

## Field Operations Facility

### Stormwater Management and the Built Environment

Clean Water Services proudly dedicated its Field Operations Facility at 2025 SW Merlo Court in Beaverton, Oregon in the fall of 2003. Special design features and careful construction methods were used to protect local streams and the nearby Nature Park. The facility is a showcase and model for those wishing to protect the environment while building the community.

#### A Model for Protecting Water Quality

Natural land absorbs rainfall. But, buildings and pavement create unnatural runoff that increases water pollution, temperature and erosion. To solve these problems, thoughtful design can mimic nature to create pavement and buildings that absorb water.

The facility and parking lots were designed to manage surface water on-site. Instead of drainage pipes and catch basins that would carry water away, plantings and porous “softscaping” allow rain to soak into the ground and filter through vegetation. Runoff is reduced and slowed while water quality flowing to the creeks is improved.

#### We Walk Our Talk

Naturally, when Clean Water Services needed to build a new Field Operations Facility with lots of pavement and roof area, we went for an innovative design that would protect water quality. Innovations include:

##### Ecoroof

Soil and plants on the roof absorb rainfall and insulate the building.



##### Porous Pavement

Allows rain to soak into the ground and stay cool.



##### Green Street

Gently sloped swales replace curbs and gutters to slow water and remove pollutants.



*(over please)*





*Woody debris was wrapped in filter fabric to create rows of protective barrier during construction. Afterward, the swale was reshaped and planted with native plants shown to the right.*



*All runoff filters through gardens and swales before reaching creeks and groundwater.*



*Roof runoff is directed to scupper gardens where the water is filtered naturally.*

### **Water Quality Protected During Construction**

Extra care protected water quality throughout construction of the new facility and parking areas. Some of the innovations:

- Covered bare dirt with gravel, keeping no more than 5 percent of the soil exposed
- Created 2 large settling ponds to capture sediment and filter pollutants
- Quickened settling process in the ponds with flocculants (like pioneers used alum to clarify silty water)
- Lined landscaped swales with jute matting to help plantings establish quickly
- Lined the main treatment swale with fabric to filter pollutants and sediment
- Continually monitored for erosion and sediment control.

### **Water Quality Protection Forevermore**

Many elements of the facility design will protect water quality for many years to come, including an ecoroof on the administration building, swale systems instead of drainage pipes and catch basins, and an oversized water quality treatment facility that was graded to natural contours. Other enduring features include the green street with swale and no curbs, porous concrete in the employee parking lot, porous paving blocks in the visitor parking area, and reinforced gravel. Runoff from the traditional roof goes to scupper gardens and is filtered through plants.



*Reinforced gravel in the storage yard.*

### **Precious Resources Protected**

Just downstream from the new facility is a precious natural resource, the THPRD Nature Park. The wildlife, native plants, creeks and wetlands benefit because typical construction soil and pollutants were kept out of the waterways. The environmentally-friendly buildings and parking will protect the watershed always.

### **More Benefits**

On site surface water management improves habitat for urban wildlife and is more pleasing to view. It's good for the bottom line, reducing the costs of heating and cooling. And, less landscape maintenance and water is needed. These are all benefits with economic, environmental and social values.

Clean Water Services is a public utility committed to protecting water resources in the Tualatin River Watershed. Nearly 463,000 customers enjoy clean water and healthy rivers and streams through innovative wastewater and stormwater services, river flow restoration, flood management projects, water quality and stream enhancement projects, fish habitat protection, and more.

