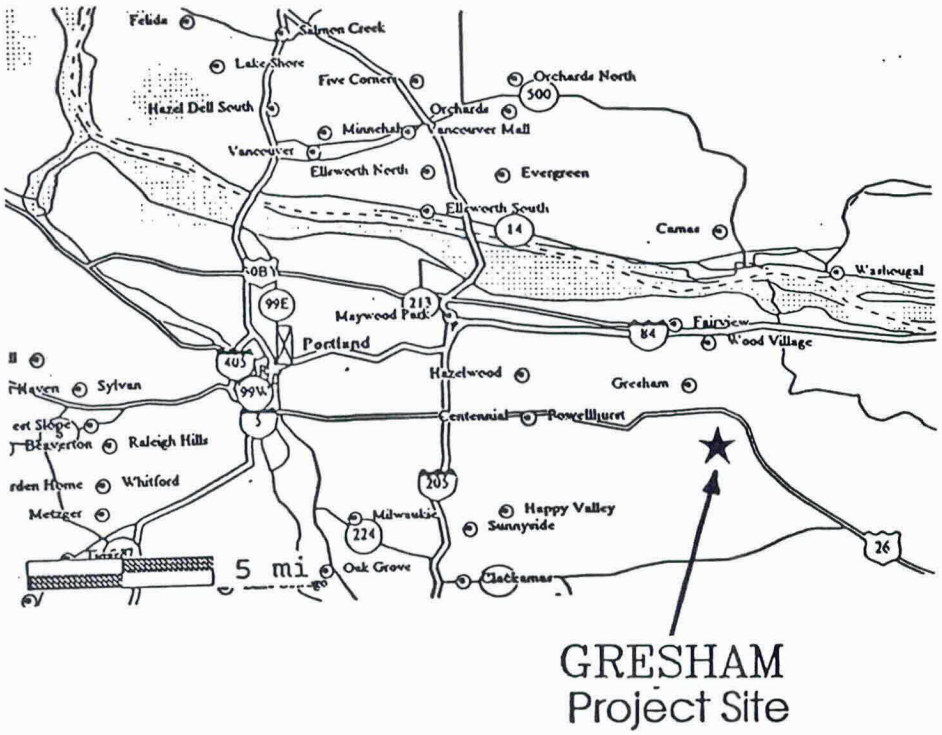
JOHNSON CREEK IMPROVEMENTS AT MAIN CITY PARK

METRO GREENSPACE RESTORATION PROJECT

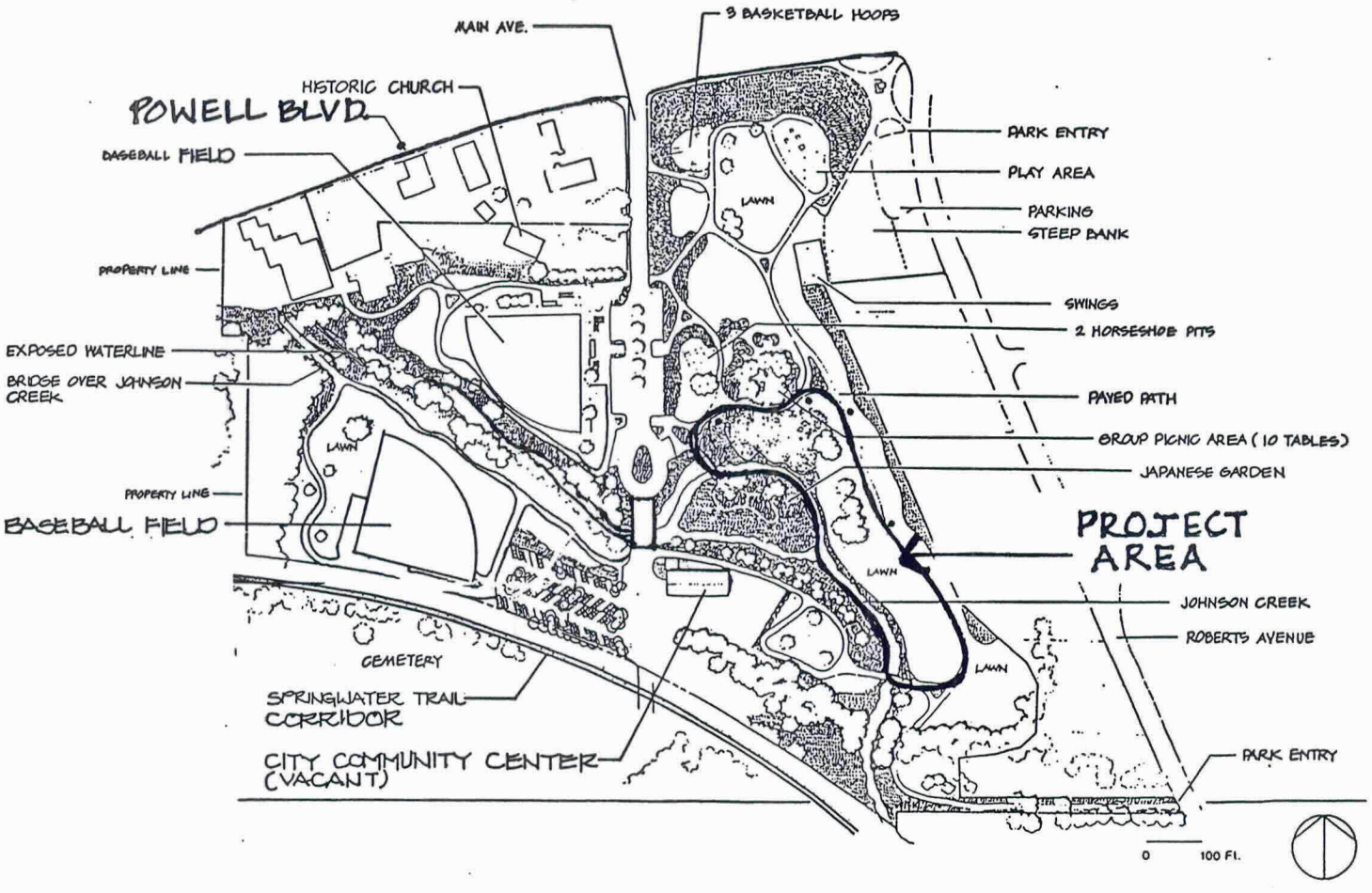
FINAL REPORT AND BILLING FORM
JANUARY 9, 1997

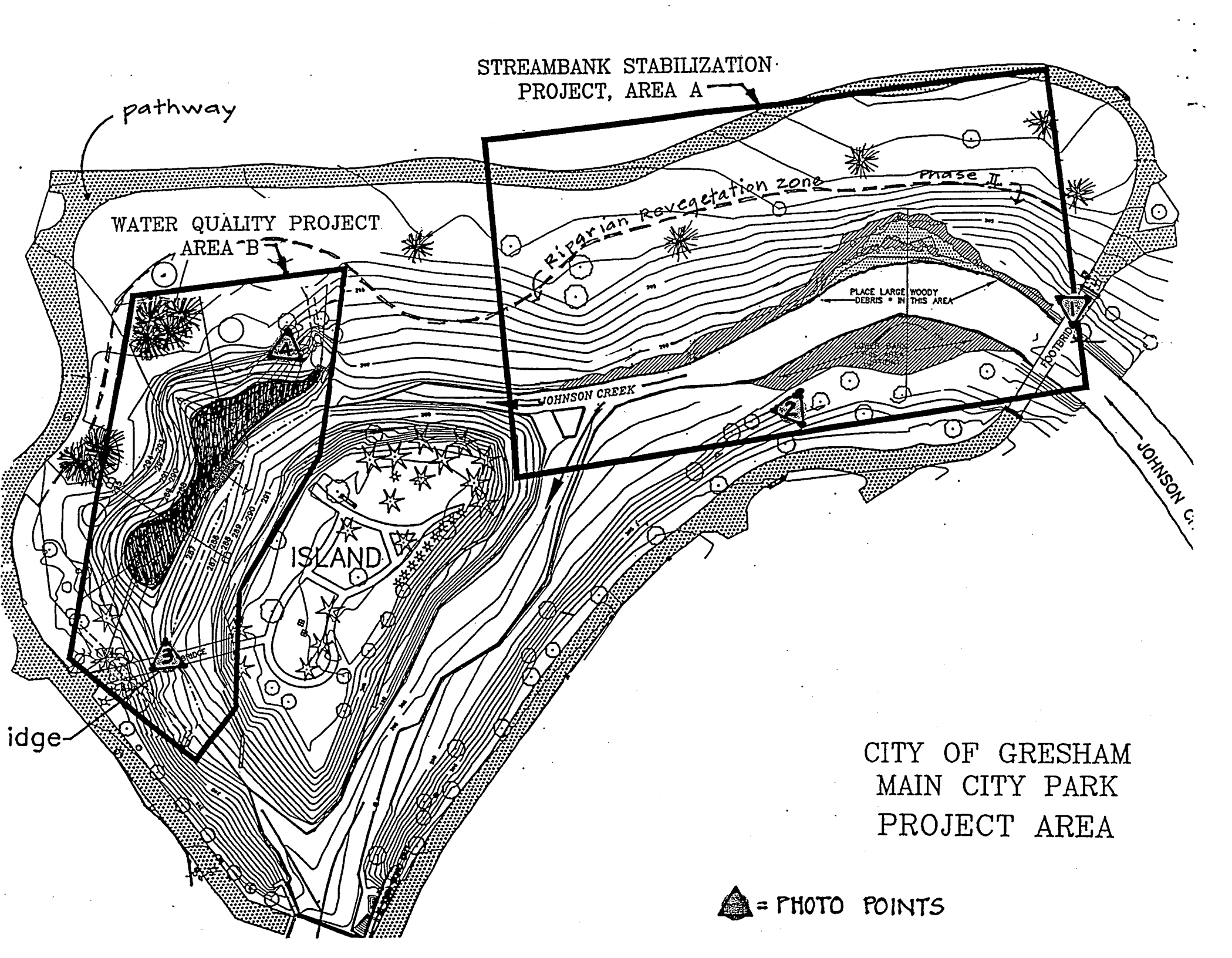
Lora Price, Project Manager
Parks & Recreation Division
Department of Environmental Services
City of Gresham
1333 NW Eastman Parkway
Gresham, Oregon 97030

VICINITY MAP



MAIN CITY PARK




STREAMBANK STABILIZATION
PROJECT, AREA A
pathway
WATER QUALITY PROJECT
AREA B
Riparian Revegetation zone
Phase II
PLACE LARGE WOODY
DEBRIS IN THIS AREA
FOOTBRID
JOHNSON CREEK
JOHNSON CI
ISLAND
BRIDGE
idge
1
2
3
4
CITY OF GRESHAM
MAIN CITY PARK
PROJECT AREA
= PHOTO POINTS

PROJECT DESCRIPTION

Main City Park is one of Gresham's oldest parks. Development of this park has occurred over a span of many years, but major developments in the park took place in the late 60s when much of the park was created, in fact, by filling in a large oxbow meander of Johnson Creek. Much of the 1/3 mile of creek that we see flowing through Main City Park today is, in actuality, an altered channel. This fact combined with the formalized park landscaping that existed down to the stream channel contributed to a number of negative impacts on the stream.

This project addresses three primary problems along the creek: lack of a native vegetation buffer zone on the streambank, a massive bank failure which was worsened by the February 1996 flood and, two large storm drains that daylighted directly into the creek, conveying pollutants through the storm runoff into the creek.

To address the eroded bank which was approximately 130 feet long and 12ft high at its worst point, a boulder terraced bank was constructed which incorporated over 200 boulders ranging in size from 4 1/2 to 6 feet in diameter. The boulder toe was placed several feet beneath the stream bed, and 4 large root wads were incorporated into the toe to provide underwater fish habitat. The remainder of the bank is being converted from a turf zone to a natural zone. An erosion control seed mix was planted and trees and shrubs will be planted in phase II of this project.

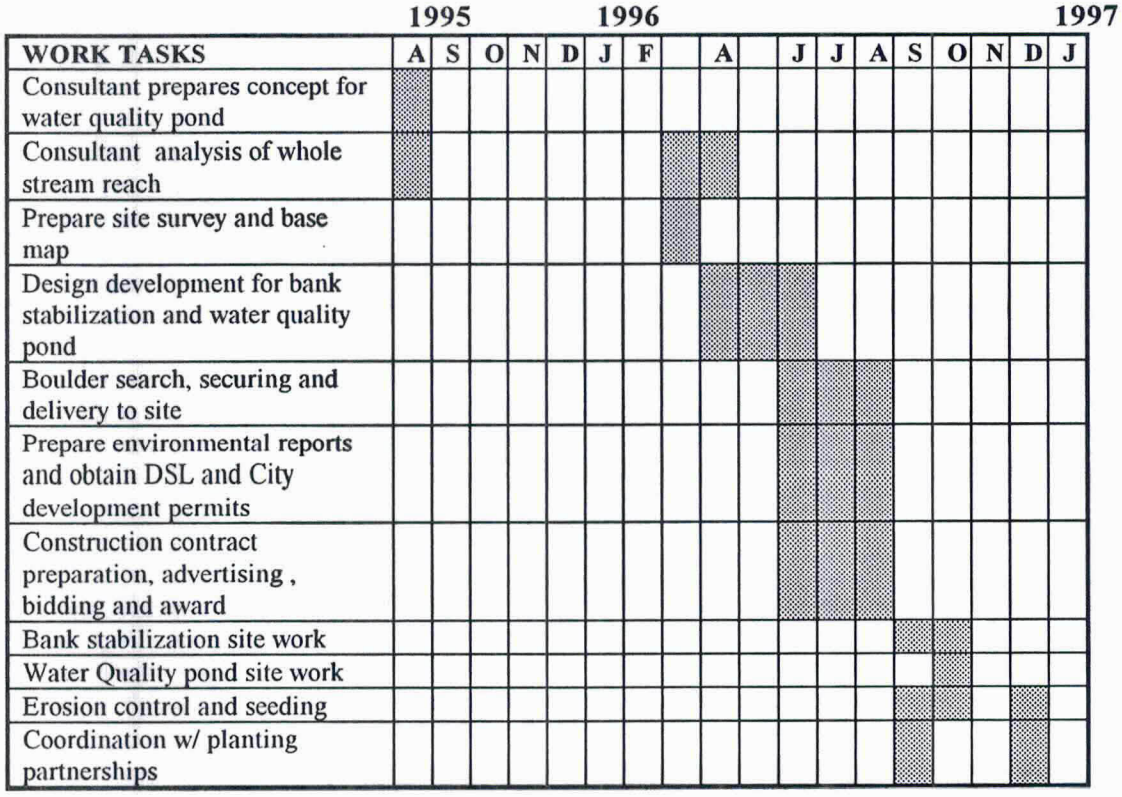
To address the two stormwater outfalls a wetland water quality pond was created to intercept and filter the runoff before it enters the creek. The two outfalls are diverted into the pond and then flow into the creek at a spillway point. The main benefit of this pond will be to capture oil films and sediments. The banks around the pond will be planted with riparian trees and shrubs in phase II of this project.

GOALS AND BENEFITS

The formation of the water quality wetland treatment pond will help reduce the discharge of sediments and pollutants in Johnson Creek by intercepting the stormwater runoff and allowing it to filter and settle before entering the creek. The stabilization of the major bank failure will prevent further soil loss and sediment discharge into the creek. Four large root wads, which were incorporated into the bank stabilization will provide additional underwater fish habitat. The round boulders that were used for stabilization also provide a recreational/viewing benefit for park users

Because the project area is within a highly used park and along a highly visible and accessible reach of the creek this project will provide wildlife and plant viewing opportunites, volunteer stewardship and excellent outdoor education potential.

WORK TASKS AND TIMELINES



PROJECT BUDGET

	Description of Services	Cost or Cash Value	Reimbursement Request from Metro
Personnel & Labor Costs	Internal services: project coordination and admin.	$12,983	0
	Construction contracted labor*	$53,988	$13,500
Materials & Supplies	Boulder supply and delivery	$8,100	0
Professional Services	Consultant Services	$18,321	$1,500
TOTAL REIMBURSEMENT REQUESTED			**$15,000**

* reflects construction cost to date, not total cost.

PROJECT STAFF / WORKERS / VOLUNTEERS

City Staff:

Lora Price; Park Planner
Dan Danicic; Civil Engineer
Terry Ramseth; Maintenance Supervisor

Consultants/Advisors:

Paul Fishman; Fishman Environmental Consultants
David Gorman; Water Resources Management
Todd Moses; Watershed Applications
Steve Fedje; Natural Resource Conservation Service

Contractor:

Mike Shaw, Kenneth Parker of Brant Construction, Inc.

Volunteer Partnerships:

Chrissie Greenwood; Multnomah Education Service District
Scott Libenguth; Gresham Rotary Club
Anthony Roy; Friends of Trees
Kathleen Taylor; Northwest Service Academy

PROJECT RELATIONSHIP TO GREENSPACE PROGRAM

Goals of the Greenspace Program include: establishing a regional system of interconnected natural areas, trail and greenways for wildlife and people; preserving the diversity of plant and animal species; and educating citizens and encouraging environmental awareness so citizens will become involved stewards of natural areas.

This project supports the Greenspaces Program by restoring a degraded reach of Johnson Creek, thereby restoring connectivity of natural conditions along the creek, for wildlife in particular. The project improves water quality by removing pollution point sources and helps to restore plant and animal diversity. This project encourages environmental awareness by involving several volunteer partnerships in the implementation and maintenance phases, and the site will serve as a excellent outdoor classroom.

WHAT WORKED / WHAT DIDN'T

The scope of this project as originally conceived was changed and expanded by the February 1996 flood event. The increased bank erosion that occurred made evident the fact that an engineered solution would be required and substantial in-stream work would be necessary. The project scope, timeline and cost was expanded as a result.

The consultant team were sensitive to designing holistically so that habitat, aesthetic and recreational values were also taken into consideration in the design as well as basic function.

Though not 100% completed, the result of the boulder reinforced bank and the water quality treatment pond are successful. Both have withstood the November 96 flood which was higher than the February flood.

ADVICE AND HELPFUL HINTS

1. When working with non-traditional construction materials such as large river boulders and root wads, allow plenty of lead time for tracking down and working out arrangements for getting materials to the project site. The timing for securing materials must often fit with other ongoing construction projects, and therefore may not necessarily be the best fit with your project's timing.

2. Using large materials like boulders requires special logistical planning to figure out equipment needs, special access needs, etc. It is essential to minimize the times that boulders need to be picked up and moved. At Main City Park we worked out a special arrangement with the private wedding chapel adjacent to the park, to access the project site most directly and bypass having heavy trucks going through the park to get to the site.

3. Look for opportunities to recycle materials to maximize resources and reduce waste and project costs. In this project river silt that was removed to lower a bench on the south bank of the creek was used to line the water quality pond to provide a growing medium for wetland plants. Waste cobbles that were removed to excavate the water quality pond were used as backfill behind the boulders on the bank.

4. In projects such as this which are not self-explanatory from drawings, it is very important to give good field direction to the contractor so he is fully aware of what needs to be executed both functionally and aesthetically. We made sure the consultant spent time working with the contractor to make sure ideas were executed as envisioned.

5. Because the project site is in a flood prone zone, coir matting or jute matting over a layer of straw was used to hold soils in place from both the impact of steady rains and from periodic flooding. Ordinary measures such as tilling soil or applying mulch do not work in flood prone areas since they would all wash downstream.

MONITORING AND MAINTENANCE PLAN

The City's Stormwater Division will monitor and maintain the function of the storm drain outfalls and the wetland treatment water quality pond. The Parks and Recreation Division will monitor the bank stabilization area. The establishment of a low profile erosion control ground cover is guaranteed by the contractor. As planting takes place, the monitoring, maintenance and watering to establish plants will be carried out through an established work plan by volunteer partnerships and assistance from the Parks Division.

August 8, 1996

Johnson Creek project seeks return of spawning fish

ROSE HOWERTER/The Oregonian

Earl Cooper, a Gresham city inspector, counts the 180 boulders that the city parks department will use to shore up the eroding banks of Johnson Creek in Main City Park. The boulders were excavated at Fairview Village.

■ Gresham will use boulders to rebuild creek bed in Main City Park, hoping to make the creek a fit destination for salmon

By KARA BRIGGS
of The Oregonian staff

GRESHAM — What do 180 boulders have to do with spawning salmon?

Enough that the city of Gresham is investing $17,000 in restoring the Johnson Creek bed in Gresham's Main City Park, where the creek is hot, barren and marked by sediment that affects reproduction of fish.

The money is a grant from the U.S. Department of Fish and Wildlife.

The city will use the boulders to rebuild 130 feet of a 12-foot high bank that has been eroding for the past two years. Plastic netting covers the bare sandy bank, but as soon as late September the boulders will shore up the bank.

It's part of making Johnson the kind of creek that salmon again can spawn in, said Phil Kidby, Gresham parks department architect.

The boulders will be stacked on top of each other beginning at water level and rising to the top of the bank. The space between the boulders will be filled with crushed rock and planted.

On the other bank, the creek also will get more plants, and gnarled logs will be put in the creek bed to give fish cool places to rest as they pass through the park.

Parks planner Lora Price developed the plan. Most of the boulders were donated by Fairview Village, which has unearthed more boulders than it knows what to do with. A few more boulders came from the Obriest Construction, which hauled all the boulders to the park.

Earlier this century Johnson Creek churned with salmon in the spring.

But as city has grown up along most of 26 mile length, its banks have been cleared of vegetation, its bed in places has been lined with rock, and even its channel has been moved.

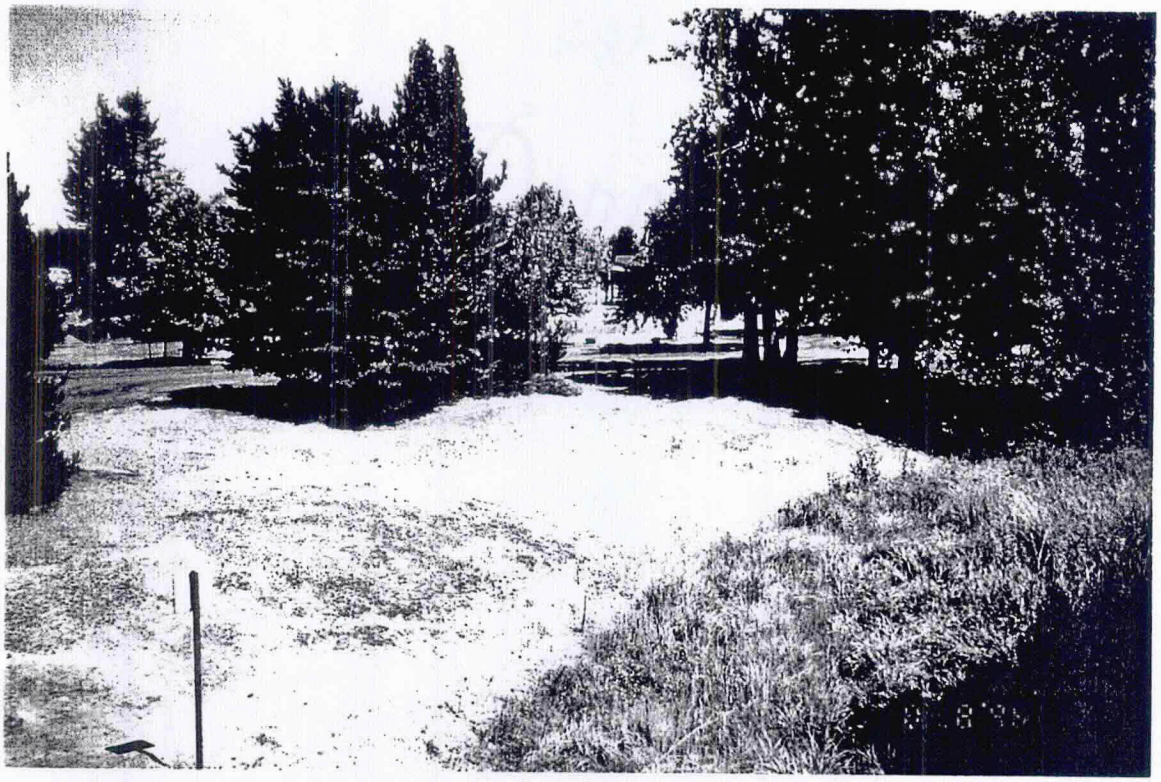
The creek bed in Main City Park has been neither healthy nor natural in years.

In 1972 the city rerouted the creek from its original bed a few hundred feet north along Southeast Powell Boulevard. The city bulldozed the new channel to end winter flooding that annually threatened downtown Gresham.

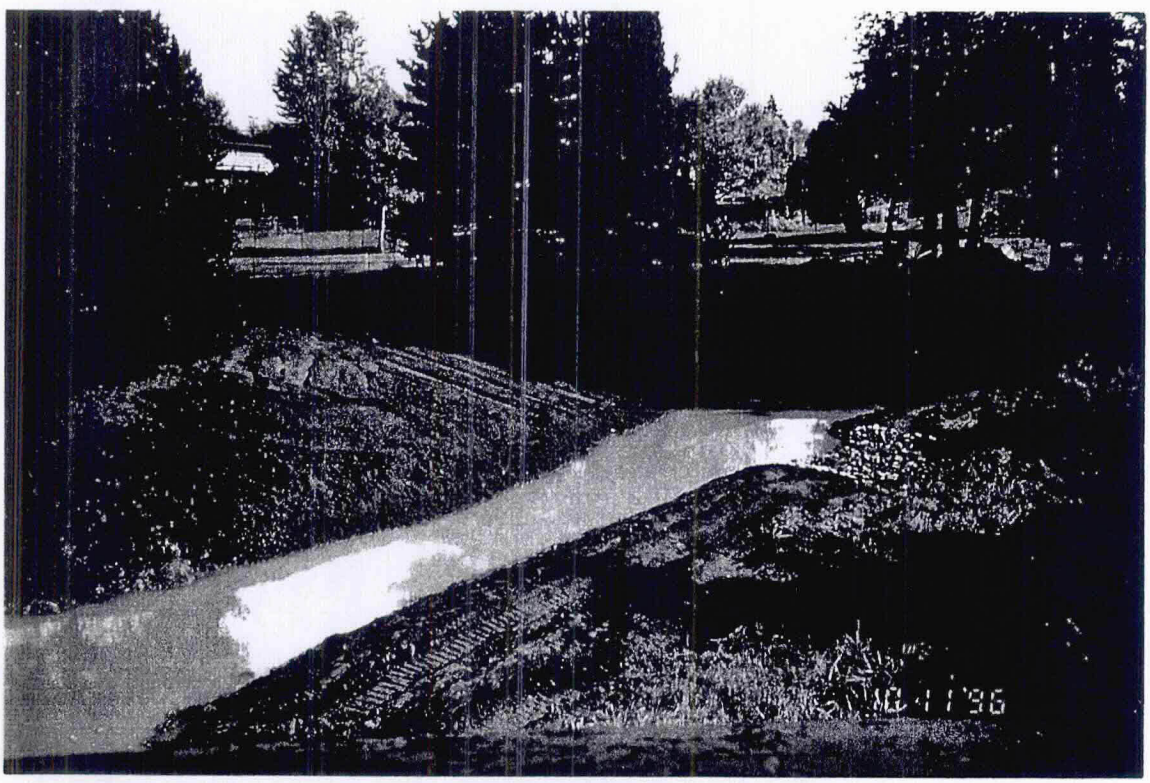
The new channel collected sediment where the creek turns abruptly to head west. Sediment hurts fish habitat because it covers the pebbles in the creek beds where fish lay their eggs.

But the plan for the boulders and other improvements should improve the habitat for fish, and the view for humans.

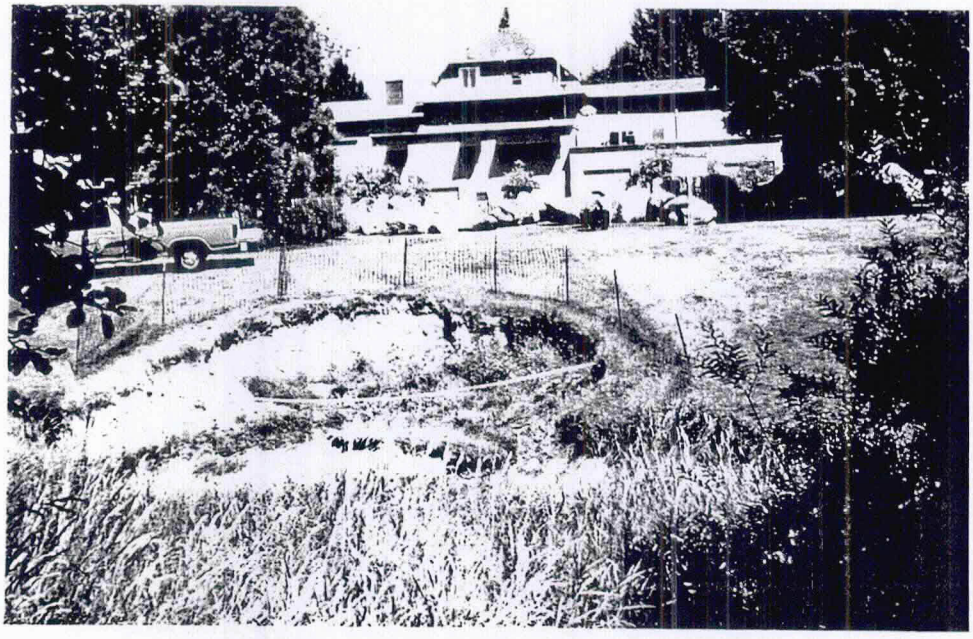
The work will begin in September.



Water Quality Wetland Treatment Pond area before construction. Area is covered with large gravel which was a maintenance headache in addition to providing no habitat along the creek.



Water Quality Wetland Treatment Pond at 75% completion. Erosion control jute and ground cover were installed following this photo. Riparian and wetland plantings will be planted in the spring during phase II.



View of bank failure and erosion before stabilization work.

Toe of boulder terraced bank being installed two feet below stream bed.

Boulder reinforced bank at 75% completion. Four large root wads are incorporated into toe of bank. Riparian plantings will be established in phase II.