
- Economy may not recover to pre-COVID levels for water sales
- Significant construction risk remains

Recommendation

- Build financial capacity
- Adopt rates that provide financial resources in advance of need
- Enhance the customer emergency assistance program
- Pursue federal and state assistance

District Financial Management Process Interdependencies



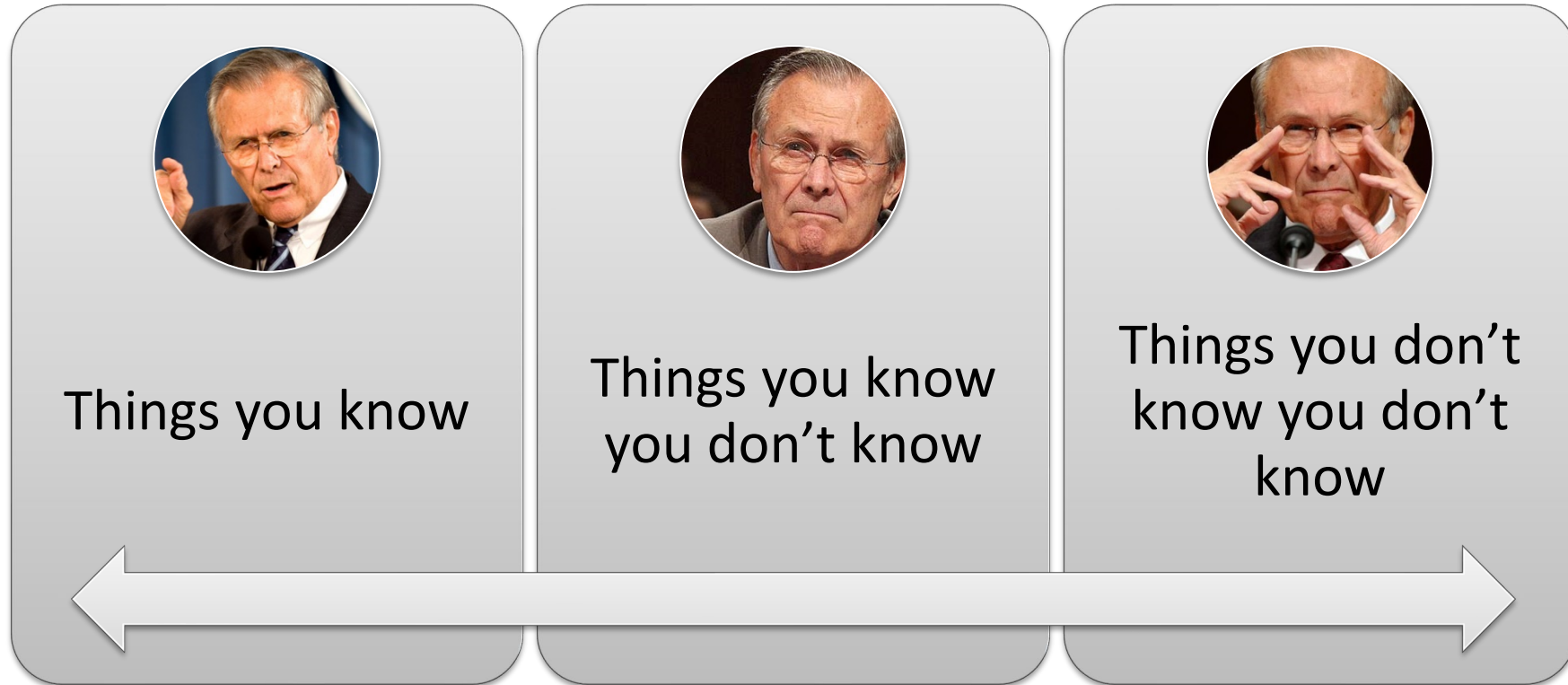
Challenges Facing Major Public Works Projects

The Environment

- Higher expectations of the accuracy of cost estimates
- Increasing sensitivity to public investments
- Customers' expectations of future costs
- COVID-19

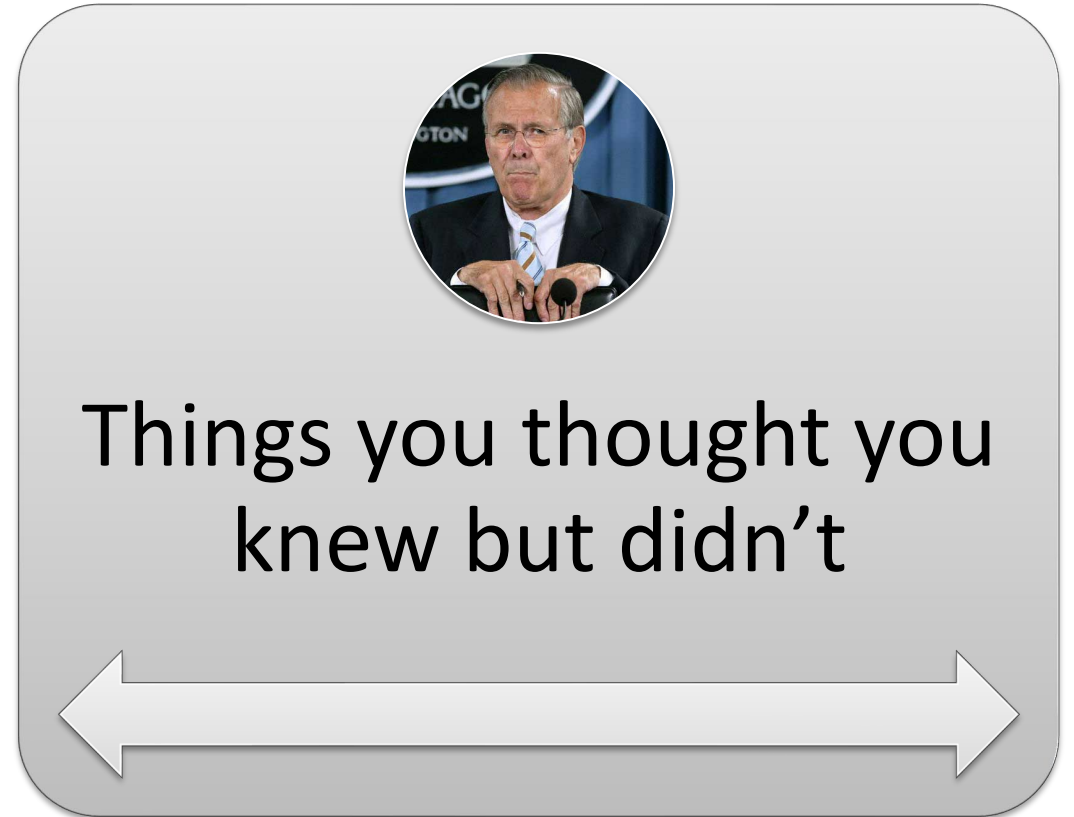
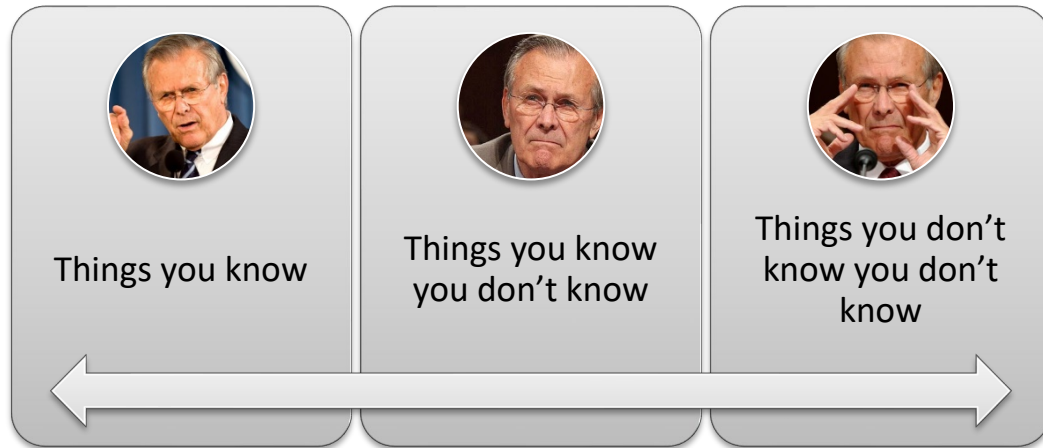
Nature of Knowledge

Donald Rumsfeld on Knowledge:



Nature of Knowledge

Donald Rumsfeld on Knowledge:



Limitation on Cost Details

Estimate Class	Expected Accuracy Range	Level of Project Definition	Typical Purpose
Class 5	Low: -20% to -50% High: +30% to +100%	0% to 2%	Concept Screening
Class 4	Low: -15% to -30% High: +20% to +50%	1% to 15%	Study or Feasibility
Class 3	Low: -10% to -20% High: +10% to +30%	10% to 40%	Budget, Authorization, or Control
Class 2	Low: -5% to -15% High: +5% to +20%	30% to 70%	Control or Bid/ Tender
Class 1	Low: -3% to -10% High: +3% to +15%	50% to 100%	Check Estimate or Bid/Tender

Source: The Association for the Advancement of Cost Engineering (AACE) International Recommended Practice No. 18R-97.

Problem Statement

Revenues

- Declines began in summer of 2019
- Commercial declines became more pronounced during COVID
- Residential (both single-family and multifamily) have stabilized at a lower level
- Lower sales and collection challenges could reduce effective revenue by over \$12 million in the biennium

Costs

- Actual costs are higher than planned
- Within the normal range for projects of this type and complexity
- We're still early in the program, a lot of construction risk is still to come

Strategies Analyzed

#	Risk Level	Description	Fiscal Year Ending ^[1]					
			2022	2023	2024 [2]	2025 [2]	2026	2027
1	Most Risk	Scenario presented at January Board Mtg.	7.5%	7.5%	7.5%	7.5%	3.6%	3.6%
2	Less Risk	Same costs as #1; build financial capacity in next biennium.	9.5%	9.5%	4.4%	4.4%	3.75%	3.75%
3	Least Risk	Same rates as #2 and reduce WWSP outlays.	9.5%	9.5%	3.6%	3.6%	3.6%	3.6%

[1] Rate adjustments projected for Nov. 1 of each fiscal year (i.e., rates adjusted on 11/1/2021 for FY2022).

[2] Scenarios 1b and 3b do not meet TVWD's net leverage target in FY2024 and FY2025, respectively.

Financial Strategies

Strategy 1 – Baseline

- Forecast of even rate increases funding capital program
- Does not provide additional financial capacity
- Presented at the January Board meeting
- Less likely to achieve rate stability

Strategy 2 – Higher Rate Increases Now

- Baseline funding of capital program
- Requires higher rate increases this year
- Increases financial capacity
- More likely to achieve rate stability

Strategy 3 – Higher Rate Increases with Reduced Capital

- Higher near-term rate increases
- Reduce WWSP capital outlays by deferring some beyond 2030
- Increases financial capacity the most
- Most likely to achieve rate stability

But Uncertainty Persists



Things you
know



Things you
know you don't
know



Things you
don't know you
don't know



Things you
thought you
knew but didn't



Discussion of Strategies

Identifying Financial Strategies

Board Finance Committee

February 16, 2021

Proposed Schedule

Financial Plan Adoption

- Preparation of Financial Strategies
 - February 16 – Board Finance Committee
 - February 17 to March 1 – Brief Other Board Members
 - March 17 – Selection of Financial Strategy by Board
- Preparation of Financial Plan
 - March 18 to April 13 – Prepare draft Financial Plan
 - April 18 – Board Adopts Financial Plan

Budget Adoption

- Budget Committee Actions
 - March 23 – Workshop #1
 - April 8 – Workshop #2
 - April 22 – Workshop #3
 - May 25 – Budget Committee Formal Meeting
- Board Adoption
 - June 16 – Board Adoption

Questions and Answers

Board Finance Committee

February 16, 2021

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Willamette Water Supply Commission Update
TVWD Work Session

March 2, 2021

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Outline

Review March WWSS Commission Board Meeting Agenda → Review Approvals and Procurements Forecast → Update on WWSP Activities

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REVIEW MARCH WWSS COMMISSION BOARD MEETING AGENDA

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Willamette Water Supply System Commission March 4, 2021 Board Meeting Agenda

1. General Manager's Report
2. Public Comment
3. Consent Agenda
 - A. Approve the February 4, 2021 meeting minutes
4. Business Agenda
 - A. Adopt MPE_1.1/COB_1.1 City of Beaverton Construction IGA
 - B. Adopt MPE_1.2/COB_1.2 City of Beaverton Construction IGA Amendment 1
 - C. Approve Amendment to Permitting Services Contract for Next One-Year Period
 - D. Approve (as Local Contract Review Board, or LCRB) Special Procurement for DCS_1.0 Panel Fabrication Services
5. Information Items
 - A. Planned April Business Agenda items

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REVIEW APPROVALS AND PROCUREMENTS FORECAST

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Approvals and Procurement Forecast for February 2021 – April 2021

Program Baseline or Related Plans

Description	Program Director	WWSS Management Committee	WWSS Commission Board
WWSP Annual Baseline Schedule and Budget	NA	3/18/2021	4/1/2021
WWSS Fiscal Year 2021-2022 Work Plan and Budget	NA	3/18/2021	4/1/2021

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Background and Drivers for Considering Alternatives to Reduce WWSP Cost

- Response to COVID-19 impacts on Partners’ revenue
- Partners’ desire to limit potential for inter-annual variations in Baseline cost estimates
- Need to address drivers before extensive construction procurements throughout 2021

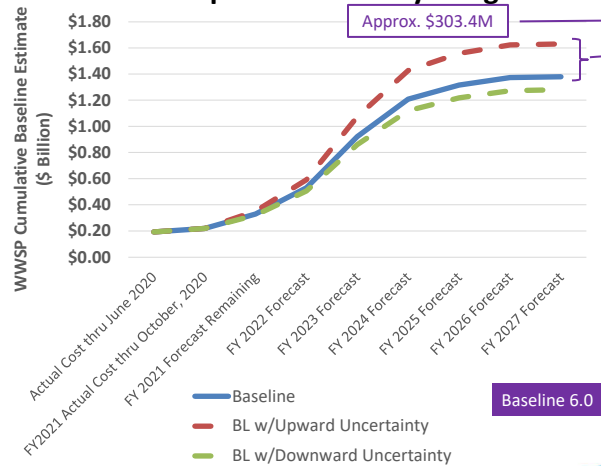
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Why now? How much cost uncertainty exists?

Planned Construction Procurements during 2021

Calendar Quarter	Quantity of Planned Procurements	Projects
Q1 2021	4	<ul style="list-style-type: none"> • MPE_1.1/COB_1.1 • MPE_1.2/COB_1.2 • PLM_4.1 • PLM_4.4 (move to Q3?)
Q2 2021	3	<ul style="list-style-type: none"> • PLW_2.0/COH_1.0 • PLM_4.2 • PLM_4.3
Q3 2021	2	<ul style="list-style-type: none"> • RES_1.0/PLM_5.3 (GMP bidding) • PLW_1.2
Q4 2021	2	<ul style="list-style-type: none"> • PLM_1.3 • MPE_1.3

Underlying Estimate Uncertainty Based on AACEI Expected Accuracy Range



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<h2 style="text-align: center;">Alternatives Summary</h2> <p style="text-align: center;">(approximate cost reduction through FY2026)</p>					
Alt. 1 (\$29.4M)	Alt. 2.1 (\$55.7M)	Alt. 2 (\$73.6M)	Alt. 3 (\$121.1M)	Alt.4 (\$152.7M)	Alt. 5 (\$171.3M)
<ul style="list-style-type: none"> • In service 6/30/26 (no float) • WTP delayed 6 months • PLW_2.0 COH turnouts & TVWD PRV facility deferred • Fiber cable deferred • Staffing modifications 	<ul style="list-style-type: none"> • In service 6/30/26 (no float) • WTP delayed 6 months • PLW_2.0 (except OWNPN & Berm) delayed 45 months (1/31/28) • Fiber cable deferred • Staffing modifications 	<ul style="list-style-type: none"> • In service 6/30/26 (no float) • WTP delayed 6 months • PLW_2.0 (except OWNPN & Berm) delayed 45 months (1/31/28) • One RES_1.0 tank deferred • Fiber cable deferred • Staffing modifications 	<ul style="list-style-type: none"> • In service 6/30/26 (float preserved) • PLW_2.0 (except OWNPN & Berm) delayed 45 months (1/31/28) • PLM_5.3 north of RES_1.0 deferred • One RES_1.0 tank deferred • Fiber cable deferred • Staffing modifications 	<ul style="list-style-type: none"> • In service 9/30/27 (no float) • WTP delayed 21 months • PLW_2.0 (except OWNPN & Berm) delayed 54 months (10/31/28) • One RES_1.0 tank deferred • Fiber cable deferred • Staffing modifications • MR reduced 	<ul style="list-style-type: none"> • In service 12/31/27 (no float) • WTP delayed 24 months • PLW_2.0 (except OWNPN & Berm) delayed 54 months (10/31/28) • One RES_1.0 tank deferred • Fiber cable deferred • Staffing modifications • MR reduced
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<h2 style="color: #0070c0;">Next Steps</h2>
<ul style="list-style-type: none"> • Complete Baseline 6.1 and FY2022 Annual Work Plan/Budget <ul style="list-style-type: none"> – Feb. 26 – Distribute draft for Management and Finance Committee review – Mar. 1 – Collect Operations Committee input – Mar. 4 – Management Committee to make preliminary selection – Mar. 15 – Submit final draft in Management Committee packet – Mar. 18 – Request Management Committee approval – Apr. 1 – Request WWSS Board approval • Develop implementation plan for Preferred Alternative/Baseline 6.1 <ul style="list-style-type: none"> – Throughout Q2 2021
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Approvals and Procurement Forecast for February 2021 – April 2021

Real Estate

Description	Program Director	WWSS Management Committee	WWSS Commission Board
MPE_1.2 Resolution of Need (3 rd supplemental)	NA	3/18/2021	4/1/2021
PLM_1.3 Resolution of Need	NA	4/22/21	5/6/2021

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Approvals and Procurement Forecast for February 2021 – April 2021

IGAs, MOUs, Permit Commitments

Metro and City of Hillsboro

- Settlement Agreement For Easement Through the Orenco Woods Nature Park (April)

City of Beaverton

- MPE_1.1/COB_1.1 Construction IGA (March)
- MPE_1.2/COB_1.2 Construction IGA Amendment 1 (April)

City of Sherwood

- DCS_1.0 Broadband Services IGA (April)

Washington County Land Use & Trans

- PLM_4.2 Design IGA Amendment 2 (November)
- Master IGA Amendment 1 (April)
- RES_1.0 Grabhorn Road Realignment IGA (April)
- PLM_4.1 Construction IGA (April)
- PLM_4.4 Construction IGA (May)
- PLM_4.2 Construction IGA (May)

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Approvals and Procurement Forecast for February 2021 – April 2021

Contracts

Title	Goal	Value	Key Dates
None	--	--	--

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Approvals and Procurement Forecast for February 2021 – April 2021

Contract Amendments and Change Orders*

Title	Goal	Value	Key Dates
Real Estate Services	Updated scope to address revised property counts and staffing	\$707k	WWSS Board Approval: 2/4/2021
WTP_1.0 Design Contract Amendment	Amend contract to reflect Sherwood land use requirements in 100% design	\$705k	WWSS Board Approval: 2/4/2021
Water Supply Integration	Add integration plans	~\$300k	WWSS Board Approval: 3/4/2021
Permitting Services	Extend DEA's contract through February 2022 and add budget to cover continued services during this period	~\$2M	WWSS Board Approval: 3/4/2021

*having values higher than the Program Director's authority

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Approvals and Procurement Forecast for February 2021 – April 2021

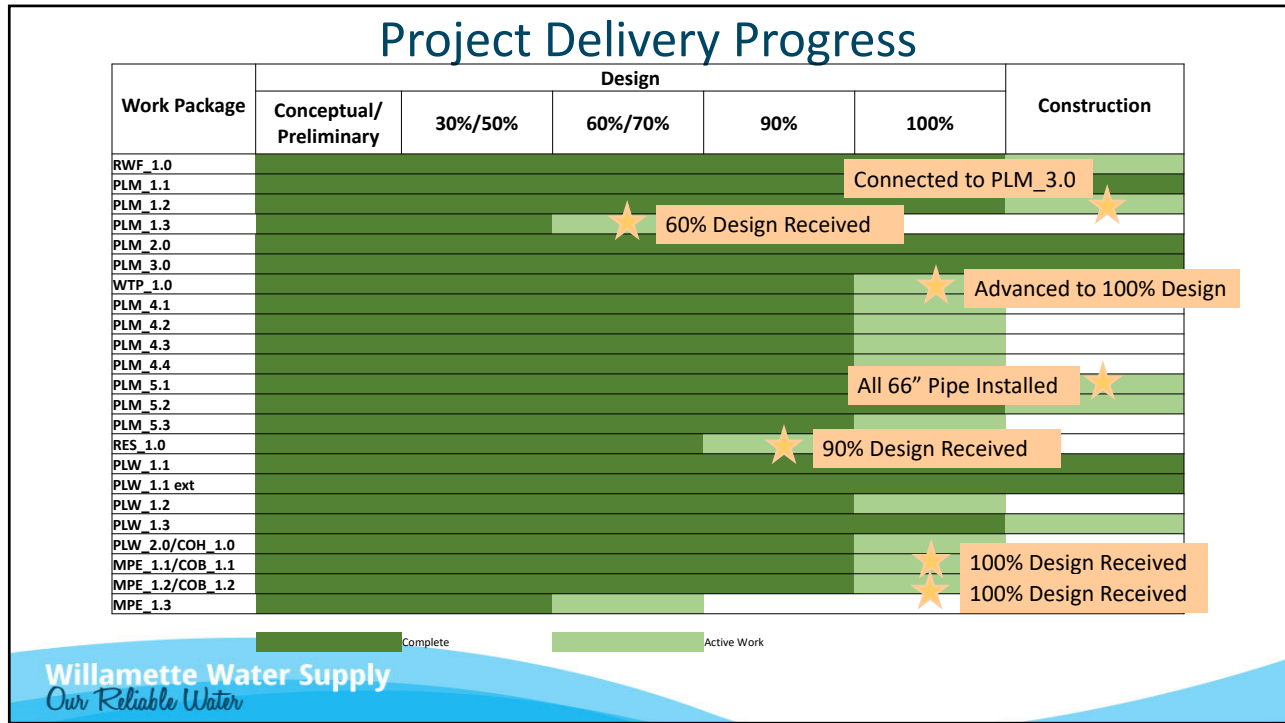
Local Contract Review Board Rule Exemption

Title	WWSS Management Committee Approval	WWSS Board Informational Item	WWSS Board Consider Approval
DCS_1.0 Panel Fabrication Services Special procurement for panel fabrication services	2/18/2021		3/4/2021

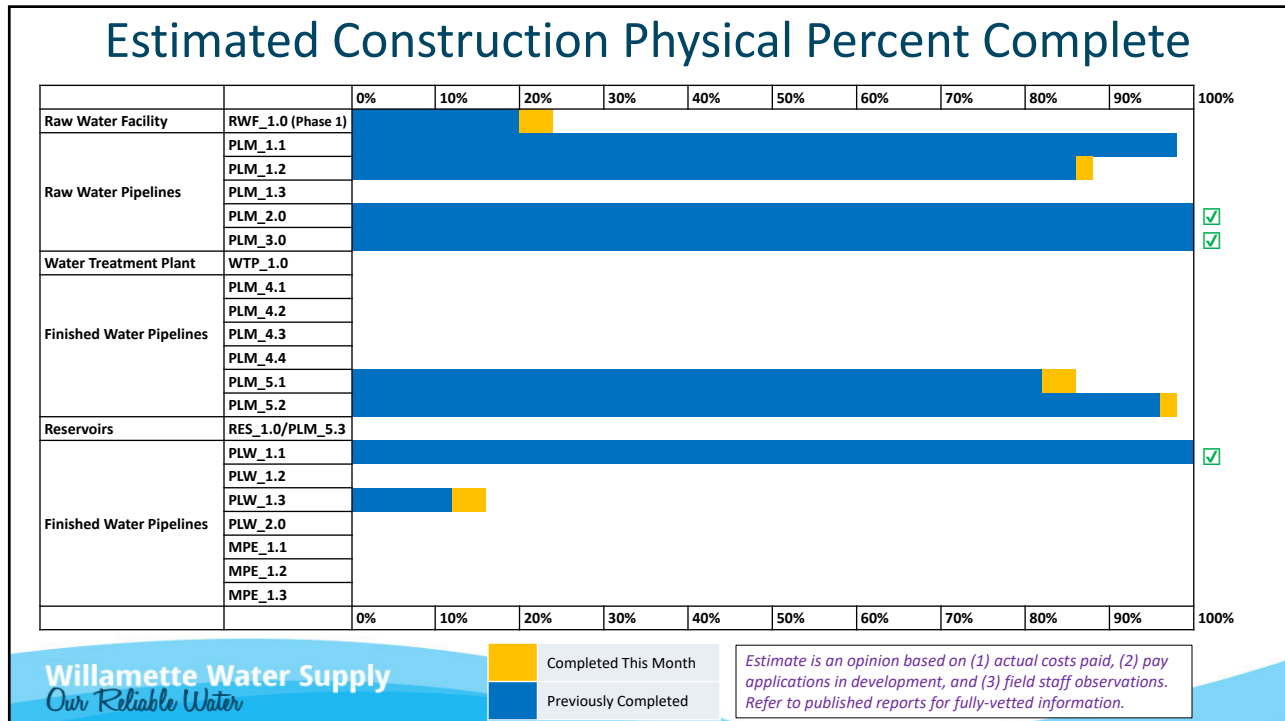
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UPDATE ON WWSP ACTIVITIES

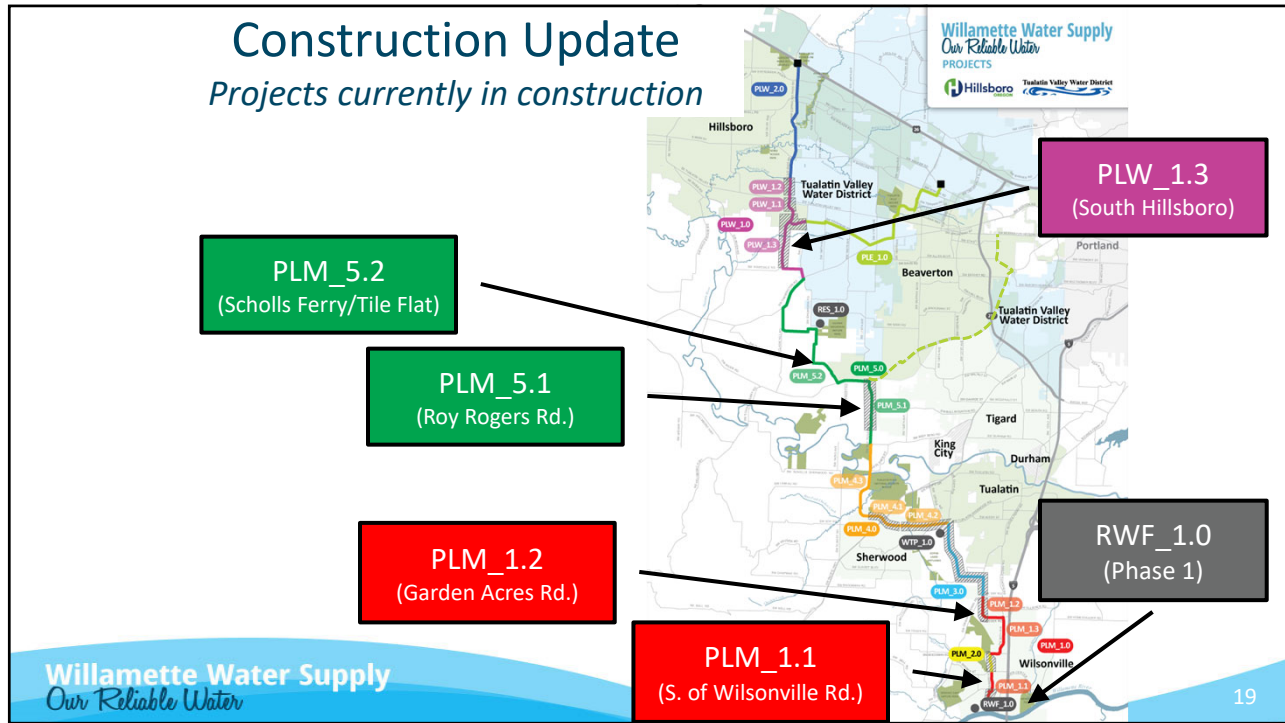
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RWF_1.0

Contractor: Kiewit Infrastructure West Co.
Designer: Black & Veatch

Current and Planned Activities:

- Completed Deep Soil Mixing (DSM) at Caisson Zone.
- Began work on DSM elements at Transition Zone.
- Jet Grouting began.
- Began excavation at trenchless launch shaft.
- Began excavation at trenchless receiving shaft.
- Removed existing Raw Water Pump #2 and sent to shop for inspection and rehabilitation if necessary.

RWF_1.0: Raw Water Facilities
Construction: 2020-2024

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Construction Photos – RWF_1.0

Removing Raw Water Pump #2 to send for evaluation and rehabilitation.



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Construction Photos – RWF_1.0

Excavation of pipe ram sending shaft after secant pile rework.



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Construction Photos – RWF_1.0

Pipe Ram Receiving Shaft



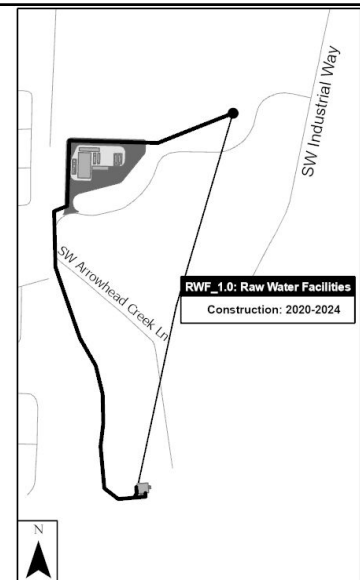
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RWF_1.0 Notable Topics

- **External Coordination**
 - Continued coordination w/City of Wilsonville and Veolia Operations staff.
 - Continued coordination with nearby neighbors and public. Neighbor complaints about damage caused by vibration.
- **Potential Claims**
 - Differing site condition claim from Condon-Johnson on soil properties at DSM and jet grouting areas
 - Differing site condition notice from JW Fowler on hydraulic conductivity of soils at tunnel
- **Delivery Challenges**
 - Rework required at the trenchless launch shaft
 - DSM and Jet Grout issues impacting schedule



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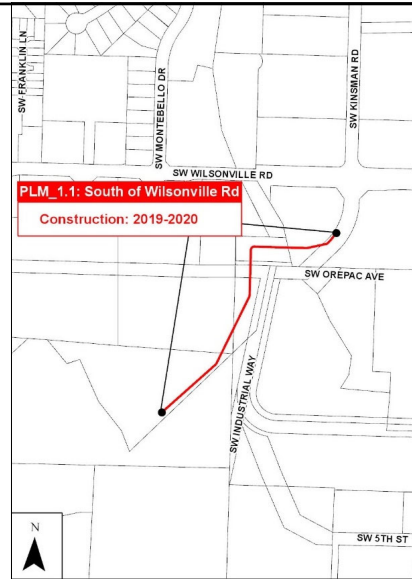
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PLM_1.1

Contractor: James W. Fowler Co.
Designer: HDR

Current and Planned Activities:

- Project complete. Punch list items complete.
- Final paving striping completed on Kinsman
- Cathodic Protection system activated and tested.
- Potential additional work required in drainage swale by City.
- Final paperwork and project closeout in progress.



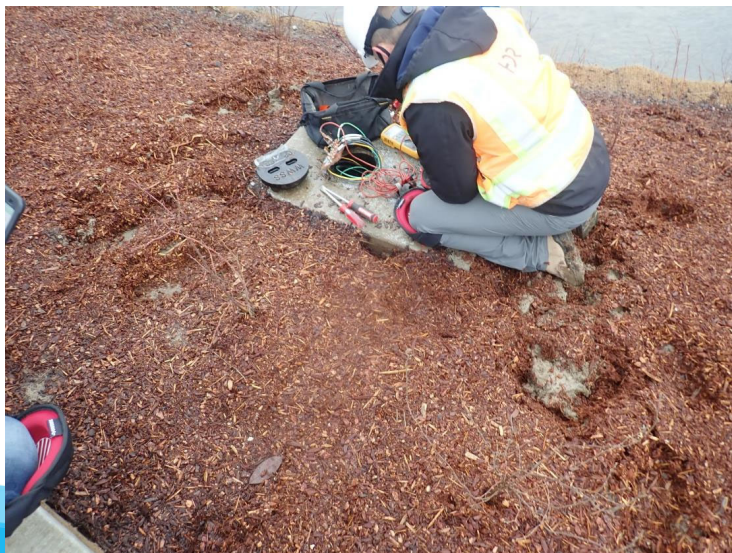
Construction Photos – PLM_1.1

Final roadway striping repair on Kinsman



Construction Photos – PLM_1.1

Design Engineer performing corrosion protection testing and gathering baseline readings



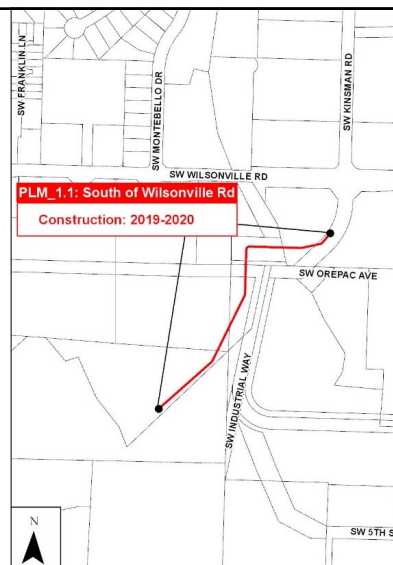
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PLM_1.1 Notable Topics

- External Coordination
 - None
- Potential Claims
 - None
- Delivery Challenges
 - Settlement of Boulder PCO



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PLM_1.2

Partner: City of Wilsonville
 Contractor: Moore Excavation Inc.
 Designer: HDR

Current and Planned Activities:

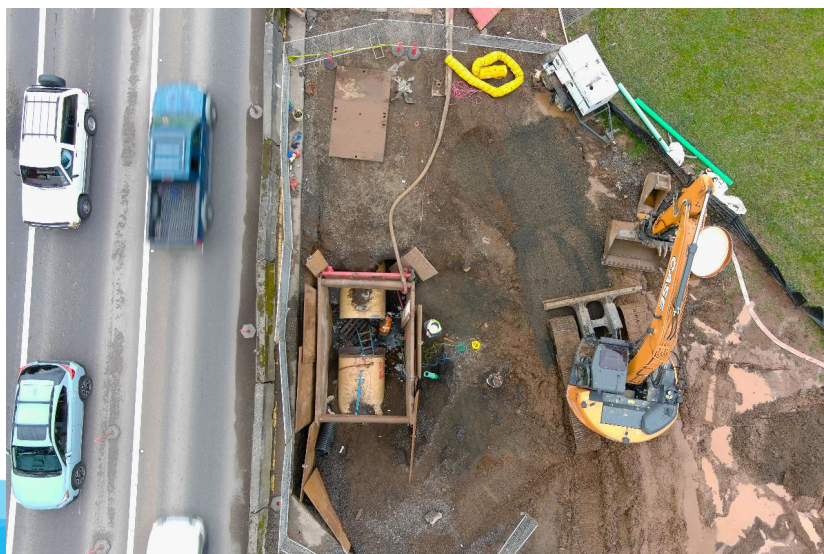
- Completed activation of cathodic protection system
- PLM_1.2 to PLM_3.0 final tie-in
- Finish grading and restoration north of Day Rd.
- Setting WWSS appurtenances after completion of Schedule A sitework and landscaping



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Construction Photos – PLM_1.2

PLM_1.2 tie-in to PLM_3.0



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Construction Photos – PLM_1.2

Welding interior of tie-in spool
for connection to PLM_3.0



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Construction Photos – PLM_1.2

Garden Acres Rd.
Schedule A work remaining



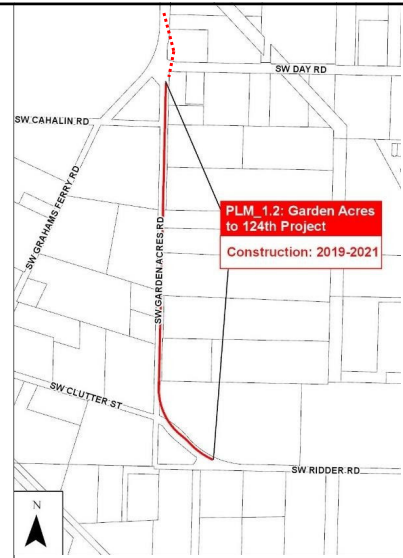
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PLM_1.2 Notable Topics

- Partner Coordination
 - Ongoing coordination with City of Wilsonville
- Potential Claims
 - None
- Delivery Challenges
 - Contractor requested time extension



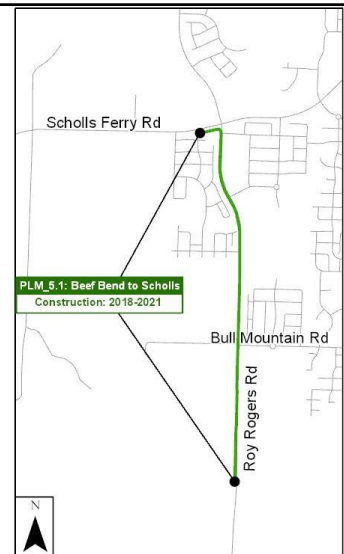
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PLM_5.1

Partner: Washington Co.
Contractor: Tapani, Inc.
(Moore Excavation Inc. – Waterline Sub)
Designer: Jacobs

Current and Planned Activities:

- Completed installation of all 66" pipe.
- Continued installation of CP systems, air vault assemblies and access vaults.
- 18" Tigard Turnout piping and associated vault construction upcoming.
- Interior joint grouting for all 66" pipe



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Construction Photos – PLM_5.1

Final two pieces of 66" pipe to be installed
(Project ends at UGB)



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Construction Photos – PLM_5.1

Completion of air valve vault in foreground.
Tigard turnout (Friendly Lane) in distance.



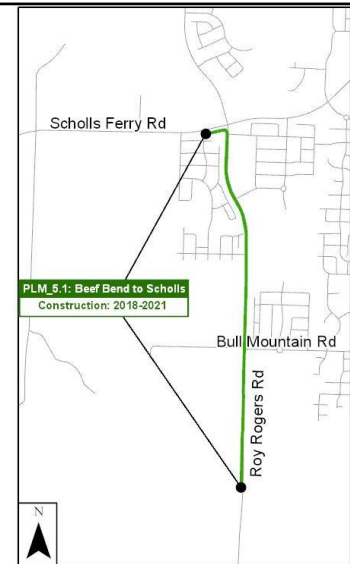
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PLM_5.1 Notable Topics

- Partner Coordination
 - Continued developer coordination
 - No issues with Washington County coordination
- Potential Claims
 - None
- Delivery Challenges
 - None



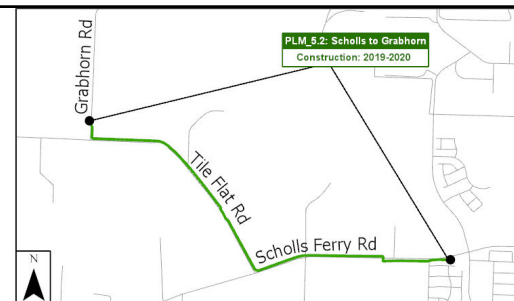
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PLM_5.2

Contractor: Emery & Sons
Designer: Jacobs

Current and Planned Activities:

- Complete property restoration
- Close project permits
- Complete Punch List
- Satisfy Final Completion Requirements



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Construction Photos – PLM_5.2

Erosion Control at Project End



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PLM_5.2 Progress Status

- Construction Cost (Emery & Sons)
 - Total contractor price \$15,056,518
 - Total cost to date (Jan) \$14,627,745
 - Percent complete 97.15%
- Construction Schedule
 - Construction NTP June 28, 2019
 - Substantial completion date December 11, 2020
 - Final completion date March 4, 2021
- Change Orders
 - Change orders to date \$192,686
 - Percent of original price 1.0%



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PLM_5.2 Notable Topics

- External Coordination
 - Permitting
 - DEQ 1200C permit closeout 12/15/2020 (pending confirmation)
 - City of Beaverton permit closeout
- Potential Claims
 - Property owner requesting restoration of private road.
- Delivery Challenges
 - PCO issued for pipeline markers. Lead time may delay final completion.



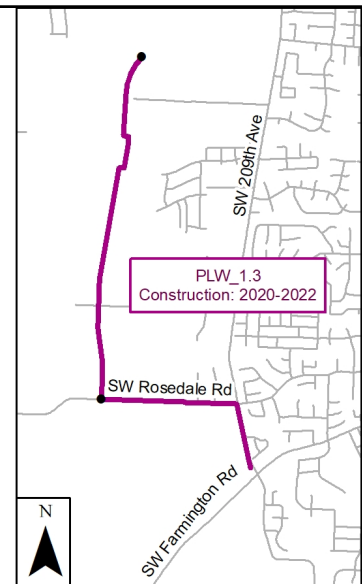
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PLW_1.3

Contractor: Tapani, Inc.
Designer: Kennedy/Jenks

Current and Planned Activities:

- Approximately 700 feet of 30-inch TVWD Turnout pipe installed
- Microtunnel launch shaft secant pile construction complete, excavation ongoing
- Microtunnel receiving shaft secant pile ongoing



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Construction Photos – PLW_1.3

Microtunnel receiving shaft
north of Butternut Creek.
Looking south



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Construction Photos – PLW_1.3

Microtunnel launch shaft
excavation



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Construction Photos – PLW_1.3

30-inch ductile iron pipe on
Rosedale Rd.



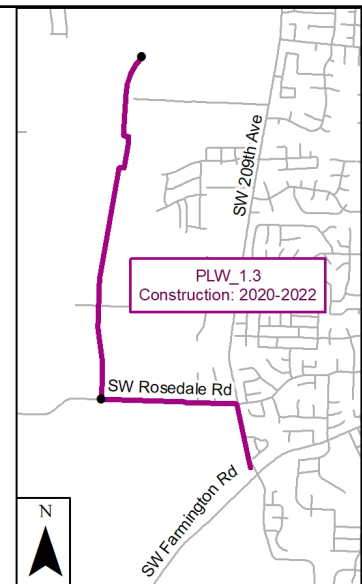
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PLW_1.3 Notable Topics

- External Coordination
 - Neighborhood / Resident outreach
 - PGE and OR-OSHA Consultation on Overhead Wires
- Potential Claims
 - None
- Delivery Challenges
 - Unmarked / Poorly Marked utility crossings



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QUESTIONS

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Final Lead and Copper Rule (LCR) Revisions
Potential Impacts to TVWD

Joel Cary & Carrie Pak, PE
Water Resources Division Manager & Chief Engineer

Tualatin Valley Water District
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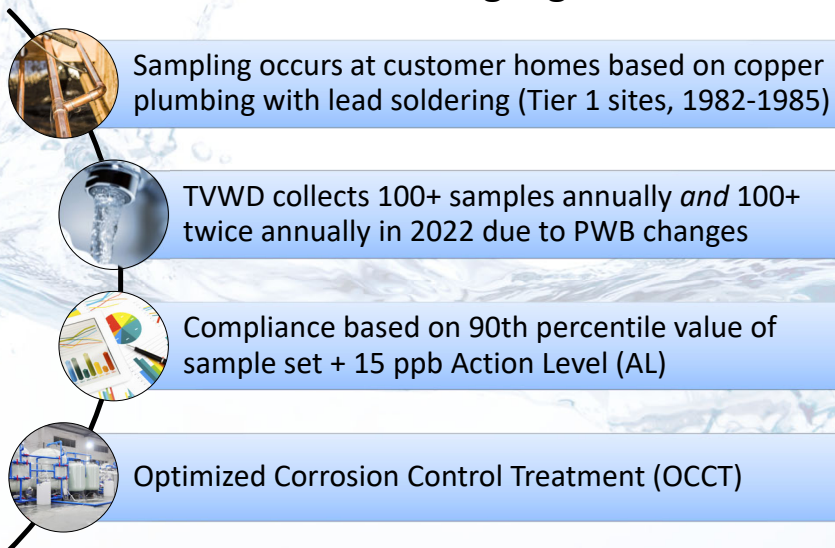
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Informational Presentation Outline

- Lead and Copper Rule (LCR) recap
- Final LCR Revisions – major components
- Timeline for implementation and compliance
- Shorter-term response: lead service line inventory
- Longer-term impacts
- Potential next steps
- Q&A

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Current LCR Highlights



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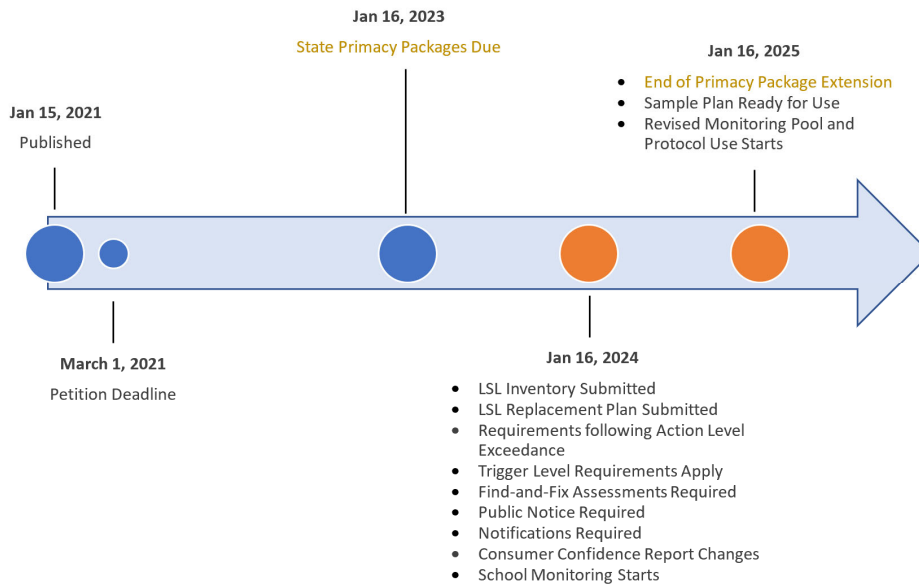
Final LCR Revisions – What’s Changing?

- **A lot, actually – newly required elements:**
 - Lead service line (LSL) inventory
 - Sampling no longer based on Tier 1 Homes (shifts to LSL focus)
 - Requires sampling of schools and childcare by water systems
 - “Find and fix” provisions
 - Notification timelines changes (e.g., 24 hours for AL exceedance)
 - Trigger level added below current action level (10 parts per billion)



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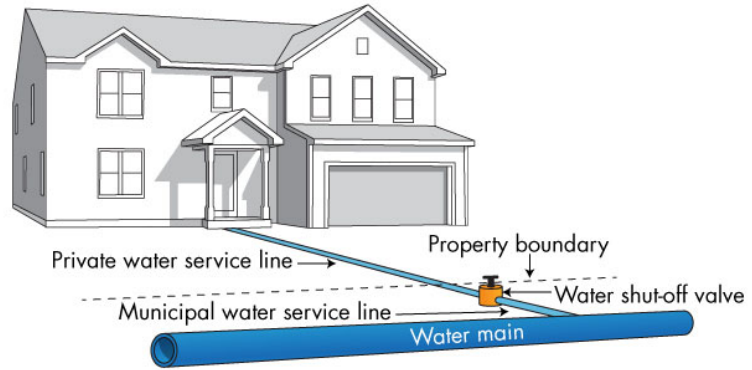
Timeline – Important Milestones



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Short-Term Response: What Do We Need To Start Now?

- Service line inventory within three (3) years
- Must include:
 - Lead service lines (LSL), partially galvanized, unknown, non-lead*
 - **Both public and private side** (see example graphic)



**Note: Multiple definitions in LCR Revisions*

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Short-Term Response: Continued

What Else Happen First?

- Data publicly available (online) for large systems
- Updated annually unless no LSLs identified
- Develop replacement plan for LSLs/unknowns
- **Notice to all customers with LSL, partial galvanized, or unknowns within 30 days of inventory completion (Jan 2024)**
- Information included in Consumer Confidence Report

Initial Inventory Approaches

- Water system records, such as distribution system maps and drawings, installation and maintenance records
- Plumbing codes, permits, and tax records
- Key historical dates to define materials:
 - ✓ 1985 lead ban
 - ✓ Past TVWD Design Standards
- Direct investigation if necessary (e.g., dig-up, potholing)

Potential Opportunities

- During water main repair or replacement
- During meter reading or replacement*
- In-home inspection, where possible, by customer or utility
- Options TBD

**See next slide, some progress already made in this area*



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Next Steps – Where Do Go From Here?

- Drafting roadmap/plan for initial service line inventory work (**within next month**)

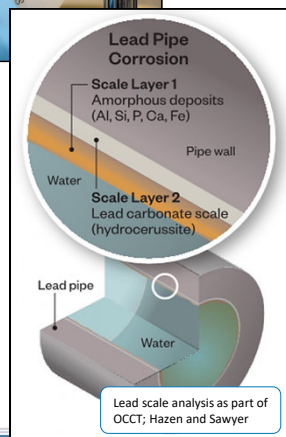
- Already have “private service line material” field in meter assessment process within GIS (**COVID-19 workload planning**)*

- Developing add package for Board consideration in draft 21-23 Budget (**now**)

- Considering consulting and outreach services to assist over next three (3) years (**now through 21-23 Budget adoption**)

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Oregon
Health
Authority



Longer-Term Elements

- **The Final LCR Revisions are complex. Staff are continuing to review details and communicate with industry peers and experts. TVWD Board will be updated again.**
 - Oregon Health Authority guidance needed, but we can't wait
 - School sampling, “find and fix” provision, new notification steps, etc., all likely to have an impact on resources needed
 - OCCT changes in the revisions already being evaluated and addressed as part of the WWSS and Water Supply Integration project

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Conclusion: This is a Big Deal

- LCR already complex given unique customer-utility interface
- One of the largest rule changes under EPA's Safe Drinking Water Act in nearly 30 years
- Aimed at providing further public health protection from lead exposure
- **Will require both short-term *and* long-term resource needs for TVWD (staffing priorities, outreach, IT, etc)**
- All industry guidance to-date is "don't wait," developing an LSL inventory will take time and resources

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Questions and Answers

Thank-you!

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District Cybersecurity Update

March 2, 2021

Tim Boylan

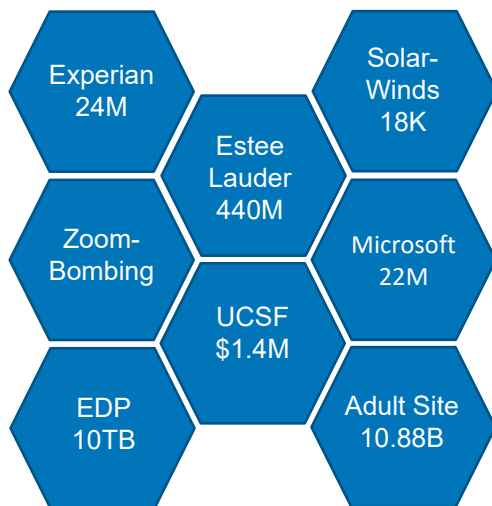
Director of IT Services

Tualatin Valley Water District

 Delivering the Best Water 💧 Service 💧 Value

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2020 In Cyber Security



A transformational year....

- Working from home
- Online classes
- Surge in online commerce
- Delivery-based businesses

....saw an accompanying increase
in cyber security incidents.

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Local and Industry Attacks



- Government systems infected with malware.
- Computers and phones were taken offline.
- County paid \$300,000 in ransom.
- Systems were offline for around two weeks.



- Unauthorized access to treatment plant SCADA.
- Settings changed to allow increased level of sodium hydroxide into the system.
- Operators watching the application saw the change and corrected the situation.

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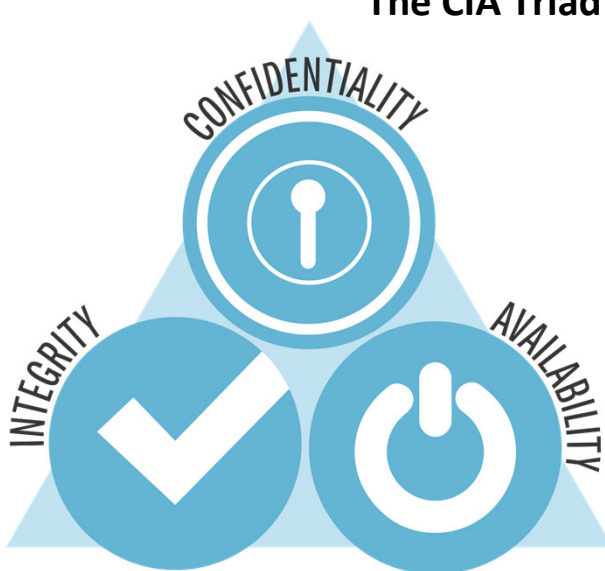
TVWD Security Framework





- Standards as Guide
 - ISO 27000
 - NIST Cybersecurity Framework
 - AWWA Cybersecurity Tool/Guide
- Layered Security Elements
 - Perimeter Security (Firewalls)
 - Access Controls (User ID/Password)
- Monitoring
 - Penetration Testing
 - Auditing
 - Alerting

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The CIA Triad Philosophy



- Confidentiality
 - Data is protected
 - Only authorized users
- Integrity
 - Data is maintained
 - No improper modification
- Availability
 - Data is available when needed

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Current and Emerging Threats

Current Threats


- ❖ Phishing
- ❖ Malware/Ransomware
- ❖ Data Leakage



Countermeasures

- ❖ Education & Awareness
- ❖ MFA / Password Changes
- ❖ Scanning / Detection Software
- ❖ Perimeter Security

Emerging Threats

- Fakes / Deep Fakes
- Smartphones Attacks
- Supply Chain Attacks



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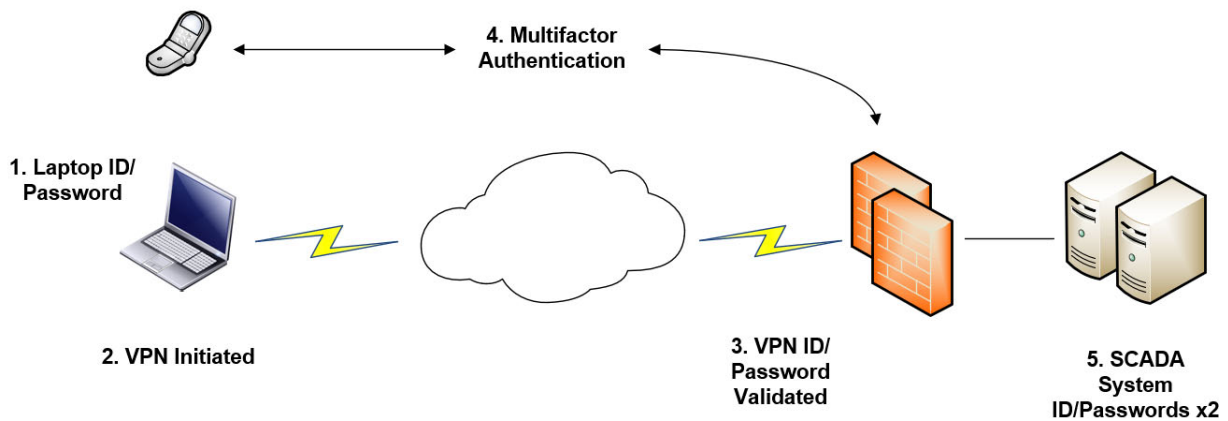
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TVWD vs Oldsmar

Element	Oldsmar	TVWD
Network	<ul style="list-style-type: none"> • Direct connection 	<ul style="list-style-type: none"> • Dedicated, protected network for SCADA
Firewall(s)	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Perimeter – VPN and public filter • Internal – Zone/network filter
VPN for Remote Access	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Encrypted • Multifactor Authentication • MFA Logging / Auditing
Target PC (HMI)	<ul style="list-style-type: none"> • Outdated • Directly connected to Internet 	<ul style="list-style-type: none"> • Targeted Updates • Behind firewall
Password Security	<ul style="list-style-type: none"> • Shared TeamViewer Password • Not regularly changed 	<ul style="list-style-type: none"> • Individual IDs/passwords for HMI • Limited access to Server • Role-based access • No enforced Change frequency w/in SCADA
Operator	<ul style="list-style-type: none"> • Operator noticed mouse movement indicating intruder 	<ul style="list-style-type: none"> • Limited “eyes on”

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Layered Security Model In Action



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Questions?

