

Attainment Report for

1996

Scientists for a day ...

... Stewards for life

Cascade Streamwatch

Watershed Research and Education Program

A partnership between the

USDA Forest Service, USDI Bureau of Land Management, the Portland Water Bureau, and Wolfree, Inc.

Prepared by the Staff

of

Wolfree, Inc.

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April 1, 1997

Who is Wolfree?

Wolfree is a non-profit 501 (c)(3) corporation whose mission is to serve people, their communities, and the Earth through science education.

We seek to improve science education so that people can enhance the quality of their lives through active stewardship. Wolfree carries out its mission by designing and implementing programs focused on the science of ecology that are hands-on, community-based, and in the outdoors.

All programs seek to foster within participants:

- a deeper understanding of the science of ecology;
- enhanced skills necessary to solve complex problems;
- a stronger desire to think creatively and critically; and
- a greater respect for themselves and their environment.

By improving people's understanding of science and the natural world, Wolfree hopes to help people make more informed decisions about their ecological roles on the planet.

Community-based Learning in the Natural Resources

Through Cascade Streamwatch, Wolfree meets the needs in the education community by providing opportunities for participation in the ecological sciences. Cascade Streamwatch provides a real-world, hands-on experience in the sciences that builds self-esteem. Now more than ever, teachers need outside resources to stimulate and engage their students in the learning process.

Wolfree is uniquely positioned to help students satisfy their CAM requirements for community-based learning experiences in Natural Resource Systems, while also helping younger students satisfy requirements for their Certificate of Initial Mastery (CIM) in general science.

In addition, Wolfree offers teachers the necessary training to increase their knowledge, experience and confidence in the sciences. Our instructional materials empower teachers to guide their students on ecological inquiries and to make their own discoveries.

Staff

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Program Manager

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Development Director

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Bureau of Land Management

Behind the Science

Water is the lifeblood of the Pacific Northwest that creates corridors of life connecting the forest slopes of the Cascade mountains to the Pacific Ocean. We can discover how our personal and collective decisions influence our local environment through understanding the workings of a healthy stream.

Program Goals



Enhance young people's awareness and appreciation of Pacific Northwest aquatic ecosystems, while cultivating skills in science, math, and problem-solving; and



develop and maintain ecosystem monitoring programs aimed at restoring fish and wildlife habitats in the Pacific Northwest.

We Put Kids Knee-deep in Science

Following brief *in-class training*, students embark on a one day field investigation of the Salmon River located at the Wildwood Recreation Area near Welches, Oregon. Nestled in the foothills of the Cascade Mountains, Wildwood is 500-acres of pristine forest and stream habitats. Students divide into three teams (a team for the wetland, small stream, and river habitats) and collect data on several key watershed components. Biologists and educators provide a mentoring role in the student's investigation. At the end of the day, students gather, discuss, and compare their findings with the other teams.

During a time when school budgets are shrinking, teachers now have easy access to a high quality educational experience in and out of the classroom. Young people have the opportunity to explore science under real world conditions. Both teachers and young people have a chance to share a memorable learning experience in a natural wilderness setting.

"PGE believes the things we do today should merit the respect of our children and grandchildren tomorrow."

— Dennis Norton, Environmental Manager
Portland General Electric

"The opportunity for these mostly city-bound students to walk and wade in a wilderness area is super in itself. For them to be involved in observing, predicting, testing and analyzing that wilderness area is a teacher's dream-come-true."

— Julie Barbour, Teacher
Kelly Elementary School

The Beginning

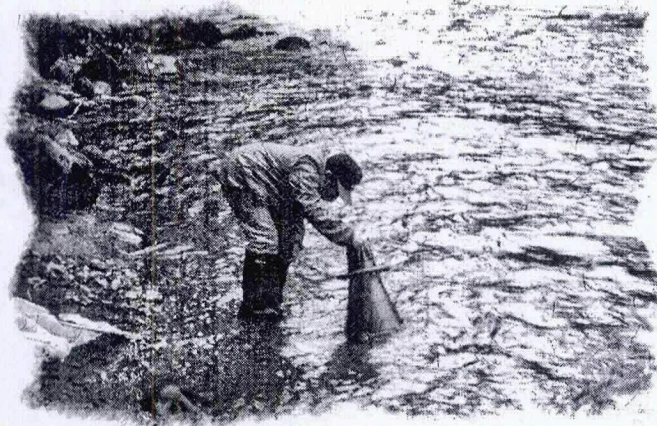


In 1991, fisheries biologists on the Mt. Hood National Forest created the Cascade Streamwatch project. An engineer, landscape architect, a specialist in education, and the fisheries biologists worked for three years on their vision to connect the people of the Pacific Northwest with the vital importance of pristine watersheds.

The original plan for Cascade Streamwatch was to build an aquatic education complex 15 miles east of Sandy on the wild and scenic Salmon River. While plans for the complex began to materialize, it became clear that creating such a structure would be a lengthy process. To support the aquatic education complex and raise awareness surrounding its development, the planning team began to develop an education program.



In September of 1993, education specialists were contracted to design and implement the Cascade Streamwatch Education Program. By December of 1993, the first draft of the curriculum was completed and a pilot-test program was begun. In March of 1994, the first spring season was initiated. Within two months, over 600 students from 15 schools completed the Cascade Streamwatch field study. Throughout the summer, the team revised the curriculum and field exercises.



In order to operate the program more efficiently, Wolftree, Inc. was asked to manage the education program. Wolftree is currently operating in this capacity and has signed a Challenge Cost Share Agreement with the USDA Forest Service. The agreement empowers Wolftree, Inc. to pursue on behalf of Cascade Streamwatch financial support from the Portland community.

The pilot season was a success as Cascade Streamwatch filled an important need in Portland's science education community. During the 1994-95 school year, we doubled our enrollment by implementing both a fall and spring field seasons. In 1996, the curriculum was improved and the number of professional facilitators was doubled.

Our Customers

Anyone who wants to learn about Aquatic Ecology is welcome at Cascade Streamwatch. Our focus, however, is middle and high school students from the Portland Metropolitan area. Many of Wolftree's mentors, close to 100, are professional scientists or resource specialists. Cascade Streamwatch currently serves 1,850 young people and about 30 teachers per year.

✓ *Annual enrollment in the program increased from 1,500 to 1,850 young people.*

We believe the Cascade Streamwatch experience should be an integral part of everyone's education — regardless of age, religion, ethnicity or economic status. Our goal, however, is to increase the numbers of students attending the program slowly while significantly improving the quality of the experience each year. In 1996, Wolfree selected classrooms from the following schools:

Elementary Schools	Middle Schools	High Schools
<ul style="list-style-type: none"> • Kelly • Faubion • Welches 	<ul style="list-style-type: none"> • George • Sellwood • Beaumont • Fernwood • Ockley Green • Portsmouth • Kellogg • Environmental Middle School • Portland Jewish Academy • Corbett • Catlin Gabel 	<ul style="list-style-type: none"> • West Linn • Jefferson • Grant • Madison • Marshall • Roosevelt • Reynolds • Sandy • Barlow • Scappoose

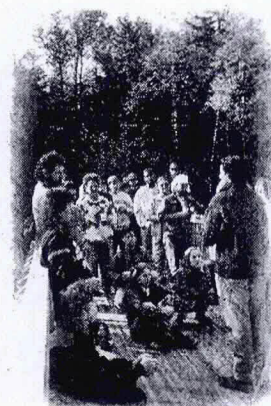


✓ *Wolfree doubled the professional mentor staff and created an Internship program*

Wolfree believes that effective learning experiences occur when there are no more than five students to one teacher (5:1). As the number of our participants grew, three obstacles made achieving this ratio challenging: (1) the average class size grew to 30 students, (2) downsizing of personnel was common in both public agencies and private companies (the source of our mentors), and (3) the ten Americorp participants from 1995 were no longer available.

In order to maintain the ratio, Wolfree recruited an additional 54 mentors (a total of 94 naturalists, professional biologists and scientists) to greet and educate the students at Cascade Streamwatch. This was not an easy task requiring a considerable commitment of time and resources. Both the financial and non-financial returns on this investment will be realized for years to come.

In addition to the professional mentors, Wolfree created an internship program. Interns participate in all facets of the program including research and design, daily operations, and teaching. This is a critical accomplishment, especially for Wolfree's partners, because unlike the Americorp program, the internship program is a sustainable staff resource. Interns are recruited from local colleges and other public organizations from. Four interns participated this year. Our goal is to double the number of interns in 1997.



✓ *Wolfree improved the quality of the learning experiences both in the classroom and the field.*

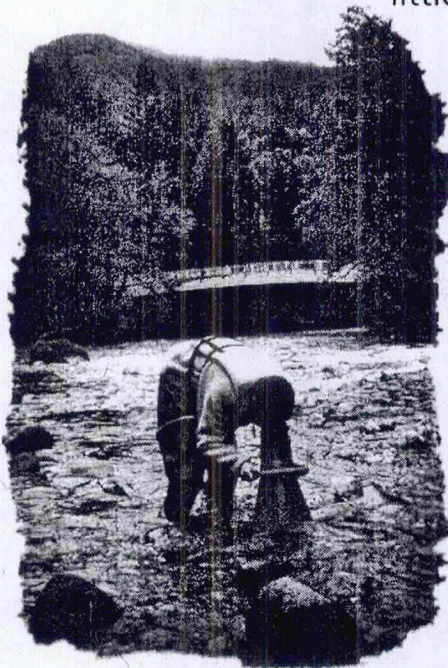
Four programmatic improvements enhanced the learning experience at Cascade Streamwatch:

- 1) The curriculum was updated, reviewed by teachers and scientists, printed by the Forest Service, and distributed to all the Cascade Streamwatch teachers;
- 2) There was higher level of preparation of students in the classroom prior the the field studies by Wolfree staff, professional scientists and teachers;
- 3) Improved instructional quality in the field was made possible through interagency training of teachers and science mentors before the field season; and
- 4) More follow-up activities were made available to the school, such as home water audits (designed by the Portland Water Bureau) and data analysis and interpretation with help from information management experts from the Forest Service.

✓ *Important data was collected on the Great Flood of '96*

Cascade Streamwatch students were treated to an event which enriched their understanding of natural processes in nature. Students participated in the monitoring of several trends before and after the flood. Daily data collection for two consecutive months following the flood event revealed to the students how a relatively pristine watershed responds to a major disturbance.

With regard to stream form, habitat, flow rates, water quality, and biological indicators, students' data suggested that the Salmon River Watershed (as it is monitored at Wildwood Park) showed very little significant negative impact due to flooding on overall stream health.



For example, their data indicated that after reaching a peak flow of 14,350 cubic feet per second (cfs) in early February, the Salmon River at Wildwood receded back to historically normal flow levels of 1,000-3,000 cfs before falling to a historically normal summer flow average of 500 cfs. Madison HS recorded only 101 cfs for CSW opening day October 1, 1996. Heavy autumn rains after an early snow fall resulted in the high flows observed later in the season. The Salmon River remained consistently above 4,000 cfs for two weeks in November. Students from the Catlin Gabel School recorded 6,150 cfs on November 14, and students from Faubion Elementary School recorded 5,820 cfs on November 21.

Data collected by the students indicated that the biological community — as reflected by the aquatic macroinvertebrates — were, over the long-term, unaffected by the intense flood activity. Stonefly, caddisfly and mayfly nymph populations sampled after the flooding were comparable to levels monitored in the spring of 1995. Students regularly observed and recorded that the flooding created more complex physical habitats and hypothesized that these structural improvements will yield the opportunity for a strong biological response in the stream system over time.

Much of the channelized river created artificially by humans after the "Flood of 1964" took on a more complex stream form with increased meandering, side channels, pools and riffles. Some of this increase in complexity could be attributed to changes in the distribution of woody debris — logs, root-wads, etc. — that occurred through flood forces.

After fluctuating considerably during the storms, dissolved oxygen, pH, temperature, hardness and turbidity returned to levels normally associated with high water quality after the flood. Students also observed new gravel deposits in and along the edges of the river. They hypothesized that fish habitat would be improved by this change — a hypothesis they will have an opportunity to test in 1997.

✓ *Support from the community*

Wolftree is responsible for coordinating and directing the program, but the accolades for Cascade Streamwatch's ultimate success extend to the Portland community for funds, mentor staff, equipment donations, and hours of volunteer effort and advice. The following is a list of organizations that participated in Cascade Streamwatch this year:

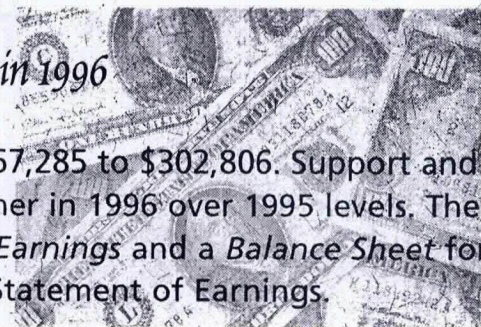
Agra Earth Environmental
AT&T Wireless Services
Beak Consultants
Bonneville Power Administration
City of Portland Water Bureau
City of Portland Parks and Rec.
CH2M Hill
Columbia Sportswear Company
Defenders of Wildlife
Environmental Protection Agency
Jackson Foundation
KINK FM 102
MFA Consultants
METRO Greenspaces
Nature's Fresh Northwest
Northwest Natural Gas
Northwest Steelheaders
Oregon Dept of Fish and Wildlife
Oregon Dept of Environmental Quality
Pacifcorp
Petaluma Poultry Processors

Portland General Electric
Portland State University
Precision Imagesetting
Resort at the Mountain
Rose Tucker Charitable Trust
Showman, Inc.
Simpson Paper Company
SRI/Shapiro Consultants
Symonds & Associates
Templeton Foundation
Timberline Lodge
US Bank
USDA Forest Service
USDI Bureau of Land Management
USDI Fish and Wildlife
US Geological Survey
Wells Fargo
Wholesome & Hearty Foods
Willamette Industries
Woodward Clyde Consultants

Wolftree thanks ardent volunteers and the hundreds of community members whose \$35-\$1000 memberships continue to provide thousands of Portland students access to exceptional outdoor learning experiences through the Cascade Streamwatch.

✓ *Wolftree's total revenue and in-kind support increased by 45% in 1996*

For the year, Wolftree's total support and revenue climbed from \$167,285 to \$302,806. Support and revenue for the Cascade Streamwatch Program was about 45% higher in 1996 over 1995 levels. The following financial statements include an un-audited *Statement of Earnings* and a *Balance Sheet* for 1996. In-kind donations and cash contributions are included in the *Statement of Earnings*.



REVENUE:

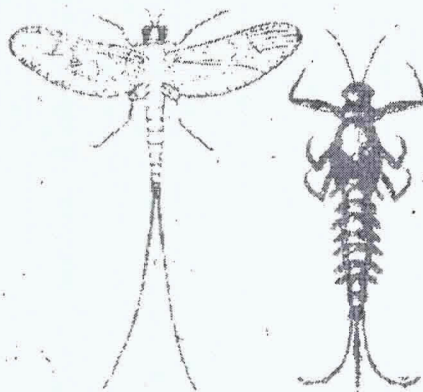
Individual Contributions
 Membership Fees
 Board Contributions
 Banquet & Auction
 Government
 Corporate
 Foundations & Grants
 Program Fees
 Contract Services
 Sales of Goods
 Interest
 Miscellaneous

CASH CONTRIBUTIONS ONLY**IN-KIND CONTRIBUTIONS¹****CASH & IN-KIND CONTRIBUTIONS****COST OF SALES:**

Banquet & Auction Expenses
 Inventory Variance

CASH ONLY**EXPENSES:**

Gross Profit
 Cost and Expenses
 Salaries
 Payroll Taxes
 Contracts
 Professional Fees
 Rent
 Utilities
 Telephones
 Insurance ²
 Office Supplies
 Postage & Delivery
 Printing & Publications
 Training
 Meals
 Online Services
 Student Transport (bus) ³
 Bank Charges
 Miscellaneous



WOLFTEE TOTAL FOR 1996	CASCADE STREAMWATCH TOTAL FOR 1996
18,463.46	-----
1,655.00	-----
1,550.00	-----
14,924.00	-----
51,426.50	45,426.50
41,430.29	28,100.00
10,000.00	10,000.00
6,059.75	1,385.00
3,000.00	-----
2,260.00	-----
6.67	-----
222.24	-----
150,997.91	84,911.50
152,808.00	114,606.00
302,805.91	199,517.50
7,116.37	-----
3,287.45	-----
10,403.82	-----
140,594.09	84,911.50
58,106.87	32,539.85
9,421.46	5,276.02
40,407.82	22,628.38
12,716.90	1,523.69
10,900.00	2,610.00
708.46	212.54
2,831.14	849.35
814.97	244.50
2,289.09	1,028.66
469.75	263.06
1,272.79	712.76
50.00	0
46.80	0
172.39	51.72
3,632.07	3,632.07
306.98	30.70
610.74	342.02
144,758.22	71,945.32
(4,164.13)	12,966.18
148,643.86	127,572.18

Net Earnings (loss) for period — CASH CONTRIBUTIONS

Net Earnings (loss) for period — WITH IN-KIND CONTRIBUTIONS

¹ includes volunteer hours for professionals plus contributions equipment and supplies

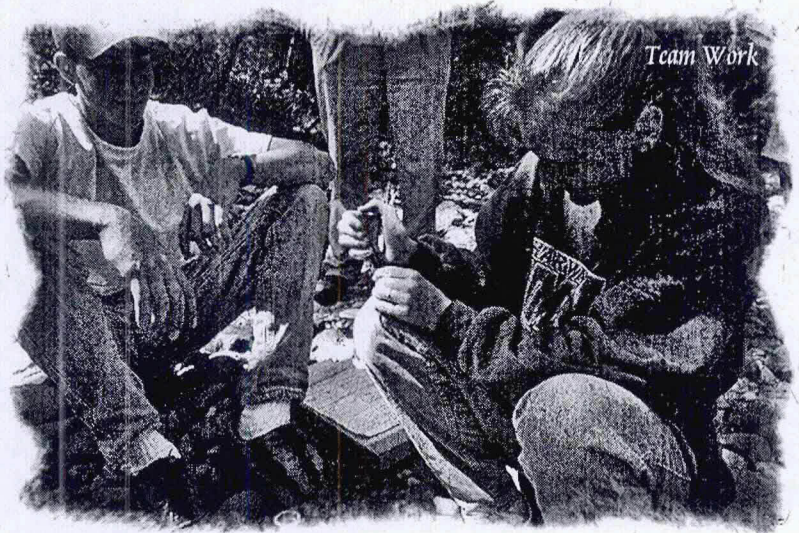
² Insurance cost were offset by an outside loan of \$1,500. Insurance cost for 1997 is projected at \$5,700

³ \$2,800 of invoices for buses in 1996 were carried over into 1997 for a total of \$6,432.07

Another Kind of Balance Sheet



Reflection



Team Work

"When I came to the river it was like a dream. If I ever git to go to the river alon then I'll ether exsplor or I will sit down and lisen to evrything aroand me. I no how to lisen and explor now"

Willie

Faubion Elementary School



Excited About Science

Hands-on Learning



"I am nature. Nature is me. After you hike around a little you realize that we are all nature. Trees, birds, water, peace, leaves, puddles, streams, peace, people, ananimals, floating, peace. Don't destroy nature. When you destroy nature, you destroy me."

Tinisha

Ockley Green MS



Wolfree Inc.
Balance Sheet
As of December 1996

Assets

CURRENT ASSETS:

CASH IN BANK	1,590.55
CASH IN SAVINGS	261.37
ACCOUNTS RECEIVABLE	1,500.00

TOTAL CURRENT ASSETS **3,351.92**

FIXED ASSETS:

EQUIPMENT	11,103.79
LESS ACCUMULATED DEPRECIATION	4,418.65
	<hr/> 6,685.14

OTHER ASSETS

ORGANIZATIONAL EXPENSES	1,520.00
ACCUMULATED AMORTIZATION	(962.22)
	<hr/> 567.34
	<hr/> 10,594.40



Liabilities and Fund Balance

CURRENT LIABILITIES:

ACCOUNTS PAYABLE	10,459.62
ACCRUED WITHHOLDING TAXES	4,499.75
ACCRUED PAYROLL TAXES	1,540.07
ACCRUED PAYROLL	(432.94)

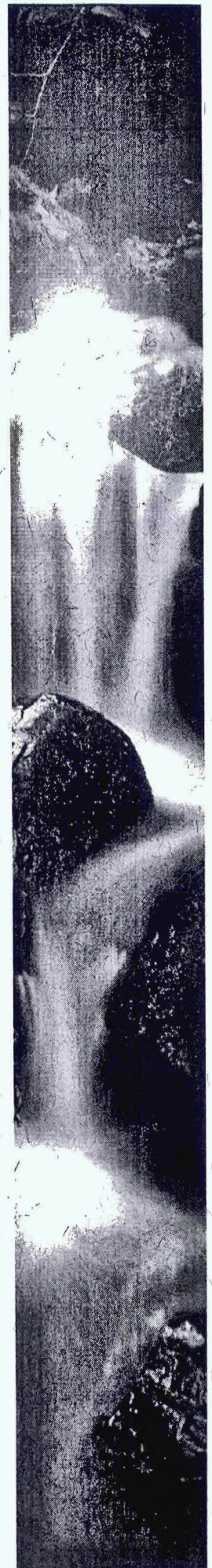
TOTAL CURRENT LIABILITIES **16,066.50**

FUND BALANCE:

FUND BALANCE	(1,307.97)
PROFIT (LOSS) FOR PERIOD	(4,164.13)

TOTAL FUND BALANCE **(5,472.10)**

10,594.40



June 12, 1997

Lynn Wilson, Restoration & Education Grants Coordinator
METRO
600 NE Grand Avenue
Portland, Oregon 97232

RE: Greenspaces Environmental Education Projects — Final Report

Dear Lynn,

The 1996 Attainment Report for Cascade Streamwatch is attached which provides background information and the progress of the program over the course of the year. In addition, a video produced by a local media group last year is an excellent audiovisual reference covering the program.

Three major accomplishments occurred during the third year of Cascade Streamwatch because of increased in-kind and financial support from the Portland community. The accomplishments include:

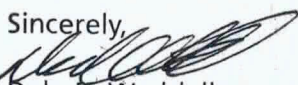
- (1) An increase in annual enrollment from 1,500 to 1,850 students, despite significant increases in bus transportation;
- (2) the number of professional volunteers doubled improving the quality of the program and insuring a safer operating environment for our customers; and
- (3) the quality of the learning experiences both in the classroom and in the field was enhanced.

One hundred percent of the funding provided by the *Greenspaces Environmental Education Grant* went towards the cost of bus transportation — *a critical first step in the success of the Cascade Streamwatch Program*. Most of the schools attending Cascade Streamwatch do not have the financial resources necessary to fund field studies. Because many of our schools are from poor communities, the ability of parents to help pay for the transportation is limited. Therefore, the success of Cascade Streamwatch is dependent on Wolftree's ability to provide outside dollars for bus transportation.

The total cost of busing for 1996 was \$5,426. In previous years, Wolftree sacrificed dollars for equipment and staff to pay for bus transportation. This year, because of the support from METRO Greenspaces, Wolftree's limited dollars were directed at improvements to the program which in many cases resulted in increased funding from other contributors. Fund-raising for the program is enhanced when Wolftree shows support from a variety of important organizations in the Portland area. Due in-part to METRO's early investment in Cascade Streamwatch, the funding for bus transportation in 1997 will now be funded mainly from private corporations.

Wolftree hopes to work with the staff of METRO in years to come to help coordinate a series of outdoor field studies that includes programs offered by both METRO and Wolftree. The demand for quality programs that move students out of their classrooms and into the outdoors continues to grow. Public and private organizations who help fund these programs have expressed a desire for providers to work together to avoid duplication of services and to better serve the education community. The financial support from METRO has been a catalyst for what Wolftree hopes will be further cooperative efforts in 1997 and beyond.

Sincerely,


Dale R. Waddell
Development Director
239-1820