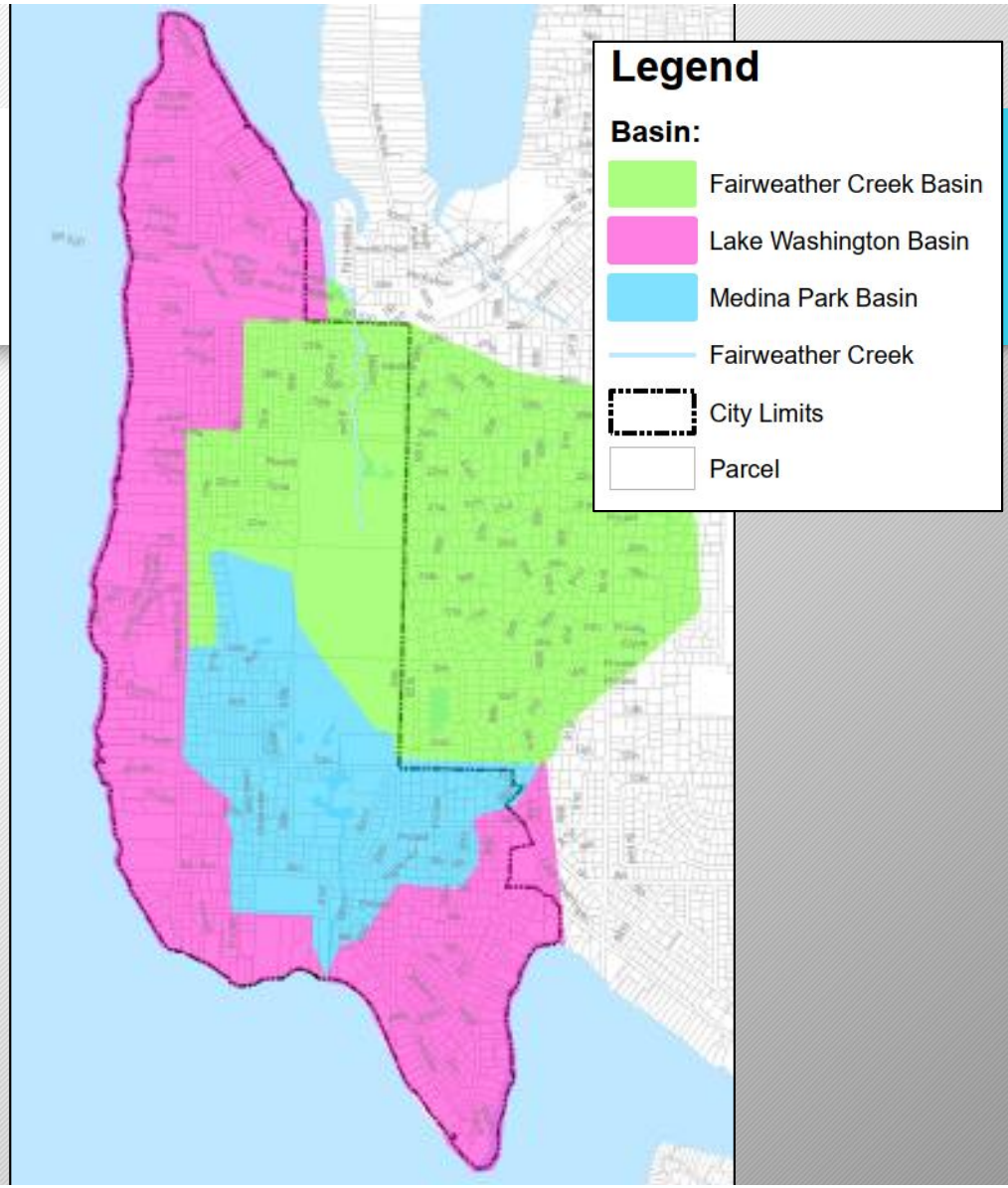
Stormwater Management Action plan (SMAP)

June 27, 2022

Background

- City is required to do a Stormwater Management Action Plan (SMAP) per the NPDES Phase II Stormwater Permit – Focus on Water Quality
- SMAP involves:
  - Delineating watersheds
  - Analyzing water quality data in these watersheds
  - Prioritizing a watershed
  - Picking a subbasin within the priority watershed to focus on for water quality measures

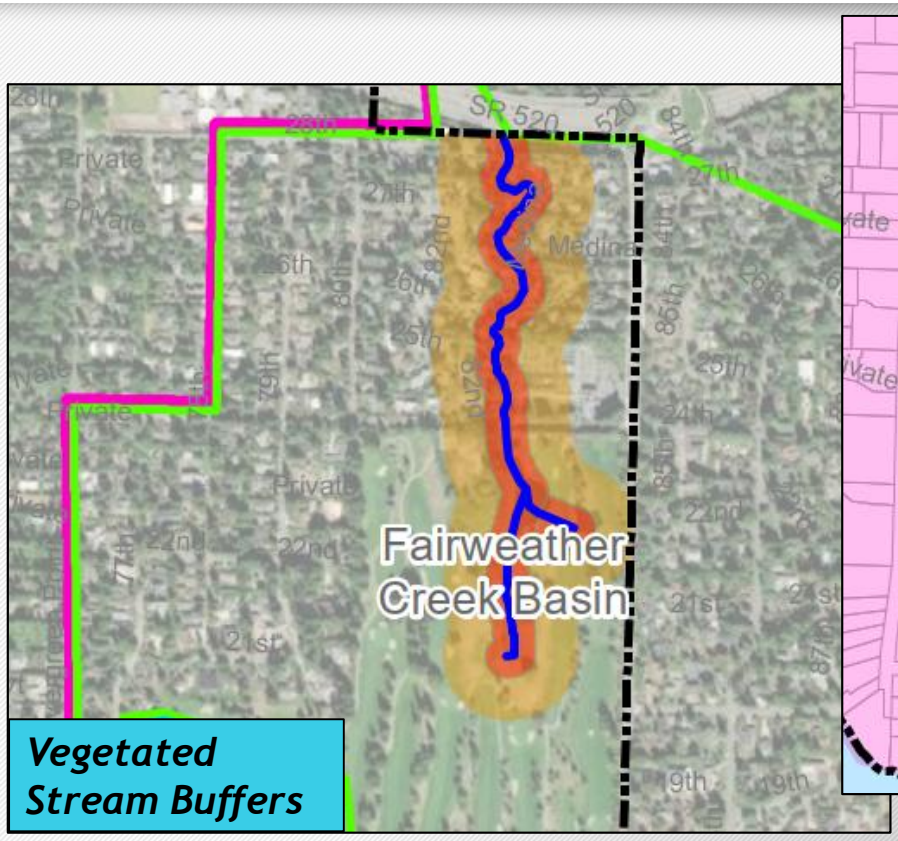


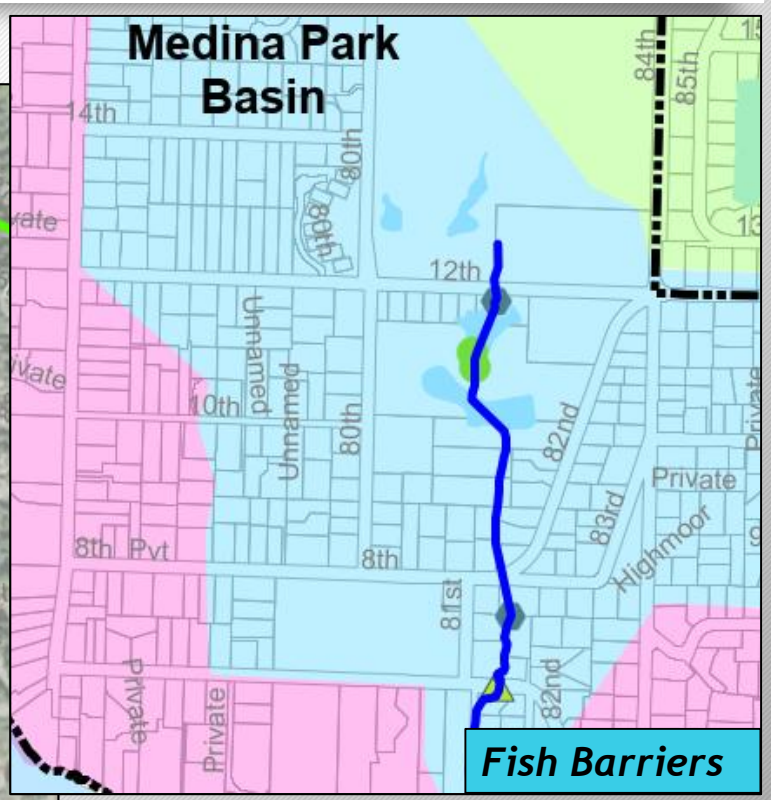
Watershed Prioritization - Overview

Watershed Prioritization based on:

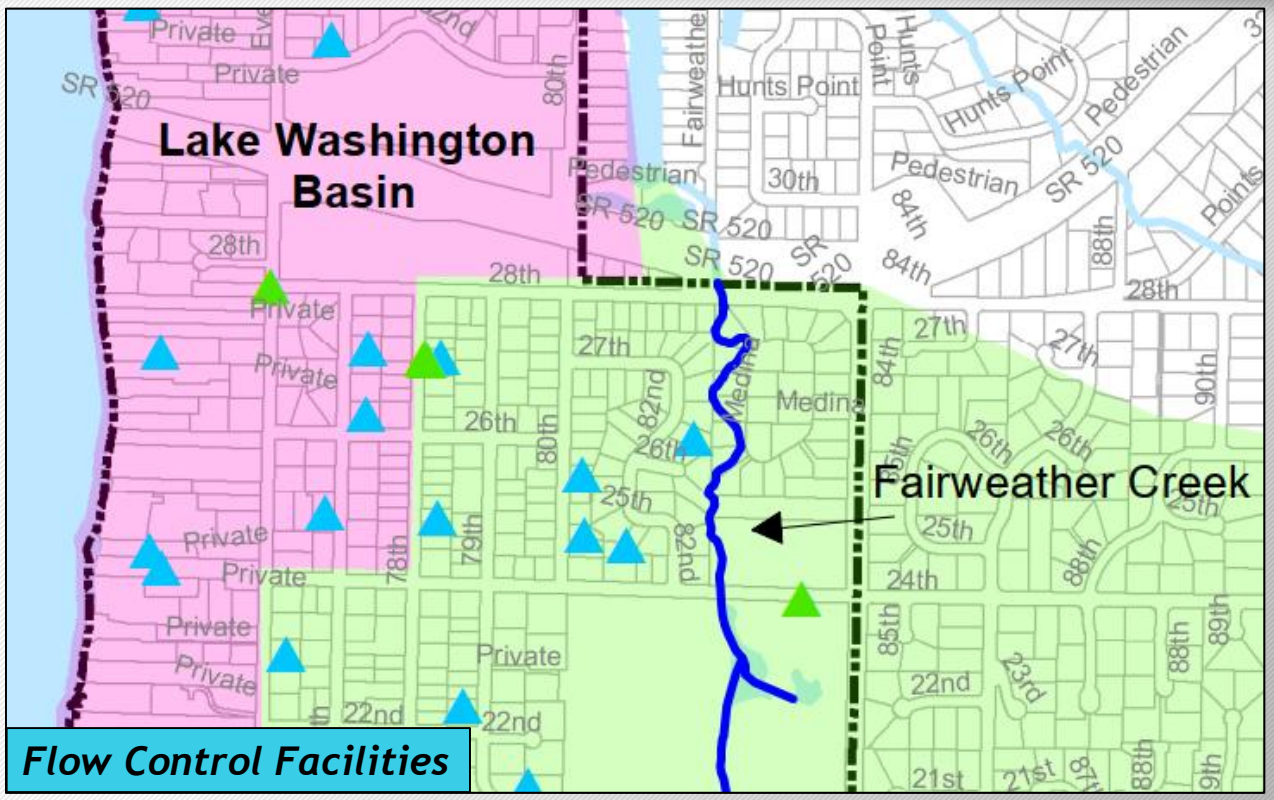
- Fish Habitat
- Flow
- Water Quality
- Land Use
- Environmental Justice

Watershed Prioritization - Fish Habitat

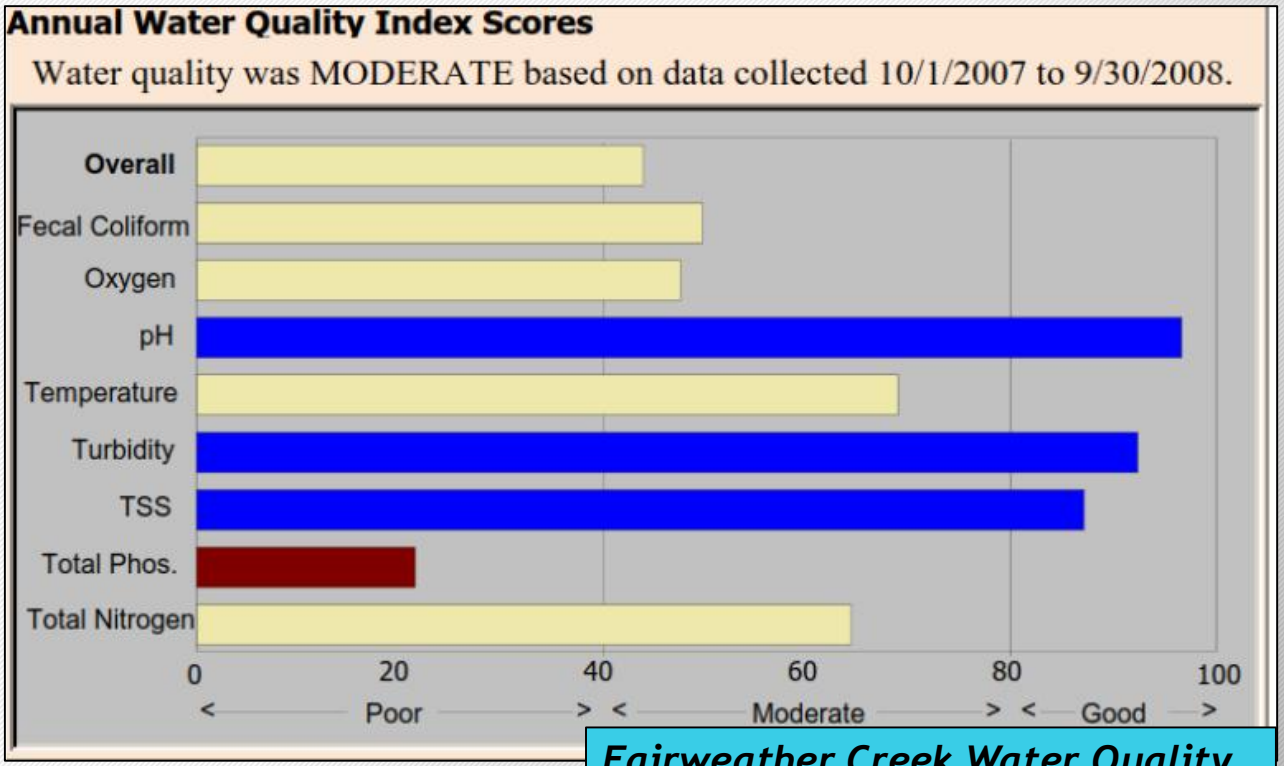




Watershed Prioritization - Flow

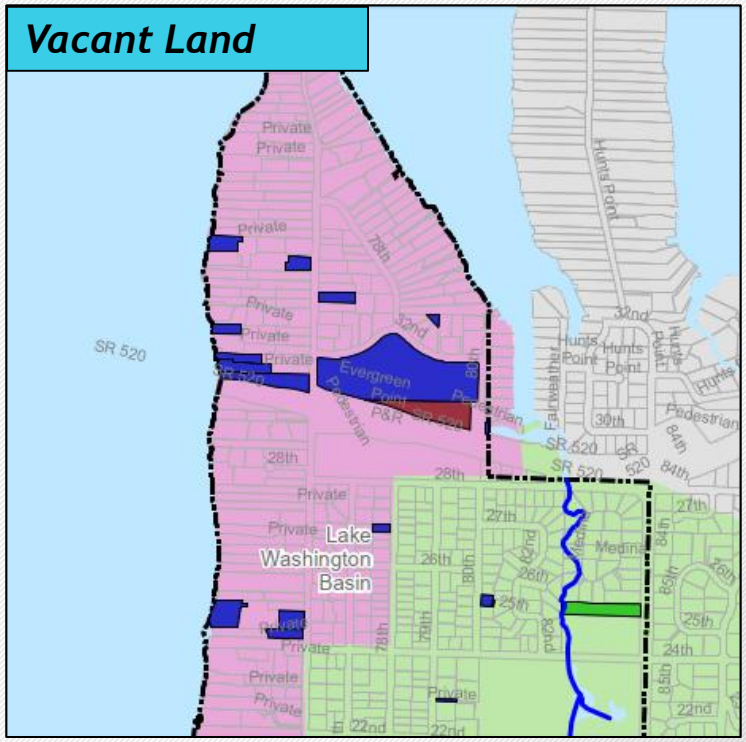


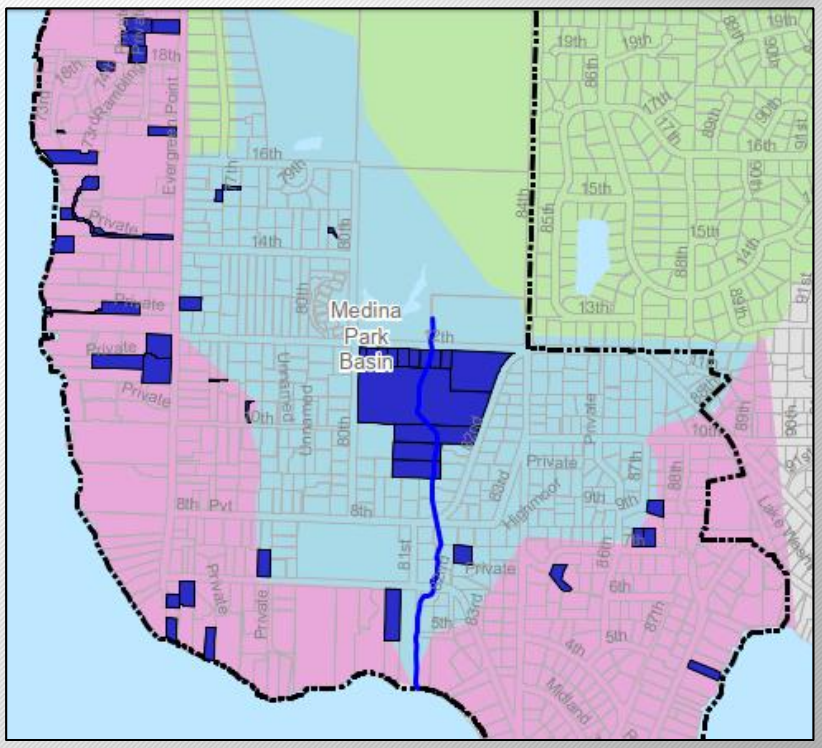
Watershed Prioritization - Water Quality



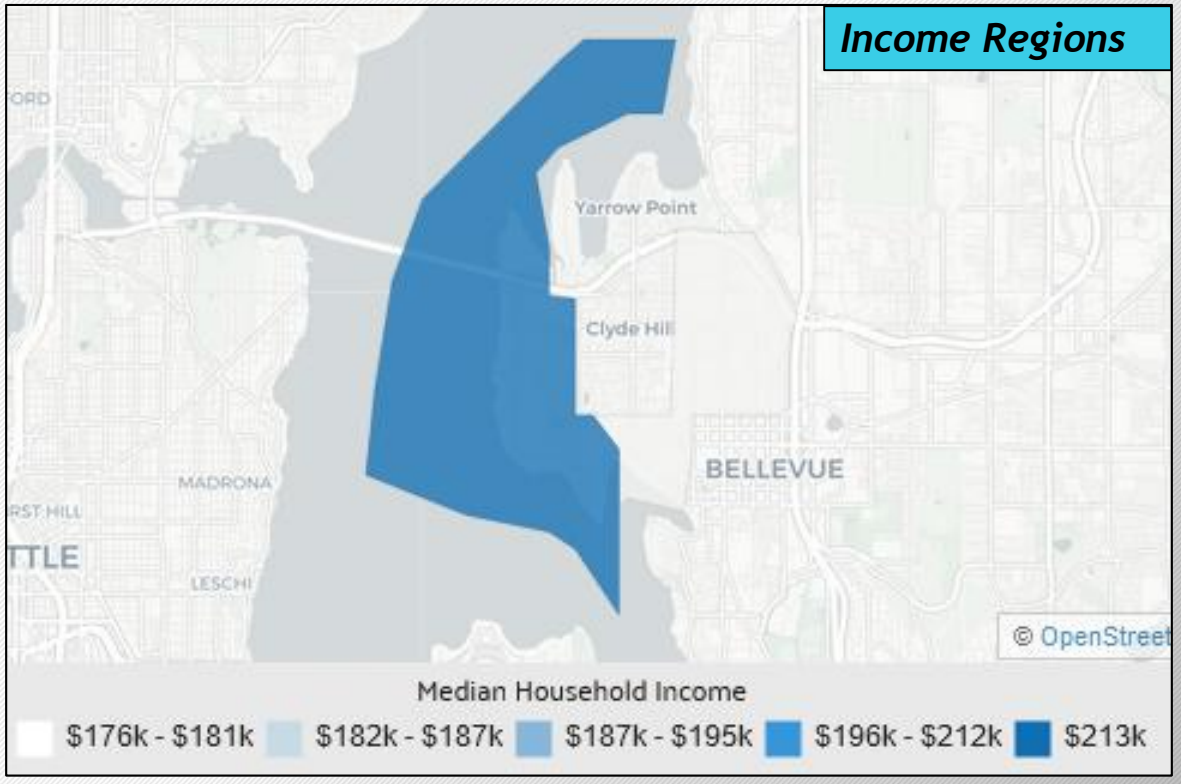
Fairweather Creek Water Quality

Watershed Prioritization - Land Use





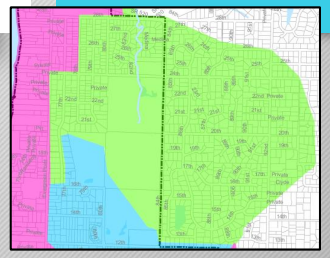
Watershed Prioritization - Environmental Justice



Watershed Prioritization - Matrix

	Fairweather Creek Basin (ac)	Medina Park Basin (ac)	Lake Washington Basin (ac)
Relative Condition[1]			
Watershed Area w/in City UGA (ac)	213	224	500
Total Watershed Area (ac) to a Flow-Control Exempt Water Body	543	224	567
% within City UGA	39%	100%	88%
General Description			
	Topography is from south to north and includes Fairweather Creek which discharges to Lake Wa. and has a TMDL for DO, temperature, fecal coliform and copper ; Land use includes developed residential, minor commercial, a school, and the golf course. Ample flow control exists but there is little treatment.	Topography is from north to south where runoff discharges to Lake Wa. via an unnamed creek; Land use includes developed residential, the golf course, a gas station, church and two schools. Ample flow control exists but there is no treatment.	Topography is generally westerly where runoff flows directly toward Lake Washington; Land use is developed residential. Ample flow control exists but there is no treatment.
Fish			
Fish Barriers	2	3	1
Fish Habitat – Stream Typing	3	1	2
Fish Habitat – Puget Sound Habitat Characterization	3	3	3
Stream Vegetation Buffer	3	3	3
B-IBI	3	N/A	N/A

Watershed Prioritization - Matrix



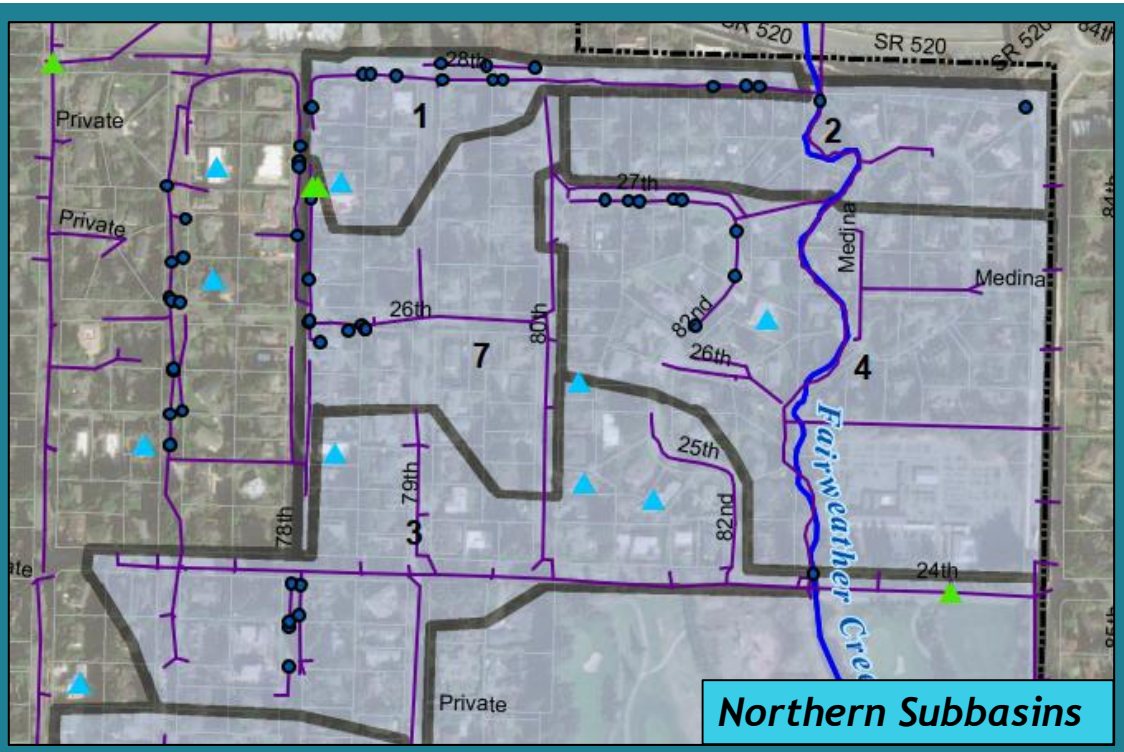
	Fairweather Creek Basin (ac)	Medina Park Basin (ac)	Lake Washington Basin (ac)
Flow			
Existing Flow Control Facilities	3	2	1
Flow Control – Puget Sound Habitat Characterization	3	3	3
Water Quality			
Existing Water Quality Treatment	2	3	3
Water Quality – Puget Sound Habitat Characterization	3	3	3
303d Listing Parameters	3	-	-
Land Use			
Existing Land Use	2	1	3
Future Development	2	1	3
Environmental Justice			
Demographic	1	1	1
Wage Divide	1	1	1
Total Score	34	25	27

(1) A score of 1 represents the relative best condition compared to a score of 3 which is the relative worst condition of each of the basins.

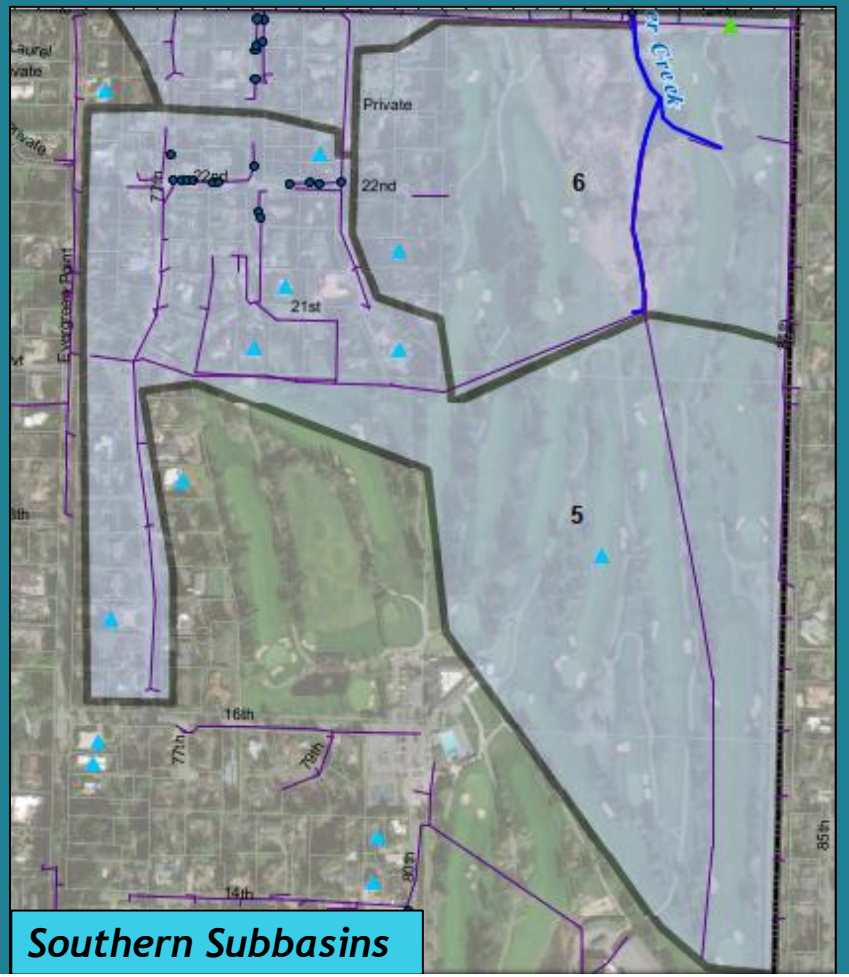
Fairweather Creek Basin = Priority Watershed

Next Step – Choose a Subbasin

- Goals
- Selection Process (things to think about)
  - Potential future projects/policies
  - Upcoming required actions
- Next Steps
- Subbasin Discussion



Northern Subbasins



Southern Subbasins

Fairweather Creek
Subbasins

Subbasin Selection – Goals

Protect

Change land use to preserve an area

Restore

Retrofit an area to provide water quality treatment

-Structural Means
-Non-Structural Means

Subbasin Selection – Potential Actions

Non-Structural (Policies/Activities):

- Source tracking study to see what pollutants are entering streams
- Public education
- Require developers to provide ‘enhanced’ treatment
- More frequent illicit discharge/spill inspections
  (i.e. catch basin inspections)
- Prioritize inspections of businesses for their stormwater practices
- Prioritize maintenance of city owned stormwater facilities
- Prioritize street sweeping / catch basin cleaning

Subbasin Selection – Potential Actions

Structural:

- Retrofit existing flow control/water quality facility (detention pond)
- Install new water quality facility (proprietary, possibly w/ future road/utility projects)
- Permeable pavement
- Modify ditches/biofiltration swales
- 'Road diet' – reduce impervious surfaces
- Install tree canopy over stream
- Also includes property acquisition for future facilities

Subbasin Selection – What's Coming

- Besides SMAP, City will also be required to do "Structural Stormwater Controls" *(Projects that reduce pollutants or affect hydrology downstream)*
- Counties/Large Cities doing these now
- Beginning 2024 *(next NPDES Ph. II Permit cycle)*
- Possibly choose SMAP subbasin knowing that these types of projects will be coming
- Each project = points; City needs X amount of points in the permit cycle

Subbasin Selection – What's Coming

Current Relative Structural Stormwater Controls Point System: *(subject to change)*

	Points
New/Retrofit flow control facility *(detention)*	1.0
In a known flooded area	1.5
New/Retrofit water quality facility	1.0
In a known water quality problem area	1.5
WQ provides enhanced/phosphorus treatment	2.0
Meets WQ standards *(not just a retrofit project)*	2.5
Low Impact Development (LID) *(i.e. rain garden)*	1.5
Property acquisition	0.5
Maintenance *(>$25k, miles swept or pipes cleaned)*	0.25

	Points
Restoration of riparian buffer	0.35
Restoration of forest cover	0.25
Floodplain reconnection	0.10
Permanent removal of impervious surface	1.0

- *Points get multiplied by area served*
- *Currently counties/large cities have to collect 300 points (up to 75 points (or 25%) can be maintenance related)*

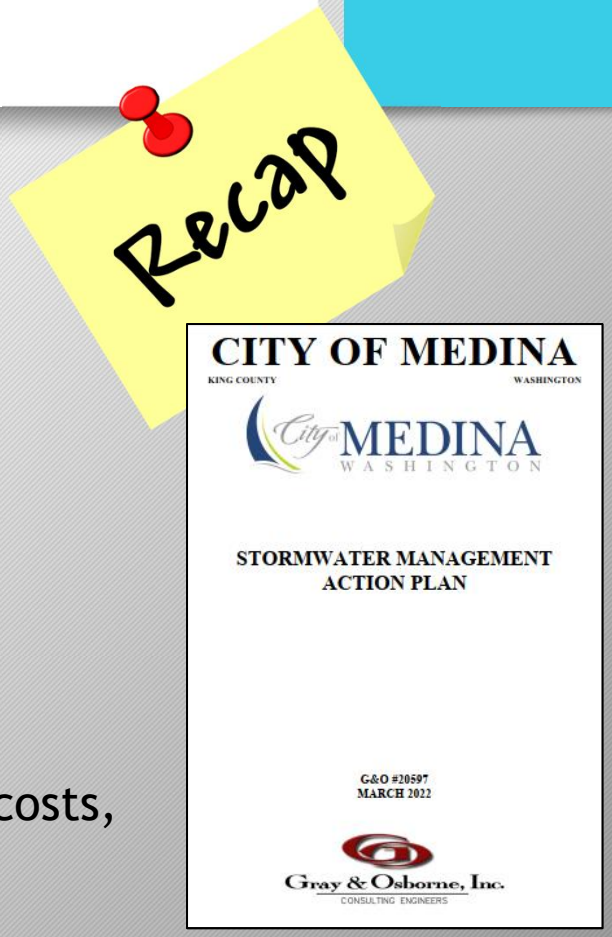
Subbasin Selection – Next Steps

- Recap
  1. Chose Fairweather Creek Watershed
  2. Talked goals for subbasin *(protect or restore)*
  3. Discussed possible future project types *(structural / non-structural)*
  4. Time to pick a subbasin *(Ecology recommended 400 - 600 acres)*

- By June 30th, only need to choose a subbasin (<u>not projects</u>) *(per permit)*

- Allow other interested parties *(Tribes, Public, Natural Resource Agencies, etc.)* to comment on selected subbasin.

- By March 2023, SMAP written to include subbasin, projects, costs, schedule and implementation plan.



Subbasin Selection – Next steps

- Recommend selecting flow control/water quality projects that will meet the future permit *(structural stormwater control projects)*
  - Retrofit Detention pond
  - New Proprietary WQ vault/filter
- Projects selected will likely need to be constructed *(In 2024+)*
  - Set realistic budget *(possible Ecology grants)*
  - Realize realistic construction opportunities
- Combine w/ future road/utility projects?

Subbasin Discussion

Subbasin Selection Discussion

Recommend Entire Fairweather Creek Watershed

(Potential Projects Shown)

- Creek listed on State list for impaired waterbodies
- 'End of pipe' types of facilities before discharging to the creek
- Potential Tree Canopy Opportunities