DATE: December 30, 2020

TO: Clean Water Services Advisory Commission Members and Interested Parties

FROM: Mark Jockers, Government & Public Affairs Director

SUBJECT: **REMINDER OF AND INFORMATION FOR JANUARY 8, 2020, CWAC MEETING**

This is a reminder of the Clean Water Services Advisory Commission (CWAC) meeting scheduled for **Wednesday, January 8, 2020,** at the District's main office, 2550 SW Hillsboro Highway. The CWAC meeting packet will be mailed to Commission members on December 31 and posted to the CWAC section of Clean Water Services' website.

Dinner will be served for CWAC members at 5:30 p.m. **Please call or send an email to Stephanie Morrison (morrisons@cleanwaterservices.org; 503.681.5143) by January 2 if you are unable to attend** so food is not ordered for you.

Enclosures in this packet include:

- January 8 Meeting Agenda
- November 20 Meeting Notes

Clean Water Services Advisory Commission

January 8, 2020

AGENDA

6:30 p.m. **Welcome & Introductions**

6:35 p.m. **Review/Approval of Meeting Notes of November 20, 2019**

6:40 p.m. **Election of Chair and Vice Chair**

The CWAC bylaws require an annual selection of a chair and vice chair. Tony Weller currently serves as Chair; Mike McKillip serves as Vice Chair.

Requested action: Nominate and elect Chair and Vice Chair

**Invitation for public comment*

6:50 p.m. **Confirmation of Budget Committee Members**

Clean Water Services' Budget Committee is made up of the five Board of Directors and five citizens from CWAC who reside within Washington County. The current CWAC members who have been appointed by the Board are Mike McKillip, Lori Hennings, Molly Brown, Tony Weller and Dave Waffle. The Budget Committee is scheduled to meet on Friday, May 8, 2020.

Requested action: Confirm existing Budget Committee members and/or nominate new members to the Board for Appointment.

**Invitation for public comment*

7:00 p.m. **Innovation & Research Center Briefing**

Clean Water Services is establishing a Research & Innovation Center to promote collaboration regarding water-sector technology that benefits water quality in the Tualatin River Watershed. The progress of the 2020 research program will be summarized and a few especially successful projects will be described in detail. In addition, the portfolio of new research projects selected for 2021 will be outlined.

- Dr. Ken Williamson, Research & Innovation Director

Requested action: Informational item

**Invitation for public comment*

7:45 p.m. **Growing Up Research Results**

A summary report of the Growing Up public/private partnership research project was released in October 2019. The report provides an accurate and updated socioeconomic and demographic profile of Washington County residents and CWS customers. Growing Up is the result of nearly 18 months of socioeconomic trend analysis, extensive opinion research and a series of community discussions that provide a window into the experiences, values and beliefs of residents of our growing community. Staff will provide an overview of the survey results.

- Mark Jockers, Government & Public Affairs Director

Requested action: Informational item

**Invitation for public comment*

8:15 p.m. **Announcements**

CWAC appointments from 12/3/2019

8:20 p.m. **Adjourn**

Next Meeting: February 12, 2020

Clean Water Services
Clean Water Advisory Commission
November 20, 2019 | Meeting Notes

Attendance

Attending the meeting from CWAC:

- Commission Chair Tony Weller (Homebuilder-Developer)
- Commission Vice Chair Mike McKillip (District 3/Rogers)
- Molly Brown (District 2/Treece)
- Andy Duyck (District 4/Willey)
- Nafisa Fai (District 1/Schouten)
- Lori Hennings (Environmental)
- Stu Peterson (Business)
- David Waffle (Cities/nonvoting)
- Matt Wellner (Homebuilder-Developer)

Absent:

- John Jackson (Agriculture)
- Art Larrance (At-Large/Harrington)
- Kris Balliet (Environmental)
- Diane Taniguchi-Dennis (Clean Water Services Chief Executive Officer (nonvoting))

Attending the meeting from Clean Water Services:

- Mark Jockers, Government & Public Affairs Director
- Jerry Linder, General Counsel
- Nora Curtis, Managing Director, Utility Operations & Services
- Damon Reische, Planning & Development Services Division Manager
- Chris Faulkner, Water Resources Program Manager
- Ryan Sandhu, Field Operations Division Manager
- Shannon Huggins, Public Involvement Coordinator
- Chris White, Public Involvement Coordinator
- Bob Baumgartner, Regulatory Affairs Director
- Stephanie Morrison, Office Manager
- Jody Newcomer, Technical Editor & Communications Specialist

Attending the meeting from the public:

- Ezra Hammer, Home Builders Association of Metropolitan Portland

1. Call to Order

Tony Weller called the meeting to order at 6:30 pm in the Tualatin Room at the Clean Water Services (CWS) Administration Building Complex in Hillsboro, Oregon.

2. Previous Meeting Notes

There were no comments regarding the notes from the last meeting, July 10, 2019.

3. Announcements

- The next CWAC meetings are scheduled for Wednesday, December 11, 2019, and January 8, 2020.
- The CWS Board of Directors (Board) started recruitment for three positions on CWAC (District 3, Agriculture Rep 2 and Business Rep 1). The Board will take action to appoint Mike McKillip to District 3 and Terry Song to the Business Rep. 1 position. Recruitment for the Agriculture position continues.

4. Sub-Basin Planning Implementation and Prioritization

Chris Faulkner reviewed the Board's charge to CWAC regarding sub-basin planning implementation and prioritization.

Mr. Faulkner said the Board adopted amendments to the Design and Construction Standards on Nov. 12, 2019, which mostly relate to pump stations. They go into effect Dec. 2, 2019.

Last summer CWS started an analysis of the impact of expanding fee-in-lieu. The analysis took more time and effort than anticipated, which took staff away from sub-basin planning. CWS staff will return to sub-basin planning and will incorporate much that was learned in the FIL analysis.

The crux of sub-basin planning is evaluating proper tools to address hydromodification in a defined area. The tools could be regional facilities such as ponds, onsite facilities or stream enhancements. The tools also could be nonstructural such as fee-in-lieu or updating a development code. A plan would evaluate all the tools and determine which are appropriate for a given geography.

CWS wants to develop a prioritization process because staff needs to know where CWS is going to do sub-basin planning and needs to know the sequencing. CWS is in the planning stage; the next stage is implementation.

There are two priority areas — expansion/greenfield areas and redevelopment infill areas. Expansion/greenfield areas are identified in the UGB and are known well in advance. Co-implementers have to do concept planning, community planning and many do master planning. CWS hopes to dovetail sub-basin planning efforts with co-implementer efforts.

There are two types of redevelopment areas — those initiated by CWS initiated or those initiated by co-implementers. Co-implementers might initiate redevelopment for urban renewal or new infrastructure. CWS can work in conjunction with those efforts. Generally, CWS considers areas with the potential for redevelopment or in areas with issues around erosion or infrastructure.

CWS wants to develop criteria to determine when and where it might initiate redevelopment. Mr. Faulkner said staff will look at many data sets including hydromodification risk areas, problem areas, building permits, available lands and impervious cover. Next steps would be to develop and define criteria to create a decision process, which includes the flexibility to adjust sequencing as needed. CWS will look to CWAC for feedback on prioritization process.

CWS staff is working with CWAC and co-implementer cities to determine an accounting structure for the fee-in-lieu program by June 30, 2020. CWS is also working with co-implementers to evaluate potential FIL revenue and develop eligibility criteria for FIL funding.

What programs might qualify for FIL? Some examples include the Clean Water Hero program and Tree for All.

Co-implementer cities are not permittees under our permit, but they're subject to the CWS permit and help run the programs. They help CWS implement the permit.

Mr. Waffle said Ms. Taniguchi-Dennis, Ms. Curtis, Mr. Jockers and Kathleen Leader, the CWS chief financial officer, recently met with a group of Beaverton officials to discuss fee-in-lieu approaches. He said it was a good discussion and is hopeful other co-implementers can have similar discussions.

CWS will continue working on sub-basin efforts already in progress. Mr. Faulkner anticipates coming to CWAC every two to three months with updates.

Questions and comments related to the Sub-Basin Planning Implementation and Prioritization are in Appendix A.

5. Leaf Program Changes Status/Update

Ryan Sandhu said two leaf machines broke before leaf cleaning started this fall. It was a dangerous situation and CWS shut down the machines for the season. Field Ops crews are using back hoes and dump trucks to remove leaves, which required shuffling crews. Some pickups were late or missed and there were many complaints. Shannon Huggins talked about the challenges of communicating problems about the leaf program, which has a narrow reach.

Mr. Sandhu reviewed previous CWAC activity and recommendations to the Board. In April 2019, the Board asked CWS to prepare a staff report to document the process to review the leaf program and the recommendations; CWS presented the report to the Board on June 4, 2019.

In September, CWS mailed brochures to the 10,000 people who get the curbside leaf program with information about changes to the program. CWS offered a survey and got more than 140 responses; many were very negative. CWS also offered the survey at leaf drop-off events and received more than 200 responses. Comments from drop-off events were very positive.

Survey responses show that those who get curbside pickup do not drop off leaves, even though the curbside service is only for street-facing trees. Ms. Huggins said many recipients didn't realize the service was just for street-facing trees. Many who get leaf pickup service were not aware that many neighborhoods don't have pickup service, yet have just as many leaves.

Ms. Huggins reviewed the themes of the survey comments. Most who have the pickup service want the service restored. Many were concerned about getting leaves to a drop-off site. Some said they would leave leaves in the street and CWS would pick them up eventually. CWS wants to avoid any issues through outreach and education, but it's working with Land Use and Transportation, which has the authority to issue code violations.

Ms. Huggins said people are testifying at Board meetings; they're calling Field Ops or Government & Public Affairs; they're emailing the Board and CWS. The feedback has been very helpful. CWS is planning public information outreach for 2020, including videos, mailings and another brochure.

CWS is acknowledging the difficulty of the change and many people want to know how the decision was made. Ms. Huggins is directing people to the CWAC section on the public website where the meeting minutes are posted.

She's also sharing possible solutions. One option is ordering extra yard bins for about $1.50 a month, each. Washington County's Solid Waste Department has been very helpful sharing options to remove leaves and being clear about the requirements. Another option is to leave leaves in the yard. They're self-mulching and attract critters.

Next steps: Continue program. Inform affected customers. Share array of options with affected customers. In fall 2020 – expand leaf drop days and discontinue curbside service.

Field Ops and Government & Public Affairs are exploring new partnerships for pickup locations and looking at ways to connect high schools, clubs and scout groups with neighborhoods. Landscape companies haven't contacted CWS yet, but many think they will.

Questions and comments related to the Leaf Program have been incorporated in the presentation summary.

6. Water Quality Briefing — PFOA/PFOS

Bob Baumgartner provided an overview of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), two synthetic chemicals that are ubiquitous in the environment and are receiving increased national attention. PFOS and PFOA are part of a suite of more than 6,000-7,000 perfluorinated compounds that have been in production and in the environment since the late1940s. These chemicals have unique water-resistant and stable properties that make them valuable for a wide range of industrial and commercial products. The chemicals are used in industrial applications, firefighting foam, carpets, furniture, water- and stain-resistant clothing, food packaging and nonstick cookware. Recently, PFOS and PFOA have been the subject of increased national attention with their detection in elevated concentrations in groundwater in certain parts of the country, especially near airports, military bases where firefighting foam has been used, and near industrial manufacturing sites. PFOS and PFOA are no longer manufactured in United States, but they can still be brought in to the country.

We all have some of the chemicals in our blood. They are persistent and are different sizes. Some bioaccumulate, some are toxic, some are carcinogenic. PFAS is the abbreviation for the entire class of compounds. The two most studied are PFOA, which was banned in 2015 and is more mobile, and PFOS, which was banned in 2002. There is growing concern about the human and environmental health impacts of the chemicals. The EPA is currently evaluating standards for drinking water, groundwater and environmental remediation, and water quality criteria. However, many states are frustrated by the perception of a lack of federal action and some states are initiating local regulations. The federal government is considering classifying some PFAS as hazardous chemicals. CWS is concerned about the impact on the biosolids program.

The normal treatment processes at wastewater plants do not do a good job breaking down PFAS. Some of the compounds move in to biosolids, some are discharged and some are transformed during the treatment process, often resulting in higher levels of PFOS and PFOA in the discharge than what comes in to the plants. One of our biggest questions is if we can't treat it, how can we control it?

To better understand this, CWS has been proactively screening influent, effluent and biosolids at Rock Creek, Durham, Hillsboro and Forest Grove water resource recovery facilities as well as selected industrial discharges. CWS surveyed 12 industries most likely to have PFOS or PFOA and sampled for 32 compounds. The initial results were discussed.

There is more PFOS at Rock Creek, which is not surprising given the industrial load. Durham has lower levels and levels at Hillsboro and Forest Grove are almost nonexistent. The levels of PFOA at Durham are much higher than expected; levels are very low at other plants. CWS is analyzing industries in the service area to trace the source. The Durham results are from just one test, but were consistent through the influent, effluent and biosolids process.

Joy Ramirez, the Environmental Services supervisor, created a sampling protocol to avoid contamination. Staff couldn't wear the current personal protection equipment because it's coated with PFAS. CWS will continue sampling to understand long-term trends.

Kris Balliet, who was not able to attend the meeting, emailed the group to say Riverkeepers wholeheartedly supports this research and wants to be involved in communication with the community.

Mr. Baumgartner said CWS compared the results of biosolids testing with results from Michigan, which has done extensive testing, and other select locations. He said the CWS results are two or three orders of magnitude below concentrations in biosolids from areas with known contamination from the production of PFAS, or where substantive problems have been documented. It doesn't eliminate concerns, but it provides some context.

The industries selected for PFAS potential represent the high tech industry, landfill, airports, metal finishing and industrial cleaners. PFAS are present at airports because it's used in firefighting foam. Airports often are used as a training ground for firefighting exercises.

CWS is focused on working with industries to try to control PFAS at the source. The preference is pollution prevention instead of treatment. The landfill is starting to screen what kinds of materials it accepts and will compile a list of banned items. For now, they're focused on firefighting foams and other rich sources.

CWS expects to see continued reduction of PFAS in wastewater and biosolids.

Questions and comments related to the Water Quality Briefing are in Appendix C.

7. Public comment

There was no public comment.

8. Adjournment

Mr. Weller adjourned the meeting at 8:15 pm.

(Meeting notes compiled by Jody Newcomer.)

Appendix A
Questions and comments regarding Sub-Basin Planning Implementation and Prioritization

Coordination with CWS

Q: How do builders bring possible sub-basin analysis areas to the attention of staff at CWS?

A: Good question. CWS needs to develop a process.

Sub-basin planning

Q: What do we mean by sub-basin plan? Is it just hydromodification?

A: For CWS it's stormwater management focused on hydromodification.

Q: We should call it a sub-basin plan for hydromodification because typically a sub-basin plan will have biological elements in it.

A: CWS is working on sub-basin strategy development in larger context and working with the Watershed Management Department. CWS is focused on the stormwater piece because of immediate permit requirements. Staff use the term sub-basin planning to mean multiple things and probably will tweak the terminology to be more precise.

Q: What was CWS' role in River Terrace and the basin plan?

A: CWS was part of the stakeholder working group and technical advisory for the concept planning. It was focused on sanitary sewer planning and stormwater planning. Tigard led the effort; CWS was a subject matter expert.

Q: Will CWS take a similar role in other areas such as King City? What is the level of commitment from CWS in areas with co-implementers versus unincorporated areas that don't have the same staff levels?

A: It will depend on resources in the cities. CWS' role is making sure these subjects are covered in the concept planning. CWS can take a primary role or a support role as needed.

Q: Can we guess how much time will be spent on greenfields versus infill? The sense is infill is most threatened; the planning areas are low hanging fruit.

A: CWS is trying to move as quickly as possible to get sub-basin strategies that are not pre-development. CWS will support planning schedules in expansion areas, but it are not the driver. For sub-basin planning for pre-development and infill, CWS want to create a road map and respond as development comes in. There is much discussion ahead.

Q: Do you know how many sub-basins you can look at in six months?

A: I would not hazard a guess. The number we used last summer was very narrowly focused. Developing a sub-basin strategy is very different.

Miscellaneous

Q: Did anything come of the USGS work on soils along the stream corridors?

A: Yes. CWS is using the data in its analysis.

Q: I didn't see an area for water quality on your list of data sets.

A: It's not there yet. It's not an exhaustive list.

Q: How often does CWS evaluate an impervious surface?

A: CWS and co-implementers evaluate annually as part of the stormwater annual report. CWS uses engineering plans.

Q: District has not wanted to take on the risk component of managing retaining walls, so the responsibility falls on homeowners associations. If builders approach HOAs seeking permission to make changes to a stormwater pond, they could say no and stop a subdivision. We should consider how that's managed in relation to sub-basin planning.

A: CWS will put it on the list.

Comments

- For the past four years Metro has been working with Portland State to model wildlife corridors. That could be a great place to point some FIL funds.
- Projects will always get out of sequence. Is there potential for private side to drive some of the effort? Also, there's a danger of getting sucked into the data. We encourage the team to simplify, simplify, simplify.
- Evaluate process every time you finish a plan. Focus on what's necessary.

Appendix B
Questions and comments regarding the Leaf Program Changes Status/Update have been incorporated in the presentation summary.

Appendix C
Questions and comments regarding the Water Quality Briefing — PFOA/PFAS

Q: Could PFOS be coming through people's pipes?

A: Possibly, but levels are typically very low in domestic sources. CWS is working with industrial sources in Rock Creek area and expects to see reductions in the levels.

Q: Did you do any tests in the river?

A: Not yet, but CWS will.

Q: What are the seasonal issues?

A: Washington, which has a number of military bases in the Puget Sound, is trying to understand the effects of dilution. The state is looking at the buildup of PFAS in fish tissue and how seasonal patterns affect that.

Q: Are these chemicals used in synthetic oils?

A: I'll find out.

Q: Are there increased cancer rates in the areas tested in Michigan?

A: We don't know yet.

Q: I was surprised Michigan levels were low. I assumed manufacturing was a potential source.

A: It is. Michigan has done a lot of work to lower levels.

Q: Can you tell PFOA from PFOS during testing?

A: Yes. They can be separated analytically.

Clean Water Services Advisory Commission's
Leaf Program Recommendations and Analysis Report

May 17, 2019

BACKGROUND

Clean Water Service's (District) Leaf Program began in 1994 as a proactive effort to prevent costly after-hours field crew responses to customer calls about clogged storm drains and localized flooding. The District started picking up leaves three to four times during the fall in certain curbed street neighborhoods in unincorporated residential areas that regularly experienced localized flooding problems due to leaf-blocked catch basins. Despite changes in regulations, storm system maintenance activities, stormwater facilities and street trees, the Leaf Program has remained relatively unchanged since the mid-1990s.

In the urban unincorporated area and four small cities (Banks, North Plains, King City and Durham) where the District provides both wholesale and retail storm and surface water management services, curbside leaf pickup is currently provided to about 10,000 tax lots, or about 14 percent of the tax lots within that area. The Leaf Program also includes two leaf drop-off days at two locations (Aloha High School and Home Depot off Northwest Murray Boulevard and U.S. Route 26), with customers encouraged to bring food bank donations along with their leaves. The leaves are hauled to West Union Gardens, then spread over agriculture land the following spring. In addition, the District provides educational materials to customers to encourage keeping storm sewer grates clear (e.g. #rakethegrate).

The Sanitary, Storm and Surface Water Management Performance and Reporting Standards (Performance Standards) are, by reference, a part of the District's National Pollution Discharge Elimination System permit. The Performance Standards require the District and its co-implementing cities to have a Leaf Program, but do not mandate a specific mix of activities to satisfy the requirement. Forest Grove, Hillsboro and Sherwood operate a curbside pickup program throughout their entire cities; Beaverton, Cornelius and Tigard have no curbside program and offer multiple leaf drop sites; Tualatin mandates additional green bins through its franchise agreement with its garbage provider. No other jurisdiction provides curbside service to just a portion of its service area.

The Leaf Program costs approximately $350,000 annually and results in the collection of 6,000 cubic yards of leaves. The curbside pickup portion accounts for about two-thirds of the cost and 80 percent of the leaves collected.

The Leaf Program ranks fourth among Field Operations maintenance activities for staff time after sanitary and stormwater line cleaning, street sweeping and water quality facility maintenance. More time is spent on the Leaf Program than on video-inspecting lines, catch basin cleaning or water quality manhole cleaning, all of which are permit-required programs.

BOARD CHARGE TO CLEAN WATER SERVICES ADVISORY COMMISSION

Several issues led to the District's review of the Leaf Program.

Customer Equity

Over the past four years, there has been increasing interest in the curbside leaf pickup program, particularly from customers who do not receive the service. Customers just outside the curbside leaf pickup boundary observe their neighbor's leaves being placed in the street and picked up by the District and they would like the same service.

Program Sustainability

The curbside pickup program uses specialized equipment with high capital and maintenance costs. The equipment is prone to breakdowns, which often means that the District is expending additional overtime costs to accomplish the work during a limited timeframe.

Expanded Scope

The curbside pickup program began as a preventive maintenance practice to address flooding associated with leaves from street trees. However, customers now routinely deposit leaves from trees on private property and leaves brought from different areas to be collected with the leaves from the street trees. The increased availability of leaf blowers and use of landscape maintenance services has exacerbated this problem.

Staff provided informational presentations to the Clean Water Services Advisory Commission (CWAC) regarding the Leaf Program in April 2016 and February 2017. Staff considered minor changes to the program, but the primary issues of equitability and sustainability were difficult to address without either a major expansion or reduction to the program.

Ultimately, staff met with the Clean Water Services Board of Directors (Board) at a work session to discuss the Leaf Program. On March 13, 2018, the Board formally charged CWAC to conduct a comprehensive review of the Leaf Program, develop criteria to evaluate program alternatives, develop program alternatives and review against the criteria, and make recommendations to the Board.

CRITERIA

At the CWAC meeting in March 2018, staff presented background on the Leaf Program, discussed challenges and perceptions, and reviewed 10 possible rating criteria. CWAC selected three rating criteria at its May 2018 meeting based on their measure of the most important aspects of the program:

1. **Ability and effectiveness to meet program purpose:** This criteria includes an estimate of the alternative's impact on localized flooding, leaf-related service requests and receiving stream water quality.

2. **Cost:** This criteria includes the cost to administer and operate the program, impact on the District's current operations and maintenance programs, sustainability over the next 10-20 years and risk to the District.
3. **Ease of implementation:** This criteria includes the ease or difficulty of implementation, ability to phase into annual operations, anticipated customer acceptance and equitability.

DATA ANALYSIS

Once the criteria were determined, CWAC members requested more information about specific characteristics of the curbside Leaf Program service area to help rate the alternatives. At the September 2018 meeting, staff shared its findings about tree cover inside and outside the curbside leaf pickup boundaries, stormwater system "density" (number of catch basins compared to linear feet of street) throughout the unincorporated areas of Washington County served directly by Clean Water Services, and locations of storm/flooding calls over the past five years. Analysis of that data indicated:

- Street tree cover is not greater within the curbside leaf pickup boundaries. In fact, it was difficult to distinguish the area within the curbside pickup boundary and areas outside based on tree coverage.
- There are not more storm/flooding calls in areas without leaf pickup or in areas with older, lower-density stormwater systems.
- Some of the newer developed areas show significant storm/flooding calls.
- Some older developed areas have stormwater system density that would meet current standards.

CWAC requested further analysis of the data, including:

- Sort service calls by month to see if there is an increase in certain areas during leaf season (September-January).
- Analyze monthly/seasonal service calls by proximity to catch basins, by leaf pickup boundary and slope/topography to evaluate effectiveness of current pickups.
- Find out (from solid waste haulers) how many direct customers of the District are using yard debris bins and how many are using two (or more) carts.

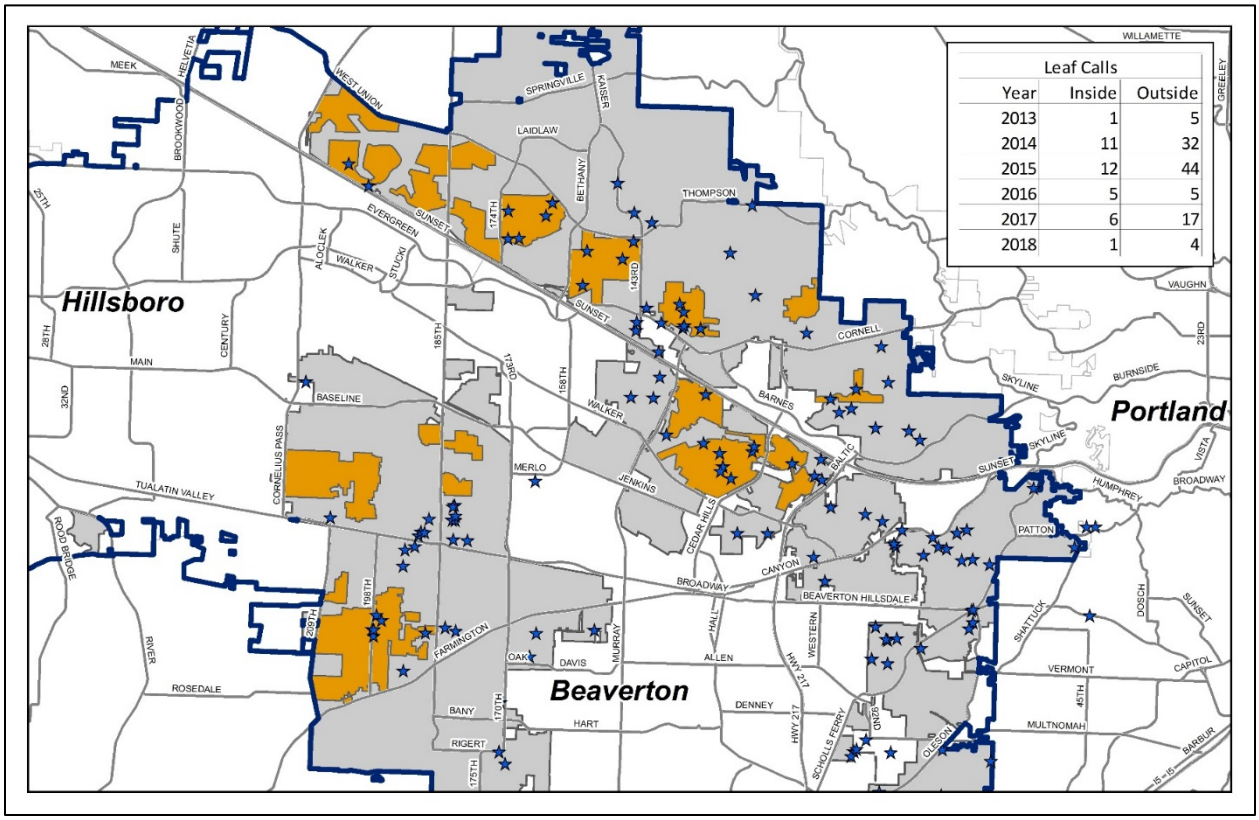
At the February 2019 meeting, staff reported on CWAC's additional data requests. While the District does not specifically track leaf-related calls, staff was able to cull general flooding call data and identify flooding calls that occurred during leaf season or referenced leaves in the comments. This allowed staff to make some general observations:

- Call volume is so low inside and outside the curbside leaf pick up boundary that it was difficult to draw detailed conclusions or do an extensive statistical analysis.
- District receives more calls from inside the curbside pickup area than expected. The curbside pickup area is about 10 percent of the area outside the pickup area, but the

number of calls from within the curbside pickup area is more than 25 percent of the total call volume.

- Areas that do not receive the curbside pickup program, but appear similar in terms of tree cover and storm system density do not have a higher call volume than other areas. One might expect these areas to have a higher call volume due to leaves, but call data does not support that hypothesis.

Figure 1: Map of Leaf Related Calls by Year. Gray areas are directly maintained by the District. Orange areas receive curbside leaf pickup by District. White areas are within city limits or outside of District service area.



CWAC had also requested data on yard debris service provided by franchise garbage haulers and District staff presented information based on discussions with Washington County Solid Waste staff. Base garbage service for all urban unincorporated Washington County includes a 60-gallon yard debris bin with service every other week. Additional yard debris bins cost $1.50 per month with service starting and stopping as requested by the customer. Extra bags or bundles are $3 each. Approximately 5 percent of customers currently pay for additional yard debris bins (2,688 of 56,500 customers).

ALTERNATIVES

Based on analysis of the data and research of other programs, staff developed seven program alternatives to review with CWAC. After review and discussion at the September 2018 meeting, two alternatives were tabled. The alternative "Elimination — No Leaf Program" was tabled because some type of program is required to meet the Performance Standards. The alternative "Partnering with Nonprofit Group(s)" was tabled because of significant liability and logistical issues. The discussion resulted in the following five alternatives selected for further evaluation:

A. Status quo.
B. Expand pickup to all customers in the urban unincorporated area, Banks, North Plains, King City and Durham.
C. Expand leaf drop days to provide additional drop-off opportunities.
D. Promote the use of green bins.
E. Upgrade storm sewer infrastructure.

A summary of each alternative, associated cost and other considerations is included below:

A. Alternative A: Status Quo
   a. Summary: Continue leaf drop days and curbside pickup service "as is."
   b. Cost
      i. Annual: $350,000
      ii. If charged to curbside customers only: $2.86/month
      iii. If charged to all customers in District-maintained area (current program): $0.41/month
   c. Considerations
      i. Equitability
      ii. Doesn't address changing tree cover
      iii. Data does not seem to support current program

B. Alternative B: Expand Curbside Pickup to All District Customers, Continue Current Leaf Drop Days
   a. Summary: Provide curbside leaf pickup to all customers within area maintained by Field Operations. Continue current leaf drop day level of service.
   b. Cost
      i. Annual $1.9 million; $1.55 million increase
      ii. All customers: $2.30/month; $1.89 increase
   c. Considerations
      i. Seasonal nature of service. Difficult to "staff up" with equipment and staff
      ii. Increased volume of leaves to dispose
      iii. Would likely be providing unneeded service to areas

C. Alternative C: Expand Leaf Drop Days, Eliminate Curbside Pickup
   a. Summary: Discontinue curbside pickup entirely. Expand leaf drop days. Provide 16 opportunities for customers to bring leaves to designated sites.

b. Cost
    i. Annual $350,000
    ii. All customers: $0.41/month
c. Considerations
    i. Customers have to pick up their leaves
    ii. May result in more storm calls
    iii. Additional leaf drop sites may be difficult to secure

D. Alternative D: Promote Yard Debris Bins, Eliminate Curbside Pickup, Eliminate Drop Days

a. Summary: Promote use of "green" bins provided by garbage haulers. Discontinue curbside pickup. Discontinue leaf drop days.
b. Cost
    i. Annual: $1,280,000 to provide an extra yard debris bin for all District customers
    ii. Annual: $185,000 to provide an extra yard debris bin for all current curbside pickup customers
    iii. If no District funds are used, then cost to customers is an optional $18 per year ($1.50 per month)
c. Considerations
    i. May result in more storm calls
    ii. Customers have to pick up leaves
    iii. Equal availability of service to all customers
    iv. Environmental impact of additional plastic bins

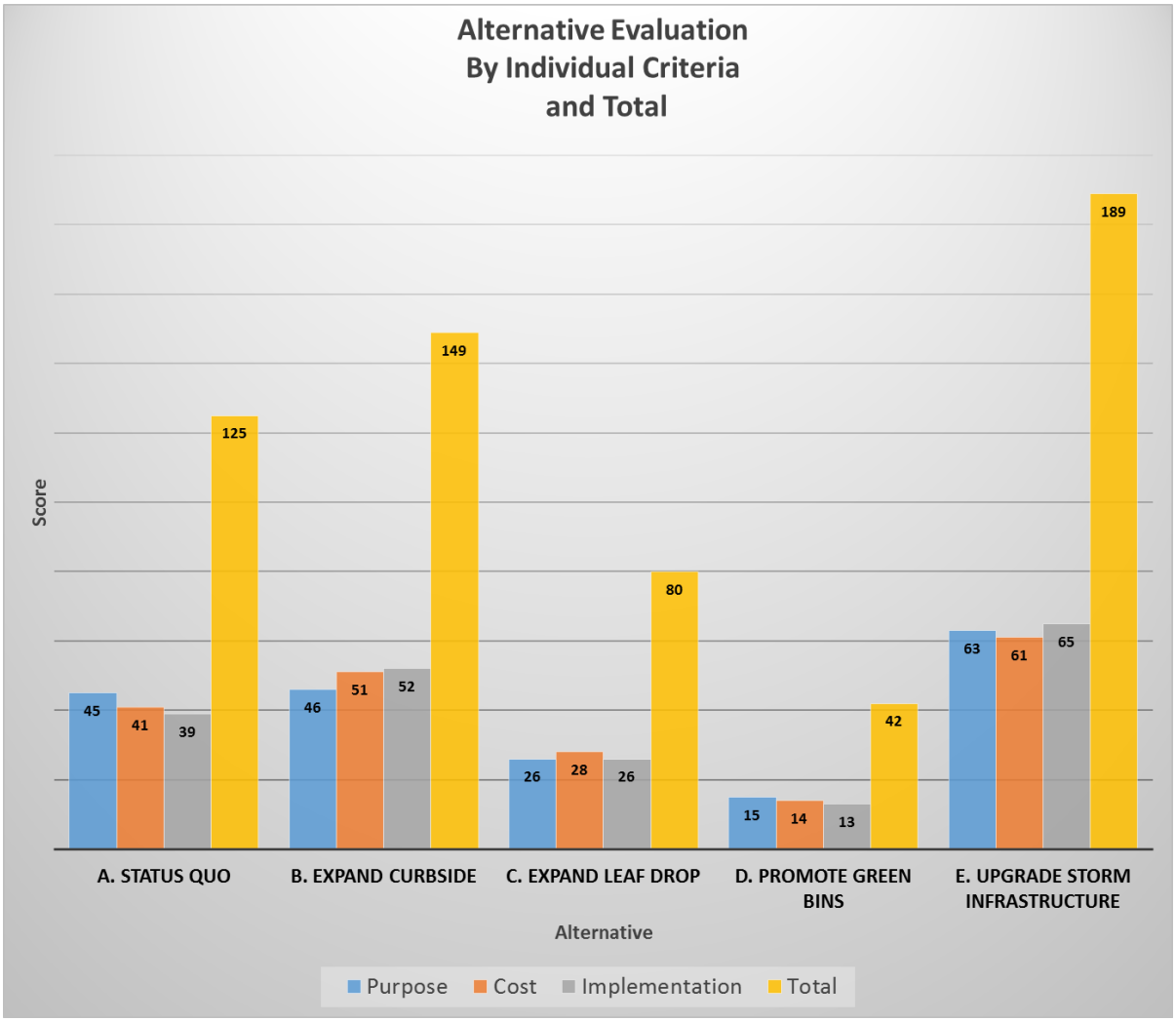
E. Alternative E: Upgrade Storm Sewer Infrastructure, Eliminate Curbside Pickup, Eliminate Leaf Drop Days

a. Summary: Discontinue curbside and leaf drop days. Use current funding level to address one medium sized capital project per year or five to seven Small Works scale system improvements per year.
b. Cost
    i. Annual: $350,000
    ii. All customers: $0.41/month
c. Considerations
    i. Medium projects can quickly become larger projects, which can exceed the annual funding level
    ii. No existing project list
    iii. Leaf related issues can be incorporated in existing Small Works program

RATING ALTERNATIVES

CWAC rated the top three alternatives as D (Promote yard debris bins), C (Expand leaf drop days) and A (Status Quo). The alternatives were rated individually, but CWAC suggested that multiple alternatives be combined to form the overall program recommendations.

Figure 2: Alternative Evaluation. The chart below shows how CWAC members rated the alternatives against the criteria. The lowest scoring alternative is the most desirable.



RECOMMENDATION

CWAC finalized its recommendation to the Board at the February 2019 meeting.

Recommendation:

1. Discontinue curbside leaf pickup.
2. Promote use of yard debris bins in conjunction with Washington County.
3. Increase the number of leaf drop days and participating locations.
4. Continue enhanced storm patrol (preventative maintenance of known localized flooding locations).
5. Continue routine street sweeping.

A motion to forward the recommendation to the Board passed unanimously. On April 23, 2019, staff presented the results of the Leaf Program review to the Board at a Work Session. The

Board accepted CWAC's recommendation and directed staff to proceed with outreach and implementation of the recommendation and to prepare this summary report for its formal acceptance.

IMPLEMENTATION SCHEDULE

The schedule below includes the major milestones related to implementation of CWAC's recommendations:

1. Fall 2019: Continue existing program.
2. Fall 2019: Focus public outreach on informing impacted customers about the changes and solicit input on preferred times, days and locations for additional leaf drop days.
3. Spring/Summer 2020: Provide notice of changes.
4. Fall 2020: Expand leaf drop days; discontinue curbside.
5. Provide updates to the Board on progress.

PUBLIC OUTREACH

The Board emphasized the importance of developing clear and effective messages regarding the program change, especially to communicate with the 14 percent of ratepayers who currently benefit from curbside leaf pickup. Staff from Field Operations and Government & Public Affairs will work on an outreach plan to notify ratepayers of the change. While the program will not change until fall 2020, notification will be sent with the fall 2019 annual program notice. Staff will also solicit input from all ratepayers regarding locations, dates and times for additional leaf drop events. Based on that information, staff will plan for the additional leaf drop opportunities. Along with providing notification of the additional leaf drop dates and times, District staff will work with County Solid Waste staff to ensure ratepayers are aware of the option to have a second yard debris bin for a fee.

Sub-Basin Planning Implementation & Prioritization

Chris Faulkner, Water Resources Program Manager

CWAC
November 20, 2019

Clean Water Services

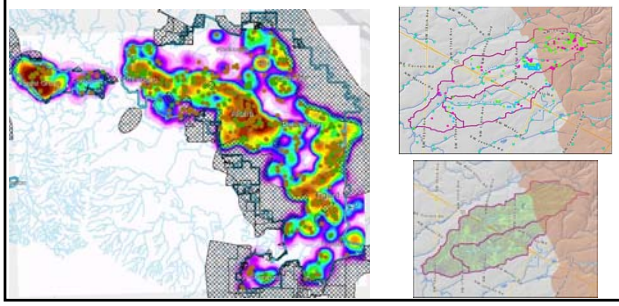
Presentation Agenda

- Recommendation to Board / Board Charge
- Recap of Previous Work – FIL Expansion Impact Analysis
- How Sub-Basin Planning, FIL, & Policy Discussion Relate
- Prioritization Process Development
- Hydromodification FIL Program Development
- Policy Considerations
- Moving Forward

Recommendation to Board / Board Charge

- CWAC, in conjunction with Co-Implementers, to provide feedback on:
  - Prioritization of sub-basin planning activities
  - Hydromodification Fee-in-Lieu (FIL) program
  - Provide input on potential policy issues around implementation
- Continue with Fall Amendments to the D&C Standards
  - Board adopted Nov. 12, 2019
  - Go into effect Dec. 2, 2019

Recap of Previous Work – FIL Expansion Impact Analysis

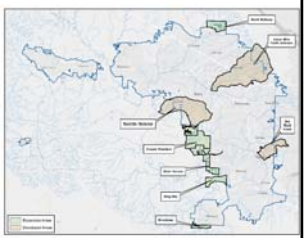


How Sub-Basin Planning, FIL, & Policy Discussion Relate

- Sub-Basin Planning will identify the proper tools for a given geography
  - Anticipate a mix of regional, onsite, in-stream, upland, and non structural tools (e.g. FIL, development standards, etc.)
  - Evaluate all tools & select appropriate ones
- FIL program may provide resources for other programmatic elements that help address stormwater management
- Policy discussions will help inform implementation

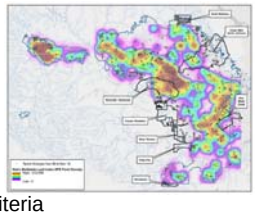
Prioritization Process Development

- Planning vs. Implementation
- Priority Areas
  - Expansion / Greenfield
  - Redevelopment / Infill
- Expansion planning as needed
- Redevelopment / Infill
  - Co-Implementer initiated
  - CWS initiated
- This analysis will help with CWS led planning



Prioritization Process Development

- Collect & analyze data
  - Hydromodification risk areas
  - Problem areas (erosion, etc.)
  - Building permit data
  - Available lands
  - Impervious cover
  - Others
- Develop & refine prioritization criteria
- Monitor & adjust sequencing as needed
- Get feedback on developing a prioritization process



Hydromodification FIL Program Development

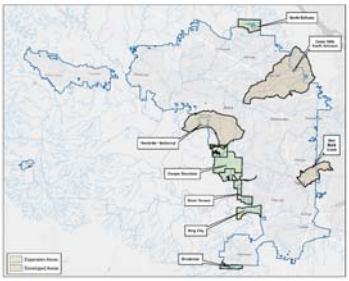
- CWS working with CWAC & Co-Implementers
- Determine accounting structure by June 30, 2020
- Evaluate potential FIL revenue
- Develop eligibility criteria for FIL funding

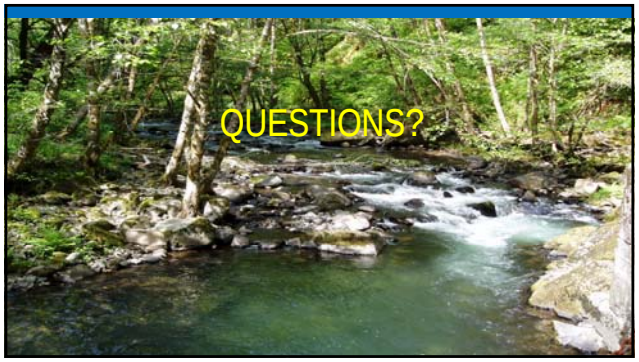
Policy Considerations

- This could represent longer-term involvement by CWAC around sub-basin activities.
- Some policy considerations around sub-basin implementation may include:
  - Land access
  - Do FIL dollars stay in the sub-basin where the impact occurs
  - How are sub-basin opportunities handled when outside an established prioritization process

Moving Forward

- Continue working on current sub-basin efforts
- Joint effort with CWAC & Co-Implementers
- Facilitate robust discussions using data & analysis
- Come back to CWAC every 2-3 months





CLEAN WATER SERVICES LEAF PROGRAM

November 20, 2019

CWAC Meeting
Ryan Sandhu / Utility Operations & Services
Shannon Huggins / Government & Public Affairs

Clean Water Services

CLEAN WATER SERVICES LEAF PROGRAM CHANGES

- Agenda
  - Review process leading to leaf program changes
  - Provide update on discontinuation of District's curbside leaf pick-up
  - Share survey feedback
  - Discuss messaging and next steps

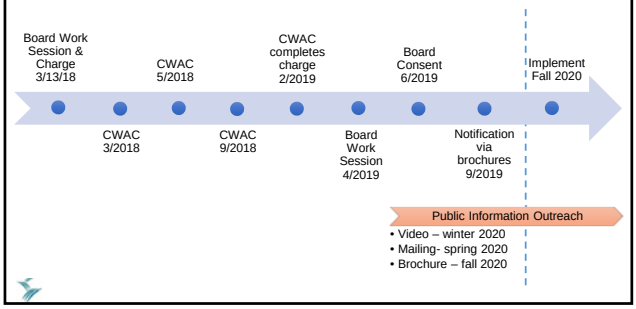
CWAC INVOLVEMENT

- The Board charged CWAC with reviewing, discussing, and providing a recommendation to the Board of Directors and staff on issues related to the Leaf Program including:
  - Review of current program;
  - Development of criteria to evaluate program alternatives;
  - Development of program alternatives and review against criteria; and
  - Provide recommendations to Board.

CWAC RECOMMENDATIONS

- Discontinue District's curbside leaf pickup;
- Promote use of yard debris bins;
- Increase the number of leaf drop days and participating locations;
- Continue enhanced storm patrol; and
- Continue routine street sweeping.

CWAC AND BOARD: TIMELINE & MAJOR TASKS



LEAF PICK-UP CUSTOMERS NOTIFIED OF PROGRAM CHANGE IN FALL BROCHURE

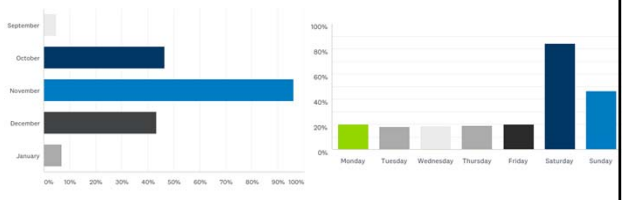
SURVEY

- Curbside leaf pick-up customers were invited to complete a survey via online link provided in brochure
  - 141 responses
- Expanded to customers at drop off event (11/16)
  - 201 additional responses

COMBINED SURVEY RESPONSES: WHICH OF THESE LEAF DROP-OFF EVENTS DID YOU PARTICIPATE IN OVER THE LAST YEAR?

ANSWER CHOICES	RESPONSES	
Clean Water Services - Beaverton Home Depot	40%	140
Clean Water Services - Aloha High School	20%	70
City of Beaverton - SW 160th & SW Shaw	4%	15
City of Beaverton - Library West Parking Lot	1%	4
City of Beaverton - Conestoga Middle School	1%	2
City of Beaverton - Highland Park Middle School	2%	7
City of Beaverton - Whitford Middle School	0%	1
City of Hillsboro - Washington County Fair Complex	0%	1
City of Sherwood - 15527 SW Willamette Street	0%	1
City of Tigard - Cook Park	0%	1
City of Tualatin - 18850 SW Cipole Road	0%	1
Other/None (please specify)	40%	141
Total Respondents: 351		

WHICH MONTHS AND TIMES DO YOU PREFER TO DROP OFF YOUR LEAVES?



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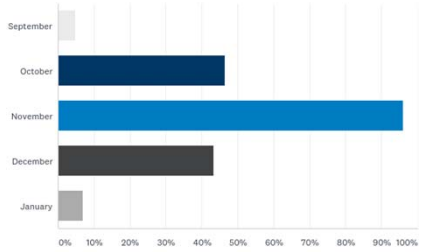
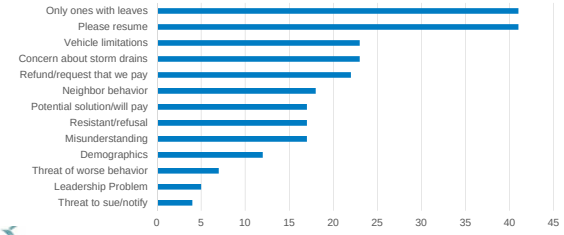
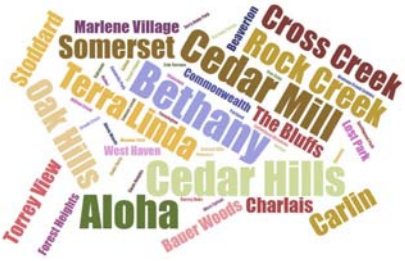


CURBSIDE LEAF PICK-UP CUSTOMER SURVEY RESPONSE ORIGINS

COMMENTS FROM CURBSIDE LEAF PICK-UP CUSTOMERS (THEMES)



LEAF DROP OFF CUSTOMER SURVEY RESPONSE ORIGINS



COMMENTS FROM LEAF DROP OFF PARTICIPANTS

#	RESPONSES	DATE
1	This is a great program.	11/16/2019 1:45 PM
2	Thank You	11/16/2019 12:42 PM
3	Thanks you guys really helped a ton	11/16/2019 12:31 PM
4	Thank you	11/16/2019 11:34 AM
5	I think that this is a great service!	11/16/2019 11:32 AM
6	Hi	11/16/2019 10:31 AM
7	Thank you good job	11/16/2019 10:26 AM
8	Best service anywhere, love it.	11/16/2019 10:18 AM
9	Great service. Thank you.	11/16/2019 10:15 AM
10	Thank you great service please continue	11/16/2019 10:06 AM
11	Love it.	11/16/2019 9:55 AM
12	Thank you	11/16/2019 9:39 AM
13	Great	11/16/2019 8:47 AM
14	Thanks	11/16/2019 7:32 AM
15	Thanks	11/16/2019 7:19 AM
16	Thanks	11/16/2019 7:14 AM
17	You guys are awesome	11/16/2019 7:09 AM
18	God bless thank you	11/16/2019 7:03 AM
19	Love it	11/16/2019 7:00 AM

FEEDBACK FROM CURBSIDE LEAF PICK-UP CUSTOMERS

- Survey comments
- Testimony at Board meetings
- Phone calls to Leaf Line and CWS
- Emails to Board and CWS
- Social media posts (Facebook, Nextdoor)

MESSAGING

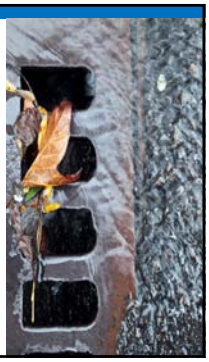
- Acknowledge feelings
- Describe process
- Explain why

MESSAGING

- Offer options:
  - More drop off locations and dates
  - Order extra yard debris bins @ $1.50/month/bin
  - Combine resources, hire landscaping service to collect and dispose of leaves
  - Local scouting groups and high schools may develop volunteer/community service opportunities
  - Leave the leaves

NEXT STEPS

- Fall 2019:
  - Continue existing program
  - Inform impacted customers about the changes and solicit input via survey
- Spring-Summer 2020:
  - Provide additional notice of changes, include options and any new info, set new drop days
- Fall 2020:
  - Expand leaf drop days; discontinue curbside
  - Provide updates to the Board on progress



THANK YOU

Clean Water Services



Clean Water Services Water Quality Briefing: PFAS (PFOS/PFOA)

Kenneth Williamson, Ph.D., P.E.
Director, Research and Innovation

Bob Baumgartner
Director, Regulatory Affairs

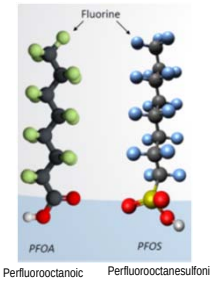
Clean Water Services



Per- and Polyflouroalkyl substances (PFAS)

A class of synthetic chemicals

- **Chains** of carbon (C) atoms surround by fluorine (F) atoms, with different endings
- **Complicated chemistry** – thousands of different variations exist in commerce
- **Widely used** in industrial processes and in consumer products
- **Some** PFAS are known to be **PBT**:
  - **Persistent** in the environment
  - **Bioaccumulative** in organisms
  - **Toxic** at relatively low (ppt) levels



Perfluorooctanoic acid | Perfluorooctanesulfonic acid

Sources of PFAS in the environment


Aqueous Film Forming Foam (AFFF)


Non-stick cookware and utensils


Stain repellant carpets, upholstery and other fabrics


Stain and water-repellant apparel (including Gore-Tex)


Grease/oil-resistant food packaging and containers


Polishes, paints, cleaning products


Personal care products and cosmetics (nail polish, eye makeup, dental floss)


Furniture


Chrome plating solutions

Sealants and waxes

Concerns

- Exposure linked to health risks: Cancer, embryo development, elevated cholesterol, obesity, immune suppression and endocrine disruption
- Risks from PFAS to human health and the environment are not well understood
- EPA has an action level for drinking water. OHA required all major drinking water providers to test for PFAS in 2019; PFAS not detected above action level
- PFAS are not treatable by normal wastewater treatment process
- EPA and Oregon do not currently have water quality criteria for these chemicals in ground and surface water
- PFAS have been found at levels of concern in drinking water, wastewater and biosolids at a number of national locations from firefighting foam, landfills, chrome plating operations and PFAS manufacturing

Growing concern

- Growing public awareness and concern related to toxicity
- Perceived lack of federal action
- Impending federal legislation and rule making
- States initiating local regulations (Maine, Michigan, Ohio)
  - Drinking water testing and limits
  - Biosolids, land application rates
  - Water quality and human health criteria
  - Cleanup standards for groundwater and soils
- Lack of local information

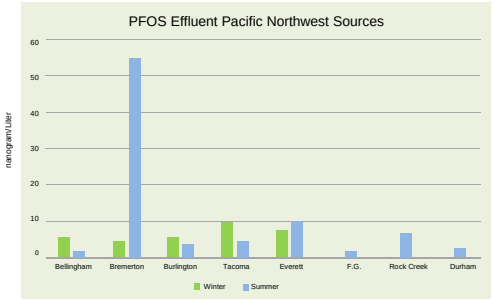
Response

- OHA and DEQ focusing on drinking water as a top priority
- CWS and Oregon Association of Clean Water Agencies formed PFAS Work Group
  - Regulatory Affairs, Water Resource Recovery, Legal, Research and Innovation, Public Affairs
- Data gathering
  - Conducted sampling and analysis to understand levels in treatment plants and to identify major sources
  - Working with state and national water research and utility organizations
- Developed communications plan
- Working with stakeholders, initiated source reduction

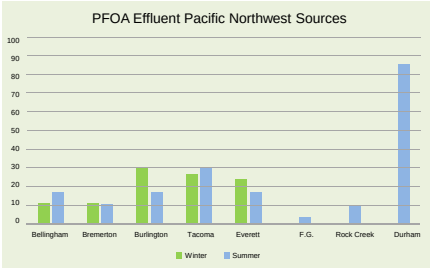
CWS PFAS screening and analysis

- Influent at all treatment plants
- Effluent at plants discharging to the river (RC, DM & FG)
- Biosolids
- 12 industries selected for PFAS potential
- Single grab samples of 32 PFAS compounds

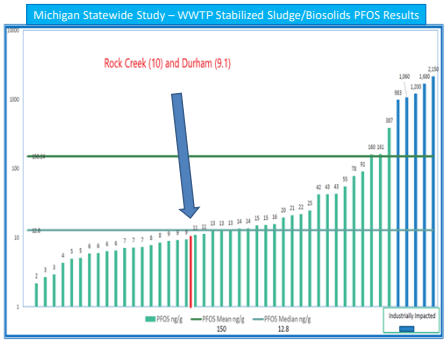
PFOS: Pacific NW effluent screening results



PFOA: CWS & Pacific NW effluent screening results



CWS Biosolids PFOS screening results v. State of Michigan WWTPs



Industrial screening shows PFAS

- 12 industries selected for PFAS potential
  - High tech
  - Landfill
  - Airport
  - Metal finishing
  - Industrial cleaners
- PFOA/PFOS found in concentrations expected
- Less than 20 ounces of the 24 billion gallons of water treated annually by CWS
- Working with priority industries on source control

Summary

- Influent, effluent and biosolids PFAS concentrations are generally typical of municipal facilities not influenced by significant sources
- PFAS concentrations at Rock Creek appear to be influenced by industrial sources and landfill leachate
- PFAS concentrations at Durham appear to be influenced by industrial sources; PFOA concentrations are high, source(s) unknown at this time
- Source control by CWS should lead to reduction of PFAS in wastewater and biosolids