

Six years in: developing the Willamette Water Supply System

AWWA PNWS Virtual Training | August 12, 2021

Joelle Bennett, PE | WWSP Assistant Director

Agenda

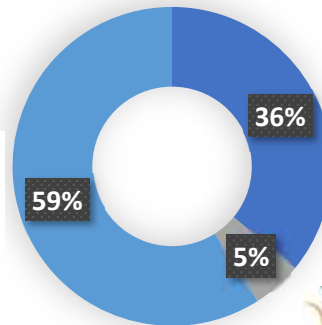
- Intro to Willamette Water Supply Program
- Where we left off
- Major changes along the way
- Lessons learned
- Next steps
- *Construction photos!*

Willamette Water Supply
Our Reliable Water Future



Willamette Water Supply Program

1. Modified water intake
2. New water treatment plant
3. 30+ miles of large diameter pipeline
4. Water storage tanks



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Willamette Water Supply Program

Preparing for the future

*Metro predicts more than 200,000 additional people living in Washington County by 2040.**

*Based on 2016 Metro forecast. (2016 Pop. 566,000)



Building a secure drinking water future



- ✓ *Earthquake resilient*
- ✓ *Alternative source during a drought*
- ✓ *Back-up if one source has water quality issues*

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Polling question:

How many agencies are partnering to develop the Willamette Water Supply System?

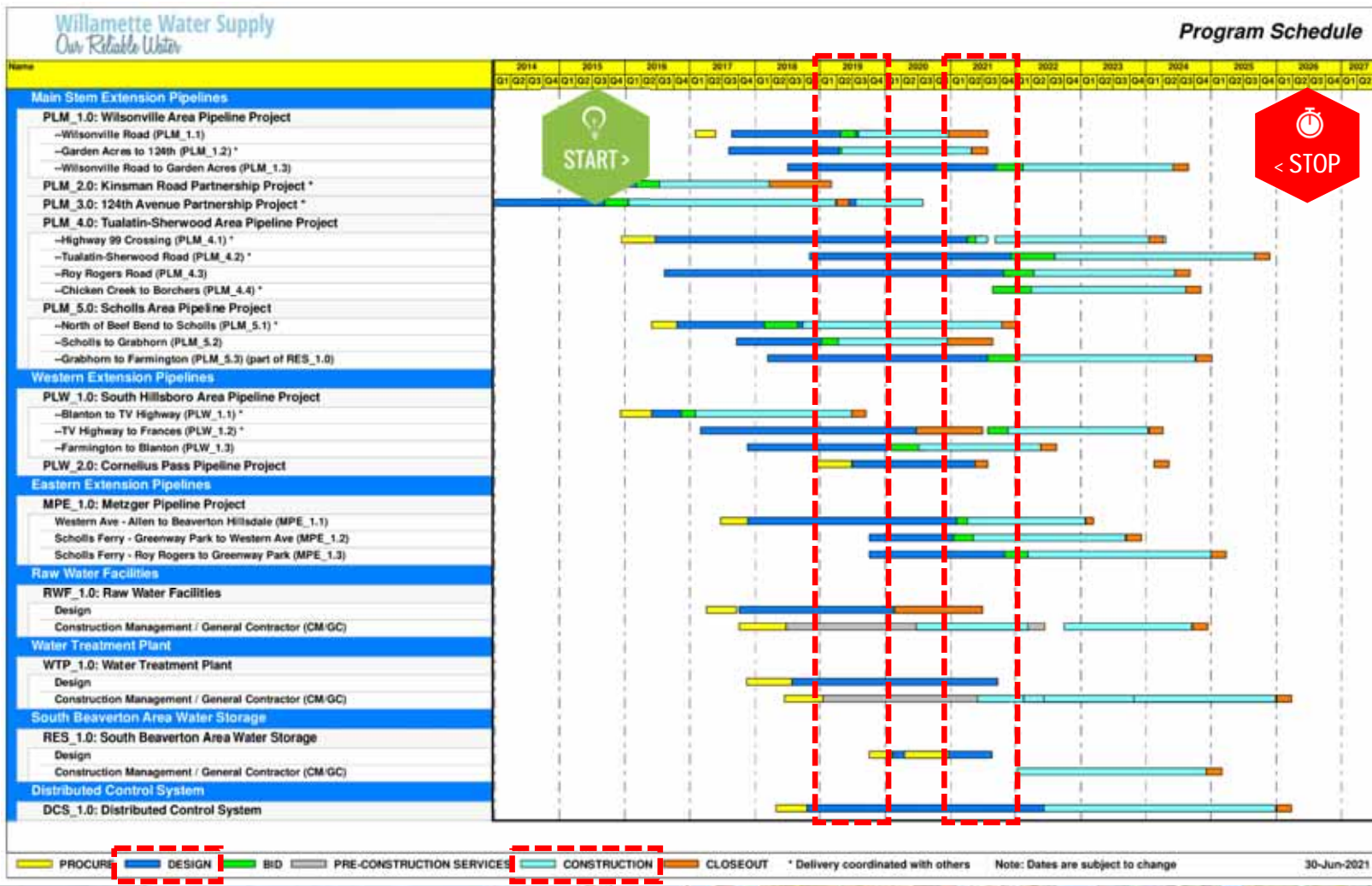
- A) one
- B) two
- C) three
- D) four

Answer: C) three

Willamette Water Supply
Our Reliable Water Future



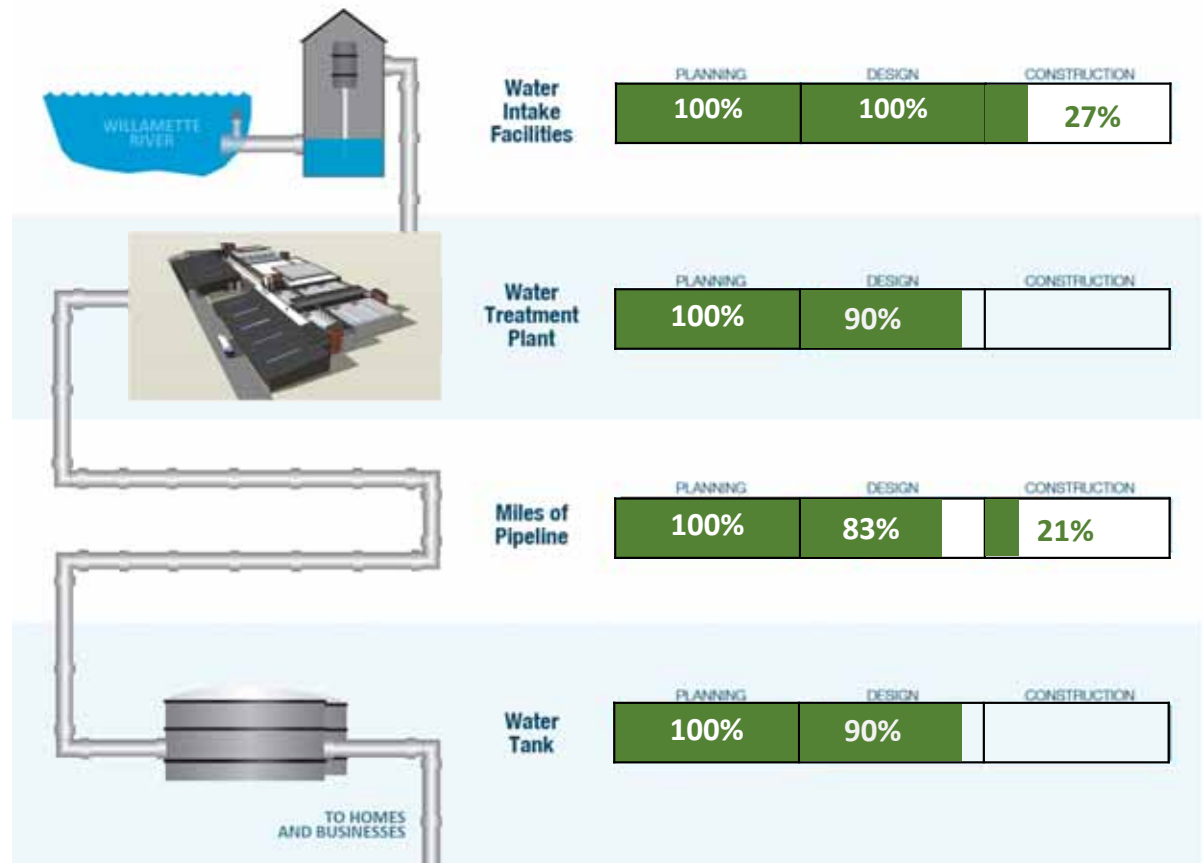
Where we
left off:



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Progress Update

We are on schedule to meet our 2026 completion date

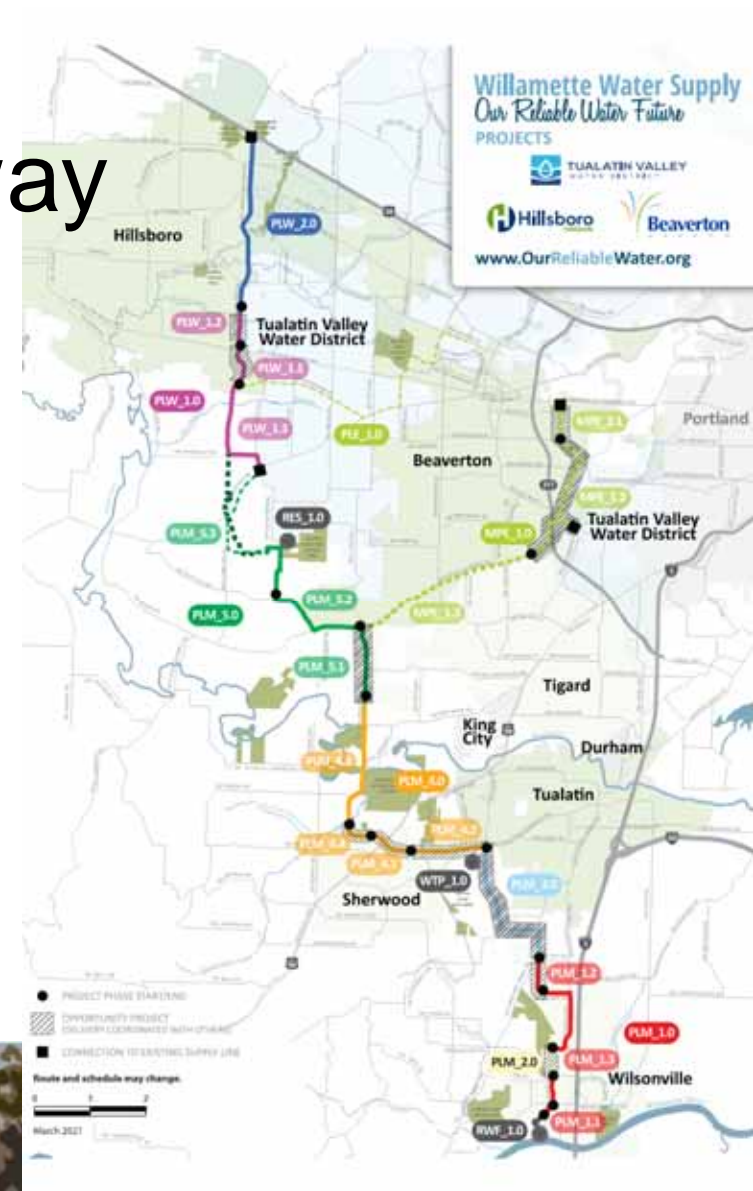


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Major changes along the way

- Moved WTP locations
- Federal permitting delays
- Pipeline realignments
- Added partnered projects
- Significant design changes
- Low bid to alternative delivery
- Deferred projects to reduce costs

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Managing changes

| | Planning, Design & Construction | Permitting & Public Involvement | Oversight, Risk, Real Estate, Governance, & Agreements | Finance, Controls & Administration | Safety & Security | External Partnerships |
|-----------------------------------|---------------------------------|---------------------------------|--------------------------------------------------------|------------------------------------|-------------------|-----------------------|
| Moved WTP locations | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Federal permitting delays | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Pipeline realignments | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Added partnered projects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Significant design changes | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Low bid to alternative delivery | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Deferred projects to reduce costs | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

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Lessons learned

- Plan ahead
- Communicate
- Build partnerships
- Maintain the highest safety standards



Next steps



- Transition from design to construction
- Operations planning and commissioning and start-up planning
- Finish on-time and on-budget

Polling question:

In project management, whether small or huge projects, how can we best manage change?

- A) Ignore change and hope it goes away
- B) Work in my silo, the only group affected is mine
- C) Utilize my Jump to Conclusions Mat
- D) Be ready for it and take a multidisciplinary approach



Answer: D) Be ready for it and take a multidisciplinary approach

The background of the slide is a photograph of a dense evergreen forest in the foreground, with rolling mountains visible in the distance under a clear sky. The image is slightly blurred, giving it a soft, natural feel.

Construction photos!

Willamette Water Supply
Our Reliable Water Future

CORNELIUS PASS RD PIPELINE PROJECT
FRANCES ST TO HIGHWAY 26

PLW_2.0
(PIPELINE WEST)

3.3 MILES

PLW_2.1 CORNELIUS PASS RD PLW_2.1
CONSTRUCTION ANTICIPATED TO BEGIN IN 2023

PLW_2.2 CORNELIUS PASS RD PLW_2.2
CONSTRUCTION ANTICIPATED TO BEGIN IN 2028

SOUTH HILLSBORO AREA PIPELINE PROJECT
FARMINGTON RD TO FRANCES ST

PLW_1.0
(PIPELINE WEST)

4.0 MILES

PLW_1.1 KINNAMAN RD TO TV HWY
(SOUTH HILLSBORO DEVELOPMENT)
CONSTRUCTION COMPLETED - 2018

PLW_1.2 TV HWY TO FRANCES ST
(WASHINGTON COUNTY)
CONSTRUCTION: 2022 - 2028

PLW_1.3 FARMINGTON RD TO KINNAMAN RD
CONSTRUCTION: 2020 - 2022

SCHOLLS FERRY RD AREA PIPELINE PROJECT
NORTH OF BEEF BEND RD TO ROSEDALE RD

PLM_5.0
(PIPELINE MAIN)

7.0 MILES

PLM_5.1 NORTH OF BEEF BEND RD TO SCHOLLS FERRY RD
(WASHINGTON COUNTY)
CONSTRUCTION: 2018 - 2021

PLM_5.2 SCHOLLS FERRY RD TO GRABHORN RD
CONSTRUCTION COMPLETED - 2021

PLM_5.3 GRABHORN RD TO ROSEDALE RD
CONSTRUCTION: 2022 - 2025

TUALATIN-SHERWOOD AREA PIPELINE PROJECT
SAR 124TH AVE TO NORTH OF BEEF BEND RD

PLM_4.0
(PIPELINE MAIN)

5.2 MILES

PLM_4.1 HIGHWAY 99 CROSSING
(WASHINGTON COUNTY)
CONSTRUCTION: 2021 - 2023

PLM_4.2 TUALATIN-SHERWOOD RD
(WASHINGTON COUNTY)
CONSTRUCTION: 2022 - 2024

PLM_4.3 ROY ROGERS RD
CONSTRUCTION: 2022 - 2023

PLM_4.4 CHICKEN CREEK TO BORCHERS DR
CONSTRUCTION: 2022 - 2023

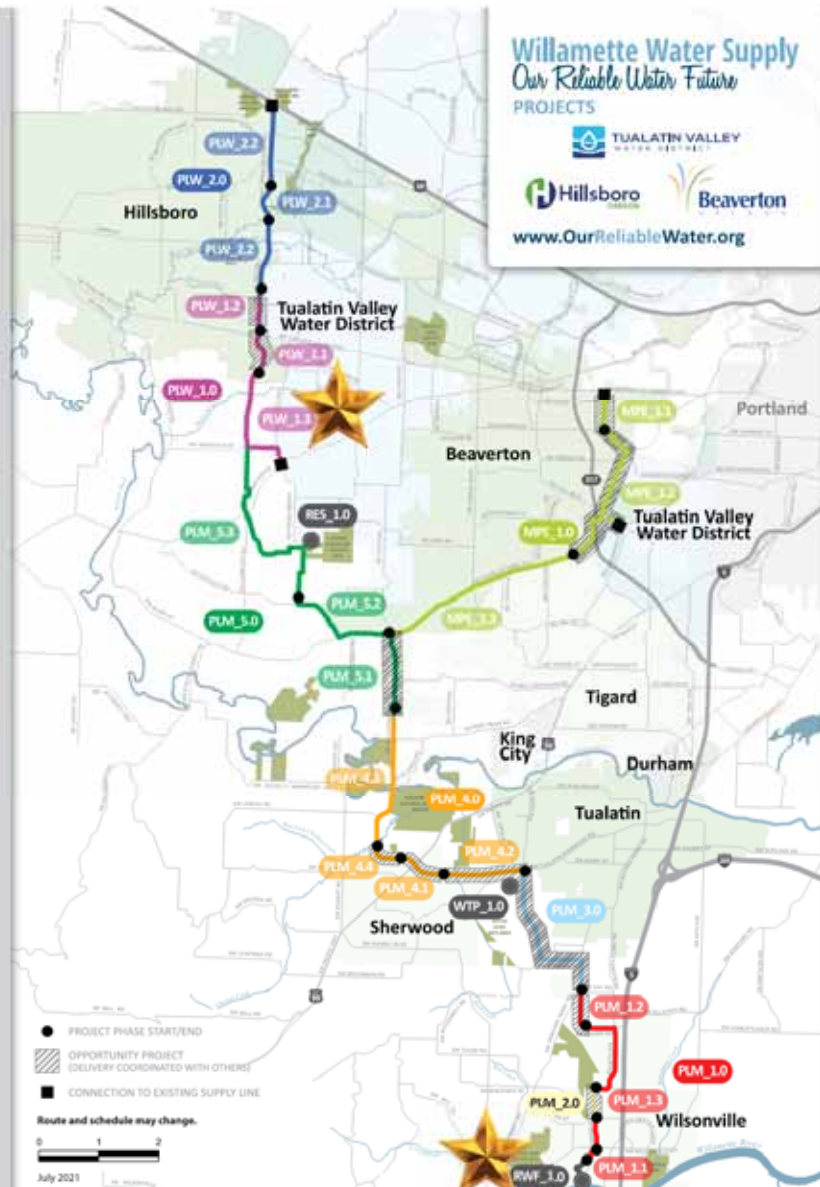
WATER TREATMENT PLANT
WTP_1.0

WATER TREATMENT PLANT (WTP)

CONSTRUCTION: 2022 - 2025

INCLUDES FINISHED WATER PUMP STATION PROJECT (FPS_1.0)

INCLUDES DISTRIBUTED CONTROL SYSTEM PROJECT (DCS_1.0)



NETZGER PIPELINE EAST PROJECT
ROY ROGERS RD TO BEAVERTON HILLSDALE HWY

MPK_1.0
(PIPELINE MAIN)

7.3 MILES

MPK_1.1 WESTERN AVE - ALLEN BLVD
TO BEAVERTON HILLSDALE HWY
(CITY OF BEAVERTON)
CONSTRUCTION: 2021 - 2023

MPK_1.2 SCHOLLS FERRY - GREENWAY PARK
TO WESTERN AVE, HALL BLVD & CASCADE AVE
CONSTRUCTION: 2021 - 2023

MPK_1.3 SCHOLLS FERRY - ROY ROGERS RD
TO GREENWAY PARK
CONSTRUCTION: 2021 - 2024

SOUTH BEAVERTON AREA WATER STORAGE TANKS
RES_1.0

STORAGE TANKS

TANK 1
CONSTRUCTION: 2022 - 2024

TANK 2
CONSTRUCTION: DEFERRED TO 2025

124TH AVENUE PARTNERSHIP PROJECT
SAR 124TH AVE EXTENSION

PLM_3.0
(PIPELINE MAIN)

2.7 MILES

CONSTRUCTION COMPLETED: 2019
(WASHINGTON COUNTY)

WILSONVILLE AREA PIPELINE PROJECT
WILLAMETTE RIVER WTP TO DAY RD

PLM_1.0
(PIPELINE MAIN)

3.3 MILES

PLM_1.1 WILSONVILLE RD
CONSTRUCTION COMPLETED: 2021

PLM_1.2 GARDEN ACRES RD TO 124TH AVE
(GARDEN ACRES ROAD IMPROVEMENTS)
CONSTRUCTION COMPLETED: 2022

PLM_1.3 WILSONVILLE RD TO GARDEN ACRES RD
CONSTRUCTION: 2022 - 2024

KINSMAN ROAD PARTNERSHIP PROJECT
KINSMAN RD EXTENSION

PLM_2.0
(PIPELINE MAIN)

0.6 MILES

CONSTRUCTION COMPLETED: 2018
(CITY OF WILSONVILLE / ODOT)

RAW WATER FACILITIES
RAW WATER FACILITIES (RWF)

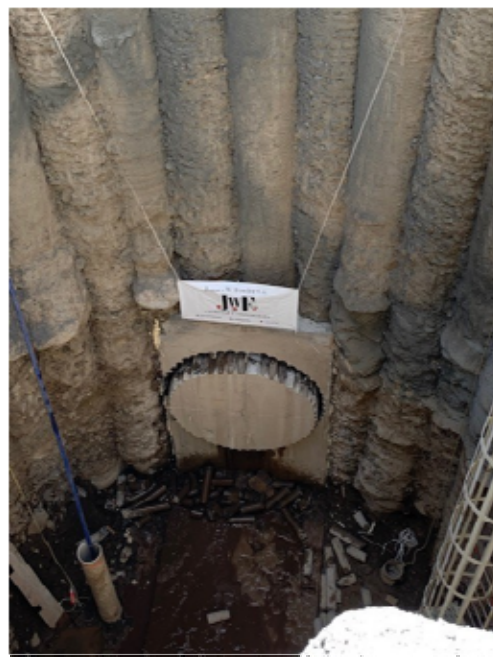
RWF_1.0

CONSTRUCTION: 2020 - 2024

0.5 MILES



Raw Water Facilities Project (RWF_1.0) in Wilsonville: Screen Berms, CFA Piles, Pipe Ram launch and receiving shafts, receiving shaft dewatering wells



Raw Water Facilities Project (RWF_1.0) in Wilsonville: Spoils removal and pipe ram breakout at receiving shaft



Raw Water Facilities Project (RWF_1.0) in Wilsonville: Preparing to install new pump header at raw water pump station

7.2021



Raw Water Facilities Project (RWF_1.0) in Wilsonville: Installing new header piping at raw water pump station



Raw Water Facilities Project (RWF_1.0) in Wilsonville: Placing concrete for flow meter vault walls 28 12:23



Raw Water Facilities Project (RWF_1.0) in Wilsonville: Installation of 66-inch raw water transmission line through park



South Hillsboro Area Pipeline (PLW_1.3): Haul road and pipe laydown, staging area, creek crossing in distance



South Hillsboro Area Pipeline (PLW_1.3): Microtunnel of Butternut Creek, 84-inch casing pipe, setting next section

04.2021



South Hillsboro Area Pipeline (PLW_1.3): Microtunnel of Butternut Creek, 84-inch casing pipe, 66-inch carrier pipe

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FRANCES ST TO HIGHWAY 26

PIPELINE WEST
3.3 MILES

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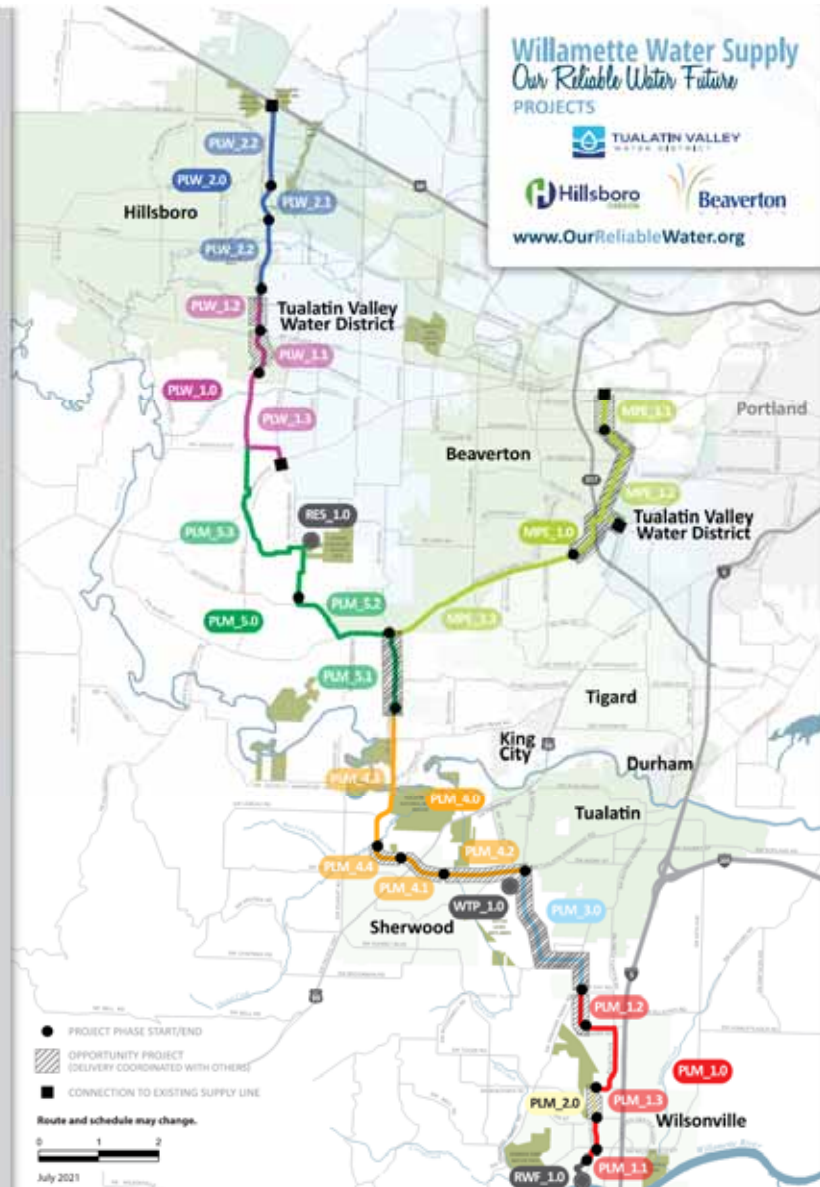
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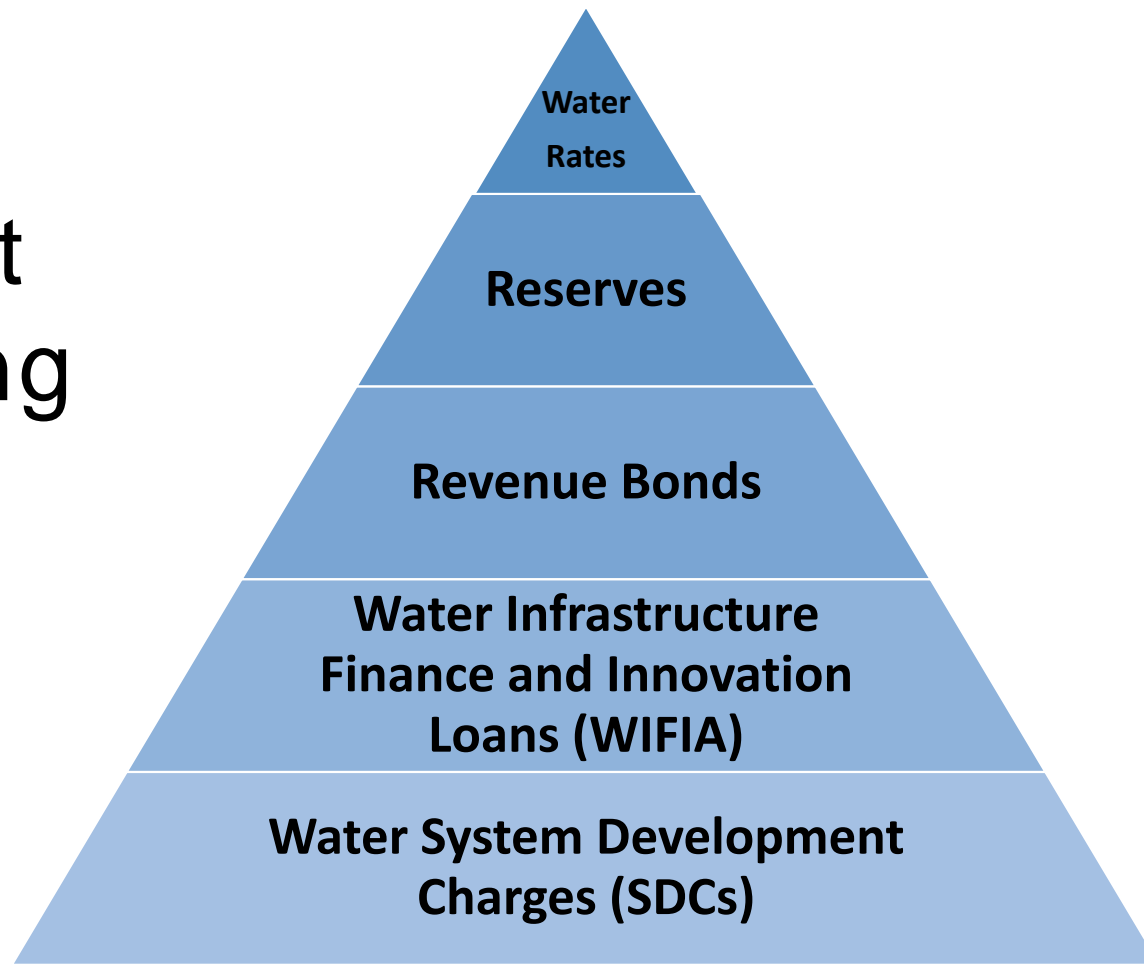
The background of the slide features a scenic landscape with a dense forest of evergreen trees in the foreground and middle ground, and a range of blue mountains in the distance under a clear sky. The colors are muted, with various shades of blue, green, and brown.

Questions?

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info@ourreliablewater.org
www.ourreliablewater.org

Project Funding



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Staying on Budget



- Negotiate the best price and quality for services and goods
- Make cost effective engineering design decisions
- Proactively manage risks early
- Partner on construction projects
- Rigorously manage all aspects of the Program
- Accurately forecast cash flow needs so partners can plan ahead

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