

Greenspaces Salmonid Education
Enhancement Project
At Headache Creek
1998-1999

Initiated by

Kurtland Davies, Counselor
Lewis and Clark High School

Implemented By

Kurtland Davies
And
Gillian Brandon

Bagley Downs Neighborhood Association
And
Students from Lewis and Clark High School
Students from Eisenhower Elementary School

Assisted by

Tim Fuller
Horticulture and Science Teacher
Lewis and Clark High School

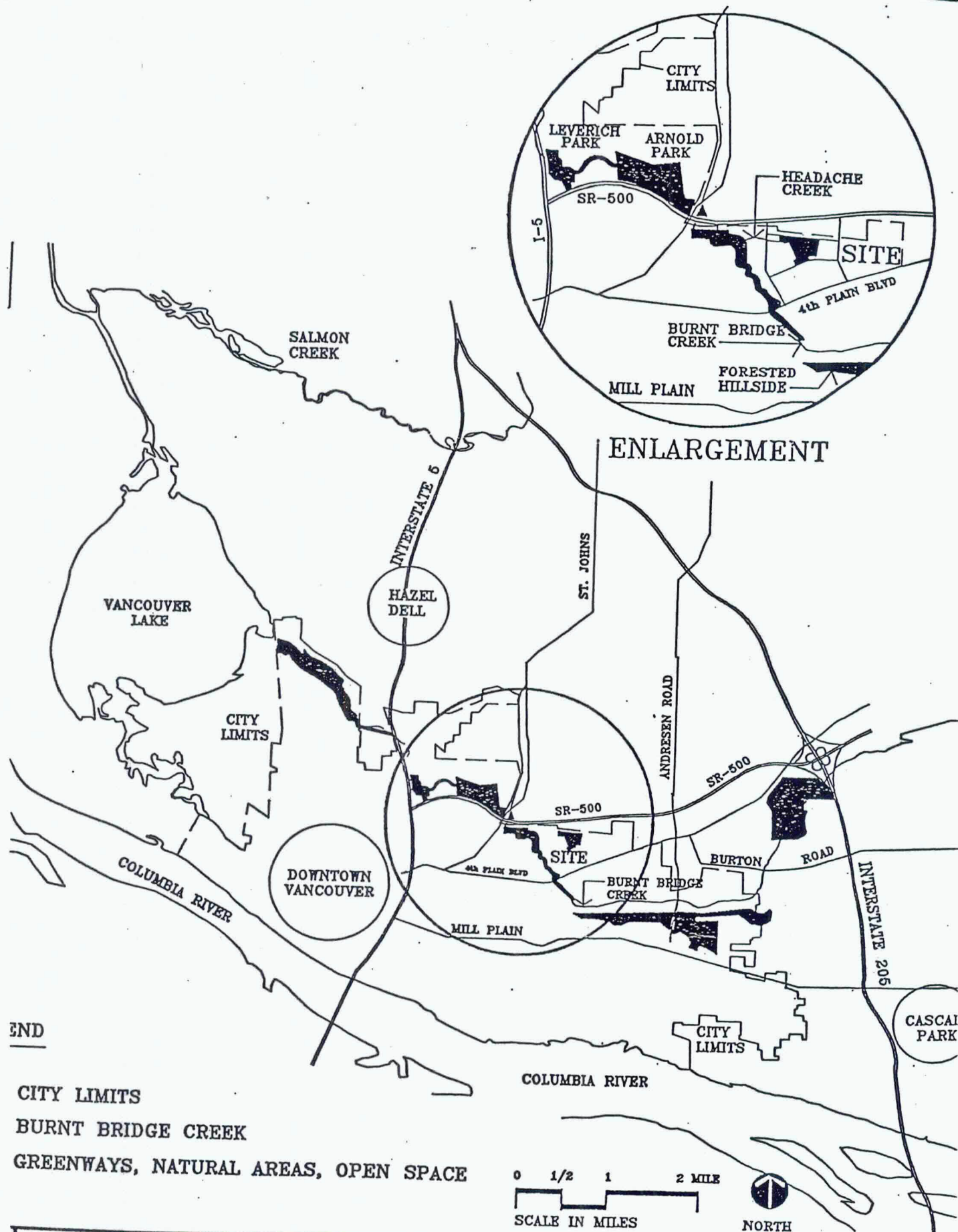
Jim Comrada,
Mabry Plant and Landscape Nursery

Michael Murphy
Murphy's Northwest Landscaping

Greenspaces Salmonid Education
Enhancement Project
At Headache Creek
1998-99

Final Report

- 1.) Project Area Map
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- 4.) Project Description
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- 6.) Work Tasks and Timelines
- 7.) Project Budget
- 8.) Project Staff/Workers/Volunteers
- 9.) How Project Relates to the Greenspaces Program
- 10.) What Worked/What Didn't/Helpful Hints
- 11.) Advice for Other Project Managers
- 12.) Monitoring and Maintenance Plan
- 13.) Accurate Count of Numbers and Species of Trees and Shrubs Planted





CITY OF VANCOUVER
WASHINGTON

Plot Date: Oct 5, 1998




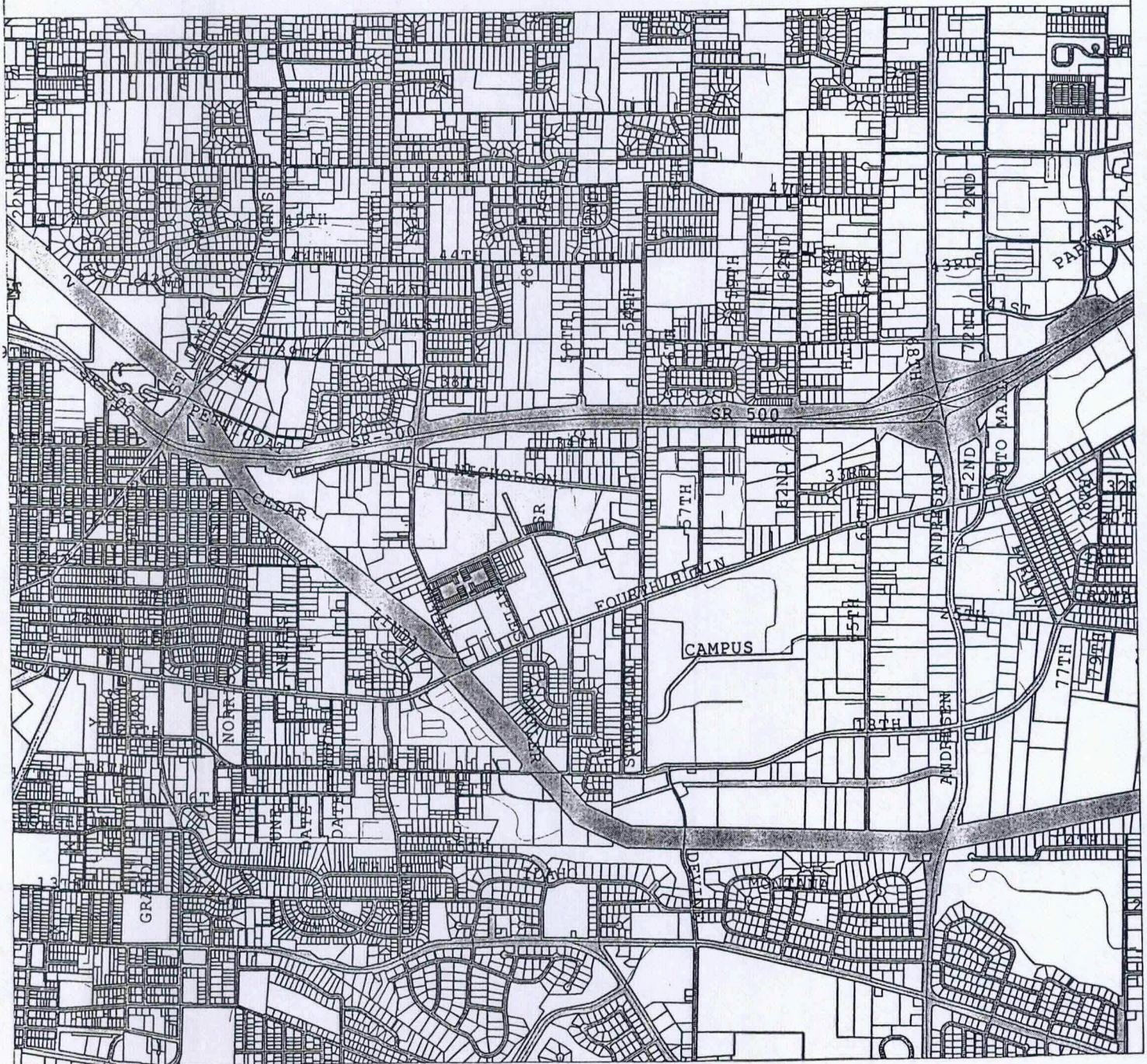
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Information shown on this map was collected from several sources. The City of Vancouver accepts no responsibility for any inaccuracies that may be present.

City of Vancouver

Community Development Department

 Roads





CITY OF VANCOUVER
WASHINGTON

Plot Date: Oct 5, 1998



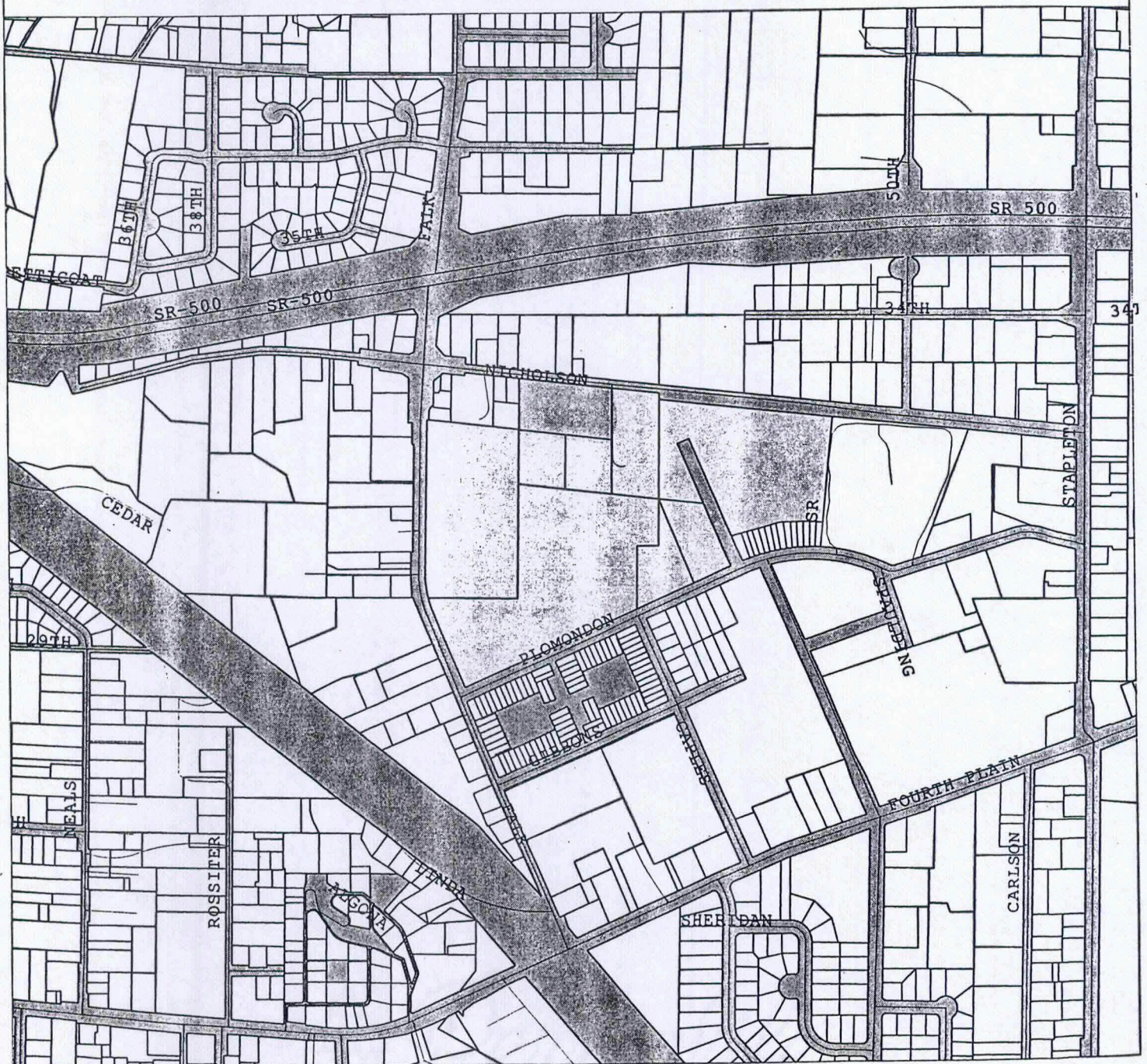
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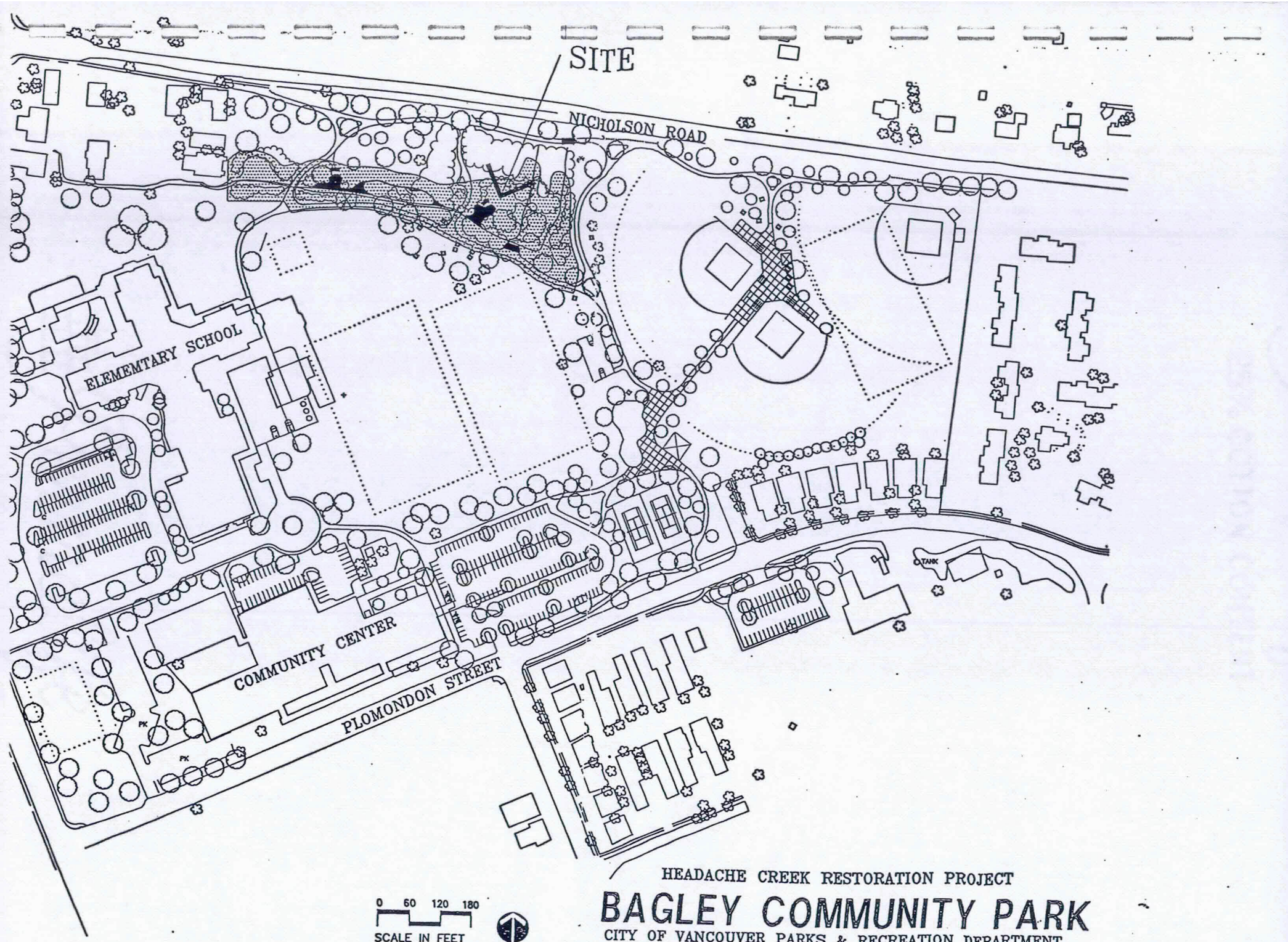
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City of Vancouver

Community Development Department

~ Roads

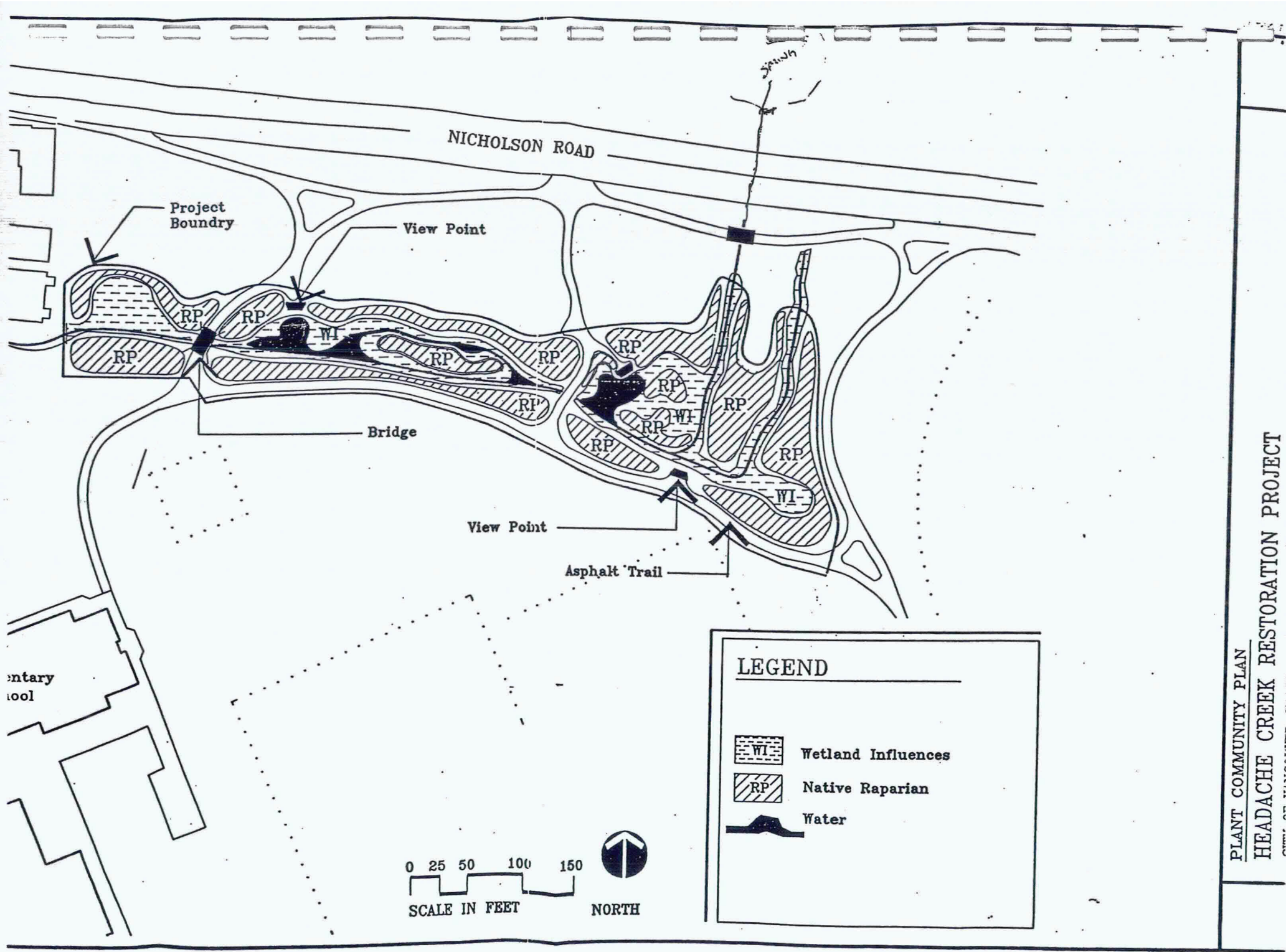


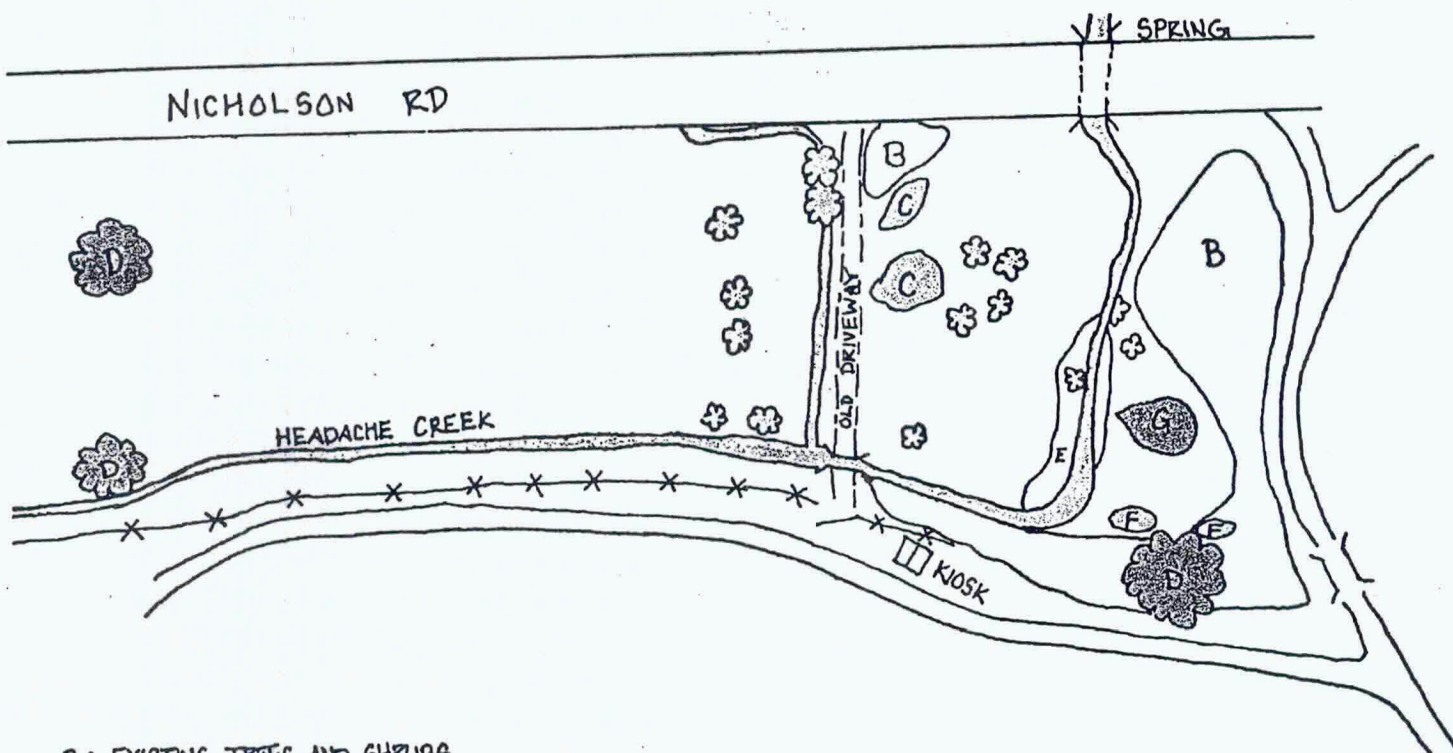


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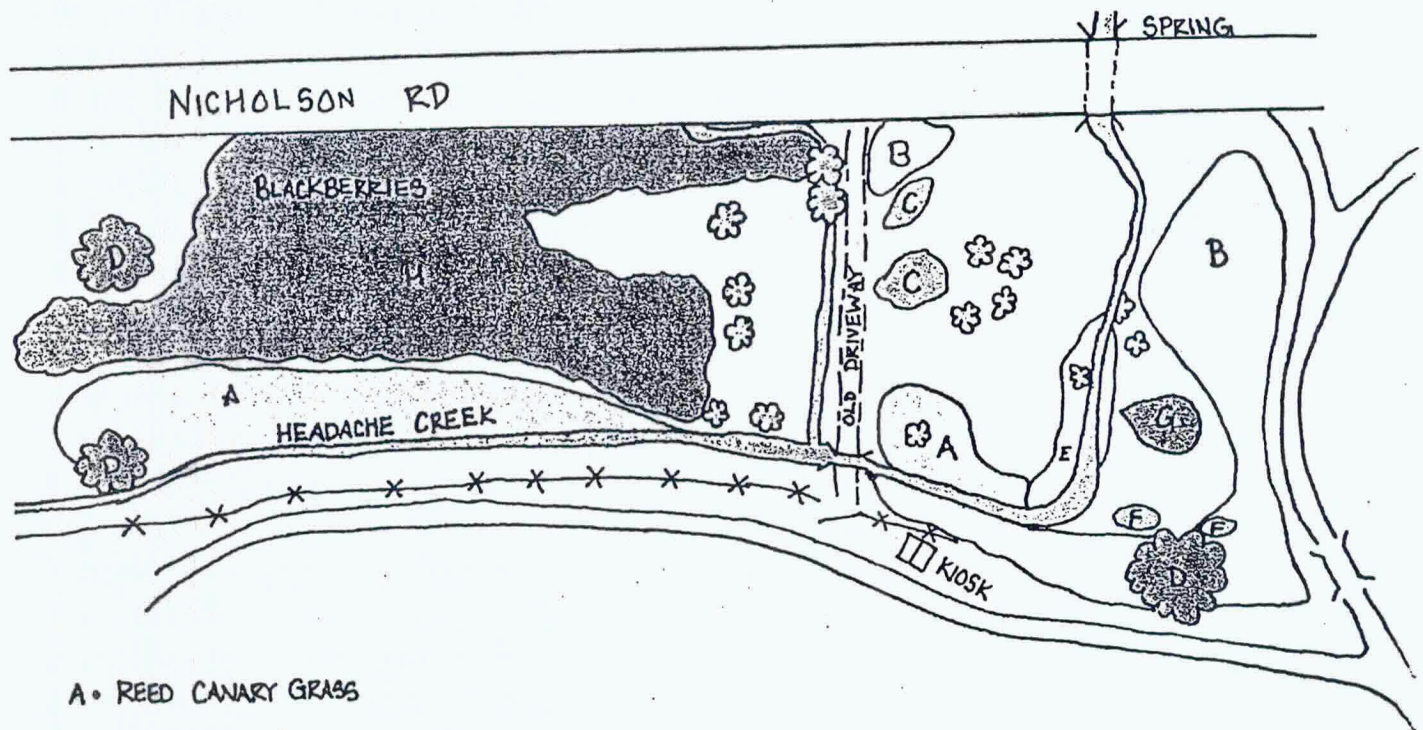


HEADACHE CREEK RESTORATION PROJECT
BAGLEY COMMUNITY PARK
CITY OF VANCOUVER PARKS & RECREATION DEPARTMENT
VANCOUVER SCHOOL DISTRICT





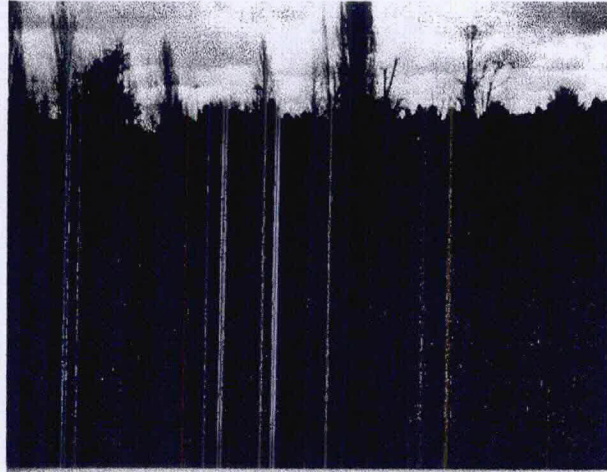
- B • EXISTING TREES AND SHRUBS
- C • ASPEN GROVES
- D • OREGON OAK
- E • WATERCRESS BED
- F • PRE-EXISTING PONDS
- G • NEW POND



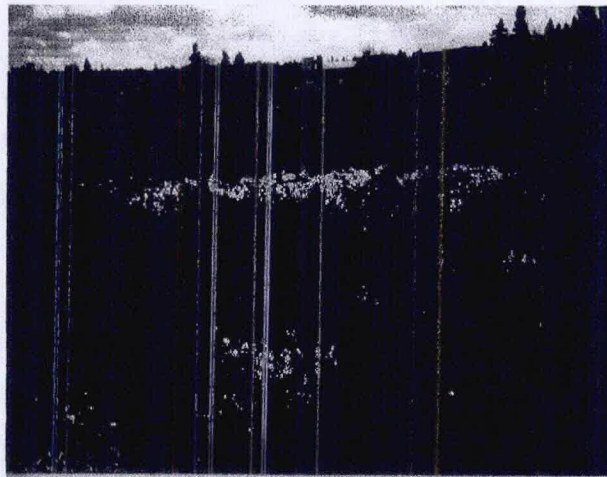
- A • REED CANARY GRASS
- B • EXISTING TREES AND SHRUBS
- C • ASPEN GROVES
- D • OREGON OAK
- E • WATERCRESS BED
- F • PRE-EXISTING PONDS
- G • NEW POND
- H • BLACKBERRIES

All of the following pictures were taken from the same viewpoint,
but different periods of time.

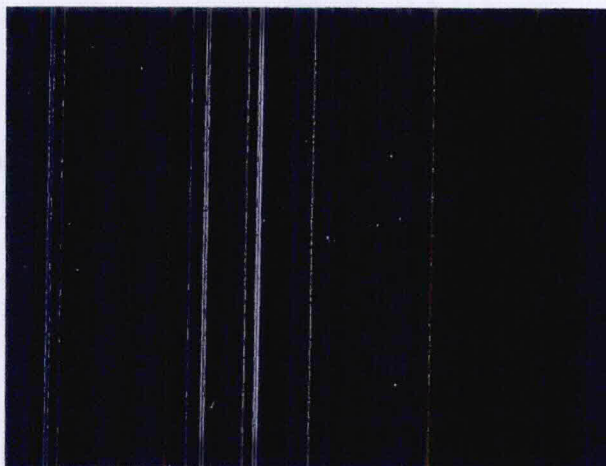
The last picture was taken after Earth Day, April 22, 1999.
They were taken looking toward the back of Roosevelt Elementary School.



First



Second

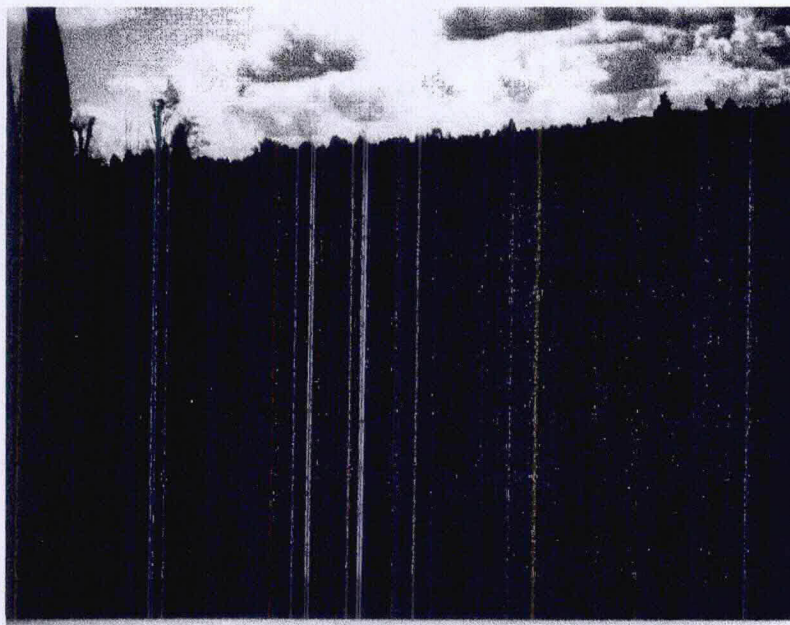


Third

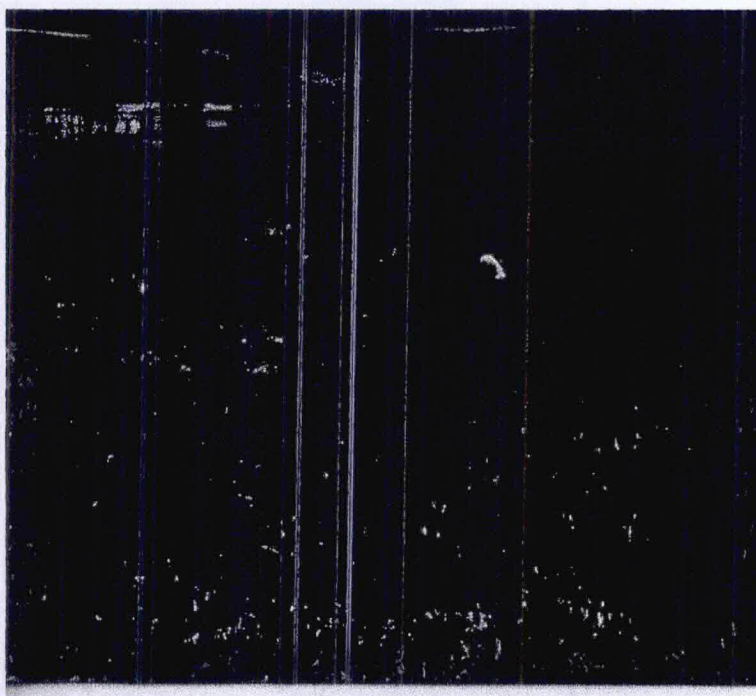
All of the following pictures were taken from the same viewpoint,
but different periods of time.

The last picture was taken after Earth Day, April 22, 1999.

They were taken looking toward the back of Roosevelt Elementary School.



Fourth



Fifth



Lewis and Clark High School Student

Roosevelt Elementary School Student



Item # 4

Project Description

March 19, we purchased over 50 large stakes to support the planting of large cottonwood and willow trees. On March 23rd, Mabry Nursery work crew and Lewis and Clark students planted over 300 cottonwood, willow, ash, big leaf maple, and red osier dogwood trees in the wettest part of the Headache Creek Wetlands. In early April, the Parks and Recreation Department obliterated the blackberry bushes on the upland area of the wetland. On Earth Day, April 22, the community, students and Mabry Nursery Crew planted over five hundred upland plants. In May, Shelton Landscaping was hired to install an irrigation system to provide watering over the summer months.

The Metro Grant paid for all of the above activities, except for the purchases of upland plants, which were provided by another grant.

Item # 5

Goals and Benefits

The goal of the project was to bring the urban wetland around Headache Creek into balance. This would benefit the environment because the wetlands act as a filter for water. More and more parking lots in this county means that a greater amount of water goes into the storm drains instead of being filtered and replenishing our ground water. While we were in the process of accomplishing this goal, we would also be able to teach our students and community members about the importance of this type of restoration, as well as more specific subjects such as plant identification, weed control, planting techniques, and many other laudable concepts.

One of the first steps to accomplish this goal was to plant cottonwood and willow trees with the goal of them growing together and forming a canopy to limit the Reed Canary Grass and the blackberries. Since Himalayan blackberries are not native to this area, they don't have any natural pests to keep them in check so they tend to invade the area once they get established. Consequently, a great deal of hard work was necessary to eradicate them. Next, over 1,000 upland plants were planted. Irrigation was installed to help the trees and other young plants to get established. We will continue to improve this habitat to the best of our ability.

Item # 6

Work Tasks and Timelines

Aug. 1997	Began meetings to discuss the possibility of involving Pan Terra students in some kind of environmental project.
Sept. 1997—1998	Continued laying the groundwork for students and neighborhood association involvement in an environmental project. Put together a grant application and submitted it.
Jan. 2, 1999	Gillian Brandon from the Bagley Downs Neighborhood Association consulted with Jim Comrada from the Mabry Plant and Landscape Nursery in regards to the appropriate trees and bushes to plant in the area. Together, they decided on an order to be delivered in time for Earth Day
Jan. 4 to April 17, 1999	Monday and Wednesday, 1.5 hours each day, 12 students and at least one adult mentor Students and Kurtland Davies cut Blackberries and pulled Canary Reed Grass.
March 3	Committee meeting to discuss design template for field guide.
March 7	Research.
March 8-12	Researched and worked on formatting field guide.
March 12	Meeting with Tim Fuller and Gillian Brandon to discuss field guide.

March 13 Kurtland Davies gave a stewardship tour.

March 19 Kurtland purchased over 50 large stakes to support the planting of large cottonwood and willow trees.

March 23 Mabry Nursery work crew, Lewis and Clark students planted over 300 cottonwood, willow, ash, big leaf maple, and red osier dogwood trees. Students staked the plants in the following days.

March 29 Gillian Brandon toured Mabry Plant and Landscape Nursery to discuss future plant selection.

April 1 Kurtland Davies purchased supplies for field guide.

Early April Parks and Recreation Department obliterated the blackberry bushes on the upland area of the wetland.

April 13 Gillian Brandon developed program with Mark Maggiora and Elizabeth Walker.

April 15 Gillian Brandon met with students and James Burchard to discuss project.

April 15 Kurtland Davies rented a weed whacker to facilitate removal of more of the blackberry bushes in preparation for Earth Day.

April 16 Kurtland Davies took students to lunch to honor them for their commitment and time devoted to the project.

April 17 Plants were delivered in preparation for Earth Day.

April 22 The community, students, and Mabry Nursery Crew planted over five hundred upland plants. Vancouver Mayor Royce Pollard and other public officials attended. The Cowlitz Native American Council performed a ceremony to commemorate the project.

DOCUMENTATION MUST BE ATTACHED FOR ALL COST

	Description of Services or Materials: Purchases	Cost or Cash Value (cash, in-kind materials & services; volunteer labor)	Request for Reimbursement from Metro*
PERSONNEL COSTS Volunteer hours are valued at \$5.50 per hour. Attach time sheets or receipts for both in-kind and reimbursements.	Student Learning & time planting and Earth Day Activities	Total volunteer labor \$5.50 per hour 50 hours = \$2,337.50	\$375.00 25 hours @\$15.00 per hour
MATERIALS & SUPPLIES Briefly describe. Attach receipts for both in-kind and reimbursements.	See attached list of plants purchased from Maybry Nursery. Shorty's Nursery Invoice #728 for large wooden stakes	Maybry Correctional people planted native plants in wetlands \$500.00 of volunteer labor	\$536.35 for large stakes for plants \$1,482.19 native plants 313.03 film, food: gloves, shovels clippers
EQUIPMENT RENTAL Briefly describe. Attach receipts for both in-kind and reimbursements.	Scotts Rental Weed Wacker	Teacher volunteer 2 hours weed wacking Earth Day Preparation	\$19.37 weedwacker rental
PROFESSIONAL or OUTSIDE SERVICE(S) Briefly describe. Attach receipts for both in-kind and reimbursements.	Teacher time teaching, planting, and organizing Earth Day	Total volunteer labor 60 hours \$1,800.00 \$30.00 per hour	\$1,464.00 irrigation system \$375.00 field guide format development
TOTAL REIMBURSEMENT REQUESTED:		\$4,637.50	\$4,189.94

*Reimbursement cannot exceed more that 50% of total project cost or more than total cash outlay and all must have a 1:1 match.

Metro Contract No.

LEWIS AND CLARK HIGH SCHOOL
VANCOUVER PUBLIC SCHOOLS
2901 GENERAL ANDERSON AVENUE
VANCOUVER, WASHINGTON 98661
(360) 696-7288 FAX (360) 737-4206

Pan Terra Earth Club

April 23, 1999

Headache Creek Wetlands Invoice

Earth Club Student Hours

24 classes x 1.5 hour class
(from Jan 4, 1999 through April 19, 1999 met x2/week Mon & Wed)
36 hours x 10 students = 360 stud hrs x \$5.50/hr = \$ 1,980.00

March 20 tree planting 3 hours x 5 students
15 stud hrs X \$5.50/hr = \$82.50

April 17 Earth Day 5 hours x 10 students
50 stud hrs X \$ 5.50/hr = \$ 275.00

Total student hours = \$ 2,337.50

Kurtland's staff time

class time	40 hours	
planting day March 20	5 hours	
prepare Earth Day	6 hours	
Eath Day 4/17/99	7 hours	
Stewardship Tour 3/13/99	2 hours	
60 hours total at \$30.00/hr		= \$1800.00

Materials & Supplies

HiSchool Pharm	Film	4/11/99	\$ 36.63
Backyard Bird Shop	Coffee	4/17/99	\$ 16.07
Albertson's	Coffee	4/17/99	\$ 4.74
Godfather's	Pizza	4/16/99	\$ 31.20
Costco	Film	4/17/99	\$ 47.12
Costco	Film	4/17/99	\$ 14.97
Fred Meyers	Gloves/Cups	4/17/99	\$ 39.13

Total M&S

Scott's rental weed wacker 4/15/99 = \$ 19.37

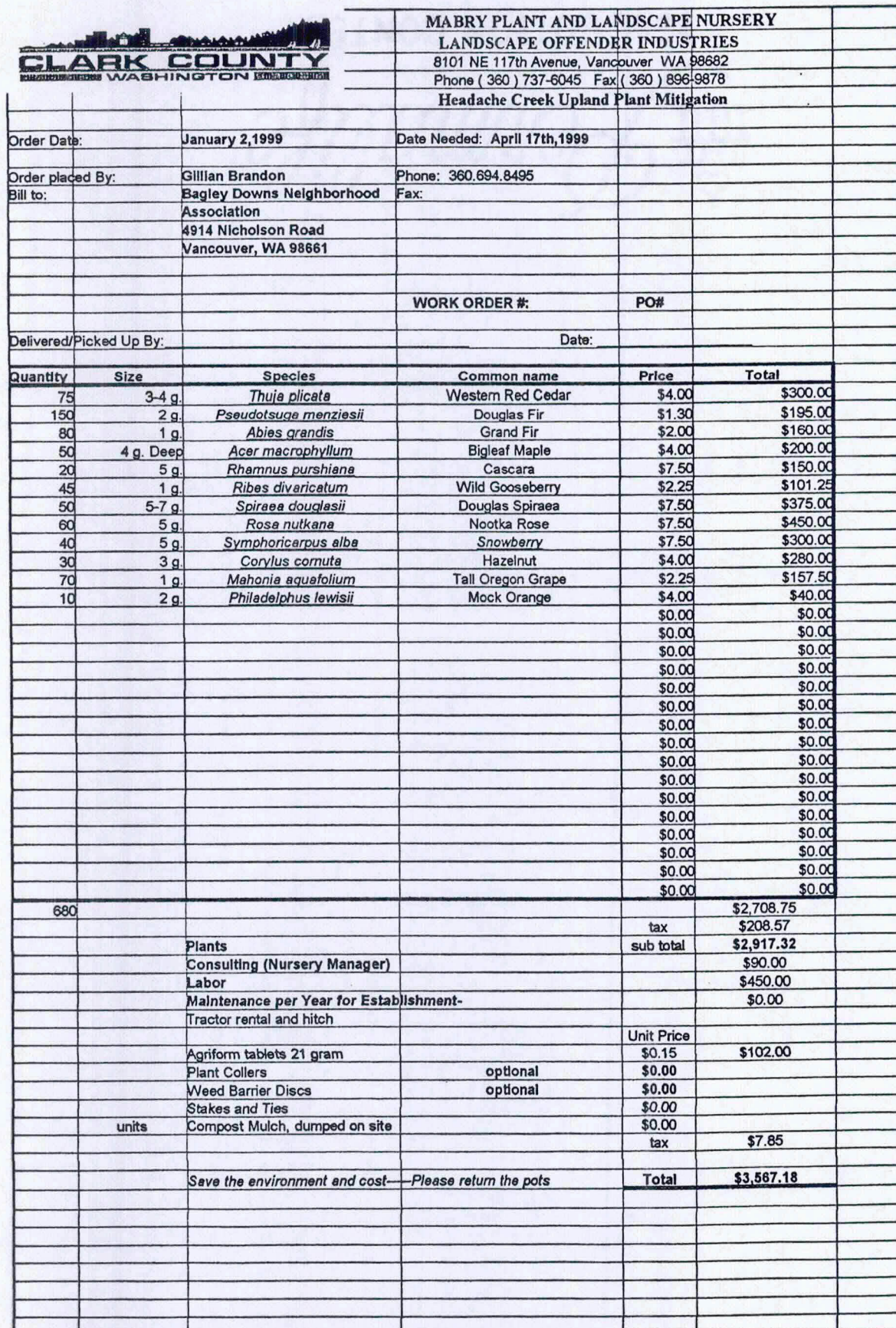
Respectfully,

Kurtland Davies

Vancouver School District No. 37 is an Equal Opportunity District

Reimburse
Kurtland Davies

See attached
slips
6-2-99
OK #10
\$1



6-2-99
CK# 1445
\$1482.19

Gillian Brandon

4912 Nicholson Rd.
Vancouver, WA 98661
(360) 694-8495
gbrando@pacifier.com

April 23, 1999

METRO
Lynn Wilson,
600 NE Grand Ave,
Portland, Oregon 97232

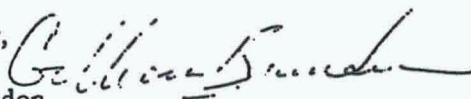
Metro Salmonid Habitat Restoration Contract # 921063

Headache Creek Wetland Field Guide

March 3	met with L&C design template	2 hours
March 7	research	2.5 hours
March 12	met with Tim	1 hour
March 8-12	research and format	8 hours
March 29	Maybry tour	1 hour
April 13	develop program with Mark and Eliz	1 hour
April 15	met with students and James Bruchard	1.5 hour
April 16- 23	format development	8 hours
TOTAL	25 hours @ \$ 15.00/hr	\$ 375.00

Respectfully,

Gillian Brandon



6-2-99
OK #1444
\$375.00

**SHORTYS' NURSERY INC.**10006 S.E. MILL PLAIN BLVD. PH. (360) 882-0699
VANCOUVER, WA 98664

STATEMENT

ACCOUNT NO

589

VANCOUVER SCHOOL DISTRICT
PO BOX 8937 ATTN: KAREN A/P
VANCOUVER WA 98668-8937

STATEMENT DATE

05/05/99

DATE PAID _____ CHECK NO. _____ AMOUNT _____

TRANSACTION DATE	INVOICE NO.	DESCRIPTION	AMOUNT	BALANCE
03/19/99	8728	Previous Invoice	536.35	0.00 536.35
AGE				TOTAL
Current				
31-60 Dys				
60+ Dys				
AMOUNT	0.00	536.35	0.00	536.35

5-10-99
CK #1382
\$536.35

THANK YOU FOR SHOPPING AT
 BIRD BOYS SHOP MART
 (360) 737-1747

4/17/99 8:09 XLTCR 07 SALE
 New Bargains Every Day!
 Visit Our New Store At 5 Corners!

1	10	4.99 /EA	
MERCHANDISE			49.90
1	*ITEM VOIDED: I		49.90
1	10	2.99 /EA	
MERCHANDISE			39.90
1	3	2.99 /EA	
MERCHANDISE			8.97
1	7	6.99 /EA	
MERCHANDISE			48.93
1	5	7.99 /EA	
MERCHANDISE			39.95
1	5	5.99 /EA	
MERCHANDISE			29.95

5-10-99

SUB-TOTAL: 167.70 TAX: 12.91
 TOTAL: 180.61
 BC AMT: 180.61

EX CARD#: XXXXXXXXXX
 ID: XXXXXXXXXX
 APP Auth: 302000

====>> JRN# 073418
 CUST # 5

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**** COSTCO ****
PORTLAND #02

GOLDSTAR MEMBER #800101156001 7

6449 36 EXPOSURES	3.39
36 @ .10	
6066 4X 1ST PRTS	3.60
6449 36 EXPOSURES	3.39
36 @ .10	
6066 4X 1ST PRTS	3.60
6724 24 EXPOSURES	2.59
15 @ .10	
6066 4X 1ST PRTS	1.50
6724 24 EXPOSURES	2.59
25 @ .10	
6066 4X 1ST PRTS	2.50
6724 24 EXPOSURES	2.59
24 @ .10	
6066 4X 1ST PRTS	2.40
6449 36 EXPOSURES	3.39
36 @ .10	
6066 4X 1ST PRTS	3.60
6724 24 EXPOSURES	2.59
24 @ .10	
6066 4X 1ST PRTS	2.40
6449 36 EXPOSURES	3.39
36 @ .10	
6066 4X 1ST PRTS	3.60

TOTAL 47.12
VF Check/Member Writn 47.12
CHANGE .00

TOTAL NUMBER OF ITEMS SOLD = 240
CASHIER:KRISTINE S. REG#89
4/17/99 16:03 0002 89 0061 109
Online Shopping: WWW.COSTCO.COM
Member Service: 1-800-774-2678
THANK YOU - COME AGAIN

**** COSTCO ****
PORTLAND #02

GOLDSTAR MEMBER #800101156001 7

83303 MANGOS	7.99
87223 KS FILM 400	7.89
158088 WOOD MERLOT	9.99
9912 PHOTO PROCES	5.99
9912 PHOTO PROCES	4.59
9912 PHOTO PROCES	4.39
9912 PHOTO PROCES	4.59
9912 PHOTO PROCES	4.39
9912 PHOTO PROCES	2.89

TOTAL 52.71

VF Check/Member Writn 52.71
CHANGE .00

TOTAL NUMBER OF ITEMS SOLD = 9
CASHIER:MATT PE REG#7
4/17/99 15:40 0002 07 0195 104
Online Shopping: WWW.COSTCO.COM
Member Service: 1-800-774-2678
THANK YOU - COME AGAIN

ONLY TODAY FOR YOUR FRED MEYER
CREDIT CARD AND EARN REWARDS.
THANK YOU FOR CHOOSING TO SHOP AT
FRED MEYER.

EPC/SKU/PLU	ITEM	PRICE
4200049000	DIXIE HOTCUP	2.75
4200049000	DIXIE HOTCUP	2.75
4200049000	DIXIE HOTCUP	2.75
4200049000	DIXIE HOTCUP	2.75
4200049000	DIXIE HOTCUP	2.75
4200049000	DIXIE HOTCUP	2.75
5330004000	GLOVES	3.99
5330004000	GLOVES	3.99
5330004000	GLOVES	3.99
5330004000	GLOVES	3.99
5330004000	GLOVES	3.99
5330004000	GLOVES	3.99
TAX	2.65 BAL.	37.09
*****	GR NAPKINS	1.99
TAX	2.80 BAL.	39.13
VISA/MASTERCARD		39.13
CASH		.00

TOTAL NUMBER OF ITEMS SOLD - 13
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0115 - FOURTH PLAZA
2201 GRAND BLVD, NC
WACO, TEXAS 76798-4225

VISA/MASTERCARD CHARGE SLIP

04/16/99 10:49 AM
DP296292 TERM:70 TRAN0066

CARDHOLDER: KURLAND DAVIES
ACCT # 4128 0037 9971 0275
EXP 10/00 APPROVAL 096126-A
MERCHANT # 210004011990

	PURCHASE AMOUNT	\$	37.13
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10/11/10			
10/12/10			
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1/30/11			

35

~~Carchalder acknowledges receipt of funds under services at the amount of the Total shown hereon and agrees to perform the obligations set forth in the Carchalder's agreement with the Government.~~

CUSTOMER SIGNATURE

CUSTOMER COPY

Lunch for
Weston & group

401101764112159
STORE # 0001

55701 00012135

CONFATMERS 211/8
WANDOVER WA 98131

DATE 04/16/97

TIME 01:58 P.M.

REC'D # 4028003/997182/5
#1 00 1100 257

EXP 10/97
SERIAL 290407

*000/REVENUES:

\$31.20

TIP# 2.00

TOTAL# 33.20

I HAVE RECEIVED GOODS AND
SERVICES IN THE ABOVE AMOUNT

SIGN

Rudolph [Signature]

RETAIN THIS COPY FOR YOUR RECORDS
TOP COPY-MERCHANT BOTTOM COPY-CUSTOMER

Item # 8

Project Staff/Workers/Volunteer

1. Kurtland Davies, Counselor, Lewis and Clark High School
2. Tim Fuller, Horticulture Teacher and Greenhouse manager, Lewis and Clark High School
3. Students from Lewis and Clark High School, Jake Dutton and Jennifer Leonard, student leaders
4. Jeff Whittler, Urban Forestry Consultant, Clark County Utility District, formerly employed by the city
5. Dave Weese, Recreation Supervisor, Vancouver Parks and Recreation
6. Terry Snyder, Designer and Planner, Vancouver Parks and Recreation
7. Elizabeth Walker, Urban Forestry Consultant, City of Vancouver
8. Jim Comrada, Mabry Plant and Landscape Nursery
9. Gillian Brandon, Bagley Downs Neighborhood Association, and other association members
10. James Buchard, Liaison for the Cowlitz Native American Council
11. Mark Maggiora, Commissioner, Urban Forestry Commission
12. Work crew from the County Work Release Program through the Mabry Plant and Landscape Organization
13. Students and staff from Roosevelt Elementary School

Item # 9

How Project Relates to the Greenspaces Program

The overall purpose of Metro's Greenspaces programs is to support habitat restoration and environmental educational projects. The Headache Creek Wetland Project is both a restoration and environmental education project. The wetland is out of balance as the Blackberry and Reed Canary Grass choke out all other plants. We planted over a thousand native plants on three-quarters of the wetland. The Parks and Recreation removed the Blackberries from the upland area. Our plantings are to create a canopy to limit the Reed Canary Grass. The upland plants are to replace the removed Blackberries. We also provided temporary irrigation until the natives become established.

Educationally, the students learned all about invasive and native plants, which ones would grow best in wetlands and which would be best in the upland area. They also learned about ecosystems and why they are so important for wildlife, including humans. We hope to do research on the survival rate of the plants we planted and eventually to label the natives and provide educational tours.

Finally, our project involved many partnerships and on Earth Day, 1999, we provided community awareness by attracting Royce Pollard, mayor of Vancouver, and other important public officials. The students explained what we were doing and why. The Cowlitz Native American Council performed a powerful ceremony. Over fifty community people helped the students plant over five hundred native trees and shrubs in the upland area of the wetland.

Item # 10

What Worked

1. Strong partnership with county and correctional facility
2. Strong partnership with neighborhood association
3. Chose site close to school (best if in walking distance)
4. Include students and adult volunteers to be involved with planning and implementing your project
5. Strong facilitator leadership
6. Get proper permits and permission
7. Fall plan, in preference to spring
8. Educational component is extremely important. Make your project "Student Centered—Project Based Learning"

What Didn't Work

1. Occasional blackberry removal is inadequate
2. Understory establishment, i.e. snowberry before establishing a canopy Tim, I didn't understand this completely so maybe the committee wouldn't either
3. Avoid expensive capital improvements, i.e. view points, trails, grading

Item # 11

Advice

- 1) Have a clear objective.
- 2) Avoid generalities in your plan.
- 3) Expect delays...be patient.
- 4) Educational component.
 - a) Be sure students and adult leaders (mentors) are committed and understand the significance of their individual contribution.
 - b) Encourage mentorship.
- 5) Limit number of partners and number of grants to manageable size.
- 6) Don't be too optimistic.
- 7) Be realistic.
- 8) Plan small projects. Many small projects add up to a large project.

Item # 12

Monitoring and Maintenance Plan

Monitoring and maintenance is a shared responsibility between the students at Lewis and Clark High School, Roosevelt Elementary School, and the Bagley Downs Neighborhood Association. These parties continue their commitment to mitigation, restoration, revegetation, and eradication of invasive non-native species. In addition, we will attempt to encourage wildlife recolonization. Jim Comrada of Mabry Plant and Landscape Nursery will continue as special consultant.

Item # 13

Accurate Count of Numbers and Species of Trees and Shrubs

<u>Quantity</u>	<u>Species</u>	<u>Common Name</u>
75	Thuja plicata	Western Red Cedar
150	Pseudotsuga menziesii	Douglas Fir
80	Abies grandis	Grand Fir
80	Acer macrophyllum	Bigleaf Maple
20	Rhamnus purshiana	Cascara
45	Ribes divaricatum	Wild Gooseberry
50	Spirea douglasii	Douglas Spirea
60	Rose nutkana	Nootka Rose
40	Symphoricarpus albus	Snowberry
30	Corylus cornuta	Hazelnut
70	Mahonia aquafolium	Tall Oregon Grape
10	Philadelphus lewisii	Mock Orange
130	Populus trichocarpa	Black Cottonwood
34	Salix lasiandra	Pacific Willow
15	Fraxinus latifolia	Oregon Ash
100	Cornus stolonifera	Red Osier Dogwood
Total 989		