



City of Vancouver

**Vancouver Lake
Partnership**

February 16, 2005

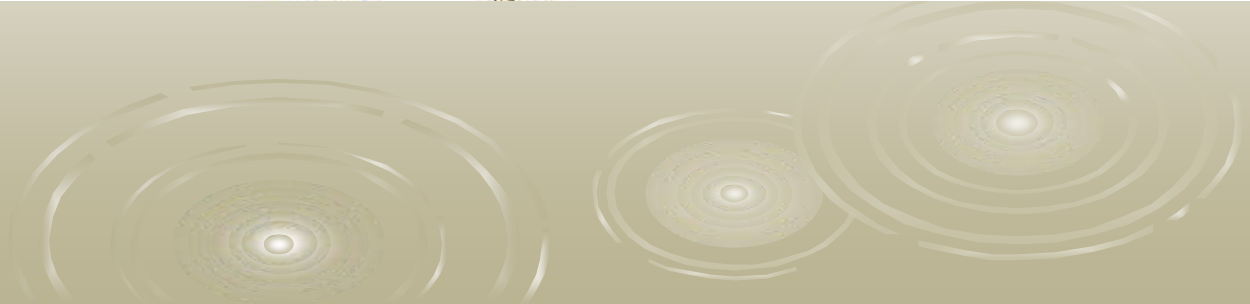
Presented by

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City Engineer



Burnt Bridge Creek





Burnt Bridge Creek Watershed





BURNT BRIDGE CREEK WATERSHED

- Burnt Bridge Creek Watershed is 28 square miles, much smaller than Salmon Creek's 90 square miles. Vancouver Lake is 4½ square miles.
- Burnt Bridge Creek is 13 miles long, however, more than half of that length was historic marshlands.
- The watershed once was heavily forested, now it has a tree canopy of 20%.
- Most of the watershed is highly permeable.
- A large portion of the rainfall in this watershed quickly percolates into the ground.



BURNT BRIDGE CREEK WATERSHED cont.

- 5 square miles of the watershed is called the Burton sink area because there is no piped storm water outlet. Water is 100% recharged into the ground.
- The marshes covered the flood plain from 18th St. to 162nd Ave.
- The marshlands collected and cleansed the water which formed the creek headwaters. The historic creek began near 18th St. as water flowed out of the marshland into a natural channel for a 5 mile journey to Vancouver Lake.
- In the mid 1800's, farmers dug a drainage ditch from 18th St. to 162nd Ave to drain portions of the marsh to farm the area.
- The volume of flow in the ditch and creek has always been small due to the small size of the watershed, forest, high groundwater recharge, and marshland.



BURNT BRIDGE CREEK WATERSHED cont.

- The creek discharges into the southeast corner of Vancouver Lake.
- Today's average summer day creek flow is equal to 0.1% of the volume of Vancouver Lake.
- The entire volume of flow from Burnt Bridge Creek for a summer month is only equal to 3% of the volume of Vancouver Lake.
- All of Burnt Bridge Creek is within the urban growth boundary.
- Water quality suffers from urbanization which was mostly built before water quality protection practices were required.
- Elevated levels of naturally occurring phosphates are found in the creek, groundwater and lake.



Groundwater and Surface Water Phosphate Concentrations in Southwest Clark County

Vancouver Water Supply System

Water Works Park (Clark College)	0.21 mg/l
Water Station #3 (north main)	0.24 mg/l
Blandford Wells (next to SR 14)	0.22 mg/l
Water Station #7 (Evergreen)	0.19 mg/l
Water Station #8 (Orchards)	0.18 mg/l
Water Station #9 (Sifton)	0.17 mg/l
Water Station #14 (Green Meadows)	0.15 mg/l
Water Station #15 (Burton)	0.13 mg/l
Ellsworth Springs (1000 ft deep wells)	0.26 mg/l
Vancouver Lake Park Test Well #1	0.14 mg/l
Vancouver Lake Park Test Well #2	0.32 mg/l
Vancouver Lake Park Test Well #4	0.49 mg/l

Average Deep Well Concentration

0.22 mg/l

Burnt Bridge Creek Surface Water Grab Sample Tests

Andresen Road	0.23 mg/l
Alki Road	0.14 mg/l
Fruit Valley Road	0.30 mg/l

Burnt Bridge Creek Average

0.22 mg/l

Healthy Plant Growth Requirement

0.05 mg/l

Columbia River

0.03 mg/l



Water Resources Protection Programs

Surface Water Management Programs

- Flood Plain and Habitat Property Acquisition
- Capital Projects Implementation
- Development Review for compliance with water quality standards
- Erosion Control and Enforcement
- Drainage Outfall Inspection
- Integrated Pesticide Management Plan
- Bio-swale Replacement Program to enhance water quality treatment
- Program Planning and Design
- Business Outreach/Inspection for chemical use and disposal practices



Water Resources Protection Programs cont.

Urban Forestry

- Protect and preserve existing trees.
- Plant trees to increase tree canopy and diversity.
- Develop tree stewardship throughout community.

Septic Tank Elimination Program

- Plan to provide sanitary sewers to all homes, businesses and industry.
- Construct affordable sanitary sewers to eliminate all septic tank systems in the Vancouver sewer service area.
- Mandatory septic tank inspection and maintenance program.



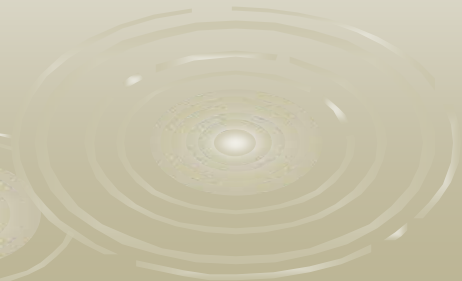
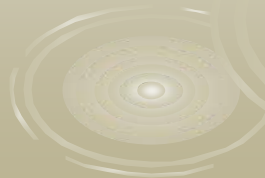
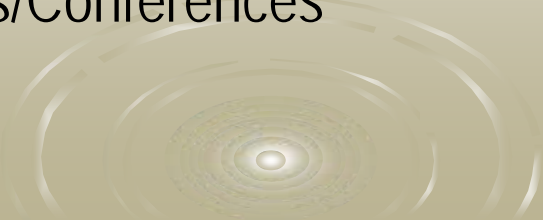
Water Resources Protection Programs cont.

Solid Waste Management

- Solid Waste Reduction
- Recycling of materials
- Environmental Information
- Hazardous Materials Disposal

Water Resources Education Center

- Community education of water resources
- School Partnership Program
- Tours of Wastewater Facilities and Wetlands
- Exhibits, Laboratory, Computer Room
- Workshops/Conferences





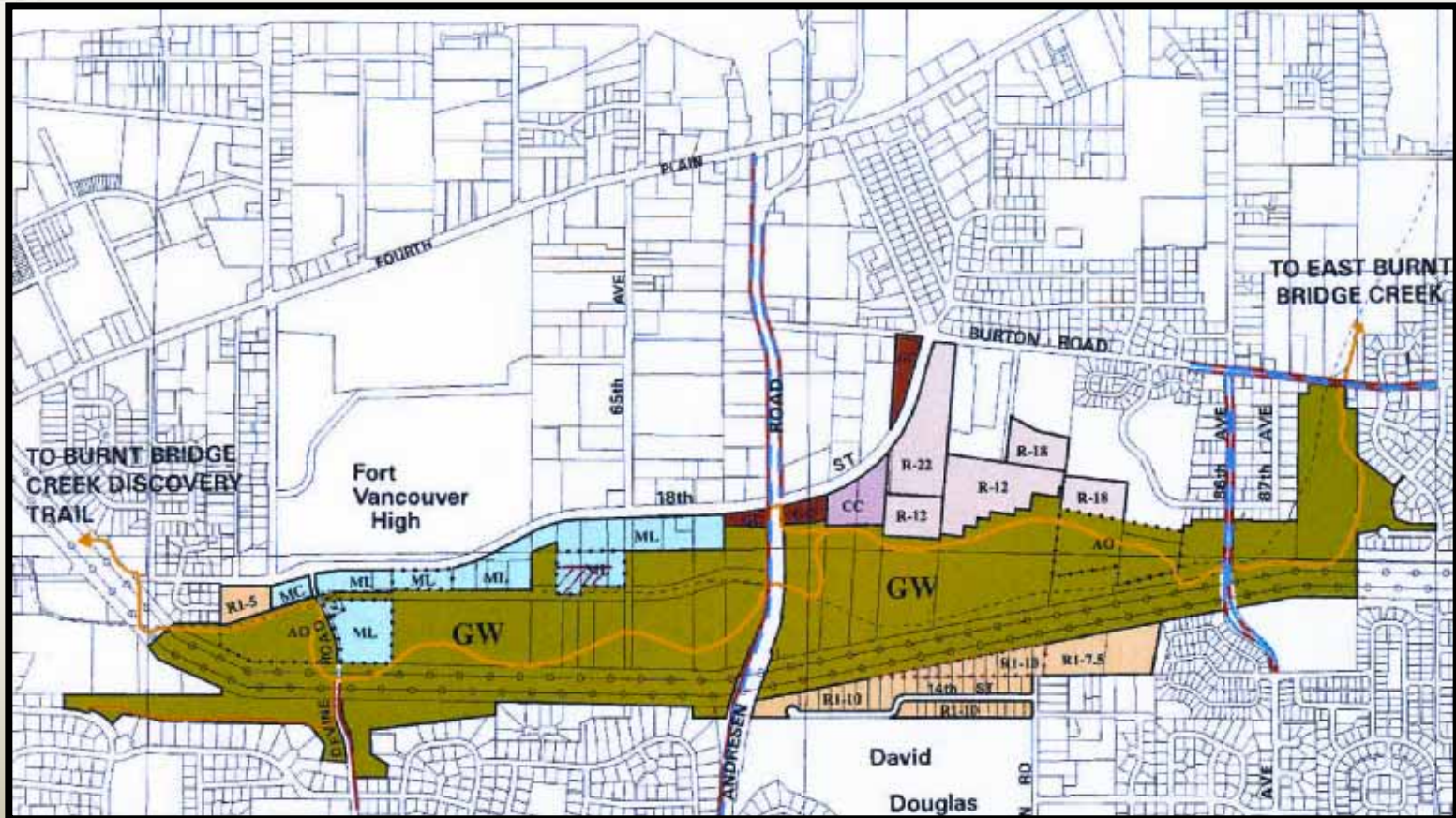
Burnt Bridge Creek Watershed





Greenway District

Lettuce Fields Sub-Area Plan





Burnt Bridge Creek Canyon

High Quality Creek Habitat





Burnt Bridge Creek Canyon

High Quality Riparian Habitat





Burnt Bridge Creek

Tree Canopy





Devine Looking East





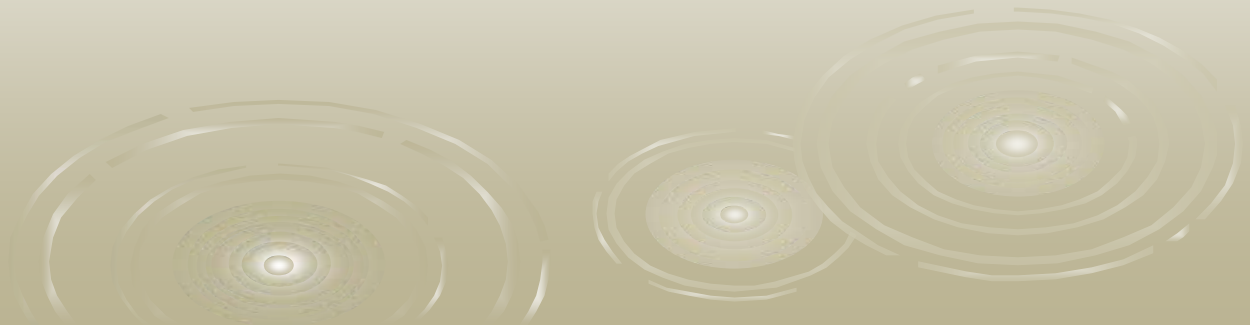
Burnt Bridge Creek





Project Goals

- Improve water quality
- Enhance fish and wildlife habitat
- Control flooding
- Treat stormwater drainage
- Increase and diversify shrub and tree canopy





Science guides design

- *Geology / Soils*
- *Basin Hydrology*
- *Wetland Delineation*
- *Stream Habitat*
- *Fish & Wildlife*
- *Vegetative Communities*
- *Archaeological*
- *Historical*

