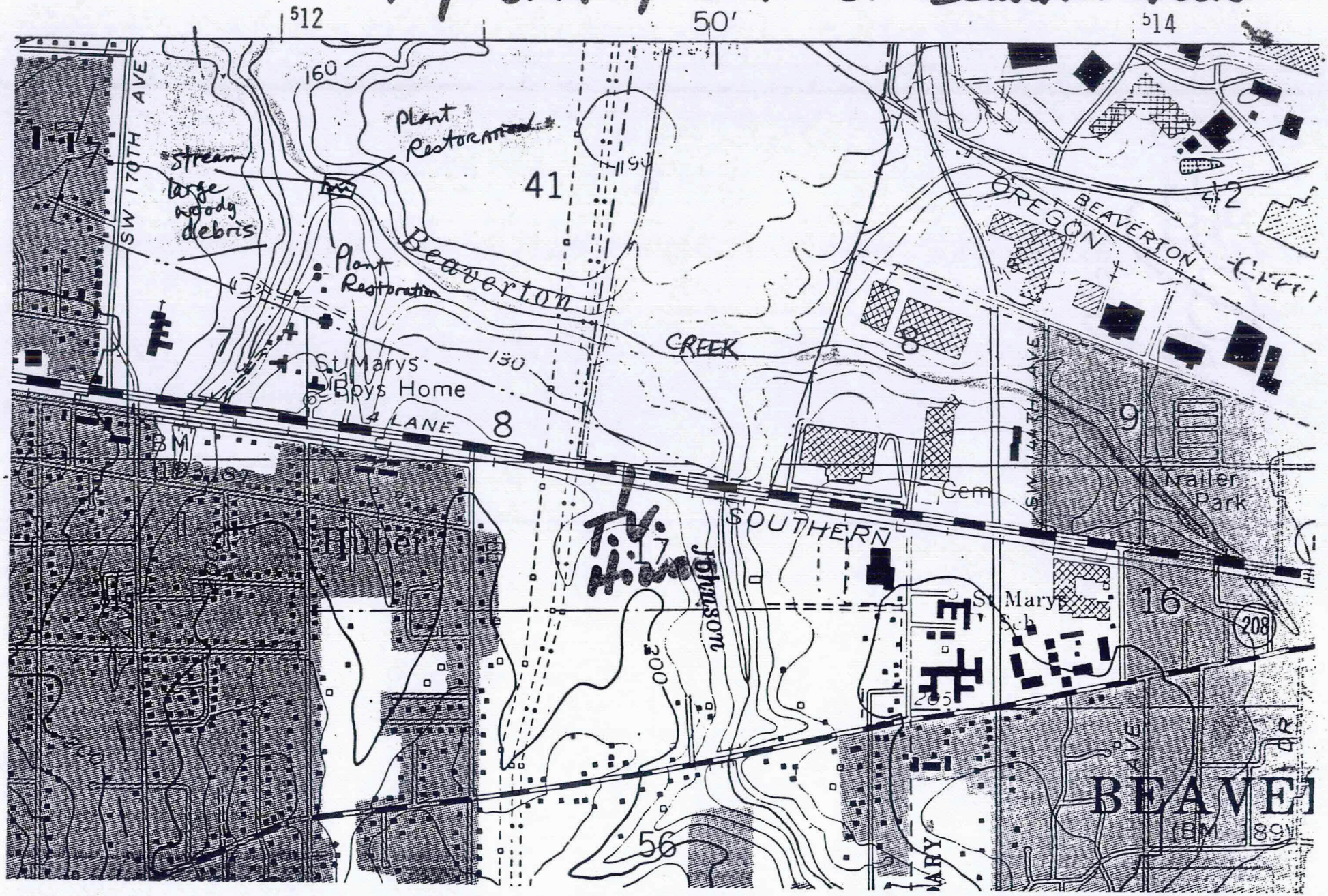
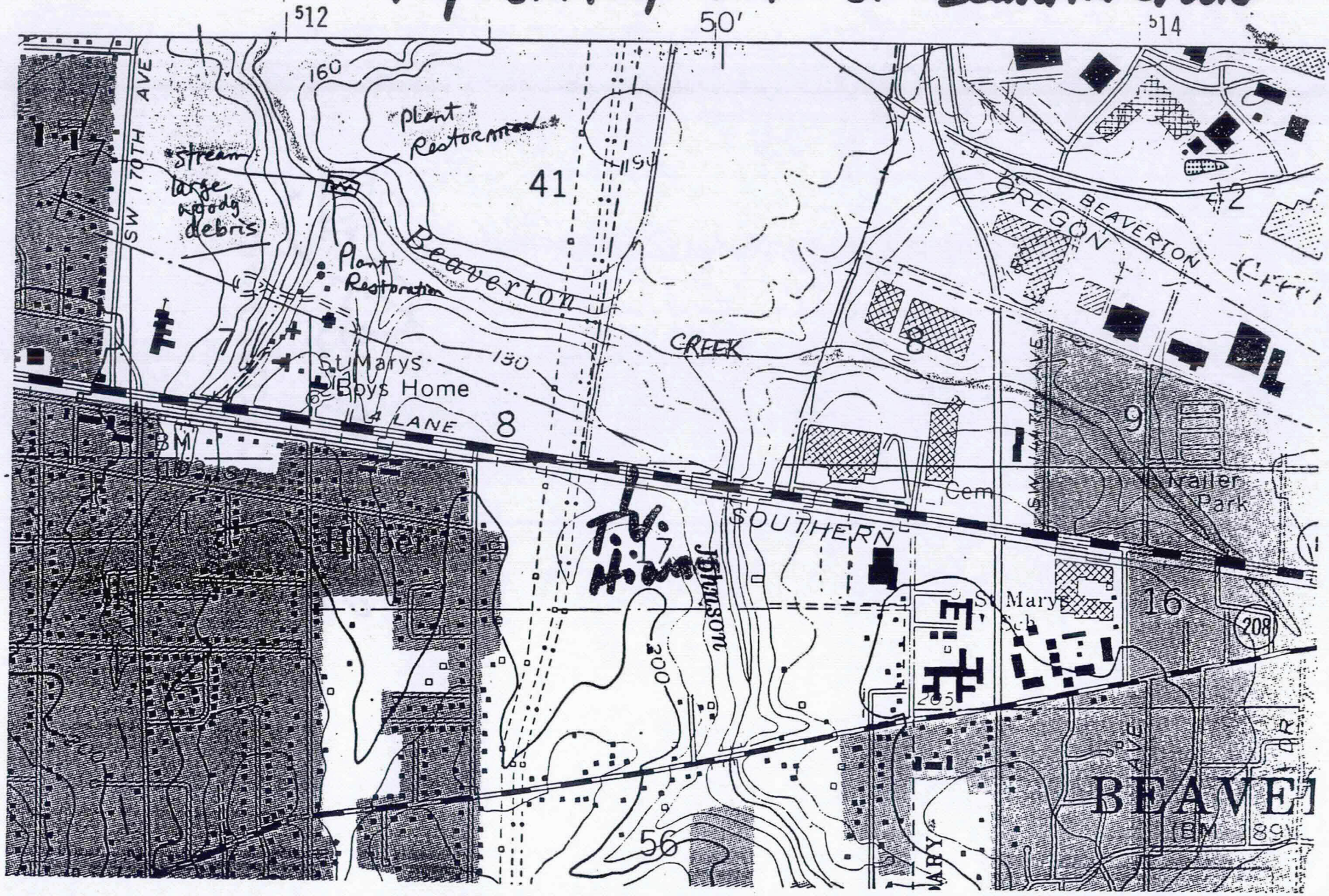
IOR #1 Related to Region / Locale

Topography Map of Beaverton Creek



IOR

Topography Map of Beaverton Creek



Project Description-

Rain caused delays in planting our plants. We are located in a floodplain. Also, we were delayed because we had to obtain a Land Design Review Type ! through the City of Beaverton.

WE began to plant June, 1998.
We continued to plant and maintain the trees through the summer class crew at St. Mary's. There were no delays.

We worked with the Americorps crew to plant cuttings in Oct. 1998.
In May, 1999, after the runoff, we were able to prepare the site for new plantings or replantings. We worked at maintenance until school was dismissed, June 19, 1999.

We will continue with two classes of maintenance during summer school 1999.
We will continue with maintenance and beaver protection for the fall of 1999 during an Environmental Education class.

#5 Goals and Benefits of Project

1. **Plant native riparian trees and shrubs in Beaverton Creek's riparian zone.**
2. **Stabilize creek banks.**
3. **Enhance macroinvertebrate, fish, and bird populations.**
4. **Lower creek water temperature and increase dissolved oxygen levels.**
5. **Promote a "positive" work ethic, group working system among "at-risk" students.**
6. **Establish and expand across-content areas environmental education curriculum with "at-risk" students.**
7. **Maintain the planted trees despite the ravishes of nutria, "rogue" beaver, and the encroachment of reed Canary grass.**
8. **Establish a "baseline" of water quality indicators as "enhancement" procedures continue and expand.**

Benefits of Project

1. **Enhanced riparian zone in Beaverton Creek: improvement in its aesthetics, water quality, and diversity.**
2. **Establish a "hands-on" environmental education program with at-risk students that "gives back to the community" and promotes a positive working environment emphasizing respect, work attitude, and responsibility to the group and good science.**
3. **Use "enhancement" activities as CIM requirements for Biology, Math, and Environmental Content areas.**
4. **Network with other agencies and community groups to expand students' horizons and awareness.**
5. **Establish an environmental project that will have a past, present, and future as an "on-site" LIVING LAB.**
6. **Call in the "experts" as speakers or as "on-line" internet support people as St. Mary's students become the "experts" as they learn what works, what doesn't and why.**
7. **Students achieve an understanding of wetlands as a "holistic concept", that is, an integrated interplay of land, water, air, and people.**
8. **Establish St. Mary's students as guardians and stewards of Beaverton Creek, especially in the political and spiritual arenas.**

WORK TASKS AND TIMELINES

Description As It Actually Happened

Beaverton Creek Restoration at St. Mary's Home for Boys/Levi Anderson School

Date	Activity
May,1998	Begin wetland, upland restoration Work with Friends of Trees volunteers Place protective cages around wetland trees to protect against rogue beaver. Place plastic fencing around upland trees. Mulch all trees with paper/asphalt 3' squares. Mark with red ribbons.
June, 1998	Summer School class at St. Mary's - weed maintenance and watering
Sept, 1998	Willow tree cuttings planted with AmeriCorps crew in Wetlands
May, 1999	Maintenance and Prepare site for new plantings
June, 1999	Plant new wetland trees, shrubs, and grasses Replace dead trees. Weed, mulch. Mark with yellow ribbons.
July-August, 1999	Weed, water, and maintain new trees, shrubs, and grasses (2 classes of Beaverton Creek Restoration crews go to creek.)

#8

Project Staff/ Workers/ and Volunteers

Staff- Paul Ferris and various assistants: Mr. Crook, Mr. Roberts. Ms. Souza, Ms. Lightfoot, and Ms. Anderson.

For Summer School 1999, a new teacher will be included, Ms. Tracy Baumgartner.

Workers-

The students of St. Mary's Home for Boys have been the primary workers. Approximately 35 different boys, of various ages, have contributed to this project..

An Americorps group was paid for 4 days cutting cuttings and planting them with the St. Mary's boys.

Volunteers

Friends of trees, approximately 3-4 volunteers, arrived to help plant trees in May- June, 1998.
Student Watershed Research staff arrived 3 times to help plant in June, 1998.
Tualatin Hills Parks and Rec. crew arrived once to plant trees.

For 1999, only one volunteer has returned from Friends of Trees. Chris Runyard, and airline pilot, has arrived 4 times to help with our restoration efforts.

#9 How Project Relates to Greenspace Program

OUR RESTORATION GRANT IS RESTORING NATIVE VEGETATION TO A HIGHLY URBANIZED, POLLUTED STREAM IN BEAVERTON WHICH IS BESET WIYH EXOTIC, INVASIVE SPECIES : reed Canary grass and nutria.

We have planted Oregon ash, pacific willow, red alder, hardhack, and red ossier dogwood as native, indigenous trees in Beaverton Creek's wetland. Upland, we have planted Douglas fir, twinberry, pacific willow, red elderberry, salmonberry, pacific crabapple, and ninebark. All are surviving with our maintenance.

Next, we are very interested in enhancing animal and plant habitats with our restoration efforts.

Lastly, we are interested in networking and establishing working relations and understanding with United Sewage Agency , OGI through the Student Watershed Research Project, and Tualatin Hills Parks and Recreation regarding our restoration of Beaverton Creek.

All of the above, I believe, work in unison with the Greenspaces Program guidelines.

We have begun. We are very excited about the future of our site. And, we are not looking back.

I want to thank you personally and professionally for your help, resources, and wonderful people on staff.

Thanks again,
Paul Ferris, Sci. and Math Teacher at Levi Anderson School, St. Mary's Home for Boys

#10

What Worked:

1. Find a local nursery that has good stock and delivers on time. This company must be reliable, inexpensive. You can choose from the phonebook, but word of mouth is best. Metro has some recommendations, but fellow grantees know.

2. Network by attending meetings. Ask questions. And, by all means, ask the same question to different groups or people. Better yet, invite the experts to you planting site. When possible bring in samples to the Metro meetings if they can't come out. Don't allow yourself the luxury of being intimidated or feeling stupid.

3. Obtain a copy of Guide to the Wetland Plants by . This book will be indispensable for plant selection and location.

4. Visit upstream or downstream wetland areas from your site. See what grows there. When possible, duplicate what grows on the opposite side of the stream that you want to restore. Plants don't lie.

5. Do soil sampling tests. Plant where the soil is relatively fertile. Stay away from clay or lower micro-topographic areas. These tend to collect more sediment, therefore more clay, and are less hospitable to planted trees.

6. Do sample tree plantings before you put in a large number of trees. Guides, including the aforementioned, divide trees into "wetland obligate" or "wetland facultative", and do not take into consideration your particular site with all its variables and nuances. Experiment: A Nine bark tree grew well the first year, but was inundated the second, and died, therefore, eliminating it as wetland variety in our site.

7. Diversify your tree types. Nature likes diversity and so should you.

8. Solicit and attract community groups to your restoration effort. Personal calls are best. And, give them reminder calls the day before you plant. Have them bring their own gloves, boots, and shovels.

9. Take their picture and send it to them. Also, have the students personalize thank you cards to them.

10. Allow 5 times the time for maintenance then you had planned. Planting is easy. Maintaining your plants is crucial and very time consuming.

11. Take pictures, pictures, pictures. Assign a student as "snapshot staffer."

12. Enrich your restoration curriculum with "guest speakers" from PSU, SWRP, DEQ, and USA. They provide their "story" to what you've said. And, your students as well as you need a break and they are happy to come in.

WHAT DIDN'T WORK

1. KNOW YOUR WATERSHED AND ITS LOCAL CITY, LEGAL GUIDELINES:
My measurable, grant goals were written PRIOR to meeting with the City of Beaverton. During this meeting, I was told to apply for Land Design Review Type I. I did so and was informed that it would cost $330 as a school related restoration project. The fee was eventually waived, but I was told that I could not introduce "large woody debris" into Beaverton Creek BECAUSE THIS WAS AGAINST F.E.M.A. regulations and the city official wanted the water from the creek "to be unimpeded in its flow" as it coursed westward. And, changing the structure of the creek must be handled by a specialist : a structural, hydrological engineer whose hourly rate was astronomical and unmet by the 10% consultant fee allowed by Metro. This became a Catch 22 situation.
In the end, I laugh about the goal:

50% INCREASE IN POOLS, RIFFLES AND STREAM DIVESITY BECAUSE OF WOODY DEBRIS. AND, A CONCOMITANT INCREASE IN FISH AND MACROINVERTEBRATE POPULATIONS.

All of this didn't happen because of my naivete. Remember, the city your site is in HOLDS ALL THE CARDS! (and paperwork). Believe me, I wasn't prepared for the bureaucracy.

2. KNOW YOUR PLANTING SITE.
We have a rogue beaver(s) at our site which literally ate a large majority of our planted, indigenous trees. It took me a long time to accept this fact. And, I believed the culprits were nutria since they were readily seen munching away, and labored away live trapping them from my site.
I should have brought the chewed twigs in to be identified by the Metro naturalist. But, I was sure it was the nutria and I didn't. I WAS WRONG.

3. KNOW THE LIMITATIONS OF YOUR METRO GRANT
If you have beaver at your site, you cannot live trap them away, but you must individually protect your planted trees by erecting individual wire cages. This would entail 5 rolls of heavy gauge , 3-4 ft. tall wire to protect 300+ trees in our wetland. This defense would be TOO LABOR INTENSIVE AND COSTLY, and if you add "at-risk" students into the mix, the situation becomes very labile and undoable. They will not work, agreeably and comfortably, given this Leviathan task.
Unless, you want to do this by yourself. No way.
And, in the end, read your contract and ask questions.
You must plan and compromise what you can or cannot do when you are ignorant or uninformed about the funding.

4. GOALS ARE TOO HIGH AND UNREACHABLE AND NEED TO BE ADJUSTED GRADUALLY OVER TIME . ALL OF THIS TAKES TIME.
We have 80% of our plants alive. But, by calling them alive, I mean, that they have been gnawed down by the beaver but they are still alive but need extreme protection and maintenance.
the projected 25-50% tree canopy cover over the creek IS STILL 0% STREAM COVERAGE.

5.SHORTAGE OF RESOURCES, CONTACTS AND PLANNING. I AM A SCHOOL TEACHER AND A SPECIAL EDUCATOR, AT THAT. AND TIME IS AN ISSUE!
I felt the pressure to continue this grant, meet its deadlines, and yet, fulfill my hourly, job description duties : individualizing academic instruction while maintaining a behavior modification regime and MAINTAINING MY SANITY AND FAMILY LIFE.
And, if you include "at-risk" students and their required paperwork and meetings on a daily, sometimes, hourly need, restoration grant time becomes SECONDARY AND TENUOUS.

I can't make excuses. But, taking on this grant requires many extra hours meetings, resource gathering, and locating of resources (people and books) that can be frustrating. The contact lists generated involve people who are "always in the field" when you call or you ask questions about reed Canary grass or nutria control, which leave the "experts" nonplussed.
It would have been nice to have more teachers as grant winners for their empathy and "good contacts".

ADVICE

1. Know your site.
2. Ask relevant questions.
3. Ask irreverent questions, which are still germane to restoration.
4. Be prepared to put in extra hours.
5. Have a plan in your mind and write it down.
6. Tell yourself it's okay to make mistakes.
7. Admit your restoration mistakes and learn from them.
8. Trust your inner instincts, but don't let them bog you down.
9. Keep an open mind.
10. Don't let personal/professional dislikes or incompatibility get in the way of decision making.
11. Accept what you have and can't change.
12. Accept the SSSSSSSSSSSSSSSSSLLLLLLLLLLLOOW time table of restoration and its changes.
13. Establish good contacts with volunteers and bakeries.
14. Buy extra gloves, shovels, water containers, and first aid kits.
15. Never rely on the daily weather reports.
16. Be as planned and as communicable as possible to your fellow teachers and principal. Always, have a written list available to them.
17. Develop a backup list.
18. Plan for the long term.
19. Ask more questions.
20. Take it EEEEEEEEEEEEEEEEEAAAAAAAAAAAASSY!
21. Thank people and send them thank you notes.
22. Build the students, the crew, up. Because without them, there is no restoration.
23. Build and perfect hands-on activities that keep kids' enthusiasm up.
24. Post their stuff when possible.
25. Network, network, network; you are not alone.

#11 Advice for Other Project Managers

1. **Know your site. Get as much information as possible, BEFORE YOU START YOUR PROJECT. Especially, zoning requirements, tree selection, and detailed maintenance plans. It's too late or wasted effort, AFTER YOU PLANT, and have to rectify your goals.**

2. **Know your Metro grant. What it pays for and what it doesn't.**

3. **Go on Metro's field trips. You'll find you are not alone and you may know more than you thought you knew. It is a good venue for "show and tell".**

4. **With our special population, volunteers are essential and very helpful in organizing and maintaining good, solid work groups. Use their expertise.**

5. **Key in and "educate" volunteers about any special students, in other words, "brief" and "debrief" them.**

6. **Be prepared by having ice water, if it hot, and "hot chocolate" if it's cold. Don't skimp on food.**

7. **Be sure your "flyers" have good directions, maps, what to wear, and what to bring, phone number to R.S.V.P.. Be very specific.**

8. **Always have extra first aid kits and a phone to call out.**

9. **Learn from your mistakes as you feel more competent.**

10. **Be as organized as possible. Lists, contingency lesson plans, and the relationship of your restoration activities to CIM requirements are very laudatory.**

11. **Never rely on the weather forecast. Go there and see for yourself.**

12. **Establish on-site, the shade, meeting, or food places. These may not be the same locations, necessarily.**

13. **Thank you notes to volunteer groups and groups that donate are mandatory, especially if they are student made.**

14. **Closely monitor how matters are going. Don't be afraid to rearrange groups or assignments.**

15. **Build-in some external reinforcers or celebration times when you met agreed upon criteria. Students can only go only so far when the only payment is "helping the environment".**

16. **Be selective with advice. Better yet, experiment first before you make any plant selection decisions.**

17. **Trust your own judgement, but not blindly. Talk with others who you think might be helpful**

18. **Have fun.**

#12 Monitoring and Maintenance Plan

• All trees and cuttings are planted in the fall or spring.
• All trees will have a weed-free, 3 ft. area around its trunk. This area will be mulched with an asphalt imbedded paper mulch or commercial Weed-Block ™ to minimize weeds. Six-inch long landscape staples will hold mulches down.
• Each upland tree or shrub will have a plastic guard around it to eliminate mouse or deer grazing.
• All wetland trees, except red ossier dogwood and douglas spiarea, will be protected by 3 ft. tall, heavy gauge wire screen with canes to keep it upright.

<u>Schedule</u>

1. Weed maintenance with gas powered , circular disc, heavy duty weed whacker. Before flooding(Fall) After flooding(late Spring)
2. Mark trees with appropriate year colored, plastic flagging.
3. Adjust upright, vertical wire cages around wetland plants.
4. Replace mulch yearly.
5. Continue and update reed canary grass encroachemnt around wetland trees and shrubs.

Maintenance is to be done by staff and Levi Anderson School students twice a week, during the week, in Summer School or Environmental Education Classes offered Fall and Spring for the years 1999, 2000, 2001.

List Of Trees Planted

Type Tree/Shrub	##'s
Oregon Ash	60
Red Alder	186
Redtwig dogwood	140
Willows sp. Salix	154
Douglas Fir	20
Pacific crabapple	5
Ninebark	5
Red Elderberry	30
Black Hawthorne	5
Cow parsnip	5
Salmonberry	5
Twinberry	6
Rushes	100
Sedges	100
Tufted Hairgrass	200

FORMAL PHOTOS OF Beaverton Creek Restoration
Oct. 1997

#1 West from marker. Shows reed canary grass riparian zone. (Apartments on 170TH ST in BACKGROUND.)

#2 East from marker. Shows reed canary grass.

* Note: Marker is in south of P[illegible]

#3 NORTH FROM Marker

#4 SOUTH FROM MARKER

↑#5 East showing marker & confluence of stream on western St. Mary's property and Beaverton Creek

#6 West showing marker and Apartments off 170TH ST.

NOTE: Camera is approximately 6' off the ground.

#7 Easterly direction of Bearertn Creek's Riparian Zone

#8 300' from site marker, Looking west towards apartments approx.

#9 From St. Mary's Property (~~S~~ northern tip) overlooking Beaverton Creek Restoration site.