Clean Water Services
Clean Water Advisory Commission
Meeting Notes

January 9, 2019

Attendance
The meeting was attended by Commission Chair Tony Weller (Builder-Developer), Commission Vice Chair Mike McKillip (District 3/Rogers) and members Molly Brown (District 2/Treece), Andy Duyck (District 4/Willey), Lori Hennings (Environmental), John Jackson (Agriculture), Art Larrance (At-Large/Harrington), Judy Olsen (Agriculture), David Waffle (Cities/non-voting), Matt Wellner (Builder-Developer), and Kevin Wolfe (Business) along with Diane Taniguchi-Dennis (Clean Water Services District Chief Executive Officer (CEO)/non-voting).

Commission members Stu Peterson (Builder-Developer) was not in attendance.

Attending the meeting from Clean Water Services were Bob Baumgartner (Regulatory Affairs Department Assistant Director), Rachel Burr (Inspection Program Manager), Nora Curtis (Conveyance Department Director), Shannon Huggins (Public Involvement Coordinator), Mark Jockers (Government and Public Affairs Manager), Jerry Linder (General Counsel), Erin Lowery (Senior Financial Analyst), Anne MacDonald (Senior Water Resources Program Manager), Stephanie Morrison (Executive Assistant), Damon Reische (Planning and Development Services Division Manager).

Members of the public attending the meeting included Bailey Huggins, Erin Poor, and Darryl Smith (MLG).

1. Call to Order
Mr. Weller called the meeting to order at 6:30 PM in the Tualatin Room at the Clean Water Services Administration Building Complex in Hillsboro, OR.

2. Previous Meeting Notes
There were no comments regarding the notes from the last meeting, November 14, 2018.

3. Election of Chair and Vice Chair
Ms. Hennings moved to nominate Mr. Weller to continue as Chair and Mr. McKillip to continue as Vice Chair. Mr. Jackson seconded. Mr. Weller asked for additional nominations. None were forthcoming and nominations were closed. Mr. Weller and Mr. McKillip were re-elected as Chair and Vice Chair, respectively.

3. Confirmation of Budget Committee Members
Ms. Brown, Ms. Hennings, and Mr. McKillip are continuing Budget Committee members. The Commission needs to recommend two more people to the Clean Water Services Board of Directors for appointment to the Budget Committee. Mr. Waffle and

Mr. Weller expressed interest in serving. Mr. Wellner moved to recommend Mr. Waffle and Mr. Weller to the Board for appointment. Ms. Olsen seconded. Motion passed*.

Mr. Jockers noted that the Budget Committee will meet Friday, May 3.

* Later in the meeting, Mr. Linder noted that either voting or non-voting Commission members can serve on the Budget Committee and confirmed Mr. Waffle's eligibility for appointment.

4. NPDES Permit Update

As follow-up to a question from Mr. Weller at the last meeting, Mr. Baumgartner shared an update on the challenge to the Clean Water Services National Pollution Discharge Elimination System (NPDES) permit, which was approved for a five-year renewal by Oregon Department of Environmental Quality (DEQ) in April, 2016. The renewal application and permit conditions were discussed in detail at several Commission meetings prior to approval. Shortly after approval, an environmental group submitted to DEQ a Petition for Reconsideration and DEQ agreed to review several aspects of the permit. While the review is underway, Clean Water Services operates under the permit conditions as issued.

The petitioning group sees water quality trading as a desirable strategy to meet temperature standards and advocated for careful documentation to support applying it to permits for other municipalities. The group took issue for various reasons with the standards for ammonia, temperature, copper, and mercury. Mr. Baumgartner noted that most concerns have been resolved except for copper and mercury, which are new issues for Clean Water Services and other municipalities in the Pacific Northwest. The Clean Water Services permit includes a variance for mercury as treatment plant discharges contain a lower level of that element than currently exists in the Tualatin River. DEQ and United States Environmental Protection Agency (EPA) expect to resolve the mercury variance question by March. DEQ has indicated to EPA that it supports the Clean Water Services approach to managing copper, but there is no timetable for resolution yet.

Meanwhile, Clean Water Services has already begun conversations with DEQ looking toward the 2021 permit renewal application, as the process requires time for DEQ review, public review and comment, DEQ response, etc. Mr. Baumgartner noted that Clean Water Services will not be proposing any substantial changes to the permit approved in 2016.

Questions and comments regarding the NPDES Permit Update are listed in Appendix A.

5. LIDA Design Challenge

Ms. Burr explained that a Design & Construction Standards (D&Cs) update in 2017 implemented stormwater treatment requirements for any project creating more than 1,000 square feet (sf) of impermeable area, and made Low Impact Development Approaches (LIDA), like vegetated treatment planters and rain gardens, a priority for meeting those

treatment requirements. Despite numerous different LIDA designs, there was negative feedback about the aesthetics/appearance of LIDA facilities and their lack of design compatibility with the surrounding neighborhood, a perceived lack of design creativity and innovation, and relatively high cost of materials. These issues gave rise to the idea of a college level, student LIDA Design Challenge as a way to encourage and showcase attractive designs and ways to improve performance of LIDA facilities, as well as show how LIDA can be integrated into an overall site design.

Challenge participants will submit designs for two sites being developed by Willamette West Habitat for Humanity—one a single-family infill project in an area without a stormwater system, the other an 8-lot townhome project with one lot already set aside for a regional treatment facility. Several design professionals/firms have offered to mentor contest participants. Entry deadline is January 18. Two entries have already been submitted, with hopes for five in this first year for the contest. A panel of judges will evaluate entries on aesthetics, function, and form. Winners will receive cash awards and will be featured at the Stormwater Showcase Summit on May 9 in Eugene, Oregon.

Questions and comments regarding the LIDA Design Challenge are listed in Appendix B.

6. Design & Construction Standards Update

Mr. Reische and Ms. MacDonald discussed refinements to the draft implementation policy for the upcoming Design & Construction Standards (D&Cs) revisions and outlined the base strategy for addressing hydromodification in the D&Cs as required by the Clean Water Services NPDES permit ***(presentation attached)***.

Mr. Reische said the draft implementation policy, adopted by the Board on November 27, 2018, was revised based partly on input from Commission members at the November 14 meeting. There were no changes to the implementation policy for projects requiring land use applications. However, for smaller projects not subject to the land use process, current standards will apply when permit application is made *within 180 days* (revised from "within 90 days") of the effective date of the new standards **and** construction begins *pursuant to the local jurisdiction's permit* (revised from "within one year of application," to allow for local variations). New standards will apply when application is made *more than 180 days* (revised from "more than 90 days") after the effective date of the new standards **or** if construction has not begun *pursuant to the local jurisdiction's permit* revised from "within one year of application," to allow for local variations). April 22, 2019 is the expected effective date for the new standards.

Mr. Reische also reviewed the schedule and stakeholder outreach, including a public hearing for the Implementation Policy, last November 27. Staff has begun releasing draft components as they are developed, and will do so approximately every 7-10 days into mid-February when a complete initial draft should be available. Comments are encouraged now and will continue to be accepted throughout the process. There will be other stakeholder meetings and engagement opportunities in the meantime and staff will return to the February and March Commission meetings for additional feedback. The proposed standards will be taken to the Board for adoption during a public hearing on

March 19. This will allow time prior to the permit due date to incorporate any changes directed by the Board and present the changes at a scheduled Board hearing.

Mr. Reische noted that Commission members are welcome at any stakeholder meetings and ongoing information will be posted on the website and shared via email. He also expects to return to future Commission meetings, one the standards are adopted, as the revised D&Cs will continue to evolve as they are put into practice, and as other needs are addressed. The immediate goal has been to put hydromodification standards in place with minimal changes to the rest of the D&Cs in order to meet the April deadline, but staff is committed to the continued refinement and development of other aspects of the D&Cs as may be needed in the coming months/years.

Mr. Reische reviewed that rather than take a one-size-fits-all approach to hydromodification on a project by project basis, Clean Water Services wants to find a comprehensive solution that provides a range of toolsregional or sub-basin approach which considers landforms, land use, condition of the receiving stream, how projects in the area inter-relate and the cumulative effects or cumulative solutions, improving the condition of already-degraded streams or habitats, etc. and identifies a range of tools or practices that make sense for a specific area. Developing individualized sub-basin strategies in an area the size of the Tualatin basin is a challenging and a long-term undertaking. A few have been created, but that work will be ongoing while the Base Strategy will be implemented initially as an interim measure to meet the hydromodification requirements by the April deadline. While the Base Strategy is still a project-by-project approach, it moves us away from a one-size fits all approach and provides for a range of tools to fit the situation.

Ms. MacDonald described the base strategy and demonstrated an online interactive map screening tool (Draft Hydromodification Planning Tool Web Map)and an accompanying table that can help developers or landowners determine the preferred stormwater management approach they will need to provide for their project once the revised D&Cs are in effect. The stormwater management requirements and preferred approaches are based on the project size, development class, and the hydromodification protection level. Ms. MacDonald encouraged everyone to try out the tool and provide feedback. She also briefly described a few other tools which will be coming out in the next few weeks to complement the written revisions to the D&Cs.

Ms. Curtis reminded Commission members that according to the Board's charge, they may be asked to host a public forum if there are any contentious issues with the D&Cs Update. If that is necessary it would likely be in addition to any regularly scheduled meetings and would likely be after March 19; possibly as late as the first week of April.

Mr. Reische thanked Commission members for their input and encouraged everyone to look over each draft component as it is released and share their comments.

Ms. Curtis noted that comments are not limited to content—there may be ideas or concerns about how the content is presented, such as an earlier observation that it was very hard to see the colors and widths of lines symbolizing different stream orders.

Questions and comments related to the D&Cs update are listed in Appendix C.

7. Announcements

Mr. Jockers noted that recruitment is underway for the District 1/Schouten position vacated by Erin Poor when she moved to a different district, and for the environmental position previously held by Erin Holmes.

Mr. Linder reported that non-voting members of the Commission may serve on the Budget Committee, so Mr. Waffle is eligible to be recommended to the Board.

The next Commission meeting will be Wednesday, February 13, 2019.

8. Adjournment

Mr. Weller adjourned the meeting at 8:22 PM.

(Meeting notes compiled by Sue Baumgartner)

Appendix A

Clean Water Services Advisory Commission Meeting Notes
January 9, 2019

Questions and comments regarding the NPDES Permit Update:

1. Where does the copper come from?
   1.1. Common sources are from processes associated with high-tech industries, motor vehicle brake pads, and drinking water pipes and fittings.

2. Is copper subject to a standard mainly due to its effect on anadromous fish?
   2.1. Largely yes, as it gets into the gills/bloodstream and affects their lateral line which helps them evade predators.

3. Is the mercury variance based on it being inherent in the soil here?
   3.1. About 80% is deposition from China and most of the rest is in the soil; it's hard to discern which of that is actually natural. The concentration of mercury in our plant discharges is 2 nanograms/liter or lower while rainfall around here carries 4 nanograms/liter.

Appendix B

Clean Water Services Advisory Commission Meeting Notes
January 9, 2019

Questions and comments regarding the LIDA Design Challenge:

1. Are the competition participants actually building their designs?
   1.1. Not as part of the competition entry, but Habitat for Humanity can use the designs if they wish.

2. Does the evaluation criteria address how much yard space is left?
   2.1. Flow-through planters are most common as they leave more yard space than other designs.
   2.2. If we could figure out (drainage) issues with crawl spaces we could put rain gardens closer to the foundation, which would leave more open space in the yard/lot.

3. Why are grates not allowed over flow-through planters? People can walk/fall right into them.
   3.1. Yes, that's something to explore. There have even been problems with people walking or even driving into such snow-covered structures. The planters must be open to sun and rain, but grates would not interfere with either of those.

4. This (competition) should be publicized through the Urban Ecosystem Research Consortium; many students are connected to that.
   4.1. Ms. Burr will send the information to Ms. Hennings.

5. What if you don't get any more than two entries?
   5.1. It would be difficult to extend the entry deadline or change the contest timing as it is difficult to coordinate with student schedules. The point really is to promote use of LIDA and good design, not just see how many entries we can generate.

Appendix C

Clean Water Services Advisory Commission Meeting Notes
January 9, 2019

Questions and comments regarding the D&Cs Update:

1. What if I'm using the screening tool map and it shows a stormwater system in my project or between my project and the receiving stream?
   1.1. You would trace through the storm system until you get to your discharge point and then go downstream from there for the number of feet appropriate based on the receiving stream order).

2. If you know your discharge point into the receiving stream is at the highest protection level, what is the significance of the 750 feet beyond that?
   2.1. The idea is that by the time discharged water gets that far downstream, the effects will have been dispersed. That distance is different for each stream order, based on 50 times the channel width assuming a given channel width based on stream order.
   2.2. And what are the implications to a developer? If you know you have a small project, in a developed area, in a high protection class, all those parameters determine your treatment requirements and the options you have for that treatment, as shown in the table.

3. How does fee-in-lieu work with this?
   3.1. We are working on that as part of our next steps, but even with just this base strategy we can start to pool money for other projects such as stream corridor enhancement, etc.
   3.2. So (looking at the table slide) fee-in-lieu is the preferred approach if it's anticipated that your project will only have a small impact on the watershed?
      3.2.1. Yes; we are looking at is your project a small area of the watershed upstream from that point of discharge (in developed areas), or is your incremental change in flow relatively small (in expansion areas).
      3.2.2. Who determines the definition of small impact/small project?
         3.2.2.1. Fee-in-lieu is a primary choice for very small projects; we haven't settled on the final numbers for definition of that but we are thinking about making it proportional to the protection level or correlated to some other element of the base strategy.
            3.2.2.1.1. You do have some of that thinking in the downstream analysis section (less than 10% of basin, etc.).
               3.2.2.1.1.1. Yes, it's very similar to that approach.

4. Expansion areas are the easy ones…but there will be small projects in expansion areas that will have already been accounted for in a downstream facility and that isn't reflected in the gray Project Size table (slide). There should be something that exempts a project that will be served by an existing facility.

4.1. Right; it's not explicitly expressed at this point but that's the intent. Much like the current approach to water quality facilities—if there's something in place, you're good--although in a sub-basin area like that you might be subject to a Regional Stormwater Management Charge (RSMC). So, in a way you would be paying a fee-in-lieu, just a different category.

5. Use of fee-in-lieu has always seemed to throw up a red flag, but Clean Water Services seems to be getting more comfortable with it, especially as shown here (treatment options table slide). Still, it has been rare for fee-in-lieu to be seen as the best fit for a project. If you put more emphasis on fee-in-lieu, you could accomplish a lot more on a larger scale. Speaking for myself, I think there's room financially to pay more for fee-in-lieu if it means I don't have to build something onsite.
   5.1. In an expansion area it's relatively easy to come up with money and put those funds toward some sort of regional project. If it's infill in an area that's 95% built out, trying to do even a pond—never mind a stream enhancement project along a reach where you might have a hundred property owners—you might have the money, but access to property is a challenge. It can become very costly and we need to consider that we're balancing those things with fee-in-lieu
      5.1.1. But those are the projects that are the most vulnerable. You can plan for and accommodate the expansion areas, but with infill projects, which is largely what we're left with…if you have to put a facility on the site that is dramatically larger, then we don't have projects.
   5.2. Unlike what you might have experienced in the past, fee-in-lieu is actually emphasized for smaller projects (in this table).

6. So, based on this table (slide) if a "very small" project of 8,000 square feet (SF is three to five lots or three lots plus roads, then a "small" project is about 10 lots?
   6.1. Yes, approximately.

7. The "very small" category is a good idea. Speaking as a homeowner, if you have a well-established neighborhood and someone is just adding a room or a deck, it makes no sense for them to have to build something that they probably aren't going to maintain properly anyway, when you could use fee-in-lieu to make a bigger impact elsewhere—culvert issues, inside streams, fish passage, etc. That's the way it should go for small changes in existing developments. How else would you fund projects in those areas, anyway? And homeowners would still have a choice—they could still choose to build a facility if they didn't want to pay the fee-in-lieu.
   7.1. Yes, we started with three categories and as we started to work through examples, we added "very small." Look for those definitions in the next few weeks.
   7.2. We'd like feedback on using this tool. We want to know what you run into as you start to use it on real-world projects. That 8000 SF is not a magic number—let us know if there is something that doesn't make sense for this situation or these circumstances.

8. It's easy to think about this in terms of residential; harder to think in terms of commercial work. You can't just go in and redesign a parking lot.

9. With this mapping tool, it seems like there are a lot of streams that aren't mapped or are incorrectly mapped. How are you handling those?
   9.1. Surprised to hear there are "a lot."
   9.2. This tool is based on our revised mapping of streams from 2014 LIDAR. We've had people go out and walk all the streams. GIS software can be made to draw all the streams based on topography, but when you do that you catch every single little roadside ditch, etc. This is a first cut; there will still be detailed plan review and at least to start with we will have to pick up unmapped streams at that stage and figure out if there are additional protections needed. Also at this stage, unmapped streams will still fit into that base strategy—there might be some difference in the receiving reach but the requirements would probably be much the same as in a more detailed sub-basin strategy.

10. Are you using only perennial streams (in the map), and did you use a minimum area drained to consider it a stream?
    10.1. Not all the mapped streams are perennial. This map is our best estimate; it is more detailed than most USGS (United States Geological Survey) data but not as detailed as if a drone had been criss-crossing over the basin for several years.
    10.2. This map is one more level refined than our pre-screening tool for vegetated corridors, but is still intended to be an initial screening tool, not a designing tool. It's not the final answer; you still have to do the detailed site plan and survey and identify water-quality-sensitive streams, but it is at least a way for developers and their engineers to estimate the available tools. It also includes a way for others to let us know if there is information that doesn't match up, so we can look at alternatives.

11. The definitions for the levels of risk (developed high, developed moderate, etc.) are not clear.
    11.1. We put a large amount of stream data into our watershed GIS, then for instance to identify high-risk streams we looked at high-gradient headwaters, steep (25%) slopes, higher landslide susceptibility, stream confinement/ravine vs. floodplain, etc.
    11.2. This is clear from the map but not from the document; we're not necessarily trying to pinpoint it in the narrative at this point.

12. Another concern is that expansion areas are defined at this point in time, while the UGB (Urban Growth Boundary) has already moved on—the risk definitions may not include those UGB changes.
    12.1. Again, this is a screening tool. We included in the high risk category the highest value habitats in riparian corridor. We used the regional conservation strategy but also what we knew about where we'd gone in and done enhancement, where there are parks, etc.

13. The whole point of the mapping tool exercise is where will you discharge and how far downstream will it have an effect, but the receiving water will most likely be a mapped stream (not just a ditch or intermittent stream), so it seems like it doesn't really matter whether ***all*** streams are mapped, if the ones that ***are*** mapped are the ones that will matter.
    13.1. As mentioned earlier, not all the mapped streams are perennial, especially those near headwaters.

14. The Regional Conservation Strategy will soon be updated with mapping of Oregon white oak and also wildlife corridors; would like to see connectivity included in this (in base and sub-basin strategies/maps/tools).
    14.1. So far we haven't found a way to capture connectivity except on such a gross scale that it wouldn't be useful; we would welcome the additional information from Metro to refine that.

15. With new "expansion areas" recently identified, it can be confusing; how is the requirement to address hydromodification affecting Bethany, River Terrace and other current expansion areas that are already underway?
    15.1. There is a sub-basin strategy for each of those (which meets the hydromodification requirements).
    15.2. Looking at the maps again, you can see those sub-basin strategy areas are already delineated. If your site is not already within one of those strategy areas, then this base strategy table would apply.
    15.3. It is interesting to see on the map what a small percentage of the overall land area those developments are, even though each is a large development area.

16. How does the flow duration curve line up with the 750-foot downstream requirement?
    16.1. You would match the flow duration curve at the point of discharge; if any point within 750 feet downstream of the discharge point is in a high protection class, then your project is subject to the requirements for that class.

17. Can any of the flow detention on a project be underground detention?
    17.1. We currently have standards for private underground detention but haven't worked out whether that would be expanded or not; we aren't planning to change what is currently in the standard for private detention.

18. What if I have a medium-size project in a developed/high protection level area, but a detention pond won't actually fit? Do we automatically go to enhanced LIDA?
    18.1. Probably; but what might not be obvious here is that we will roll out a full list of approaches and what they address in terms of water quality, conveyance quantity, current downstream construction issues, hydromodification, and fulfilling the LIDA requirement that was added in 2017. Not all approaches may satisfy that 100%, so in that specific example, maybe using enhanced LIDA with a peak matching pond would be a way you could meet the requirement.

18.1.1. So even though the requirements table might indicate I have to provide a really big pond, you have the flexibility to say I could do a normal pond plus LIDA?

18.1.1.1. Yes, we are working right now on a prioritized list—similar to the LIDA prioritization list developed in 2017—with some defined triggers for bumping down the scale.

19. Have you done any comparison of flow duration pond sizing vs peak mass detention sizing?

19.1. In developing an interface tool for the EPS's Hydrologic Simulation Program – Fortran (HSPF) used for River Terrace, pond designs based on flow duration were about 2 ½ to 3 times larger than those based on peak mass, but that depends on a lot of variables.

19.1.1. One of our challenges is that we have such erodible materials here that it doesn't take much flow to start ripping up some of our streams.

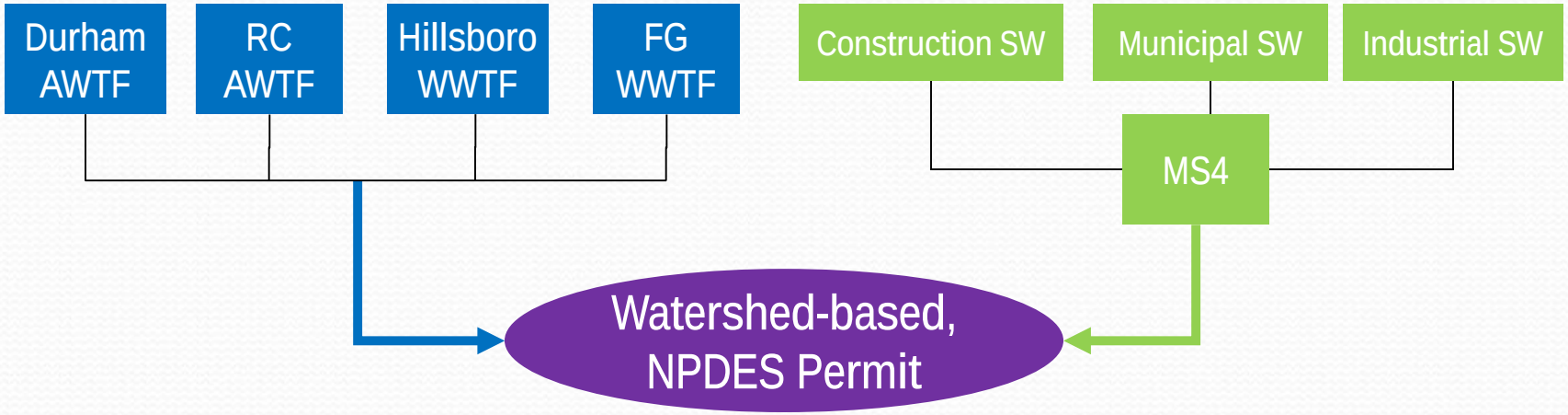
20. Would some of the things they did in River Terrace under City of Tigard standards (weirs, concrete flow-through planters, etc.), or similar designs, be allowed outside the City of Tigard under these general D&Cs?

20.1. Yes, though we may not be as explicit about aesthetics at this point, but the types of facilities in terms of how they function would be allowed; the practices you mentioned may fall under what we consider enhanced LIDA.

21. Adding a "click for specific stream info" capability (on the interactive map screening tool) would be really helpful.

Watershed-based NPDES Permit

- Integrated permit for 4 WWTFs, and MS4
- Includes water quality trading for temperature
- Bubbled loads for TSS, ammonia, phosphorus



Permit Status

- Permit issued: April 22, 2016
- Permit effective date: June 1, 2016
- Permit application date December 2020
- Permit expiration date: May 31, 2021

Petition for Reconsideration

- Petition filed by NEDC/NWEA in 2016
- Issues:
  - Water quality trading program
  - Evaluation of copper and mercury
  - Application of Highest and Best Standards
  - Whole effluent toxicity testing
  - Ammonia limits
  - Temperature standard
- Petition accepted by DEQ
- Permit status

Status of Petition for Reconsideration

- CWS has worked closely with DEQ to help address most issues
- Remaining issues:
  - Copper: compliance strategy mostly defined
  - Mercury: pursuing a variance
- Timeline for resolution

Status/Next Steps

- DEQ reviewing variance as part of petition for reconsideration
- Need to develop permit conditions (interim limits, monitoring, reporting, pollution reduction actions, variance duration, etc.)
- EPA approval necessary
- Challenges:
  - First variance in Oregon
  - DEQ and new EPA rules not entirely consistent
  - Not using socio-economic impacts as the reason for the variance

LIDA Design Challenge

CWAC Meeting

January 9, 2019

Clean Water Services

Outline

- Why Have a Competition?
- Design Challenge Goals
- Creating a Design Challenge

Why Have A Design Competition

- Some negative feedback regarding the visual appearance of single family stormwater facilities.
- Site planning is often lacking and neighborhood site attributes are not always considered.
- There appears to be a lack of creativity and innovation in design.
- Noted that cost of materials and construction can be high.

Flow Through Planter Examples

Raingarden Examples

The Design Challenge Goals

- Improve the **aesthetic appeal** and integrate LIDA into the landscape.
- Increase the **diversity of form** to reflect homeowner interests and site conditions.
- Improve **LIDA performance**.

Creating A Design Challenge

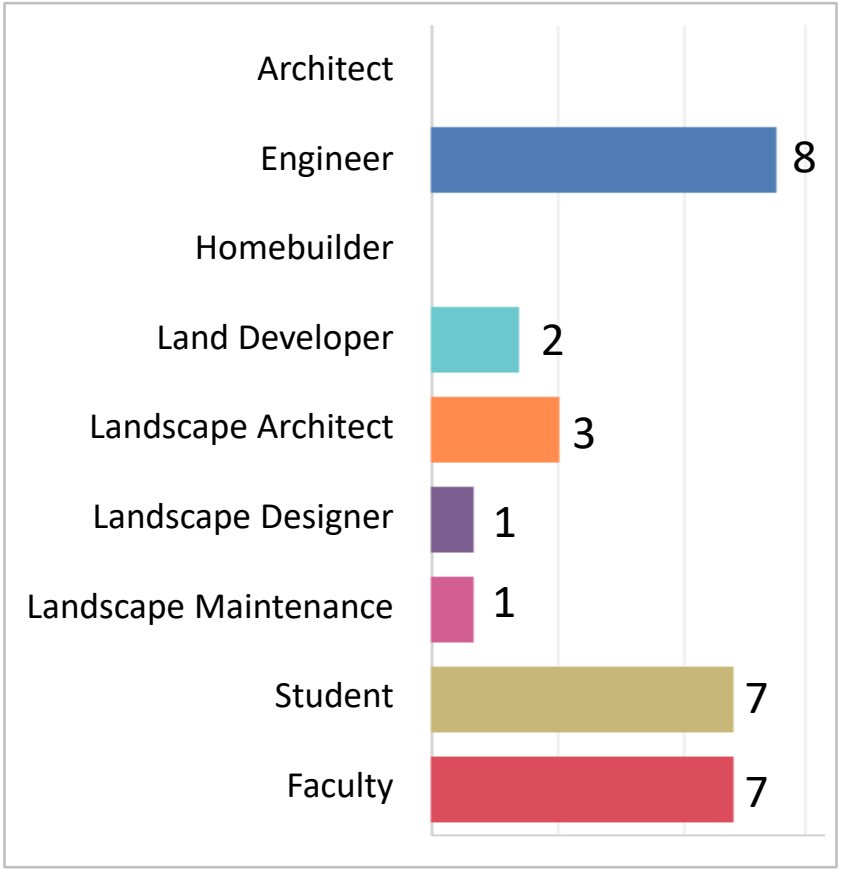
- Internal Work Group
- Survey
- Selection Criteria
- Site Selection
- Awards

Internal Workgroup - Questions

- Eligible Entrants
  - Higher education and/or professional?
- Design categories
  - Single family residential, commercial properties or subdivisions?
- Selection criteria
  - Focus on aesthetics, water quality, performance?
- Award
  - Offer monetary award, recognition to motivate participation?

Survey Overview

- Professional & Higher Ed community
  - Sent to 60 people
    - 5 professional organizations
    - 7 higher education institutions
    - 30+ practitioners
    - 10 Developers
  - 29 responses
- Co-implementers
  - Sent to 41 people
  - 5 responses



Final Decisions

- Eligible Entrants – Higher education
- Design categories- Design for single family residential
- Selection criteria to focus on aesthetics
- Offer monetary award and recognition to motivate participation

Selection Criteria

Aesthetics

- Year-round interest
- Seasonal interest
- Biological services
- Does the facility fit or stand out of local/site landscape?
- Does the design use natives?
- Will the aesthetic goals work with form?

Function

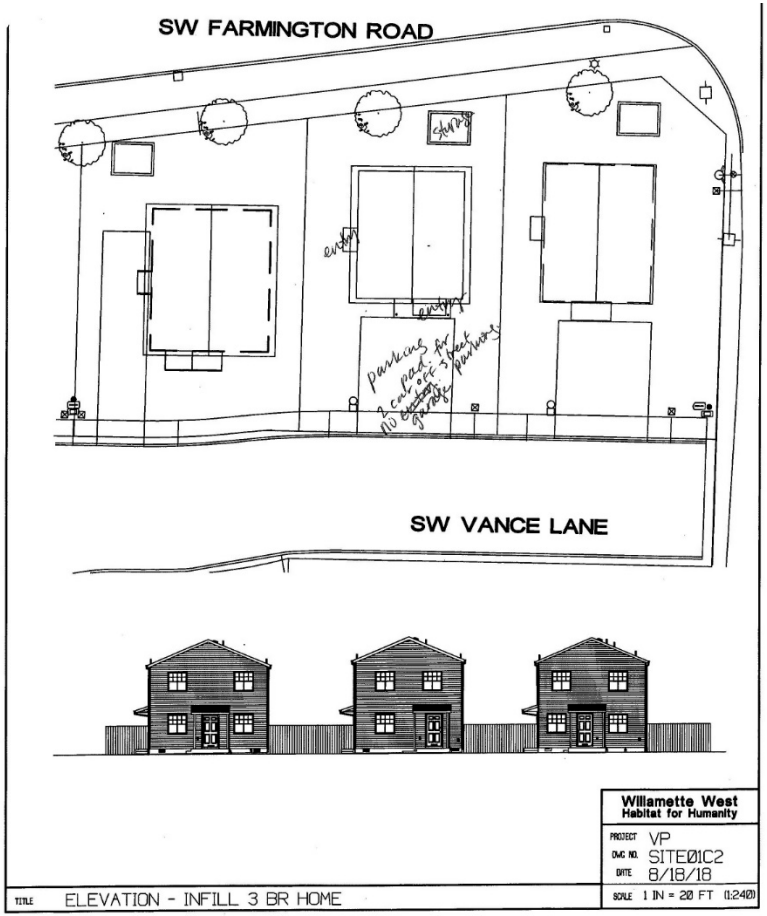
- Volume management
- Infiltration
- Pollutant removal
- Time of concentration

Form

- Maintainability
- Sediment management
- Plant survivability
- Usable in multiple settings

Site Selection

- Willamette West Habitat for Humanity has partnered with CWS to provide sites for the design competition.
- 2 sites suitable for design challenge.
  - Single-family dwelling: Provide on-site treatment/infiltration on the lot where access to public storm is not available.
  - 8 unit townhomes. Provide on-site treatment at the lot or street level.

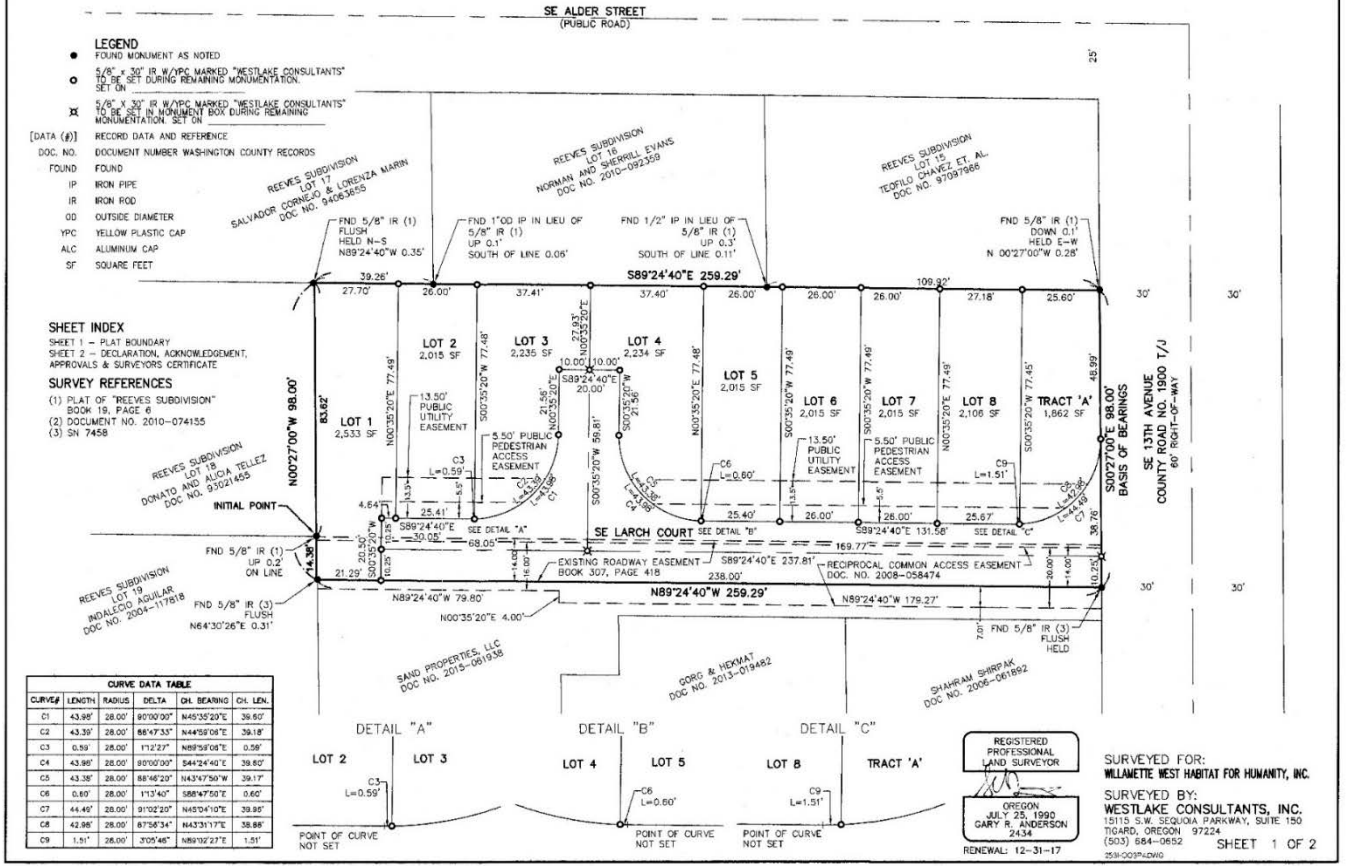

SW FARMINGTON ROAD
SW VANCE LANE
Williamette West
Habitat for Humanity
PROJECT VP
DWG NO. SITE01C2
DATE 8/18/18
TITLE ELEVATION - INFILL 3 BR HOME
SCALE 1 IN = 20 FT (1:240)

ALDER COMMONS

IN THE NW 1/4 OF SECTION 5, T. 1 S., R. 2 W., W.M.
CITY OF HILLSBORO, WASHINGTON COUNTY, OREGON
AUGUST 2, 2016

RECORDED AS DOCUMENT NO. 2017001279

SCALE: 1 INCH = 20 FEET



CURVE DATA TABLE					
CURVE#	LENGTH	RADIUS	DELTA	CH. BEARING	CH. LEN.
C1	43.98'	28.00'	90°00'00"	N45°35'20"E	39.60'
C2	43.39'	28.00'	88°47'33"	N44°59'08"E	39.18'
C3	0.59'	28.00'	1°12'27"	N89°59'08"E	0.59'
C4	43.98'	28.00'	90°00'00"	S44°24'40"E	39.60'
C5	43.38'	28.00'	88°46'20"	N43°47'50"W	39.17'
C6	0.60'	28.00'	1°13'40"	S88°47'50"E	0.60'
C7	44.46'	28.00'	91°02'20"	N45°04'10"E	39.95'
C8	42.98'	28.00'	87°56'34"	N43°31'17"E	38.88'
C9	1.51'	28.00'	3°05'46"	N89°02'27"E	1.51'

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 25, 1990
GARY R. ANDERSON
2434
RENEWAL: 12-31-17

SURVEYED FOR:
WILLAMETTE WEST HABITAT FOR HUMANITY, INC.

SURVEYED BY:
WESTLAKE CONSULTANTS, INC.
15115 S.W. SEQUOIA PARKWAY, SUITE 150
TIGARD, OREGON 97224
(503) 684-0652

SHEET 1 OF 2

2531-003PLDWG

And the winner is…

- Cash award for 1st, 2nd, and 3rd place.
- Winning team can showcase their design at the upcoming Stormwater Summit in May of 2019.
- Promotion of design in Clean Water Services' education and outreach materials. Design may be considered for inclusion in the LIDA Handbook.

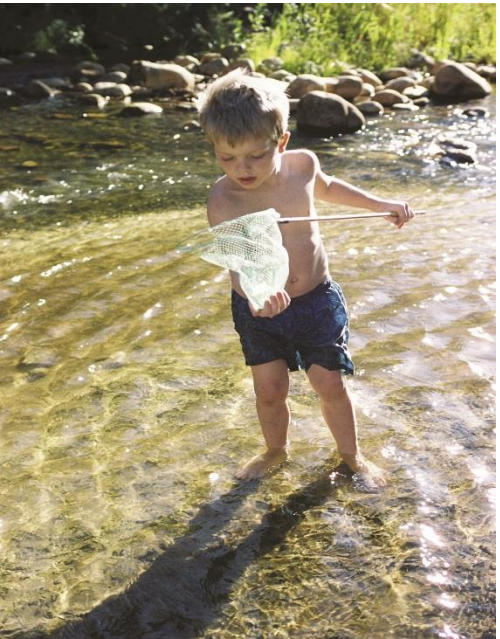
QUESTIONS & COMMENTS

Design & Construction Standards Update

Clean Water Services Advisory Commission

January 9, 2019

Clean Water Services



Update Topics

- D&C Stormwater Mgmt. Standards Implementation Policy
- Update Schedule
- Stakeholder Engagement
- The Base Strategy for Addressing Hydromodification Impacts
- Base Strategy Methodology

Implementation Policy- Projects *requiring* Land Use (LU)

Current Standards apply:

- When LU application is made prior to the effective date of new standards

New Standards will apply:

- When LU application is made after the effective date of new standards

Implementation Policy- Projects *not requiring* Land Use

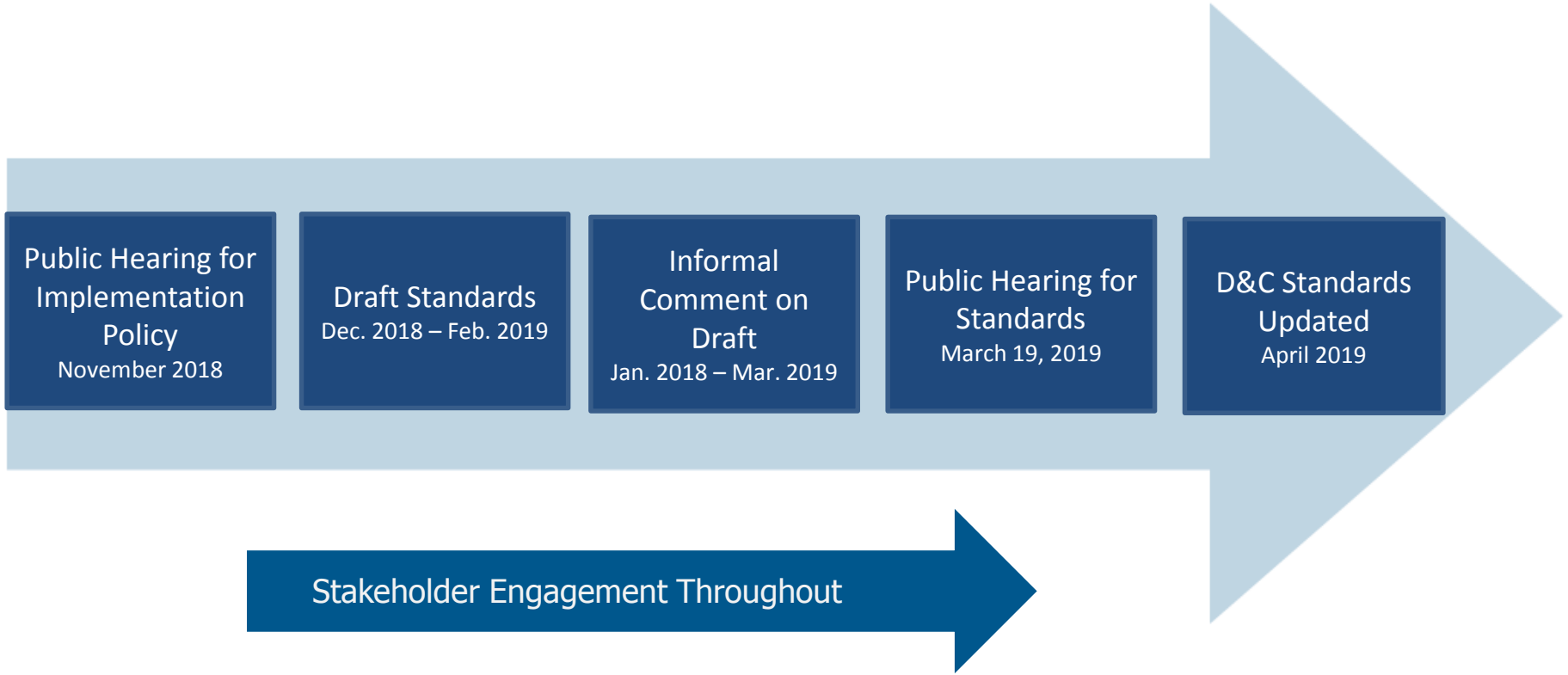
Current Standards apply:

- When permit application is made within 180 days of the effective date & construct begins pursuant to the local jurisdictions permit

New Standards will apply:

- When permit application is made more than 180 days after effective date, or building has not begun pursuant to the local jurisdictions permit

Schedule for 2019 D&C Update



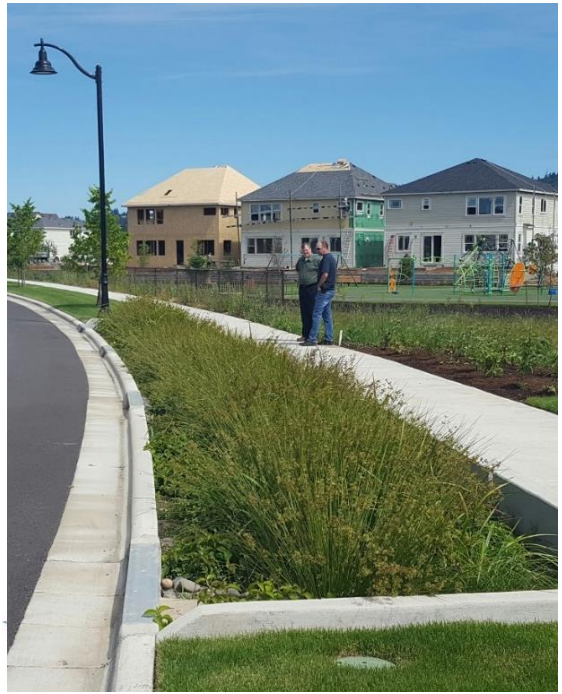
D&C Update Key Milestones

- Rollout of Base Strategy Methodology – January 4
- Additional Components of Base Strategy – every 7 to10 days through beginning of February
- Complete Initial Draft – Mid to Late February
- Public Hearing for Standards – Mar. 19, 2019
- Opportunity for engrossment – First part of April
- Proposed Effective Date – April 22, 2019
- Stakeholder engagement – throughout

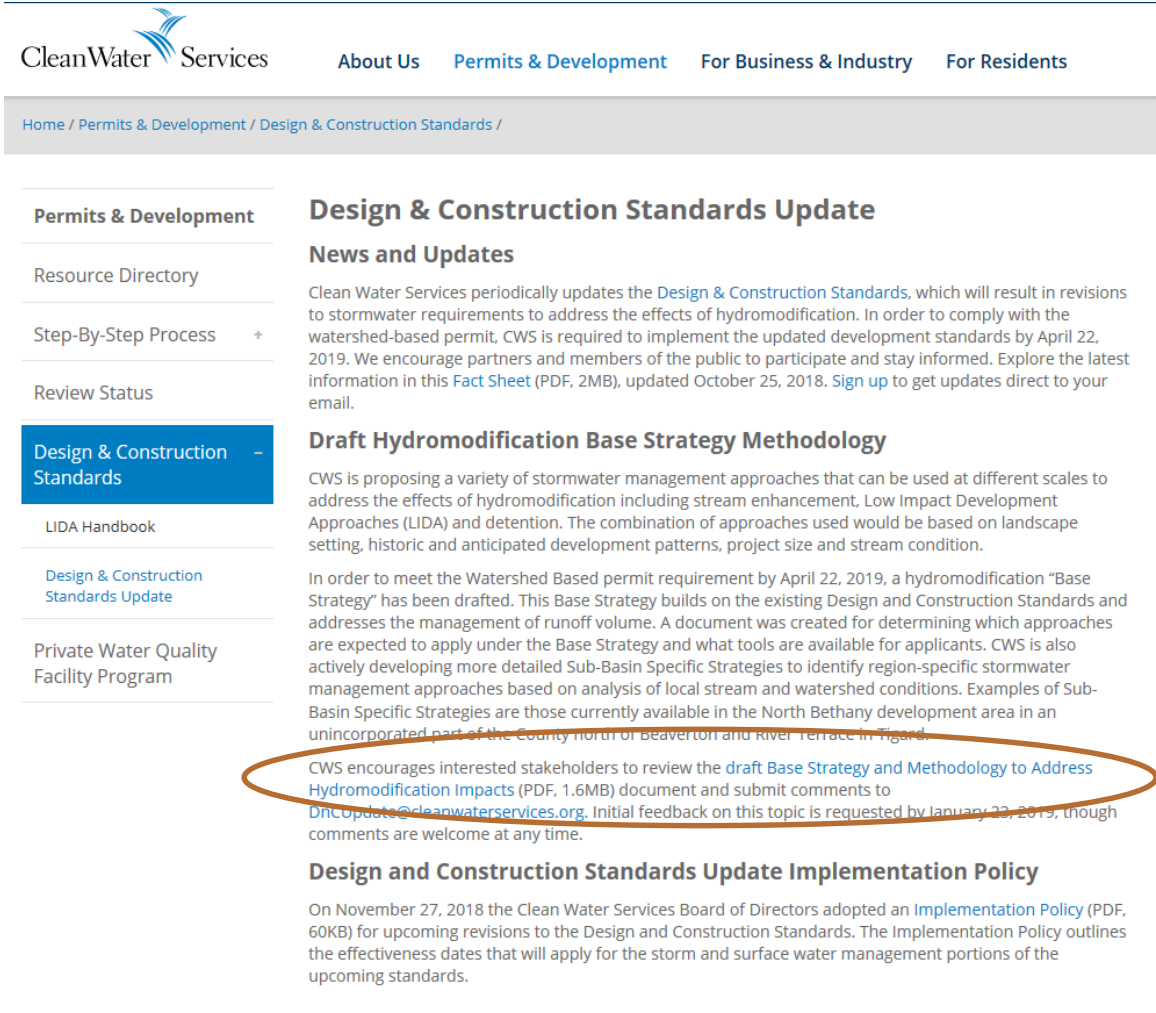
Stakeholder Engagement

- Co-Implementers Meetings – Monthly
- Clean Water Advisory Commission – Monthly
- Tualatin River Watershed Council – February 6th
- Portland Home Builders Association – Mid February
- General Stakeholder Meeting – Mid to Late February
- Rollout & Draft Standards email notifications sent to 350+ D&C Update Mailing List
- Ongoing Information through CWS Website & Factsheet

Base Strategy to Address Hydromodification Impacts



http://cleanwaterservices.org/permits-development/design-construction-standards/design-construction-standards-update/



Demonstration of Base Strategy Determination

- Based on:
  - Project Size Category
  - Development Class
  - Hydromodification Protection Level

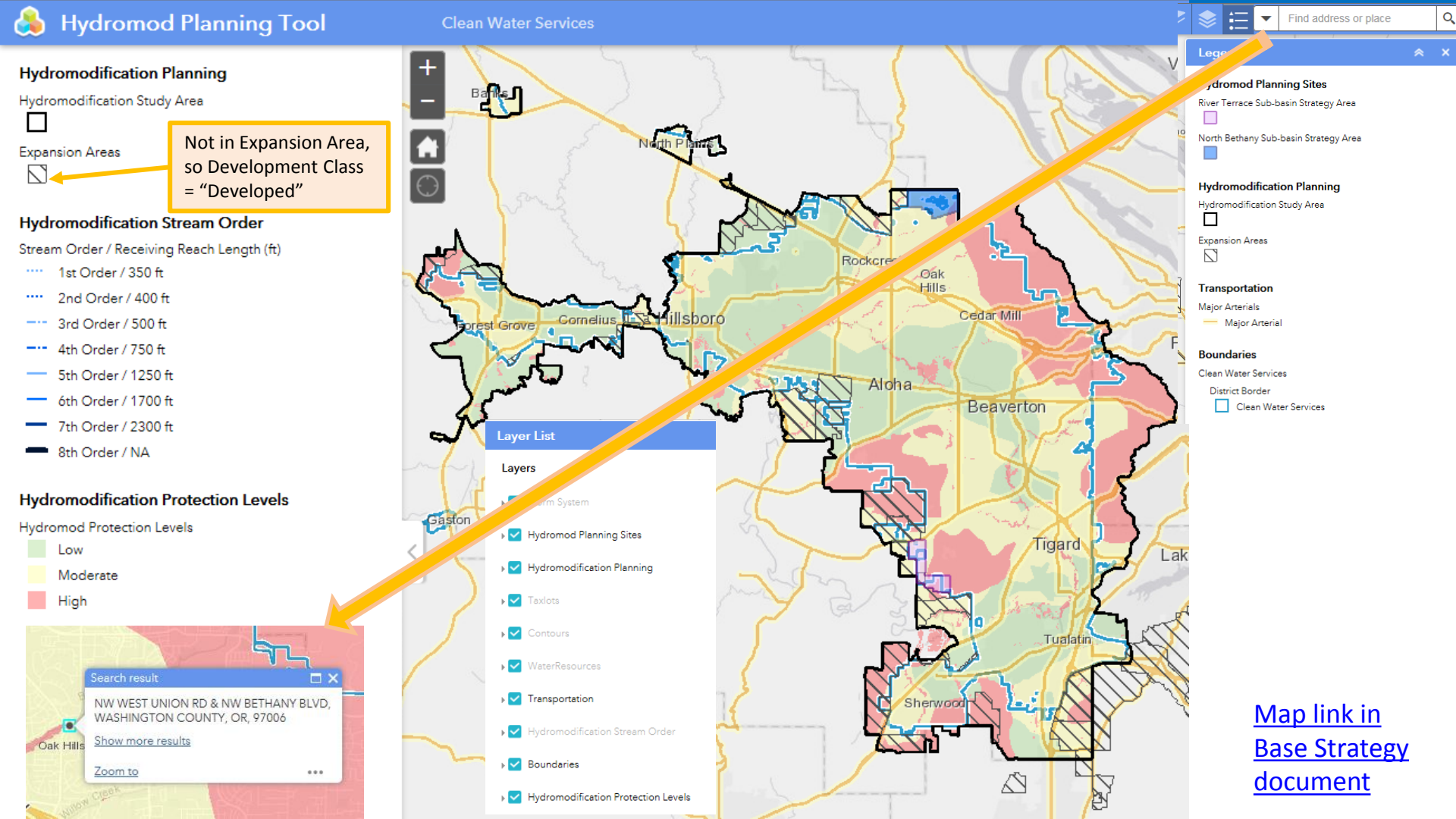
- Need to know 3 things:
  - Where project is (address, tax lot[s], intersection)

  Location: TLNO 1N1290000400 (near intersection of NW West Union Rd. and NW Bethany Blvd.)
  - How much impervious area is planned

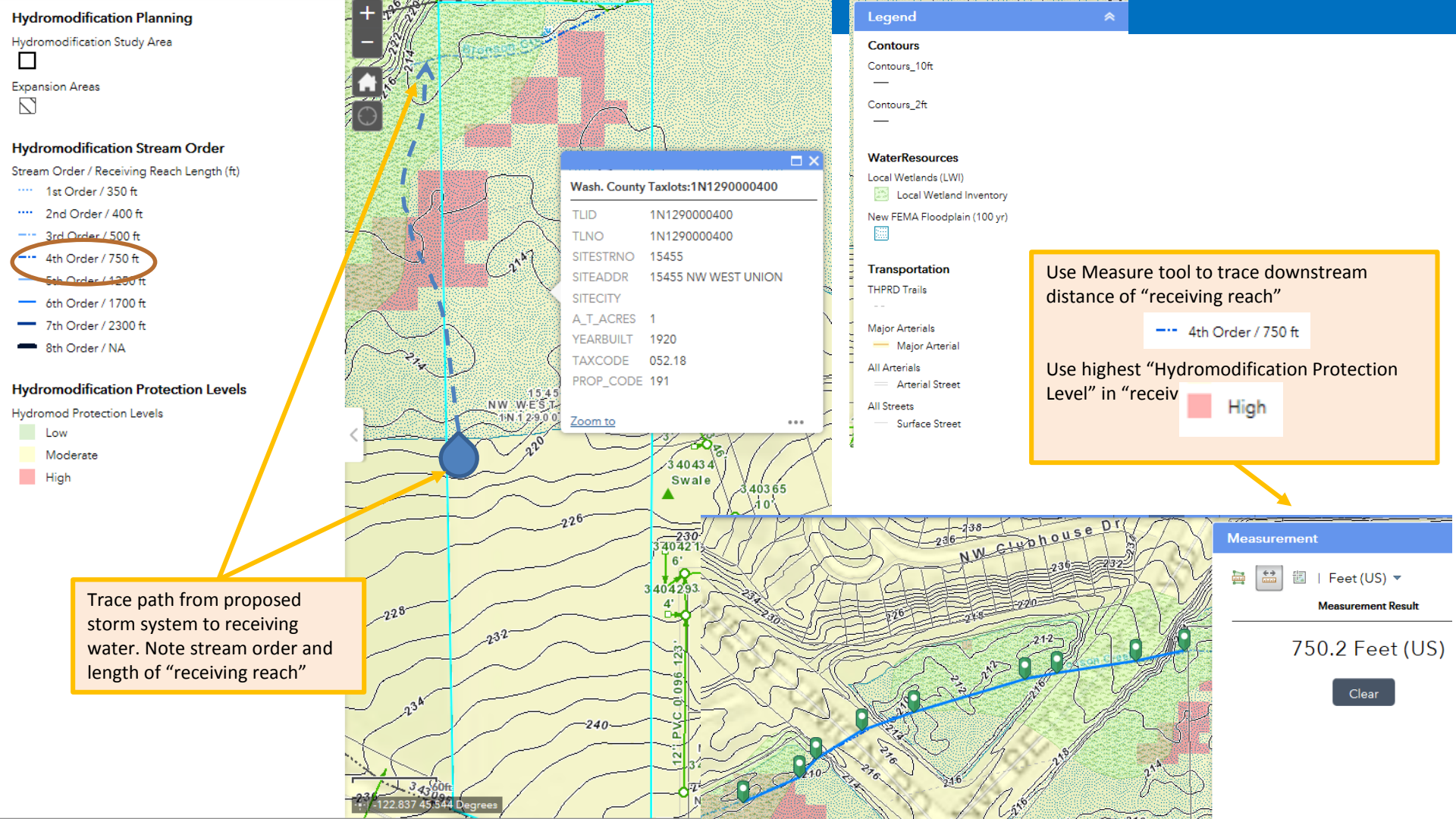
  Development – 5 lot subdivision

  Impervious Area: 17,691 SF (includes public streets and 2,640 square feet of impervious surface per lot)
  - Where water will leave development area (multiple locations ok)

  Drain from low spot on buildable land



[Map link in Base Strategy document]


Hydromodification Planning
Hydromodification Study Area
Expansion Areas
Hydromodification Stream Order
Stream Order / Receiving Reach Length (ft)
1st Order / 350 ft
2nd Order / 400 ft
3rd Order / 500 ft
4th Order / 750 ft
5th Order / 1250 ft
6th Order / 1700 ft
7th Order / 2300 ft
8th Order / NA
Hydromodification Protection Levels
Hydromod Protection Levels
Low
Moderate
High
Legend
Contours
Contours_10ft
Contours_2ft
WaterResources
Local Wetlands (LWI)
Local Wetland Inventory
New FEMA Floodplain (100 yr)
Transportation
THPRD Trails
Major Arterials
Major Arterial
All Arterials
Arterial Street
All Streets
Surface Street
Wash. County Taxlots:1N1290000400
TLID 1N1290000400
TLNO 1N1290000400
SITESTRNO 15455
SITEADDR 15455 NW WEST UNION
SITECITY
A_T_ACRES 1
YEARBUILT 1920
TAXCODE 052.18
PROP_CODE 191
Zoom to
Use Measure tool to trace downstream distance of “receiving reach”
4th Order / 750 ft
Use highest “Hydromodification Protection Level” in “receiv
High
Trace path from proposed storm system to receiving water. Note stream order and length of “receiving reach”
Measurement
Feet (US)
Measurement Result
750.2 Feet (US)
Clear

Development Class/ Hydromodification Protection Level	Very Small Project Size 1,000 – 8,000 sq. ft.	Small Project Size 8,000 – 20,000 sq. ft.	Medium Project Size 20,000 – 50,000 sq. ft.	Large Project Size > 50,000 sq. ft.
Expansion/ High	Enhanced LIDA	**Peak Matched Detention** Enhanced LIDA Fee-In-Lieu*	**Flow Duration Curve Matched Detention** Fee-In-Lieu*	**Flow Duration Curve Matched Detention** Fee-In-Lieu*
Expansion/ Moderate & Expansion/ Low		**Enhanced LIDA** Peak Matched Detention Fee-In-Lieu	**Peak Matched Detention** Fee-In-Lieu*	
Developed/ High	Fee-In-Lieu	**Enhanced LIDA** Peak Matched Detention Fee-In-Lieu*	**Flow Duration Curve Matched Detention** Enhanced LIDA + Peak Matched Pond Fee-In-Lieu*	
Developed/ Moderate & Developed/ Low		**Enhanced LIDA** Fee-In-Lieu	**Peak Matched Detention** Enhanced LIDA Fee-In-Lieu*	

* indicates option if project is anticipated to have small impacts within watershed context

Additional Base Strategy Components

- Interface to HSPF Tool with Instructions
- Additional Examples using the Methodology
- Refined Approach Table with E-LIDA Crediting
- Design Criteria for new Stormwater Management Approaches
- Updates to the Text of Chapter 4, Runoff Treatment & Control
- Fee-in-lieu Calculation
- Refinements to the Base Strategy Methodology

STAY TUNED!

THE RIVER STARTS HERE

“To restore a river, you need to involve just about everybody”

- Paul Bruchez, rancher on the Upper Colorado River, in the Denver Post, June 23, 2017