

Putting the Reins on Stormwater

Improving Stormwater Management at the Evergreen State Fairgrounds

Introduction

Local county fairgrounds are an important part of many agricultural communities. As the population has grown in the Puget Sound area, they have also become a main attraction for regional urban communities. The Evergreen State Fairgrounds in Monroe, Snohomish County, has been a part of the local community for 100 years. It now draws over one million visitors from around Puget Sound each year.

Problem

The Evergreen State Fairgrounds moved to its present location in Monroe in 1945. Over the last 63 years the fair, owned and operated by Snohomish County, has grown to cover over 185 acres. As part of their efforts to improve stormwater management, county staff observed that the fairgrounds are similar to many areas of the county built decades ago—some parts of the grounds provide little or no treatment for their stormwater. In addition, the special animal husbandry needs of the fairgrounds bring unique challenges to contain and treat wastewaters laden with soaps and some animal manure.



Project Goals

In 2006, Snohomish County applied to the Department of Ecology for grant money to improve the fairground's stormwater system by using a variety of low impact development (LID) techniques. LID is an approach to managing stormwater that uses rain gardens, pervious pavement, and other structures to soak stormwater into the ground in small amounts at many locations. This localized, dispersed infiltration of stormwater helps reduce or prevent damage to local streams by reducing stormwater runoff and its associated pollutants. Ecology agreed with the county's idea to install a variety of LID techniques, all in one location, that would both improve stormwater management and serve as a demonstration site for designers, builders, and the general public.

Local stormwater management with LID



In a separate effort, the county also wanted to perform dye testing to check where several drains in the animal husbandry areas led. If drains were routed to the stormwater system, polluted and soapy water would ultimately go to the local stream (French Creek), which is not allowed. If they drained to the sanitary sewer, then clean water would go to the local sewage treatment plant during winter and add to the county's wastewater bill.

Milestones and Outcomes

The county learned a lot as it carried out both of these projects. For the LID project, staff found that the best laid LID plans still needed to be adjusted based on local site conditions. Soil tests conducted before construction did not give them the exact



location of the better-draining soils that were needed to properly infiltrate stormwater. As a result, the cost for some of the improvements was a little higher than originally expected.

Another lesson learned during the LID project involved the need to restrict the amount of porous concrete that is delivered in each truck load. Because the initial trucks were loaded with too much material, the porous concrete did not have the proper consistency and was therefore rejected. Subsequent loads were limited to six to seven yards of material per truck, which was accepted and installed.

The dye testing revealed important information about the drains in several animal husbandry areas. Staff verified that five drains located in uncovered areas were connected to the sanitary sewer system. That's a good thing when animals are getting washed and ready for the fair because dirty, soapy water needs to go to the local wastewater treatment plant. However, during winter months clean rainwater goes to the local wastewater treatment plant for treatment it doesn't need. That increases the county's sewer bills and uses up capacity at the plant. Staff now know that they should protect these areas from stormwater by installing overhead roof protection from rain, or a temporary cap on the drains during wet weather.



Project highlights

The LID projects reduced the volume of stormwater leaving the Evergreen State Fairgrounds. Putting stormwater back in the ground where it belongs should improve the health of local streams. Demonstrating many LID techniques in one location makes the fairgrounds a valuable place for educating legislators, contractors, and the public on the value, simplicity, and attractiveness of LID principles and practices. It was also a great learning experience for engineers and suppliers as well. More details on successes and lessons learned are at <http://www.ecy.wa.gov/biblio/0910023.html>.

By reducing the amount of stormwater entering several of the drains at the fairgrounds, Snohomish County's sewer bill will go down. Although it is a small amount of water removed from the system, the public can more fully benefit from the important investment at the local wastewater treatment plant.

Partners

Snohomish County, Surface Water Management Division
Snohomish County Parks and Recreation
Department of Ecology, Water Quality Program

Funding

The budget for the LID pilot project at the Evergreen State Fairgrounds is \$394,000, which is funded by an Ecology grant and by Snohomish County, who also provided staff time to perform the dye tests.

For more information

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