



**Burnt Bridge Creek
Urban Forestry and Greenways
Workgroup Meeting**



DEPARTMENT OF
ECOLOGY
State of Washington
SOUTHWEST REGION OFFICE

Welcomes & Introductions

- *Name, Title, Department*



Meeting Objectives

- 1. Review priority locations for water quality improvement from Source Assessment (15 minutes)**
- 2. Begin implementation planning (60 minutes)**
 - Priority areas for implementation.
 - Implementation goals, actions, and opportunities.
 - Implementation challenges.
 - Milestones, targets, and timelines for implementation.
 - Criteria to measure progress (performance measures).
 - Funding sources and implementation partners.
- 3. Next steps (10 minutes)**

Where have we been?

- **October 2020:** Burnt Bridge Creek Source Assessment published
- **February 2021:** Burnt Bridge Creek Partnership kicked off
- **March 2021:** Implementation workgroups assigned
 - Stormwater and capital improvements
 - Operations and maintenance
 - Urban forestry and greenways
 - Sewer connection and septic systems
 - Public education and outreach
 - Other TBD: SEH America, local water use, and monitoring
- **April-May 2021:** Implementation Workgroups
 - *Ecology having internal meeting about SEH America Facility*

Where are we going?

- **June 2021:** Submit completed worksheets to Ecology
- **Summer 2021:** Full Burnt Bridge Creek Partnership meeting
Report out on what we learned at workgroups
- **Summer 2021:** External partnership meeting – LCEP, Watershed Alliance, WSDOT, Clark County Clean water Division, Clark County Public Health, Clark Conservation District, LCFRB, etc.
- **Fall 2021:** Public Webinar
- **January 2022:** Internal Draft (City of Vancouver, Ecology, and EPA)
- **Spring 2022:** External Draft Burnt Bridge Creek Water Cleanup Plan
- **Summer 2022:** Publish *Burnt Bridge Creek Water Cleanup Plan*

Ecology's Objective

- **Lead City of Vancouver through a planning process that results in a Water Cleanup Plan that achieves EPA's requirements.**
 - Identify **causes of pollution.**
 - Estimate pollutant **reductions needed.**
 - Describe **implementation** to achieve pollutant reductions
 - Estimate **technical and financial assistance** needed
 - Develop information and **education** component
 - Develop **implementation schedule.**
 - Establish **milestones and targets**
 - Develop **criteria to measure progress**
 - Monitor to **evaluate effectiveness** of implementation efforts.

Water Quality Priorities



Burnt Bridge Creek Source Assessment

TMDL Study- *Source Assessment*

- Identify critical areas
- Identify shade deficits
- Bacteria load reductions needed
- Implementation recommendations



DEPARTMENT OF
ECOLOGY
State of Washington

Burnt Bridge Creek Watershed Fecal Coliform Bacteria, Temperature, Dissolved Oxygen, and pH

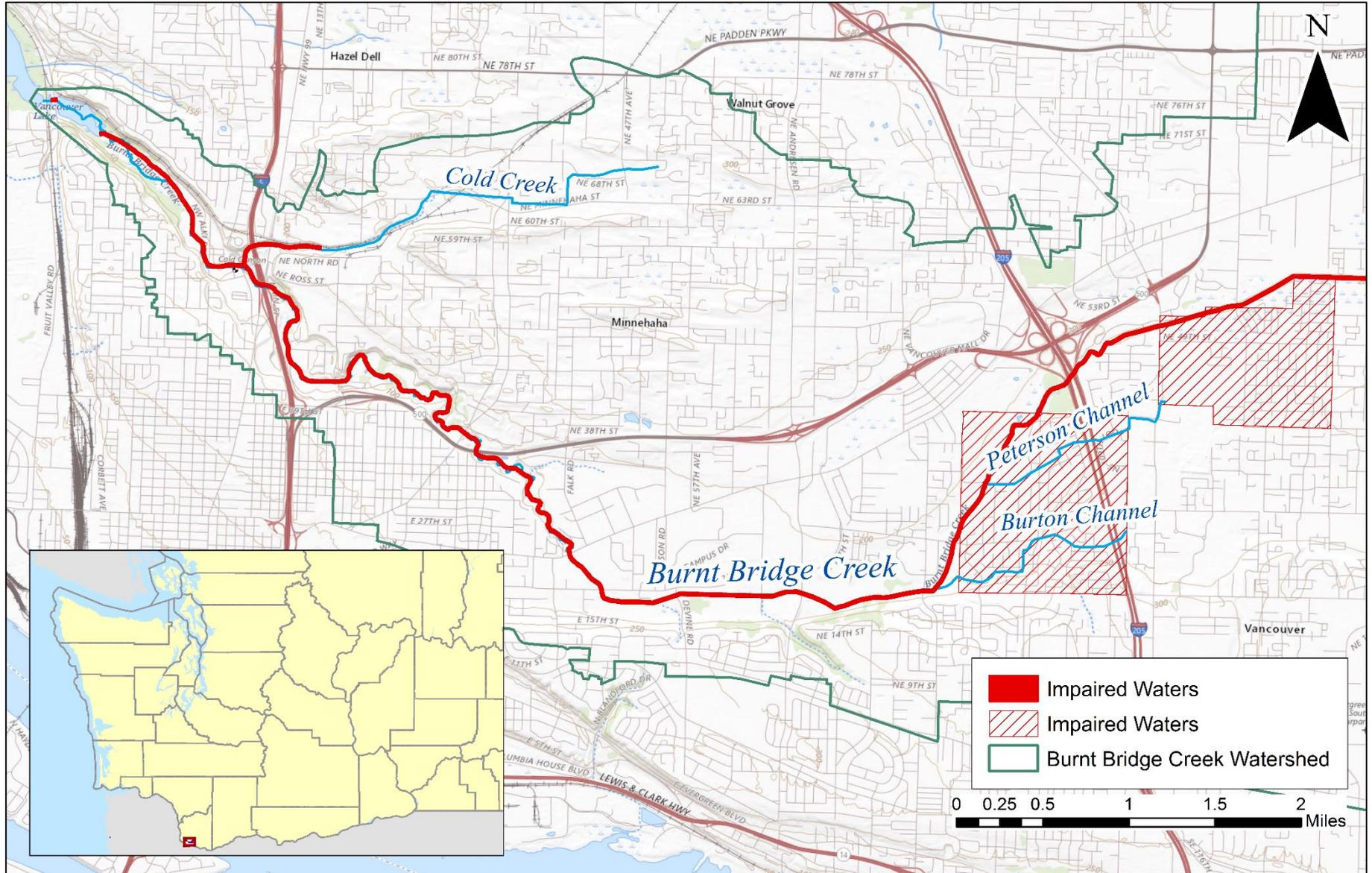
Source Assessment Report

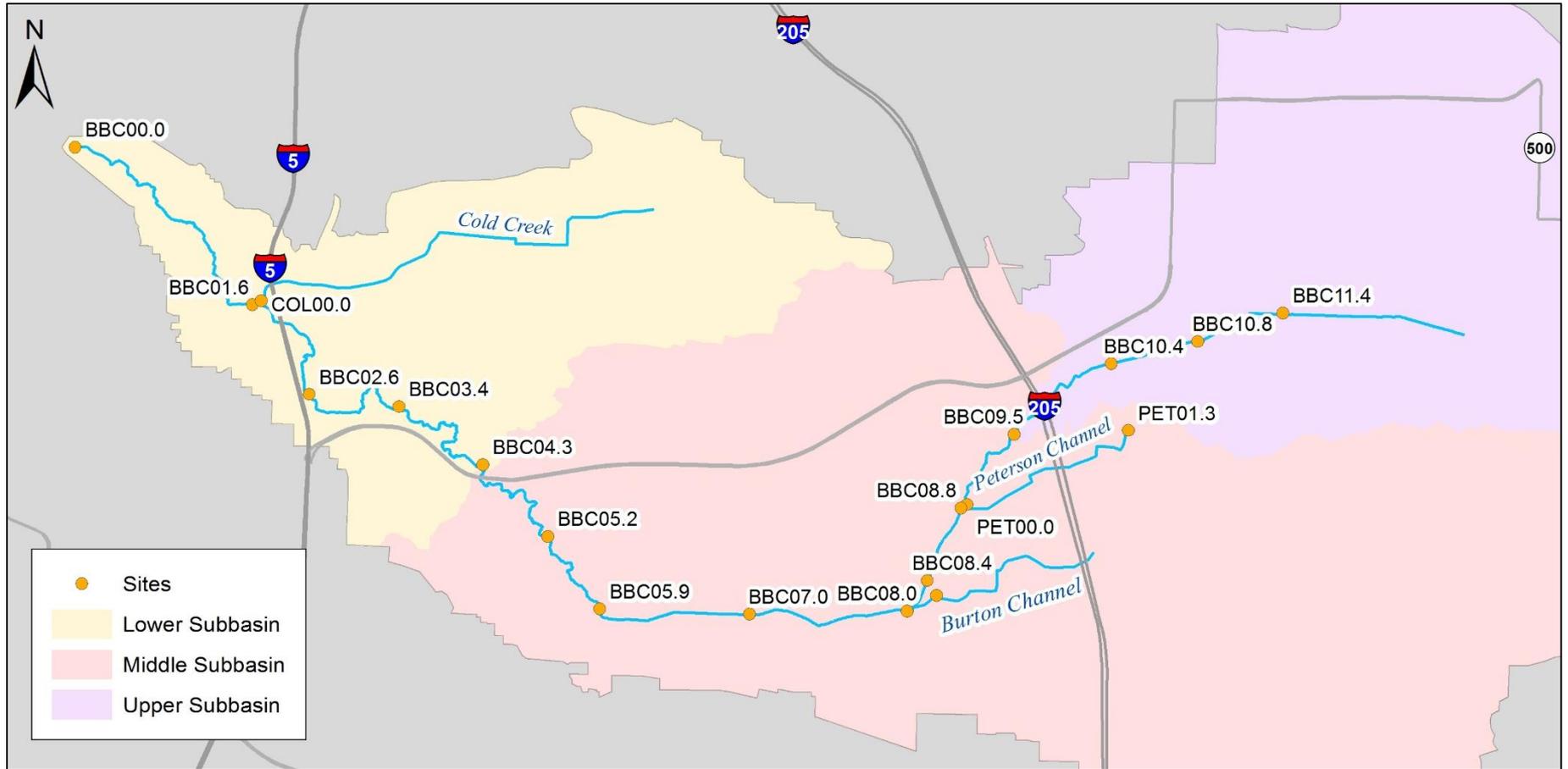


October 2020

Publication 20-03-016

303d list - Bacteria, Temperature, pH, and Dissolved Oxygen

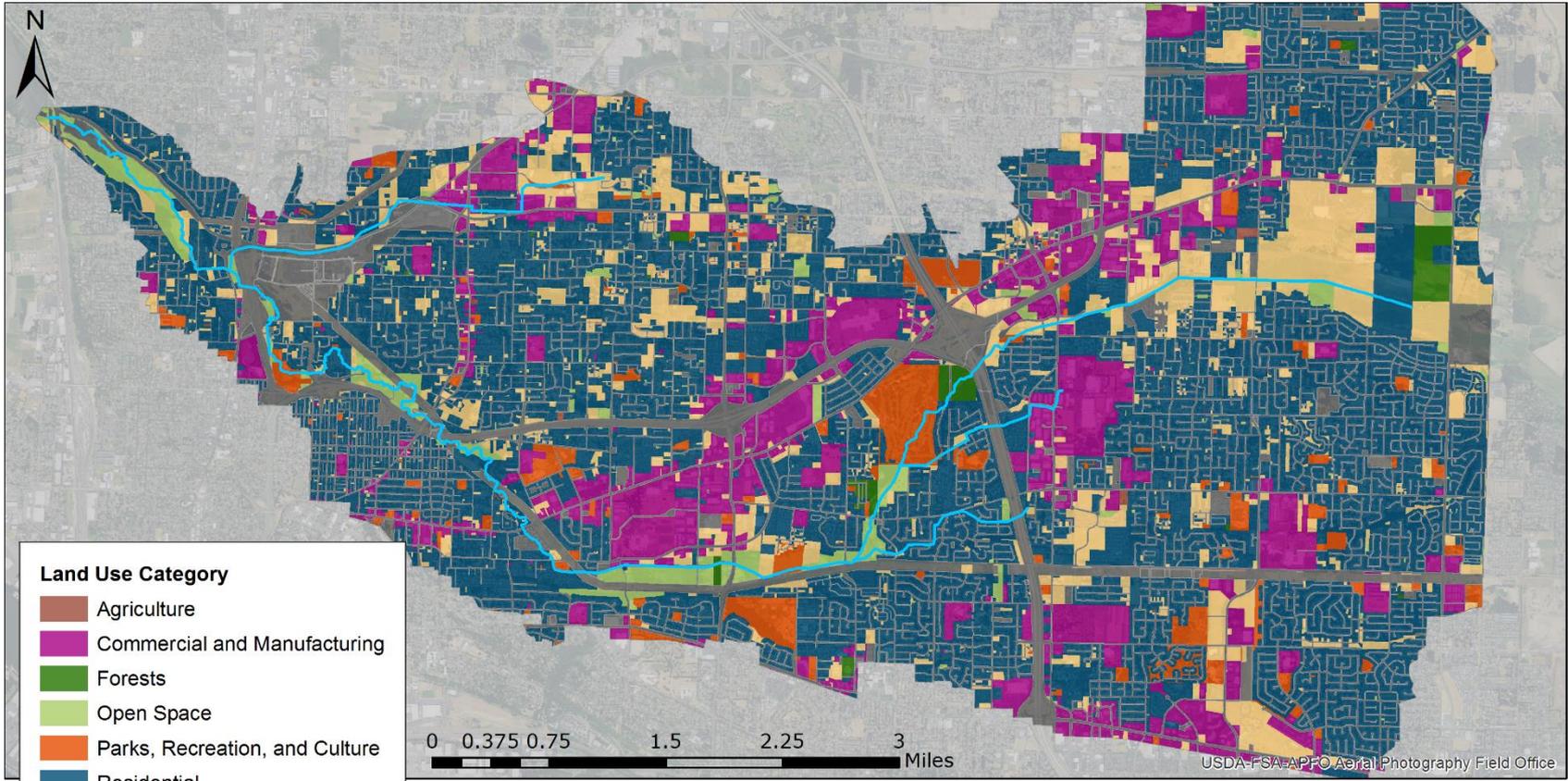


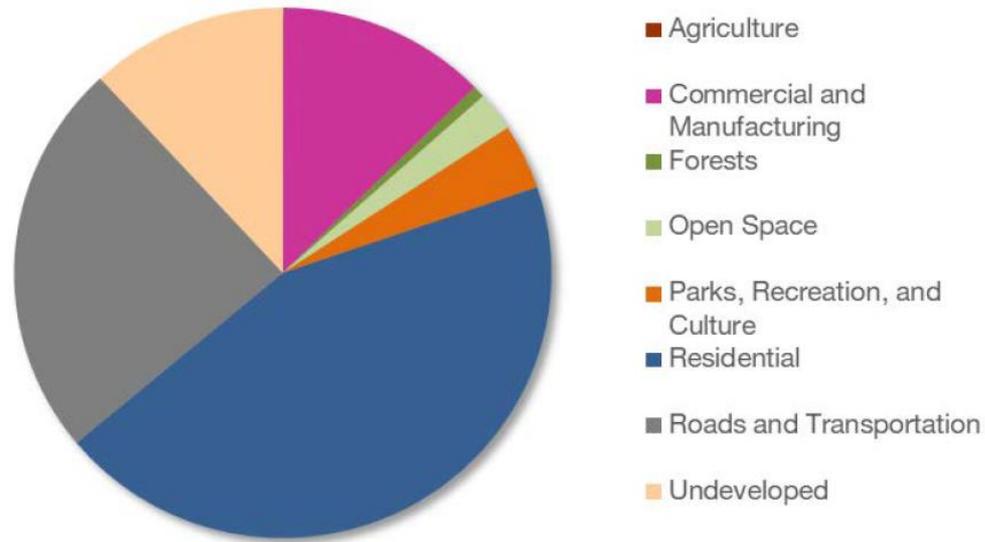


Lower = RM 0 to 5

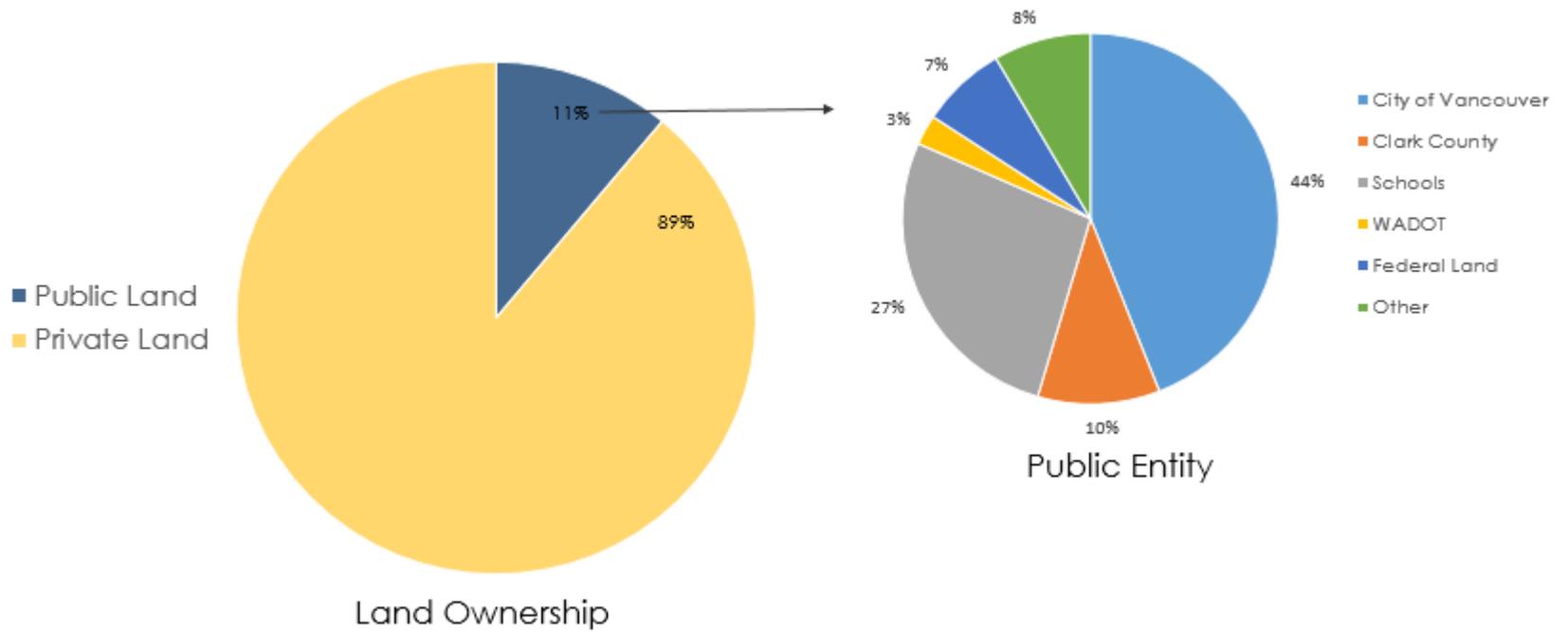
Middle = RM 5 to 10

Upper = RM 10 to 13





Land Use Category	Land Use (acre)	Land Use (%)
Agriculture	12	0%
Commercial and Manufacturing	2,333	13%
Forests	134	1%
Open Space	445	2%
Parks, Recreation, and Culture	736	4%
Residential	8,174	44%
Roads and Transportation	4,478	24%
Undeveloped	2,201	12%



Public Entity	Land Area (acre)	Land Area (%)
City of Vancouver	901	44%
Clark County	215	10%
Schools	554	27%
WSDOT	54	3%
Federal Land	151	7%
Other	171	8%

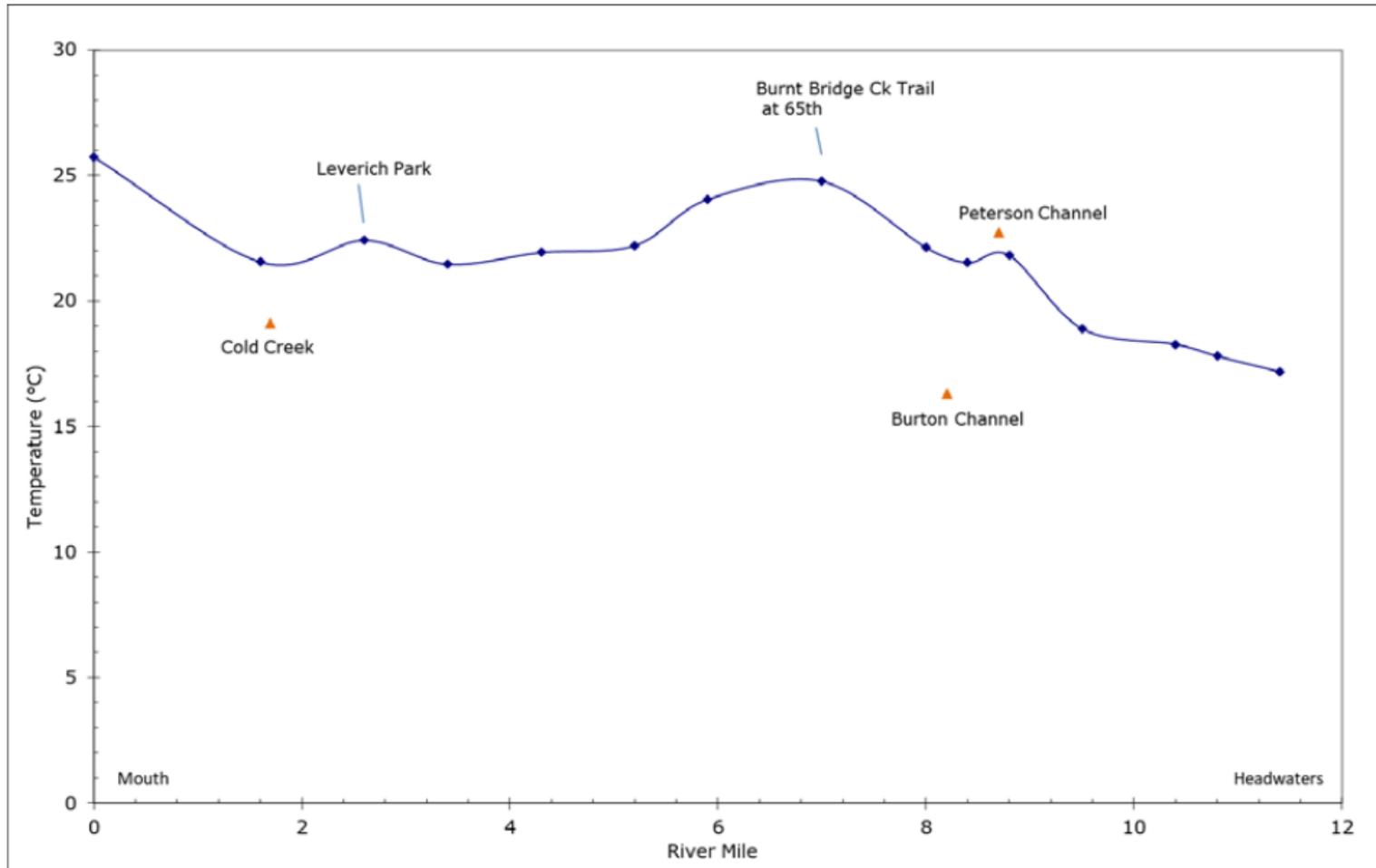
Temperature Priorities

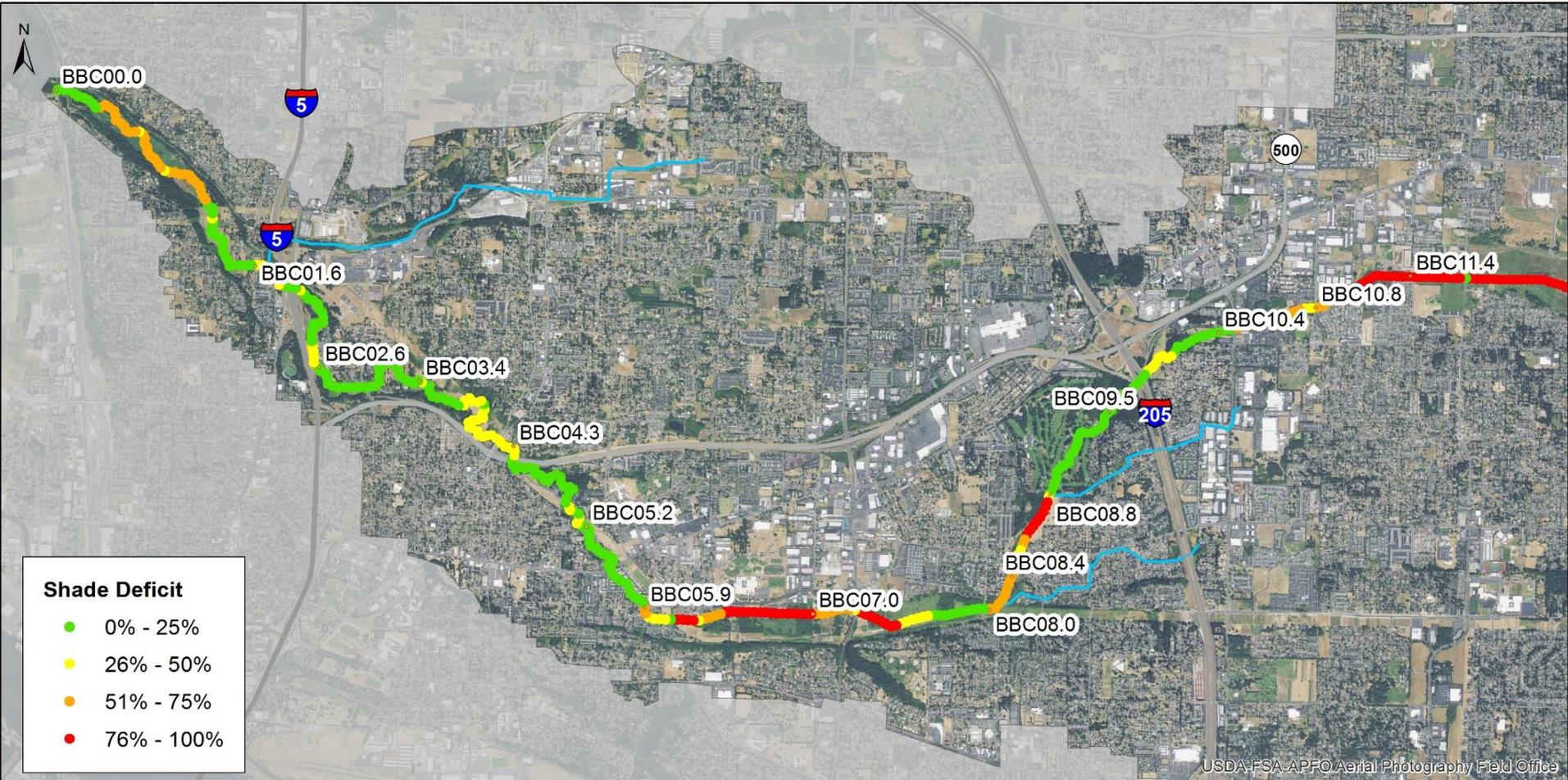


Temperature Priority areas

- All sites exceeded, except for outlet of Cold Creek
- Maximum temperatures at BBC0.00
- Middle subbasin had highest number of days above criteria
 - BBC05.9 and BBC07.0

River Temperatures





BBC00.0

BBC01.6

BBC02.6

BBC03.4

BBC04.3

BBC05.2

BBC05.9

BBC07.0

BBC09.5

BBC08.8

BBC08.4

BBC08.0

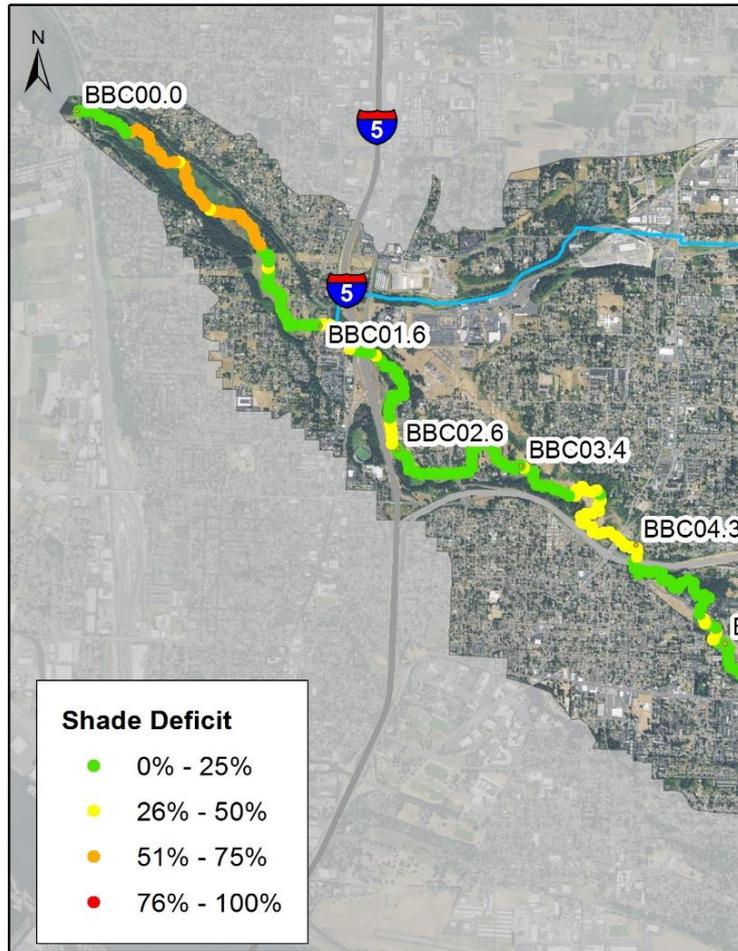
BBC10.4

BBC10.8

BBC11.4



Lower Watershed (RM 0-5)

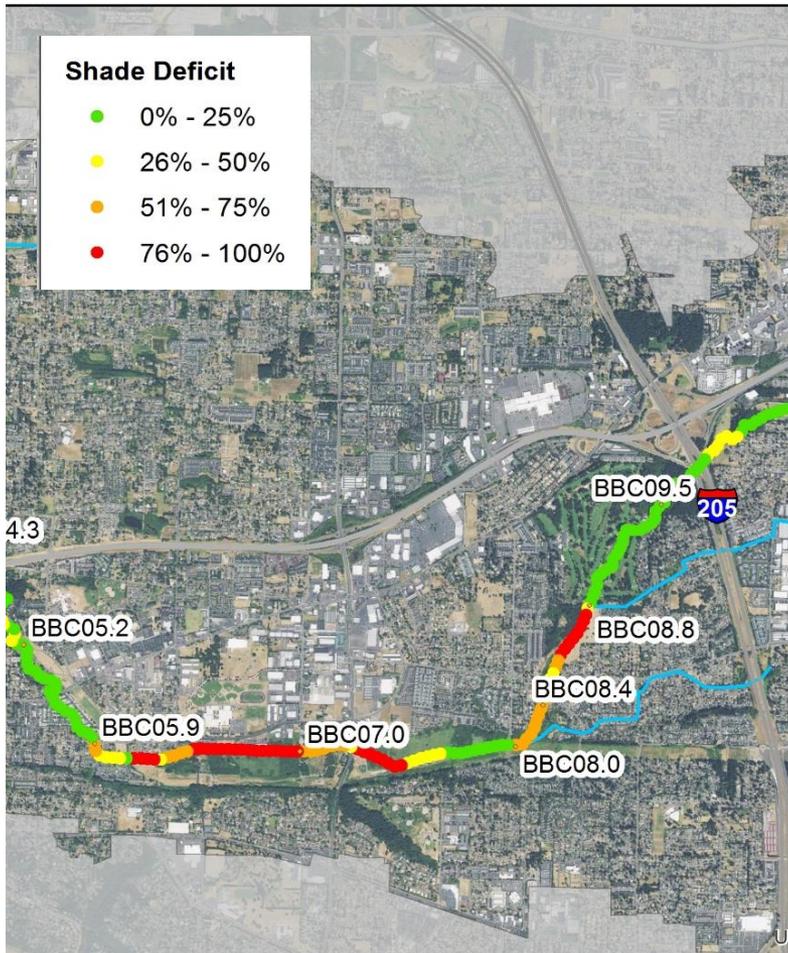


River Mile	Existing Shade	Potential Shade	Shade Deficit
0-1	40%	83%	43%
1-2	66%	97%	31%
2-3	67%	84%	17%
3-4	84%	94%	10%
4-5	57%	93%	36%
Average	63%	90%	27%

River miles over 30% shade deficit

- RM 0-1 = 43%,
- RM 1-2 = 31%.
- RM 4-5 = 36%

Middle Watershed (RM 5-10)



River Mile	Existing Shade	Potential Shade	Shade Deficit
5-6	81%	91%	11%
6-7	51%	85%	35%
7-8	12%	94%	83%
8-9	43%	88%	44%
9-10	46%	66%	21%
Average	47%	85%	39%

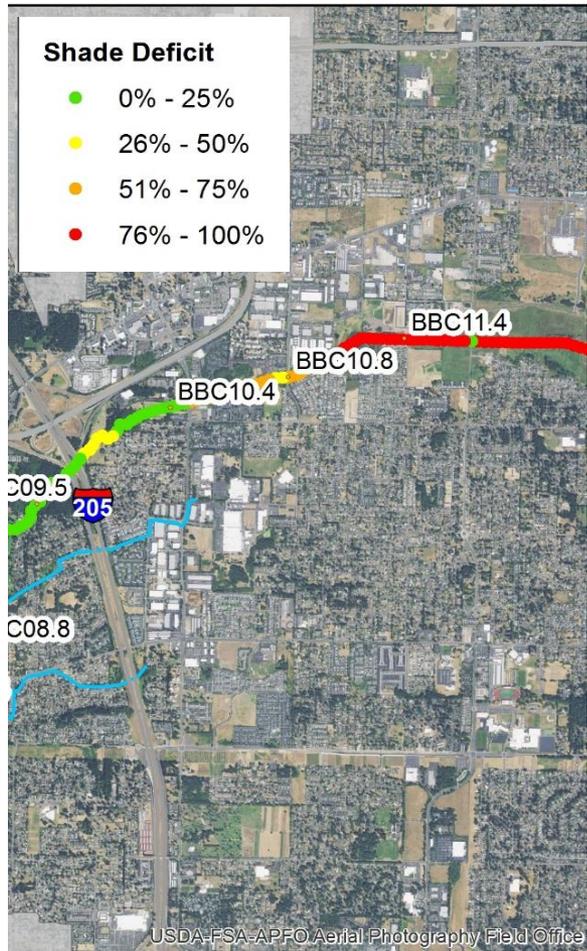
River miles over 50% shade deficit

- RM 7-8 = 83%

River miles over 30% shade deficit

- RM 8-9 = 44%,
- RM 6-7 = 35%,

Upper Watershed (RM 10-13)



River Mile	Existing Shade	Potential Shade	Shade Deficit
10-11	66%	92%	26%
11-12	25%	98%	73%
12-13	6%	93%	87%
Average	32%	94%	62%

River miles over 50% shade deficit

- RM12-13 = 87%
- RM11-12 = 73%

Summary

- River miles 0, 5.9 and 7.0 have highest temperatures.
- The system potential height is 41 meters, overhang is 4.1 meters, and density is 85%
- River miles over 50% shade deficit
 - RM12-13 = 87%
 - RM 7-8 = 83%
 - RM11-12 = 73%
- River miles over 30% shade deficit
 - RM 8-9 = 44%,
 - RM 0-1 = 43%,
 - RM 4-5 = 36%,
 - RM 6-7 = 35%,
 - RM 1-2 = 31%.

Summary

- **Riparian restoration**
 - **Upper watershed = 62% average**
 - River miles 12-13 = 87% shade deficit
 - River miles 11-12 = 73% shade deficit
 - **Middle watershed = 39% average**
 - River miles 7-8 = 83%
 - **Lower watershed = 27% average**

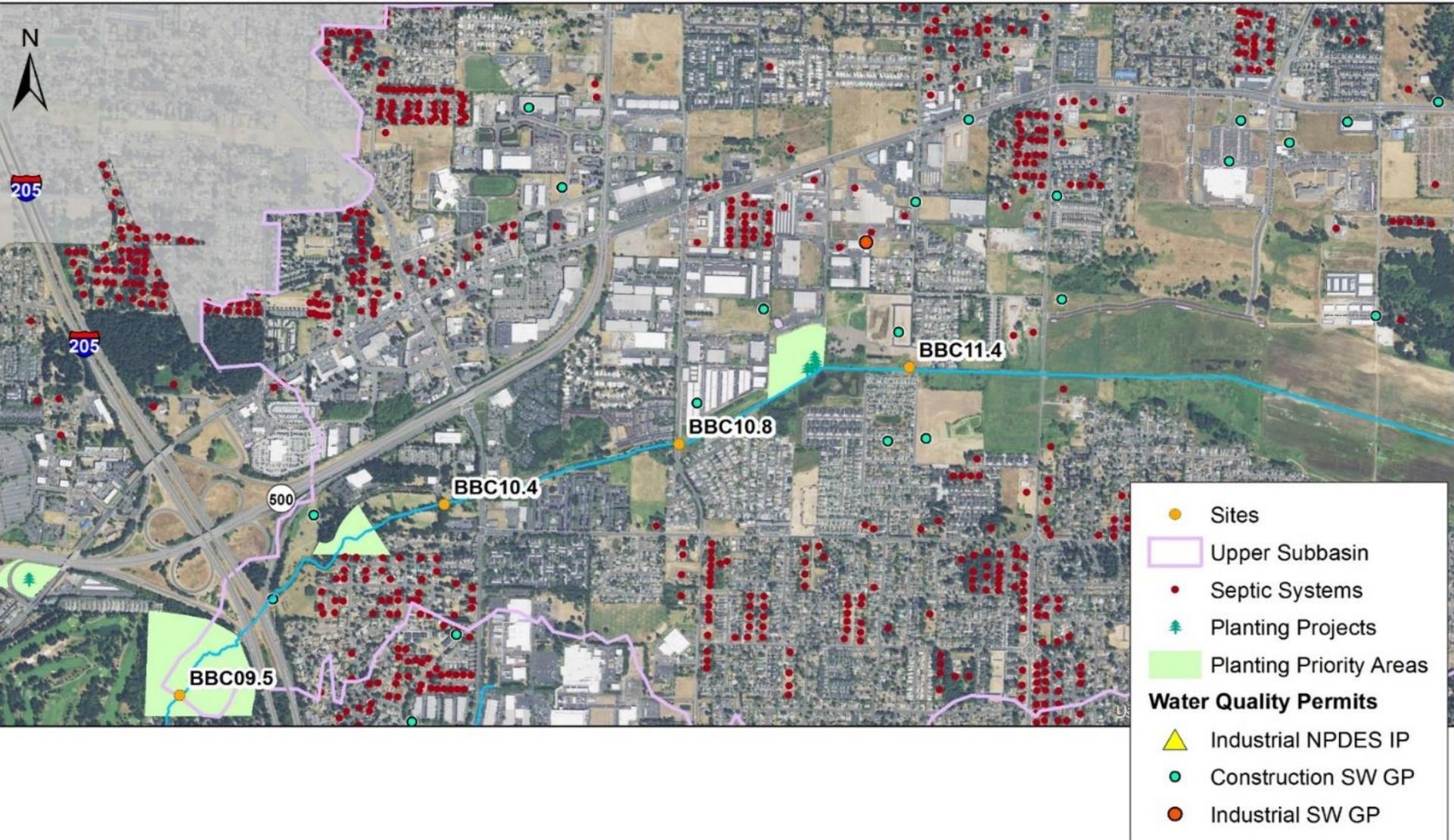
Recommendations

- **Priority #1:** Middle and Upper watershed, deficits over 50%
 - RM12-13 = 87% shade deficit
 - RM 7-8 = 83% shade deficit
 - RM11-12 = 73% shade deficit
 - RM 5.9 and 7.0 for most number of days above criteria

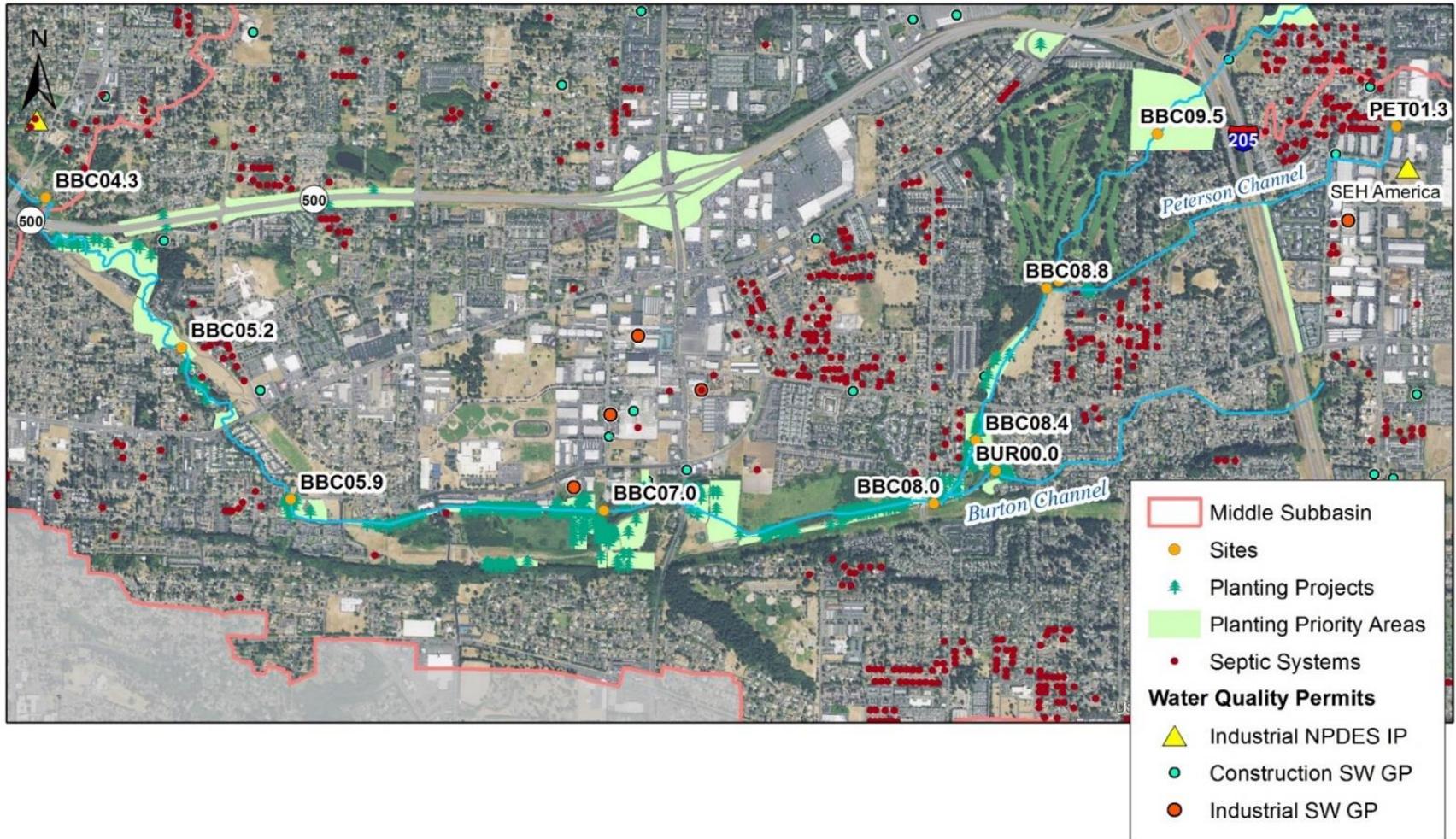
Recommendations

- **Priority #2:** All shade deficits over 30%
 - RM 8-9 = 44%
 - RM 0-1 = 43%
 - RM 4-5 = 36%
 - RM 6-7 = 35%
 - RM 1-2 = 31%

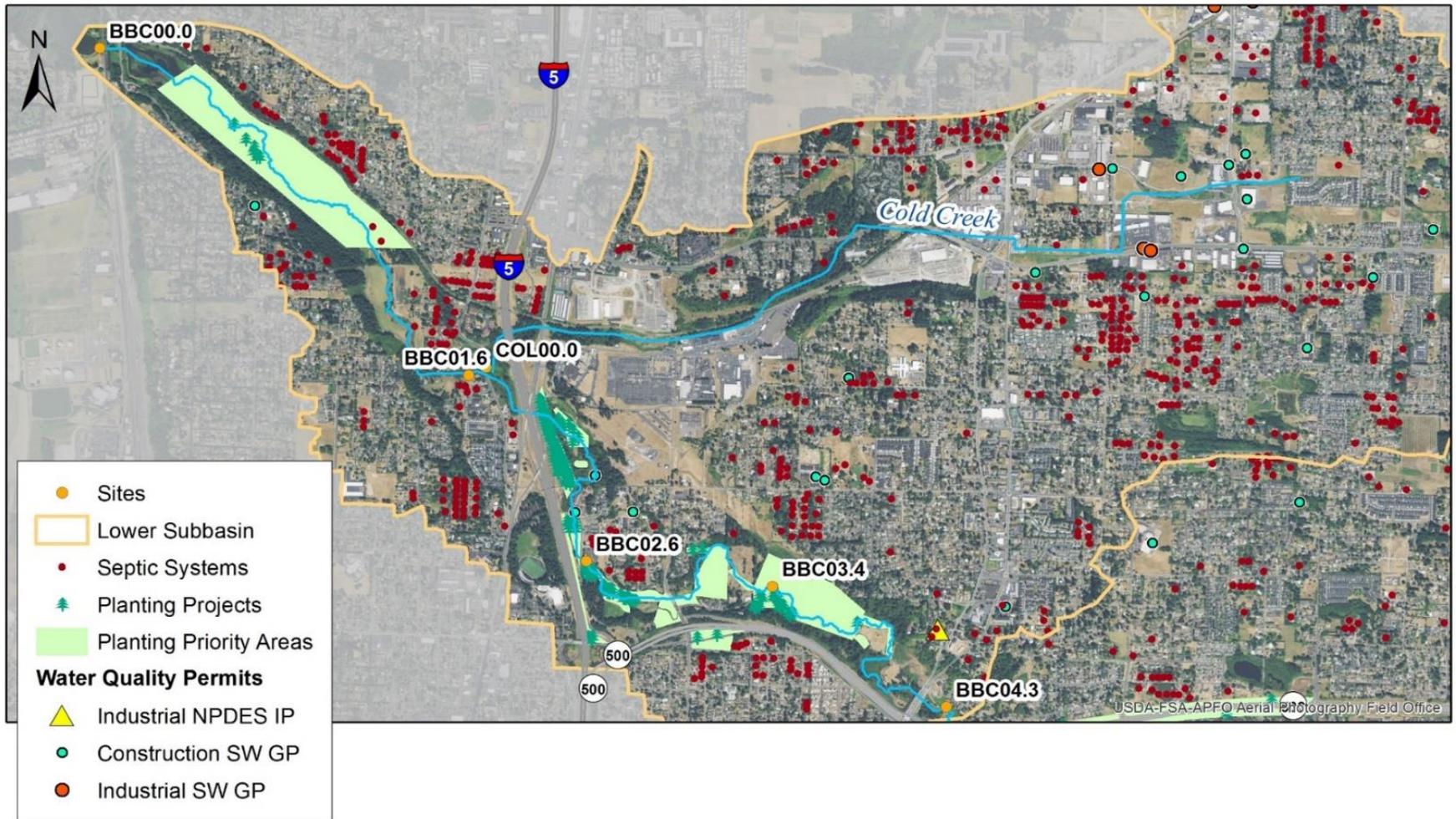
Upper Watershed – Priority Planting Areas



Middle Watershed Priority Planting Areas



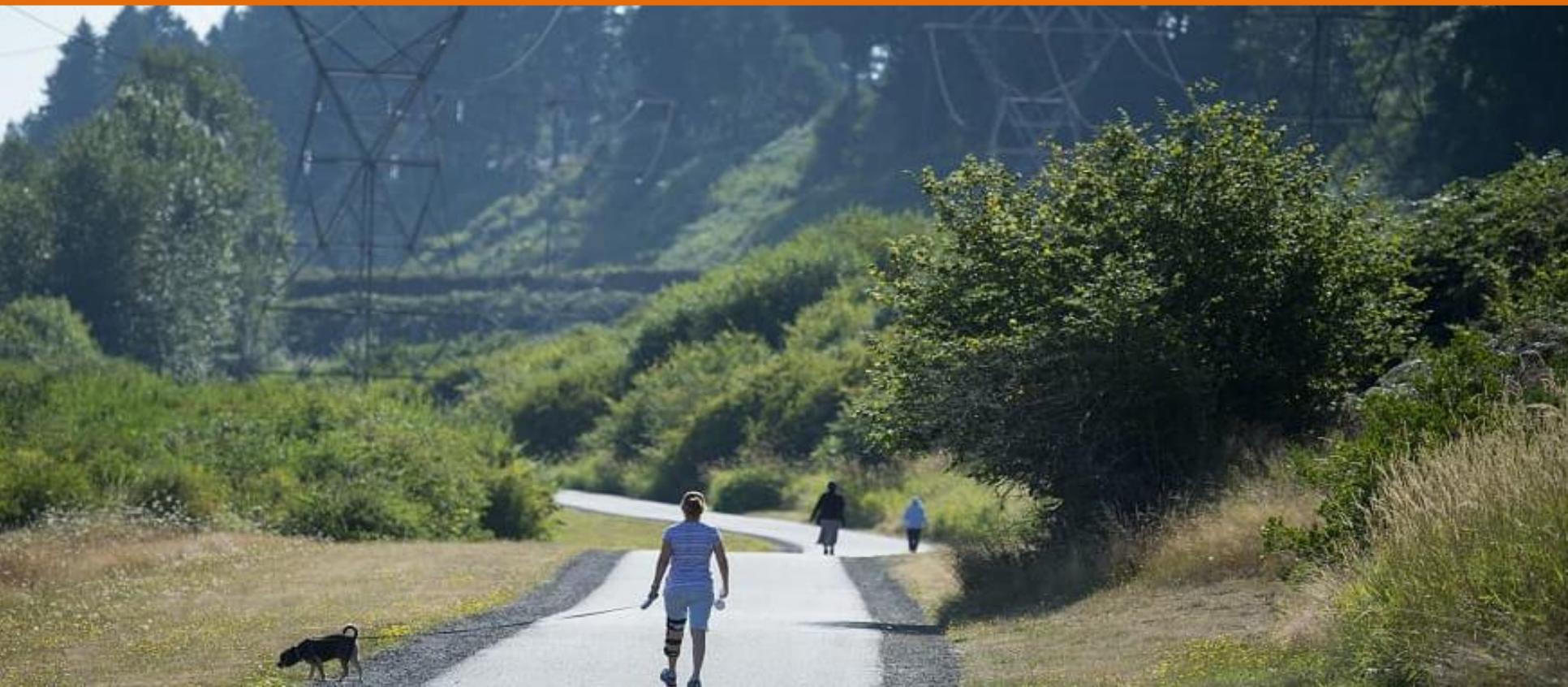
Lower Watershed (RM0-5) Priority Planting Areas



Dissolved Oxygen Priority Areas

- *Reducing warm water temperatures expected to improve dissolved oxygen.*
- Sites with most noncompliant days for DO are:
 - Upper watershed (BBC11.4, BBC10.8)
 - Middle watershed (BBC7.0 and BBC05.9)

Implementation Planning Review Worksheets



Discussion topics

- Urban Forestry Program
- Burnt Bridge Creek Greenway
 - Past implementation
 - Current implementation
 - Future implementation
- Project Restore
- Friends of Trees – street trees
- Property acquisition
- Temperature projects that go beyond tree planting and shade.
Instream restoration – large wood, floodplain reconnection
- Implementation opportunities – public and private property
- Public education and outreach
- Anything else we should focus on?



Implementation Planning

- Resources, reports, or websites Ecology should reference for information
 - 1.
 - 2.
 - 3.

Implementation Planning

- **Priority areas for implementation**
 - Examples
 - Parks
 - Neighborhoods
 - River miles
 - Subwatersheds
 - Catchments or Drainage areas
 - Parcel IDs

Implementation Planning

Implementation challenges

1.
2.
3.

Milestones, Targets, and Timelines

Milestones	Target Date
1.	2023
2.	2025
3.	2027
4.	2030
5.	2033

Criteria to measure implementation progress

Performance measures

Criteria to Measure Progress

1.

2.

3.

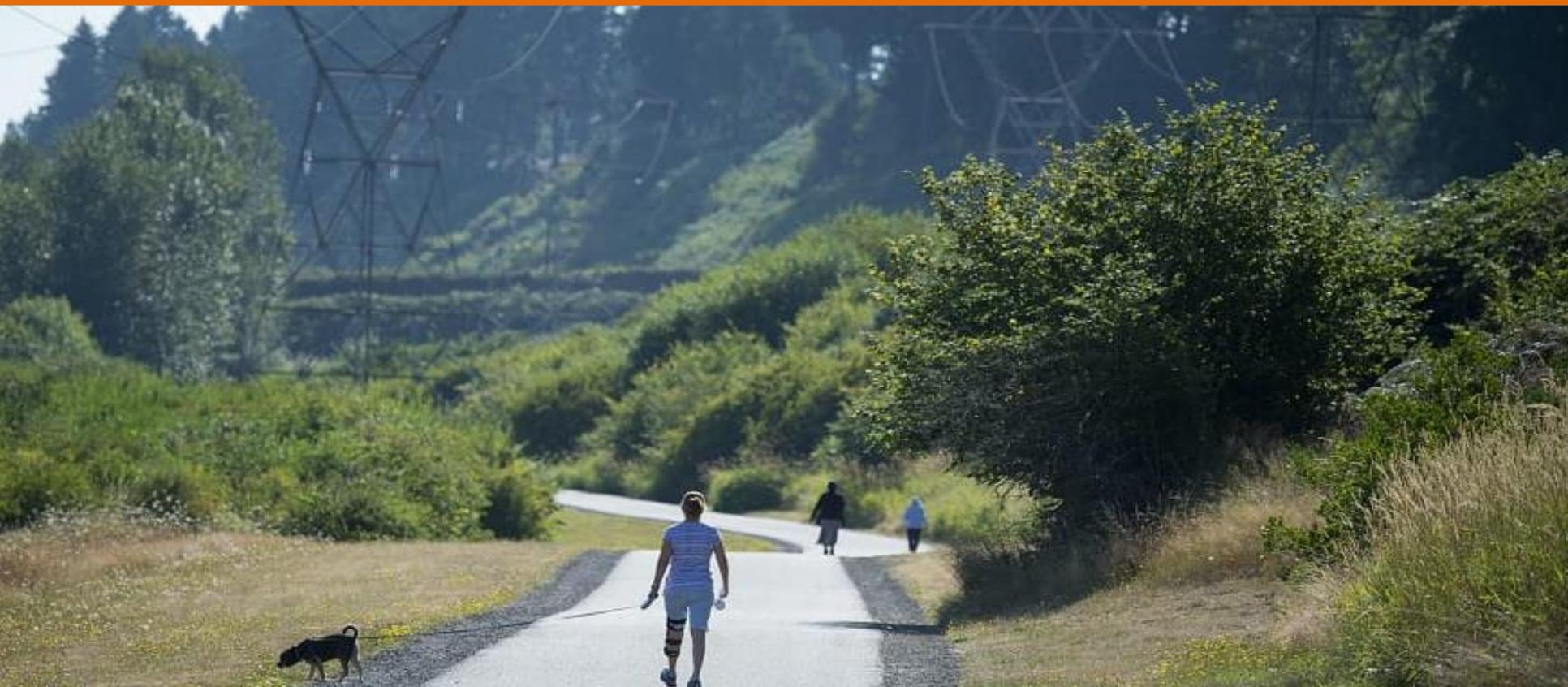
4.

5.

Funding Sources and Partnerships

Funding Sources	
Implementation Partners	

Next Steps



Timeline

- **April-May 2021:** Implementation Workgroups.
- **June 1, 2021:** Completed worksheets due to Ecology.
- **Summer 2021:** Full Burnt Bridge Creek Partnership meeting (report out on what we learned at workgroups)
- **Summer 2021:** External partnership meeting – LCEP, Watershed Alliance, WSDOT, Clark County Clean water Division, Clark County Public Health, Clark Conservation District, LCFRB, etc.
- **Fall 2021:** Public Webinar
- **October 2021:** FY 2023 Funding Applications due!
- **January 2022:** Internal Draft (City of Vancouver, Ecology, and EPA)
- **Spring 2022:** External Draft Burnt Bridge Creek Water Cleanup Plan
- **Summer 2022:** Publish *Burnt Bridge Creek Water Cleanup Plan*

www.tinyurl.com/burntbridgecreek

Burnt Bridge Creek Partnership for clean water



[Return to Department of Ecology website](#) | [Burnt Bridge Creek Source Assessment Report](#) | [Report environmental complaints online](#)



Burnt Bridge Creek Watershed Fecal Coliform Bacteria, Temperature, Dissolved Oxygen, and pH

Source Assessment Report



October 2020
Publication 20-04-003

What is the Burnt Bridge Creek Partnership?

The Burnt Bridge Creek watershed located in Vancouver, Washington, is on Washington State's polluted waters list (303d list) for warm water temperatures, bacteria, dissolved oxygen, and pH pollution problems, which drives the need to develop a Water Cleanup Plan. In October 2020, the [Burnt Bridge Creek Source Assessment Report](#) was published to identify critical areas for water quality improvement. This Source Assessment identifies portions of Burnt Bridge Creek that are not meeting water quality standards. The report also identifies the largest shade deficits in the watershed to focus tree planting efforts, and determines the bacteria reductions needed to meet water quality standards.

To implement recommendations from the Source Assessment, the [Burnt Bridge Creek Partnership](#) was formed in February 2021 to develop and implement the Water Cleanup Plan. This Water Cleanup Plan will focus on best management practices and implementation actions to improve water quality. The Partnership will meet regularly through 2022.

Questions about the Burnt Bridge Creek Partnership should be directed to [Devan Rostorfer](#), Water Quality Specialist, Washington State Department of Ecology.

Past Events & Meeting Materials

- [February 2, 2021 - Burnt Bridge Creek Partnership kickoff meeting](#)
 - [Agenda - February 2021](#)
 - [Presentation - Overview of process](#)
 - [Presentation - Burnt Bridge Creek Source Assessment](#)
 - [Burnt Bridge Creek Source Assessment Report](#)
 - [Meeting Summary - February 2021](#)

Local Resources

- [City of Vancouver Stormwater, Surface Water, and Groundwater Utility](#)
- [City of Vancouver Urban Forestry](#)
- [City of Vancouver Water Resources Education Center](#)
- [City of Vancouver Sewer System & Wastewater Treatment Facilities](#)
- [Stormwater Partners of Southwest Washington](#)
- [Burnt Bridge Creek Trail](#)
- [Explore Your Watershed](#)
- [Project Restore](#)

FY 2023 Call for Projects

Grant Funding Opportunities

- One of our regional goals is to help local jurisdictions develop competitive applications for Ecology Water Quality grants.
- To encourage communication earlier in the process and provide more time for project proposal development, Ecology is asking interested applicants to complete a short “Notice of Intent” form by **June 15, 2021**.
- Ecology will still host statewide application workshops in August and the final applications are due October 12, 2021.
- For more details please visit <https://tinyurl.com/ECY-SWRO-Grants>, or contact Leanne Whitesell, Regional Fund Coordinator, *Nonpoint Activity Projects*, (360) 407-6295 or Leaw461@ecy.wa.gov.



APPENDIX: Recommendations from Source Assessment

Riparian Restoration

- Achieve system potential riparian vegetation of 85% tree canopy in the Burnt Bridge Creek watershed wherever possible.
- Implement riparian forest restoration on all priority planting areas in the Burnt Bridge Creek watershed where the soils and hydrology support forested conditions.
- Prioritize the river miles with the highest shade deficits for riparian restoration.
- In the upper watershed, efforts to plant vegetation should be pursued to reduce stream temperatures. Partnerships and outreach to private landowners will be necessary to encourage and establish plantings that provide shade and lower water temperatures in this reach.
- In the middle watershed, riparian restoration efforts should be targeted from RM 7 to RM 8 (including BBC07.0) due to this section having the largest shade deficit (83%).
- In the lower watershed, the average shade deficit is 25%. However, between RM 0–2 (includes BBC00.0 and BBC01.6) there is a large, open area with little vegetation. This section of the riparian corridor has been identified as a priority planting area by the City of Vancouver.

Riparian Restoration

- Continue to increase shade. Focus these restoration activities in areas with large shade deficits in the upper and middle watershed, as determined through the shade analysis.
- Continue implementation of restoration and conservation programs led by the City of Vancouver and Clark County; partner with other local stakeholders to improve water quality in the watershed. These include programs implemented by the Watershed Alliance of Southwest Washington, Clark Conservation District, Columbia Springs, Lower Columbia Estuary Partnership, Washington State University Extension, Lower Columbia Fish Enhancement Group, Lower Columbia Fish Recovery Board, Friends of Trees, and the Vancouver Water Resources Education Center.
- Protect and restore natural flood plains, riparian habitats, and microclimate enhancements that increase the number of cold-water refuges available and improve the overall habitat quality for salmonids and other fish species.
- Implement creek restoration projects that enhance channel complexity.