Clean Water Services

DATE: February 1, 2022

TO: Clean Water Services Advisory Commission Members
and Interested Parties

FROM: Mark Jockers, Chief of Staff

SUBJECT: **REMINDER AND INFORMATION FOR FEBRUARY 9, 2022, CWAC MEETING**

This is a reminder that a Clean Water Services Advisory Commission (CWAC) meeting is scheduled for **Wednesday, February 9, 2022.**

In support of best practices for preventing the spread of the coronavirus, CWS has adopted the following format for the February meeting:

- The meeting will be held virtually using the Webex platform.
    - Webex offers the option to connect to video, slides and audio via a device with internet access, or an audio-only connection through any telephone line.
    - CWAC members should watch for an email containing Webex connection details.
    - Interested parties should register for this meeting by February 8 by following the instructions on the website.
- The meeting will begin at 5:30 p.m. Please plan to establish your connection to the meeting 10-15 minutes before the start time to allow the meeting to begin promptly.
- Dinner will not be provided.

The CWAC meeting packet will be mailed to Commission members on Tuesday, February 1, and posted to the CWAC section of the Clean Water Services' website.

Please call or send an email to Stephanie Morrison (morrisons@cleanwaterservices.org; 503.681.5143) by February 8 to advise about your attendance at this meeting.

Enclosures in this packet include:

- February 9 Meeting Agenda and Materials
- January 12 Meeting Summary

Clean Water Services Advisory Commission

February 9, 2022

AGENDA

5:30 p.m. **Welcome and Introductions**

5:40 p.m. **Review and Approve Summary of January 12, 2022, Meeting**

5:50 p.m. **PNW WateReuse Report and our Water Reuse roadmap**

Clean Water Services has a long and successful history of producing high quality reuse water for irrigation. Now, CWS is working to expand water reuse opportunities within the Tualatin River watershed. The water reuse program helps protect the watershed, the community and the environment by improving the quality of the water in the Tualatin River, controlling temperature, and reducing the use of drinking water for irrigation. The program can also help businesses, including agriculture, find a safe and sustainable alternative water supply resource. Staff will provide an overview of CWS' water reuse program, the roadmap for its growth and next steps.

- Jared Kinnear, Reuse Manager

Requested Action: *Informational*

6:20 p.m. **Invitation for public comment**

6:25 p.m. **Announcements**

6:30 p.m. **Adjourn**

Next Meeting: March 9, 2022

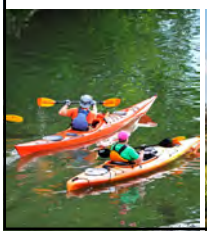
1

WATER REUSE PROGRAM ROADMAP

February 9, 2022

Clean Water Services Advisory Commission
Jared Kinnear, Reuse Manager

Clean Water Services



2

AGENDA

- CWS water reuse history
- CWS Reuse Program
- Why reuse now?
- Reuse Program strategies & roadmap
- What's next

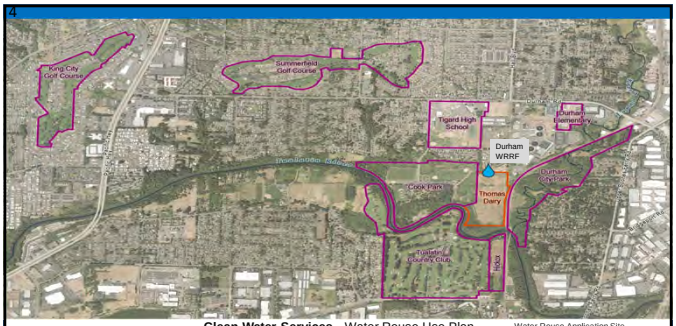
3

HOW WATER REUSE BEGAN AT CWS

- 1990 – Regulatory strategy, TMDL phosphorus
  - 1 MGD peak
  - Stable program for past 30 years
- 2013-2019 – Pure Water Brew moves from an idea to approved for commercial use
- 2020s – Regulatory strategy – thermal management
  - 5 MGD by 2025
  - Environmental restoration
  - Partnership-driven
  - Diverse water management




4



Clean Water Services - Water Reuse Use Plan
Class A Recycled Water from Durham Water Resource & Recovery Facility

Water Reuse Application Site
District-Owned Property
Water Reuse Customer

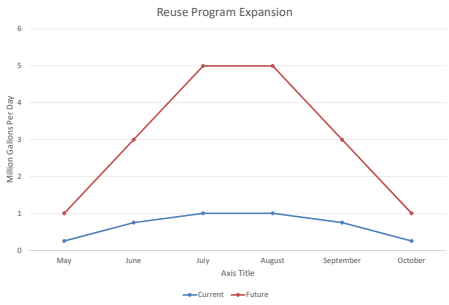
5

CWS REUSE FUN FACTS

- 2021: Distributed ~81 million gallons
- Could distribute ~550 million gallons
- CWS largest urban producer in Oregon
- Durham WRRF currently only supplier
- Customers: golf courses, schools, wetlands, meadow and athletic field, CWS (onsite irrigation)
- ~200 acres total area

6

5 IN 25



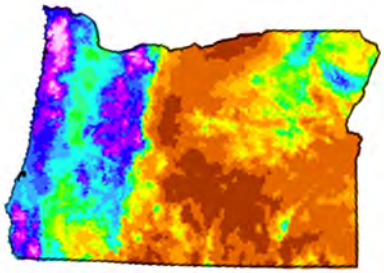
7

WHAT IS DRIVING GROWTH OF WATER REUSE IN OREGON?

- Climate change
- Economy
- Innovation
- Water supply

8

ANNUAL PRECIPITATION: 2020



9

URBAN REUSE DRIVERS

RURAL REUSE DRIVERS

10

ROADMAP AND STRATEGIES GUIDING REUSE PLANNING

11

CURRENT STATE → FUTURE STATE VISIONING

Current State

What have we already accomplished…

Future State

Water providers offer reuse as the best use for their nonpotable needs and there is high demand from retail customers.

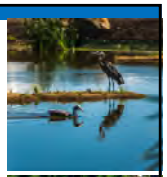
CWS will restore properties to functional wetlands, providing additional streamflow into the mainstem Tualatin and lowering temperature.

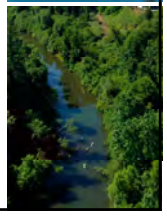
The agricultural community is a strong supporter of reuse water. CWS provides reuse water to TVID for exchange for Hagg Lake releases.

12

PROGRAM OBJECTIVES

- Keep thermal energy out of the river
- Urban: retail/wholesale
  - Smart water use
- Agriculture: transfer/exchanges
  - Supply farmers to offset instream water rights
- Environmental: land application
  - Restore wetlands that regulate mainstem water quality

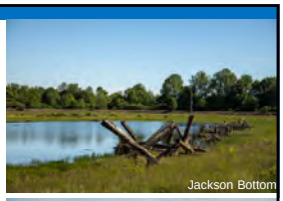




13

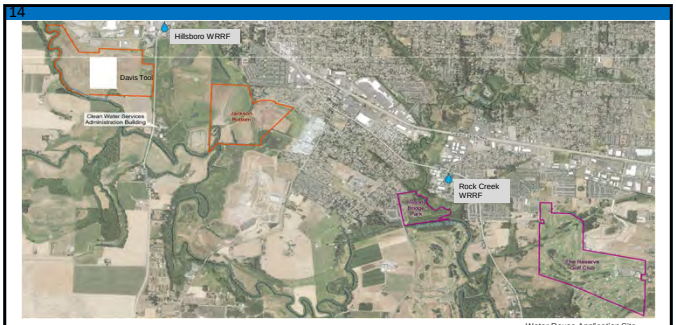
FUTURE PROJECTS

- Jackson Bottom and Davis Tool
  - 1.5 MGD
  - Summer 2023
- The Reserve Golf Course
  - 1.5 MGD
  - Summer 2023
- Fernhill properties
  - 2 MGD
  - Summer 2024


Jackson Bottom


Fernhill Wetlands

14



Clean Water Services - Water Reuse Use Plan
Class A Recycled Water from Rock Creek Water Resource & Recovery Facility

Water Reuse Application Site
District-Owned Property
Water Reuse Customer

15

WATER REUSE PROGRAM STRATEGIC PERSPECTIVE

- If we succeed, what are the economic, environmental and social benefits?
- How will we measure success?

16

ECONOMIC MEASURES

- Cost-benefit analysis of alternatives
- Monetized value of agriculture or native seed production
- Support of ratepayers

17

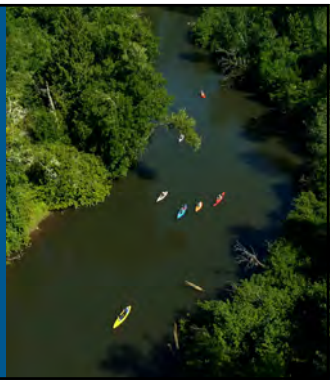
ENVIRONMENTAL MEASURES

- Acres of wetland restored
- Soil surveying and analysis
- Flow monitoring
- Amount of water reuse applied

18

SOCIAL MEASURES

- Partners involved
  - Environmental nonprofit organizations, government agencies, partner utilities, ratepayers, rural landowners
- Regulatory support
- Public / internal awareness of “waste” as resource



19

NUMEROUS BENEFITS

Watershed Protection

Smarter Potable Water Use

Temperature Compliance

Cost Savings

Restoring Natural Areas

Climate Impact Resilience

Protecting Habitat

20

ARRAY OF STAKEHOLDERS AND PARTNERS

STATE LEGISLATORS

REGULATORS
Water Resources Department, Bureau of Reclamation

GENERAL
Social Equity Group, General Public, Industry/Professional Associations

AGRICULTURE
Tualatin Valley Irrigation District, Business

DISTRICT STAFF

URBAN
Partner Cities, TVWD, Business Associations / West Side Business Alliance, Golf Courses, County, JWC, Elected Officials

ENVIRONMENTAL
Water Watch Oregon, Tualatin River Watershed Council, Tualatin Riverkeepers, JWC, Army Corps, Environmental Interest Groups, DSL, NW Env. Advocates

21

NEXT STEPS: ENGAGEMENT AND OUTREACH

Stakeholder Outreach Plans
Prioritized | Coordinated | Strategic | Tailored Messaging | Phased

Program Brand
Identity | Message | Broadcast

Outreach
Website | Signage | Forums/Presentations | Demonstration Sites | Multimedia | Polling

22

QUESTIONS?

Clean Water Services

Clean Water Services Advisory Commission Meeting Summary

Date: January 12, 2022

Location: The meeting was conducted on Webex

Attendance

Attending the meeting from CWAC:

- Tony Weller (Homebuilder-Developer 1), Commission Chair
- Mike McKillip (District 3/Rogers), Commission Vice Chair
- Alex Phan (District 1/Fai)
- Andy Duyck (District 4/Willey)
- Fatima Taha (At-Large/Harrington)
- George Marsh (Agriculture 1)
- Jan Wilson (Environment 1)
- Stu Peterson (Business 2)
- Sherilyn Lombos (Cities/nonvoting)
- Diane Taniguchi-Dennis (Clean Water Services Chief Executive Officer/nonvoting)

Absent:

- Alan Jesse (Agriculture 2)
- Lori Hennings (Environment 2)
- Matt Wellner (Homebuilder-Developer 2)
- Terry Song (Business 1)

Attending the meeting from Clean Water Services:

- Mark Jockers, Chief of Staff
- Gerald Linder, General Counsel
- Joe Gall, Chief Utility Relations Officer
- Kathleen Leader, Chief Financial Officer
- Tom VanderPlaat, Strategic Business Associate
- Jared Kinnear, Reuse Manager
- Nate Cullen, Chief Operating Officer
- Rick Shanley, Treatment Plant Services Manager
- John Dummer, Engineering Division Manager
- Andy Braun, Systems Planning Division Manager
- Stephanie Morrison, Office Manager
- Shannon Huggins, Public Involvement Coordinator
- Chris White, Public Involvement Coordinator
- Tracy Rainey, Senior Policy Analyst
- Jody Newcomer, Technical Editor & Communications Specialist
- Victor Davidson, Information Technology Analyst

Attending the meeting from the public:

- Dale Feik, Chair of Washington County Citizen Action Network

1. CALL TO ORDER

Weller called the meeting to order at 5:32 p.m.

Morrison announced the meeting was being recorded and recognized all attendees.

2. REVIEW/APPROVAL OF MEETING NOTES

There were no comments regarding the notes from the meeting on Dec. 8, 2021.

- The notes were approved.

3. ELECTION OF CHAIR AND VICE CHAIR

The CWAC bylaws require an annual selection of a Chair and Vice Chair. Currently Weller serves as Chair and McKillip serves as Vice Chair.

- Weller nominated Song for Chair; McKillip seconded. The nomination was closed and Song was elected Chair.

- McKillip nominated Hennings for Vice Chair; Wilson seconded. The nomination was closed and Hennings was elected Vice Chair.

4. CONFIRMATION OF BUDGET COMMITTEE MEMBERS

Clean Water Services' Budget Committee is made up of the five members of the CWS Board of Directors and five representatives from CWAC who reside within Washington County. The CWAC representatives serve three-year, staggered terms. Weller's budget committee term expired on December 31, 2021, and Molly Brown, who is no longer on CWAC, was filling a Budget Committee appointment that expires in October 2022. The other members of the Budget Committee are McKillip (September 2022), Duyck (September 2023), and Hennings (June 2024). The Budget Committee is scheduled to meet on Friday, May 6, 2022.

Duyck said he would like to step down from the committee if another member is willing to fill the vacancy. Hennings, Song and Wellner could not attend the meeting, but Hennings had confirmed her interest in continuing to serve and Song and Wellner said they're interested in serving. Taha also expressed interest in serving on the committee. Peterson and Wilson said they're interested in the positions, but they don't live in Washington County and are not eligible.

The budget meeting is almost a full day and members receive the budget materials about two weeks before the meeting. The committee listens to the CWS budget presentation, hears public comment, has the opportunity to ask questions, and recommends the budget for adoption by the Board. Duyck said you don't need a financial background to serve. Wilson noted that the positions have different expiration dates and asked who would fill which slot. Jockers said CWS will make a recommendation to the Board.

- Duyck officially withdrew from the committee and moved to recommend Song, Taha, and Wellner to fill the vacant positions. Wilson seconded. The motion carried to recommend Song, Taha, and Wellner to the Board for appointment to the Budget Committee.

5. TUALATIN PROJECT: SCOGGINS DAM UPDATE

- Tom VanderPlaat, Strategic Business Associate
- Jared Kinnear, Reuse Manager
- Mark Jockers, Chief of Staff

CWS has worked for nearly 20 years with the Bureau of Reclamation, the Joint Water Commission (JWC), and the Tualatin Valley Irrigation District (TVID) on the Tualatin Basin Dam Safety and Water Supply Joint Project. The team developed three options: 1) modify the existing dam (Safety of Dams only), 2) raise and modify the existing dam, and 3) build a new dam. Cost estimates in 2020 ranged from $774 million for the SOD-only option to $1.18 billion to build a new dam downstream.

In 2020, the Tualatin Joint Partners determined that all options were technically feasible, but the cost for each project option was too high. They agreed to do further analysis to determine the best path forward. The results of that analysis indicate that CWS could more cost-effectively meet its current compliance obligations through other strategies, and that increased water flow will not resolve future compliance challenges. Dam safety costs are split 85% federal and 15% local. The 15% split is based on benefits; benefits to CWS for water quality and benefits for drinking water carry the majority of the costs. The estimated local share for CWS with the SOD-only option is more than $50 million.

New modeling shows CWS can meet regulatory compliance needs without new water supply by expanding water reuse, continuing shading projects through Tree for All, optimizing water management, and working through cooperative water agreements with partners. The Willamette Water Supply will come on line in 2026 or 2027 and will help meet drinking water needs.

The passage of the federal infrastructure bill accelerated SOD projects with increased funding. CWS and repayment contractors (TVID and JWC) support the SOD-only option. CWS will seek federal funding to help optimize water management and address climate change impacts.

Reclamation will go through a NEPA (National Environmental Policy Act) Environmental Assessment and review the final design for the SOD-only option. Repayment contractors will negotiate and sign agreements for the local share, and construction could begin in 2025.

CWS has had a water reuse program since 1991 out of the Durham facility. It's focused on urban areas and includes parks, golf courses, and schools. CWS reuses 1 million gallons a day (mgd) from Durham and has a Districtwide goal of 5 mgd in 2025. The primary focus is land application, which is a mitigation strategy to avoid putting warm water in the river. Other beneficial uses include using reuse instead of river water or city water to irrigate crops and restoring degraded wetlands and wildlife habitat.

Taniguchi-Dennis thanked Duyck, who served on the CWS Board of Directors during much of the project, and VanderPlaat, Dummer, and Jockers at CWS for their work on the water supply project. She said we wouldn't be where we are today with Reclamation ready to invest in Scoggins without them.

QUESTIONS, COMMENTS

How does this affect the budget going forward? Weren't we setting money aside to help pay for the project?

Taniguchi-Dennis said the money will be used to expand the reuse program and treatment technology. Newer modeling on the river helped CWS understand that more water from Scoggins would not solve compliance issues associated with warm water coming out of the treatment plants. We're approaching the effluent temperature limit at the treatment plants, and are currently looking at near-term improvements to address this issue.

We have adequate resources to begin these investments and to keep rate increases predictable. We did not have enough money saved to build the more expensive options. We considered what we needed for compliance and our responsibility to the ratepayers. Money from the federal government is available now; Scoggins Dam needs to be secured now.

Cullen said we won't see big savings by going with the SOD-only option; instead we don't have to find additional funding for the dam. We're exploring strategies to address thermal compliance without increasing water supply such as making changes at the treatment plants, expanding the reuse program, and continuing the shade program.

Jockers said the water supply project has been a focus in the region for almost 20 years. The focus sharpened in 2010 when Reclamation identified Scoggins Dam as one of the most seismically threatened in the country. There are dividends from all the work. Reclamation operates in 17 western states and monitors an estimated 475 dikes, dams and reservoirs and this project remains one of its top two or three in the country. The entire region has made this a priority, as has the Oregon Congressional delegation. The highest priority is protecting public safety and securing our primary water source.

Were the construction costs in 2020 dollars?

The numbers are in prior year dollars, so actual numbers would be even higher.

How does the Willamette Water Supply help water supply?

Additional drinking water supply from the Willamette frees water supply in Scoggins.

How did the people at Stimson Lumber respond to this development?

Jockers said the Stimson CEO understood the decision and appreciated how transparent the CWS team of VanderPlaat, Dummer, and Martin have been with him. They built a good relationship with the Stimson CEO.

6. EAST BASIN MASTER PLAN

- Nate Cullen, Chief Operating Officer
- Rick Shanley, Treatment Plant Services Manager
- John Dummer, Engineering Division Manager
- Andy Braun, Systems Planning Division Manager

On November 30, 2021, the Board charged CWAC with reviewing the East Basin Master Plan and making a recommendation to the Board on adoption.

The Durham Water Resource Recovery Facility and the sewer pipes and pumps that drain to that facility are collectively known as the East Basin. The East Basin Master Plan is a comprehensive examination of the 20-year infrastructure needs of the system that serves more than 200,000 residents of Sherwood, Tigard, Tualatin, King City, Durham, Metzger and portions of Beaverton, Aloha, Portland and Lake Oswego.

The purpose of the East Basin Master Plan is to manage the collection and treatment system assets and plan for necessary improvem(cip0ents to:

- Accommodate growth, including expansion and infill.
- Anticipate and meet regulatory requirements.
- Upgrade, replace or restore aging infrastructure.

The East Basin Master Plan will help Clean Water Services plan for and sequence investments. The project list in the Master Plan is the foundation for the CWS Capital Improvement Plan (CIP) and System Development Charges (SDCs), and influences rates and financing.

Shanley said a resilient, robust master plan will include steps to improve watershed health, adapt to uncertainty, establish a vision for the future, define cost-effective strategies, and meet the demands of stakeholders.

A common basis of planning is key to an integrated conveyance and treatment plan. The team considered several factors:

1. Study area characteristics: Where is growth going to occur, and how much is going to occur? It's important to understand how much flow is going to come to the treatment plants as teams develop conveyance piping and pumping systems. The goal is to build things so we don't restrict growth, but not to build too early and leave facilities unused.
2. Climate sensitivity analysis: How do peak storm events impact pipe, pumps, and treatment systems?
3. Seismic resilience analysis: How do we prepare for an emergency response today? Where are the weakest spots?
4. Regulatory and permitting: How do we address potential overflow conditions?

Dummer said the East Basin conveyance system is about 60 square miles and feeds into the Durham facility. There are 700 miles of sewer mains (pipes that are smaller than 24 inches in diameter) that are maintained by co-implementer cities and CWS. The system has 35 miles of

interceptors and trunk sewers (24 inches and larger) that are owned and maintained by CWS, and 15 pump stations, including 8 miles of force mains. CWS staff in conveyance engineering work on analysis, design, and construction management. Field Ops crews do cleaning, maintenance, and some construction.

As part of the master planning process, needs related to infrastructure condition, rehabilitation and replacement, resilience, and growth were identified.

Infrastructure condition: Crews examine infrastructure condition by doing TV inspections at least once every eight years. Pipes are cleaned every four years.

Rehabilitation and replacement: Crews also look for ways to reduce inflow and infiltration (I/I). I/I is the extraneous stormwater and groundwater that enters the sanitary sewer, especially during the winter rains. Inflow is stormwater from yards, roofs and footing drains or from cross-connections with storm drains and downspouts or manhole covers. Infiltration is groundwater that enters sewer pipes and manholes through holes, breaks, pipe joints and connections. Reducing I/I effectively increases capacity in the pipes for wastewater by keeping stormwater out, as well as reducing the capacity needed at the treatment plants.

Resilience, particularly related to climate change: The team stress tested the planned improvements by using hydraulic modeling to simulate higher intensity storms anticipated in the future and subjecting the proposed improvements to these events.

The practical applications of a multifaceted approach can be seen in the Fanno Sewer Basin improvements planning. The team is considering I/I reduction strategies, rehabilitating the Fanno Interceptor, upsizing the Metzger Trunk, and building a wet-weather pump station. In the wet season, the pump station would convey excess flows to the treatment plant; in the dry season it could send reuse flows the other direction.

Growth: Braun said understanding population growth is key to understanding where flow is coming from for the conveyance system. CWS works closely with Portland State population research center, Metro, and the co-implementer cities to understand growth in the service area. In 2019, the Oregon Legislature passed House Bill 2001 to help provide more housing choices, including increased density. Every city served in the Tualatin Basin is expanding its urban growth boundary and accommodating increased density.

Pump stations accommodate growth, but the number of CWS stations has hardly changed in about 20 years. Several pump stations at the existing boundaries of development will be decommissioned as new pump stations come on line at the new limits of the Urban Growth Boundary. Other additions to the Urban Growth Boundary will necessitate additional pump stations.

CWS and the cities work together to implement these changes to accommodate growth, and the development community builds much of the infrastructure. For example, six new pump stations are planned in the next five to 10 years to accommodate new development in Tualatin. Generally, CWS builds and maintains pump stations and gravity sewers 24 inches and larger in diameter as a regional service. Cities own and manage gravity sewers less than 24 inches. City

partners generally construct pipes larger than 12 inches using regional SDC dollars allocated by CWS.

CWS has an adaptive implementation strategy to implement projects. CWS works with city partners and the development community to monitor and verify increasing flows, use GIS to track development and equivalent dwelling units, and plan for just-in-time delivery to support development.

The master plan projects timing of many projects and identifies areas of responsibility — CWS, a city, or the development community.

The master plan also addresses estimated costs of projects, sources of funding, and eligibility for funding. SDCs can be used for growth and development projects. CWS' regional and local rates contain a capital cost component that can be used for rehabilitation projects. CWS is conducting a Cost of Service Analysis to allocate rehabilitation and expansion capital costs to residential, commercial, and industrial customer classes. Gall said there's a lot of internal coordination and collaboration, but we also engage with city partners to discuss the master plan and plan for growth.

Jockers said CWS integrates the work done inside the fence at the treatment facilities with the work spread throughout the communities in our master plan. It helps us prioritize the investments needed to serve our customers. The Board asked CWS to present the East Basin Master Plan to CWAC and recommend adoption to the Board. CWS is in the early stages of the West Basin Master Plan and Jockers asked how involved CWAC members would like to be.

QUESTIONS, COMMENTS

Do you plan to talk about the East Basin Master Plan at future CWAC meetings?

There is nothing planned, but we can revisit the topic if CWAC wants to hear more.

The plan is very agency driven. How is the development community involved in the process? They're the ones who spend the money to create the need.

Most of the development community is working through the cities, and CWS is engaged with cities as they look at their urban growth boundary areas and consider land use and development patterns. Developers drive the timing of development and CWS works with cities to respond and prepare for development. Developers work with cities on development proposals, and CWS works with cities to accommodate the proposals.

Things didn't follow the plan in North Bethany. Groups invested years in the master planning effort, but the implementation was not as orderly as the infrastructure needed. Is there a better way to do it?

We learned a lot in North Bethany where the plan was perhaps too detailed. Projects don't always develop in ways that make the most sense for the conveyance system. Adjustments are made as needed in the implementation of the overall plan. Gall said CWS now has a planner on staff who works with the cities and we're trying to improve communication between all parties.

At the end of the day it's a willing seller and good timing that allows a developer to say a property is available to develop.

Peterson applauds the addition of Gall to CWS. He said developers are the ones driving projects and paying for projects, and it's important that they have contacts within CWS.

What happens when a pump fails? What are the safeguards?

Generators provide redundancy at each pump station. We determine the right size of flows, and we focus on reliability with the main pieces of equipment at the pump. If something does fail, we're able to respond immediately. All our pump stations have stand-by generator capacity so we can keep things running if there's a power outage.

What happens when there's a mechanical failure in the pump?

Pump stations have at least two pumps, and are designed so that peak flows can be accommodated with just one pump in operation. We also have a rigorous maintenance program and a monitoring system that sends a system failure alert to an operator who monitors all systems 24/7.

Does CWS oversee pump stations or is it the cities?

CWS maintains pump stations. We require pump stations to be built to CWS standards, even when developers build them.

There's a worst-case scenario plan, right? What's the emergency fallback plan?

Cullen said CWS has done two things to prepare in case we lose power for an extended period. We have standby generators at every pump station with a day or two of diesel fuel on hand and we've coordinated with Washington County to get more fuel to keep the generators running. We've also identified emergency overflow points for every pump station to direct flow to streams to protect public health in case a force main ruptures. That's the fail-safe on a public health contingency.

Are the water quality improvements related to the water supply project going to show up in basin plans?

Taniguchi-Dennis said the improvements are in the five-year CIP, which is informed by our master plans.

Cullen said the projects related to the 5 in 2025 goal are included in the five-year CIP for Fiscal Year 2022-23. Projects related to reducing temperature gain throughout our treatment plants will be part of the West Basin Master Plan, then they'll be added to the CIP.

Will the West Basin Master Plan identify treatment projects for the East Basin?

Cullen said the West Basin Master Plan will include a feasibility assessment of projects. The plants have the same characteristics, so projects at one facility can be applied at other plants. When we conclude the feasibility study, we'll develop specific projects for each facility and incorporate them in the different CIPs. We do the CIP on a facility program basis – Rock Creek, Durham, Hillsboro, Forest Grove.

Is there any concern about flow reduction in the river with 5 in 2025?

Cullen said he would've been concerned about 10 years ago, but today we've exceeded the flow augmentation we need for good water quality, and we've continued to increase our discharge. At some point there's no additional benefit and diverting water for reuse will not harm the river.

I'm a big fan of reuse, but I know flow levels are a critical issue.

Jockers said we have target flow numbers. The base is about 150 cubic feet per second (cfs) and we aim for 180 cfs.

Cullen said we also have flow releases from the reservoirs to maintain a minimum flow in the river. The average combined flow for Rock Creek, Hillsboro, Forest Grove, and Durham is 60-70 mgd. The 5 in 2025 goal for reuse is a small amount of the overall flow.

Shanley said we're giving reuse water to people who are taking water out of the river.

The East Basin Master Plan is done. Does CWAC want to be involved earlier in the process for the West Basin Master Plan?

- It would be great to add more public input and build site visits into the process for the Board and CWAC. Site visits provide different information than maps.
- I would like to be involved earlier in the West Basin planning process to understand what some of the issues are. We represent the public involvement piece of the process and it would be nice to better understand the different perspectives.
- There's a lot to learn and I have a lot of questions, but I trust the work CWS has done

➢ Phan moved to recommend adoption of the East Basin Master Plan. McKillip seconded. The motion carried.

7. PUBLIC COMMENT

Feik spoke about climate change, planting trees, preserving large trees and forests, and solar panels. He advocated a strategy to leave trees in place and put solar panels where there are no trees. He encouraged the group to consider what you take away when you cut mature trees to develop land in any recommendations to the Board.

8. ANNOUNCEMENTS, QUESTIONS, COMMENTS

- The next meeting is scheduled for Feb. 9, 2022.
- Influent samples showed spikes in the concentration of virus in August 2021 and there are dramatic spikes now with the omicron variant.

9. ADJOURNMENT

Weller adjourned the meeting at 7:40 p.m.

1

TUALATIN PROJECT: SCOGGINS DAM

January 12, 2022
Clean Water Services Advisory Commission

Tom VanderPlaat, CWS Water Supply Project Manager
Mark Jockers, Chief of Staff
Jared Kinnear, Reuse Manager



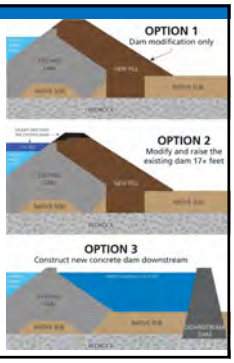
2

3

OPTIONS CONSIDERED

- Project options considered and cost estimates:

	Cost
▪ Safety of Dams (SOD) Only	$ 774 million
▪ Additional storage: 0 acre-feet	
▪ Option 2	$ 1.15 billion
▪ Additional storage: 21,000 acre-feet	
▪ Option 3	$ 1.18 billion
▪ Additional storage: 50,000 acre-feet	



4

2020 FEASIBILITY DESIGNS

- All options technically feasible
- Cost estimates high ($770M to $1.2B)
- Expanded downstream dam is beyond region's financial capacity and future water demands
- Dam safety costs are 85% federal / 15% local cost share (CWS, Tualatin Valley Irrigation District and Joint Water Commission)

5

INTEGRATING WATER NEEDS OF THE REGION

- New modeling shows CWS can cost-effectively meet regulatory compliance needs without new water supply by:
  - Expanding reuse
  - Shading (Tree for All)
  - Optimizing water management
  - Entering cooperative water agreements
- Willamette Water Supply will meet drinking water needs

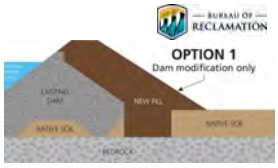
9

PATH FORWARD

- Move forward with Scoggins Dam seismic modifications
  - Infrastructure bill accelerates SOD projects with increased funding
  - CWS and repayment contractors support SOD option
- Seek federal grants and other strategies
  - Optimize water management
  - Address climate change impacts
  - Help identify other grant funding sources
    - WIFIA: Water Infrastructure Finance and Innovation Act
    - Title XVI – Water Reclamation and Reuse

SCOGGINS DAM – SAFETY OF DAMS (OPTION 1)

- Seismic safety modifications process
  1. NEPA Environmental Assessment
     - (NEPA: National Environmental Policy Act)
  2. Reclamation final design and review
  3. Repayment contracts developed and signed
  4. Construction may begin in 2025



CWS WATER REUSE PROGRAM

- What is water reuse?
  - Where is it currently used?
- Today: 1 million gallons/day
- 2025 goal: 5 million gallons/day
- Strategy to meet permit requirements
- Benefits
- Develop partnerships

QUESTIONS?



1

EAST BASIN MASTER PLAN

January 12, 2022
Clean Water Services Advisory Commission

Nate Cullen, Chief Operating Officer
Rick Shanley, Treatment Plant Services Manager
John Dummer, Conveyance Engineering Division Manager
Andy Braun, Systems Planning Division Manager



2

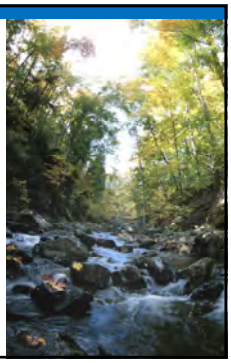
PRESENTATION OUTLINE

- Approach to integrated master planning
- Getting to know the CWS conveyance system
- Identifying and addressing needs
- Adaptive implementation and funding
- Next steps

3

ESTABLISHING GOALS IS ESSENTIAL FOR SUCCESSFUL PLANNING

- Improve watershed health
- Adapt to uncertainty
- Vision for the future
- Cost-effective
- Resilient



4

COMMON PLANNING BASIS LED TO AN INTEGRATED CONVEYANCE & TREATMENT PLAN

- Study area characteristics
  - Where and how much growth?
- Climate sensitivity analysis
  - How do peak storm events impact our pipes, pumps and treatment systems?
- Seismic resilience analysis
  - How do we prepare for emergency response today?
- Regulatory and permitting
  - How do we address potential overflow conditions?

5

PLANNING ASSUMPTIONS FEED MODELING AND ALTERNATIVES ANALYSIS

Model Development
- Rainfall data
- Flow monitoring & calibration
- Capacity assessment
- Inflow & Infiltration study

INFOSWMM Model

SUMO Treatment Model

CAPITAL IMPROVEMENT PLAN

6

EAST BASIN CONVEYANCE SYSTEM

- Serves ≈ 60 square miles
- 700 miles of sewer mains
- 35 miles of interceptors and trunk sewers
- 15 pump stations

7

IDENTIFYING AND ADDRESSING THE NEEDS

- Infrastructure condition
- Rehabilitation and replacement
- Resilience
- Growth

8

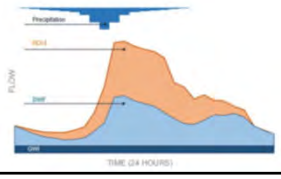
INFRASTRUCTURE CONDITION

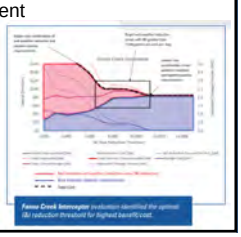
- Consider condition vs. capacity improvements for the Fanno Creek Interceptor

9

INFILTRATION AND INFLOW REDUCTION APPROACH

- Identified optimal inflow/infiltration reduction for conveyance and treatment

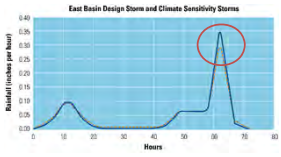


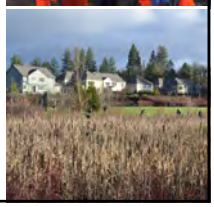


10

RESILIENCE

- Stress test for dealing with potential changes in climate





11

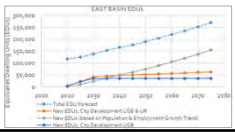
CONVEYANCE SYSTEM KEY IMPROVEMENTS

- Fanno Sewer Basin improvements
  - Multifaceted approach
    - 1 I/I reduction
    - 2 Fanno Interceptor rehabilitation
    - 3 Metzger Trunk upsize
    - 4 Wet-weather pump station

12

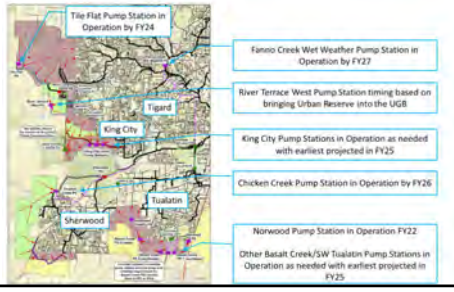
POPULATION GROWTH

- When, where and how much growth?
- Portland State population research center and Metro
  - City plans for specific growth areas
  - House Bill 2001 (allowing increased density)



13

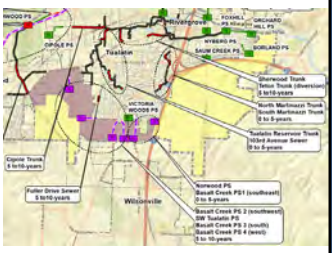
PUMP STATIONS ACCOMMODATING GROWTH



14

COLLABORATIVE IMPLEMENTATION TO ACCOMMODATE GROWTH

- District implementation
  - Six pump stations (Developer collaboration)
  - Gravity sewers >24 inch
- City implementation
  - Gravity sewers <24 inch
    - Regional funding
    - Shared funding



15

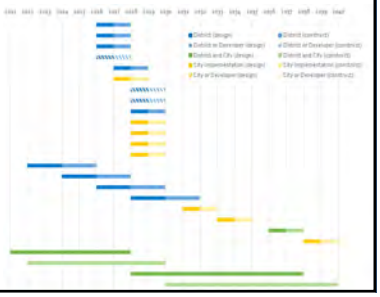
ADAPTIVE IMPLEMENTATION

- Monitoring to verify increasing flows
- GIS tracking of development and equivalent dwelling units
- Just-in-time delivery to support development
- City partners
- Development community

16

PROJECT TIMING BY IMPLEMENTATION RESPONSIBILITY

- Implementation by:
  - CWS
  - Cities
  - Development community
- Schedule based on development and growth



17

FUNDING THE IMPROVEMENTS

- Cost of Service study
- Regional and local rates for system rehabilitation
- System Development Charges (SDCs)
- Beginning to reflect in 2022-23 budget

18

WHAT'S NEXT: ENGAGEMENT & REVIEW

2021-22

- **Oct 2021** — Board briefing
- **Nov 2021** — Board charged CWAC with review recommendation
- **Dec 2021** — CWAC meeting
- **Jan 2022** — CWAC meeting
- **Mar 2022** — Board briefing
- **April 2022** — Board Action on East Basin Master Plan

Nov 2021-Feb 2022
City outreach and review
- **CIP Prioritization Committee**
- **Co-Implementer Meetings**
- **City Managers & Councils**

Beaverton, Tigard, Tualatin, Sherwood, King City, Durham, Washington County

19

CWAC DISCUSSION AND NEXT STEPS

- CWAC's interest and involvement in this kind of project
- Board charge

20

QUESTIONS?