

Fairgrounds Stormwater Improvements Design

City of Lynden Public Works Department

WQC-2017-LyndPW-00098

June 24, 2019 - June 30, 2021

Final Total Project Cost: \$129,752

Ecology Funded Water Quality Improvement Cost: \$97,314

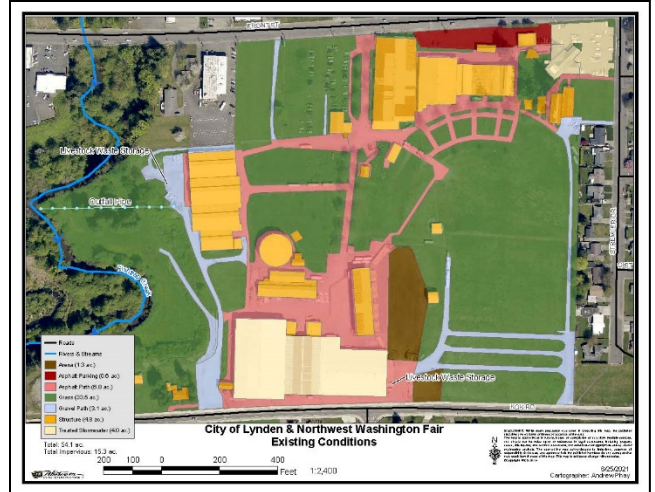
Additional Water Quality Improvement Cost: \$32,438

Project Description:

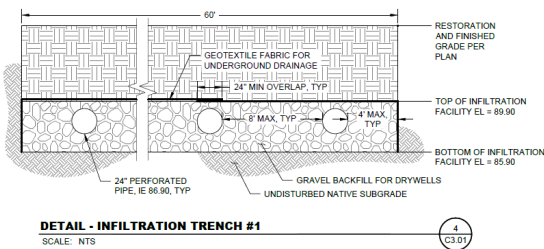
This project improves water quality in Fishtrap Creek through the design of low impact development stormwater facilities at the Northwest Washington Fair and Event Center (Fairgrounds) in the City of Lynden (City). Source control was designed to treat total suspended solids (TSS), dissolved copper, dissolved zinc, and total phosphorus, and to eliminate stormwater runoff into Fishtrap Creek by increasing infiltration. Additionally, in livestock areas, separating and directing flows with manured water to the City's wastewater treatment plant.

Fishtrap Creek flows into the Nooksack River 2.5 miles downstream of the project area then into Bellingham Bay and Portage Bay in another 6.5 miles. Portage Bay supports commercial, ceremonial, and subsistence shellfish harvest for members of the Lummi Nation and Nooksack Tribe.

The Fairgrounds is one of the largest properties in the City of Lynden. The 54-acre property includes over 20 acres of impervious surfaces. The runoff from much of the surface area is currently conveyed directly into Fishtrap Creek during most of the year.



Project area showing all 20 acres of impervious surfaces and historic outfall to Fishtrap Creek that will all be treated with the new stormwater LID project design.



Examples of design materials

Project Accomplishments

The City partnered with the Fairgrounds and Whatcom Conservation District on this project to improve water quality in Fishtrap Creek. The City contracted Herrera Environmental Consultants with their extensive stormwater design experience to develop a design which uses proven low impact development (LID) stormwater techniques to infiltrate stormwater from over 20 acres of impervious surfaces.

Activities completed:

- Developed an easement with the Fairgrounds for construction and ongoing maintenance
- Signed Interlocal agreements with partners
- Permits and environmental review
- 90% LID stormwater project design
- 90% design of educational elements to support LID design

Project was completed on schedule and within budget, while building partnerships to ensure the success of the construction and future maintenance.

Water Quality and Environmental Outcomes

The recent closure of Portage Bay shellfish beds owned by the Lummi Nation have increased attention on urban and agricultural runoff. Poor water quality also impacts aquatic species such as salmon and can pose a threat to human health. To achieve water quality improvements, this project designed new stormwater infrastructure for one of the largest landholdings in Lynden. The Northwest Washington Fair and Event Center, with visitors from throughout the region, is an ideal location to showcase improved agricultural practices and stormwater treatment.

Stormwater from the fairgrounds is currently piped directly to Fishtrap Creek impacting water quality and exacerbating high water events. As the name implies, Fishtrap Creek carries historic importance as a food source to Nooksack tribal members. The fairgrounds are the one of the largest sources of stormwater flow into the creek. The remedy is unusually cost effective because large lawn and gravel areas are available to site stormwater facilities.

Low Impact Development (LID) is an approach to managing rainwater that mimics the flow of water in nature. LID techniques allow rainwater to soak into the ground (infiltrate) close to where it falls. This helps replenish groundwater, remove pollutants, and provide water for streams and wetlands.

Lessons Learned:

- The collaboration between the City, Conservation District, and the Fairgrounds resulted in a strengthened partnership and agreements which will facilitate the future project construction. The team collectively learned more about the Best Management Practices (BMP) available for treatment.
- Significant scope changes occurred between 30% design and 90% design. The original design concepts included a wide array of BMPs for treatment, but also to serve as demonstration sites. The demonstration sites had to be limited in finding a cost-effective solution. This resulted in significant revisions to LID design and education materials.
- There are two sources of stormwater and contamination at the fairgrounds. Most surfaces fit well with traditional stormwater BMPs, However, areas with heavy livestock use during certain events require using agricultural BMPs. An agricultural engineer from the Conservation District designed the livestock facilities while stormwater engineers from Herrera designed the infiltration facilities.

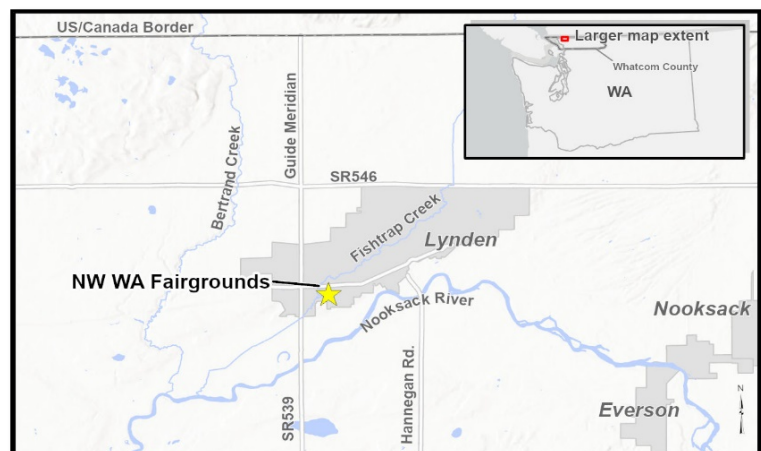
The Next Step for Continued Success:

- Construction funding has been offered by Ecology for the stormwater BMPs and the City decided against seeking funding from Ecology for the livestock BMPs.
- Funding has been requested from the Washington State Conservation Commission for construction of livestock BMPs.

Recipient Contact Information

CITY OF LYNDEN PUBLIC WORKS
300 4TH STREET
LYNDEN, WA 98264

PHONE: (360) 354-3446
CONTACT: STEVE BANHAM, PE
EMAIL: BANHAMS@LYNDENWA.ORG



Project location in Whatcom County, Washington