Water Environment Services Advisory Committee

AGENDA

Date: September 16, 2021
Time: 6:00 – 8:00 pm
Location: Zoom

Facilitator: Diana Helm, WES Advisory Committee Chair

Time	Topic	Action
6:00 pm *20 minutes*	**Welcome, introductions, and opening remarks** *Greg Geist, WES Director*	**Inform**
6:20 pm *5 minutes*	**Public Meeting Record Discussion** *Presented by Greg Geist, Director*	**Inform**
6:25 pm *15 minutes*	**Clean Water Exchange Strategic Communication and Engagement Plan** *Presented by Shelly Parini, Business & Community Relations*	**Inform**
6:40 pm *15 minutes*	**Sustainability** *Presented by Ron Wierenga, Environmental Services Division Manager*	**Inform**
6:55 pm *15 minutes*	**Willamette Facilities Plan** *Presented by Lynne Chicoine, Capital Division Manager*	**Inform**
7:10 pm *20 minutes*	**General Committee Questions, Topics of Interest, and Future Agenda Items** *Presented by Greg Geist, Director*	**Inform**
7:30 pm	**Adjourn**	

Clean Water Exchange

Strategic Communication and Engagement Initiatives 2022-2025

CLACKAMAS WATER ENVIRONMENT SERVICES

September 2021

Overview

This unique multi-tiered research endeavor helped us learn what is most valued as it relates to services provided by WES.

The Clean Water Exchange will help WES:

- Strengthen customer and stakeholder understanding
- Create new clean water partnerships and advocates
- Build trust through enhanced connections

WES used three unique methods for acquiring stakeholder input. Each method was designed to answer three key questions:

1. What is working well as it relates to WES' services and operations?
2. What clean water challenges are you most concerned about and why?
3. What other suggestions do you have that might help WES with its efforts to be a credible source of information and champion of water protection?

CLACKAMAS
WATER
ENVIRONMENT
SERVICES

Research Methods

Stakeholder Interviews

15 one-on-one interviews conducted.

Virtual Focus Groups

32 participants attended 2 focus groups.

Survey & Engagement Website

670 unique visitors &
96 surveys completed.

CLACKAMAS WATER ENVIRONMENT SERVICES

Stakeholders

Stakeholders were chosen to be a part of this effort because of their vested interest in the future of our programs and services, including healthy watersheds, public health and economic vitality, resource recovery, and customer service.

CLACKAMAS WATER ENVIRONMENT SERVICES

Themes

Five common themes emerged as both strengths and opportunities for WES.

Reliable Service

Impressive Outreach

Dedicated Partner

Industry Leader

Forward Thinking

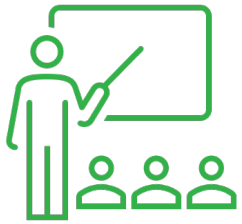
CLACKAMAS WATER ENVIRONMENT SERVICES

Strategies

The common themes were used to identify four key communication and engagement strategies for WES.

1

Develop additional educational materials that are visually-engaging, easy-to-understand, and accessible for diverse audiences.



Impressive Outreach

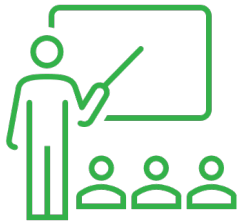
Dedicated Partner

Industry Leader

CLACKAMAS WATER ENVIRONMENT SERVICES

2

Establish innovative partnerships that leverage the strength of the community to achieve shared goals and deliver common messages.



Impressive Outreach

Dedicated Partner

Industry Leader

CLACKAMAS WATER ENVIRONMENT SERVICES

3

Be responsible environmental and fiscal stewards by investing in innovative initiatives that support safe, reliable, and affordable services.

Reliable Service

Dedicated Partner

Industry Leader

Forward Thinking

CLACKAMAS WATER ENVIRONMENT SERVICES

4

Invest in community-driven solutions and cultivate a generation of diverse watershed leaders.

Dedicated Partner

Industry Leader

Forward Thinking

CLACKAMAS WATER ENVIRONMENT SERVICES

Summary

While there is a deep appreciation for the work WES does to keep our waterways clean, the district story is often hard to understand. Moving forward WES needs to find deeper and more creative ways to connect to its customers, stakeholders and service area communities.

Next Steps

1. Prioritize Initiatives
2. Define Success
3. Prepare Roadmap
4. Establish Measures & Set Targets
5. Align Strategic Plan with Budget

Timeline

August/September

Prioritize Initiatives

Confirm and prioritize actions for roadmap development.

01

02

October

Define Success

Create a defined vision of success.

November

Prepare Roadmap

Prepare a roadmap that contain distinct actions with ownership.

03

04

December

Establish Measures & Set Targets

Refine measures of success and define protocol for measurement and establish time-based targets.

January, 2022

Align Plan w/Budget

05


2022-2025
The Journey Begins
CLACKAMAS
WATER
ENVIRONMENT
SERVICES

Clean Water Exchange

Final Report
September 2021

CLACKAMAS
WATER
ENVIRONMENT
SERVICES

WSC

Table of Contents

Executive Summary

Clackamas Water Environment Services (WES) has been leading the **Clean Water Exchange**. The Exchange is a unique research process designed around our organization's mission to provide resource recovery and watershed protection services so we can all live, work, and play in a healthy environment.

WES is leading the **Clean Water Exchange** to discover what our stakeholders most value related to clean water services. The appreciative engagement and research approach allows us to understand stakeholder understanding of our future, programs, and services, including healthy watersheds, public health and economic vitality, resource recovery, and customer service.

With a three-component research approach, participants in elements of the **Clean Water Exchange** have ranged from those stakeholders vested in WES' future, program, and services to ratepayers with less existing familiarity with WES. The three-component research approach included: Stakeholder Interviews, Virtual Focus Groups, and Survey & Engagement Webpage. All research was finalized in July 2021.

The research data shows us there is strong support for WES and great appreciation for improved outreach efforts over years. At the same time, there is opportunity to make a stronger connection between our work and protecting water quality in our rivers and streams. Participants are asking more of WES as it relates to education, volunteer opportunities and means to understand areas such as stormwater management and watershed health even more.

There is growing awareness as well for the clean water challenges ahead and a general sense that we can all work more closely together to address these complex challenges including rising temperatures, sustainable and affordable solutions, and inclusive and equitable service.

We also learned that while there is a deep appreciation for the work WES does to keep our waterways clean, the district story is often hard to understand. Moving forward WES needs to find deeper and more creative ways to connect to its customers, stakeholders and service area communities.

The focus groups, online survey and interviews provide us the information needed to identify short-term and long-term opportunities to continually strengthen our stakeholder relationships and collaboration to better achieve our clean water mission.

In response, four strategic initiatives were created:

1. Develop additional educational materials that are visually-engaging, easy-to-understand, and accessible for diverse audiences.
2. Establish innovative partnerships that leverage the strength of the community to achieve shared goals and deliver common messages.
3. Be responsible environmental and fiscal stewards by investing in innovative initiatives that support safe, reliable, and affordable services.
4. Invest in community-driven solutions and cultivate a generation of diverse watershed leaders.

These strategic initiatives will be used to develop a 2022-2025 Communications and Engagement Roadmap which will help WES chart a course for continuous improvement with its customers and stakeholders.

Introduction

Project Overview

The **Clean Water Exchange** was a unique multi-tiered research process designed to support Clackamas Water Environment Services (WES) in learning what is most valued as it relates to services provided by WES.

The purpose of Clean Water Exchange was to help:

- Strengthen customer and stakeholder understanding.
- Create new clean water partnerships and advocates.
- Build trust through enhanced connections.

Research Methods

WES used three unique methods for acquiring stakeholder input. Each method was designed to answer three key questions:

1. *What is working well as it relates to WES' services and operations?*
2. *What clean water challenges are you most concerned about and why?*
3. *What other suggestions do you have that might help WES with its efforts to be a credible source of information and champion of water protection?*

Method 1: Survey and Engagement Webpage

A multi-language web page was designed to build awareness, educate visitors, and offer an opportunity for stakeholders to provide input. The web page received over 670 views and 96 survey responses were completed by a diverse sector of stakeholders.

Method 2: Stakeholder Interviews

One on one stakeholder interviews included interviews with 15 stakeholders to build trust while curating a deeper understanding of stakeholder needs and water values.

Method 2: Focus Groups

Two virtual focus groups drew 32 participants. The intention of these focus groups was to collaborate and engage as a group while curating a deeper understanding of stakeholder needs and water values.

Project Goals

WES set the following three goals for the Clean Water Exchange:

1. Opportunity to strengthen stakeholder understanding.

Meet our stakeholders where they are and understand what matters most to them:

- *Watershed familiarity*
- *Water values and knowledge*
- *Vision for the future of clean water*
- *Recognized opportunities for positive change*
- *Channels, methods, languages*

2. Opportunity to build new partnerships and advocates.

Working collaboratively for:

- *Healthy watersheds*
- *Resource recovery*
- *Resilient systems*
- *Community vitality*
- *Growing economy*
- *Public health*
- *Reasonable rates*

3. Opportunity to build trust through connections.

Strengthen two-way communication channels between WES and its customers both direct and indirect to:

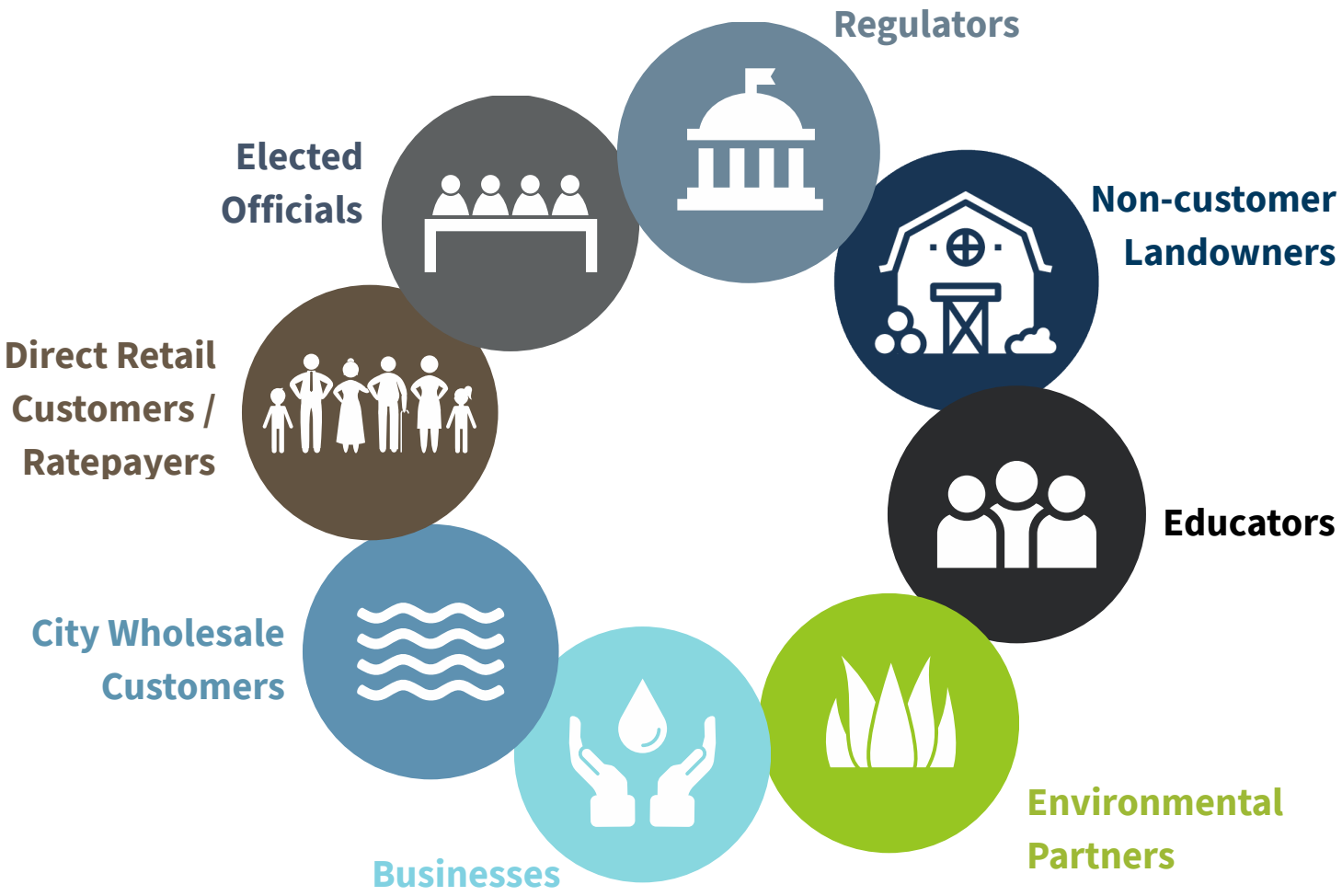
- *Better align outreach objectives with stakeholder values*
- *Improve awareness and understanding for WES mission and the work we do every day*
- *Enhance understanding of healthy watersheds and water quality*
- *Educate and inspire behavioral change for watershed protection*

Stakeholder Involvement

Stakeholders were chosen to be a part of this effort because of their vested interest in the future of our programs and services, including healthy watersheds, public health and economic vitality, resource recovery, and customer service.

During an early task force meeting, stakeholder segments were identified as depicted in **Figure 1**. A detailed summary of the stakeholder segments is shown in **Table 1**.

FIGURE 1. STAKEHOLDER SEGEMENTS



Themes

From the research, five common themes emerged as both strengths and opportunities for improvement.

Reliable Service

Strength: Provides reliable wastewater treatment services across the area.

Opportunity: Enhance water quality and manage the impacts of growth and climate change.

Impressive Outreach

Strength: Engages with the community and delivers value through educational materials.

Opportunity: Communicate information simply, creatively, and more broadly.

Dedicated Partner

Strength: Lead and collaborate in keeping our rivers clean and streams healthy.

Opportunity: Strengthen relationships with service area cities.

Industry Leader

Strength: Cultivates an environment that attracts highly-skilled professional staff.

Opportunity: Prepare for future workforce shortages.

Forward Thinking

Strength: Proactively and innovatively plans for the future.

Opportunity: Maintain infrastructure, build resiliency, and prepare for emergency response.

Additional insights into each of these themes is provided on the next few pages.

TABLE 1. COMMON THEMES

Theme	Method	Strength	Opportunity
 **Reliable Service**	**Survey**	**98%** of participants said they were confident in WES' efforts to provide reliable service. Only **2%** said they were not sure.	Participants prioritized clean water in our rivers and streams as the highest priority for the future.
	Focus Group	There was a general consensus from the focus group participants around WES' ability to deliver high quality service today.	50% of participants expressed concerns about water quality impacts and recommended helping others better understand the impact of landscaping and climate change (i.e., impacts of temperature and toxicity on our natural environment).
	Stakeholder Interview	**100%** of participants said they have high confidence in WES' ability to provide wastewater treatment services, today.	Almost all participants expressed concerns with WES' (and its service area cities) ability to stay on top of managing pollutants and stormwater runoff related to anticipated infill, shrinking lot sizes and growth. Climate change was also noted and the impacts it is and/or will have on our waterways and watersheds as it relates to everything from severe droughts to flooding.
 **Impressive Outreach**	**Survey**	**87%** of participants said they were satisfied with WES's ability to communicate with customers. Only **6%** said they were not sure. **67%** of participants said they were satisfied with WES's effort to educate customers on water quality practices. **19%** said they were not sure.	Over **50%** of participants selected that they would like to learn more about stream and wetland enhancement; stormwater management (watershed protection); and watershed health education.
	Focus Group	**63%** of the comments recognized WES for its efforts in outreach and education: ***"They are thinking outside the box on how to engage with the community and engage with young and old to educate them. This is exciting!"***	When asked about ways to continue being a credible source of information, **74%** of the ideas were related to outreach and education: ***"Educate at the youngest possible ages; get kids understanding where it comes from and goes."*** A majority of the ideas from participants focused on youth education including guided tours, video outreach materials, and the "poop fairy".
	Stakeholder Interview	Several participants shared positive feedback about the outreach and educational work that WES is doing: ***"Outreach and education are very important. The fact you're doing this type of work will only improve at every level, surface to operation."*** and ***"WES is doing a great job with outreach and education – we've really stepped up our game!"***	Participants shared that **communicating rates and budget information in a transparent and easy to understand format** would be key to building trusting relationships with service area cities and constituents**.** Understanding how rates are collected and invested were identified as key opportunities. Website enhancements, annual calendars, color-coded maps of district were a few of the ideas that were suggested to enhance visibility and understanding.
 **Dedicated Partner**	**Survey**	**86%** of participants said they were satisfied with WES's ability to be customer oriented. Only **8%** said they were not sure.	Participants recognized additional partnership opportunities: ***"Our family plays in many of Oregon's rivers and streams, we go to all of the parks in the area, so partnering with parks would be a good way to share educational materials/interpretive signage, partnering on events, etc."***
	Focus Group	Participants commended WES for its educational partnership efforts: ***"Partnership and discussions regarding supporting schools has been very friendly & looking forward to learning more."***	Participants expressed interest in additional partnerships: ***"How do you encourage everyone to work together and share information?"***
	Stakeholder Interview	Participants commended WES for partnership efforts with other agencies: ***"WES is doing an excellent job working with the City of Happy Valley relating to development, permits and master planning for future growth needs."***	WES' ability to **maintain and strengthen relationships with the service area cities** was a point of major concern for many of the interviewees: ***"My desire would be for WES and the municipalities it serves to build even stronger relationships, so the residents and other stakeholders know more about WES and its important role they do in protecting our watershed."*** It will be important to work together to help rate payers understand the need for big capital projects and to collaborate on issues of mutual impact, such as Inflow and Infiltration.

Theme	Method	Strength	Opportunity
Industry Leader	**Survey**	**77%** of participants said they were satisfied with WES's ability to control costs and maintain reasonable rates. Only **13%** said they were not sure.	**76%** of participants asked that WES share more about recycled water and **64%** of participants asked that WES share more about renewable energy. **69%** of participants asked that WES share more about everyday actions to prevent water pollution and **67%** of participants asked that WES share more about stream and wetland improvement projects.
	Focus Group	Participants described staff interactions as very positive and complimented WES for cultivating the right environment: ***"Interaction with staff is outstanding, motivated, upbeat, and interactive. What an organization should really strive for!"*** Participants also describe staff as responsive and knowledgeable: ***"Anytime there is a question, staff is responsive and provide good answers. Staff assist with getting from where we are to where we want to be."***	Participants expressed concerns around the reduced number of younger generation entering the workforce.
	Stakeholder Interview	Participants described staff as highly professional and responsive.	WES' ability to **attract and retain highly skilled professionals from operations to senior leadership** was an expressed concern. Workforce shortages are a current threat with the wave of retirements underway and a small pipeline of skilled workers to replace them. Participants provided a number of suggestions to get on top of this issue in the near term, most related to strengthening relationships with educational partners and more interaction with youth.
Forward Thinking	**Survey**	**59%** of participants were satisfied with WES's planning and investment in infrastructure.	**10%** of participants were not satisfied with WES's planning and investment in infrastructure. **31%** were not sure.
	Focus Group	WES was described as forward looking for the planning efforts: ***"20-30 year plans, big difference between WES and other service providers."***	Participants expresses concerns related to infrastructure planning and WES' ability to achieve the capacity needed.
	Stakeholder Interview	WES was described as proactive with people, programs, policies, and vision.	Participants recognized that climate change is here and recommending identifying alternative water supplies for the future.

Engagement Model

An engagement model is a process used to approach ongoing relationships and communication with stakeholders. The model presented below is the foundation for WES' engagement initiatives and strategies. This model can be used to build trust and set expectations. An effective Communicating and Engagement Plan models various levels of engagement.

Increase Engagement Level →

	Inform	Collaborate	Empower
Description	Educational or informative one-way communication. Keeping the public informed.	Seeking value-based input that will guide decisions makers. Two-way communication model of information gathering and report-outs.	Participates are actively involved in solution development. A circular model where stakeholders advise and guide policy with influence over decision final decisions.
Communication Tools	E-newsletters. Press Releases. Website Announcements. Printed Collateral. Advertisements. Educational Materials. News Channels. Signage. Social Media	Open Houses. Public Meetings. Listening Sessions. Surveys and Polling. Social Media. Volunteer Initiatives. Special Events. Education Center/Locations.	Community Partnerships. Advisory Boards. Working Groups. Focus Groups. Board, Commission. Regulators. Volunteer Initiatives.
When to Use	When education and information is being shared with stakeholders.	When public comments, input, and buy-in is needed.	When stakeholders guiding policy, solutions, and decisions.
Examples	quarterly e-news	3-Creeks Community involvement	WES Advisory Committee
Promise	*"We will keep stakeholders informed and provide timely updates on program progress."*	*"We will actively listen to stakeholder concerns and recommendations to provide maximum value to our community."*	*"We will partner with stakeholders when formulating ideas and implementing change to foster trust and inspire innovation."*

Strategies

The following strategies for WES engagement were developed from the themes through the Clean Water Exchange research.

1

Develop additional educational materials that are visually-engaging, easy-to-understand, and accessible for diverse audiences.

Themes: Impressive Outreach, Dedicated Partner, Industry Leader

Engagement Model: Inform

Priority Stakeholders: Retail Customers, Wholesale Customers, Business, Education

2

Establish innovative partnerships that leverage the strength of the community to achieve shared goals and deliver common messages.

Themes: Impressive Outreach, Dedicated Partner, Industry Leader

Engagement Model: Collaborate

Priority Stakeholders: Business, Education, Environmental Partners

3

Be responsible environmental and fiscal stewards by investing in innovative initiatives that support safe, reliable, and affordable services.

Themes: Reliable Service, Dedicated Partner, Industry Leader, Forward Thinking

Engagement Model: Inform, Collaborate

Priority Stakeholders: Retail Customers, Wholesale Customers

4

Invest in community-driven solutions and cultivate a generation of diverse watershed leaders.

Themes: Dedicated Partner, Industry Leader, Forward Thinking

Engagement Model: Empower

Priority Stakeholders: Business, Education

Recommended actions have been prepared for each strategy and prioritized using the ICE scoring model. ICE scoring uses three parameters to estimate value: Impact, Confidence, and Ease.

- **Impact** reflects the effect a project will have on a stakeholder.
- **Confidence** reflects at the likelihood of achieving the desired impact.
- **Ease** reflects how easy a project is to complete.

An ICE score is then calculated by taking the sum of the three criteria and the largest score is considered the highest priority. Using this model, opportunities received a score indicated by a checkmark. The less checkmarks a category received, the lower the score. Additional insights into each of these strategies and actions are provided on the next few pages.

1 Develop educational materials for diverse audiences that are visually-engaging, easy-to-understand, and accessible.

Themes: Impressive Outreach, Dedicated Partner, Industry Leader

Engagement Model: Inform

Priority Stakeholders: Retail Customers, Wholesale Customers, Business, Education

Recommended Actions:

- Build upon renewed brand to create fresh content based on audience.
- Enhance social media channels to reach targeted ratepayer stakeholders and businesses. Develop content that support's WES' communication goals and aligns with stakeholder interests.
- Prioritize stakeholder preferred communication channels.
- Use a variety of communication tools to reach multigenerational audiences- digital, print, in-person, special events.
- Use compelling elements such as, personal narratives, maps, videos, images, and amination to tell WES' story.

Opportunities

Audience	Retail Customers (Ratepayers)	Wholesale Customers Elected Officials Regulators	Education (Youth & Students)	Business
Communication Method	Bill inserts. Newsletters, physical and digital. Text-notifications.	Routine email updates. Attend agency public meetings. Present at conferences.	Social media. Video campaigns. Facility tours. Classroom presentations.	Meet & greet events. Signage. Newsletters. Outreach swag
Impact	✓✓	✓✓	✓✓	✓
Confidence	✓✓	✓✓	✓	✓
Ease	✓✓✓	✓✓✓	✓✓	✓✓
Score	7	7	5	4

High Priority — Low Priority

Project Successes

WES E-News: Quarterly E-Newsletter sent to 5,000 active subscribers.

Social Media Education Campaign: Weekly educational messages focused on watershed health.

2 Establish innovative partnerships that leverage the strength of the community to achieve shared goals and deliver common messages.

Themes: Impressive Outreach, Dedicated Partner, Industry Leader

Engagement Model: Collaborate

Priority Stakeholders: Business, Education, Environmental Partners

Recommended Actions:

- Establish common goals with community partners (i.e., climate resiliency, watershed protection, affordable services)
- Leverage existing opportunities to share messaging and co-branding (i.e., joint press releases, newsletters)
- Develop new communication opportunities (i.e., joint event, shared mailer)
- Explore unconventional partnerships (art community, human rights groups, social media influencers)
- Collaborate with private industry, city leaders and other agencies to find solutions to issues that impact the health and well-being over watershed and community as a whole (i.e., homelessness).

Opportunities

Audience	Business (HOA, Landowners, Realtors)	Education (Educators)	Environmental Partners
Communication Method	Present at HOA meetings. Share educational collateral with Real Estate agents. Welcome packages to new homeowners.	Youth curriculum development. Field trips programs. Internship's opportunities. Research partnership.	Public art. Film and music festivals. Photo and film contests. Presence at activism events. Humanitarian efforts.
Impact	✓✓✓	✓✓	✓✓
Confidence	✓	✓	✓
Ease	✓	✓	✓
Score	5	4	4

High Priority — Low Priority

Project Successes

Celebrate Watershed Health Art Education Mural at Tri-City WRRF.

Street of Dreams sponsorship featuring watershed health & "Trash it, Don't Flush it" messaging.

3 Be responsible environmental and fiscal stewards by investing in innovative initiatives that support safe, reliable, and affordable services.

Themes: Reliable Service, Dedicated Partner, Industry Leader, Forward Thinking

Engagement Model: Inform, Collaborate

Priority Stakeholders: Retail Customers, Wholesale Customers

Recommended Actions:

- Continually engage the community in value-based conversations (i.e., polling, surveys, interviews).
- Align forward-looking projects with stakeholder priorities, values, and interests.
- Commit to leading a highly engaged and inclusive strategic planning, budget development, and rate-setting process.
- Demonstrate transparency by clearly communicating where ratepayers' dollars are being invested (i.e., stormwater mitigation, infrastructure upgrades, O&M).
- Seek opportunities to highlight infrastructure investments (i.e., animated maps, photos, videos, tours).
- Celebrate and involve the stakeholders project milestones.

Opportunities

Audience	All Stakeholders	Retail Customers Wholesale Customers	Retail Customers (Ratepayers)	Wholesale Customers	All Stakeholders
Communication Method	Invest in third-party, statistically validated public polling process	Lead highly engaged strategic planning, budget-setting, rate design processes	Share rate information on website, social media and at community meetings, and in-person events	Goal-setting and visioning. Budget development. Master Plan. General Plan.	Groundbreaking. Ribbon cutting. Annual Open House Events. Facility Tours.
Impact	✓✓✓	✓✓✓	✓✓	✓✓	✓✓
Confidence	✓✓✓	✓✓✓	✓✓	✓✓	✓✓
Ease	✓✓	✓	✓✓✓	✓✓✓	✓✓
Score	8	7	7	7	6

High Priority — **Low Priority**

Project Successes

Customer Service educational campaign for new billing system.

Solids Handling Improvements Project community awareness campaign.

4 Invest in community-driven solutions and cultivate a generation of diverse watershed leaders.

Themes: Dedicated Partner, Industry Leader, Forward Thinking

Engagement Model: Inform, Collaborate, Empower

Priority Stakeholders: Business, Education

Actions:

- Create innovative solutions by bringing new voices to the table.
- Design and develop an annual or bi-annual Watershed Leadership Collective for community leaders of all ages and background. The Academy would include interactive coursework where participates got to tour facilities, visit sites, hear from industry experts, ride along with water professions and various unique experiences that demonstrate “a-day in the life of a WES employee”.
- Partner with local high schools or universities to offer internships and research opportunities. Engage youth in a first-hand experience that will spark an interest in watershed protection.
- Recruit young talent and demonstrate community support by participating in local career fairs and recruitment events.
- Work with local businesses to develop joint efforts to support clean water protection.

Opportunities

Audience	All Stakeholders	All Stakeholders	Business	Education	Education
Communication Method	Community advisory groups.	Leadership academy.	Quarterly focus group with business owners.	Internships. Academic research.	Recruitment events. Local career fairs.
Impact	✓✓✓	✓✓✓	✓✓	✓✓	✓
Confidence	✓✓✓	✓✓	✓	✓	✓
Ease	✓	✓	✓✓	✓	✓
Score	7	6	5	4	3

High Priority — **Low Priority**

Project Successes

Clackamas Academy for Industrial Science Classroom Solids Project.

Oregon Water Education Foundation Water Environment School Partnership with CCC.

Draft Roadmap Framework

Schedule & Milestones ◍ Start Date ▽ Milestone ❖ Regulatory ★ Engagement

Strategy	Action	Leader	2022				2023				2024				2025				2026				2027			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Develop educational materials for diverse audiences that are visually-engaging, easy-to-understand, and accessible.																										
Establish innovative partnerships that leverage the strength of the community to achieve shared goals and deliver common messages.																										
Be responsible environmental and fiscal stewards by investing in innovative initiatives that support safe, reliable, and affordable services.																										
Invest in community-driven solutions and cultivate a generation of diverse watershed leaders.																										

Recommendations

Next Steps

Prioritize Initiatives

Confirm actions that support the strategies outlines in this document. Distinguish between those that can be completed in the short-term (small changes) and long-term (big ideas). Prioritize actions for roadmap development accordingly.

Define Success

Create a defined vision of success for each of the strategies outlined in this document.

Prepare Roadmap

Prepare a roadmap that contain distinct actions with ownership and are accountable to a schedule. Consider dependencies on interdepartmental collaboration and external stakeholder engagement.

Establish Measures & Set Targets

Refine measures of success that will effectively evaluate progress of actions towards these strategies. Define protocol for measurement and establish time-based targets.

Align Plan with Budget

Roadmap Upkeep

The roadmap should be a living document that establishes concrete plans while simultaneously adapting to changing conditions and tracking progress. This is a complex requirement and requires routine maintenance and the consistent use of specific tools to enable iterative planning. The following concepts must be considered and implemented:

Review and Revision

It is recommended that the team review and update the roadmap every 4 weeks or as needed to progress schedules. The action leads are to report progress along the roadmap on a quarterly basis to engage leadership in decision-making, prioritization, and resource needs.

Document Control

Updates to external-facing documents and the roadmap itself should occur continuously. Version identification, storage, and distribution needs to follow a structured protocol so that the most current information is communicated.

CLACKAMAS
WATER
ENVIRONMENT
SERVICES

WES Sustainability Efforts

September 2021

Sustainable Clackamas County

- 2008: BCC passes *Resolution for a Sustainable Clackamas County* to set path toward a more ecologically, socially and economically sound future
- 2018: BCC directs staff to create Climate Action Plan
- 2020: BCC adopts Performance Clackamas goal:

"By 2023, a Climate Action Plan is adopted for our community with specific recommendations to reach the goal of being carbon neutral by 2050."

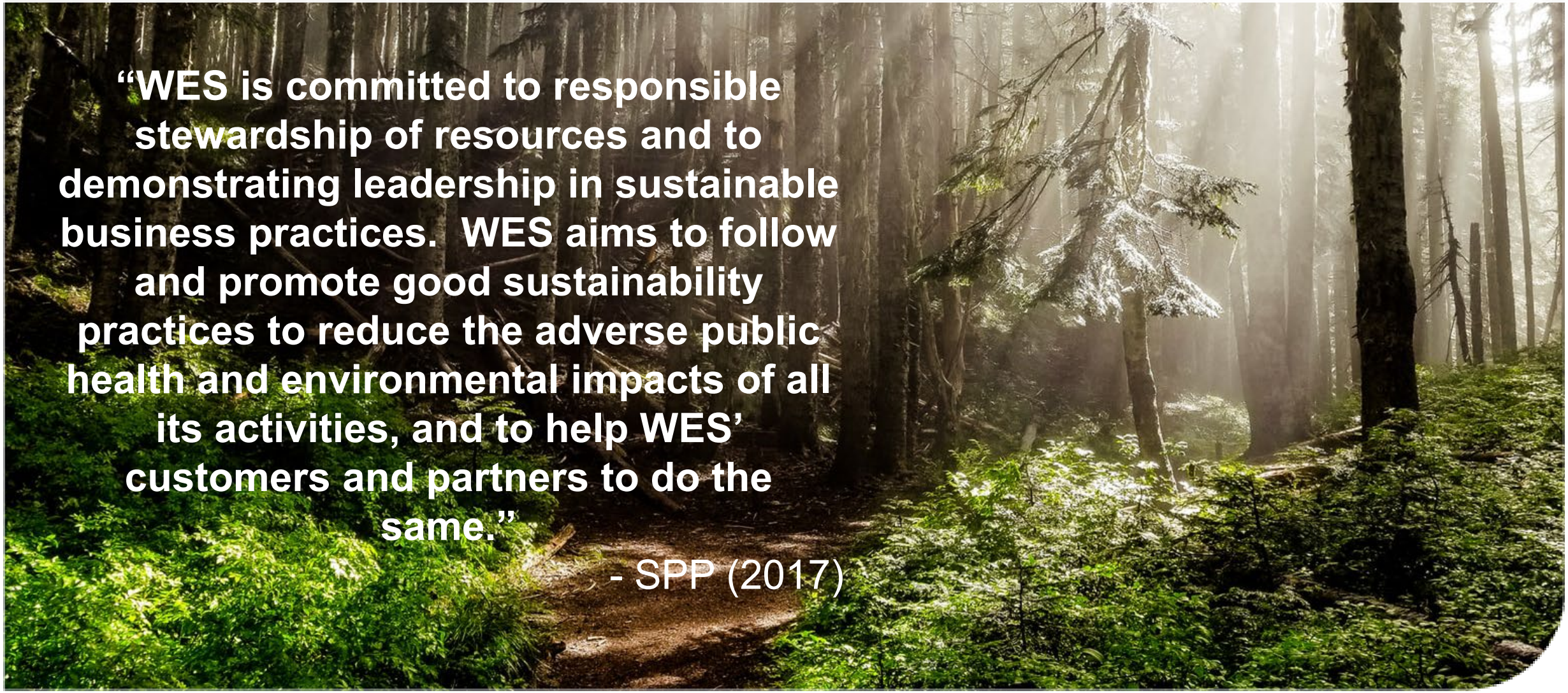
CLACKAMAS WATER ENVIRONMENT SERVICES

WES SUSTAINABLE PRACTICES POLICY (2017)

- Establishes department goals and scope in areas of sustainable practices, including:
  - — policy,
  - —leadership and employee engagement,
  - —materials management,
  - —water,
  - —energy,
  - —community engagement.

CLACKAMAS WATER ENVIRONMENT SERVICES

Sustainable Practices Policy (2017)



WES GREEN TEAM

- Established in 2017 as part of the Sustainable Practices Policy
- Composed of 9 staff from multiple WES divisions and facilities to:
  - Provide analysis and recommendations for green efficiency improvements
  - Ensure compliance with the Leaders in Sustainability certification
  - Provide sustainability training for new hires and annual refreshers for current staff

Green Team Staff Engagement Projects

- Purchased re-usable dinnerware for staff events.
- Fleet monitoring to encourage reduction in vehicle-miles-traveled.
- Organized the Plastic Free Eco-Challenge for month of July to raise awareness and reduce single-use plastics.
- Upcoming: Battery Recycling Round-up.

CLACKAMAS WATER ENVIRONMENT SERVICES

‘Leaders in Sustainability’ Certification

- Provides Clackamas County workplaces with guidance and recognition for meaningful achievements in sustainability practices.
- 3-tier certification program based on 90+ possible sustainability practices; areas of focus include:
  - Policy and Employee Engagement
  - Reduce, Reuse, Recycle
  - Energy
  - Water Conservation and Stormwater Quality
  - Hazardous Materials Management
  - Transportation

CLACKAMAS WATER ENVIRONMENT SERVICES

WES LiS Certification Achievements

- First County department to achieve certification (2017)
- Improved from Silver to Gold certification (2021)
- Created staff intranet page, including links to sustainability resources and tool for staff suggestions
- Helped implement reuse/reduce/recycling into daily operations and procurement
- Installed storm drain markers, low-flow water fixtures, and emphasis on drought tolerant landscaping

CLACKAMAS WATER ENVIRONMENT SERVICES

RECENT SUCCESS STORIES

- Climate Exchange
- Cogeneration Plant at Tri-City
- Renewable Energy Certificate (RECs)
- Demand Response Energy Partnership with PGE
- Climate Resilience Evaluation and Awareness Tool (CREAT)

Clackamas County Climate Exchange

- Cross-departmental commitment to achieve goal of adopting a countywide Climate Action Plan and being carbon neutral by 2050.

CLACKAMAS WATER ENVIRONMENT SERVICES

Cogeneration Plant

- New cogeneration engine to produce combined heat and power utilizing digester methane (biogas)
  - offsets 4,324 megawatts of electricity per year enough to meet 50% of the Tri-City Facility electrical needs
  - an equivalent of removing 660 passenger vehicles and offsetting 3,057 metric tons of carbon dioxide annually

CLACKAMAS WATER ENVIRONMENT SERVICES

Renewable Energy Certificates (REC's)

- Oregon Community Solar Program helps develop solar projects across the state and expand access to clean energy.
- Subscribers get a utility bill credit for their portion of the energy generated by each project.
- WES has subscribed to three community solar projects that produce nearly 4,000 KWac and saves WES close to $45,000 dollars annually.

CLACKAMAS WATER ENVIRONMENT SERVICES

Demand Response Energy Partner (PGE)

- Agreement between PGE and WES to reduce or shift energy use when demand is high - usually hot summer or cold winter days.

CLACKAMAS WATER ENVIRONMENT SERVICES

Climate Resilience Evaluation and Awareness Tool (CREAT) - EPA

- EPA's CREAT is a risk assessment application that helps utilities adapt to climate change impacts by providing a better understanding of current and long-term weather conditions.
- Performed on Hoodland Facility as part of EPA pilot program.

CLACKAMAS WATER ENVIRONMENT SERVICES

COMING SOON...

- Update of WES Rules, Regulations, and Design Standards
- Strategic Energy Management
- UW Collaborative Climate Modeling
- Electric Vehicle Charging Stations
- PGE Green Futures

Update WES Rules and Design Standards

- Update and modernizing of WES Rules and Design Standards prioritizing low-impact design practices

- Anticipated adoption in 2022.

CLACKAMAS
WATER
ENVIRONMENT
SERVICES

Strategic Energy Management (SEM)

- Initial effort identified 114 energy saving opportunities and reduced usage of 3,000,000 kWh with over $150k in savings at Tri City Facility.
- Will expand SEM process to Kellogg Creek and Hoodland facilities during 2021/22.

CLACKAMAS WATER ENVIRONMENT SERVICES

UW Collaborative Climate Modeling

- Precipitation modeling project to help understand how rainfall rate changes in future climate scenarios.
- Potentially useful in design standards, facility designs, master planning efforts.

CLACKAMAS WATER ENVIRONMENT SERVICES

Electric Vehicle Charging Stations

- Plans to install new electric charging stations at Tri City and Kellogg Creek to serve internal WES fleet as well as customer needs.

- Supports county goal to convert vehicle fleet from gas-powered to electric.

CLACKAMAS
WATER
ENVIRONMENT
SERVICES

PGE Green Futures

- Through a Power Purchase Agreement with PGE, WES will source up to 100% of our electricity from a new regional wind or solar facility.

- Fixed price per megawatt hour for the duration of the agreement.

CLACKAMAS
WATER
ENVIRONMENT
SERVICES

WES Green Team Members

- **Jeannie Andersen,**
  Permits Technician
- **Erik Bertram,**
  Development Review
- **Jeremy Bodner,**
  Sanitary/Storm Tech
- **Akiko Gates,**
  Admin Specialist
- **Michael Hawkins,**
  Wastewater Plant Operator
- **Terrance Romaine,**
  Resource Recovery Supervisor
- **Robert Russo,**
  Management Analyst
- **Nathan Seaver,**
  Civil Engineer
- **Andrew Swanson,**
  Water Quality Analyst

"Emeritus"

- **Chris Desiderati**
- **Chanin Bays**
- **Matt Glazewski**

CLACKAMAS
WATER
ENVIRONMENT
SERVICES


Questions?
“Do your little bit of good where you are; it’s those little bits of good put together that overwhelm the world.”
– Archbishop Desmond Tutu
CLACKAMAS
WATER
ENVIRONMENT
SERVICES

CLACKAMAS
WATER ENVIRONMENT SERVICES

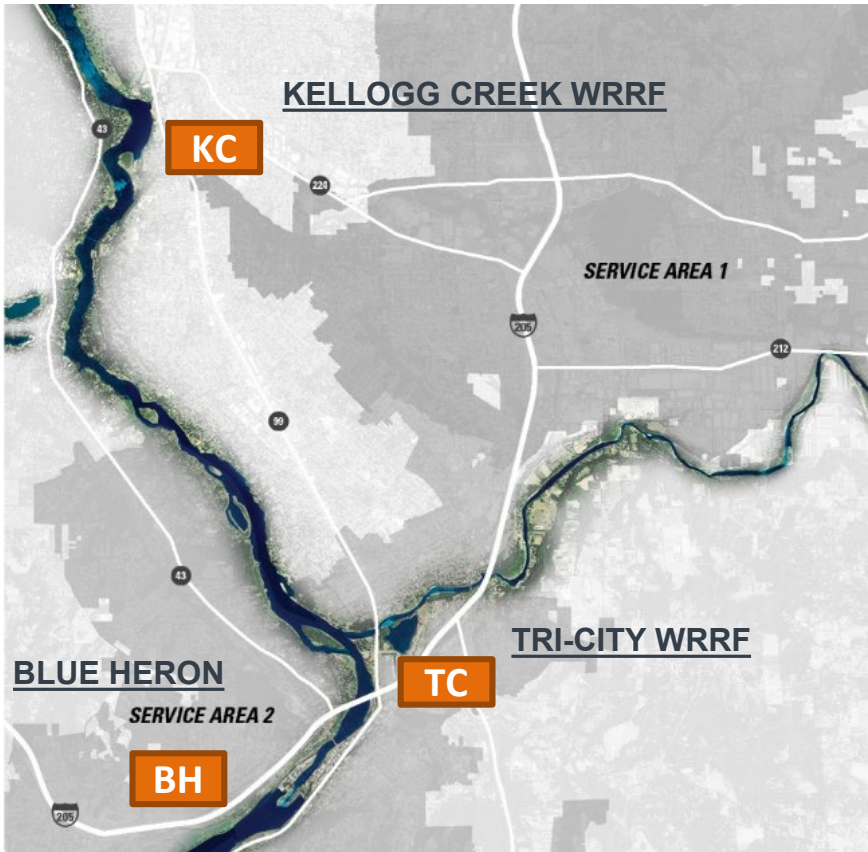
WES Advisory Committee
16 September 2021

Willamette Facilities Plan

Lynne Chicoine, PE BCEE
Capital Program Manager

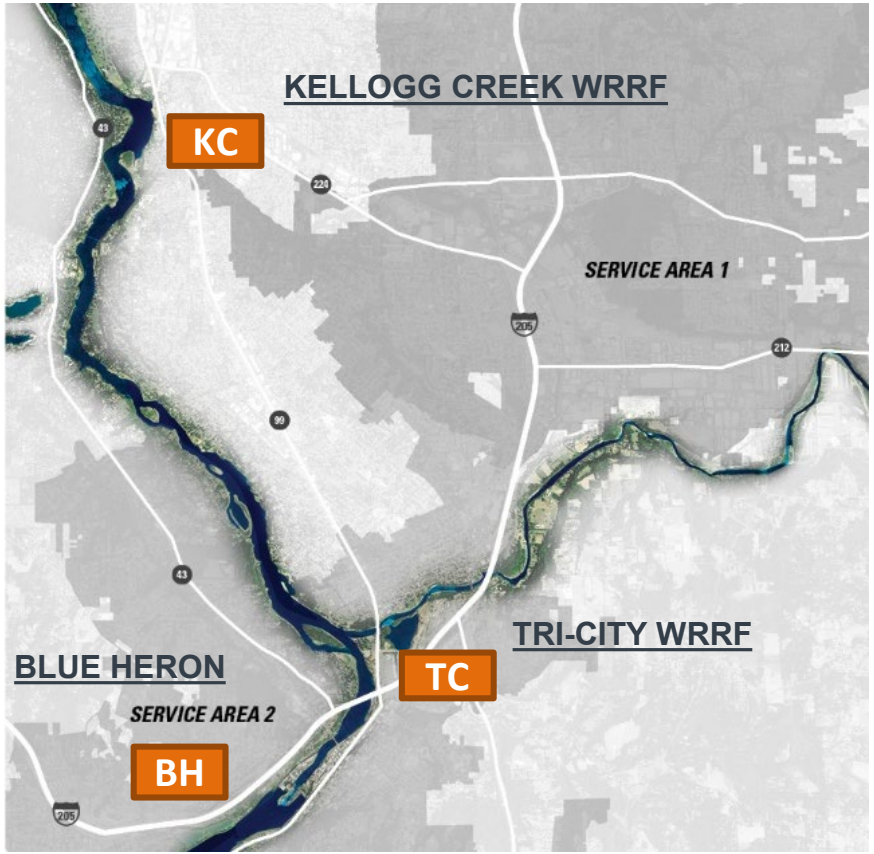
What is a Facilities Plan?

- Authorized under OARs to address public facilities in comprehensive planning process
- Conforms with DEQ Guidance so will qualify for State Revolving Fund (SRF) construction loans
- **Willamette Facilities Plan provides a regional approach**



The WFP will provide…

- A comprehensive, **regional plan** for your infrastructure
- A **prioritized 20-year CIP** addressing current and potential future needs
- **Best value** for ratepayers by maximizing use of existing facilities
- Sustainable, **affordable solutions** that support economic development
- **Continued protection** of Willamette River water quality



Facilities Plan Development
Phase 1 - Background

- TASK 100 PROJECT MANAGEMENT
- TASK 200 PLANNING AREA CHARACTERISTICS
- TASK 300 WASTEWATER FLOWS AND LOADS
- TASK 400 PERMITTING AND REGULATORY CONSIDERATIONS
- TASK 500 CAPACITY ANALYSIS
- TASK 600 CONDITION ASSESSMENT
- TASK 700 ASSET MANAGEMENT
- TASK 800 ALTERNATIVES DEVELOPMENT AND EVALUATION
- TASK 900 WATER QUALITY MODELING
- TASK 1000 RECOMMENDED PLAN
- TASK 1100 FACILITIES PLAN DOCUMENTATION
- TASK 1200 ENVIRONMENTAL REVIEW AND DOCUMENTATION
- TASK 1300 QUALITY CONTROL

CLACKAMAS WATER ENVIRONMENT SERVICES

Facilities Plan Development
Phase 2 – Alternatives Evaluation

- TASK 100 PROJECT MANAGEMENT
- TASK 200 PLANNING AREA CHARACTERISTICS
- TASK 300 WASTEWATER FLOWS AND LOADS
- TASK 400 PERMITTING AND REGULATORY CONSIDERATIONS
- TASK 500 CAPACITY ANALYSIS
- TASK 600 CONDITION ASSESSMENT
- TASK 700 ASSET MANAGEMENT
- TASK 800 ALTERNATIVES DEVELOPMENT AND EVALUATION
- TASK 900 WATER QUALITY MODELING
- TASK 1000 RECOMMENDED PLAN
- TASK 1100 FACILITIES PLAN DOCUMENTATION
- TASK 1200 ENVIRONMENTAL REVIEW AND DOCUMENTATION
- TASK 1300 QUALITY CONTROL

CLACKAMAS WATER ENVIRONMENT SERVICES

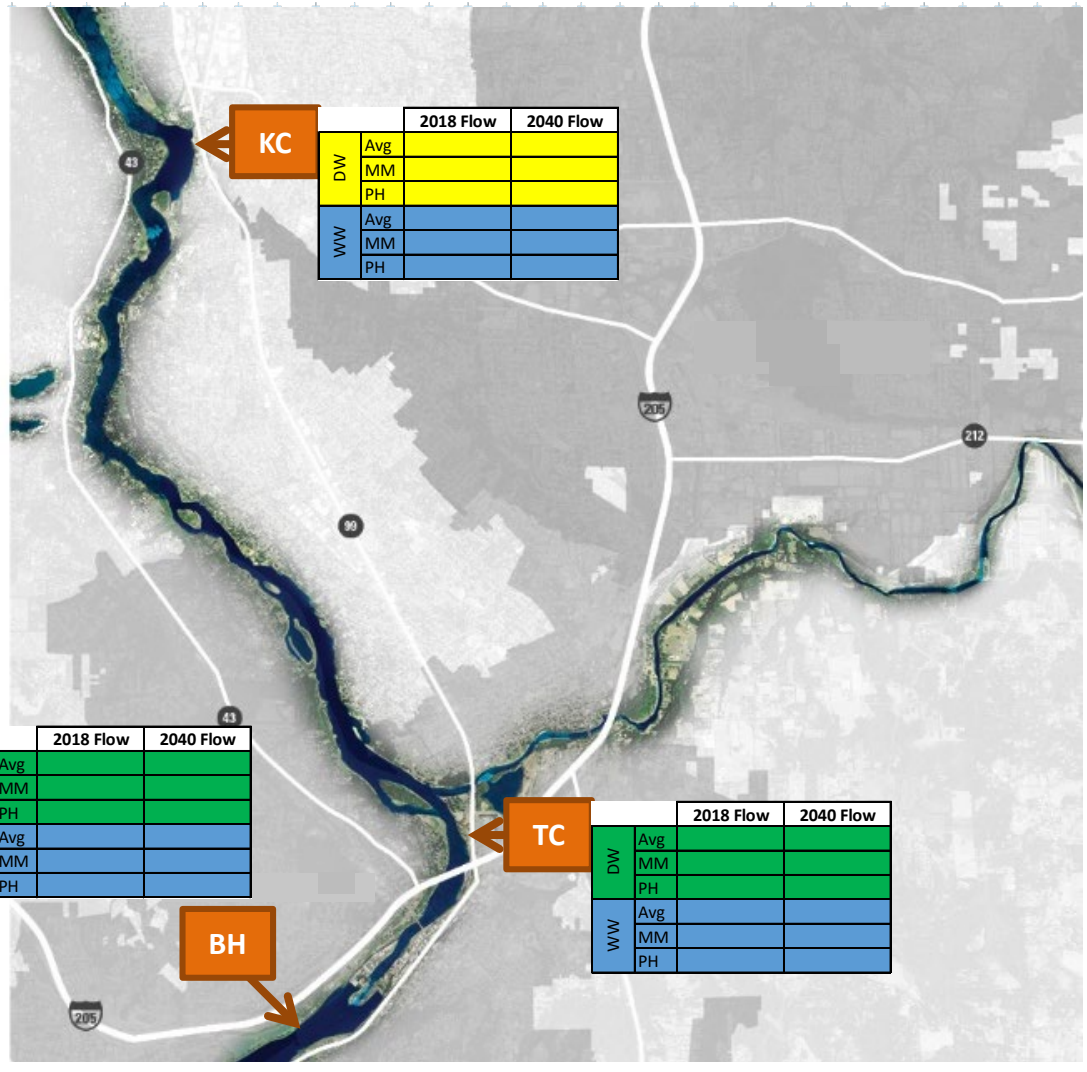
Facilities Plan Development
Phase 3 – Documentation

- TASK 100 PROJECT MANAGEMENT
- TASK 200 PLANNING AREA CHARACTERISTICS
- TASK 300 WASTEWATER FLOWS AND LOADS
- TASK 400 PERMITTING AND REGULATORY CONSIDERATIONS
- TASK 500 CAPACITY ANALYSIS
- TASK 600 CONDITION ASSESSMENT
- TASK 700 ASSET MANAGEMENT
- TASK 800 ALTERNATIVES DEVELOPMENT AND EVALUATION
- TASK 900 WATER QUALITY MODELING
- TASK 1000 RECOMMENDED PLAN
- TASK 1100 FACILITIES PLAN DOCUMENTATION
- TASK 1200 ENVIRONMENTAL REVIEW AND DOCUMENTATION
- TASK 1300 QUALITY CONTROL

CLACKAMAS
WATER
ENVIRONMENT
SERVICES

Scenario Schematics

- NPDES Permit Limits
  - Existing Dry Weather Limits
  - Future Dry Weather Nutrient Limits
  - Existing Wet Weather Limits
- Dry Weather Strategy
  - Average, Max Month, Peak Flow
- Wet Weather Strategy
  - Average, Max Month, Peak Flow



Scenario Descriptions and Costs

Scenario	Description	Estimated, $M
Scenario 1 (Base Case)	Existing NPDES permit limits, peak flow transfer from KC to TC WRRF, no treatment at Blue Heron.	$135
Scenario 1.5	Existing NPDES permit limits at KC, future seasonal NPDES nutrient limits at TC, peak flow transfer from KC to TC WRRF, no treatment at Blue Heron.	$206
Scenario 2	Future seasonal NPDES nutrient limits, peak flow transfer from KC to TC WRRF, no treatment at Blue Heron.	$257
Scenario 3	Future seasonal NPDES nutrient limits, seasonal “intensification” at KC WRRF, peak flow transfer from KC to TC WRRF, no treatment at Blue Heron.	$243
Scenario 4	Existing NPDES permit limits, peak flow transfer from KC to TC WRRF, peak flow treatment at Blue Heron.	$131
Scenario 5	Future seasonal NPDES nutrient limits, peak flow transfer from KC to TC WRRF, year-round treatment at Blue Heron.	$294

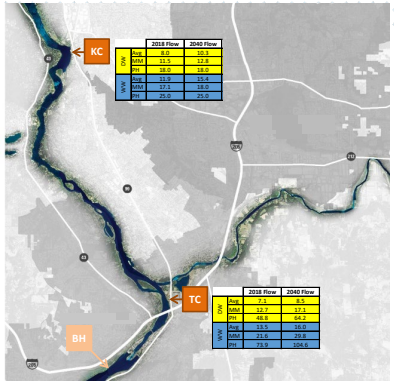
Scenario Descriptions and Costs

Scenario	Description	Estimated, $M
Scenario 1 (Base Case)	Existing NPDES permit limits, peak flow transfer from KC to TC WRRF, no treatment at Blue Heron.	$135
Scenario 1.5	Existing NPDES permit limits at KC, future seasonal NPDES nutrient limits at TC, peak flow transfer from KC to TC WRRF, no treatment at Blue Heron.	$206
~~Scenario 2~~	~~Future seasonal NPDES nutrient limits, peak flow transfer from KC to TC WRRF, no treatment at Blue Heron.~~	~~$257~~
Scenario 3	Future seasonal NPDES nutrient limits, seasonal “intensification” at KC WRRF, peak flow transfer from KC to TC WRRF, no treatment at Blue Heron.	$243
~~Scenario 4~~	~~Existing NPDES permit limits, peak flow transfer from KC to TC WRRF, peak flow treatment at Blue Heron.~~	~~$131~~
~~Scenario 5~~	~~Future seasonal NPDES nutrient limits, peak flow transfer from KC to TC WRRF, year-round treatment at Blue Heron.~~	~~$294~~

Recommended Scenario Implementation

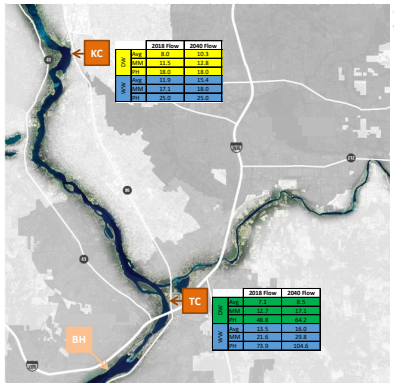
Scenario 1 Schematic & Overview

- Existing NPDES Permit Limits
- Dry Weather Strategy
  - Continue to treat AVG, MM flows from KC Service Area at KC
  - Minimal improvements required at KC and TC
- Wet Weather Strategy
  - Continue to cap peak flows to KC at 25 mgd
  - Transfer balance of flow to TC
  - Expand Intertie PS and associated conveyance
  - Expand TC to treat up to 105 mgd (PHWWF)



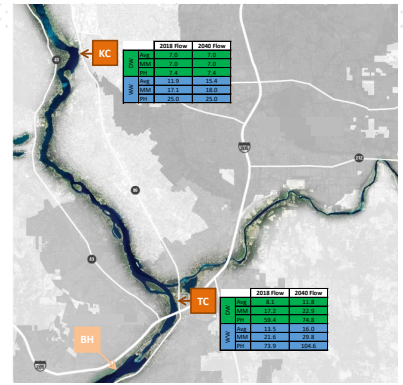
Scenario 1.5 Schematic & Overview

- Hybrid NPDES Permit Limits
- Dry Weather Strategy
  - Continue to treat AVG, MM flows from KC Service Area at KC
  - Minimal improvements required at KC
  - Transfer balance of flow to TC
  - Expand TC to meet nutrient limits
- Wet Weather Strategy
  - Continue to cap peak flows to KC at 25 mgd
  - Transfer balance of flow to TC
  - Expand Intertie PS and associated conveyance
  - Expand TC to treat up to 105 mgd (PHWWF)



Scenario 3 Schematic & Overview

- Future Summertime Nutrient Limits (3 mg/L TIN, 0.3 mg/L P)
- Dry Weather Strategy
  - Install intensification at KC
  - Cap AVG, MM flow to KC at ± 7 mgd
  - Transfer balance of flow to TC
  - Expand TC to meet nutrient limits
- Wet Weather Strategy
  - Continue to cap peak flow to KC at 25 mgd
  - Transfer balance of flow to TC
  - Expand Intertie PS and associated conveyance
  - Expand TC to treat up to 105 mgd (PHWWF)



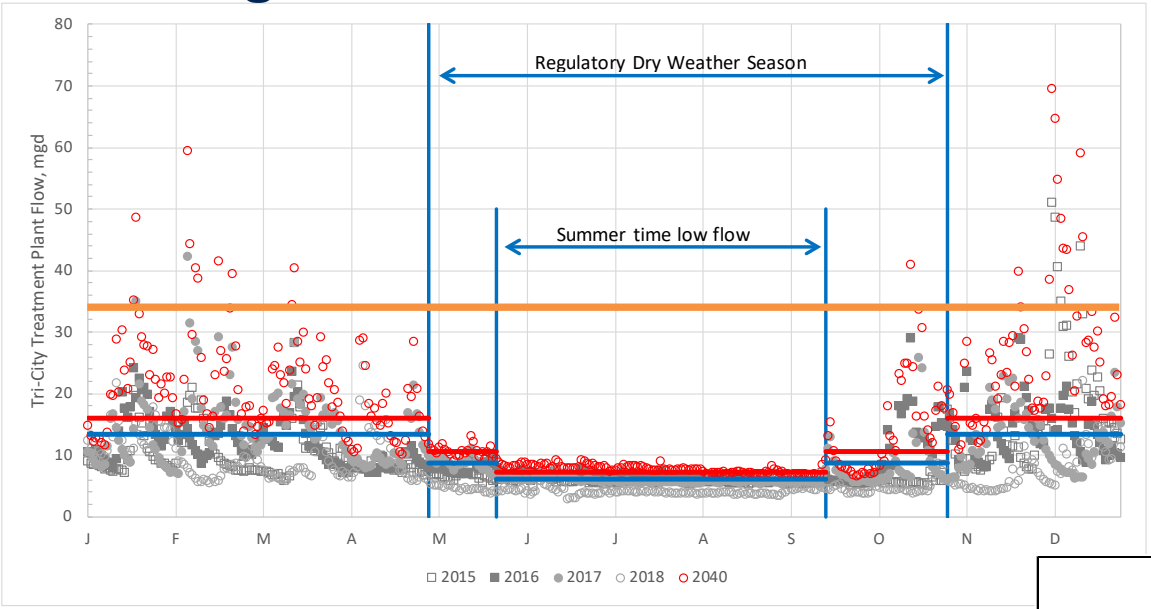
- **Scenario 1**
  - Cap peak flow capacity at KC (25 mgd)
  - Increase Wet Weather transfer capacity between KC and TC
  - Solids and disinfection improvements at KC
  - Increase peak flow capacity at TC
- **Scenario 1.5**
  - Implement Dry Weather nitrification, P-removal at TC
- **Scenario 3**
  - Implement Dry Weather nitrification, P-removal at KC
  - Increase transfer of KC flow to TC (and expand accordingly)

Required KC WRRF Improvements – Condition

Administration Building Remodel	$1.4M
Solids Handling Improvements	$27.0M
Aeration Basin Improvements	$3.8M
Influent Pump Station Improvements	$1.5M
Disinfection Improvements	$2.8M
Miscellaneous Improvements	$6.0M

CLACKAMAS WATER ENVIRONMENT SERVICES

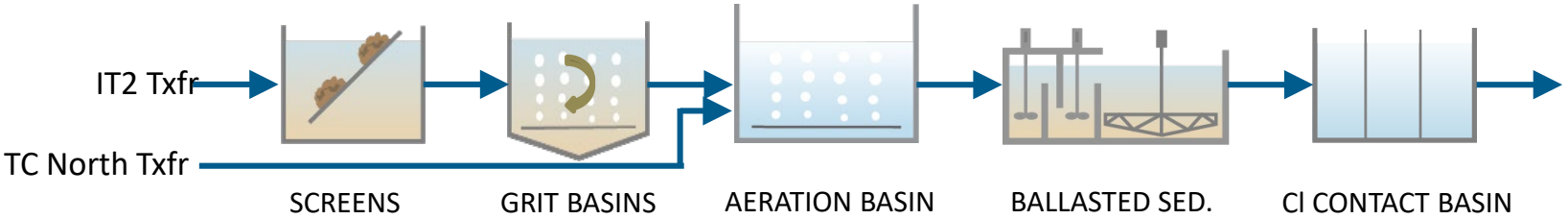
Infrequent Peak Flow Spikes at TC WRRF Create Operational Challenges



Estimated Value	Current [1]	Projected (2040)
% of Time Q ≤ 35 mgd	99%	98%
No. of ST Events per Year	3	9
Average Annual ST Duration (hrs)	50	180
% of Annual Flow Discharged as ST	1%	3%
(1) Average of 2015 - 2018 data		

Actiflo® and Bio-Actiflo® Schematics

ACTIFLO®

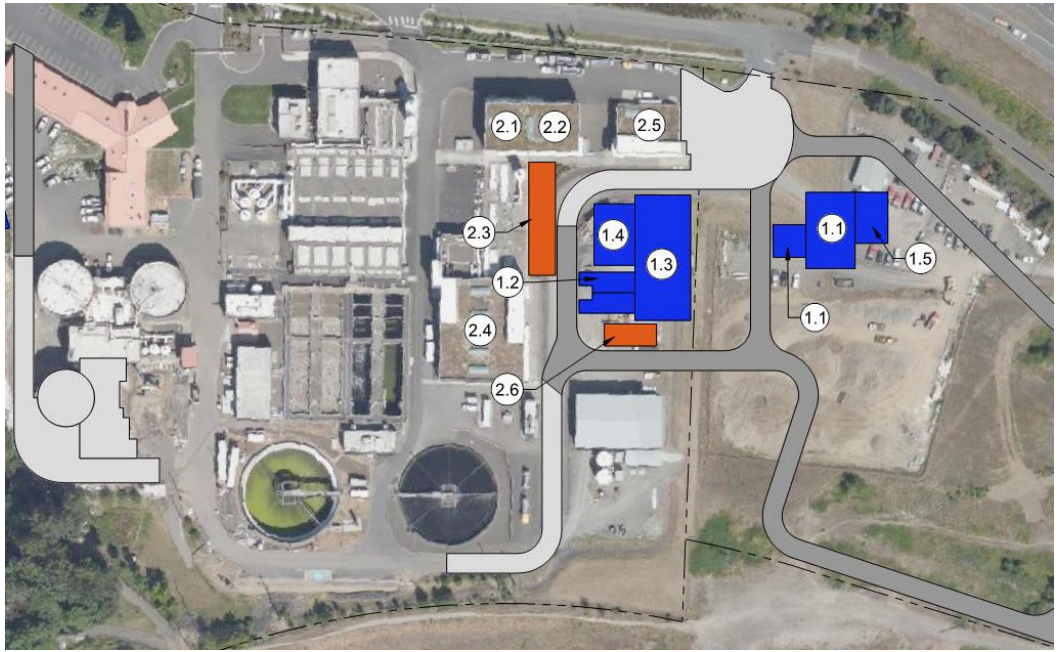


BIO-ACTIFLO®

Estimated Total Project Cost Comparison

Ballasted Sedimentation Option	Estimated Project Cost 2021$, Class 5	Total Project Cost Δ (Relative to Actiflo®)	Key Differences & Cost Compared to "only Actiflo®"
ALT 5 - Actiflo®	Construction: $39 M ELA: $9 M **Total Project: $48.0 M**	--	--
ALT 5B – Partial Bio-Actiflo® **Designed for Future Conversion**	Construction: $42 M ELA: $11 M **Total Project: $53.0 M**	$5 M	• Larger Actiflo® Equipment ($2.7 M) • Larger Actiflo® Tank ($0.4 M) • Additional Yard/Site/Civil ($0.3 M) • ELA on Added Scope ($0.8 M)
ALT 5A - Bio-Actiflo®	Construction: $63 M ELA: $15 M **Total Project: $78.0 M**	$30 M	• Larger Actiflo® Equipment ($2.7 M) • Larger Actiflo® Tank ($0.4 M) • Additional Actiflo® Equip ($2.2 M) • MBR AB/Biological Tank and Aeration ($8.7 M) • RAS Booster Pumps ($0.9 M) • Pumping Mods for North Plant Txfr ($1.2 M) • 35 mgd Grit Removal for KC flow ($6.5 M) • Additional Yard/Site/Civil ($2.1 M) • ELA on Added Scope ($6.2 M)

Potential Site Layout – Actiflo®



LEGEND:

SCENARIO 1

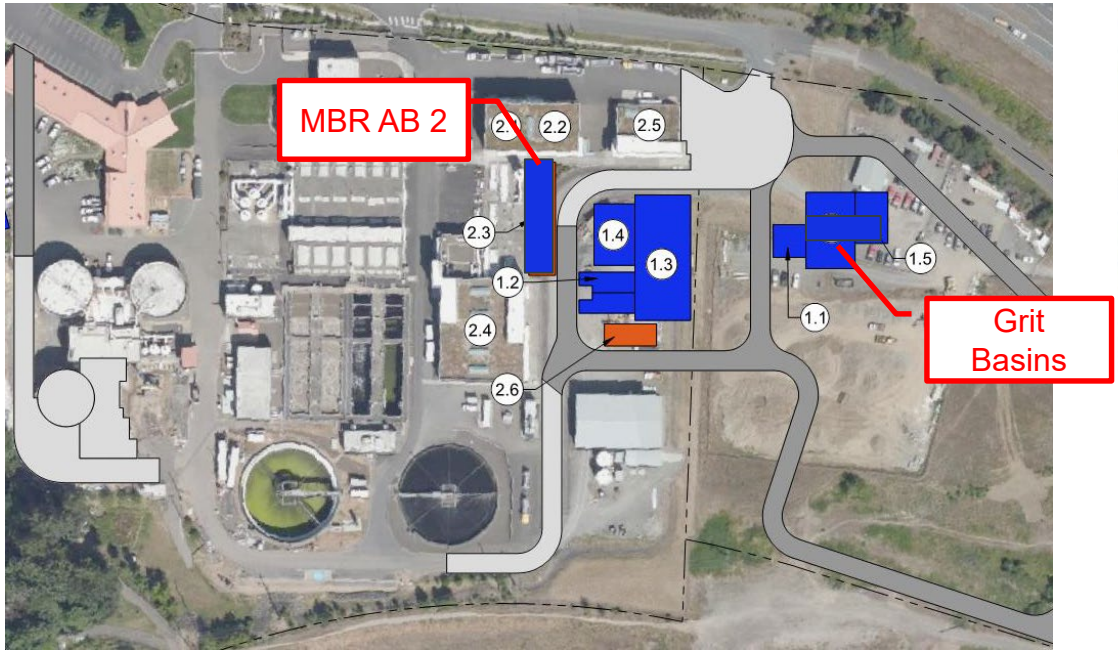
1.1 - SOUTH PLANT SCREENINGS BUILDING
1.2 - BALLASTED SEDIMENTATION
1.3 - SOUTH CHLORINE CONTACT BASIN
1.4 - SOUTH CHEMICAL BUILDING
1.5 - SOUTH HEADWORKS ODOR CONTROL
1.6 - GRAVITY THICKENERS 1-2

SCENARIO 1.5

2.1 - MBR PUMP STATION EXPANSION
2.2 - MBR FINE SCREEN EXPANSION
2.3 - MBR AERATION BASIN 2
2.4 - MEMBRANE EXPANSION
2.5 - UV DISINFECTION EXPANSION
2.6 - TERTIARY PUMP STATION

CLACKAMAS WATER ENVIRONMENT

Potential Site Layout – Bio-Actiflo®



LEGEND:

SCENARIO 1

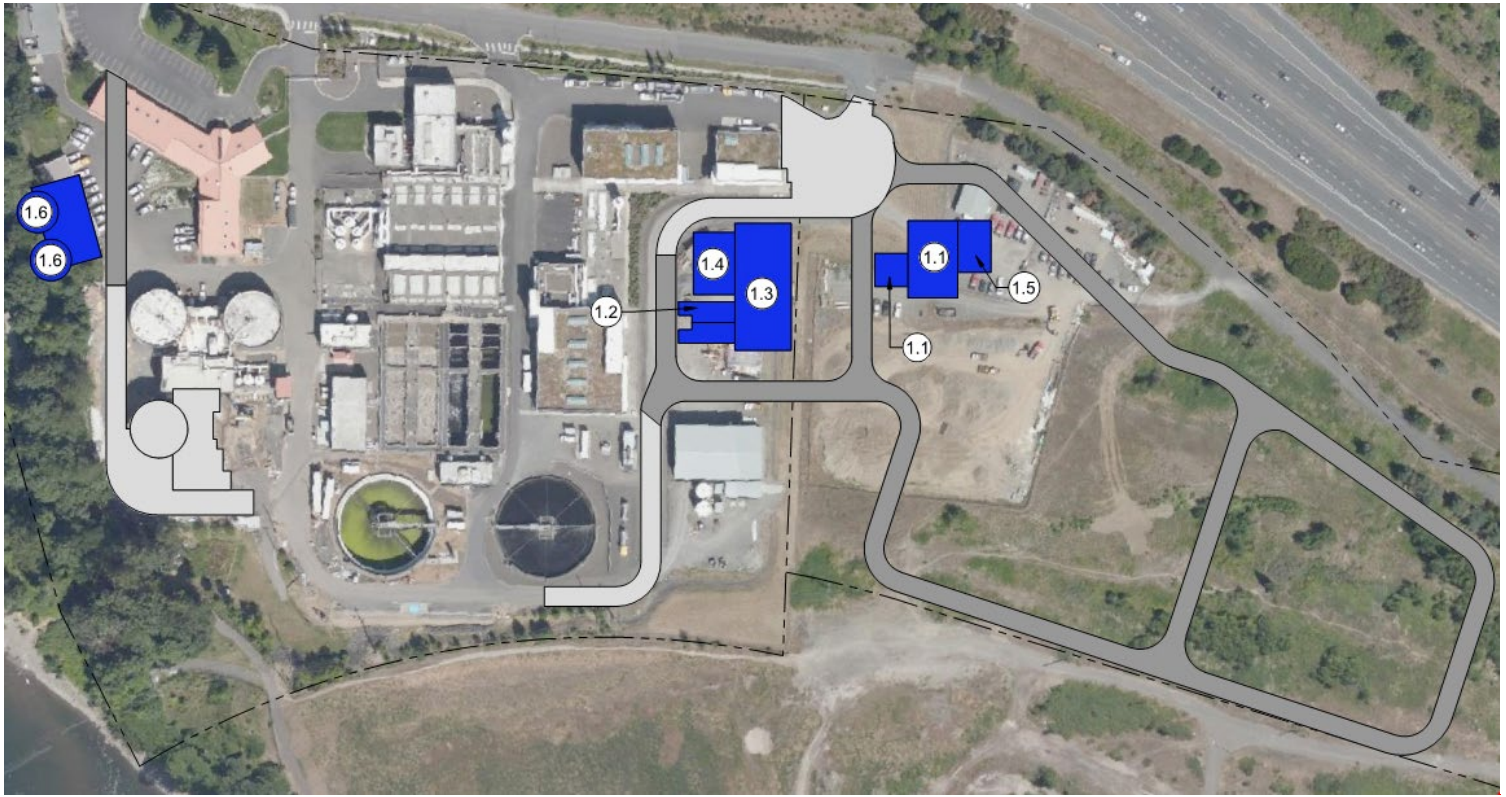
1.1 - SOUTH PLANT SCREENINGS BUILDING
1.2 - BALLASTED SEDIMENTATION
1.3 - SOUTH CHLORINE CONTACT BASIN
1.4 - SOUTH CHEMICAL BUILDING
1.5 - SOUTH HEADWORKS ODOR CONTROL
1.6 - GRAVITY THICKENERS 1-2

SCENARIO 1.5

2.1 - MBR PUMP STATION EXPANSION
2.2 - MBR FINE SCREEN EXPANSION
2.3 - MBR AERATION BASIN 2
2.4 - MEMBRANE EXPANSION
2.5 - UV DISINFECTION EXPANSION
2.6 - TERTIARY PUMP STATION

CLACKAMAS WATER ENVIRONMENT

Conceptual Site Plan – Scenario 1



LEGEND:

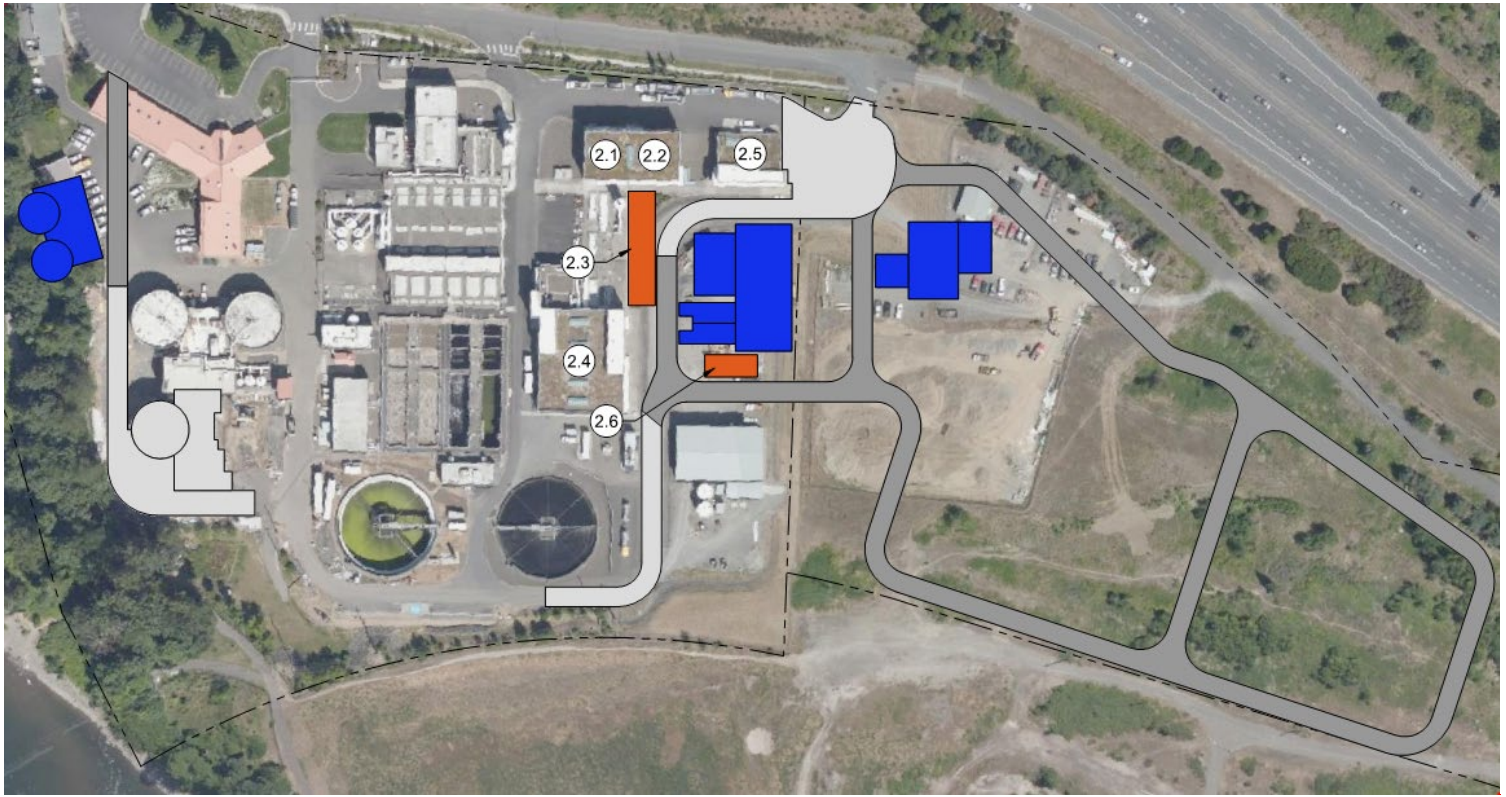
SCENARIO 1
1.1 - SOUTH PLANT SCREENINGS BUILDING
1.2 - BALLASTED SEDIMENTATION
1.3 - SOUTH CHLORINE CONTACT BASIN
1.4 - SOUTH CHEMICAL BUILDING
1.5 - SOUTH HEADWORKS ODOR CONTROL
1.6 - GRAVITY THICKENERS 1-2

SCENARIO 1.5
2.1 - MBR PUMP STATION EXPANSION
2.2 - MBR FINE SCREEN EXPANSION
2.3 - MBR AERATION BASIN 2
2.4 - MEMBRANE EXPANSION
2.5 - UV DISINFECTION EXPANSION
2.6 - TERTIARY PUMP STATION

SCENARIO 3
3.1 - SOUTH GRIT BASIN
3.2 - SOUTH PRIMARY SEDIMENTATION BASINS 7-8
3.3 - SOUTH CAS AERATION BASINS 5-6
3.4 - ML SPLITTER BOX 1
3.5 - SOUTH SECONDARY CLARIFIERS 3-4
3.6 - SOUTH RAS PUMP STATION 2
3.7 - SOUTH BLOWER BUILDING
3.8 - ANAEROBIC DIGESTER 4
3.9 - RELOCATED DIGESTER GAS HOLDING TANK
3.10 - SOUTH PLANT ODOR BUILDING

BUILDOUT
B.1 - SOUTH INFLUENT PUMP STATION
B.2 - SOUTH PRIMARY SEDIMENTATION BASINS 9-12
B.3 - SOUTH CAS AERATION BASINS 7-14
B.4 - ML SPLITTER STRUCTURE 2
B.5 - SECONDARY CLARIFIERS 5-8
B.6 - RAS PUMP STATION 3
B.7 - SOUTH BLOWER BUILDING EXPANSION
B.8 - SOUTH CHLORINE CONTACT BASIN EXPANSION
B.9 - GRAVITY THICKENERS 3-4
B.10 - ANAEROBIC DIGESTER 5
B.11 - MAINTENANCE BUILDING / GARAGE

Conceptual Site Plan – Scenario 1.5



LEGEND:

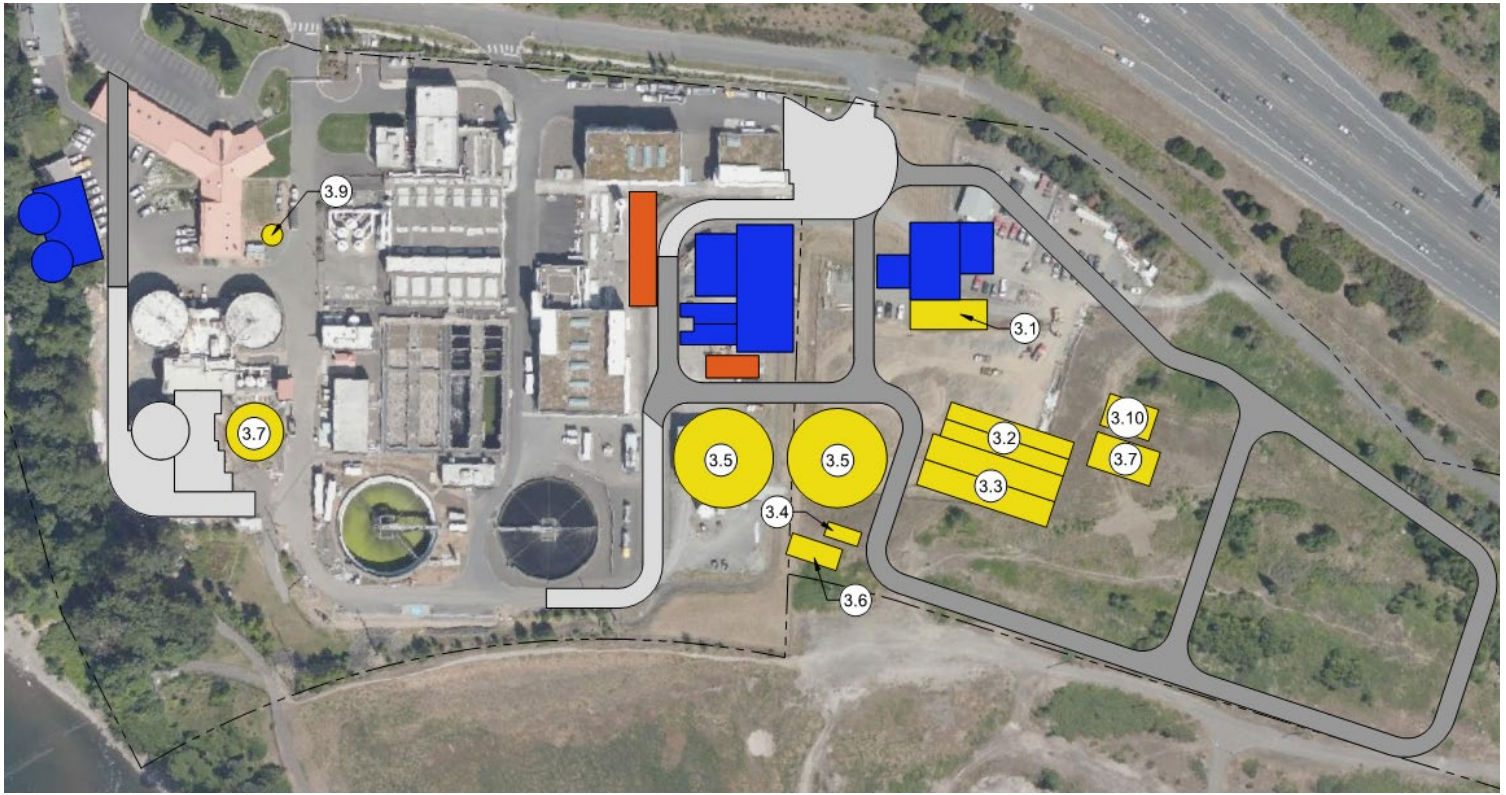
SCENARIO 1
1.1 - SOUTH PLANT SCREENINGS BUILDING
1.2 - BALLASTED SEDIMENTATION
1.3 - SOUTH CHLORINE CONTACT BASIN
1.4 - SOUTH CHEMICAL BUILDING
1.5 - SOUTH HEADWORKS ODOR CONTROL
1.6 - GRAVITY THICKENERS 1-2

SCENARIO 1.5
2.1 - MBR PUMP STATION EXPANSION
2.2 - MBR FINE SCREEN EXPANSION
2.3 - MBR AERATION BASIN 2
2.4 - MEMBRANE EXPANSION
2.5 - UV DISINFECTION EXPANSION
2.6 - TERTIARY PUMP STATION

SCENARIO 3
3.1 - SOUTH GRIT BASIN
3.2 - SOUTH PRIMARY SEDIMENTATION BASINS 7-8
3.3 - SOUTH CAS AERATION BASINS 5-6
3.4 - ML SPLITTER BOX 1
3.5 - SOUTH SECONDARY CLARIFIERS 3-4
3.6 - SOUTH RAS PUMP STATION 2
3.7 - SOUTH BLOWER BUILDING
3.8 - ANAEROBIC DIGESTER 4
3.9 - RELOCATED DIGESTER GAS HOLDING TANK
3.10 - SOUTH PLANT ODOR BUILDING

BUILDOUT
B.1 - SOUTH INFLUENT PUMP STATION
B.2 - SOUTH PRIMARY SEDIMENTATION BASINS 9-12
B.3 - SOUTH CAS AERATION BASINS 7-14
B.4 - ML SPLITTER STRUCTURE 2
B.5 - SECONDARY CLARIFIERS 5-8
B.6 - RAS PUMP STATION 3
B.7 - SOUTH BLOWER BUILDING EXPANSION
B.8 - SOUTH CHLORINE CONTACT BASIN EXPANSION
B.9 - GRAVITY THICKENERS 3-4
B.10 - ANAEROBIC DIGESTER 5
B.11 - MAINTENANCE BUILDING / GARAGE

Conceptual Site Plan – Scenario 3



LEGEND:

SCENARIO 1
1.1 - SOUTH PLANT SCREENINGS BUILDING
1.2 - BALLASTED SEDIMENTATION
1.3 - SOUTH CHLORINE CONTACT BASIN
1.4 - SOUTH CHEMICAL BUILDING
1.5 - SOUTH HEADWORKS ODOR CONTROL
1.6 - GRAVITY THICKENERS 1-2

SCENARIO 1.5
2.1 - MBR PUMP STATION EXPANSION
2.2 - MBR FINE SCREEN EXPANSION
2.3 - MBR AERATION BASIN 2
2.4 - MEMBRANE EXPANSION
2.5 - UV DISINFECTION EXPANSION
2.6 - TERTIARY PUMP STATION

SCENARIO 3
3.1 - SOUTH GRIT BASIN
3.2 - SOUTH PRIMARY SEDIMENTATION BASINS 7-8
3.3 - SOUTH CAS AERATION BASINS 5-6
3.4 - ML SPLITTER BOX 1
3.5 - SOUTH SECONDARY CLARIFIERS 3-4
3.6 - SOUTH RAS PUMP STATION 2
3.7 - SOUTH BLOWER BUILDING
3.8 - ANAEROBIC DIGESTER 4
3.9 - RELOCATED DIGESTER GAS HOLDING TANK
3.10 - SOUTH PLANT ODOR BUILDING

BUILDOUT
B.1 - SOUTH INFLUENT PUMP STATION
B.2 - SOUTH PRIMARY SEDIMENTATION BASINS 9-12
B.3 - SOUTH CAS AERATION BASINS 7-14
B.4 - ML SPLITTER STRUCTURE 2
B.5 - SECONDARY CLARIFIERS 5-8
B.6 - RAS PUMP STATION 3
B.7 - SOUTH BLOWER BUILDING EXPANSION
B.8 - SOUTH CHLORINE CONTACT BASIN EXPANSION
B.9 - GRAVITY THICKENERS 3-4
B.10 - ANAEROBIC DIGESTER 5
B.11 - MAINTENANCE BUILDING / GARAGE

Conceptual Site Plan – “Buildout”

LEGEND:

SCENARIO 1

1.1 - SOUTH PLANT SCREENINGS BUILDING
1.2 - BALLASTED SEDIMENTATION
1.3 - SOUTH CHLORINE CONTACT BASIN
1.4 - SOUTH CHEMICAL BUILDING
1.5 - SOUTH HEADWORKS ODOR CONTROL
1.6 - GRAVITY THICKENERS 1-2

SCENARIO 1.5

2.1 - MBR PUMP STATION EXPANSION
2.2 - MBR FINE SCREEN EXPANSION
2.3 - MBR AERATION BASIN 2
2.4 - MEMBRANE EXPANSION
2.5 - UV DISINFECTION EXPANSION
2.6 - TERTIARY PUMP STATION

SCENARIO 3

3.1 - SOUTH GRIT BASIN
3.2 - SOUTH PRIMARY SEDIMENTATION BASINS 7-8
3.3 - SOUTH CAS AERATION BASINS 5-6
3.4 - ML SPLITTER BOX 1
3.5 - SOUTH SECONDARY CLARIFIERS 3-4
3.6 - SOUTH RAS PUMP STATION 2
3.7 - SOUTH BLOWER BUILDING
3.8 - ANAEROBIC DIGESTER 4
3.9 - RELOCATED DIGESTER GAS HOLDING TANK
3.10 - SOUTH PLANT ODOR BUILDING

BUILDOUT

B.1 - SOUTH INFLUENT PUMP STATION
B.2 - SOUTH PRIMARY SEDIMENTATION BASINS 9-12
B.3 - SOUTH CAS AERATION BASINS 7-14
B.4 - ML SPLITTER STRUCTURE 2
B.5 - SECONDARY CLARIFIERS 5-8
B.6 - RAS PUMP STATION 3
B.7 - SOUTH BLOWER BUILDING EXPANSION
B.8 - SOUTH CHLORINE CONTACT BASIN EXPANSION
B.9 - GRAVITY THICKENERS 3-4
B.10 - ANAEROBIC DIGESTER 5
B.11 - MAINTENANCE BUILDING / GARAGE

Schedule for Willamette Facilities Plan Submission to DEQ

Action	Date
Receive DEQ Comments on TMs 1 – 5	September 2021
Submit Agency Review Draft Facilities Plan to DEQ Willamette Facilities Plan Kellogg Creek WRRF Facilities Plan Tri-City WRRF Facilities Plan	October 2021
Receive Comments from DEQ	December 2021
Submit Final Facilities Plan	January 2022
Plan Adoption by WES	January 2022


Questions?
Lynne Chicoine, PE BCEE
Capital Program Manager
lchicoine@Clackamas.us
CLACKAMAS
WATER
ENVIRONMENT
SERVICES