METRO GREENSPACES GRANT 1991

COMPLETION REPORT: for CONTRACT #902275

PROJECT TITLE: WETLANDS CREATION & ENHANCEMENTS - NEWELL CREEK WATERSHED

BY: John Inskeep ENVIRONMENTAL LEARNING CTR.
19600 So. Molalla Ave.
Oregon City, OR 97045

CONTACT PERSON: Gerald W. Herrmann
Executive Director

COMPLETION REPORT NARRATIVE:

ACTIVITES UNDERTAKEN

Project starup commenced during the summer of 1992 and was fully completed before the METRO/ELC MEDIA EVENT held in early October.

The project undertook to reduce and whereever possible curtail advserse effects of stormwater contaminants to the upper watershed areas of Newell Creek, Oregon City's largest drainage basin. The project also sought to expand and reestablish wetland values in areas of the Center and College's grounds for the benefit of wildlife and people. Education components not funded, but completed during the project, included 10 interpretive signage modules detailing the benfits of wetlands and adverse effects of un-restrained stormwater runnoff. Additionally several information kiosks were created for those same purposes.

PERSONNEL/MANPOWER

The intent of the project was to employ disadvantaged low income persons in as many activites such as soil movement, grading, biofiltration basins execution and interpretive stations as possible. Over 12 persons were directly employed durin the period with over 50 more community volunteers assisting at various stages.

SPECIAL FEATURES CREATED

In order to adequately deal with stormwater contaminants from nearby College parking lots and other sources, the project sought to develop a attrative "natural appearing method" of containing and filtering such runoff. Various design ideas were reviewed, and consultant information and advice sought. What was ultimately thought to be most creative, while at the same time efficient, was the development of a wier type structure using various graded gravels, and selected types of organic composts. The result was the evolution of a beaver dam

like structure to be integrated with expansion of existing basins to higher quality wetlands and new basin excavation for wetland purposes.
This over 80 foot structure was hoped to reduce the amounts of land area required to effectivley settle sediments, and bio-filter remaining contaminants of an oil based nature.

PROJECT RESULTS

Over one acre of wetlands were created and enhanced, in some cases created from upland areas that were altered in topography to lowland areas. All areas so created were vegetated with native wetland, emergent, and fringe upland vegetation species. Adjacent areas subject to high solar input were planted with trees and shrub communities to reduce overheating of wetland waters and resultant algae growth stimulation.

All sources of on-campus and adjacent agricultural field runoff were targeted for treatment through the wetland-bio-remediation system. All such areas now flow through the completed project with very benefical results. The results noted in two months of heavy rainfall include:

1) College parking lot and rooftop drain runoff dust and debris are being eliminated from ELC fish rearing basins

2) College parking and rooftop drain sources of oils and other adverse substances (tars from roofing for example) have bee fully contained and absorbed in the wier/compost filtering area

3) Public interest in the graphic and educational stations relating to all prject features has been very high (over 500 persons have toured the project since dedication in mid-October 1992

4) Wildlife values have been significantly enhanced through the creation of open space wetland, introduction of support plantings and wetland species, and resulting habitat diversity

The Center and College now have a fully developed wetland complex and state-of-the-art bioremediation facility for user group education and specialized classes and workshops in stormwater management.

PROJECT MONITORING AND EVALUATION:

Since the project is fully contained within a long-term permanent facility for environmental education (The John Inskeep ENVIRONMENTAL LEARNING CENTER), long term monitoring and evaluation is assured.

The Center employs over a dozen persons in various professional and technical areas and a staff biologist as well. Such expertise will allow not only regular maintenance and enhancement functions to be conducted routinely, but also technical evaluation of water quality and wildlife benefits of the project and system.

Annual photography of project features will be conducted as in the case of all Center exhibits (this is a common practice). The Center has performed such functions for over 15 years to document Center growth and development.

Quarterly water quality testing has been done for over five years and will continue for the purposes of this project as well as aid in local and regional jurisdiction stormwater management projects.

Since Clackamas Community College has a fully developed WATER QUALITY TECHNOLOGY PROGRAM (for over 15 years), the completion of this project will add new capability to that successful program. Already students from that program are using stormwater testing techniques at the Center waterways and streamcourses. With National Pollution Dischage permitting and regulatory requirements of EPA coming in to force, this project will serve as a model training and resource area for technician and professional advancement.

Wildlife inventories are to be conducted as well to determine the following:

1) If water quality has aided fish success in rearing and maturation

2) If more diversity of habitat now provided has resulted in greater wildlife use and diversity in wildlife type

3) If stormwater improvements now being experienced by the project and system can be sustained over long periods of time

19600 S. Molalla Ave., Oregon City, OR. 97045 PH: (503) 657-6958 ext. 2351

NEWS BULLETIN

PUBLIC SERVICE ANNOUNCEMENT
OCTOBER 1, 1992

FOR IMMEDIATE RELEASE

PEOPLE-MADE BEAVER DAM TO BE DEDICATED

(Oregon City) The METRO GREENSPACES GRANTS PROGRAM, THE U.S. FISH AND WILDLIFE SERVICE, and John Inskeep ENVIRONMENTAL LEARNING CENTER have teamed up to solve storm water problems at the Center's 15 acre Clackamas Community College location using new technologies and the time proven designs of one of the Northwest's unique animals - the beaver. The Greenspaces program is a cooperative regional system of natural ares, open space, trails and greenways for wildlife and people. The program offers grants to cities, counties, park districts, and non-profit organizations to restore and enhance degraded natural areas along streams, in wetlands, and upland areas. The Center, a 1991 recipient of $14,750 grant from METRO's GREENSPACES PROGRAM will unveil an enhanced bio-filtration wetland, extensive educational exhibits, new wetland filtration areas designed to improve runoff from nursery and community garden operations, and a 75 foot "people- made beaver dam filtration system" on Tuesday, October 6th from 11AM - 12:30PM. The public and interested business and industry groups are encouraged to view the new complex. Though every effort has been made to reduce storm water impacts by staff and students at Clackamas Community College, runoff from over 60 acres of parking lots and other paved areas still bring substantial amounts of oil and other water borne contaminants into the Center's wildlife ponds, and stream areas where salmon and steelhead rearing and water quality studies are conducted. The generous grant from the METRO GREENSPACES Program has allowed the Center to establish "the first simple and replicatable filtration system masked to look like a beaver dam that includes wetland and other wildlife support components and should be of value to hundreds of other applications in commercial, industrial and homeowner

applications" according to Jerry Herrmann, Center Director. The system, designed by the Center, consists of rock and compost filtration wiers that simulate some of the filtering actions of a real beaver dam, siltation storage areas, wetland plantings and bio-filtration beds and complete instructional signage and information stations for public education. The dedication event will highlight benefits of the project, overview water quality improvements at the Center's Fish Rearing Facility resulting from the project and provide all dedicators and visitors with baked salmon, smoked trout, crawfish, and other Center specialities during a brief buffet luncheon. For further information, contact the Center at 656-0155 Tuesday through Saturday.

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GREENSPACES DEDICATORS ASSIST IN FINAL COMPOSTS PLACEMENTS

FILTRATION SYSTEM & ENHANCED WETLAND (SPONSORS PHOTO)

SITE PREPARATION FOR WETLAND BASINS (CORRECTIONS WORKERS)

DEBRIS REMOVAL (SAVED FOR BEAVER DAM/WIER) (GIRL SCOUTS)

EXPANDED BIO-REMEDIATION BASIN WITH WIER & WALKWAY

COMPLETED "PEOPLE MADE BEAVER DAM" FILTRATION WIER COMPLEX

NEWELL CREEK HEADWATERS WIER CONSTRUCTION (CULVERTS VISIBLE)

WIER COMPONENTS ASSEMBLY (GRADED GRAVELS, COMPOSTS for FILTER)

BASIN EXCAVATION USING RAKING & PUMPING TECHNIQUES

STORMWATER STORAGE & SEDIMENTATION TEST (WETLAND)