

City of Renton

Shoreline Master Program

Planning Commission 01-14-09



Shoreline Management Act Overview

Shorelines in Renton

- Lake Washington – discussed 12-10-08

This meeting

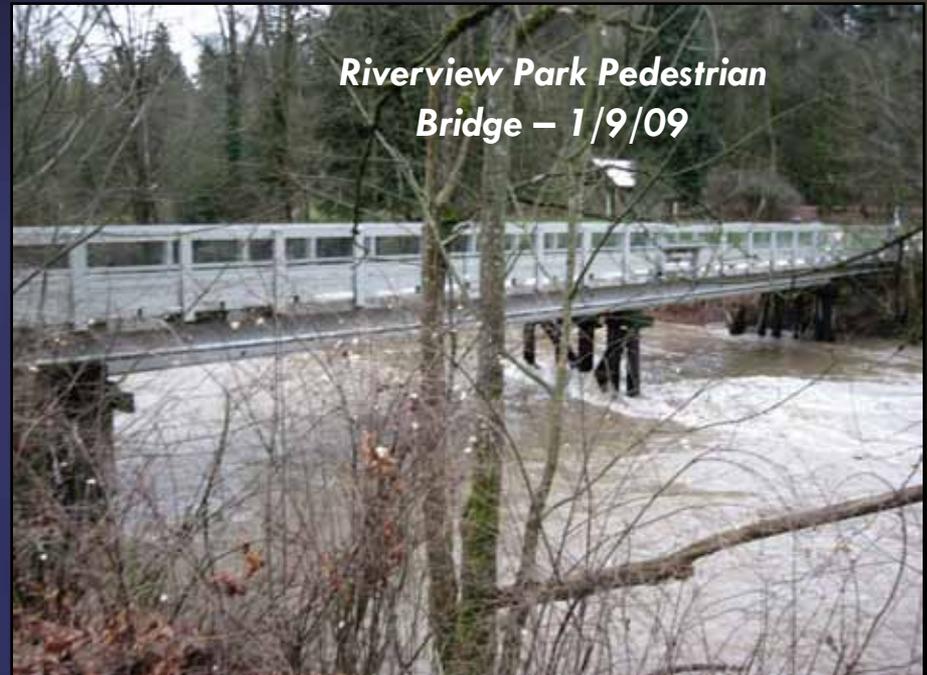
- Cedar River
- May Creek
- Green River/Black River
- Springbrook Creek
- Lake Desire



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Information Resources

- Inventory/Characterization
- Tech Memo – Opportunities/
Constraints Ecological Functions
- Tech Memo – Regulatory
Options – Overview
- Tech Memo – Regulatory
Options – Specific Issues
- Tech Memo – Public Access
- Tech Memo – Demand for
Water Dependent Use



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Inventory and Characterization

- Identify the ecosystem-wide processes and ecological functions
- Assess relationship to ecological functions present within the jurisdiction
- Identify specific measures necessary to protect and/or restore the ecological functions and ecosystem-wide processes



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Stream Ecological Functions

- Water Cycle
- Sediment
- Water chemistry
- Organic matter
- Stream geomorphology
- Habitat character/vegetation



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Stream Ecological Functions

☐ Water Cycle

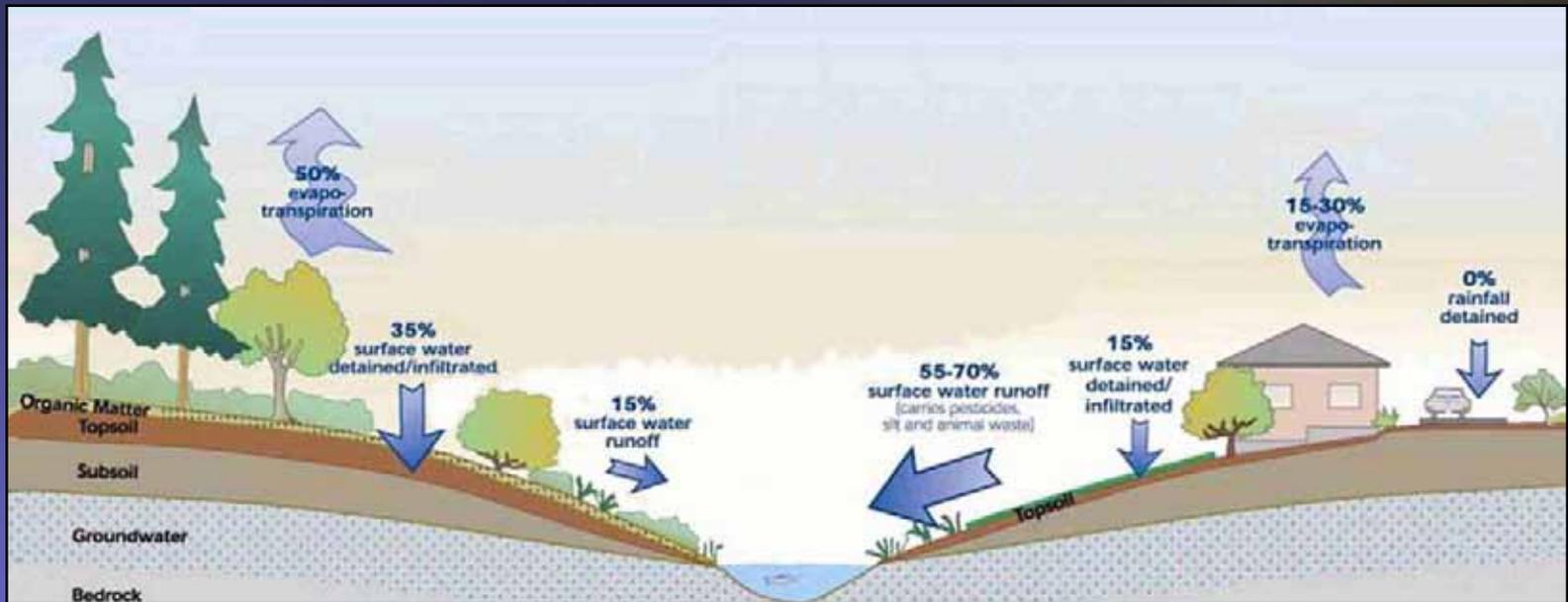
- Input via rain or snow events
- Cycling
- Flood events
- Infiltration through soil to recharge groundwater, depends upon:
 - Geologic characteristics - Coarse outwash vs. aquitards
 - Impervious surface coverage - Undeveloped vs. developed land



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Stream Ecological Functions

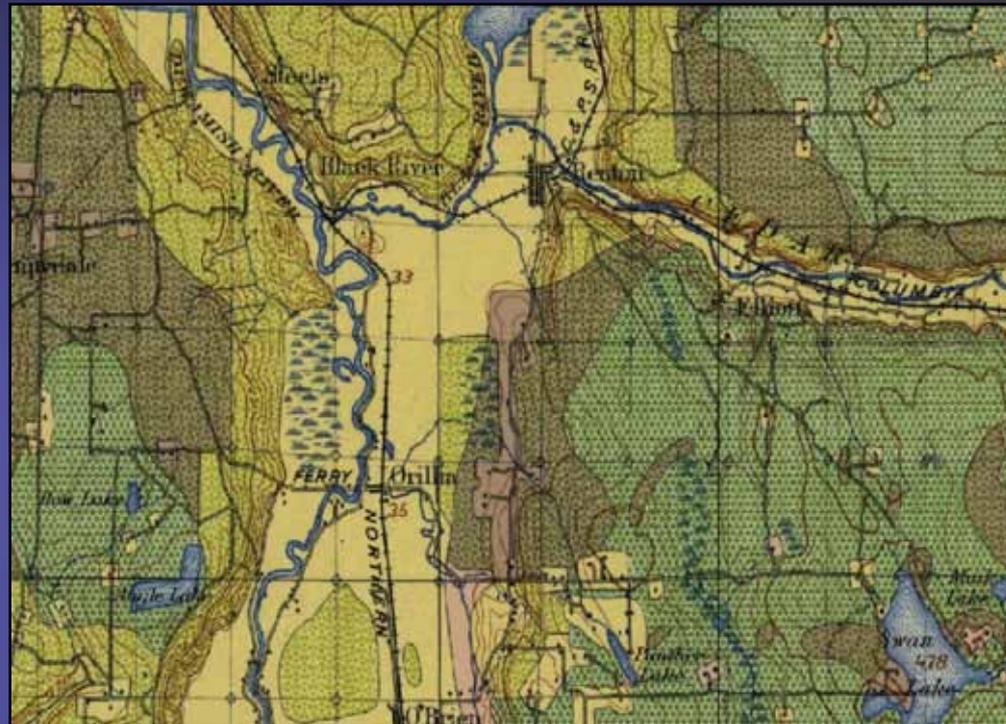
□ Water Cycle



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Stream Ecological Functions

- ❑ Water Cycle - Change in Cedar River/Green River/Lake Washington flows



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Stream Ecological Functions

Sediment

- Dependent upon:
 - Geologic features (slope, land cover, soil cohesion, storage potential)
 - Climate features (precipitation, intensity)
 - Interactions/impairments with hydrologic process
- Primary mechanisms:
 - Soil erosion
 - Mass wasting (landslides)
- Sediment can positively and adversely affect water quality/shoreline environment



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Stream Ecological Functions

Water chemistry/water quality

- Dissolved & absorbed materials transported & delivered to water bodies
 - Includes contaminants & toxins
- Vegetation, atmosphere & temperature play an important role in delivery
 - Wetlands and soils with minerals important for nitrogen, phosphorus & toxin cycling
 - Streams, deltas, wetlands & shallow areas allow deposition of nitrogen, phosphorus & toxins, preserving water quality in lakes



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Stream Ecological Functions

Organic matter

- Living & dead organisms, carbon-based materials (LWD) & riparian vegetation
 - Delivered via mass wasting, erosion & windthrow
 - Important for energy, habitat characteristics (pools & riffles), & nutrient cycles
 - Also important for shade & temperature
- Affects stream geomorphology



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Stream Ecological Functions

Stream geomorphology

- Natural changes/migration of stream channels over time
 - Provides pools & ripples
 - Prime aquatic habitat for certain species
- Channel migration mechanisms:
 - LWD
 - Alteration to upland environment (e.g. impervious surfaces)
 - Mass wasting



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Stream Ecological Functions

Habitat character/Aquatic habitat

- Health of environments for aquatic species linked to surrounding terrestrial ecosystem
- Affected by all structural processes
- Alteration of plant & animal communities:
 - Competition
 - Food web dynamics
 - Predator-prey relations
- Aquatic habitat connectivity may be limited by natural barriers (e.g. waterfalls) limiting population productivity



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Stream Ecological Functions

Habitat character/Terrestrial habitat

Shoreline vegetation contributes to ecological function

- Shading for temperatures required by salmonoids
- Organic inputs for aquatic life
- Food sources :insects & benthic microinvertebrates
- Stabilizing banks & minimizing erosion
- Reducing fine sediment
- Filtering vegetative uptake
- Providing critical wildlife habitat/migration corridors
- Providing LWD for aquatic diversity
- Regulating microclimate

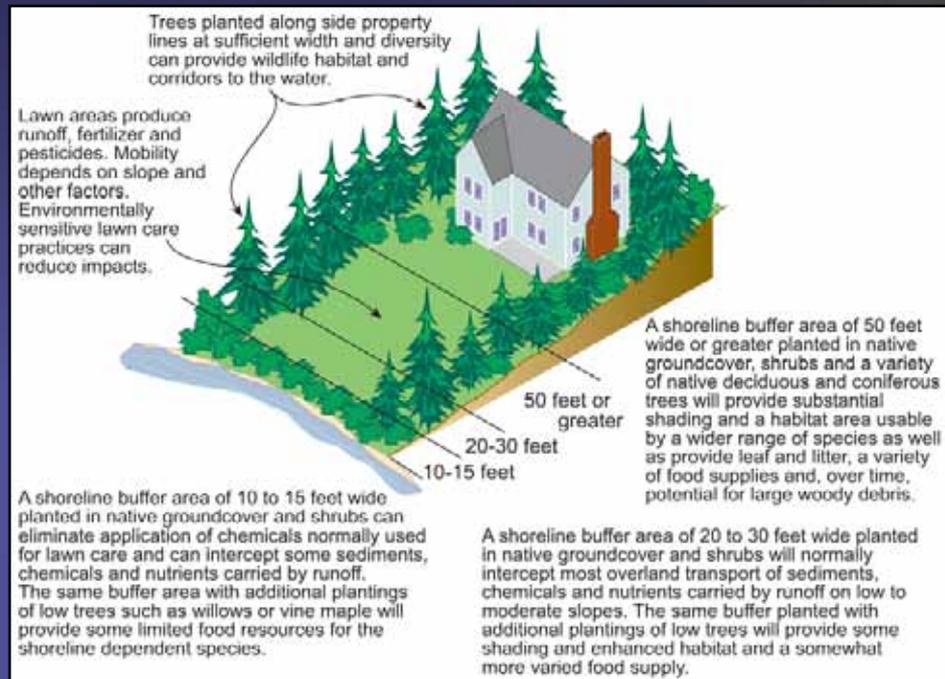


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Stream Ecological Functions

Habitat character/Terrestrial habitat

Vegetation



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No Net Loss

Cumulative Impacts WAC 173-26-186

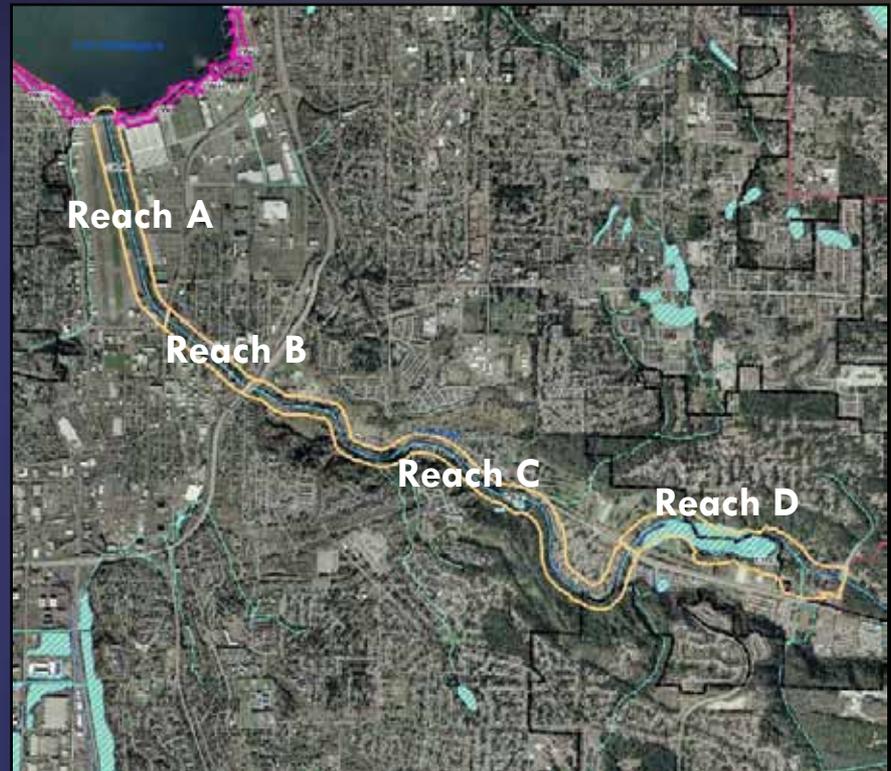
- Reasonably foreseeable future development and use of the shoreline
 - More intense development
 - Larger houses
 - More impervious surface
 - Larger commercial/multi-family buildings
 - Change in type of uses
 - Commercial mixed use
 - Marinas
 - Possible change in industrial uses on shoreline
 - Possible change in transportation use



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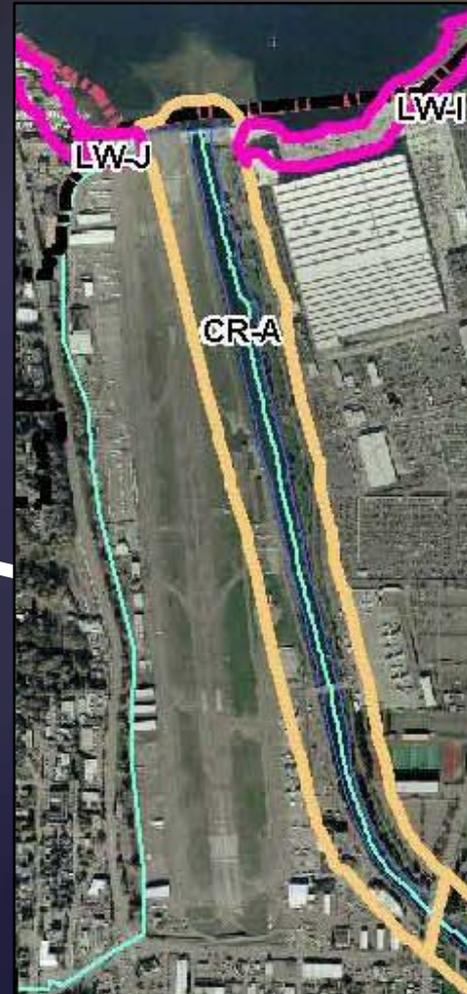
No Net Loss Opportunities and Constraints
Maintaining and Enhancing Ecological Productivity

Cedar River *By Reach*



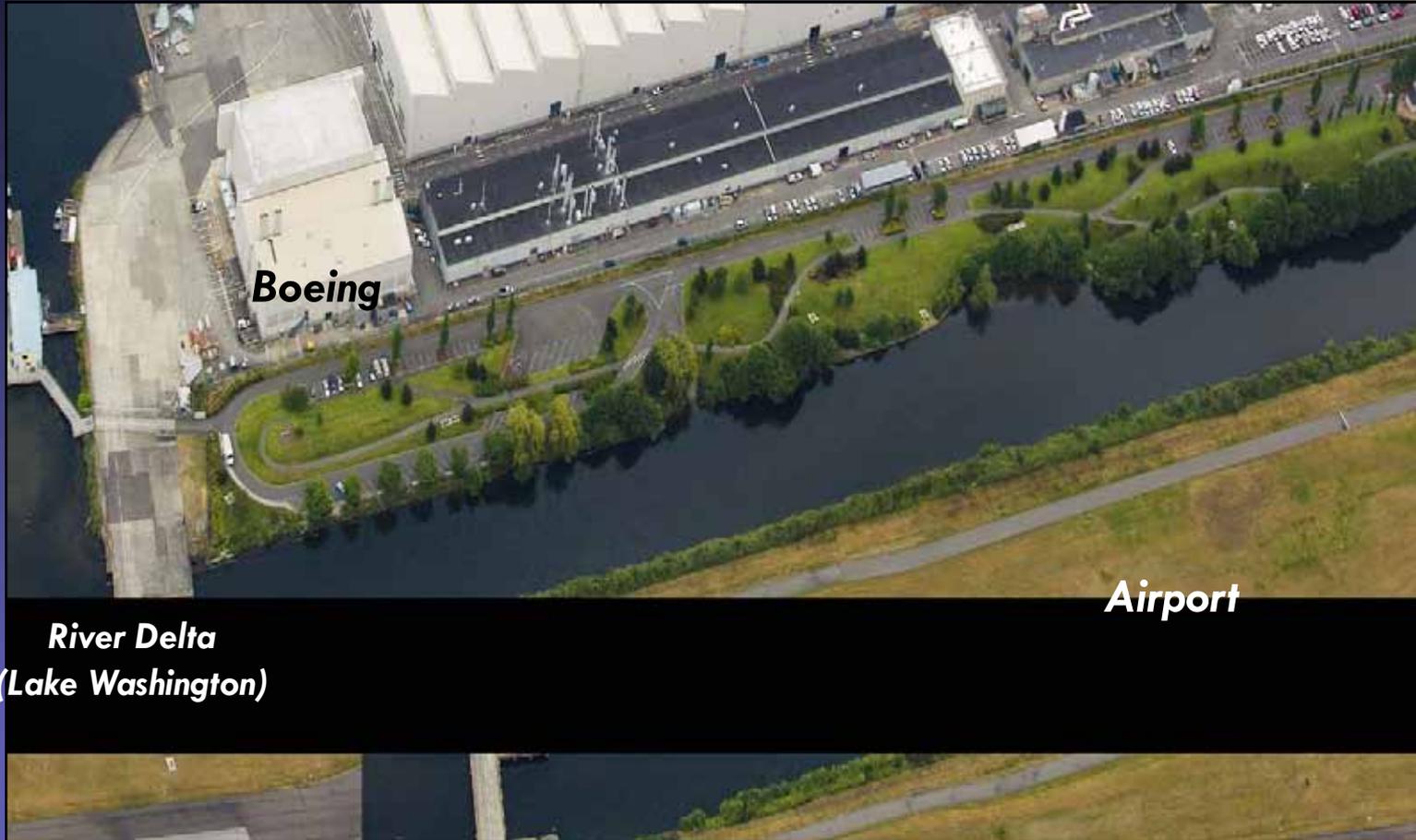
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Cedar River *Reach A*



Renton Shoreline Master Program

Cedar River *Reach A* Channelized Stream



Renton Shoreline Master Program

Cedar River *Reach A* Channelized Stream



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Parametrix

Renton Shoreline Master Program Cedar River *Reach A* Channelized Stream



Renton Shoreline Master Program

Cedar River *Reach A* Channelized Stream



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Cedar River Reach A Summary:

- Extends from Lake Washington to the Logan Avenue Bridge
- Straight channel since 1916
- Levees – USACE - restrictions on vegetation
- Routinely dredged in the past for flood control
- High levels of fine sediment, little habitat complexity; primarily a migratory corridor
- Park on west side, Municipal Airport on east side



Renton Shoreline Master Program

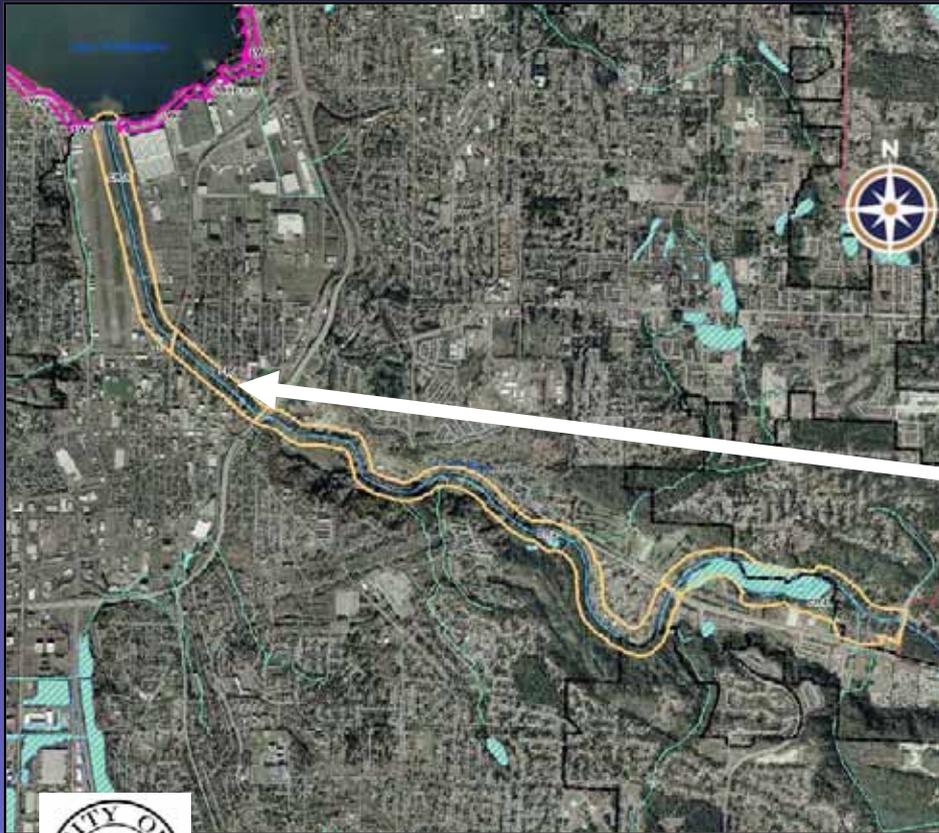
Cedar River *Reach A* **Potential actions:**

- Minor enhancements to riparian vegetation
 - Additional/more complex vegetation provides refuge & additional food sources for young salmon
 - Use constraints on west side – Municipal Airport
- Removal of hardened shorelines
 - Enhance habitat for juvenile salmon
 - Decrease habitat for prickly sculpins (salmon predator)
 - Substantial changes to flood control facilities
- Substantial reconfiguration of River to provide more natural stream character - Would require substantial redevelopment of adjacent uses



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Cedar River *Reach B*



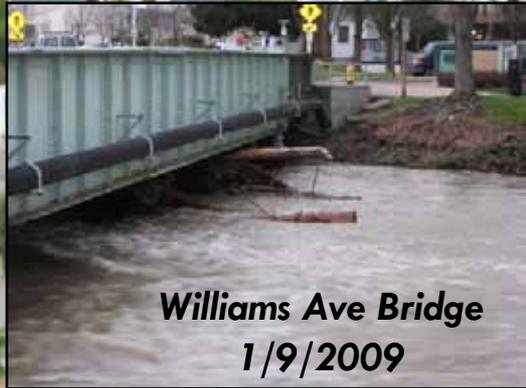
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Cedar River *Reach B* Channelized Stream



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Cedar River *Reach B* Channelized Stream



Williams Ave Bridge
1/9/2009

Wells Ave Bridge



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Cedar River *Reach B* Channelized Stream



1/9/09

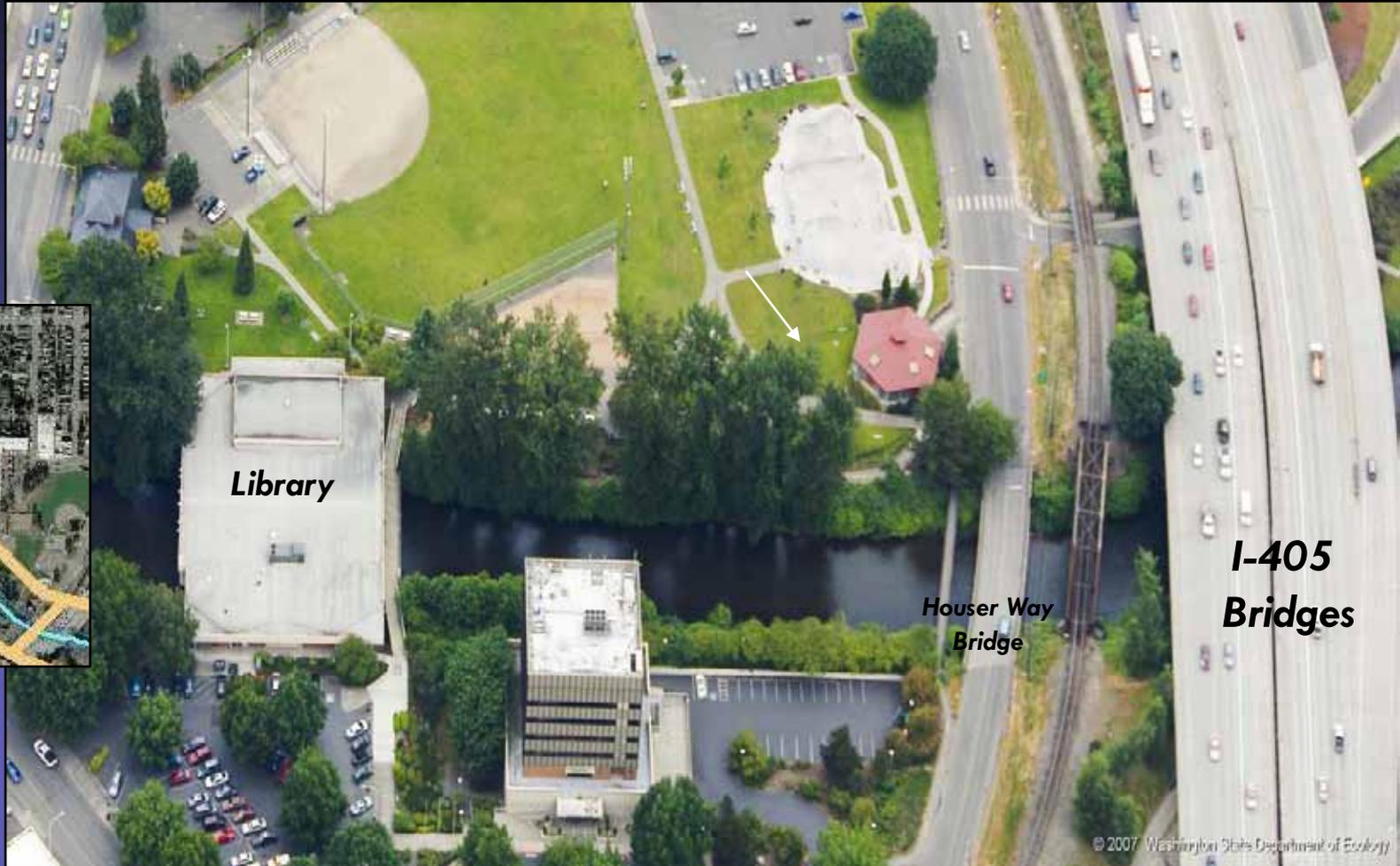


1/8/08



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Cedar River *Reach B* Channelized Stream



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Cedar River *Reach B* Summary:

- Extends from the Logan Avenue Bridge to I-405
- Straight channel since 1916
- Levees restricted by Corps; restrictions on vegetation
- Senior Center, parks, trails
- Single-/multi-family & commercial uses
- Spanned by the Renton Library
- High levels of fine sediment, little habitat complexity; primarily a migratory corridor (some spawning does occur)



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Cedar River Reach B Potential actions:

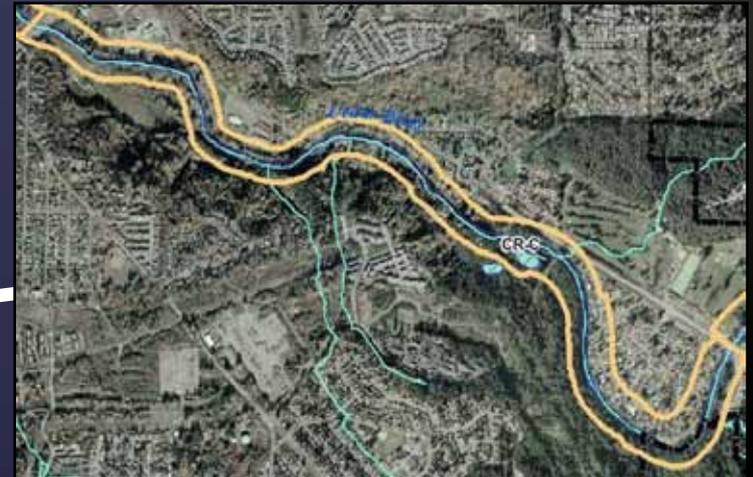
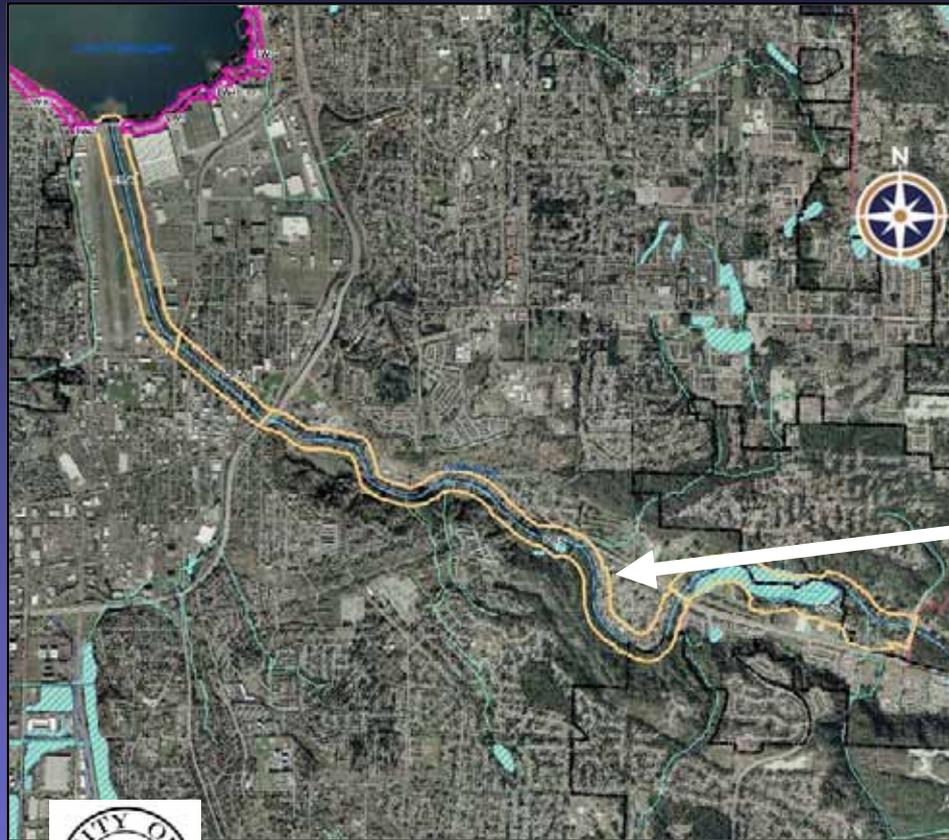
Minor enhancements to riparian vegetation

- Additional/more complex vegetation provides refuge & additional food sources for young salmon
- Most effective where paved pedestrian trail is adjacent to River - Requires compromise between two SMA goals: public access & ecological restoration



Renton Shoreline Master Program

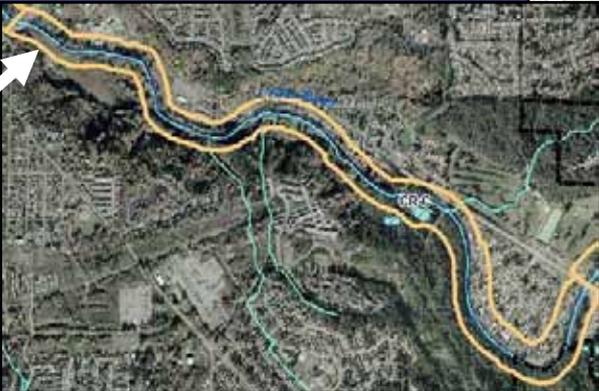
Cedar River *Reach C*



Renton Shoreline Master Program

Cedar River *Reach C*

South: Undeveloped & North: Hardened



I-405
Bridges



Community
Center



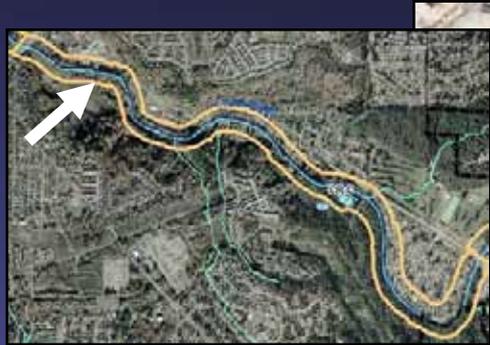
1/9/2009



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Cedar River *Reach C*

South: Undeveloped & North: Hardened



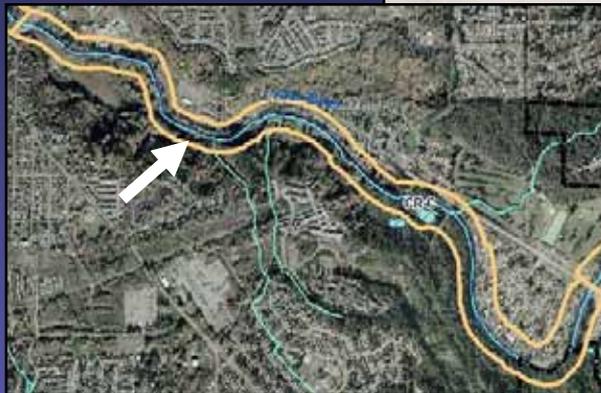
**Former Concrete
Batch Plant**

**Public Open
Space**



Renton Shoreline Master Program Cedar River *Reach C*

South: Undeveloped & North: Hardened



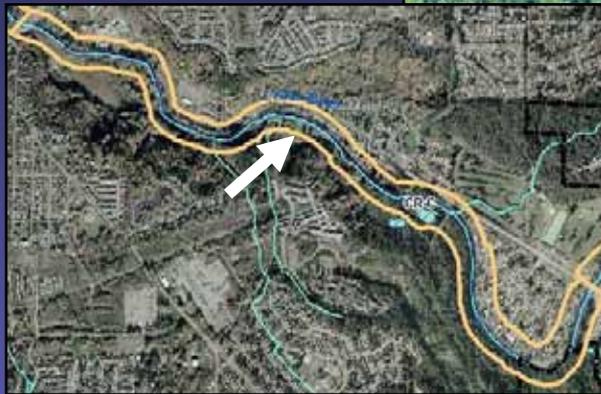
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Cedar River *Reach C*

South: Undeveloped & North: Hardened



Riverview Park Pedestrian Bridge – 1/9/2009



Public Open Space

SR-169

Public Open Space – Riverview Park

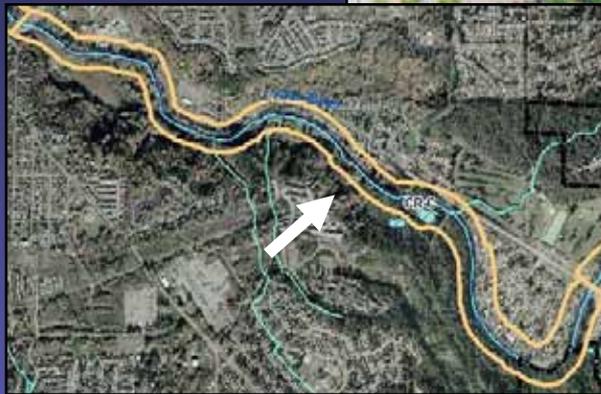
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Cedar River *Reach C*

South: Undeveloped & North: Hardened



Renton Shoreline Master Program

Cedar River *Reach C*

South: Undeveloped & North: Hardened



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Cedar River Reach C Summary:

- ❑ Extends from I-405 to SR 169
- ❑ South side is largely public open space; Cedar River Trail is set back from the River
- ❑ North is Cedar River Park, former concrete batch plant, single-/multi-family residential uses, commercial sites, & SR-169 (mostly hardened shorelines)



Renton Shoreline Master Program

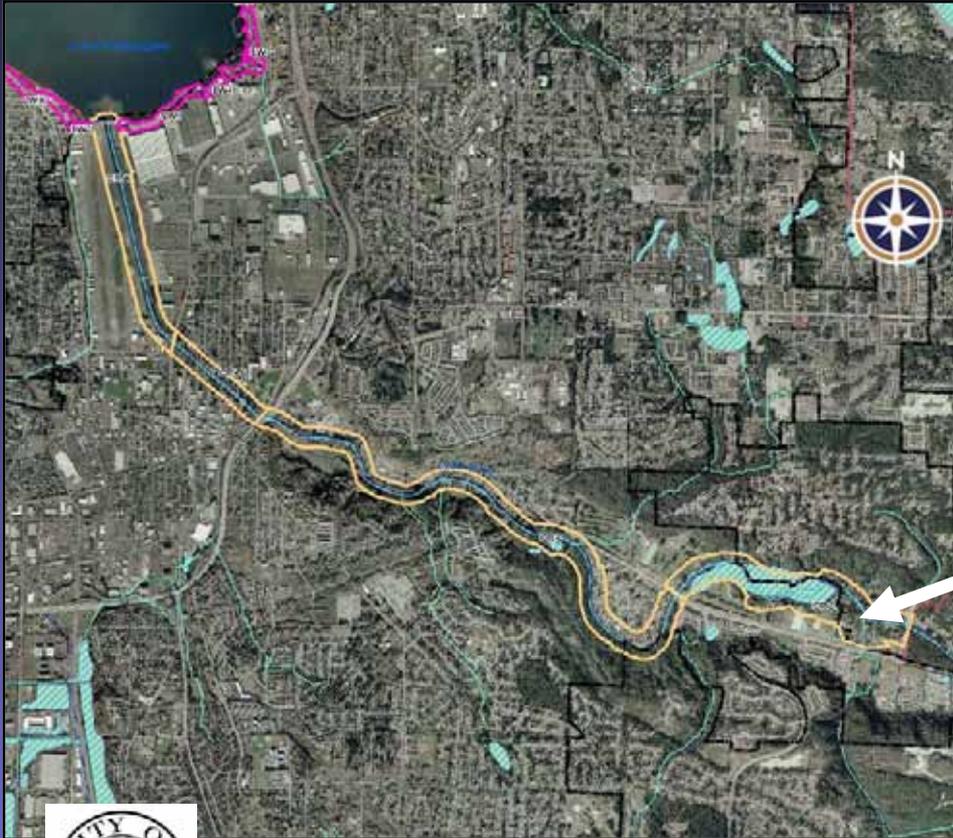
Cedar River Reach C Potential actions:

- Maintenance & enhancement of existing natural vegetation
- Additional building setbacks – north side
- Removal of hardened banks & provision of a buffer area of native vegetation – north side
 - Most significant opportunities:
 - Former concrete batch plant site
 - Redevelopment of multi-family site
 - Requires trade-off between public access (non-water-oriented mixed uses) and ecological enhancement



Renton Shoreline Master Program

Cedar River *Reach D*



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Cedar River *Reach D*

Intact/Natural Channel Characteristics



*Maplewood
Golf Course*



Gravel Bar

*SR-169
Bridge*



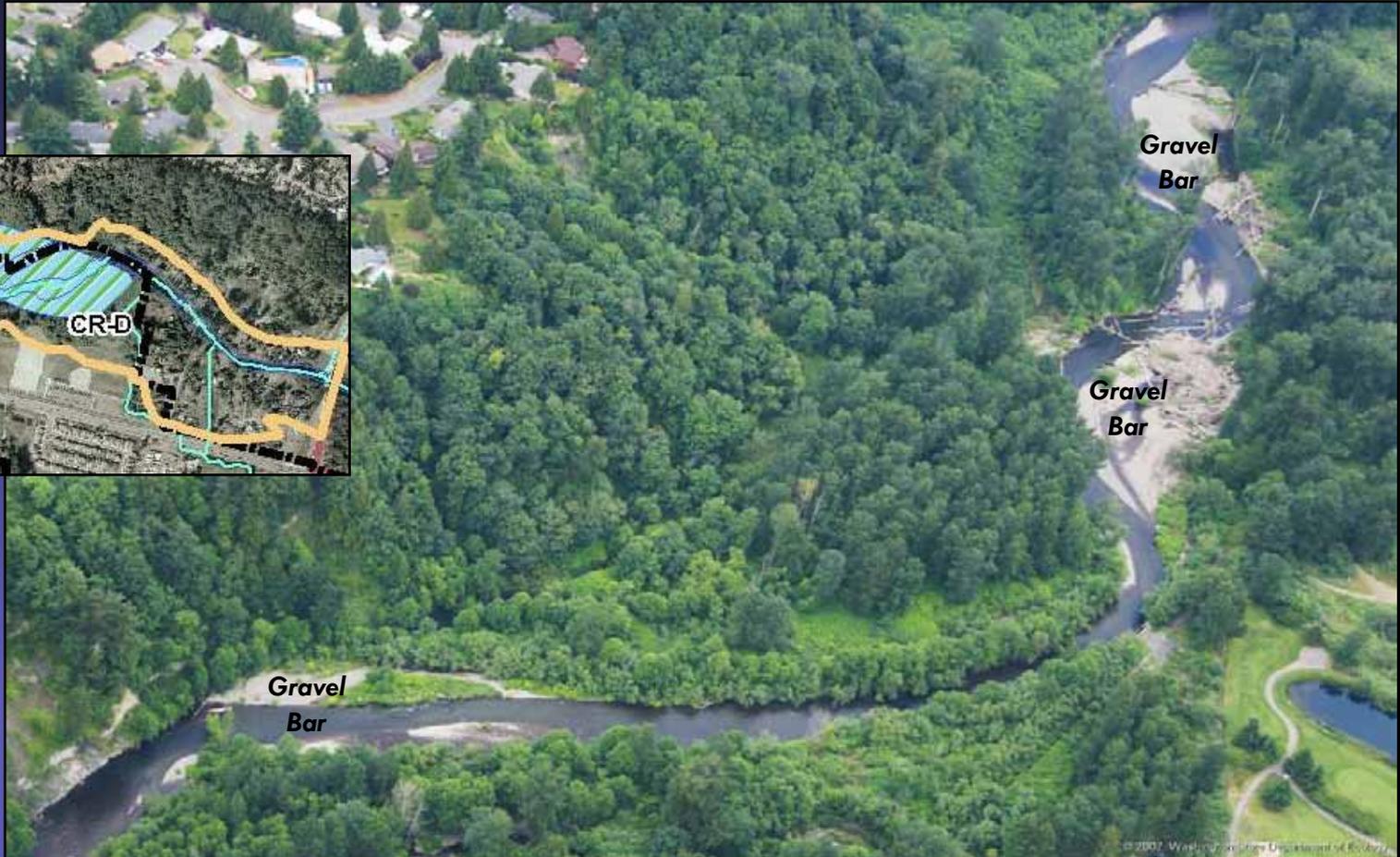
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Cedar River *Reach D*

Intact/Natural Channel Characteristics



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Cedar River *Reach D*

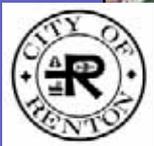
Intact/Natural Channel Characteristics



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Cedar River *Reach D*

Intact/Natural Channel Characteristics



Maplewood
Golf Course

Renton Shoreline Master Program

Cedar River *Reach D*

Intact/Natural Channel Characteristics



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Cedar River **Reach D** Summary:

- ❑ Runs from SR-169 Bridge to city limits
- ❑ Maintains most intact & natural channel characteristics in city
 - ❑ South shore bordered by Maplewood Golf Course & Ron Regis Park - Three off-channel salmon spawning channels have been constructed adjacent to the golf course
 - ❑ North shore undeveloped, allowing native riparian vegetation, channel meandering/migration & gravel bar development - LWD resulting from 2001 Nisqually earthquake landslide



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Cedar River Reach D Potential actions:

- Maintenance of existing natural vegetation & addition of complexity to existing vegetation
- Relocation or elimination of flood control facilities - channel migration/meandering



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No Net Loss Opportunities and Constraints
Maintaining and Enhancing Ecological Productivity

May Creek *By Reach*



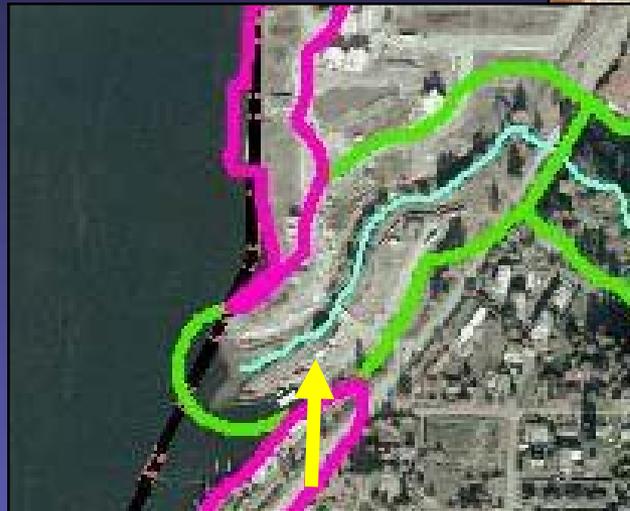
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May Creek *Reach A*



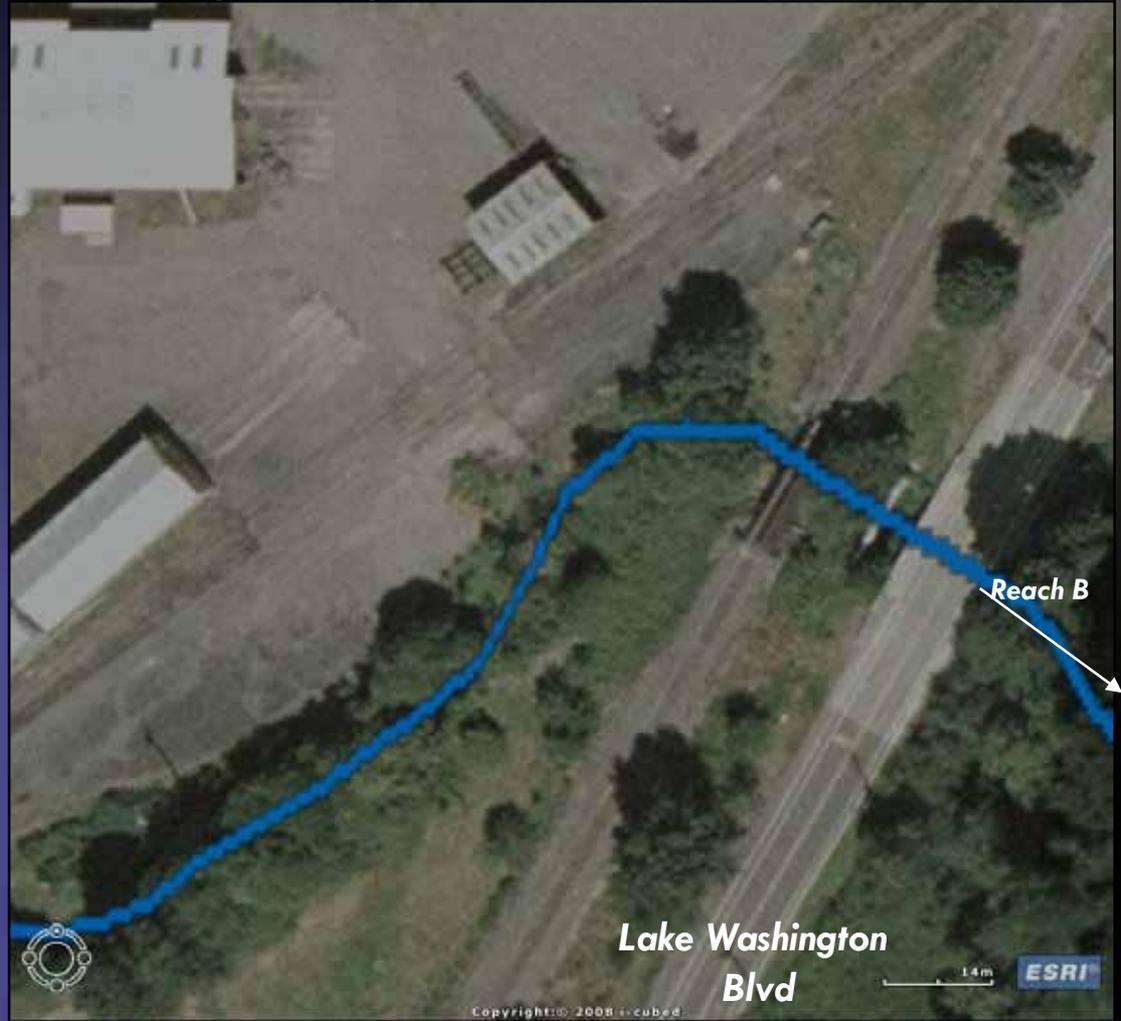
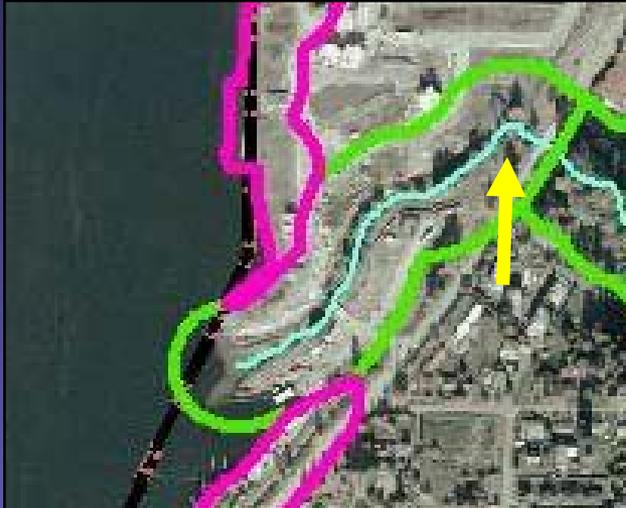
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May Creek **Reach A** High Degree of Modification



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May Creek *Reach A* High Degree of Modification



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May Creek *Reach A* Summary:

- ❑ Extends from mouth of Creek in Lake Washington to the Lake Washington Boulevard bridge.
- ❑ High degree of human modification
 - ❑ Channel re-routed in 1920s to accommodate industrial development; little natural riparian vegetation
 - ❑ Armoring to prevent channel migration/flooding
- ❑ Recent riparian revegetation associated with Barbee Mill subdivision should yield more natural habitat over time



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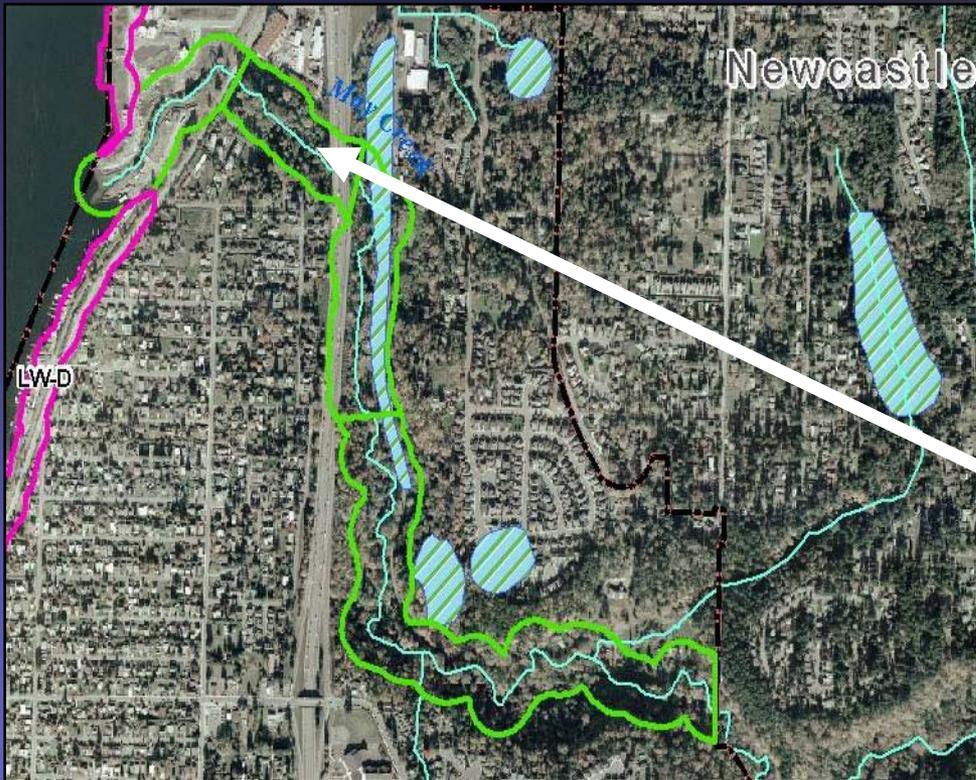
May Creek Reach A Potential actions:

- Restoration actions limited due to narrow buffer
- Buffer has been vegetated; best action is to ensure survival of plantings & control of invasive species
- If public use leads to trampling of vegetation & informal trails, fencing should be considered



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May Creek *Reach B*



Renton Shoreline Master Program

May Creek *Reach B* Natural Channel Characteristics



Renton Shoreline Master Program

May Creek *Reach B* Natural Channel Characteristics



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May Creek **Reach B** Summary:

- Extends from the Lake Washington Blvd to I-405
- 5.5-acre undeveloped parcel zoned residential
- Armoring associated with Lake Washington Blvd & I-405
- Stream section between roads is relatively unaltered



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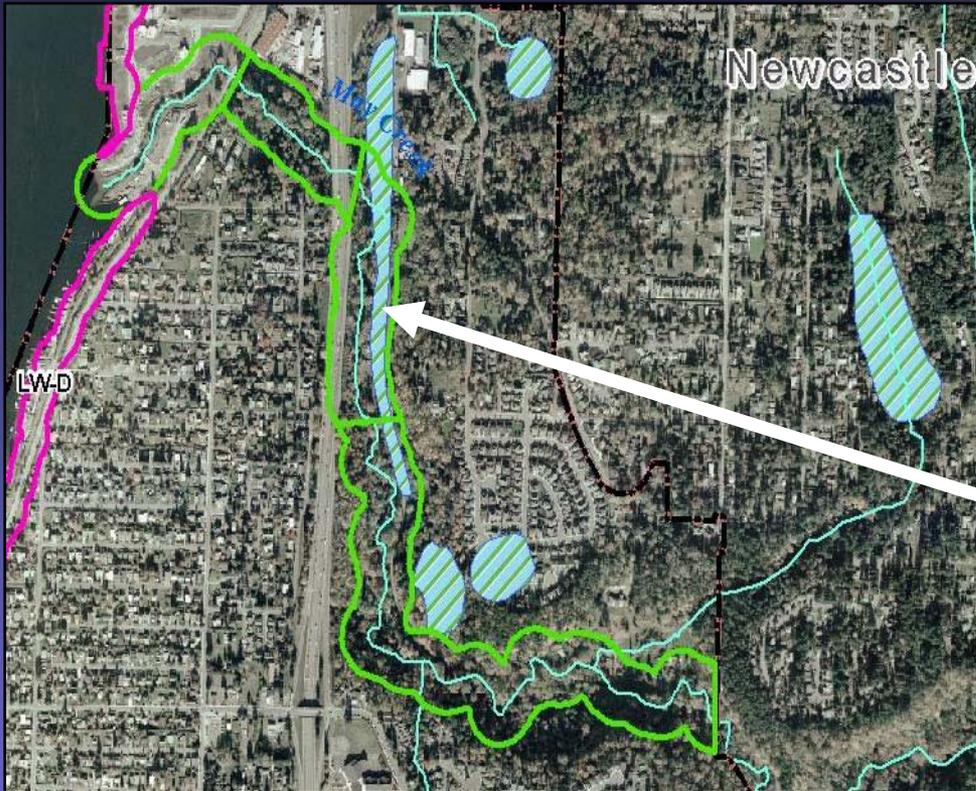
May Creek *Reach B Potential actions:*

- Ensure that future development preserves intact buffer area of native vegetation
- Vegetation should provide a variety of functions & terrestrial habitat
- Future development should also consider water quality & increased flow



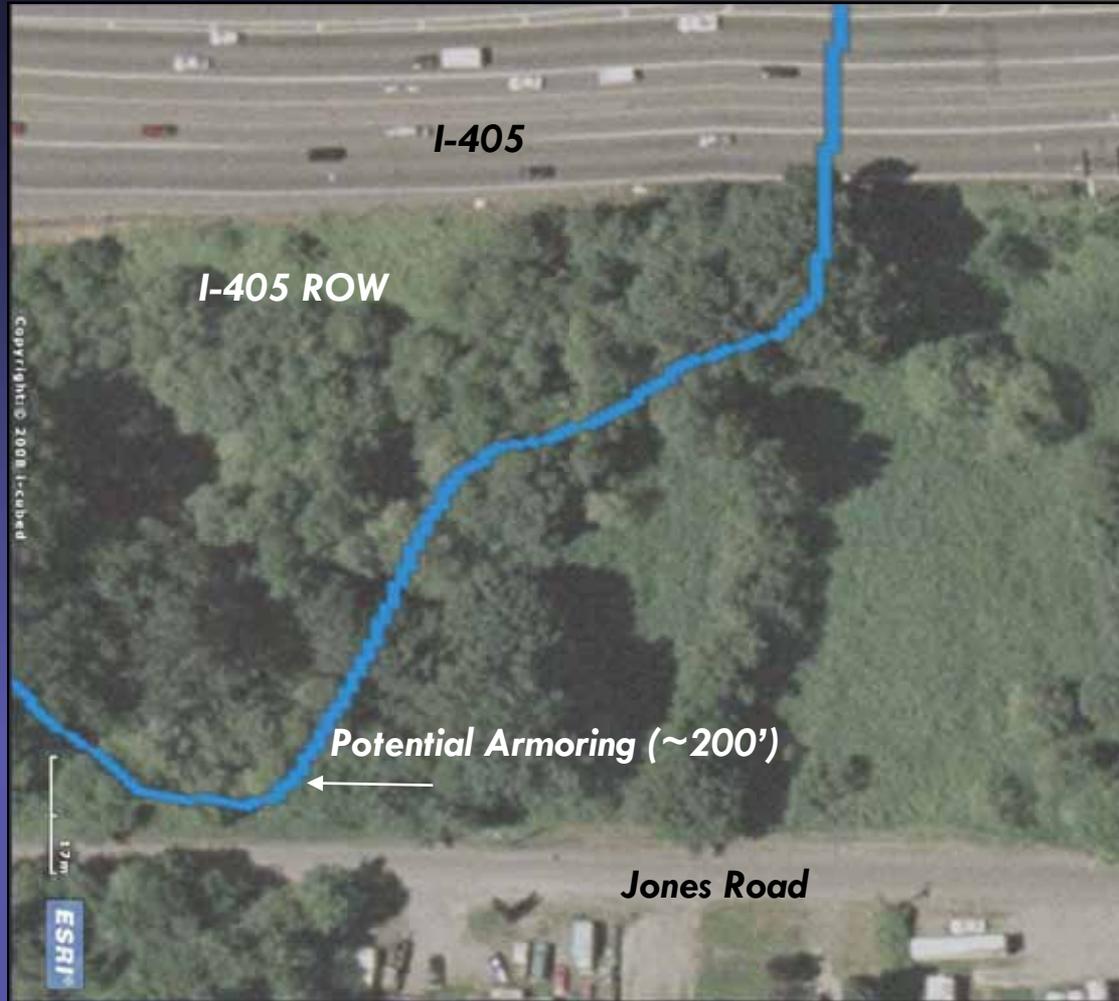
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May Creek *Reach C*



Renton Shoreline Master Program

May Creek *Reach C*



Renton Shoreline Master Program

May Creek *Reach C*



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May Creek *Reach C* Summary:

- ❑ Extends from I-405 to NE 36th Street
- ❑ Bounded by I-405 (west) & Jones Road (east)
- ❑ Flows through I-405 ROW, large undeveloped/
privately-owned parcel east of I-405, & adjacent to
3 residences north of SE 36th Street
- ❑ ~200' of streambank is armored
- ❑ ~500' of streambank appears to be modified



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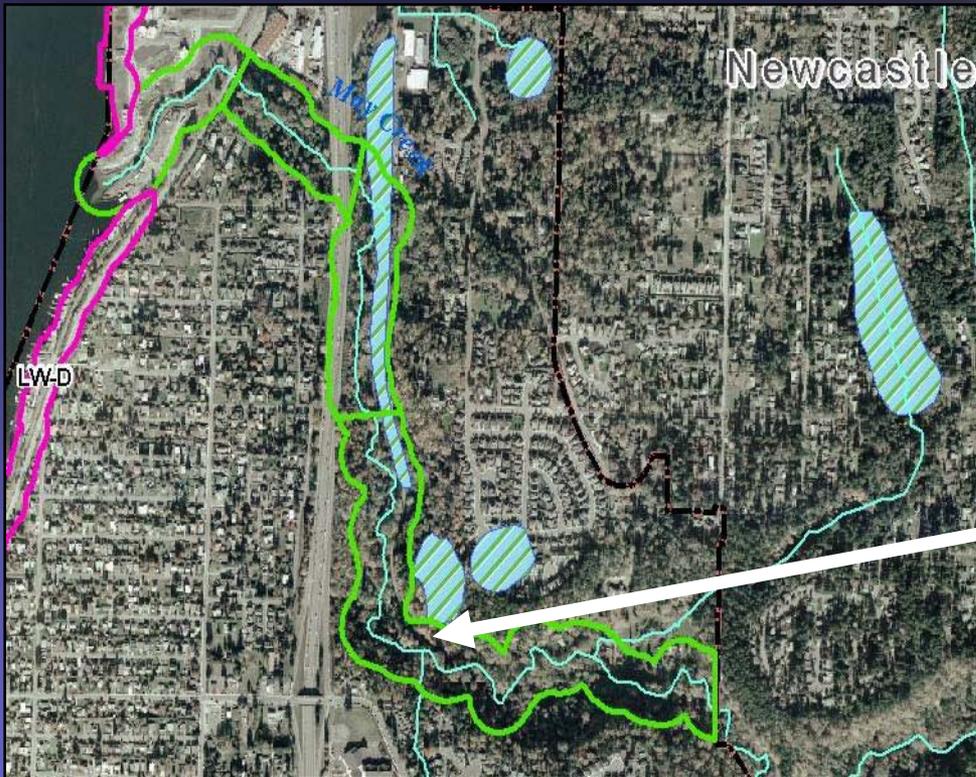
May Creek *Reach C Potential actions:*

- Opportunity to remove bank armoring
- Ensure natural riparian vegetation is maintained
- Educate adjacent property owners to avoid impacts from herbicides & pesticides
- Future development of large privately-owned parcel should preserve an intact buffer area of native vegetation



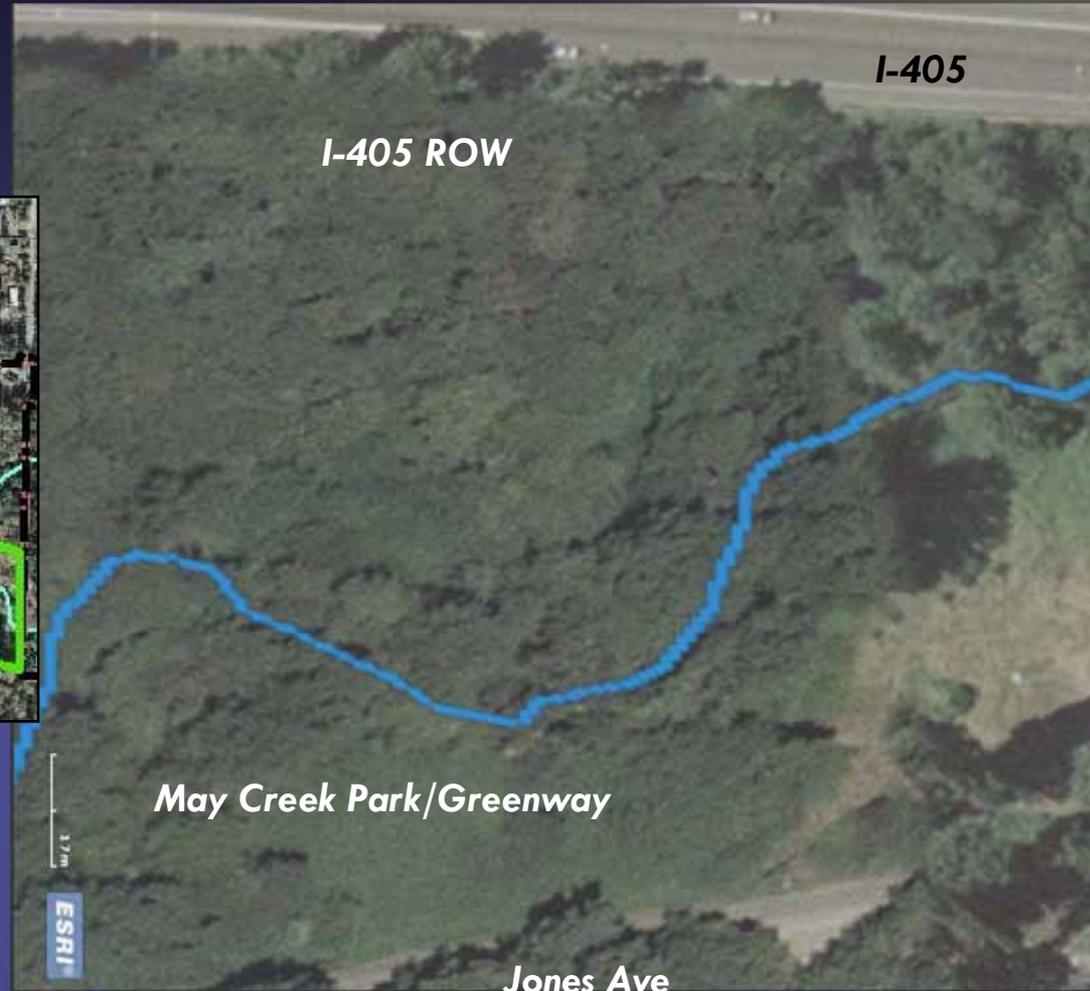
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May Creek *Reach D*



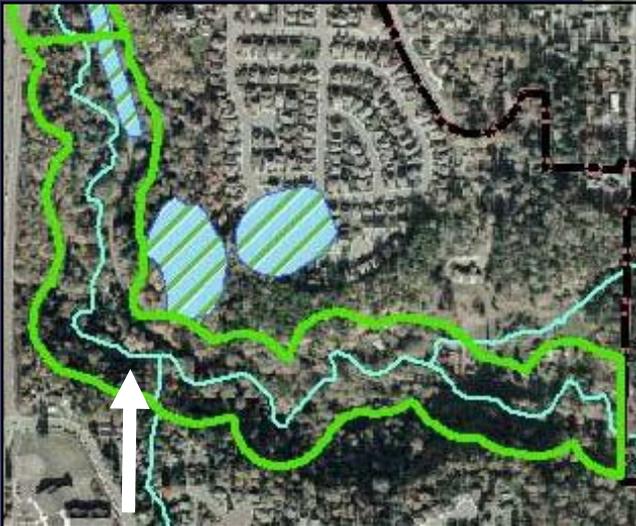
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May Creek *Reach D* Natural Channel Characteristics



Renton Shoreline Master Program

May Creek *Reach D* Natural Channel Characteristics



Renton Shoreline Master Program

May Creek *Reach D* Natural Channel Characteristics



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May Creek *Reach D* Summary:

- Extends from NE 36th Street to City limits
- Largely bounded by May Creek Park (KC) & open space tracts set aside in residential subdivisions
- 4 single-family 1-5 acre lots have cleared an area close to the stream; there are several road crossings to serve these residences
- Other buffer areas range from 200'-600'



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May Creek *Reach D Potential actions:*

- Maintain existing riparian vegetation & enhance where clearing has taken place or invasive species have become established
- Future development may provide opportunity to relocate development away from stream, replant the buffer area & eliminate/combine stream crossings
- Educate existing & future adjacent property owners to avoid impacts from herbicides & pesticides



Renton Shoreline Master Program

No Net Loss Opportunities and Constraints
Maintaining and Enhancing Ecological Productivity

**Green River,
Black River,
& Springbrook
Creek By
Reach**



Renton Shoreline Master Program

Green River *Reach A*

