DEPARTMENT OF ECOLOGY
State of Washington

Burnt Bridge Creek Partnership

DRAFT Implementation priorities and actions

July 19, 2021

Introductions

- Washington Department of Ecology
- City of Vancouver

Meeting Objectives

1. Review purpose of Burnt Bridge Creek Partnership and TMDL Alternative Restoration Plans.

2. Review what was discussed at each of the Burnt Bridge Creek workgroup meetings and present draft priorities and actions for implementation.

3. Discuss next steps.

What we won't be discussing today…

- **Milestones, targets, and timelines**
  - Interim milestones
  - Checkpoints
  - Target dates

- **Criteria to measure progress**
  - Performance measures
  - Effectiveness monitoring

- **Funding Sources & Partnerships**

Agenda

- **Burnt Bridge Creek Partnership & Alternative Restoration Plan** (10 min.)

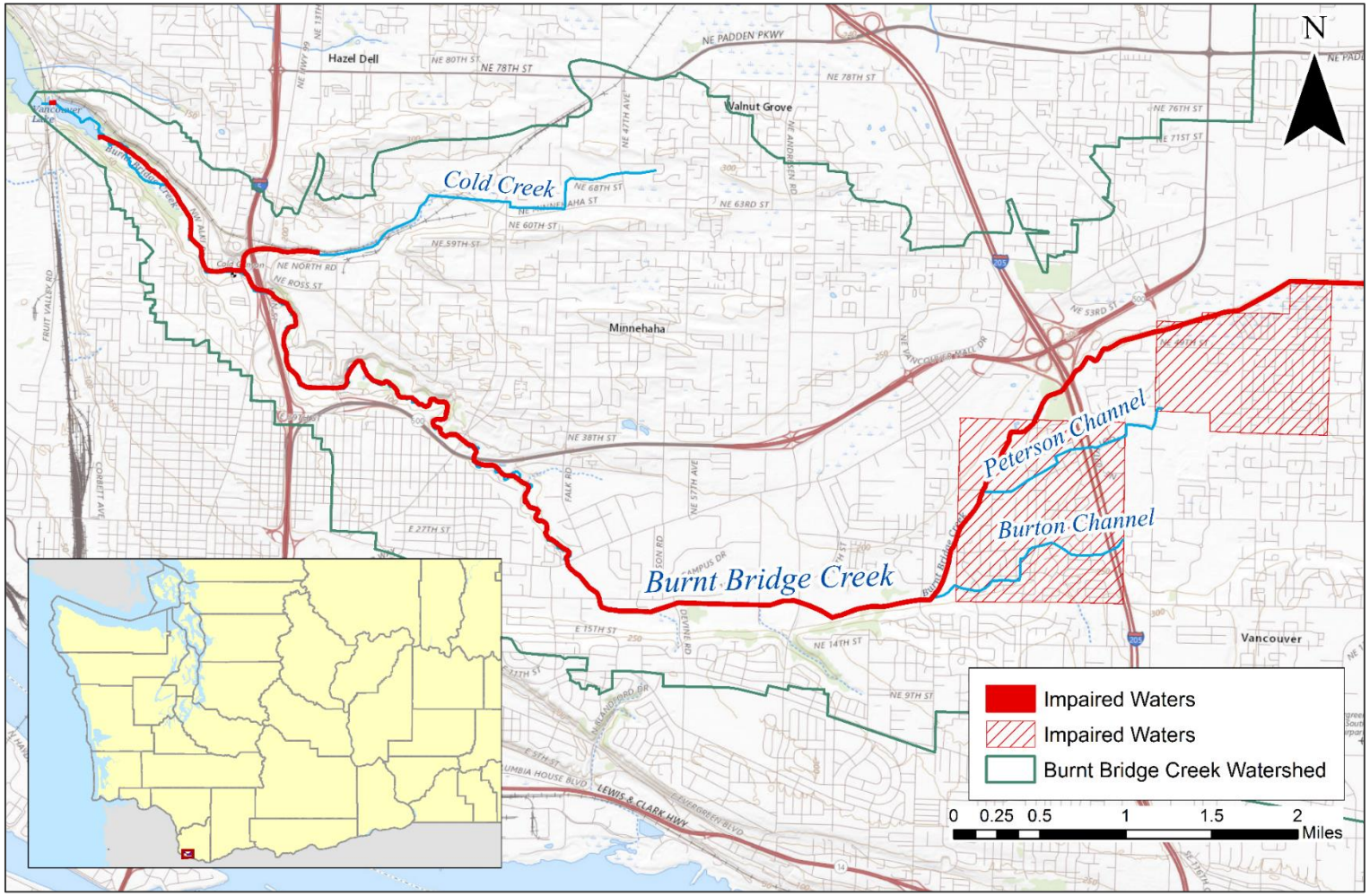
- **Draft priorities & implementation actions** (80 min.) – 1:15 p.m.
  - Urban Forestry and Greenways (15 min.)
  - Sewer Connection and Septic Systems (15 min.)
  - Stormwater and Capital Improvements (15 min.)
  - *BREAK @ 2:00 p.m*. (5 min.)
  - Operations and Maintenance (15 min.)
  - Public Education and Outreach (15 min.)

- **Next Steps** (25 min.) – 2:35 p.m.

1

Review Burnt Bridge Creek Partnership & Alternative Restoration Plans

Burnt Bridge Creek Impairments



Washington State's impaired waters list (303d)

- Temperature
- Bacteria
- Dissolved Oxygen
- pH

Goals

- Develop TMDL Alternative Restoration ***in advance of*** *a* formal TMDL.
  - Implementation strategy to improve water quality.
  - Milestones, targets, and timelines.
  - Effectiveness monitoring plan

- **Result** = Voluntarily meet water quality standards through BMP implementation.

What is a TMDL Alternative Restoration Plan?

- Developed ***in advance o***f a TMDL.
- **Does not** establish waste load allocations or effluent limits for permits.
- Achieved through voluntary implementation to make progress before TMDL is required.
- Must achieve **8 elements** of Alternative Restoration Plans

How do we achieve EPA's 8 Elements for TMDL Alternative Restoration Plans?

1. **Identify** impaired waters
2. **Analyze** pollution reductions needed
3. **Implementation plan** explaining how to address pollution sources
   - Timeline and schedule
   - Milestones and target dates
4. **Funding strategy and cost estimates**
5. **Stakeholders and partners**
6. **Estimation** of when water quality standards will be achieved
7. **Monitoring plan** to evaluate effectiveness
   - Adaptive management process
8. **Commitment to periodic evaluation**

Burnt Bridge Creek Timeline

2008-2009

Water Quality Assessment

2020

Burnt Bridge Creek Source Assessment

2021

Burnt Bridge Creek Partnership

2022

Burnt Bridge Creek TMDL Alternative Restoration Plan

Burnt Bridge Creek Partnership

Where have we been?

February 2021

Burnt Bridge Creek Partnership Kickoff

April-May 2021

Implementation workgroups assigned

- Urban Forestry & Greenways
- Sewer Connection and Septic Systems
- Stormwater and Capital Improvements
- Operations and Maintenance
- Public Education and Outreach

July 2021

Draft Implementation Priorities & Actions

2

DRAFT Priorities & Implementation Actions

Urban Forestry & Greenways

Discussion Topics

- Urban Forestry – street and yard tree planting
- Greenways and Sensitive Lands
- Land Acquisition
- Instream restoration
- Challenges
- Education and Outreach

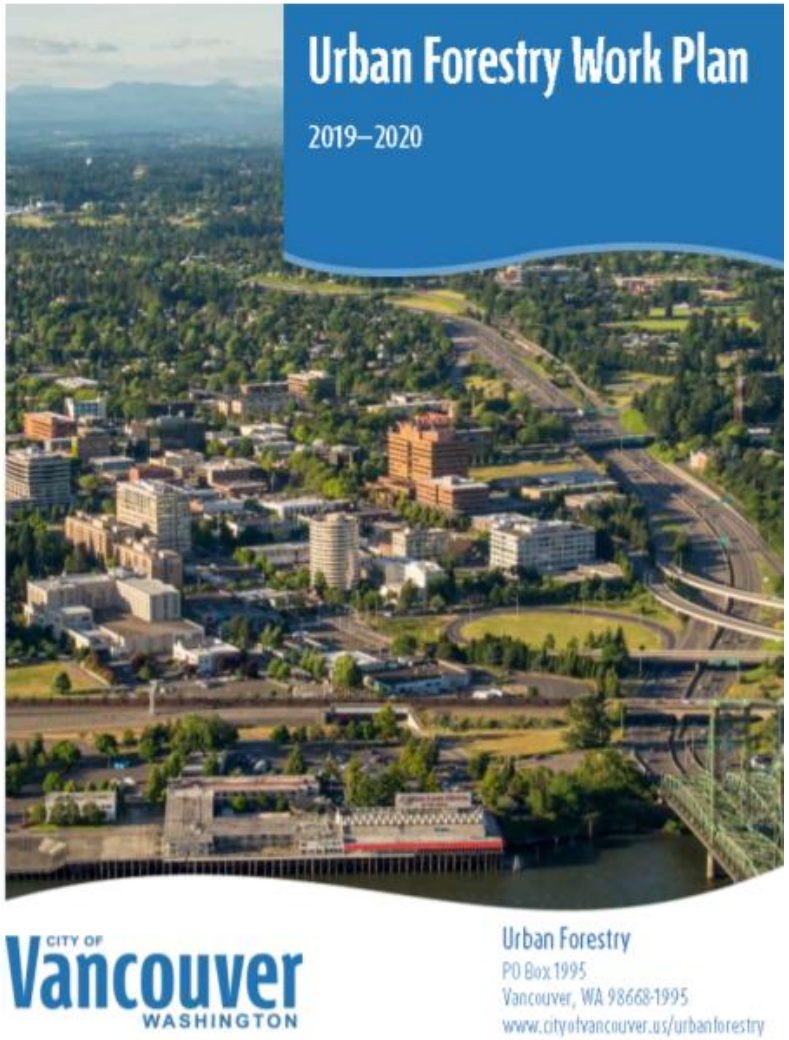
Workgroup Members: Charles Ray, Rich McConaghy, Brian Potter, Tim Esary, & Annette Griffy

Background – Urban Forestry Program

- **Goal** = achieve 28% tree canopy
- **Focus** = street and yard tree plantings
- **Upland restoration** focused on parks and schools.
- **As of 2010** - 5,579 acres of tree canopy over 29,998 acres

Tree Canopy Assessment

- **2011** - Last study completed
- **2021** - Next study expected
- Completed every 5 to 10 years



Programs and partners

- **Friends of Trees**
  - 16 years of tree planting in City of Vancouver
  - Plants more than 500 trees and prunes more than 200 trees annually.

Background – Burnt Bridge Creek Greenway

- **8 miles of** protected greenway
- Most publicly owned properties are restored
  - 200 acres of land in Greenway
  - Priority is planting 50-100 feet buffers

- **600,000 trees** planted since 2005
- **10,000 cubic yards** of invasive species removed.
- Volunteer events – Make a Difference Day and MLK Day.

Programs and partners

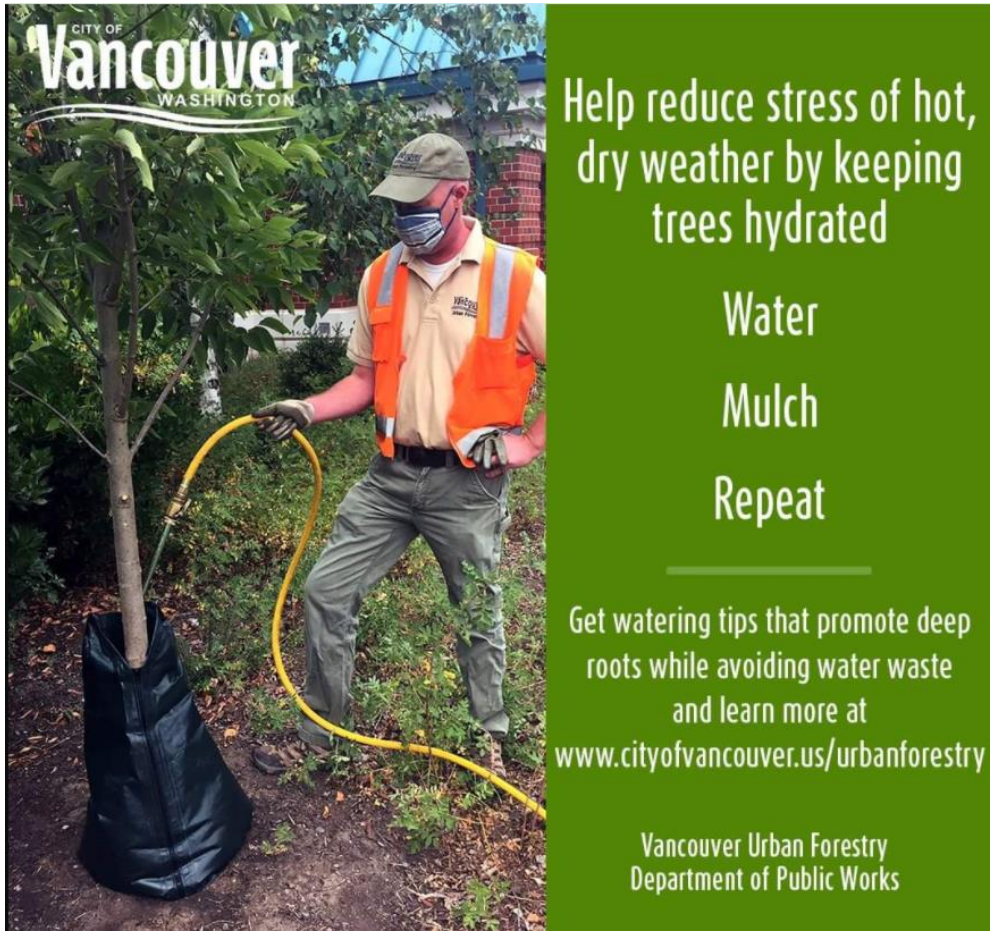
- **Watershed Alliance of Southwest Washington**
  - **Project Restore.**
    - Tree planting on private property
    - Invasive plant removal
  - **110 lots identified** for restoration
    - 40 are businesses or vacant
    - 70 are private homeowners
  - **1.3 miles of creek restoration** on Burnt Bridge Creek
    - 28 properties enrolled
    - 26 have been restored

Challenges

- Development pressure, limited resources, and willing landowners

Challenges

- Long-term maintenance of trees, especially in overburdened communities



Challenges

- Funding for land acquisition and easements.
- Lack of strategic property acquisition plan

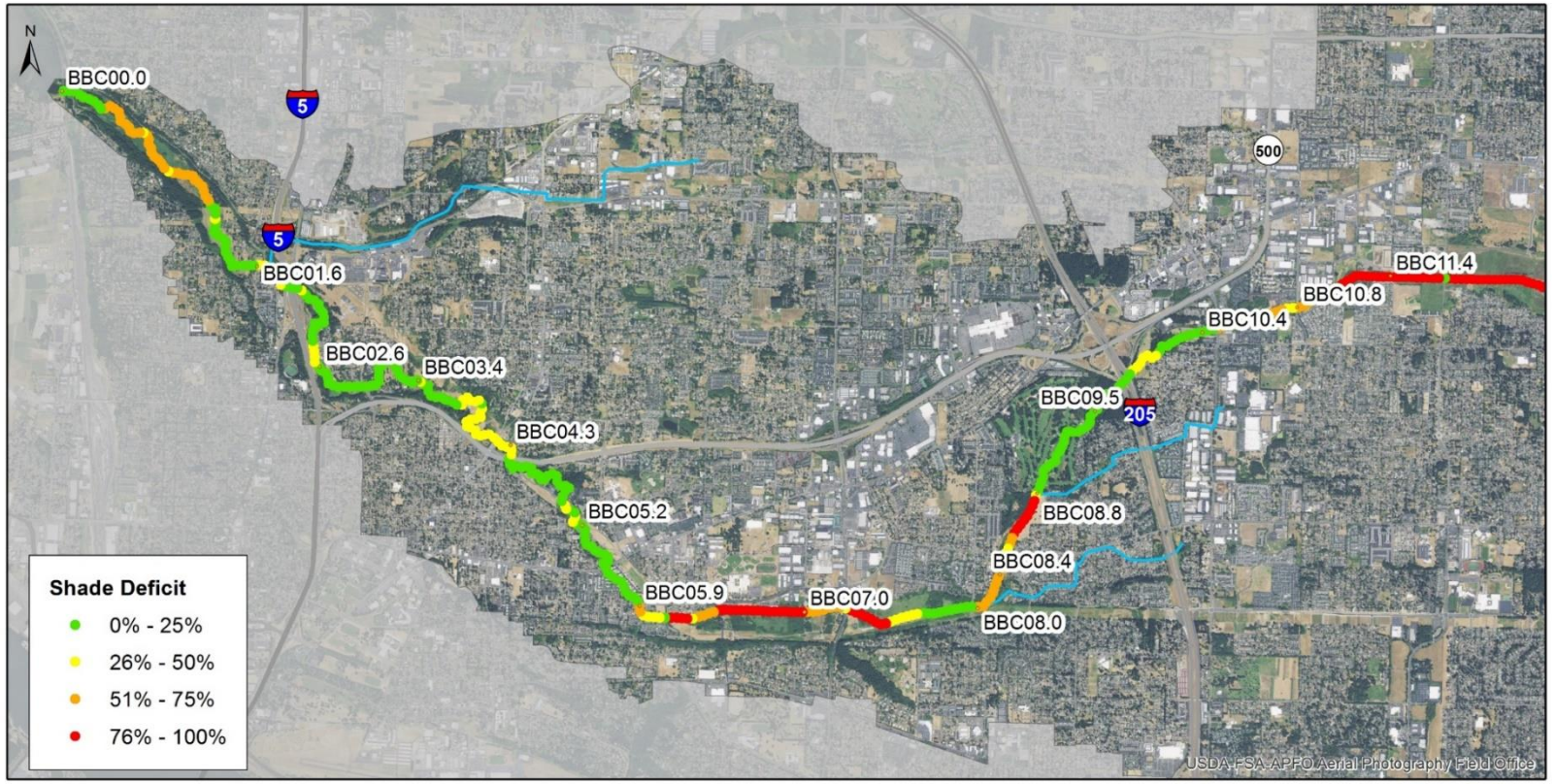
Challenges

- **Instream restoration**
  - Reconnecting floodplains
  - Restoring wetlands
  - Addressing eroding streambanks

Challenges

- **Bonneville Power Administration requirements**
  - Trees cannot be more than 10 feet on areas 150 feet from center conductor
  - Tallest tree being planted is 20 feet tall
- **Built infrastructure in buffers**
  - Trails
  - Utilities
  - Homes
- **Washington Department of Transportation funding**

Priorities from Source Assessment, 2018



Upper watershed (RM 10-13) = 62%

- River miles 12-13 = 87% shade deficit
- River miles 11-12 = 73% shade deficit

Middle watershed (RM 5-10) = 39%

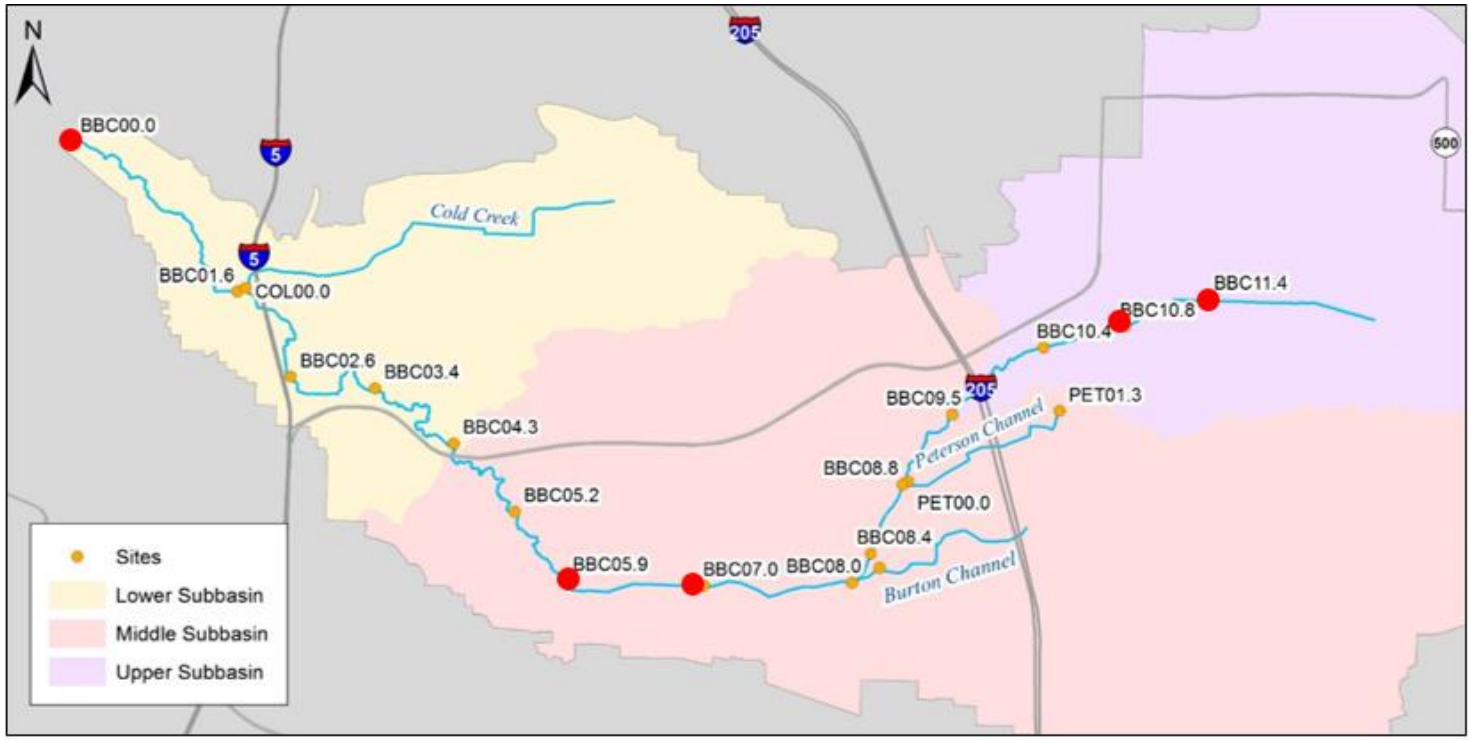
River miles 7-8 = 83%

Lower watershed (RM 0-5) = 27%

Site potential tree height and overhang

- **Tree Height** = 41 meters tall or approximately 135 feet
- **Overhang potential** = .1 meters or approximately 13.5 feet
- **System potential shade** = 85 % forested watershed
- **Minimum buffer width** = 50 feet
- 45% of Greenway is forested

Priorities from Source Assessment, 2018



- **Temperature:** River miles 0, 5.9, and 7.0 had highest temperatures.
- **Dissolved Oxygen:** River miles 5.9, 7.0, 10.8, and 11.4 have most noncompliant days.

Priorities from Source Assessment, 2018

- **Upper watershed (RM 10-13)** = 62% average shade deficit
  - River miles 12-13 = 87% shade deficit
  - River miles 11-12 = 73% shade deficit
- **Middle watershed (RM 5-10)** = 39% average
  - River miles 7-8 = 83%
- **Lower watershed (RM 0-5)** = 27% average

DEPARTMENT OF ECOLOGY
State of Washington

DRAFT Implementation Actions
Urban Forestry and Greenways

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Priority areas for urban forestry and greenways implementation

UF1.1 Prioritize restoration of urban forestry and greenways to areas with the highest average shade deficits.

- This includes the upper watershed located between river miles 10 and 13, and middle watershed located between river miles 5 and 10.

UF1.2 Prioritize phase one implementation to areas with shade deficits over 50 percent.

- These areas are located in the upper and middle watershed
- Specifically include the following locations and shade deficits: RM 12-13 = 87%, RM 7-8 = 83% and 11-12 = 73%.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Greenways and sensitive lands

UF2.2 Focus property acquisition efforts upstream of river mile 8 and I-205 to extend the Burnt Bridge Creek Greenway into the upper watershed.

UF2.3 Where feasible, achieve a system potential tree height of 41 meters, or approximately 135 feet tall in the watershed. Achieve the maximum overhang potential of trees in riparian areas, which is 4.1 meters or approximately 13.5 feet.

Overview of DRAFT Implementation Actions

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Greenways and sensitive lands

UF2.5 Complete a shade deficit analysis of Burnt Bridge Creek tributaries including Burton Channel, Peterson Channel, and Cold Creek to identify opportunities for riparian restoration.

UF2.6 Identify wetland areas in the watershed for wetland enhancement and restoration. If possible, work with private property owners to acquire properties or place a conservation easement on wetland areas for conservation purposes.

UF2.7 Increase riparian buffer widths in areas where the river has less than 50 feet of riparian buffer implemented.

Overview of DRAFT Implementation Actions

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Urban Forestry

UF3.2 Complete the Vancouver Tree Canopy Assessment every 10 years to assess progress on preserving and restoring urban tree canopy.

UF3.3 Continue to plant trees in upland areas, focusing on Vancouver's Parks and Schools that are hydrologically connected to priority areas for water quality.

UF3.4 Prioritize implementation of urban forestry efforts on residential properties, which make up 44 percent of the watershed.

- Focus implementation on properties that are hydrologically connected to outfalls that influence priority water quality areas in the Burnt Bridge Creek watershed.

Overview of DRAFT Implementation Actions

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Other

UF4.1 Update local codes and ordinances to increase the required landscaped area percentage or to cap impervious surface area percentages in new development and redevelopment

UF4.4 Increase funding for Parks and Surface Water property acquisition programs to purchase and preserve more property for conservation and restoration

Overview of DRAFT Implementation Actions

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Other

UF4.7 Identify unauthorized water withdrawals on Burnt Bridge Creek that are being withdrawn without a water right and provide education and outreach, and enforcement action to stop the withdrawal.

UF4.8 Remove riprap and bank armoring that has been implemented without authorization or a permit, and where feasible identify opportunities to reconnect the floodplain.

UF4.9 Identify and remove any manmade ponds or impoundments on Burnt Bridge Creek that are impacting water flow, causing eutrophication, or affecting water quality.

Overview of DRAFT Implementation Actions

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Other

UF4.13 Develop a strategic land acquisition plan for the Burnt Bridge Creek watershed focused on identifying high priority, critical conservation areas for future acquisition to protect water quality. Include shoreline management and critical areas, as well as critical aquifer recharge areas

UF4.14 Develop an instream restoration plan focused on identifying locations streambank stabilization, floodplain reconnection, or wetland restoration. Identify areas to enhance cold-water refuge areas, implement large wood, establish side-channels or off-channel habitat, and reduce erosion issues.

Funding Sources & Partners

Funding

- City of Vancouver's Stormwater Utility
- Washington Department of Transportation Stormwater Fees
- Water Quality Combined Funding Program
- Private Landowners

Partners

- Watershed Alliance of Southwest Washington
- Friends of Trees
- Lower Columbia Estuary Partnership
- Washington Department of Transportation
- Private Landowners

Discussion

- Questions?
- Thoughts?
- Comments?
- Feedback?
- Concerns?
- Is there anything I missed?

Sewer Connection & Septic Systems

Discussion Topics

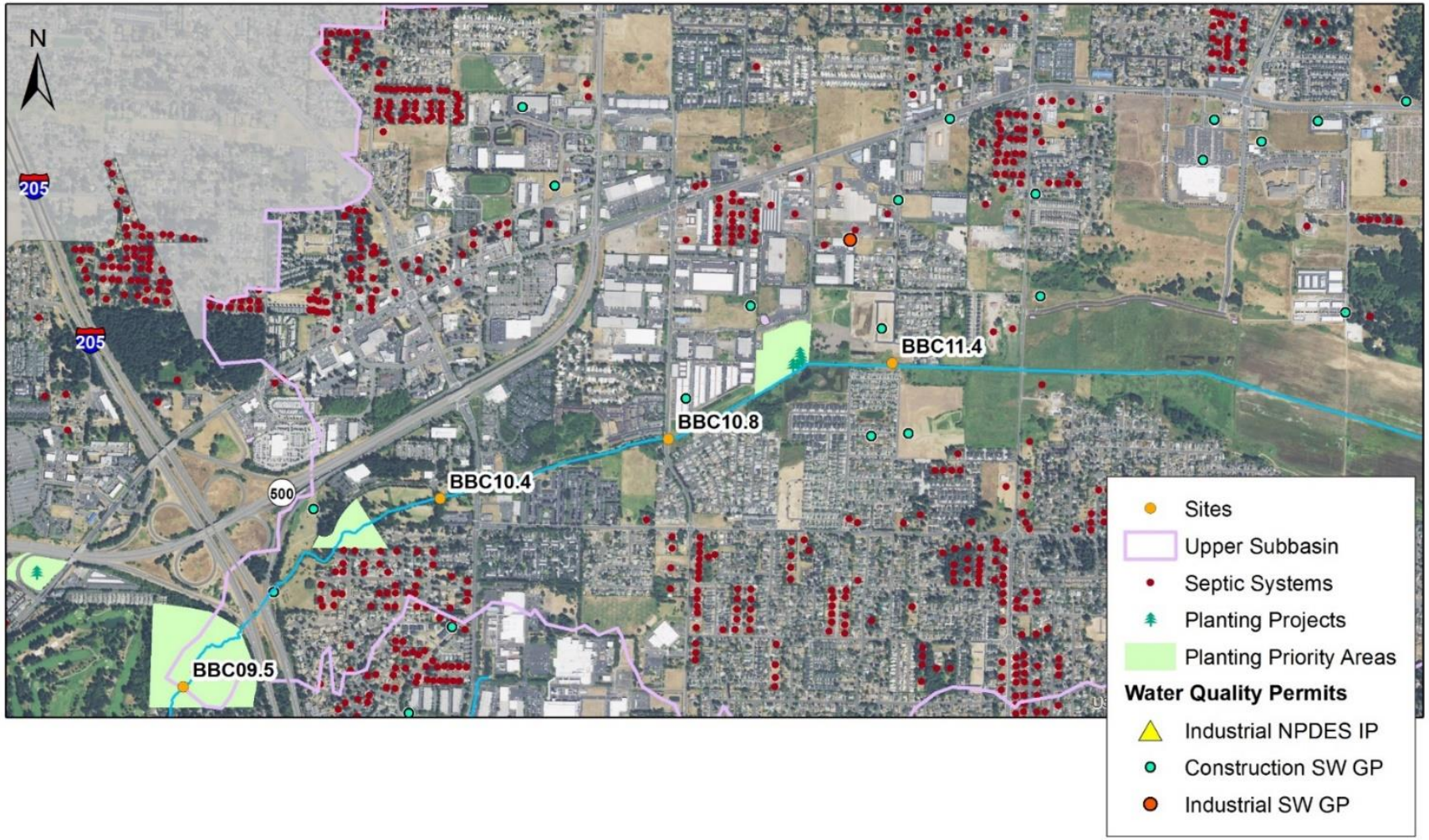
- Sewer Connection Inventive Program
- Septic System Jurisdiction – Clark County Public Health
- Septic System Inspections and Maintenance
- Education and Outreach
- Financing
- Sewer collection system and infrastructure
- Partners

Workgroup Members: Sheryl Hale, Eric Schadler, Annette Griffy, Dan Swensen

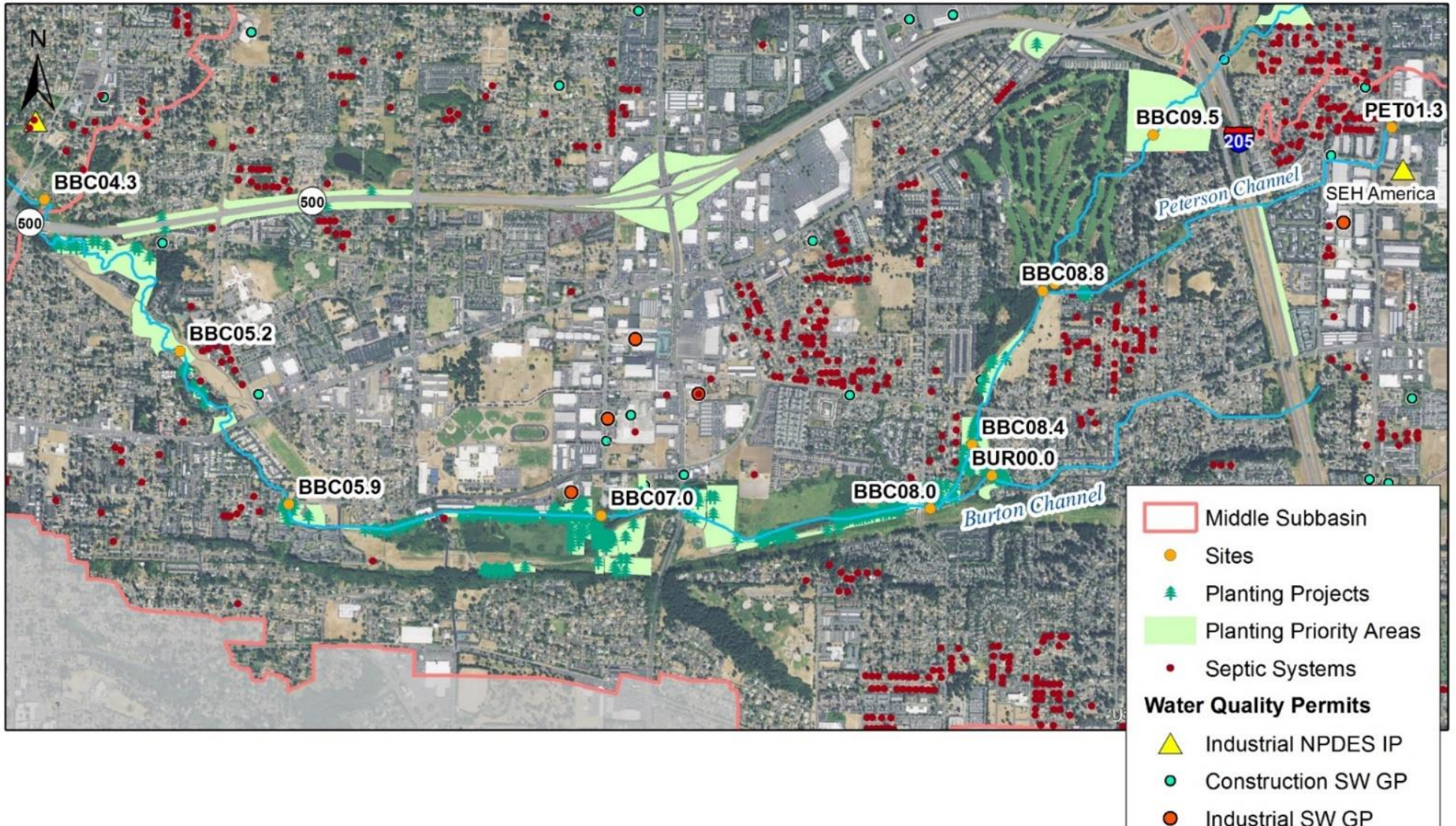
Background

- Most of Burnt bridge Creek has sewer available.
- 2 Wastewater treatment facilities.

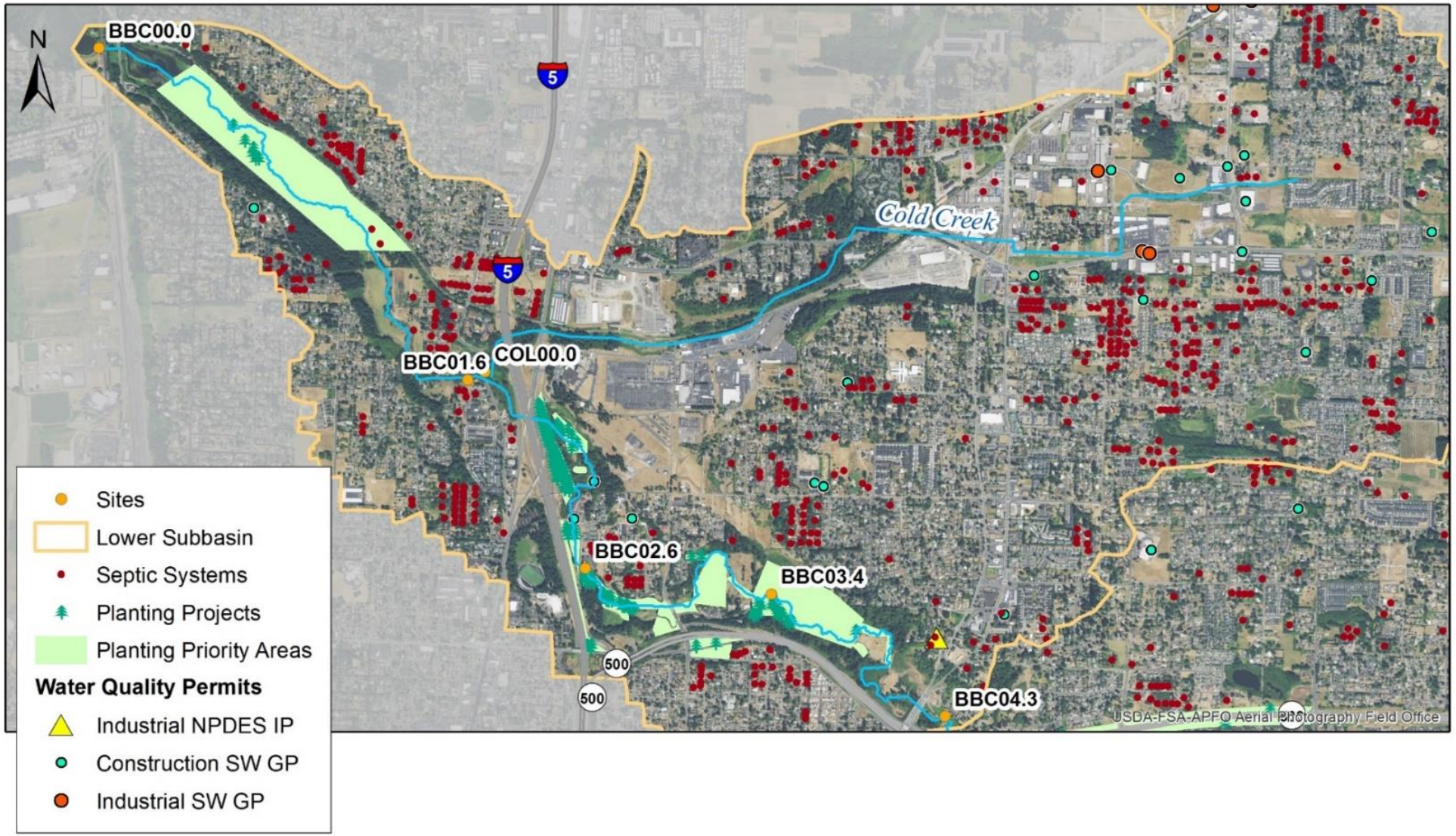
Upper Watershed (RM 10-13)
~ 1,000 Septic Systems



Middle Watershed (RM 5-10)
~2,000 Septic Systems



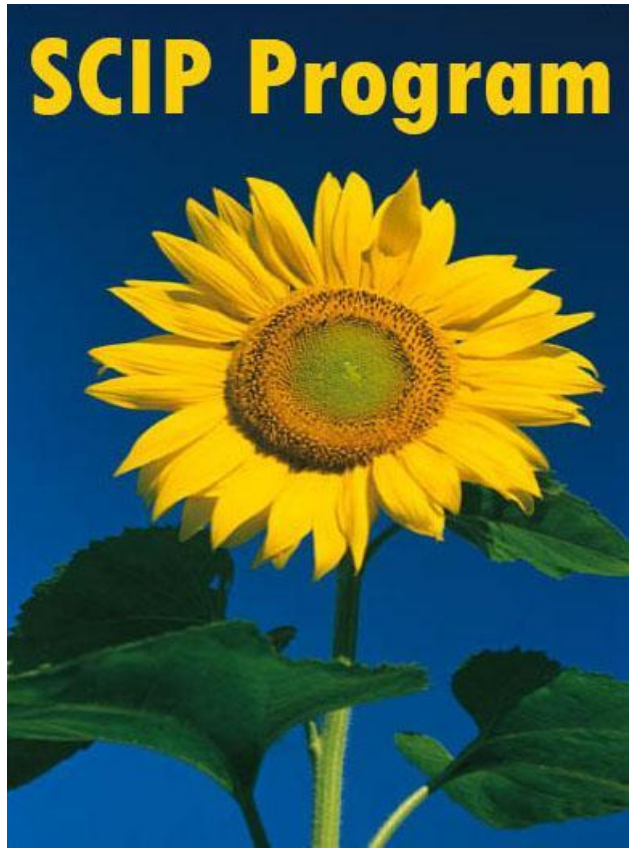
Lower Watershed (RM0-5)
~700 Septic Systems



Sewer Connection and Incentive Program (SCIP)

- Developed in 1998
- **Initial priority** = proximity to surface water & areas with high density septic systems
- **Goal** = provide & extend sewer
- Connection to sewer is voluntary
- City allocated $3 million annually in capital budget for SCIP

SCIP Education and Outreach



- Focused on sewer extension projects
- CCPH invited to participate and educate
- **Goal =** encourage sewer connection.
- No outreach happening within SCIP to septic owners
  - Need: Messaging to educate and encourage; Information on financing
  - Need: How to inspect and maintain system

Clark County Public Health's role

- Primary jurisdiction over septic systems
- CCPH has Final authority to allow septic repair or replacement
- CCPH normally requires connection if system is failing or in disrepair
  - Requirement may be waived if cost to connect is more than double cost of repair or replacement, or if fix is simple.

Well & Septic Inspection Certification

Get certified to inspect your own gravity-fed septic system and learn how to properly maintain your well and septic systems.

Get certified to inspect your septic system* AND learn how to:

- ◊ **Prevent costly repairs**
- ◊ **Protect your drinking water**
- ◊ **Maintain your well and septic systems**

Well & Septic Inspection Certification and Maintenance for Homeowners Workshop

Where: Clark County Public Works Ops Center, bldg B1 (4700 NE 78th St, Vancouver)

Date: Tuesday, February 23

Time: 6 to 9 PM

Cost: $15 per household

Registration and details at:
www.brownpapertickets.com/event/2499349

**System must be owner occupied and gravity fed. Not vaild for sale of house, homeowner can self-inspect every other inspection, alternating with a certified O&M professional.*

Jointly Sponsored by: WSU Clark County Extension, Clark County Environmental Services, and Clark County Public Health.

Washington State University Extension | WSU Clark County Extension Small Acreage Program | Environmental Services | Public Health

WSU Extension programs and employment are available to all without discrimination. Reasonable accommodations will be made for persons with disabilities and special needs who contact 360-397-6060 ext 0 at least two weeks prior to an event.

Septic System O&M

- **O&M is required** if not connecting to sewer.

- **Septic inspections and maintenance**
  - Inspections required every 3 years,
  - Maintenance recommended every 5 years
  - Replacement every 25-40 years.

- **Workshops, education and outreach**

- **Past Due Operations and Maintenance** notification letters

- **Poop Smart Clark** – septic system inspection and maintenance rebate program

Age and condition of septic systems

- Many systems over **40 years old**
- Condition and function of systems is **unknown**
- **First step** = identify septic system age and condition, past due for inspections and maintenance
- **Septic system prioritization**

Sewer Connection Financing

- 20-year financing program
- **$19,000 dollars =** average cost to connect
- Incentive to connect in **2 years**

SCIP Education and Outreach

- Outreach for SCIP may be challenging
- Costs to connect may differ greatly
- Opportunity:
  - Complete cost analysis before outreach
  - Develop cost-share, rebate, or grant assistance program

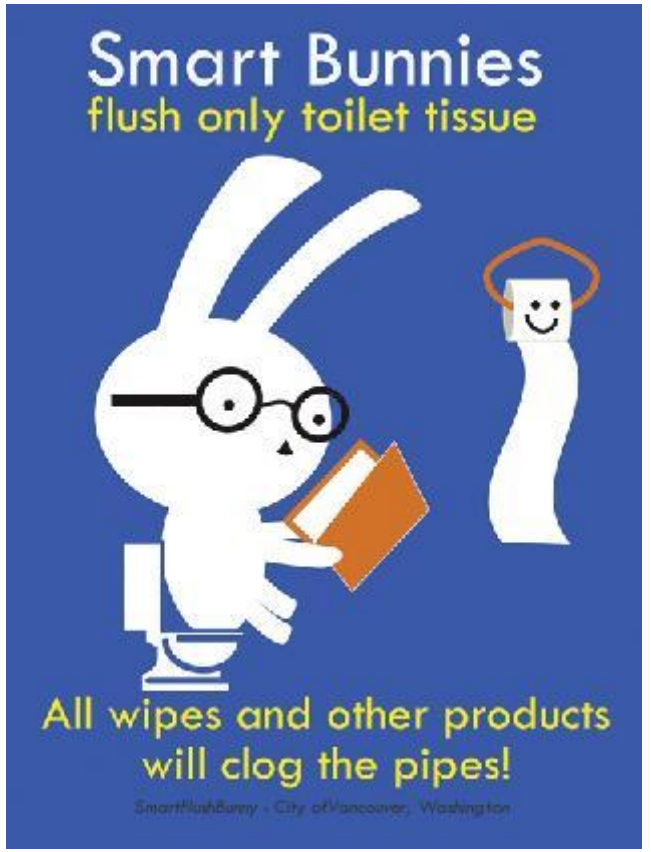
Sewer Collection System

- **High priorities**
  - Infiltration and Inflow
  - Root management
  - Manhole sealing and repair
  - Lateral connections
  - Lining

- **Inspection program**
  - Televising every 7 to 8 years
  - Dye and smoke testing as needed

Sewer Education and Outreach

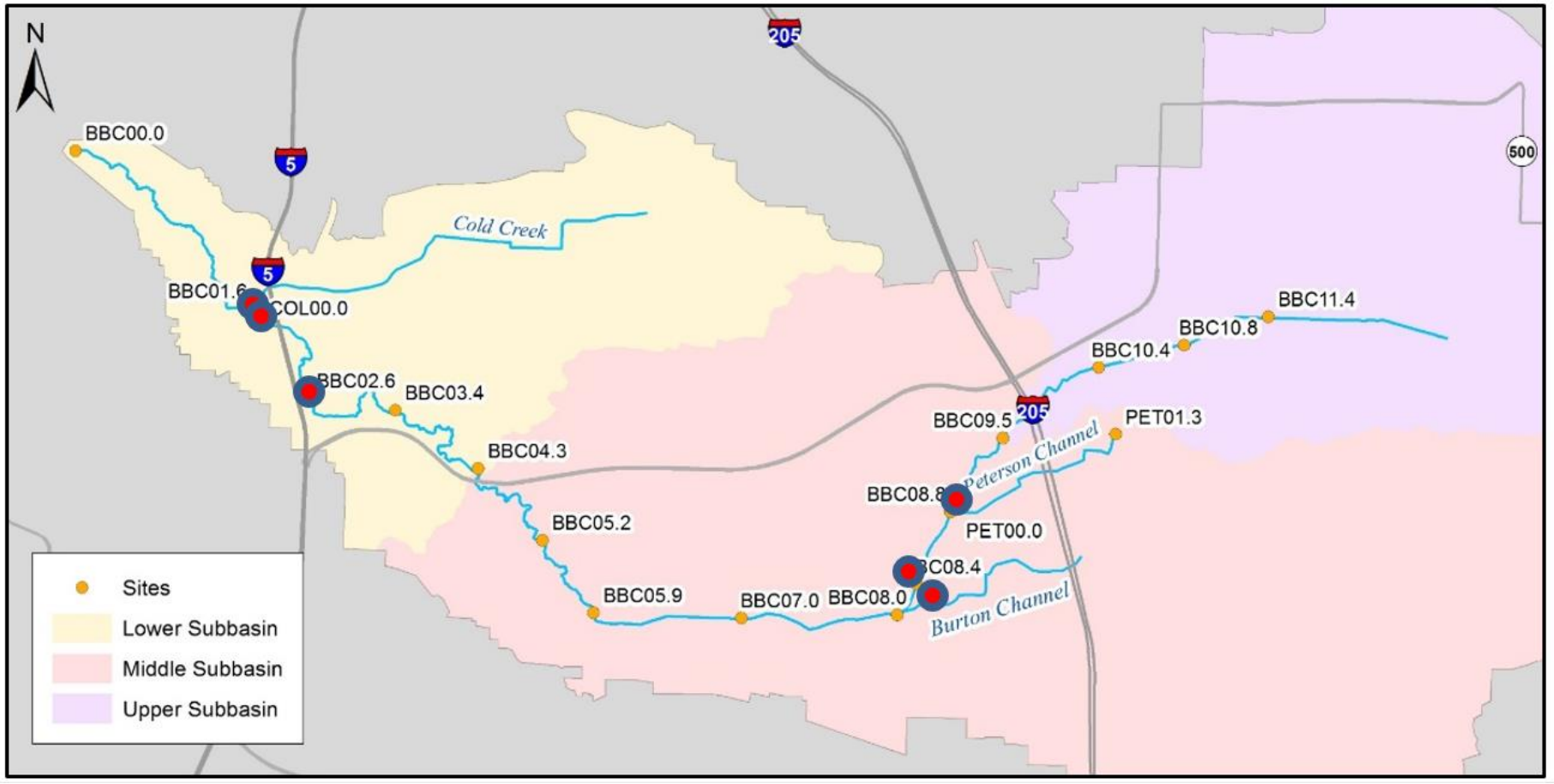
- Focus areas
  - Fats, oils, and grease
  - Flushable wipes



Partners

- **Clark County Public Health** – Septic systems
- **Clark Regional Wastewater District** – Sewer
- **Poop Smart Clark** – Outreach, Education, Technical & Financial Assistance

Priorities from Source Assessment, 2018



Priority 1: Geometric means >200cfu/100ml in dry season & load reductions over 75 percent

DEPARTMENT OF ECOLOGY
State of Washington

DRAFT Implementation Actions
Sewer Connection and Septic Systems

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Priority areas for sewer and septic implementation

SS1.1 Prioritize sewer and septic system implementation to areas with known bacteria problems in the lower and middle watershed.

- Phase 1 implementation should be targeted to Peterson Channel, Cold Creek, Burton Channel, and river miles 8.4, 2.6, and 1.6.

SS2.2 Delineate drainages and sewered areas that are contributing to priority areas for water quality. Identify specific neighborhoods, sewer lines, and parcels with potential to impact water quality.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Septic systems inspections and maintenance

- **SS2.1** Complete a septic systems record assessment to confirm which septic systems are draining to priority areas for water quality.

- **SS2.2** Complete a septic system records assessment to identify age, condition, and criticality of septic systems. Identify which septic owners are past due for septic system inspections and maintenance.

- **SS2.4** Implement a past due operation and maintenance lettering effort, with the goal to send mailers to landowners that are past due for septic systems inspection and maintenance.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Septic systems – inspections and maintenance

- **SS2.4** Utilize Poop Smart Clark to implement a septic system rebate program for inspections and maintenance. Develop new component of Poop Smart Clark to financially assist septic owners with sewer connection.

- **SS2.6** Utilize source tracing and pollution identification and correction methods to identify and confirm failing septic system that are contributing to water quality exceedances.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Sewer connection

- **SS3.1** Complete outreach to septic system owners that have not connected to sewer who are located in priority drainages for water quality.

- **SS3.4** Develop financial assistance programs for homeowners who want to connect to sewer. These may include applying for a grant to help landowners connect to sewer, implementing a rebate or cost-share program.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Sewer O&M

- **SS4.1** Complete sewer televising and inspection to identify, inventory, and map sewer repair needs, focusing on identifying cracks, leaks or holes in sewer pipes, presence of roots, and challenges with manholes. Document priority assets and geographic locations for O&M or replacement.

- **SS4.2** When necessary, utilize smoke testing and dye testing to investigate challenge with infiltration and inflow, and illicit connections.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Sewer O&M

- **SS4.5** Prioritize sewer repairs and capital investments in areas with known bacteria issues in the middle and lower watershed, focusing on assets that are located within 200 feet of the stream.

- **SS4.6** Consider opportunities to include “proximity to known water quality concerns” in Vancouver’s criticality matrix when prioritizing infrastructure for maintenance, repairs, and capital improvement.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Sewer Capital Improvements

- **SS5.1** Prioritize sewer capital improvement projects in areas where there are known bacteria issues, specifically focusing on capital projects that will address infiltration and inflow issues, prevent or alleviate backflow or overflow issues, help fix issues with manholes, and improve the lining of sewer systems, especially where laterals and sewer mains connect.

Funding & Partners

Funding

- City of Vancouver Sewer Utility
- Water Quality Combined Funding Program (Department of Ecology)

Partners

- Clark County Public Health
- Clark Regional Wastewater District
- Washington Department of Health
- Washington Department of Ecology
- Poop Smart Clark
- Private Landowners
- Washington State University Extension

Discussion

- Questions?
- Thoughts?
- Comments?
- Feedback?
- Concerns?
- Is there anything I missed?

Stormwater & Capital Improvements

Discussion Topics

- Implementation: assessments, activities and retrofits
- Illicit Discharge Detection and Elimination
- Source Control
- Private Stormwater Facilities
- Public Education and Outreach
- Agriculture and pet waste
- Impervious Surfaces

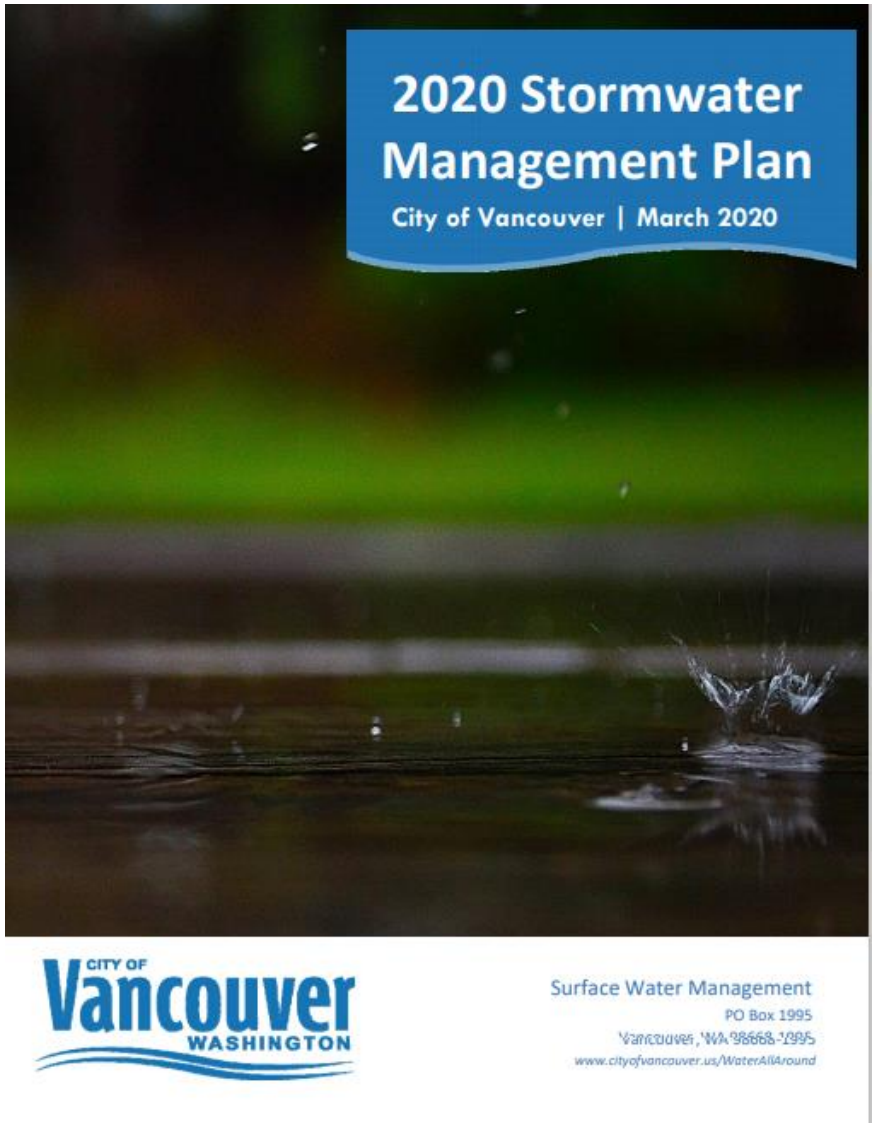
Workgroup Members: Kris Olinger, Nikki Guillot, Dan Swensen, Annette Griffy

Background

- **Western Washington Municipal Stormwater Permit**
  - City of Vancouver – Phase II
  - Clark County – Phase I
  - Washington Department of Transportation

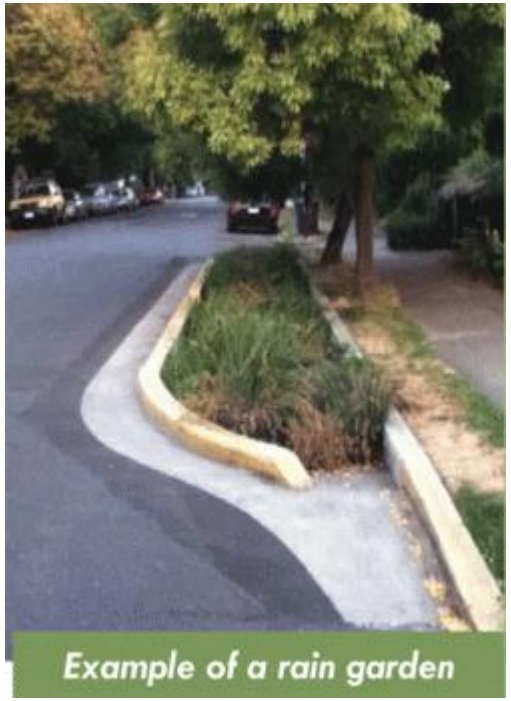
- **Permit elements**
  - Planning, mapping and documentation
  - Illicit discharge detection and elimination
  - Operations and maintenance
  - Runoff and flow controls for development
  - Source Control
  - Structural Stormwater Control
  - Public Education and Outreach

- **Vancouver** = 70 percent of Burnt Bridge Creek watershed or 13,030 acres



Implementation: assessments, activities, and retrofits

- **SFAP** = Stormwater Financial Assistance Program (Department of Ecology)
- **17 grants** for stormwater
- **LCFRB** = Lower Columbia Fish Recovery Board Outfall Assessment



Example of a rain garden

Implementation in Peterson and Burton Channel

- **Subasin-by-subasin**
  - Peterson Channel Assessment
  - Burton Channel Assessment

- **SFAP Implementation** of retrofits identified in Assessments.

- **Goal** = include assessments into Vancouver's CIP

Illicit Discharge Detection and Elimination (IDDE)

- **Focus areas**
  - Business inspections
  - Drinking water resource protection areas
  - Businesses storing or managing hazard materials

- **Indicators:** Visual and odor, dry screening

- **Focus** = one subasin per year, builds information into asset management system

IDDE

- **Estimates 100-150 IDDE complaints annually.**

- **Challenges:**
  - Remodels and home additions
  - Improper connection of downspouts
  - Contractor and plumbers obtaining required city building permits

- **Corrected through enforcement** – required by permit

- **Coordination with sewer department**

Source Control

- **New requirements** in Phase II Municipal Stormwater permit
- **Priorities businesses**
- Assessing every property with **parking lot**
- **Current focus** = properties with “potential to pollute”
  - Source Control inventory development
  - Windshield survey ~ 8,200 businesses

Source Control

- **2022** – complete necessary ordinance revisions
- **Develop outreach plan**
- **Develop source control focus group**
- **Complete interviews**
- **Opportunity** = prioritize businesses and land uses with potential to contribute bacteria and nutrients

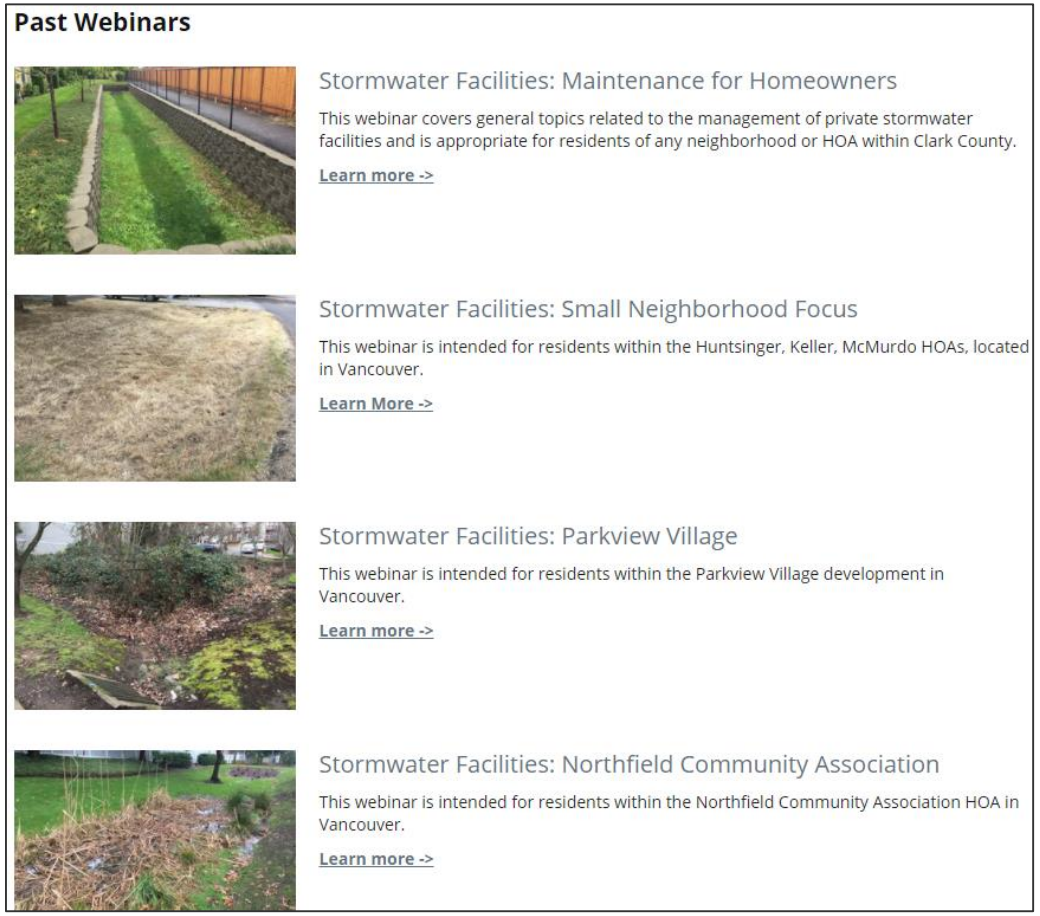
Private Stormwater Facilities

- **1,400 private facilities estimated in Vancouver**
  - ~50% are deficient

- **Providing technical assistance**
  - Site visits
  - Contractor education
  - Providing engineering drawings
  - Annual Inspections

Private Stormwater Facilities

- Working with Homeowners Associations (HOA)
  - Multi-family properties
- Encouraging phased maintenance
- Working with HOA's challenging



Public Education and Outreach

- Source Control Webinar Series – 2022
- Pollution Prevention at Home Webinar Series
- EPA Wash Right Campaign
- Farmer’s Market Vendor Education
- Goal = Centralized spill kits

Agriculture and Pet Waste

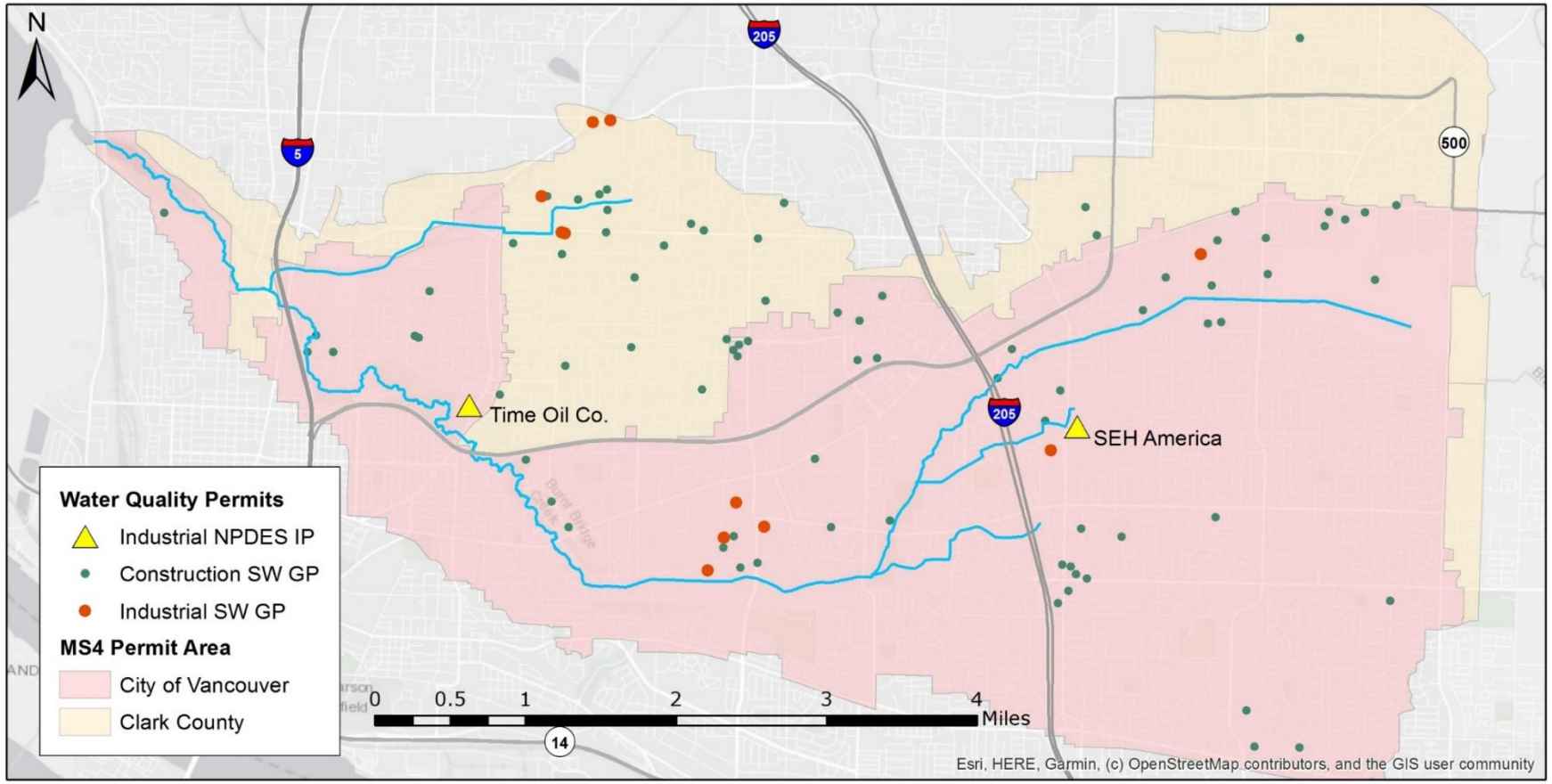
- No agriculture or manure ordinance in City
  - Defers to Clark Conservation District
- Questions about agriculture and manure enforcement in Vancouver
- Pet waste = Canines for Clean Water

Impervious Surfaces

- Stormwater drainage fee

- Opportunity
  - Prioritize most densely impervious subbasins for stormwater activities and retrofits
  - Neighborhoods
  - Roads
  - Parks
  - Commercial Areas

Priorities from Source Assessment, 2018



~70% or 13,030 acres is covered by the City of Vancouver MS4 permit

Priorities from Source Assessment, 2018

Roads and residential areas greatest land uses

- **Lower watershed: RM 0-5**
  - 45% residential
  - 29% roads
  - 7% commercial, manufacturing, mining
  - Vancouver / Clark County MS4 and some WSDOT
- **Middle watershed: RM 5-10**
  - 45% residential
  - 24% roads
  - 15% commercial, manufacturing, mining
  - Mostly Vancouver MS4, some Clark County & WSDOT
- **Upper watershed: RM 10-13**
  - 43% residential
  - 21% roads
  - 11% commercial, manufacturing, mining
  - City of Vancouver and Clark County MS4

DEPARTMENT OF ECOLOGY
State of Washington

DRAFT Implementation Actions
Stormwater and Capital Improvements

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Priority areas for stormwater management

SWM1.1 Prioritize stormwater management efforts to improve bacteria conditions in the middle and lower watershed

- Prioritize Burton Channel, Cold Creek, and Peterson Channel, as well as river miles (RM) 8.4, 2.6, and 1.6 for having dry season bacteria exceedances over 200 cfu/100ml

SWM1.2 Focus nutrient source control efforts to river miles 5.9, 7, 9.5, and 11.4. Prioritize stormwater management efforts to improve dissolved oxygen conditions at these locations.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Stormwater retrofits and capital improvements

SWM2.1 Incorporate proximity to impaired surface water into Vancouver's criticality matrix when prioritizing stormwater retrofits in asset management and capital improvement programs.

SWM2.3 Complete mapping to delineate drainage areas contributing to priority areas for water quality in Burnt Bridge Creek

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Stormwater retrofits and capital improvements

SWM2.4 Incorporate results from the subbasin studies completed in Burton Chanel and Peterson Channel into Vancouver's Capital Improvement Program. Prioritize implementation of projects that will help improve water quality in priority areas of Burnt Bridge Creek.

SWM2.5 Collaborate with Clark County to complete a basin study of Cold creek to identify retrofit opportunities to improve water quality.

SWM2.10 Complete an audit of local codes, ordinances, and standards to identify opportunities to improve local codes to encourage adoption of low impact development in new development and redevelopment projects. When possible, increase building setbacks, reduce parking lots sizes, and increase vegetation area and root zone requirements.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Stormwater retrofits and capital improvements

SWM2.12. Implement stormwater retrofits to treat runoff from roads. This includes encouraging WSDOT to install flow control and water quality treatment BMPs to manage runoff from I-205, I-5, and SR-500.

SWM 2.13 Provide technical assistance to private facility owners through site visits and by completing annual inspections.

- Prioritize facilities in drainage areas contributing to known water quality impairments.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Illicit Discharge Detection and Elimination (IDDE)

SWM3.1. Focus Illicit Discharge Detection and Elimination (IDDE) efforts in subwatersheds that have known bacteria impairments, starting with Burton Channel, Peterson Channel, and Cold Creek, river miles 8.4, 2.6 and 1.6.

SWM3.3 Implementing monitoring and source tracing in areas with known bacteria issues to identify and trace pollution issues in Burnt Bridge Creek. This may include pollution identification and correction efforts and microbial source tracking upstream from outfalls, into Vancouver's infrastructure and manholes

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Illicit Discharge Detection and Elimination (IDDE)

SWM3.4 Prioritize implementation of infrastructure televising, smoke testing, and dye testing in Burton Channel, Peterson Channel, Cold Creek, and at river miles 8.4, 2.6 and 1.6.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Source Control

SWM4.3 Prioritize businesses and land use types that have the greatest potential to contribute bacteria or nutrients to Burnt Bridge Creek for source control inspections

SWM4.4 Focus implementation of pet and goose waste BMPs at parks, along trails and greenways, and other public areas in subwatersheds with wet and dry season bacteria issues.

SWM4.11 Work with Royal Oaks Golf Club to implement operational and structural source control efforts to reduce nutrient loading

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Source Control – Agriculture

SWM4.7 Develop, adopt, and enforce a citywide agricultural and manure management ordinance. Collaborate with Poop Smart Clark to provide technical and financial assistance to landowners to address bacteria issues on private property.

SWM4.8 Provide funding support to Clark Conservation District or other agricultural service organizations to support implementation of agricultural technical assistance, planning, and BMP implementation in Burnt Bridge Creek.

Funding Sources & Partners

Partners

- **Jurisdictional**
  - Clark County Clean Water Division
  - Washington Department of Transportation
- **Implementation**
  - Urban Forestry Program
  - Stormwater Partners of Southwest Washington
  - Water Resources Education Center
  - Watershed Alliance of Southwest Washington
  - Clark Conservation District
  - LINC?

Funding Source

- City of Vancouver Stormwater Utility
- WSDOT
- Clark County
- Water Quality Combined Funding Program – Department of Ecology

Discussion

- Questions?
- Thoughts?
- Comments?
- Feedback?
- Concerns?

BREAK @ 2:00 p.m.

5 minutes

Operations & Maintenance (stormwater)

Discussion Topics

- Urban Forestry and Greenways
- Stormwater O&M
- Balancing retrofits and maintenance
- IDDE – Coordinating with sewer
- ERTS complaints and spill response
- Leaf management
- Challenges

Workgroup Members: Brian Potter, Tim Esary, Tim Buck, Aron Rice, Annette Griffy

Background on O&M

- 26 Employees
- Activities
  - Street sweeping
  - Vactoring
  - Flushing
  - Infrastructure televising
  - Annual facility maintenance
  - Outfall inspections
  - Maintenance repairs
  - Erosion control and construction stormwater
  - Maintenance and stewardship of Greenway – tree planting, mowing, irrigation, invasive species management

Urban Forestry and Greenways

- **Focus of O&M work**
  - Root zone management
  - Spraying
  - Irrigation
  - Vegetation maintenance

Stormwater O&M

- **Objective:** Meet terms and conditions of stormwater permit
  - Completes inspections
  - Implements operational BMPs
  - Maintenance on certain asset types

- **Opportunity**
  - Prioritize O&M to geographic areas with water quality issues

Challenges

- Slow draining areas
- Areas with dry wells
- Assets reaching end of useful life
- Preventing pollutant loading to groundwater

Challenges

- Balancing replacement and retrofits with maintenance
- New stormwater facilities = more maintenance

Coordination with sewer department

- IDDE
- Eliminating cross connections
- Televising
- Addressing sewer issues in MS4

ERTS complaints and spill response

- O&M team first to respond
- Imitate notifications
- Coordinate response
- Contain and cleanup spill

Leaf Management

- Coordinate with Vancouver solid waste program
- Capture and contain leaf material
- Free leaf pickup coupon
- Disposal and composting encouraged
- Leaf ordinance

Challenges

- Unhoused population living near Burnt Bridge Creek has increased
- Homeless Assistance and Response Team (HART)
- Talkin 'Trash
- RV Pump out programs

DEPARTMENT OF ECOLOGY
State of Washington

DRAFT Implementation Actions
Operations and Maintenance

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Priority areas for operations and maintenance

OM1.1 Prioritize operations and maintenance activities to drainage areas contributing to bacteria water quality issues in the middle and lower watershed.

- This include Burton Channel, Cold Creek, and Peterson Channel, as well as river miles (RM) 8.4, 2.6, and 1.6.

OM1.2 Prioritize infrastructure televising in areas with bacteria and nutrient pollution challenges to support IDDE efforts.

OM1.3 Prioritize street sweeping, vactoring, and implementation of erosion control BMPs and the construction stormwater permit to areas with pH exceedances. This includes areas contributing to river mile 0 and Burton Channel.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Priority areas for operations and maintenance

OM1.5 Continue infrastructure assessment to understand age, condition, performance, and criticality of infrastructure. Identify which assets are reaching the end of their useful life, and prioritize them for replacement.

OM1.8 Document and create a database of neighborhoods, roads, and assets that have operations and maintenance challenges.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Urban Forestry and Greenways

OM2.5 Develop financial and technical assistance resources for landowners to complete long-term maintenance on tree-plantings, after the 5-years of maintenance through Project Restore ends. Maintenance on planting sites should be completed for at least 10 years post implementation.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Stormwater

OM3.3 Coordinate with sewer O&M staff to identify and eliminate cross connections. When necessary, utilize investigative monitoring, smoke testing, and dye testing to investigate challenge with infiltration and inflow, and illicit connections.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Other

OM3.5 Prioritize leaf cleanup outreach and implementation to areas with dissolved oxygen challenges to help improve water quality by keeping leafs out of Burnt Bridge Creek, which can lower dissolved oxygen levels when decomposing. This includes river miles 5.9, 7, 9.5, and 11.4.

OM3.6 Provide support and resources for the Talkin' Trash program to support cleanup of encampment areas in Burnt Bridge Creek. When and where feasible, host RV pump out programs, provide dump out locations, and waste receptacles.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Other

OM3.9 Create a dedicated source of funding for infrastructure maintenance. Seek out additional grant funds to support maintenance efforts. When possible, account for lifecycle maintenance needs in project scoping, grant applications, funding requests, staffing plans, and municipal budgeting efforts

Funding Sources & Partnership

Funding

- City of Vancouver – Stormwater & Sewer Utility

Partners

- Clark County Clean Water Division
- Washington Department of Transportation
- Talkin' Trash
- Homeless Assistance and Response Team (HART)
- Volunteers
- Private Landowners
- City of Vancouver Sewer & Solid Waste Departments

Discussion

- Questions?
- Thoughts?
- Comments?
- Feedback?
- Concerns?
- Is there anything I missed?

Public Education & Outreach

Discussion Topics

- Urban Forestry and Greenways
- Water Resources Education Center
- Student Watershed Monitoring Network
- Partnerships and collaboration
- Stormwater
- Sewer connection and septic systems
- Diversity, equity, and inclusion
- Challenges

Workgroup Members: Rick McConaghy, Jessica George, Charles Ray, Loretta Callahan, Nikki Guillot, Kris Olinger, Annette Griffy

Background

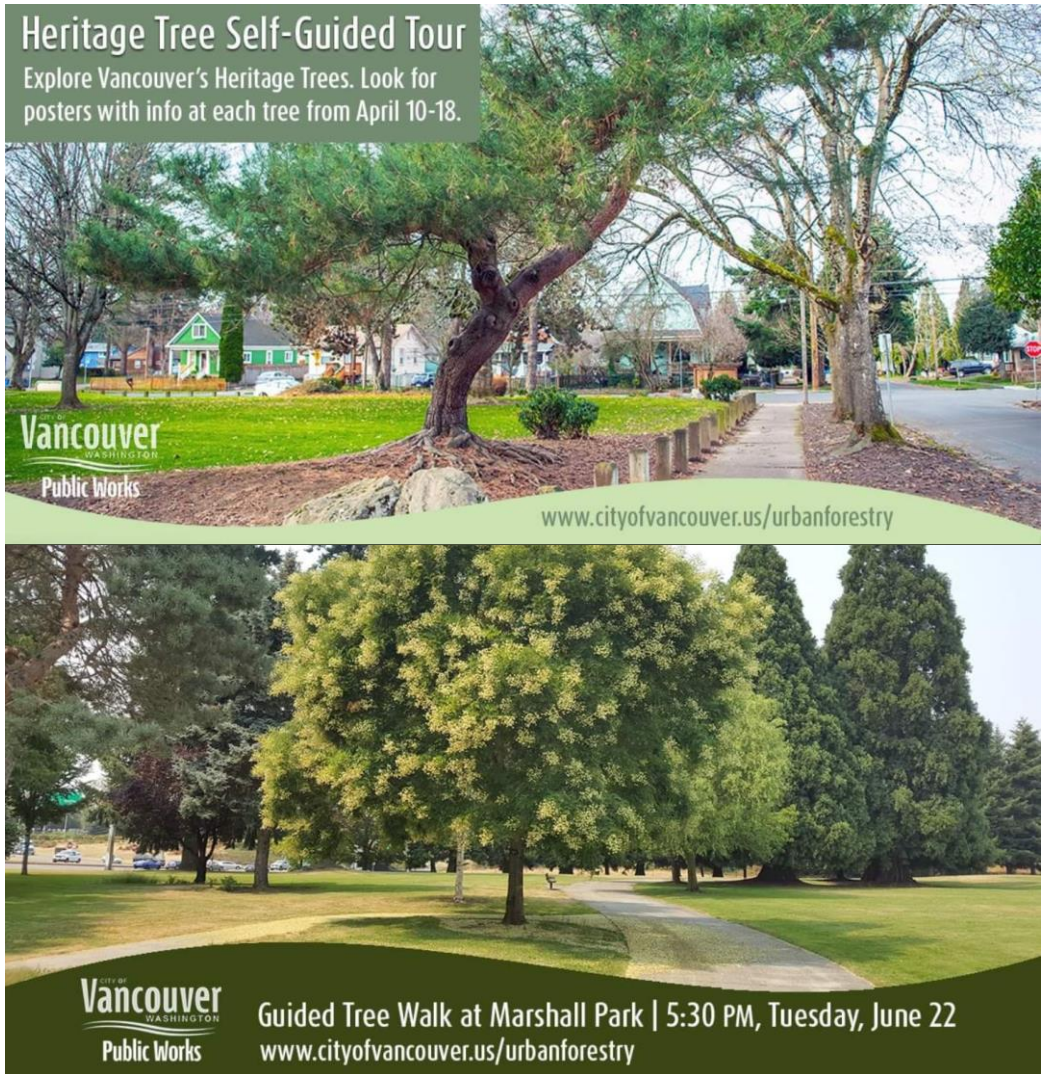
- **Goals:**
  - Raise awareness
  - Inspire behavior change
  - Promote stewardship

- **Partnerships**
  - Friends of Trees
  - Columbia Springs
  - Watershed Alliance of Southwest Washington
  - Lower Columbia Estuary Partnership
  - Clark Conservation District
  - Schools Neighborhoods
  - Church groups
  - Businesses
  - Clark County Nature Network
  - Washington Service Corps
  - AmeriCorps
  - Master Gardener Program

Urban Forestry and Greenways

- **Target audience:** Property owners who want to remove or plant trees & volunteers.
- **Thousands of volunteers engaged annually**
- **2-year workplan guides work**
- **Annual report summarizes activities**
- **Performance measures & effectiveness measured**

Urban Forestry Outreach Methods



- **Social media**
- **Printed resources:** Brochures, Flyers, Posters
- **Events:** Arbor Day & Arbor Month, Old Apple Tree Festival, Heritage Tree Program, Pop-up Arboretums, Heritage Tree Tours, Tree talk workshops.
- **Training:** Tree care and lawn maintenance, tree stewards training
- **Neighborhood stewards**
- **AmeriCorps & Seasonal Interns**
- **Urban Forestry Commission**
- **Volunteers**

COVID-19 Impact

- Updated technical information
- Updated website
- Developed more online materials & videos
- Monthly newsletter

Water Resources Education Center

- Opened in 1996
- Hosts K-12 Field Trips, Workshops, Special Events
- Goal = Reopen January 2022
- Beach and Greenway Cleanups
- Streamside Chats
- Columbia River Festival

Student Watershed Monitoring Network

- Water quality curriculum
- Watershed monitoring
- Virtual Essay contest
- FieldScope

Partnerships and Collaboration

- Watershed Alliance of Southwest Washington
- Columbia Springs
- Clark County Public Health
- Talkin' Trash - Sold Waste Management Program & Share Vancouver

Stormwater

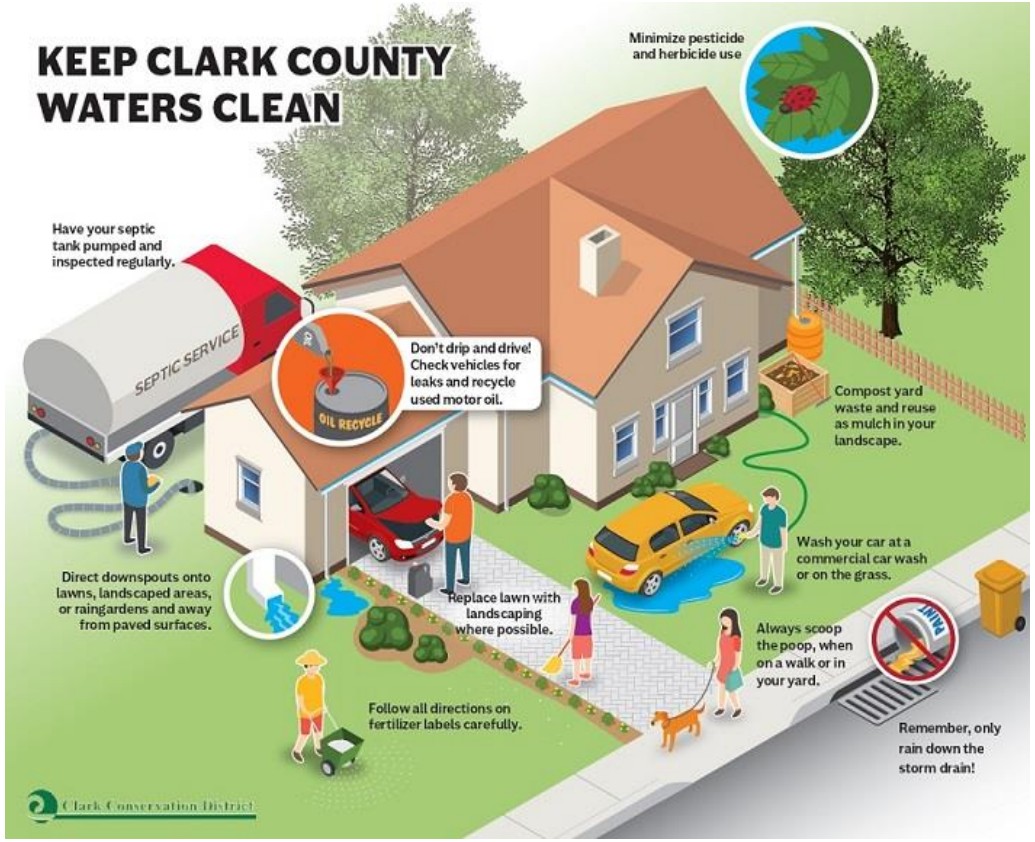
- Pollution Prevention
- Source Control
- Wash Right Campaign
- Pet waste

Diversity, Equity, and Inclusion

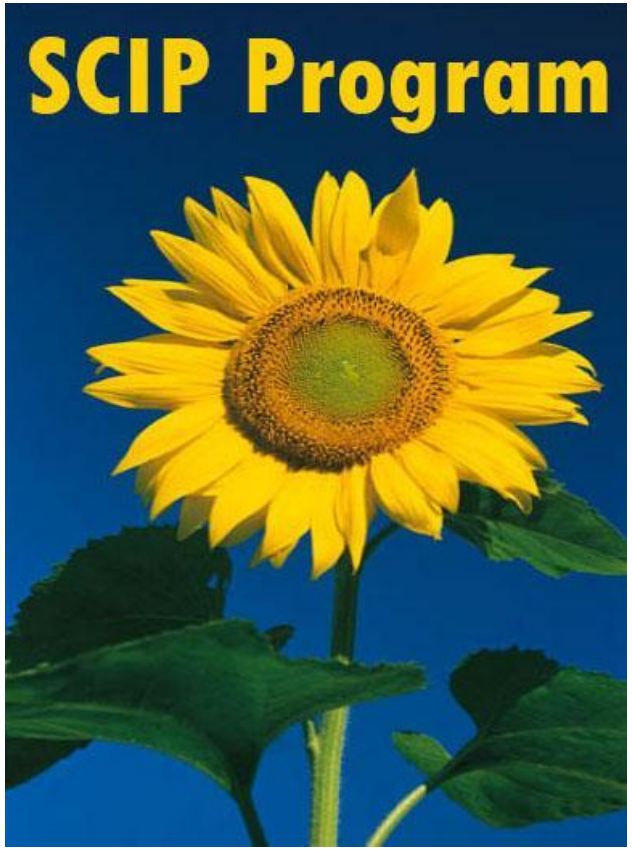
- Accessibility of documents
- Language translation services
- Community based social marketing (CBSM)
- City-level equity map
- Working with community development organizations
- Developing financial and technical assistance resources

Sewer connection and septic systems

- **Vancouver focus** = sewer extension
- **CCPH** = Vancouver relies on CCPH for education and outreach
  - Past due operations and maintenance notification letters
  - Inspection and maintenance rebate program



Sewer Connection and Incentive Program



- Outreach focused on new sewer construction
- Goal = encourage connection to sewer
- Provide accurate pricing & financing information

DEPARTMENT OF ECOLOGY
State of Washington

DRAFT Implementation Actions
Public Education and Outreach

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Target Audiences

ED1.1 Prioritize outreach and education to homeowners with septic systems on properties adjacent to Burnt Bridge Creek and its tributaries.

ED1.2 Prioritize outreach and education to public and private landowners with riparian properties adjacent to the highest shade deficits on Burnt Bridge Creek mainstem and tributaries.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Urban Forestry and Greenways

ED2.4 Prioritize outreach to private landowners in riparian areas to promote tree planting projects through Project Restore. Prioritize outreach to private landowners in upland areas through Friends of Trees.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Stormwater

ED3.1 Collaborate with Clark County and the Washington Department of Transportation, and the Stormwater Partners for Southwest Washington, to develop and implement stormwater education activities in the Burnt Bridge Creek watershed.

ED 3.2 Increase the number of dog waste facilities in the Burnt Bridge Creek watershed. Utilize Canines for Clean Water education for public education and outreach.

- Establish relationships with business that provide pet waste removal services to foster new programs to remove dog waste from watersheds. Partnerships with local veterinarians, groomers, pet boarding, shelters, pet stores, and dog licensing should also be explored to educate on water quality.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Stormwater

ED3.3 Prioritize stormwater source control outreach for bacteria and nutrient pollution to areas with known water quality problems.

- **ED5.4** Provide education on best practices for fertilizer application for tree care and lawn maintenance. Prioritize education and outreach to areas with dissolved oxygen impairments.

ED3.4 Prioritize pollution prevention education that focuses on bacteria and nutrient reduction practices for pet waste, livestock, lawn care, and humans.

ED3.7 Continue to develop education and outreach programs for Homeowners Associations (HOAs) focused on private stormwater facility maintenance, and best practices for pesticide and fertilizer application, and other pollution prevention activities.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Sewer Connection and Septic Systems

ED4.1 Collaborate with Clark County Public Health and Clark Regional Wastewater District to develop and implement new outreach materials for septic systems and sewer connection.

ED4.2 Commit to hosting an annual Well and Septic workshop in the Burnt Bridge Creek watershed in partnership with Clark County Public Health, Washington State University Extension, and other Poop Smart Partners.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Sewer Connection and Septic Systems

ED4.4 Complete outreach to septic system owners that have not connected to sewer who are located in priority drainages for water quality.

ED4.5 Develop financial assistance programs for homeowners who want to connect to sewer. These may include applying for a grant to help landowners connect to sewer, implementing a rebate or cost-share program, or developing other tax incentives to encourage homeowners to connect to sewer.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Other

ED5.5 Continue to implement the new Talkin; Trash program, which employ houseless individuals to complete community litter clean up. Consider opportunities to prioritize implementation in areas on the greenway where there have been impacts to riparian vegetation. Explore opportunities to incorporate sanitation education into the program, including developing new RV pump out programs to manage sanitary waste from unhoused populations.

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Other

ED5.8 Develop technical and financial assistance resources to help support implementation of water quality best management practices and maintenance in overburdened communities. Ensure education and outreach materials are accessible and translated into non-English languages

Overview of DRAFT Implementation Actions

Note: Due to time limitations, this is not a full comprehensive list of all actions

Other

ED5.12 Conduct outreach and education to landowners who have….

- completed unauthorized water withdrawals off Burnt Bridge Creek.
- implemented riprap or bank armoring without a permit.
- installed manmade ponds or impoundments on Burnt Bridge Creek

ED5.16 Complete outreach to private landowners with erosion issues on private property and identify opportunities for streambank stabilization and riparian restoration.

Discussion

- Questions?
- Thoughts?
- Comments?
- Feedback?
- Concerns?
- Is there anything I missed?

3 Next Steps

Next steps

1. **Reconvene workgroups?**
   - Urban Forestry and Greenways
   - Sewer Connection and Septic Systems
   - Stormwater and Capital improvement
   - Operations and Maintenance
   - Public Education and Outreach
2. **Review Meeting Summaries & Draft Implementation Actions**
3. **Incorporate comments into summaries**
4. **Request additional information / review additional sources**
   - Reports & assessments
   - Mapping
   - Permits
   - Past projects
5. **Assign responsibility of implementation actions**

Burnt Bridge Creek Partnership

Where are we going?

Summer 2021*: Continue information gathering & learning*

Fall 2021

External Partnership Meeting

- Clark County
- WSDOT
- Lower Columbia Estuary Partnership
- Watershed Alliance
- Clark Conservation District
- Etc.

Winter 2021

Public Webinar - TBD

January 2022

Internal DRAFT Burnt Bridge Creek TMDL Alternative Restoration Plan

Summer 2022

External DRAFT Burnt Bridge Creek TMDL Alternative Restoration Plan for EPA review

Goal: Complete by end of 2022

Information needed to achieve EPA requirements

1. Implementation cost estimates
2. Criteria to measure progress
3. Implementation milestones, targets, and timelines
4. Effectiveness monitoring plan
5. Commitment to evaluate implementation progress

Future topics

To be discussed at a future date…

- **Point Sources**
  - SEH America
- **Local water use**
  - Consumptive uses
  - Critical aquifer recharge areas
- **Other?**

Engaging External Partners – Fall 2021

- **Jurisdiction**
  - Clark County Clean Water Division
  - Clark County Public Health
  - Clark Regional Wastewater District Washington Department of Transportation
- **Implementation**
  - Lower Columbia Estuary Partnership
  - Watershed Alliance of Southwest Washington
  - Clark Conservation District
  - Friends of Trees
- **Other**
  - Lower Columbia Fish Recovery Board
  - Washington Department of Fish and Wildlife
  - Environmental Protection Agency

Anyone else?

Thank You for Your Commitment to Clean Water

DEPARTMENT OF ECOLOGY
State of Washington

Questions?

Thank You!

Devan Rostorfer | Water Quality Specialist & TMDL Lead
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