Clean Water Services
Our commitment is clear.

DATE: April 5, 2013

TO: Clean Water Services Advisory Commission (CWAC) Members and Interested Parties

FROM: Mark Jockers, Government & Public Affairs Manager

SUBJECT: REMINDER OF AND INFORMATION FOR APRIL 17 MEETING

This is a reminder of the CWAC meeting scheduled for **Wednesday, April 17, 2013.** The CWAC meeting packet will be mailed to Commission members on April 8. The Agenda will also be posted to Clean Water Services' website on April 8 at CWAC section of our website.

Food will be served for CWAC members at **5:30 p.m**. prior to the meeting.

Please call or send an email to Mark Jockers (JockersM@cleanwaterservices.org; 503 681-4450) if you are unable to attend so food is not ordered for you.

Enclosures in this packet include:

- Agenda for April 17, 2013 Meeting
- Regional Conservation Strategy Executive Summary
- March 20, 2013 Meeting Notes

Note: Background materials on the Permits and Design and Construction Standards will be sent to Commission members on April 15 in advance of the meeting. Background materials will also be posted to the CWAC section of the website in advance of the meeting.

2550 SW Hillsboro Highway Hillsboro, Oregon 97123
Phone: (503) 681-3600 Fax: (503) 681-3603 www.CleanWaterServices.org

Clean Water Services Advisory Commission
April 17, 2013

AGENDA

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

6:35 p.m. **Review/Approval of Meeting Notes of March 20, 2013**

6:40 p.m. **Overview of the Regional Conservation Strategy and opportunities for partnership in the Tualatin Basin**

As a charter member of The Intertwine Alliance, Clean Water Services collaborated closely on the recently published Regional Conservation Strategy. Staff will provide an overview of the Strategy and how it can link to meeting the District's business goals.

- Bruce Roll and Rich Hunter, Watershed Management Department

Action requested: Information

7:30 p.m. **Clean Water Services Permits and the D & C Standards Update Process**

An informational presentation on the history and drivers for the District's federal NPDES and MS4 permits and how the permit requirements and other water quality related land use planning requirements are ultimately reflected in the Design and Construction Standards.

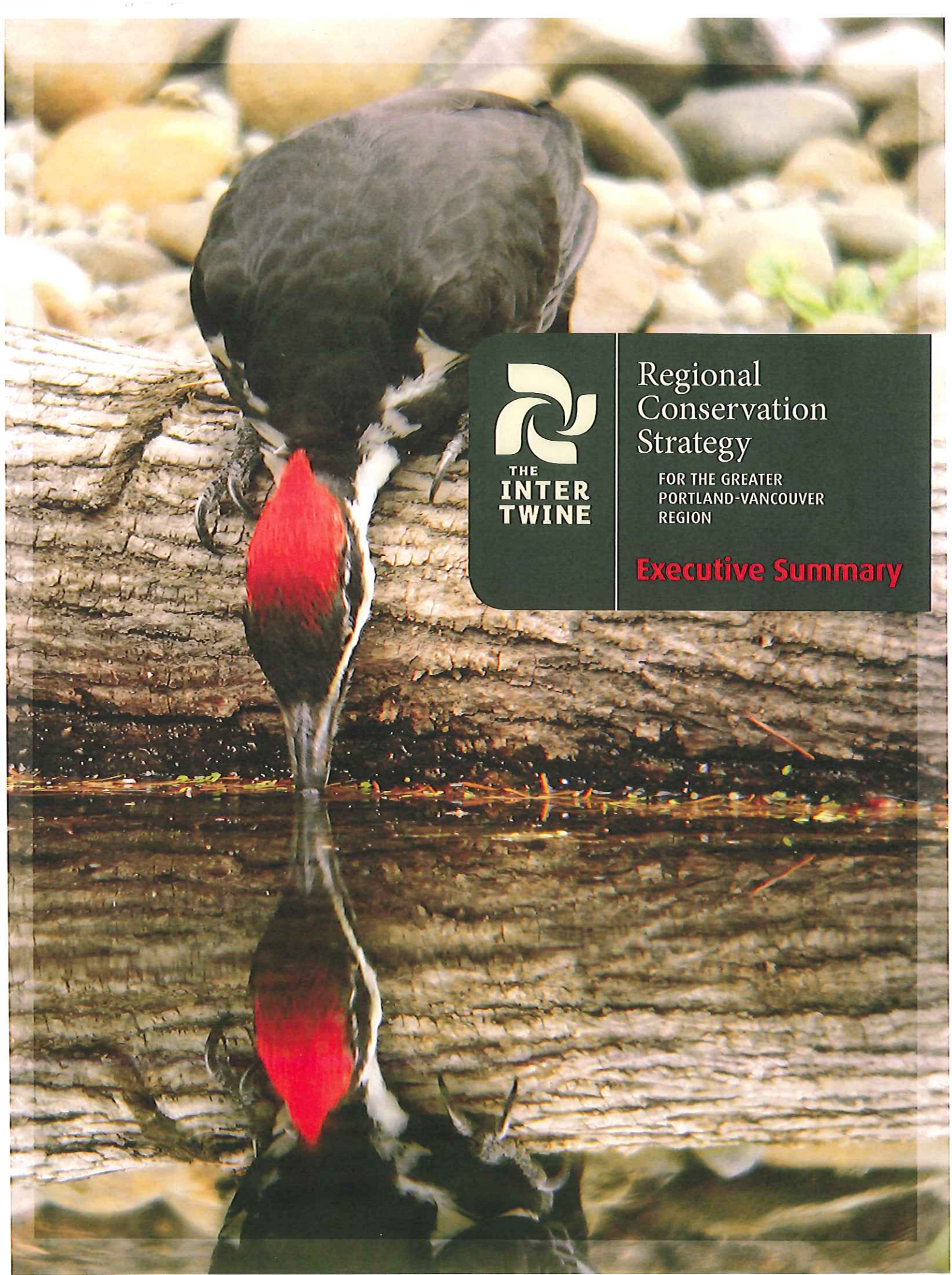
- Raj Kapur and Roger Dilts, Regulatory Affairs Department
- Nora Curtis and Damon Reische, Conveyance Department

Action requested: Update and background information

8:20 p.m. **Announcements**

8:25 p.m. **Adjournment**

Next Meeting: May 15, 2013



THE INTER TWINE

Regional Conservation Strategy

FOR THE GREATER PORTLAND-VANCOUVER REGION

Executive Summary

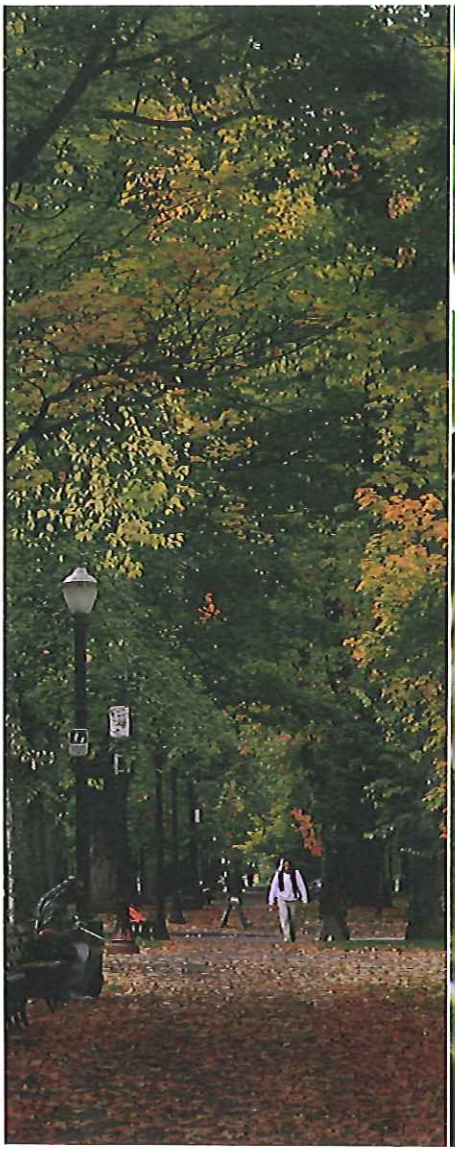
I have found that people who feel very strongly about their own landscape are more often than not the same people who are pushing for better comprehensive planning. But it is the landscape that commands their emotions. The landscape element of any long-range regional plan will only be a small part of the total effort, but more than any other element it can enlist a personal involvement. People are stirred by what they can see.

— WILLIAM H WHYTE
The Last Landscape, 1968

THE INTER TWINE

Imagine

Flocks of tundra swans in the farm fields of rural Washington County. Western bluebirds foraging for insects on Chehalem Ridge. An elk herd traversing the Tualatin Mountains. Skein after skein of snow geese over Ridgefield National Wildlife Refuge, with snow-clad Mount St. Helens as a backdrop. Peregrine falcons stooping on prey in downtown Portland. An Anna's hummingbird nesting in the backyard. All of these encounters with nature are possible where we live, work, and play—at the confluence of two great rivers in the greater Portland-Vancouver region. ▪ More than 2 million of us have the great fortune of living in a species-rich area made up of multiple landscapes—natural and built, urban and rural, working and wild. Coho salmon still spawn here, as they have for thousands of years. Bald eagles and osprey offer spectacular aerial displays from the heart of downtown Vancouver to the Tualatin Valley's rich farmland. Our backyards and neighborhoods host songbirds as they travel migratory routes dating back to time immemorial. ▪ How will we ensure that this unique natural legacy remains for future generations? That is the promise of the *Regional Conservation Strategy*.



The *Regional Conservation Strategy's* primary purpose is to describe how we can protect our region's biodiversity for the long term. What is biodiversity? Simply put, it is the vast array of plants and animals that make up our landscape, from the tiniest soil microbes to gigantic Douglas firs—and everything in between. Biodiversity is critical to the health of our region's ecosystems and to our own physical and economic health. Ecosystems that have diverse plant and animal life contribute to our clean air and water, fertile soil, and effective crop pollination. They help reduce industrial waste and put food on the table. Biologically diverse ecosystems are more resilient than simpler, species-poor ecosystems, which means that they are better able to withstand disturbances, including climate change. Biodiversity supports economic competitiveness by contributing to quality of life and attracting business and tourism.

Imagine a region rich with life and access to nature

In addition, the region's residents take pride in knowing that nature—in all its forms—is nearby. They treasure nature for its inherent value and want to protect fish and wildlife habitat to ensure access to nature where they live, work, and play.

A unique focus on biodiversity

We envision an exceptional, interconnected system of neighborhood, community, and regional parks, natural areas, trails, open spaces, and recreation opportunities distributed equitably throughout the region. This region-wide system is an essential element of the greater Portland-Vancouver metropolitan area's economic success, ecological health, civic vitality, and overall quality of life.

—THE INTERTWINE VISION

The Intertwine: Building on a legacy

The *Regional Conservation Strategy* is a product of The Intertwine Alliance—a broad coalition of public, civic, private, and nonprofit organizations dedicated to building a world-class system of parks, trails, and natural areas. The Intertwine Alliance was formed in 2009 to ensure that the region's network of parks, trails, and natural areas is completed and cared for, and to help the region's residents connect with nature and live active, healthy lives.

The Intertwine vision calls for the creation of "a bi-state regional biodiversity recovery and management plan that would, among other goals, identify significant natural areas for acquisition and protection, develop innovative strategies to conserve the region's natural resources, and ensure that large and small refugia are interconnected in every neighborhood and watershed in the region." The vision calls for specific outcomes that would result in the protection of a diversity of habitat types, plants, and animals across the urban and rural landscape; acquisition, restoration, and management of habitat connectivity for fish and wildlife; and long-term protection of the ecological integrity of streams, wetlands, rivers, and floodplains. The Intertwine Alliance launched the *Regional Conservation Strategy* in 2010 as a way to develop strategies to achieve these desired outcomes.

The *Regional Conservation Strategy* builds on an inspiring legacy of past efforts to weave nature into the urban landscape. More than 100 years ago, famed landscape architect John Charles Olmsted's master plan for Portland's park system called for scenic nature preserves to be built around natural landscape features; Olmsted advocated for creative ways to integrate the natural and built environments. In 1971, the Columbia Regional Association of Governments (CRAG) proposed a regional, bi-state system that would "protect, expand, and manage the region's network of parks, trails, natural areas, and fish and wildlife habitats" and provide opportunities for residents to have personal connections to nature. In 1992 Metro, working collaboratively with local park providers, agencies, and citizens on both sides of the Columbia River, adopted the Metropolitan Greenspaces Master Plan, which has resulted in the addition of more than 15,000 acres of publicly owned natural areas on both sides of the Columbia River.

Now it is The Intertwine Alliance's turn to build on this legacy. Representatives from Alliance partner organizations large and small collaborated for 2 years to create the *Regional Conservation Strategy* (with its supporting *Biodiversity Guide for the Greater Portland-Vancouver Region*) as a modern-day "owner's manual" to guide the expansion, restoration, and management of The Intertwine—the region's network of parks, trails, natural areas, and healthy watersheds.

The Strategy covers 3,000 square miles from the Lewis River in the north, south to the Molalla and Pudding Rivers and east-west from the Cascades to the coast range.

The challenge

Although we are fortunate to enjoy nature nearby, we face significant challenges to ensuring that that will be the case in the future. The landscape we inherited—a fertile mosaic of floodplains, wetlands, bottomland hardwood forests, prairie, oak savanna, and forested ridges—has been built on and fragmented. Spotted owls used to live in what are today the West Hills of Portland, and the braided Willamette River was once so shallow you could literally walk across it. Some rivers have been deepened and channelized and their banks hardened. Many habitats are fragmented and isolated, and oak savanna and wetlands have virtually disappeared. Our cities are filled with hazards to wildlife, from domestic animals to windows, wires, and cell towers that precipitate wildlife collisions. And the landscape is made up of myriad small, individually-owned parcels.

These changes to the landscape have affected the region's fish and wildlife species as well. Today, local runs of coho, Chinook, and chum salmon and steelhead trout are listed under the federal Endangered Species Act. One out of every four bird species in the region is experiencing long-term population declines, and many species that used to be common, such as western meadowlarks, common nighthawks, and western bluebirds, are becoming rare. The streaked horned lark is proposed for listing with critical habitat designations under the Endangered Species Act. Amphibian and invertebrate populations—both of which are critical indicators of ecosystem health—demonstrate a significant loss of diversity throughout much of the region.

We face the challenge of providing for growing human populations and needs while simultaneously addressing the needs of native fish, wildlife, and plants and protecting important ecosystem services such as water quality and plant pollination. If the predicted influx of people to the region becomes reality, many more native species are likely to decline across the region unless we become better at conserving and enhancing their habitat.

— BIODIVERSITY GUIDE FOR THE GREATER PORTLAND-VANCOUVER REGION

Far too many people in our region lack access to nature within walking distance of their homes and suffer from what author Richard Louv describes as "nature deficit disorder." With an additional 1 million people expected to move into the region over the next few decades, the pressures on our natural landscape will grow only more intense. The challenge of global climate change demands that we start now to integrate conservation, adaptation, and mitigation strategies to prepare for the unprecedented changes that lie ahead.

Although the challenges may be daunting, a combination of providence and planning has resulted in a region that retains much of its natural capital. Unlike much of the rest of the nation, we have managed to contain our urban footprint through regional growth management and good land use planning. We are fortunate to be surrounded by wildlife refuges, state and national forests, and working forests and farms. Our urban system of parks, trails, and natural areas provides the framework for creating an interconnected system of wildlife habitats and corridors that link to one another and the greater rural landscape beyond. And, with our vibrant urban forest canopy, ecoroofs, rain gardens, and naturescaped yards, we are recognized as a leader in integrating green infrastructure into our built landscape.

A strategy to maintain access to nature where we live, work, and play

When combined with its companion document, the *Biodiversity Guide for the Greater Portland-Vancouver Region*, the *Regional Conservation Strategy* presents a shared understanding of the nature of our region. It defines the challenges facing local wildlife and ecosystems and offers a vision, framework, and tools for moving forward collaboratively to protect and restore our natural systems.

The *Regional Conservation Strategy* is unique in four ways:

- **It focuses on the urban and urbanizing metropolitan region** that has received too little attention in previous conservation plans.
- **It gives equal attention to urban and rural landscapes** and addresses the connections between them.
- **It covers almost 3,000 square miles on both sides of the Columbia River** and encompasses parts of Clackamas, Columbia, Marion, Multnomah, Tillamook, Washington, and Yamhill counties in Oregon and Clark, Cowlitz, and Skamania counties in Washington.
- **It is paired with the first-ever science-based biodiversity guide for our region**, along with high-resolution, cutting-edge mapping and scientific modeling that incorporate information from scientists and practitioners who have expert knowledge of the region.

"Our increasingly urban world is searching for new models and innovations that can help lead the way toward sustainable and equitable urban regions. That search is bringing the world to Cascadia, and ultimately right here to Portland's doorstep. From what I have observed from my funder's perch, the Cascadia region is positioned strongly to provide leadership for the world; and in turn, Portland is positioned strongly to provide leadership for Cascadia."

—STEVE WHITNEY
Program Officer, The Bullitt Foundation

The *Regional Conservation Strategy* builds on existing local planning and implementation efforts and is consistent with state conservation strategies in Oregon and Washington. It will lead to regional cooperation and more efficient use of increasingly limited financial and human resources. It synthesizes existing scientific information, summarizes current conservation efforts, and will be an important reference for land managers, both public and private. For policy makers, it presents objective, science-based information and summarizes conservation opportunities for policy making.

The *Regional Conservation Strategy* is not a regulatory document or comprehensive plan. Instead, it presents a broad regional view of conservation while highlighting ongoing efforts and potential actions at the local level. It is a starting point for future collaboration, not a substitute for existing planning. It synthesizes and provides a larger context for local efforts and serves as a framework for future strategic conservation actions.

The *Regional Conservation Strategy* spells out how its recommendations can be integrated with myriad local, state, and federal conservation plans, initiatives, and regulations, to avoid competition and redundancy and better leverage resources. It describes options for increased collaboration among cities and counties, regional and federal partners, watershed councils, local conservation districts, and other nonprofit organizations.

Both the current ecological conditions and the desired future conditions of the region's major habitat types are outlined. Opportunities for future conservation are delineated, and threats to the region's biodiversity—such as habitat loss,

Communities strong in their sense of place, proud and aware of local and special qualities, creating to some extent their own cultural forms, are in fact what one healthy side of the original American vision was about. They are also, now, critical to ecological survival.

— GARY SNYDER, "THE REAL WORK"
from *Knowing Home: Studies for a Possible Portland*, 1981

degradation, and fragmentation; projected negative impacts of climate change; wildlife hazards; and invasive species—are identified.

The *Regional Conservation Strategy* organizes conservation opportunities by landscape type: natural areas, working lands, and developed areas. Natural areas provide habitat for those species that are most sensitive to human disturbance. Working lands include agricultural land and commercial forests that, in addition to their commodity functions, support many native species and natural processes. Developed areas, which when properly managed increase the urban landscape's permeability for wildlife, enhance the ecological function of neighboring natural areas and biodiversity corridors.

The *Regional Conservation Strategy* also explains the importance of biodiversity corridors, of the ecosystem services that nature provides to the region, and of ensuring equitable distribution of and access to natural areas, in the interests of addressing issues of social and environmental justice. Finally, individualized strategies are proposed for species of special concern. These include bald eagles, purple martins, streaked horned larks, migratory birds, salmon, steelhead, coastal cutthroat and bull trout, Pacific lamprey, bats, amphibians, native turtles, and species that depend on prairie and oak habitat.

Key recommendations

The following strategies are recommended for specific landscapes:

CONSERVATION IN NATURAL AREAS

- Conserve high-priority land and protect existing natural areas
- Improve regional habitat connectivity
- Restore ecological processes and functions in natural areas
- Monitor changing conditions and conduct appropriate research
- Involve citizens in protecting and managing natural areas
- Remove invasive species and enhance native vegetation

CONSERVATION IN WORKING LANDS

- Increase financial support for conservation activities on working lands
- Improve management of working lands for habitat value and water quality
- Explore better integration of farming and forestry into natural area management, including on publicly owned lands
- Increase farm and forestland easements to prevent conversion to other uses and support the long-term economic viability of local farm and forestland
- Provide funding and support for new farmers to purchase or lease farms, so that farms are not developed
- Encourage strong land use zoning and right-to-farm ordinances

CONSERVATION IN DEVELOPED AREAS

- Increase the value of the overall urban landscape for native species
- Reduce hazards to wildlife
- Support equity and community health
- Promote stewardship of wildlife on urban landscapes and reduce human-wildlife conflicts
- Provide a mix of regulatory and incentive-based programs to promote conservation practices
- Encourage low-impact development

Specific recommendations for implementing the *Regional Conservation Strategy* are presented in each chapter in considerable detail. For example, the chapter on current conditions and challenges recommends "an interconnected system of functional natural areas across the urban and rural landscapes that supports—at a minimum—the current level of biodiversity (i.e., the existing range of plants, animals)." The climate change chapter recommends that the region develop and use the best available science; incorporate back-up strategies and redundancy in management because it confers resilience; use adaptive management; and seek solutions—including increased reliance on green infrastructure—that yield multiple benefits."

To improve biodiversity corridors, the *Regional Conservation Strategy* recommends that physical barriers be removed and that connectivity be considered in urban and transportation planning. The chapter on ecosystem services recommends creating incentives for the use of green infrastructure in the development of public and private infrastructure, steering mitigation investments toward the best opportunities to enhance and protect ecosystem services, and supporting cities in moving toward policies of no net loss of ecosystem services.

"Marked economy in municipal development may be effected by laying out parkways and parks so as to embrace streams that carry at times more water than can be taken care of by drain pipes of ordinary size. Thus brooks or little rivers which would otherwise become nuisances that would some day have to be put in large underground conduits at enormous expense, may be made the occasion for delightful local pleasure grounds or attractive parkways."

— JOHN CHARLES OLMSTED

Report of the Park Board, 1903

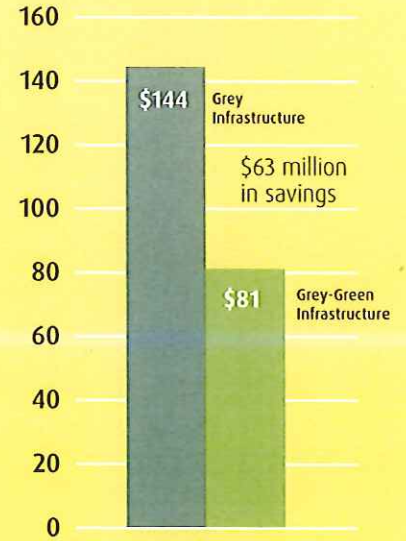
Green Infrastructure: Efficient, Cost-Effective, and Meets Many Objectives

As John Charles Olmsted advocated in his master plan for Portland Parks more than 100 years ago, there are multiple values associated with the integration of the natural and built landscapes. Using natural systems as green infrastructure that is strategically woven into the urban landscape helps to manage urban stormwater, mitigate flooding, improve air quality and water quality, and promote biodiversity.

At a time when the region's grey infrastructure is aging and in need of expensive maintenance (and in some cases replacement), we need resilient, affordable green infrastructure solutions that return multiple benefits and leverage additional resources for every dollar spent. Natural systems provide us with multiple social, ecological, and economic benefits for every dollar spent. One goal of the Regional Conservation Strategy is to take a regional approach to identifying natural features that might be better integrated with the built environment and complement more traditional grey infrastructure. The use of green infrastructure will stretch infrastructure dollars further and yield more benefits than engineered, grey infrastructure alone.

As an example, the City of Portland projects that constructing a new separated stormwater system in southeast Portland will save $63 million compared to using piped solutions alone and will involve an investment of $11 million in green infrastructure solutions. (See graph at right, in which the gray column represents grey infrastructure costs and the green column represents a mix of grey and green infrastructure.)

Project Costs of Grey vs. Combined Grey and Green Stormwater Infrastructure in Southeast Portland's Brooklyn Creek Basin *(in millions)*



Courtesy Portland Bureau of Environmental Services

A BIGGER PIE:
Building a Case for Federal Funding

The *Regional Conservation Strategy* makes the case for "growing the pie," meaning bringing new financial and agency resources to the expansion and management of the region's network of parks, trails, and natural areas. Responding to that need, The Intertwine Alliance has formed a partnership with the Metropolitan Greenspaces Alliance, a national coalition of regionally based alliances that have developed or are in the process of developing regional approaches to protecting biodiversity in their regions. The Intertwine Alliance is working with Chicago Wilderness, Houston Wilderness, Cleveland's Lake Erie Allegheny Partnership for Biodiversity, Amigos de los Rios in Los Angeles, the Milwaukee region's SweetWater, and San Francisco Bay Area Open Space Council to identify ways of engaging the President, Congress, and federal agencies in bringing additional financial and agency resources to metropolitan alliances like The Intertwine Alliance, to assist them in their work.

The U.S. Forest Service has identified The Intertwine Alliance and other members of the Metropolitan Greenspaces Alliance as potential recipients for federal funding, contingent on the adoption of a regional biodiversity plan. The *Regional Conservation Strategy* and *Biodiversity Guide for the Greater Portland-Vancouver Region* will position our region for potential future federal funding.

Our region's network of parks, trails, and natural areas is key to creating a lasting legacy for our children and future generations. The national "No Child Left Inside" movement has developed out of a recognition that children and adults who have access to nature in their everyday lives are healthier, happier, and better learners than those who do not. In his book *Biophilic Cities,* professor and author Timothy Beatley argues that nature in our cities is not optional; rather, nature is essential to both the physical and mental health of urban dwellers.

Beatley observes that urban nature is not "distant and pristine, defined by how little humans have used or impacted it, but nearby and nuanced; [urban nature] is as much defined by its resilience and persistence in the face of human pressures. Wildness doesn't mean untouched or removed, but instead refers to the many creatures and processes operating among us that are at once fascinating, complex, mysterious, and alive." What is the "daily minimum requirement" for exposure to nature? Beatley argues that from the time we step out of our homes, we should be exposed to nature.

What is the extinction of the condor to

a child who has never known a wren?

— ROBERT MICHAEL PYLE
The Thunder Tree, 1993

The Intertwine Alliance agrees. That's why the *Regional Conservation Strategy* describes how we can better integrate nature into the urban fabric at every scale, from individual backyards to larger, regionally important refuges and publicly owned natural areas. The Intertwine Alliance predicts that, in the future, our region's children and adults will continue to have access to nature where they live, work, and play and residents will enjoy better health and a stronger economy and society—if we choose to implement the *Regional Conservation Strategy*.

Choosing our legacy

A SCIENTIFIC COMPANION DOCUMENT:

The Biodiversity Guide

The *Regional Conservation Strategy* is based on a scientific companion document: the *Biodiversity Guide for the Greater Portland-Vancouver Region*. When The Intertwine Alliance launched the effort to develop the *Regional Conservation Strategy*, its partners acknowledged that without a sound scientific underpinning, the strategy would lack credibility and be less useful as a guide to protecting the region's natural resources. The Intertwine Alliance's steering committee recognized that if the region is to protect biodiversity, a science-based companion document would be needed—a guide that describes the region's biodiversity.

The *Biodiversity Guide for the Greater Portland-Vancouver Region,* together with mapping and GIS modeling completed specifically for this project, provides important tools for conservation practitioners and decision makers: a narrative that describes the composition and patterns of biodiversity across the region, a land cover map at a scale suitable for analysis of urban and near-urban areas, and a data-driven GIS model of conservation priority areas. The *Biodiversity Guide* narrative describes the status of the region's flora, fauna, and natural habitats; changes that have occurred in the regional landscape since 1850; and potential losses the region might experience if appropriate conservation and restoration actions are not taken. Also explained are the importance of fire in managing ecosystems, the ecological significance of floodplains, and challenges that climate change poses for the region's biota. In addition, the narrative serves as the biological basis for the *Regional Conservation Strategy's* discussions of issues, current conservation work, and future strategic opportunities. Taken together, the narrative, mapping, and GIS modeling provide the information and spatial context needed to help identify places of high conservation value. They also show how local projects fit within the larger spatial scale and can be used to identify where action is needed to keep habitats within urban areas connected to each other and to areas surrounding the greater Portland-Vancouver region.

Contents of the Companion Biodiversity Guide

CHAPTER 1 **Current Conditions**
Includes statistics on land cover and ownership

CHAPTER 2 **Biogeography**
Describes changes in the landscape over time

CHAPTER 3 **Habitat Types**
Summarizes major habitats, their key elements, threats, and opportunities

CHAPTER 4 **Flora**
Discusses sensitive plant species

CHAPTER 5 **Fish and Wildlife**
Inventories the region's fish and wildlife species and their conservation status

CHAPTER 6 **Issues and Concepts**
Explains ideas helpful in understanding the region's biogeography

CHAPTER 7 **Threats and Challenges**
Outlines obstacles to biodiversity conservation

CHAPTER 8 **Strategies**
Describes how to address threats and challenges

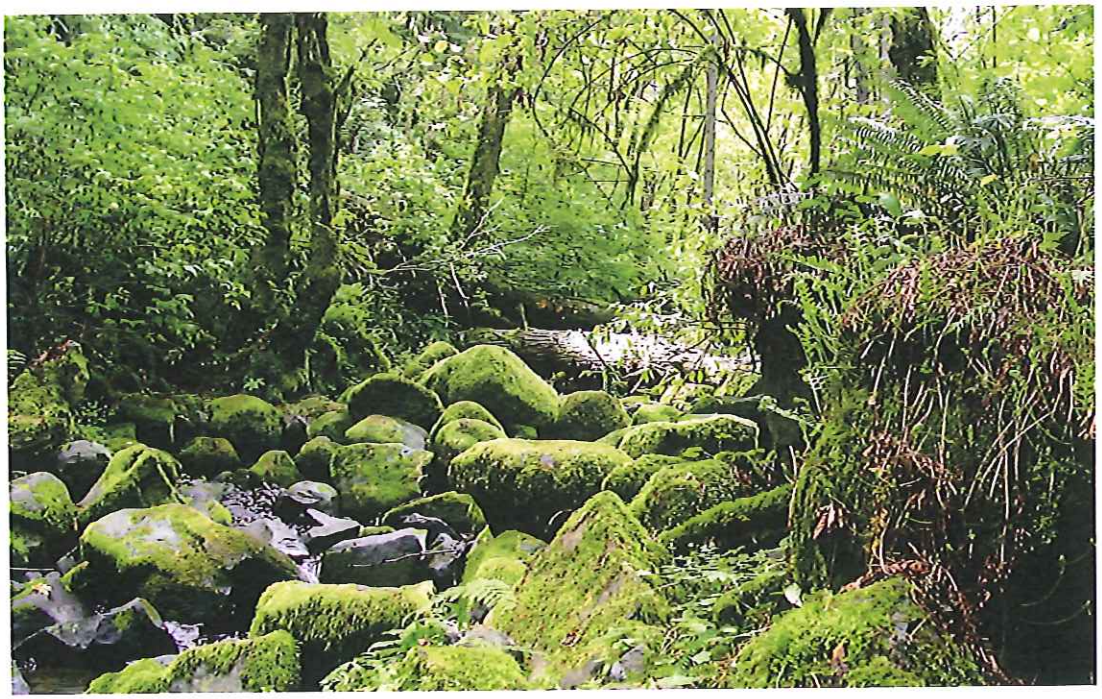
APPENDICES Extensive technical information on mapping, land ownership, habitat types, species and watersheds is detailed in the 10 appendices included in the *Biodiversity Guide.*

Praying Mantis

Coyote

Swallowtail Butterfly

Peregrine Falcon



The *Regional Conservation Strategy* and *Biodiversity Guide* will provide land managers, land use planners, nonprofit organizations, and agencies with the tools to protect, restore and manage natural resources and biodiversity at every scale, from the urban core, neighborhood greenways and forest canopy, individual watersheds, to large rural working and natural landscapes.

Trillium

Acorn Woodpecker

Checkermallow

Green Heron

River Otter

Red-Legged Frog

Anna's Hummingbird

Steelhead

Beaver

Flame Skimmer

Western Screech-Owl

Elk

Regional Conservation Modeled Output

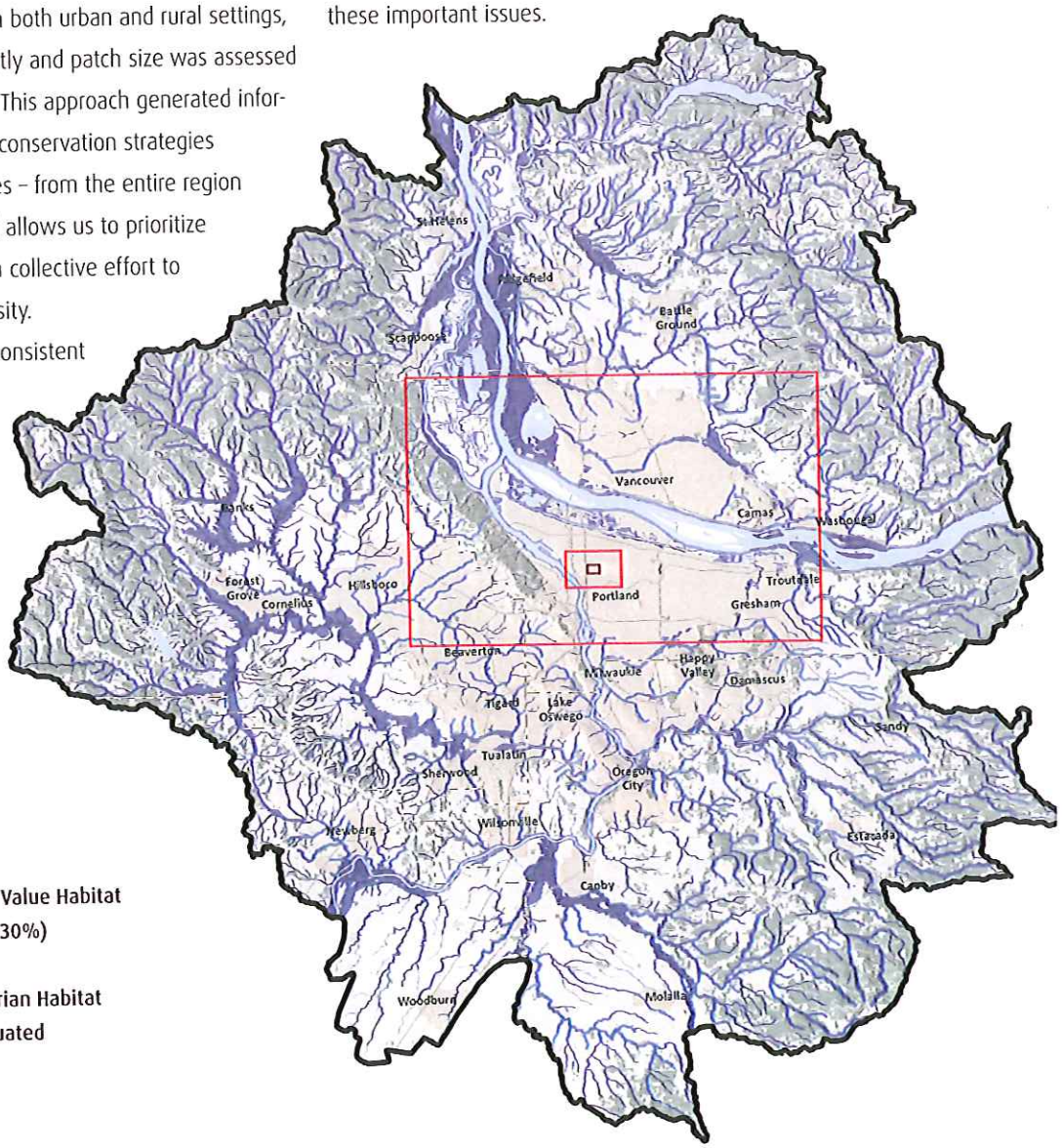
High-Value Lands in the Region

This graphic shows ecologically high-value lands in the greater Portland-Vancouver region, based on The Intertwine Alliance's conservation priority model. High-value areas on the regional map ranked in the top one-third of all areas because of the type, location, and size of their habitat. In short, these areas represent regional priority lands within our nearly 3,000-square-mile region.

Our scientifically based prioritization model divided the region into 5 meter pixels (5 x 5 meter squares) and analyzed them for a number of features, including: existing vegetation, wetlands, habitat patch size and shape, and the presence of roads. To account for habitats in both urban and rural settings, pixels were scored independently and patch size was assessed in relative and absolute terms. This approach generated information that can help prioritize conservation strategies at a variety of geographic scales – from the entire region to the local neighborhood; and allows us to prioritize urbanized habitats as part of a collective effort to preserve the region's biodiversity.

In general, the results are consistent with, but more detailed and geographically comprehensive than, previous efforts to prioritize wildlife habitat within the region. Because the region has both highly developed urban areas and relatively undisturbed landscapes, much of the highest value habitats fall outside the region's urban growth boundaries. However, more than 19,400 acres of regional high-priority lands occur within and around the region's cities.

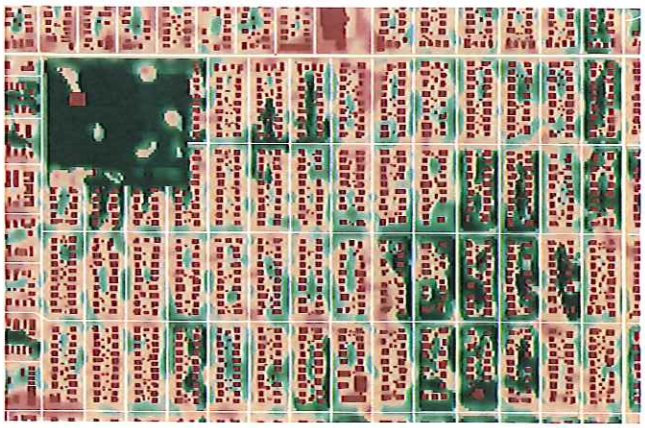
Reliable, region-wide information for some important habitats such as oak woodlands, prairie, rare species and high-quality forests, was not available. For now, their inclusion in planning efforts will continue to require expert knowledge. It's also important to note that the model addressed biodiversity, not culturally or visually significant landscapes. Future efforts of The Intertwine Alliance will address these important issues.



Understanding Conditions at Multiple Scales

Regional 1"=6.3 MILES, OR 33,333 FEET

Local 1"=0.85 MILES, OR 4,500 FEET



Neighborhood 1"=0.19 MILES, OR 1,000 FEET

- Highest Value
- High Value
- Medium-High Value
- Medium-Low Value
- Low Value
- Least Value

An important benefit of our approach is the flexibility to analyze data at any scale, from the 3,000-square-mile region to the local neighborhood. The following examples represent patterns of land cover and relative conservation value as one zooms in from the regional to the neighborhood scale.

Regional

At the regional geographic scale, most small, local habitats are not apparent. Only the most prominent features stand out, such as rivers and large forest blocks. The highest scoring areas reflect habitats that have significant conservation value within the 3,000-square-mile region. Most highly fragmented urban habitats are not represented at this scale even though these areas are critical to regional biodiversity.

Local

At this intermediate scale, finer habitat patterns are more apparent while regional elements are still prominent. In this example, blocks of habitat barely visible at the regional scale become more dominant. For example, patterns of street tree density within east Portland become recognizable as a potential regional planning element. Opportunities to create ecological connections between regional sites are suggested. Only the highest scoring areas at this scale are likely to have regional significance.

Neighborhood

At the local scale, the neighborhood, features that appear less significant at the regional scale are apparent. Habitats barely or not recognizable at larger scales, such as local parks, creeks, vegetated hillsides, or tree patches can be woven into a meaningful framework and incorporated into local habitat conservation planning, neighborhood by neighborhood.

Lacamas Lake, Camas, Washington

The *Regional Conservation Strategy for the Greater Portland-Vancouver Region* and the accompanying *Biodiversity Guide* were made possible thanks to the collaboration of more than one hundred and fifty individuals and organizations.

The complete *Regional Conservation Strategy* and *Biodiversity Guide* are available online at The Intertwine Alliance's website: **www.theintertwine.org/conservation**

Read more online

Production Executive Summary Lead Authors: Mike Houck, Urban Greenspaces Institute and Bob Sallinger, Audubon Society of Portland; Project Coordinator: Dan Roix, Columbia Land Trust; Editor: Ann Sihler; Graphic Design: Laurie Causgrove. A complete list of contributors is available online. Financial Support: Bullitt Foundation, Clean Water Services, East Multnomah Soil and Water Conservation District, Metro Regional Government, National Park Service-Rivers, Trails and Conservation Assistance Program, Vancouver Audubon Society.

Photography COVER: Steve Berliner; PAGE 1, 3, 8, 10 (large photos), AND BACK COVER: Mike Houck; PAGE 5, LEFT TO RIGHT: Steve Berliner; Mace Vaughan, The Xerces Society; Michael Wilhelm; PAGE 9: Richard Wilhelm; PAGE 10 SMALL PHOTOS: Michael Wilhelm: *Coyote, Swallowtail; Butterfly, Trillium, Green Heron;* Bob Sallinger: *Peregrine Falcon;* Matt Benotsch: *Checkermallow;* Steve Berliner: *Acorn Woodpecker;* PAGE 11: Mike Houck (upper), Bob Sallinger (lower); PAGE 11 SMALL PHOTOS: Michael Wilhelm: *Otter, Red-legged Frog, Beaver, Elk, Steelhead;* Steve Berliner: *Owl, Anna's Hummingbird;* PAGE 12 & 13: Metro PRINTED ON RECYCLED STOCK

Clean Water Services

DATE: April 15, 2013

TO: CWAC Members

FROM: Nora Curtis, Conveyance Department Director

SUBJECT: Presentation Materials--Permits and Design and Construction Standards

At your April 17, 2013 meeting, Clean Water Services' Regulatory Affairs and Development Services staff will provide an informational presentation on the history and relationship between the District's permits and its Design and Construction Standards. The presentation is a follow-up to questions from your March meeting.

The Oregon Department of Environmental Quality (DEQ) issues National Pollutant Discharge Elimination System (NPDES) permits to the District which covers the sanitary sewer system, as well as the Municipal Separate Storm Sewer System (MS4). These permits contain conditions regarding the operation and maintenance of the systems, including conditions to regulate construction and development. The permit conditions are ultimately reflected in the District's Performance Standards with its member cities and in its Design and Construction Standards. The District is currently in the process of renewing its permit with DEQ and updating its Design and Construction Standards.

Attached is a draft of Wednesday's presentation if you would like to preview it before the meeting. Your preview of this material is optional and you do not need to print it out prior to the meeting; hard copies will be provided.

2550 SW Hillsboro Highway • Hillsboro, Oregon 97123
Phone: (503) 681-3600 • Fax: (503) 681-3603 • cleanwaterservices.org

Clean Water Services Watershed Permit and the Design & Construction Standards

DRAFT

Clean Water Advisory Commission

April 17, 2013

Clean Water Services

Clean Water Act

- **Federal Water Pollution Control Act Amendments (1972)**
  - **established the core of the program we know today**
- **1977 Amendments**
  - **focused on priority pollutants and effluent guidelines**
- **Water Quality Act (1987)**
  - **focused on water quality issues and storm water**

Total Maximum Daily Load (TMDL)

- **Clean Water Act**
  - **ID waterbodies that do not meet standards – 303(d) list**
  - **TMDLs for waterbodies that do not meet standards**
- **The amount of a pollutant a waterbody can assimilate & still meet standards.**
  - **WLA assigned to point source/ LA assigned to non-point sources**
  - **NPDES permit used to assign WLA to point sources**

Tualatin TMDL History - Part 1

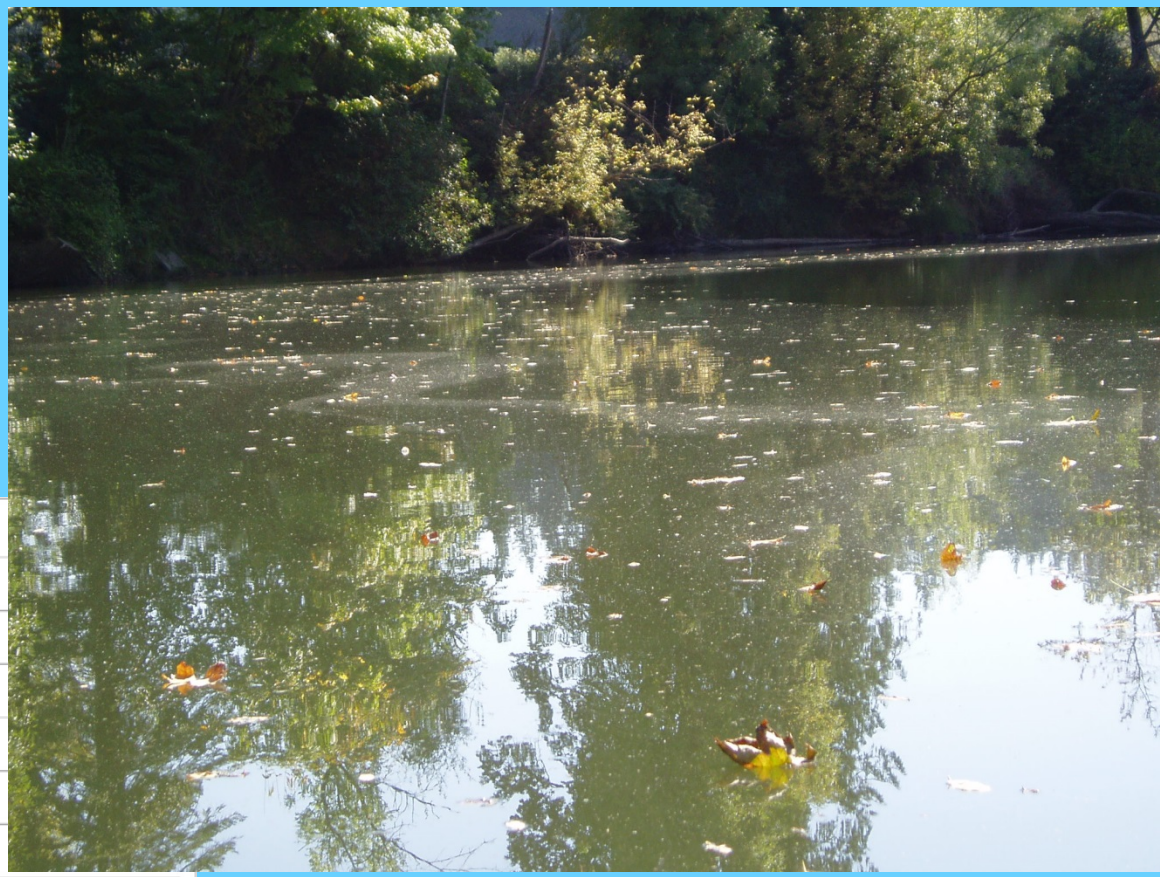
- **Nutrients causing nuisance algal growth (1980's)**
  - **pH and dissolved oxygen exceedances**
- **1988 TMDL (1st watershed in nation)**
  - **Ammonia/dissolved oxygen**
  - **Total phosphorus**

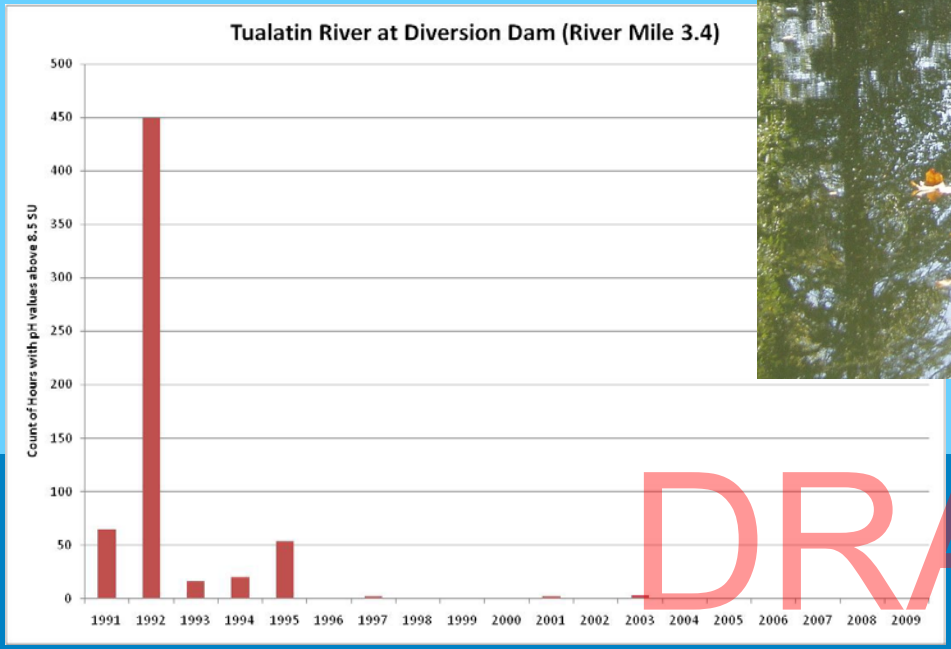
1988 TMDL Implementation

- **$325 million to upgrade AWTFs to meet TMDL requirements**
  - **Nitrification to remove ammonia**
  - **Advanced chemical treatment to remove phosphorus**
  - **>99% removal of ammonia and phosphorus**
- **Land use based controls**
  - **Urban controls**
  - **Forest Practices Act**
  - **Water Quality Management Plans for Agriculture**

TMDL Results

- **Eliminated pH exceedances**
- **No Algal Mats**
- **Improved DO**





Clean Water Services

2001 Tualatin TMDL

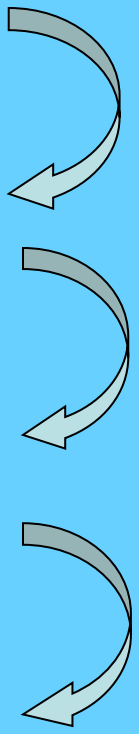
- **2001 TMDL**
  - **Temperature – Primary focus**
  - **Addressed tributary WQ issues**
  - **Wasteload allocations (WLAs) for Municipal storm water**
- **New TMDLs developed for…**
  - **Temperature**
  - **Bacteria**
- **2001 Temperature TMDL Implementation**
  - **Stringent limits for point sources/thermal load trading program**
  - **In urban areas, relied on the riparian protection provisions from the 1988 TMDL to meet temperature requirements**

NPDES Permit Program Hierarchy

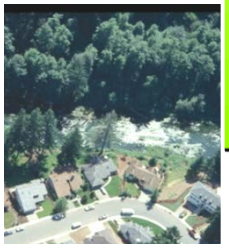
- **Clean Water Act**
  - Require NPDES Permits
- **Code of Federal Regulations (40 CFR 122)/ Oregon Administrative Rules (OARs)**
  - Define permit requirements
- **NPDES Permit**
  - Effluent limits, monitoring requirements, reporting requirements, compliance conditions, boiler plate
- **Reports/plans to meet permit req'ments**
  - Examples: Stormwater management plan, recycled water plan, industrial pretreatment program documents, etc.
- **Local ordinances/standards to implement permit req'ments**
  - Examples: Ordinance 27, Resolution & Orders , etc.

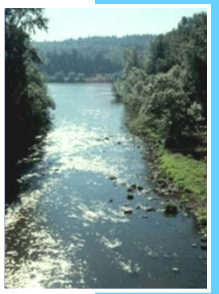
TMDL Hierarchy

- **Clean Water Act**
  - ID waterbodies that do not meet standards – 303(d) list
  - TMDLs for waterbodies that do not meet standards
- **Code of Federal Regulations (40 CFR 130)/ Oregon Administrative Rules (OARs)**
  - Define how TMDLs are developed and implemented
  - EQC Orders adopting TMDLs
- **Implementation**
  - NPDES permits for point source allocations
  - TMDL implementation plans for non-point source allocations
- **Local ordinances/standards to implement TMDL plans**
  - Examples: Ordinance 27, Resolution & Orders, etc.



Tualatin River Watershed





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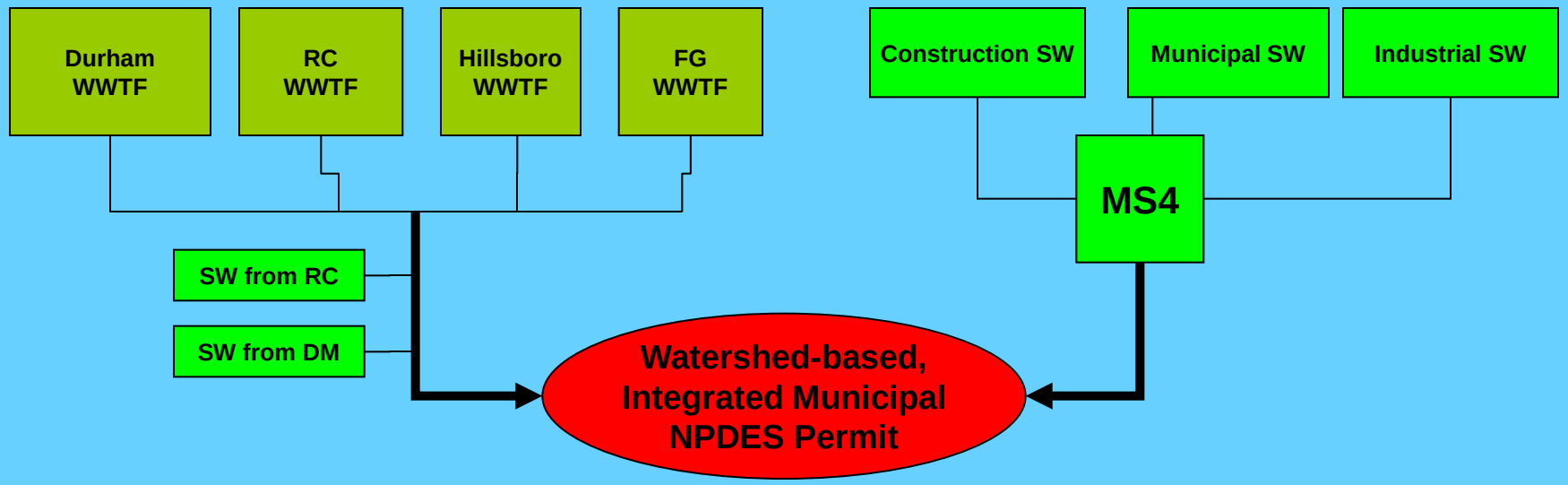
Clean Water Services

Watershed-based NPDES Permit

- **Watershed based permit issued to Clean Water Services (1st in nation)**
- **Integrated multiple wastewater and stormwater permits into a single permit**
- **Included water quality trading provisions for temperature and oxygen demanding pollutants**



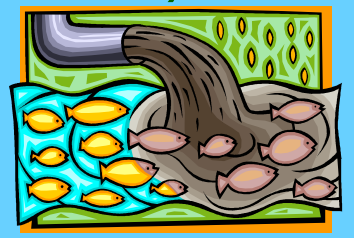
Clean Water Services

Stormwater Discharges

- **Discharge from the public stormwater system (MS4) into waters of the State also requires an NPDES permit.**
- **Unlike permits for discharges from wastewater treatment plants or industrial sources, MS4 permits do not impose numeric effluent limits.**
- **Instead, the permittee must operate under a written Storm Water Management Plan (SWMP) describing a suite of programs that are intended to reduce the discharge of pollutants from the MS4 to the "maximum extent practicable." (MEP)**
- **The MS4 permit describes the elements that the SWMP must contain, as well as prescribing other program requirements.**

What the SWMP must address

- **Illicit Discharge Detection and Elimination**
  - **Discharges other than stormwater to the MS4, including spills and illegal connections**



- **Industrial and Commercial Facilities**
  - **Stormwater discharges from other than residences. CWS is the agent for DEQ's 1200Z permitting program.**

- **Construction Site Runoff Control**
  - **Stormwater pollutants from erosion and construction wastes. CWS is the agent for DEQ's 1200C permitting program.**

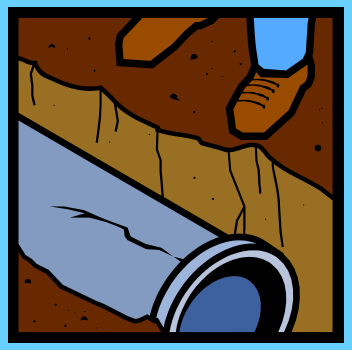
- **Education and Outreach**
  - **Public education and staff training**

- **Public Involvement and Participation**
  - **Requires public involvement in specified aspects of MS4 program development, revision and reporting.**

- **Post-Construction Site Runoff**
  - **Addresses discharges of stormwater from development after construction is complete**

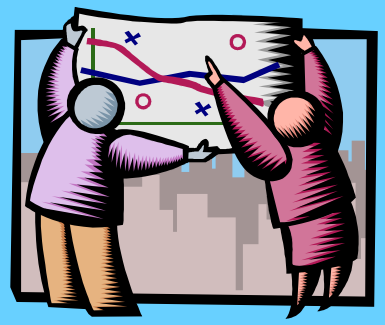
- **Pollution Prevention for Municipal Operations**
  - **Addresses street maintenance, pesticide use on municipal properties, runoff from municipal facilities that manage municipal waste, and releases from fire-fighting training.**

- **Stormwater Management Facilities Operation and Management**
  - **Addresses the inventory, inspection and maintenance of pipelines, water quality facilities and other MS4 infrastructure, as well as private water quality facilities.**



And…

- **In addition to the SWMP, the Permit requires programmatic improvements and strategic planning, such as:**
  - **Assessment of hydromodification impacts related to MS4 discharges, and**
  - **Development of a retrofit strategy to provide treatment in developed areas that lack stormwater controls.**



How the Design & Construction Standards Fit In

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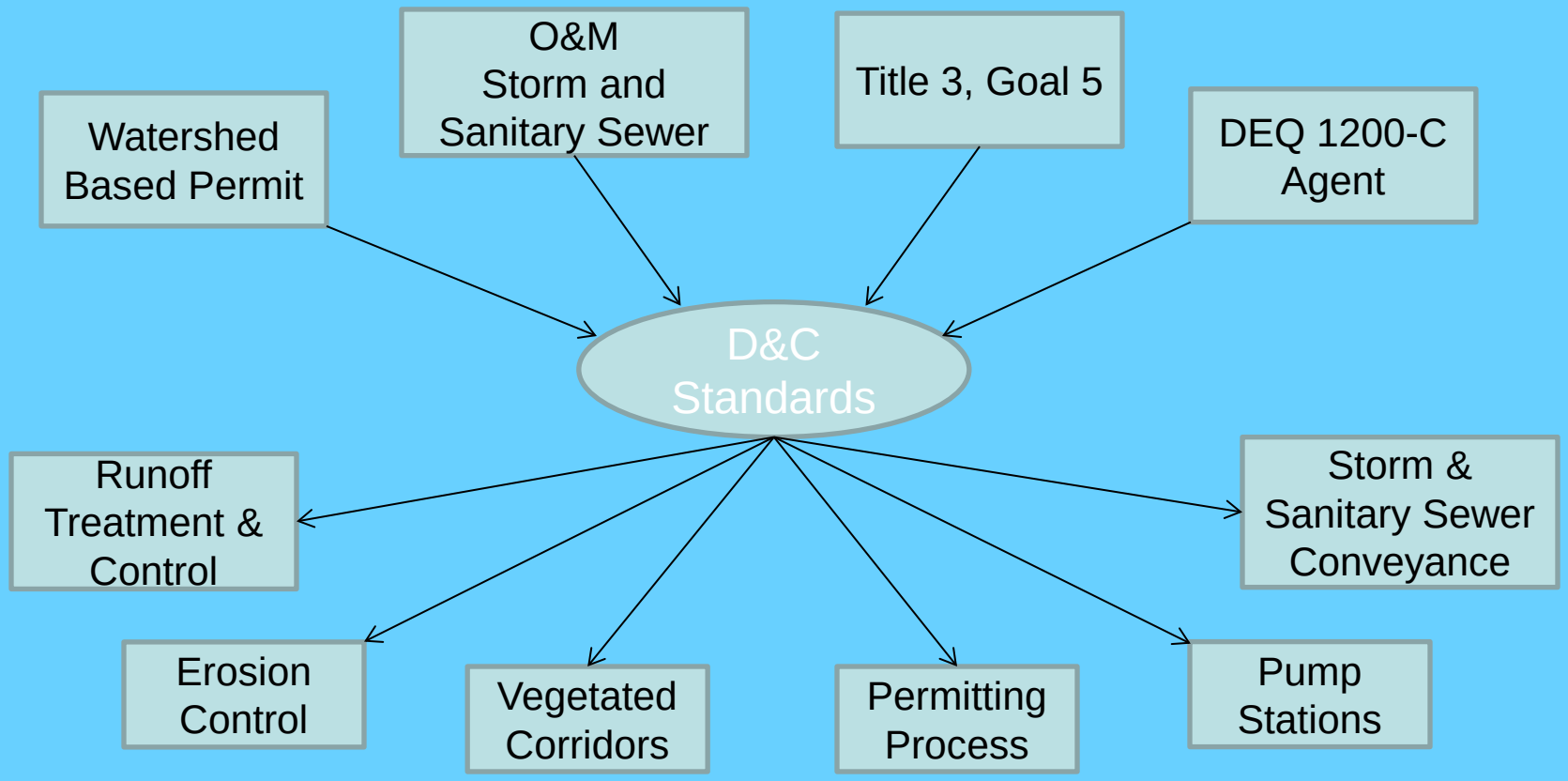
Clean Water Services

Role of the Design & Construction Standards



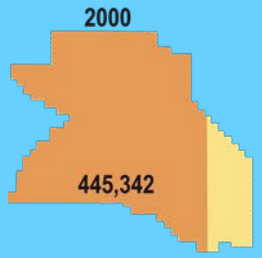
Clean Water Services

1999—ESA listings & Title 3

- **NMFS lists Upper Willamette steelhead and chinook salmon as ESA threatened**
- **November: At request of Washington County and Cities, USA managed development of Title 3 Functional Plan submitted to Metro**

2000—
Riparian Protection Increases

- **February: D&C Standards revised**
  - **Is a key component for Cities' Compliance with Metro's Title 3**



Washington County population 445,342
(42.94% increase since 1990)

Clean Water Services

2004—Watershed-based permit

- **February:** DEQ issues watershed-based permit to Clean Water Services
  - First in the nation
  - Integrated permits for 4 POTWs, MS4, and 2 POTW 1200Z stormwater
- **March:** D & C Standards revised
  - Strengthens protection of water quality sensitive areas via vegetated corridors

June 2005—Healthy Streams Plan

- **Comprehensive update of subbasin plans**
- **Submitted by County and Cities to Metro as the Washington County Title 3/Goal 5 substantial compliance package**
- **Partners with Metro, Washington County and Cities**

What are Vegetated Corridors?

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Clean Water Services

What are Vegetated Corridors?

Water Quality Sensitive Ares (**Sensitive Areas**): Existing and created wetlands; rivers, streams, and springs (intermittent or perennial); natural lakes, ponds, and in-stream impoundments

Vegetated Corridors (sometimes called **Buffers** or abbreviated **V.C.**): A corridor adjacent to the Sensitive Area that is preserved and maintained to protect the water quality functions of the Sensitive Areas

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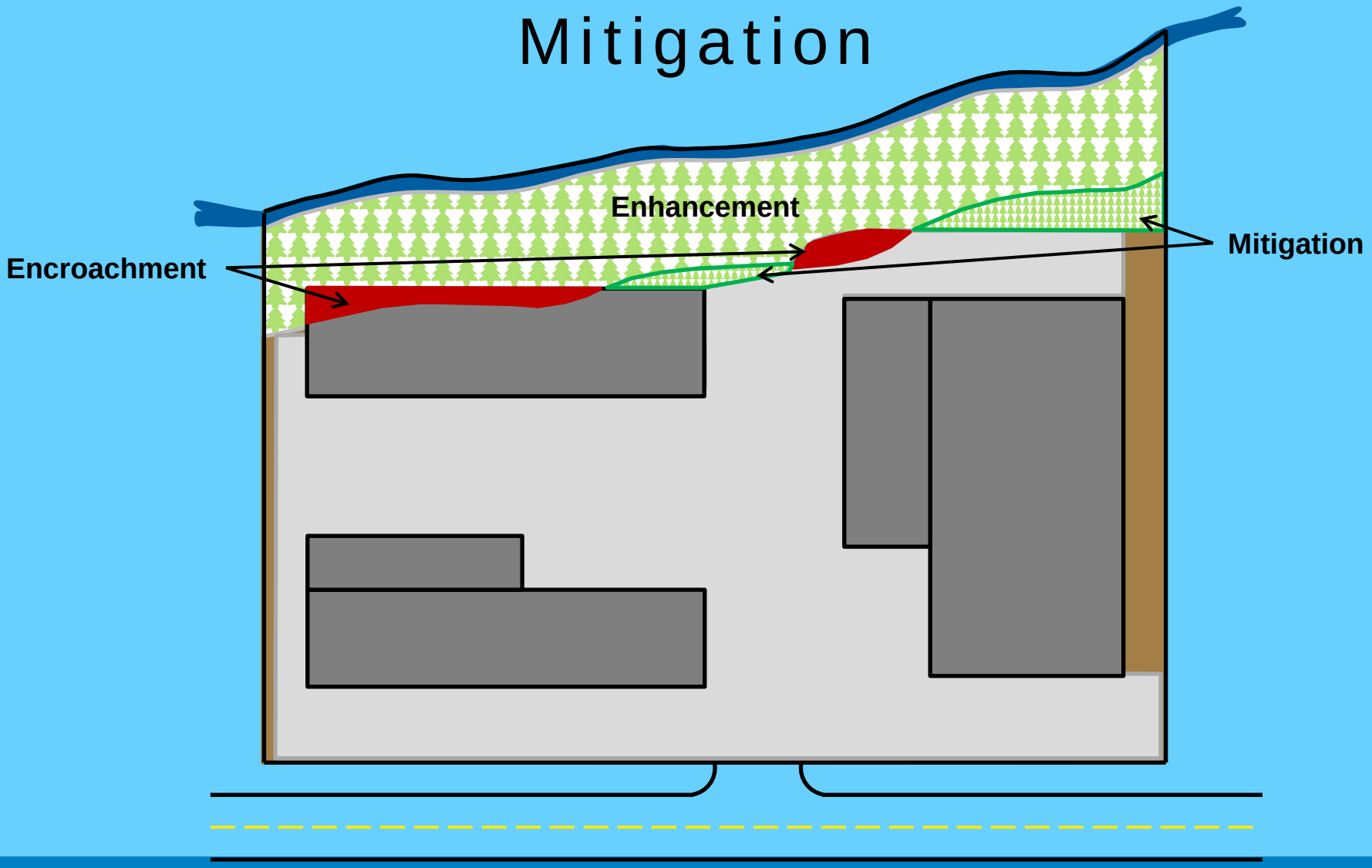
Clean Water Services

Enhancement, Encroachment & Mitigation



Clean Water Services

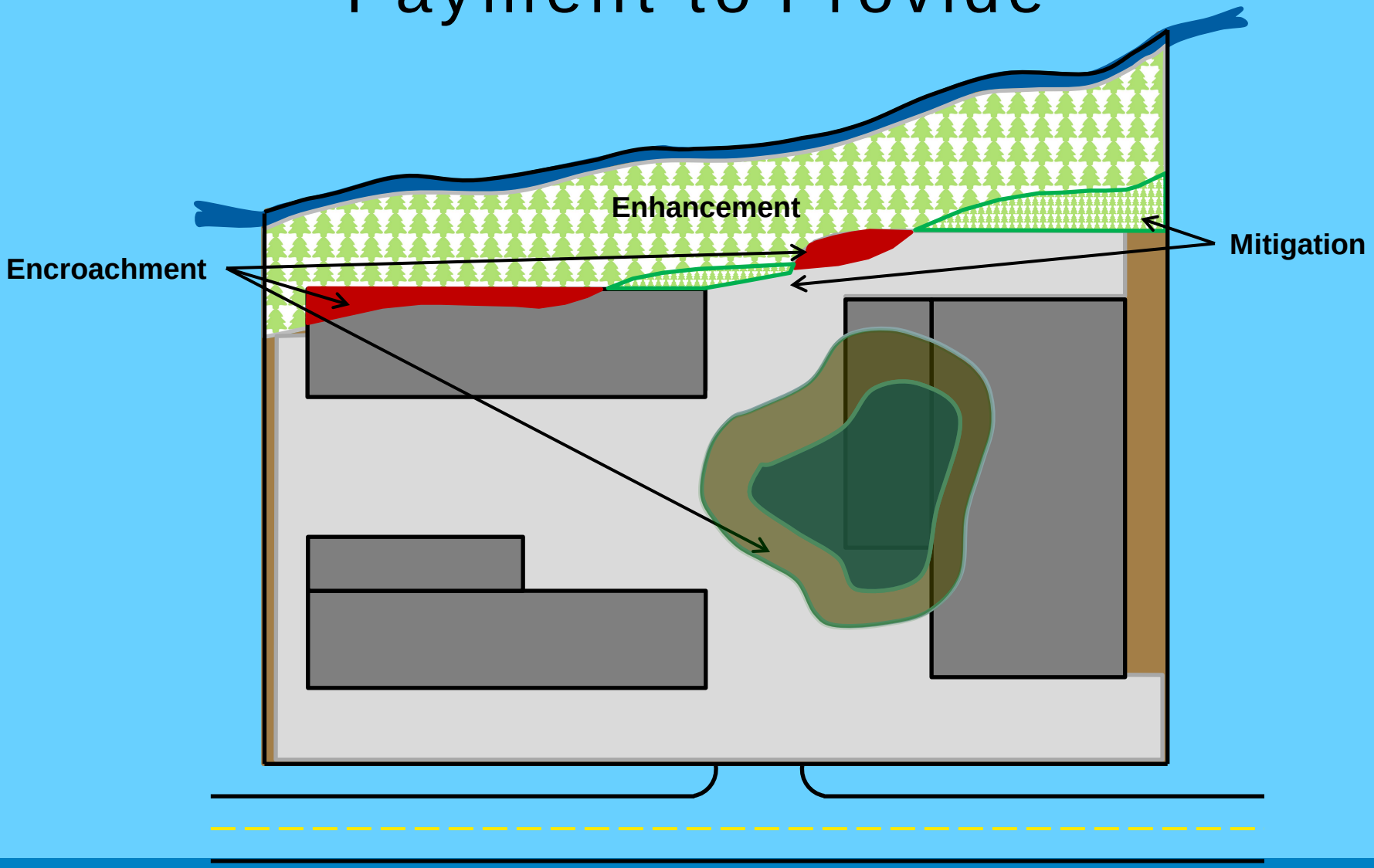
Levels of Encroachment

- **Minor Encroachment (formerly Buffer Averaging)**
- **Tiered Alternatives Analysis**
- **Allowed Uses**

Payment to Provide

- **Started with R&O 04-09 Design and Construction Standards (prior to 2004 all encroachments mitigated on the ground).**
- **Allowed for payment of fee to District in lieu of on the ground mitigation (District uses funds to create VC Mitigation).**
- **Initially restricted to projects that were making payment to DSL for wetland mitigation**
- **Broadened under R&O 07-20 to allow payment for encroachments under 300 sq. ft.**
- **Current Fee: $2,500 + $2.22 per square foot of Mitigated area over 1,000 sq. ft.**

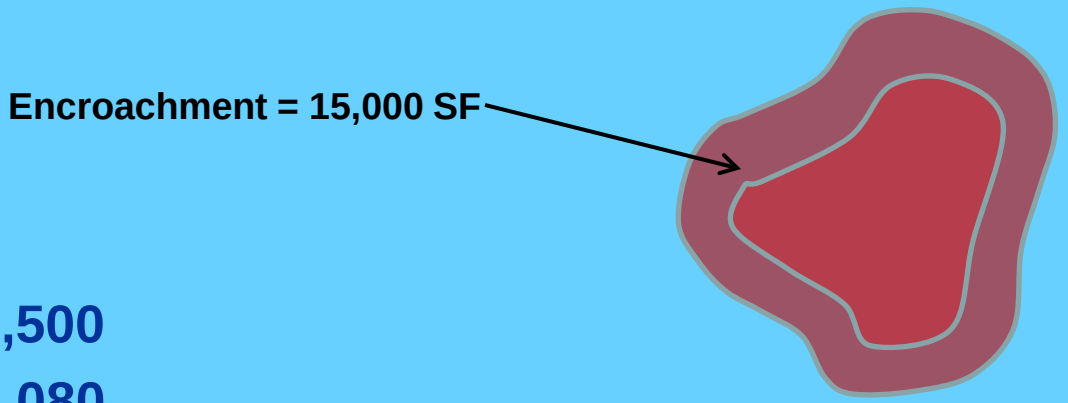
Payment to Provide



Clean Water Services

Payment to Provide

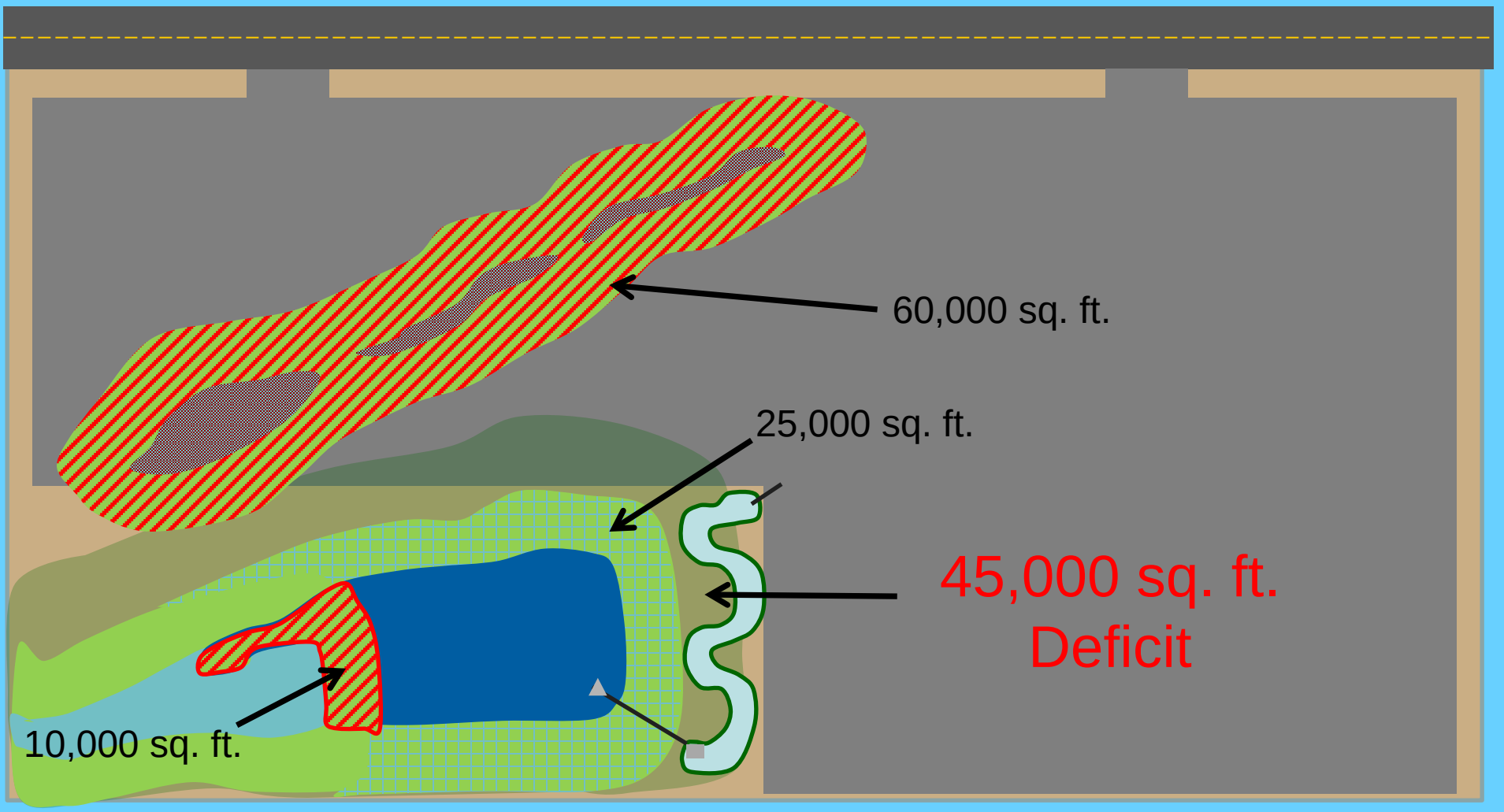
$ 2,500 + $2.22 per square foot of Mitigated area over 1,000 sq. ft.



Base Fee =	**$ 2,500**
+ $2.22 x 14,000 SF =	**$31,080**
Total =	**$33,580**

Clean Water Services

Fully Buffered Wetland Mitigation



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Clean Water Services

Clean Water Services
Clean Water Advisory Commission
Meeting Minutes
March 20, 2013

Attendance

The meeting was attended by Commission Chair Tony Weller (Builder/Developer) and Commission members Molly Brown (District 2-Malinowski), Alan DeHarpport (Builder/Developer), Erin Holmes (Environmental), John Kuiper (Business), Mike McKillip (District 3-Rogers), Art Larrance (At-Large-Duyck), Judy Olsen (Agriculture), Stephanie Shanley (Business), Richard Vial (District 4-Terry), and David Waffle (Cities), and Clean Water Services District General Manager Bill Gaffi.

Commission members Lori Hennings (District 1-Schouten), Jerry Ward (Agriculture), and Sandy Webb (Environmental) did not attend.

Attendees from Clean Water Services included Bob Baumgartner (Regulatory Affairs Division Manager), Clayton Brown (Source Control Manager), Vince Chavez (Source Control Investigator), Peter Corduan (Source control Investigator), Mark Jockers (Government and Public Affairs Manager), Kathy Leader (Finance Manager), Carrie Pak (Engineering Division Manager), Damon Reische (Development Services Supervisor), and Sheri Wantland (Public Involvement Coordinator).

1. Call to Order

The meeting was called to order at 6:32 PM by Chair Tony Weller. The meeting was held in the conference room at the Clean Water Services Administration Building.

2. Introduction of New CWAC Members

Mr. Jockers introduced three new Commission members: Erin Holmes, Art Larrance, and Richard (Rich) Vial.

Ms. Holmes is the USFWS (United States Fish and Wildlife Service) Tualatin River National Wildlife Manager.

Mr. Larrance owns Raccoon Lodge and Cascade Brewing in the Raleigh Hills area and was a member of the FACT (FOG Abatement and Compliance Team) group working with Clean Water Services to address FOG (Fats, Oils, and Grease) issues.

Mr. Vial is an attorney with a law firm of Vial Fotheringham in Portland. Mr. Vial lives in rural Washington County and also serves on Washington County Planning Commission.

Mr. Jockers also announced the Board's appointment of former Beaverton City Councilor Cathy Stanton to the Commission effective September 1, 2013. Ms. Hennings's term has

been extended until Ms. Stanton assumes the position in September.

3. Review/Approval of January 16 Meeting Notes

Mr. DeHarpport moved to approve the minutes of the January 16, 2013 meeting. Mr. McKillip seconded. Motion passed.

4. Election of Chair and Vice Chair

Mr. DeHarpport moved to nominate and elect Tony Weller as Chair and John Kuiper as Vice Chair. Ms. Olsen seconded. Motion passed with two abstentions.

5. Confirmation of Budget Committee Members

Mr. Jockers reviewed the criteria and duties of the Budget Committee. Members are appointed by the Board for staggered three-year terms. Current members are Ms. Brown, Mr. DeHarpport, Ms. Hennings, Mr. Kuiper, and Mr. Weller. The Committee will meet Friday, May 3 from 9 AM to 1 PM.

Later in the meeting, Mr. Jockers pointed out that the Budget Committee terms of Mr. DeHarpport and Ms. Hennings will expire before the May 3 meeting. Mr. Vial moved to recommend to the Board the re-appointment of Mr. DeHarpport and Ms. Hennings. Mr. Waffle seconded. Motion passed.

6. FOG Control Program Progress Report

Mr. Baumgartner ***(presentation attached)*** reviewed the rationale for formalizing a program to deal with FOG (fats, oils, and grease), outlined the prioritized steps for its three-phase development and implementation, and described recommended revisions for implementation based on feedback since the last update to the Commission. Mr. Baumgartner noted the work done by the FACT (FOG Abatement and Compliance Team) group convened by Clean Water Services and the progress in changing the state building code for plumbing to address FOG control. Mr. Baumgartner displayed a slide showing the three program development and implementation phases, with colored circles denoting how the steps for each phase have been prioritized.

Several Phase I implementation steps, plus an item from Phase II, are already completed or underway (circled in blue). The next set of program implementation actions will include four Phase I items and two Phase II items (circled in red). This prioritization is based on feedback from FACT and the Commission to implement the FOG Program using a triage approach—focus on a few activities with the biggest impact for the effort required—and to emphasize education and technical assistance rather than enforcement. The Commission will help evaluate progress and effectiveness of these activities before addressing the need for any changes to existing rules and regulatory aspects of the FOG Program. The remaining items (uncircled) will be re-evaluated later, as the program evolves.

Mr. Weller asked about measuring outcomes of FOG Program efforts. Mr. Baumgartner said one simple metric is the frequency of cleaning that is required for sewer lines identified as high-FOG.

Mr. Baumgartner said the triage approach identified several activities for focused effort in the next phase of the FOG Program:

1. Provide voluntary plan review for new construction.
2. Conduct inspections and follow-up with High and Very High FOG FSEs that are on sewer lines that require frequent FOG-related cleaning, FSEs on lines that feed into the newest pump station (Lower Tualatin), and FSEs or others associated with SSOs or illicit discharges.
3. Update agreements with cities to ensure common goals and consistent message, and to reflect the different plan needed by each city based on distribution of high-priority FSEs.
4. Expand educational outreach to multi-family housing units and to households on high-FOG sewer lines in residential areas.

Mr. Baumgartner said that offering plan reviews helps get appropriate grease removal devices (GRDs) installed correctly right from the start, which pays off in fewer inspection follow-ups and is more efficient and cost-effective than trying to improve maintenance and management practices for poorly-designed systems. Now that the building code updates are in place, FSEs have welcomed the assistance.

He said that of the 1,700 FSEs within the Clean Water Services District boundary, 126 (about 15%) were identified as the highest priority. Focusing inspections and follow-up education on these FSEs will address the largest and most serious FOG-related problems first, an efficient and effective use of limited resources for the greatest impact. Less significant sources of FOG will be addressed later. Mr. Baumgartner added that FOG production depends on the type of food produced, number of meals served, whether the facility is dine-in or to-go, and management practices. For example, a convenience store or coffee shop is generally a Low FOG producer, while a commercial food processor would be Very High because of the large volume—even if the products were relatively low FOG.

In addition to the focused efforts described above, Clean Water Services has begun to gather a variety of FOG-related information from cooperating FSEs to help guide future education and technical assistance efforts. There has also been initial outreach to FSEs regarding how best to develop a plan for retrofitting existing establishments for improved FOG control. Some of the information gathered will also be background for discussions of the role that enforcement actions should play. For now, Clean Water Services will continue its practice of using enforcement as necessary if compliance is not achieved using other approaches.

Mr. Baumgartner said once the outlined efforts are functioning and there is some information to report, he will return to the Commission to discuss steps that should follow. He asked Commission members to accept the FOG Program Progress Report included in the pre-meeting materials and to recommend it be forwarded to the Board of Directors, unless there were points not captured or other guidance or redirection the

Commission wished to offer.

Mr. McKillip asked if a fee is charged for plan reviews and technical assistance. Mr. Baumgartner said there is currently no charge, but the idea of program-supporting fees may be discussed after more information is gathered and reviewed. He added that fees can be charged to FSEs for re-inspections necessary due to noncompliance.

Mr. Weller commented that the prioritized program implementation as outlined tonight seems like a sane approach to the FOG problem and accepted the report for forwarding to the Board of Directors.

7. Design and Construction Standards Update

Ms. Pak noted that development activity has increased recently compared to the last two years, with six different subdivision applications submitted for plan review just last month. While the Design and Construction Standards (D&Cs) update is driven by upcoming changes in regulatory requirements, the hope is that it will also streamline the development approval process, especially as the number of projects increases.

Mr. Reische explained that the D&Cs includes requirements for storm and sanitary sewer system construction, treatment of stormwater runoff from impervious areas, construction site erosion control s, and vegetated corridors (the protective areas—also known as buffers—around water quality sensitive areas). There have been several revisions since 2000; the last major revision was in 2007 and was about twice as "big" as this one. Mr. Reische reviewed ***(presentation attached)*** the schedule and key topics for this update. The update will reflect changes in the Clean Water Services NPDES (National Pollutant Discharge Elimination System) permit including the incorporation of a 1,000 square foot development/redevelopment impervious area treatment threshold. The update will also include modification to stormwater treatment requirements to accommodate changing development patterns, incorporation of alternate mitigation strategies for vegetated corridor encroachments , incorporation of specific erosion control practices for stream and wetland restoration projects, address possible conflicts with state plumbing code, and clarifying language in existing standards.

As outlined in Mr. Reische's presentation, the first phase of the update was a series of stakeholder outreach meetings held last fall, and reviewed with the Commission in January. The second phase included several technical discussion meetings on key topics, with all stakeholders invited to discuss each topic. Results of those meetings will be summarized for the Commission tonight. The third phase will involve consolidating all comments and drafting updated language. A group of city and county representatives will act as an in-house advisory group during the drafting, and there will be a stakeholder meeting to review the draft before it is released for public comment. The Commission, as the community-representative sounding board charged with assisting in the public involvement process, could host a forum for additional comments on complex or controversial topics if needed.

Mr. Reische summarized the four recent technical discussion meetings:

1) Water Quality Treatment Requirements for Redevelopment. Various alternatives to the existing redevelopment treatment requirement listed in Table 4-1 (in the current D&Cs) were discussed. The goal of the redevelopment requirement is to get treatment of at least some of the existing untreated impervious area on a site. The current standards require a "disproportionally" larger existing area being treated for a relatively small redevelopment project, potentially resulting in stormwater treatment improvements that may exceed the cost of the original project. One example is the Cornelius Fred Meyer site, where the 5,000 sq. ft. redevelopment project was big enough to trigger stormwater treatment improvements be applied to half of the 15-acre site. The goal is to have the water quality treatment requirement be reasonably proportional to the redevelopment project while continuing to get treatment for additional untreated impervious areas on a site. If the requirement is significantly disproportional and small redevelopment projects trigger treatment of entire site, it can result in the project being dropped because of the extra expense, so there is no improved treatment at all. Consensus was the simpler, the better; redevelopment area should be driving factor, not site size ; some interest in basing it on cost or facility size.

2) Water Quality Treatment Requirements and Vegetated Corridor Requirements for Trails. Water quality (WQ) treatment is complicated for trails, as they are linear (and their length means they quickly reach the square footage that triggers treatment requirements—especially with the upcoming 1,000 sq. ft. treatment threshold) and have no conveyance system for getting runoff to treatment. Trails are also often placed in vegetated corridors (VCs), limiting the space and techniques available for treatment of runoff. The technical meeting resulted in collaborative discussion and many ideas for potential approaches/designs for treating runoff from trails. Some support for boardwalks instead of asphalt or concrete trails. Strong opinion, from some, that placing a trail in a vegetated corridor (VC) should be avoided. Current standards require enhancement of all VC area on a site, regardless of actual project size. This is often an issue for parks projects, since the frequently have large VC areas, though can also come up with other types of projects. Support for the idea of a "proportional enhancement" rule limited to small projects on sites with a very large VC area. There was a lot of discussion and many questions about how it might work in practice. Didn't seem to be seen by most as "relaxing" rules to the detriment of the environment. Would add requirement to also enhance any very small VC area left over after meeting initial requirement. Consensus that concept is appropriate for small projects on sites with large VC areas, to avoid disproportionate requirements for those projects but also to ensure that even small areas are not overlooked (similar to concept in #1 for WQ treatment requirements for redevelopment).

3) Construction Site Management Requirements. Important topic but seemed to be non-controversial. Discussion on appropriate Best Management Practices (BMPs) for non-storm water pollution control. Could result in BMPs being

added to existing standards, to better address existing NPDES permit conditions. Agreement that best approach is to come up with workable BMPs. Suggestion for inspectors to carry spill kits.

4) Vegetated Corridor Mitigation Strategies. Focus on how to deal with VC mitigation when wetland impacts are being mitigated through a mitigation bank, a fairly recent issue as mitigation banks for projects within the Clean Water Services District boundary have been available only for the past couple of years. With DSL (Department of State Lands) emphasis on use of mitigation banks, there is also more use of the PTP (payment to provide) option for VC mitigation. Questions and some strong opinions about the relationships between VCs and isolated wetlands, the use of wetland mitigation banks or VC banks, best locations for such banks, and using a function-based approach to decide where best to mitigate for disturbed VCs.

In discussion following 1) above, Mr. Gaffi mentioned the increasing regulatory pressure to provide water quality treatment of stormwater in existing built-up areas (retrofitting). Ms. Pak said that is part of what is driving the move to refine the treatment requirements for redevelopment projects. Another factor is the interest in retrofitting from environmental groups, who would like to see treatment for impervious areas that otherwise would not trigger any requirements (such as those little projects that end up not getting done). She added that the current standards do not "credit" or encourage redevelopment projects which convert impervious area to pervious area, which reduces runoff. Mr. Reische hopes to include some type of incentive for this in the updated D&Cs.

A lengthy discussion followed the summary of 4) above. There were numerous questions and clarifications about what was required in the past and what is required now, as well as acknowledgment of confusion when terms such as vegetated corridor and buffer are used interchangeably or that the terms enhancement and mitigation have one meaning in some agencies and a different meaning in other agencies. There is also the complexity of wetlands being regulated by DSL and VCs being regulated by Clean Water Services. Mr. Vial, Mr. DeHarpport, and Mr. Weller noted the dissatisfaction from developers at the meeting regarding the requirement to mitigate for VCs associated with isolated wetland impacts being mitigated at a wetland bank. There is also some discomfort with the idea of banks and mitigation occurring outside the Clean Water Services District boundary. Mr. DeHarpport said it appears Clean Water Services is the only jurisdiction in Oregon that requires mitigation for the VC. Mr. Weller pointed out that the development community doesn't disagree with the requirement that onsite wetlands must have a VC or that VC deficiencies on the site must be addressed. He added that one reason for the requirement is that VCs are part of the strategy for complying with the Clean Water Services NPDES permit.

Mr. Gaffi suggested looking for flexibility in the permit language that might allow for some leeway in VC mitigation situations. He pointed out that when a wetland is mitigated through a wetland bank, there is a VC around that bank which may reduce the

need to mitigate for the VC associated with the mitigated wetland on the project site.

Ms. Pak agreed, and noted this issue may return to the Commission for further discussion. She is available to answer any questions from Commission members and suggested it may be useful to provide some history and definitions at a Commission meeting

Mr. Larrance observed that these situations are mostly going to be infill projects that have not been developed yet for good reason. Mr. DeHarpport agreed, adding that relaxing the current standards to allow an isolated wetland fill without mitigating for the VC would make that infill development more attractive, which would help minimize the UGB (Urban Growth Boundary) expansion. He also pointed out that as there really are not very many isolated wetlands around, the overall effect on the Tualatin Basin would be minimal. Mr. DeHarpport added that by contrast, allowing expanded use of proprietary treatment systems could have a big basin-wide impact.

Mr. DeHarpport went on to explain that a proprietary treatment system is an underground stormwater vault that can function as well as an above-ground vault as long as it is maintained, but maintenance concerns have been a stumbling block to their expanded use. He feels it is a double standard to allow them only in high-density areas when their function and maintenance should be identical in single-family subdivisions. Ms. Pak acknowledged the debate about the filter cleaning/replacement cycle. She said Clean Water Services is testing the cleaning/replacement frequency of some prototype "filter vaults" and will likely bring the results to the Commission.

Ms. Pak said several additional topics came up during the technical meetings: requirements for planting density; forming a committee to look at planting density; need to change design storm specifications and measurement increments to meet new NPDES permit standards for treating 80% of annual rainfall amount; and further discussion of the treatment threshold.

Mr. Reische expects a large amount of feedback on some portions of the update, but the final draft of the update should be presented to the Commission for recommendation to the Board in late 2013 or early 2014.

Mr. Reische concluded with a reminder to check the Clean Water Services website for information about the D&Cs update, including notes from stakeholder and technical meetings, and to call him or Ms. Pak with any questions.

Mr. Waffle commented that city representatives like the consultative approach used during the update process and are eager to continue helping draft solutions. They also like the idea of the pre-release meeting to review the draft changes.

Mr. Weller noted that the two technical meetings he attended, one of mostly like-minded participants and the other not, had both gone well. He commended Ms. Pak and Mr. Reische for adapting the update process to accommodate stakeholder concerns, including

the idea of holding another meeting prior to releasing the draft update.

8. Announcements
The next meeting will be April 17, 2013.

9. Adjournment
The meeting was declared adjourned by Mr. Weller at 8:33 PM.

(Meeting notes prepared by Sue Baumgartner)

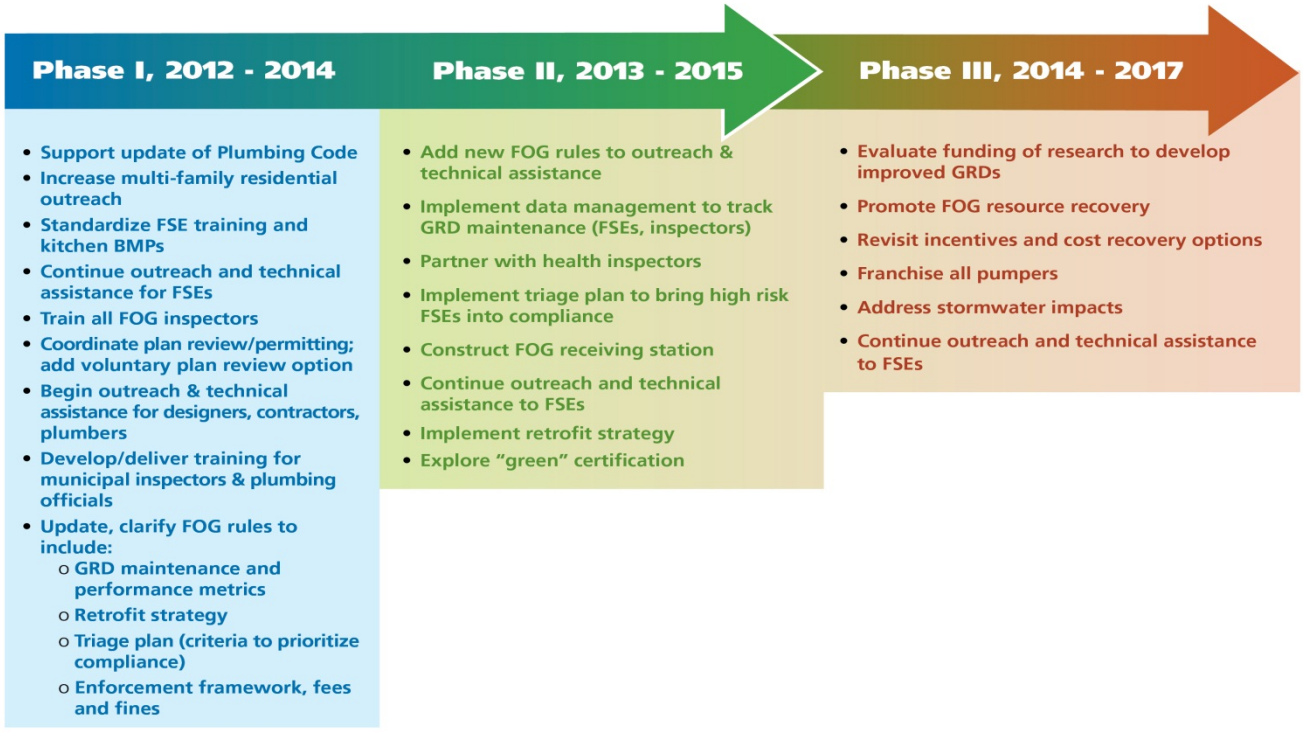
FOG Program Progress Report
March 8, 2013

Improved FOG Control

In an effort to improve FOG control in food service establishments (FSEs), District staff convened the FOG Abatement and Compliance Team (FACT) comprised of District and City staff, FSE owners and managers, building and plumbing officials, and health inspectors. They met 12 times from July of 2011 through November of 2012 to explore barriers to FOG control, and to identify and prioritize potential solutions. The FACT concurred that by installing and properly maintaining appropriately-sized grease removal devices (GRDs), FSEs can reduce operating costs. Unfortunately, FOG control has been an afterthought and, coupled with varying interpretations of the Plumbing Code and a lack of consistent guidance on how to select effect GRDs, FSEs were at a loss.

Board and CWAC Support

In support of an improved District FOG program, the Board of Directors charged the Clean Water Advisory Commission (CWAC) to receive input and provide recommendations. At five of their meetings, CWAC prioritized program elements. Based on CWAC input and the FACT work, staff drafted the following plan of phased action items to improve the FOG program. Many of the actions are completed or underway, and the sequence of some items has changed.



Plumbing Code Change
Of all the ways to improve FOG control, the universally-supported idea was a commonsense amendment to the state Plumbing Code to clarify that all drains in food preparation areas must be connected to a grease removal device (GRD). In addition, FSEs need data to help them make a business decision for effective FOG control. The FACT recommended case studies that illustrate the cost tradeoffs of GRD size and maintenance, to be coupled with education and outreach for FSEs and all those who influence their FOG control decisions (architects, plan reviewers, building/plumbing officials, plumbers, pumpers, etc.).

Thanks to the FACT work and statewide efforts to improve FOG control, the Plumbing Code was amended surprisingly fast. As of January 1, 2013, all drains in food and beverage preparation areas at FSEs must connect to a GRD. Because the code applies only to new construction or remodeling that triggers a plumbing permit, the question remains: How can existing FSEs be encouraged to improve FOG control?

Statewide Education and Outreach
Responding to the outcry from FSEs for data, technical assistance, and consistency, ACWA has initiated a statewide FOG awareness campaign that will be led by District staff. On February 14, 2013, a kickoff meeting of FACT members and representatives of additional groups that influence FSEs decisions about FOG control confirmed key messages, resources and networks to help develop and deliver training throughout Oregon.

Next Steps
Many of the phased actions for an improved FOG program are underway, and it is time to clarify roles and next steps. District staff recommends the next steps and communications plan outlined below.

District staff will:
1. Continue to implement the phased action items listed above.
2. Continue to lead the ACWA/statewide outreach and education campaign.
3. Brief City Managers and the Service Deliver Study Group on the Plumbing Code change and direction of the District's FOG program.
4. Schedule a final FACT meeting and thank the group for their service.
5. Develop a triage plan to prioritize and respond to FOG problems (See next page).
6. Request CWAC to approve this report and forward it to the Board.

DRAFT Triage Plan

Triage prioritizes options on the likelihood of a successful outcome. The FOG triage plan will provide data to support the development of a viable retrofit strategy and enforcement process. Staff will engage CWAC and local public works directors to refine the plan, which initially will:

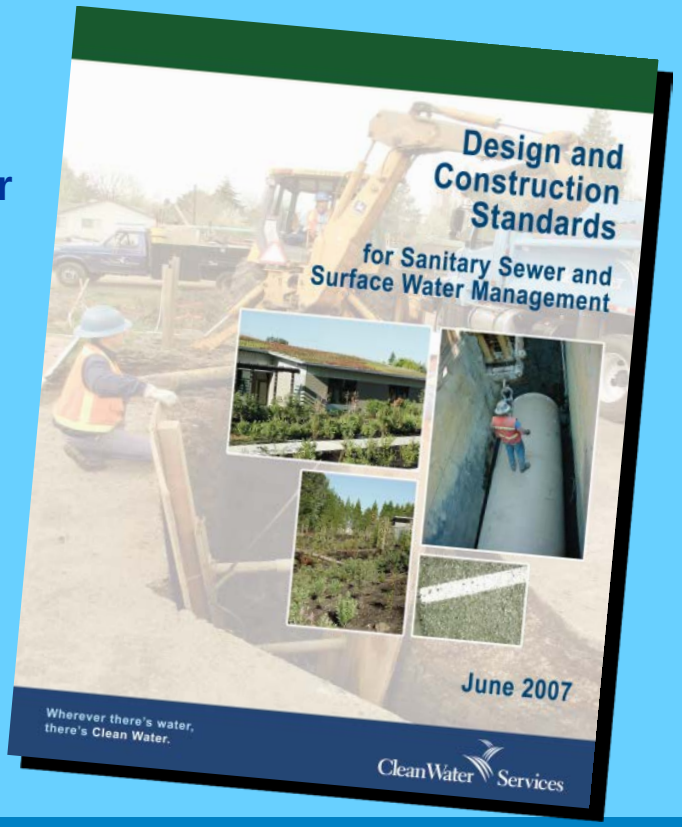
- Focus on known problems (excess line cleaning, pump stations, SSOs).
- Apply our efforts to the greatest risks to the public sanitary sewer system.
- Use applicable parts of the District's Enforcement Response Plan for pretreatment, (ie re-inspection fees, cost recovery, administrative action).
- Revise the performance standards for member Cities from the universal inspection of all FSEs once per year to an outcome-based inspection and re-inspection schedule.

Clean Water Services
Design & Construction Standards Update

Clean Water Advisory Commission

March 20, 2013

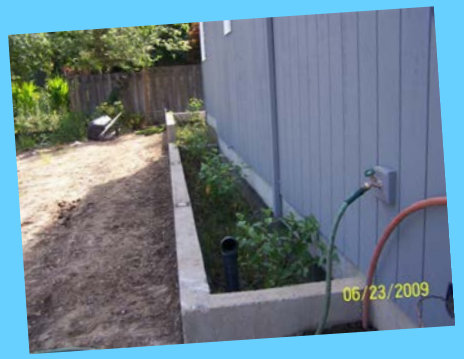
Damon Reische, Development Services Supervisor
Carrie Pak, Engineering Division Manager



Clean Water Services

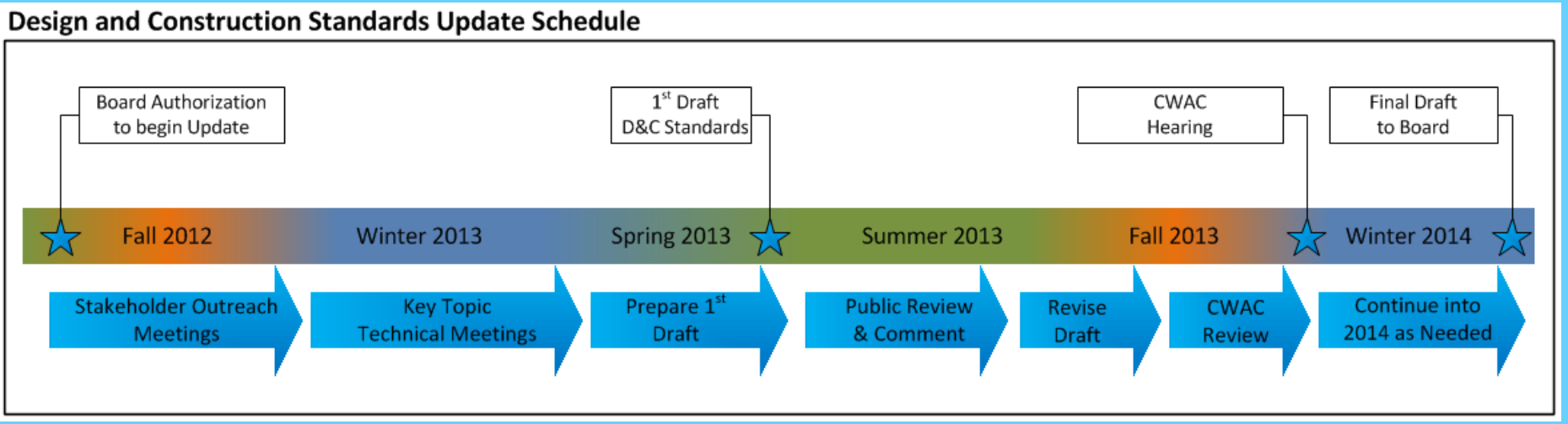
Key Topics

- **Evaluation and clarification of water quality requirements for redevelopment, linear and partition projects and to address changing development patterns.**
- **Evaluation of vegetated corridor enhancement and mitigation strategies to provide consistency with changes to State and Federal wetland mitigation policy.**
- **Incorporation of specific erosion control Best Management Practices for stream and wetland restoration projects.**
- **Modifications to avoid conflicts with State plumbing code.**
- **Minor revisions to clarify existing standards.**



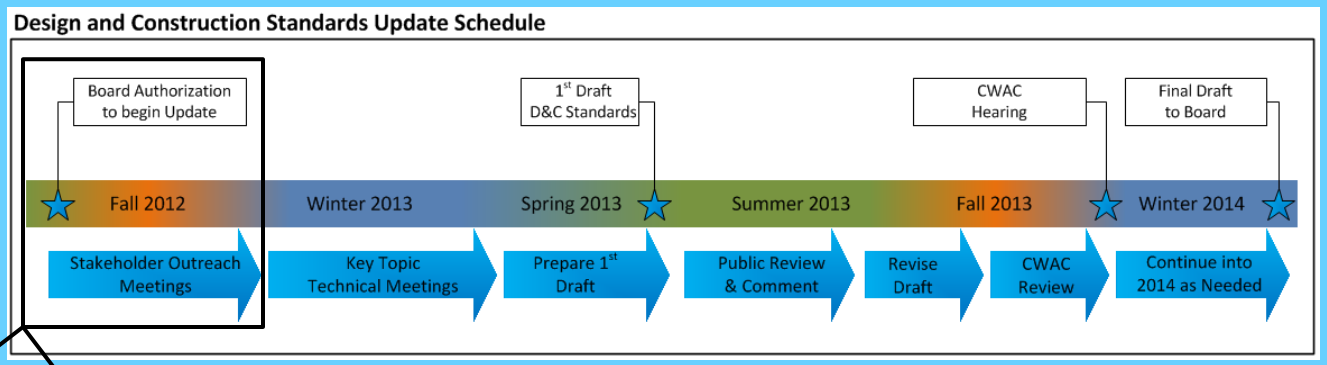
Clean Water Services

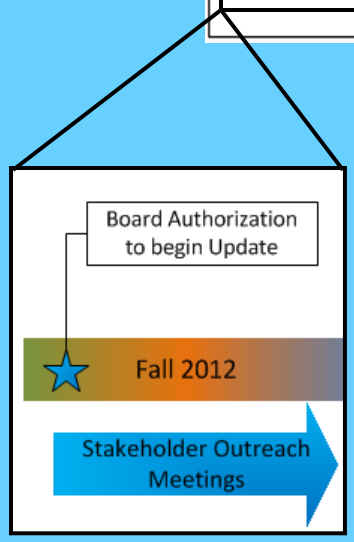
Process & Schedule



Clean Water Services

Outreach Meetings

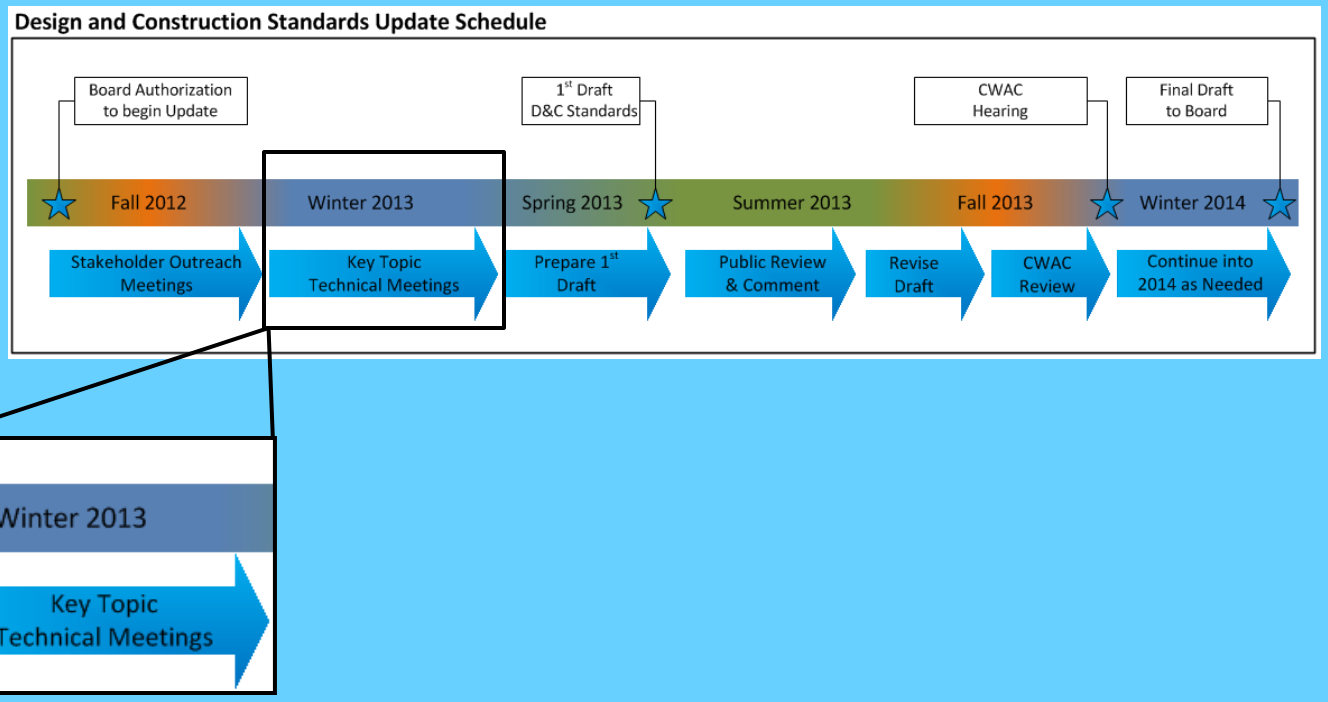




- **City/County Jurisdiction – October 4, 2012**
- **Parks and Trail Planners – October 25, 2012**
- **Presentation for the Tualatin River Watershed Council – November 7, 2012**
- **Development Community– November 13, 2012**
- **Progress Update for Clean Water Advisory Commission – November 14, 2012**
- **Presentation for the Tualatin Riverkeepers – November 29, 2012**
- **Progress Update for Clean Water Advisory Commission – January 16, 2013**

Clean Water Services

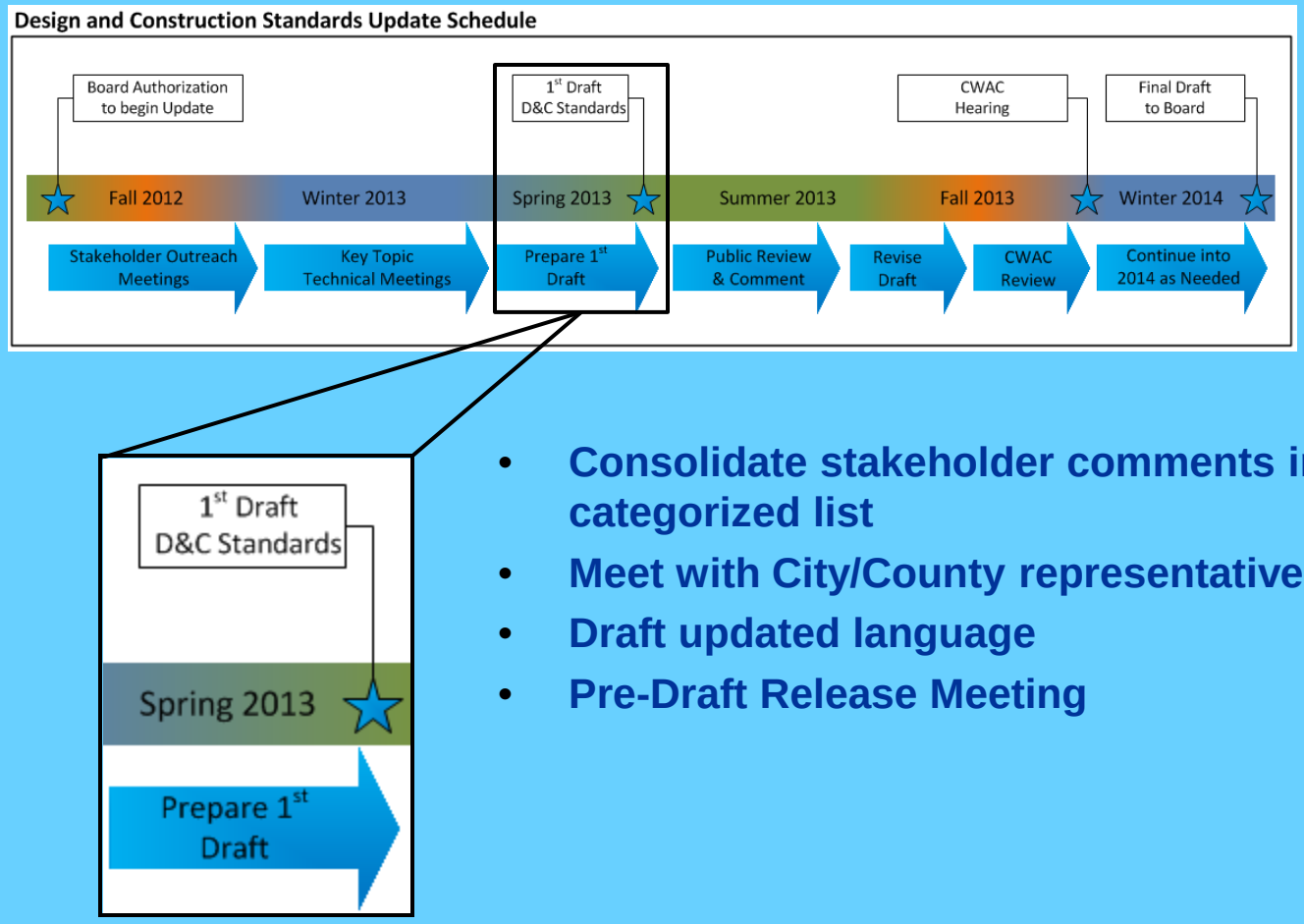
Technical Discussion Meetings



- **Water Quality Requirements for Redevelopment: – February 12, 2013**
- **Trails & Parks, Treatment and VC Requirements – February 28, 2013**
- **Construction Site Management Requirements – March 5, 2013**
- **Vegetated Corridor Mitigation Strategies – March 19, 2013**

Clean Water Services

What's Next?



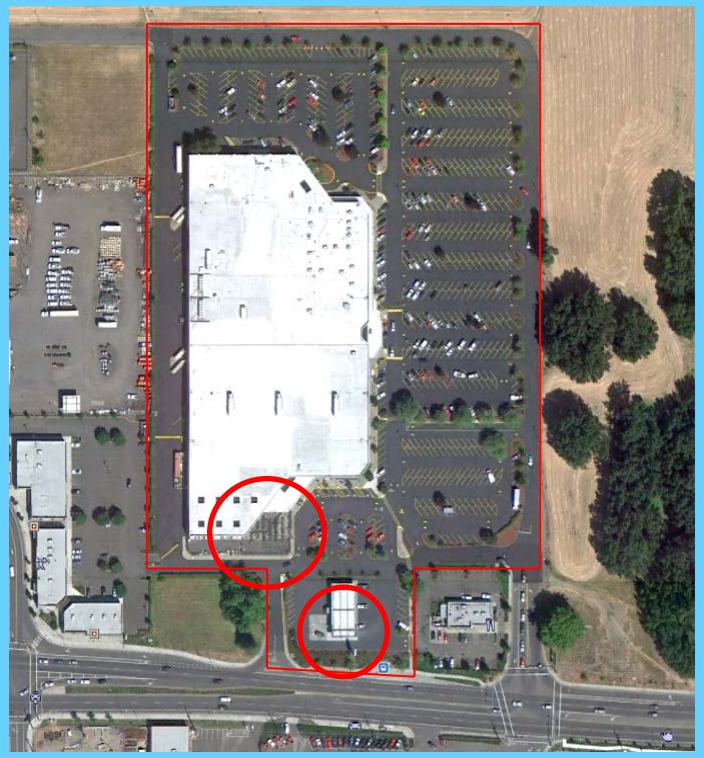
- **Consolidate stakeholder comments into a categorized list**
- **Meet with City/County representatives**
- **Draft updated language**
- **Pre-Draft Release Meeting**

Clean Water Services

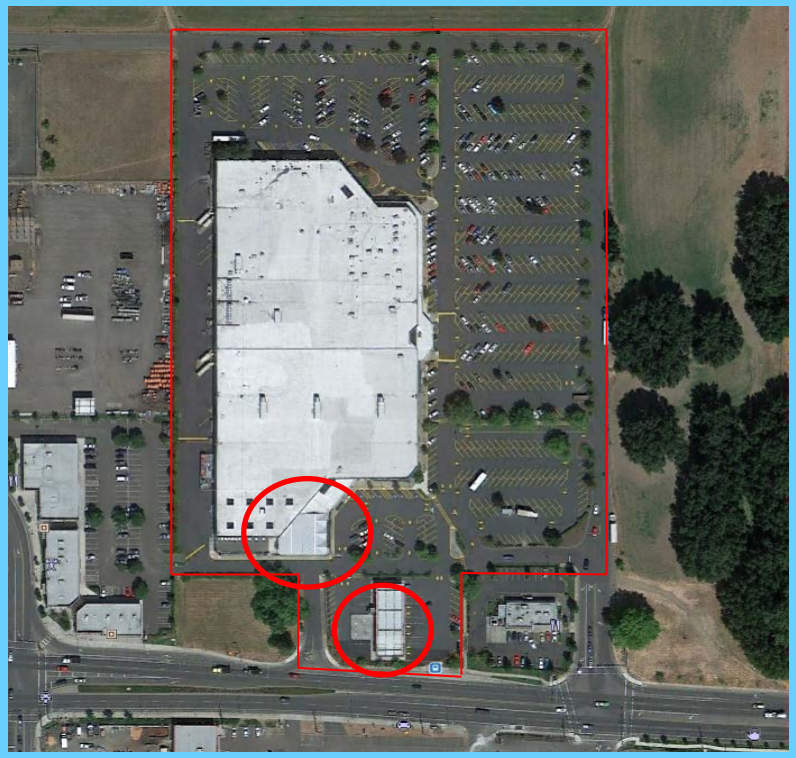
Water Quality Requirements for Redevelopment

Attendance: 44 people; 1/2 city/county representatives;

1/2 consultants; 1 person representing an environmental group



Before



After

Clean Water Services

Water Quality Requirements for Redevelopment

TABLE 4-1
IMPERVIOUS AREA REQUIRING TREATMENT
ON REDEVELOPMENT SITES

Existing Impervious Area on Site	Existing Impervious Area Disturbed by Redevelopment	Impervious Area Required to Treat
< 5,280 sq.ft.	≤ 100%	No new treatment required
≥ 5,280 sq.ft. and < 0.5 acres	< 1,000 sq.ft.	No new treatment required
	≥ 1,000 sq.ft.	100% of impervious area
≥ 0.5 acres and < 5 acres	< 1,000 sq.ft.	No new treatment required
	≥1000 sq.ft. and < 25%	Disturbed impervious area + 25% of undisturbed impervious area
	≥ 25% and < 50%	Disturbed impervious area + 50% of undisturbed impervious area
	≥ 50%	100% of impervious area
≥ 5 acres	< 1,000 sq.ft.	No new treatment required
	≥1000 sq.ft. and < 50%	Disturbed impervious area + 50% of undisturbed impervious area
	≥ 50%	100% of impervious area

Modified Table 4-1

Changed to include treatment threshold

Split into 2 categories

Split into 2 categories

Existing Impervious Area on Site	Existing Untreated Impervious Area Altered by Redevelopment	Untreated Impervious Area Required to Treat
< 5,280 sq.ft.	≤ 100%	**Altered Area over 1,000 sq. ft. only**
≥ 5,280 sq.ft. and < 0.5 acres	< 1,000 sq.ft.	**No new treatment required**
	>1,000 and < 5,280 sq. ft.	**Project area plus 10,000 sq. ft. of undisturbed impervious area, or project area plus remaining impervious on site**
	≥ 5,280 sq.ft.	**100% of impervious area**
≥ 0.5 acres and < 5 acres	< 1,000 sq.ft.	**No new treatment required**
	≥1000 sq.ft. and <5,280 sq. ft.	**Project area plus 10,000 sq. ft. of undisturbed impervious area, or project area plus 25% of the remaining impervious area on site**
	>5,280 sq. ft. and <25%	**Project area plus 25% of remaining impervious area on site**
	≥ 25% and < 50%	**Project area plus 50% of remaining impervious area on site**
	≥ 50%	**100% of impervious area**
≥ 5 acres	< 1,000 sq.ft.	**No new treatment required**
	>1,000 sq. ft. and <5,280 sq. ft.	**Project area plus 10,000 sq. ft. of remaining impervious area on site**
	≥5,280 sq.ft. and < 50%	**Project area plus 50% of remaining impervious area on site**
	≥ 50%	**100% of impervious area**

Scaled Proportional Treatment Ratio

New or modified Impervious Area*	Treatment Ratio ** Treatment to Disturbance	Treatment Range
< 1,000 sq. ft.	0	0
≥ 1,000 sq. ft. and < 2,640 sq. ft.	1:1	1,000 sq. ft. – 2,640 sq. ft.
≥ 2,640 sq. ft. and < 10,890 sq. ft. (1/4 ac.)	2:1	5,280 sq. ft. – 21,780 sq. ft. (1/2 ac.)
≥ 10,890 sq. ft. (1/4 ac.) and < 21,780 sq. ft. (1/2 ac.)	3:1	32,670 sq. ft. (3/4 ac.) – 65,340 sq. ft. (1 ½ ac.)
≥ 21,780 sq. ft. (1/2 ac.) and < 87,120 sq. ft. (2 ac.)	4:1	87,120 sq. ft. (2 ac.) – 348,480 sq. ft. (8 ac.)
≥ 87,120 sq. ft. (2 ac.)	5:1	435,600 sq. ft. (10 ac.) +

Simplified Proportional Treatment Ratio

New or modified Impervious Area*	Treatment Ratio ** Treatment to Disturbance	Treatment Range
< 1,000 sq. ft.	0	0
≥ 1,000 sq. ft.	3:1	3 x area disturbed, up to site area

Clean Water Services

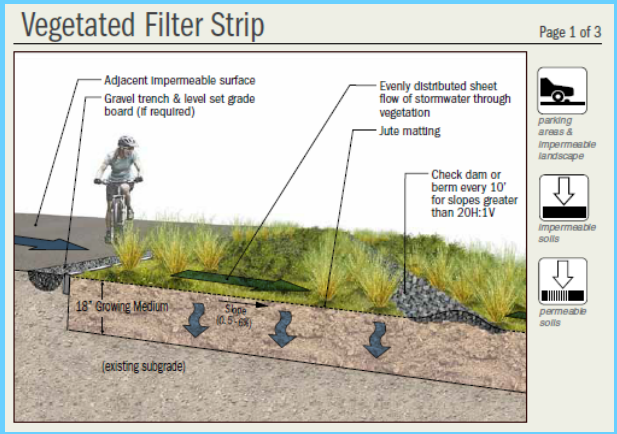
Water Quality Requirements for Redevelopment

Feedback

- **Cities were most engaged stakeholder group**
- **General consensus that simpler is better and site size should not be driving factor**
- **Desire from some for some sort of analysis based on cost or facility sizing to determine thresholds**
- **All agreed current standard needed fixed**

Trails & Parks, Treatment and VC Requirements

Treatment Requirements and Options



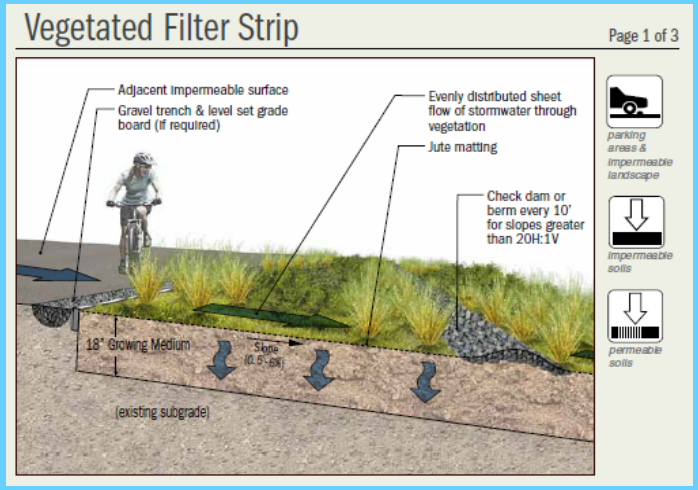
Proportional Enhancement

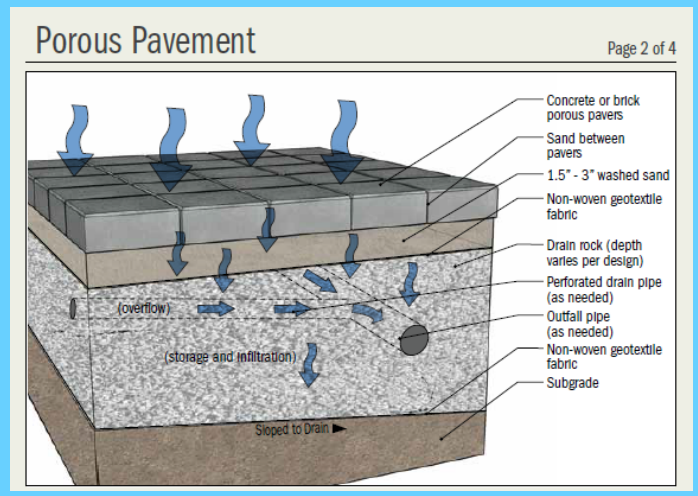
Attendance:

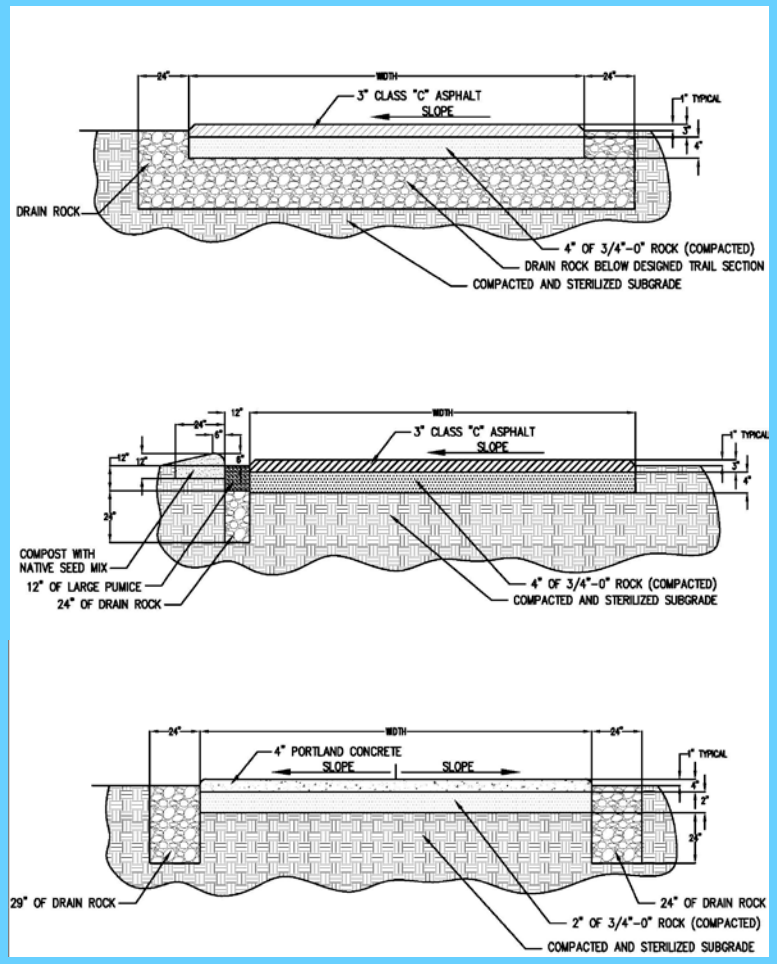
- 49 people
- 1/3 consultants
- 1/3 park district and city representatives
- Several Washington County staff,
- 3 developers,
- 1 ODFW representative
- 1 person representing an environmental group

Clean Water Services

Trails & Parks, Treatment and VC Requirements







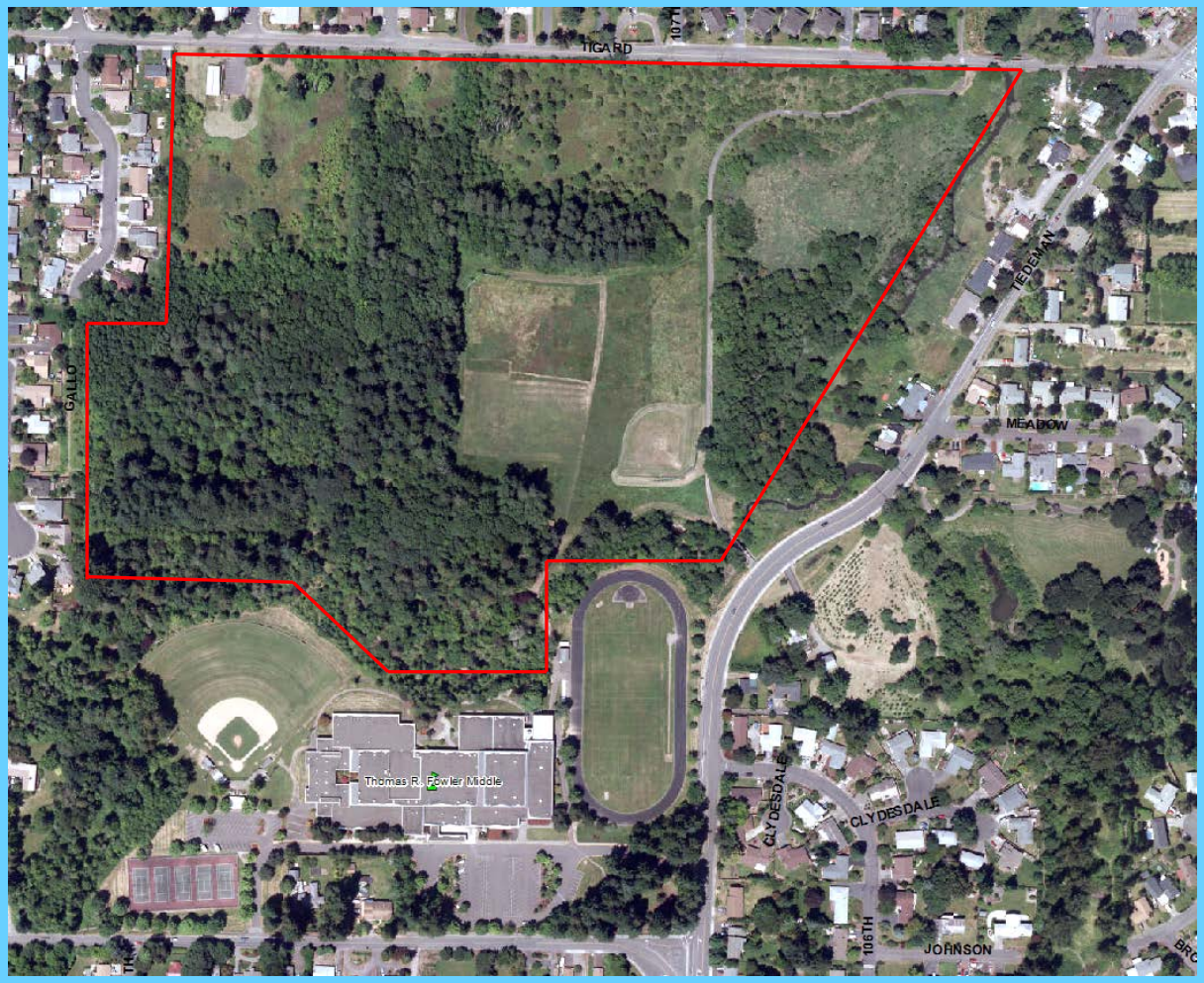
Clean Water Services

Trails & Parks, Treatment and VC Requirements

Feedback on Treatment Options

- **Collaborative discussion from trail planners**
- **Many ideas on potential approaches to treating runoff from trails**
- **Recognition of added difficulty in providing treatment within vegetated corridor**
- **ODFW advocated for boardwalks in certain instances**
- **TRK strongly advocated for avoidance of trail impacts in corridors, but supportive of treating runoff**

Trails & Parks, Treatment and VC Requirements



Clean Water Services

Trails & Parks, Treatment and VC Requirements

Feedback on Proportional Enhancement

- **Gratitude on part of park planners for District's recognition of disproportionate requirement**
- **Many questions on how a proportional enhancement rule might work**
- **General consensus that proportional enhancement is appropriate for small projects on sites with large vegetated corridor areas**

Construction Site Management Requirements

Non-Stormwater Pollution Control

Goal: Prevent or reduce impacts to storm and surface waters from waste generated on construction sites

Examples:

- **Discarded Building Materials**
- **Concrete Waste Management**
- **Chemical & Hazardous Waste**
- **General Litter**
- **Sanitary Waste**

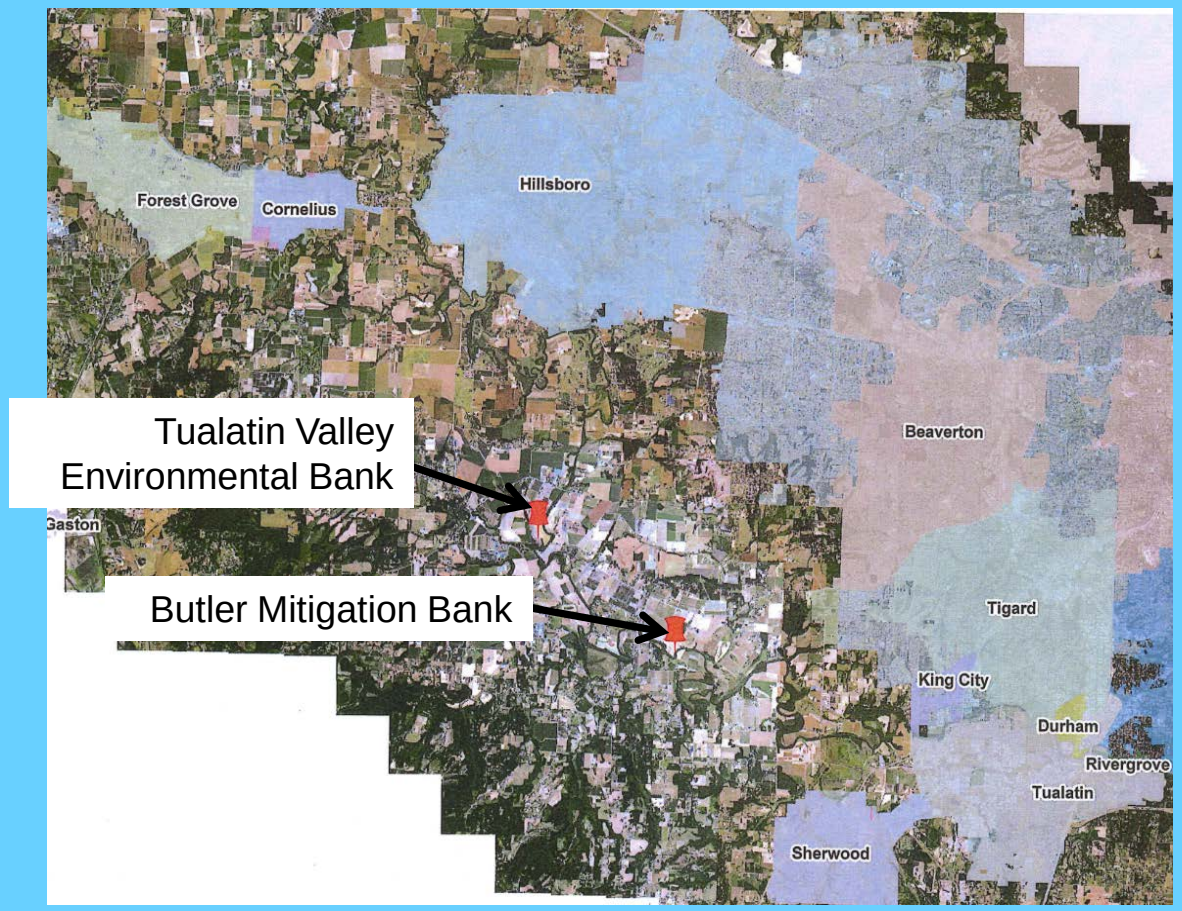
Clean Water Services

Construction Site Management Requirements

Feedback

- **About 29 stakeholders attended, approximately half representing cities/County, other half a mix of developers, builders, and contractors.**
- **General agreement for coming up with workable BMPs**
- **Lots of ideas on having spill prevention on vehicals**
- **Important but noncontroversial topic**

Vegetated Corridor Mitigation Strategies



Attendance: 45+ people;

- **¼ developers/home builders**
- **¼ city/county**
- **¼ consultants**
- **¼ other**
- **No environmental group representation**

Clean Water Services

Vegetated Corridor Mitigation Strategies

Feedback

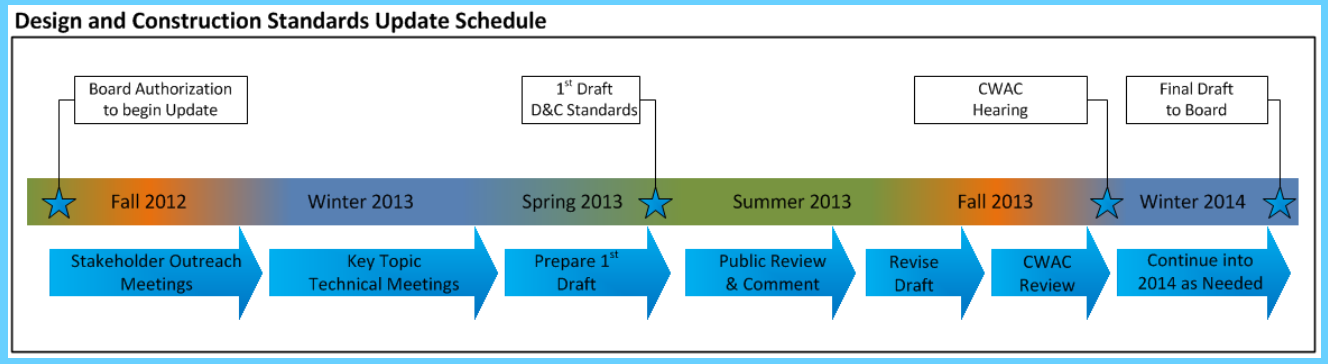
- **Desire from HBA to eliminate current vegetated corridor mitigation requirements for isolated wetland impacts being mitigated at a bank**
- **Suggestions to allow for vegetated corridor mitigation outside UGB at wetland mitigation bank or vegetated corridor specific bank**
- **Suggestion to use a functional based approach to determining if vegetated corridors are mitigated within UGB or at bank**

Other Topics of Concern from Technical Discussion Meetings

- **Treatment Threshold**
- **Design Storm**
- **Planting Densities**

What's Next?

- **Consolidate stakeholder comments into a categorized list**
- **Meet with City/County representatives to help choose best options for update**
- **Meet with Hillsboro Chamber of Commerce**
- **Draft updated language**
- **Pre-Draft Release Meeting**
- **Public Comment Period**



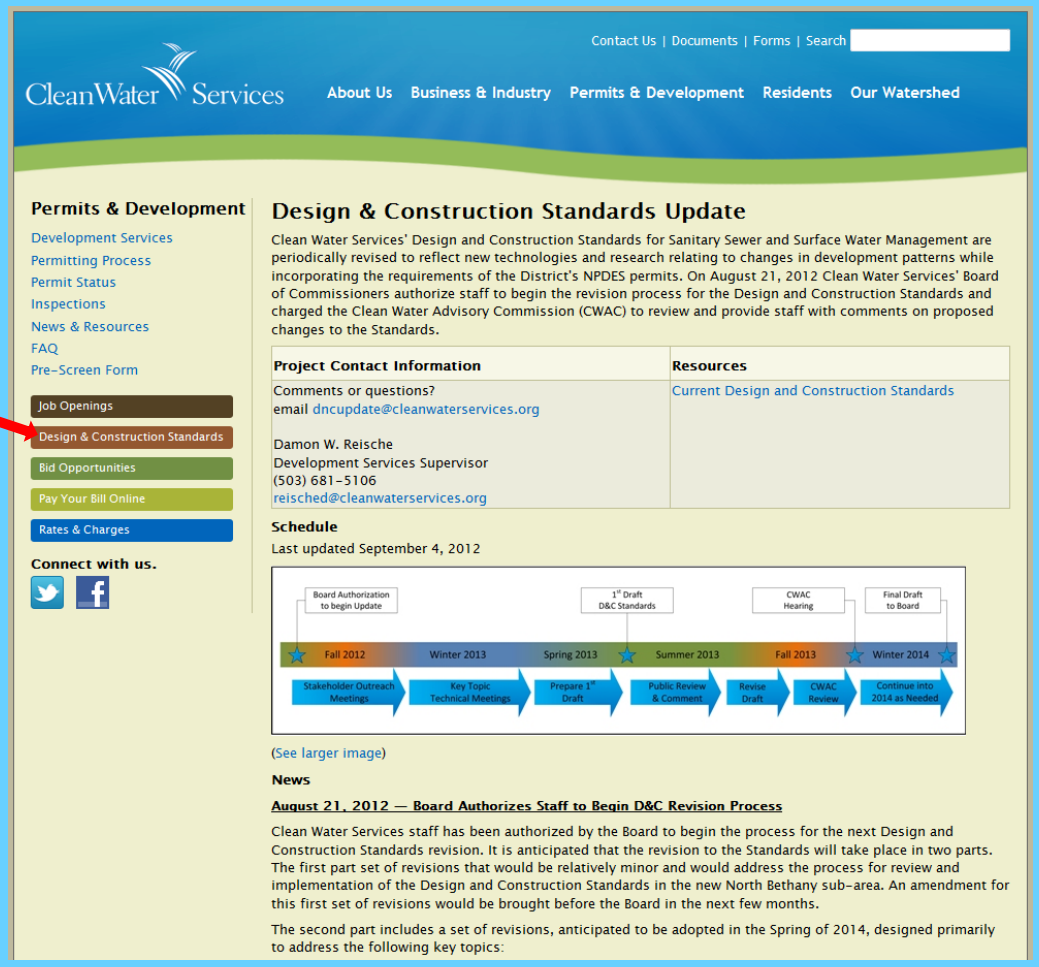
Clean Water Services

D&C Update Webpage

Click Here

OR

www.cleanwaterservices.org/dncupdate



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