

# KELSO STORMWATER MONITORING PLAN

*This plan satisfies S8.C of the Phase II Municipal Stormwater NPDES Permit (Permit). It is comprised of two components, stormwater monitoring and Stormwater Management Plan (SWMP or “Program”) effectiveness monitoring. Monitoring described in this plan is in addition to that associated with the Illicit Discharge Detection and Elimination (IDDE) program. Results will be used to support the adaptive management process and lead to refinements of the SWMP.*

## STORMWATER MONITORING

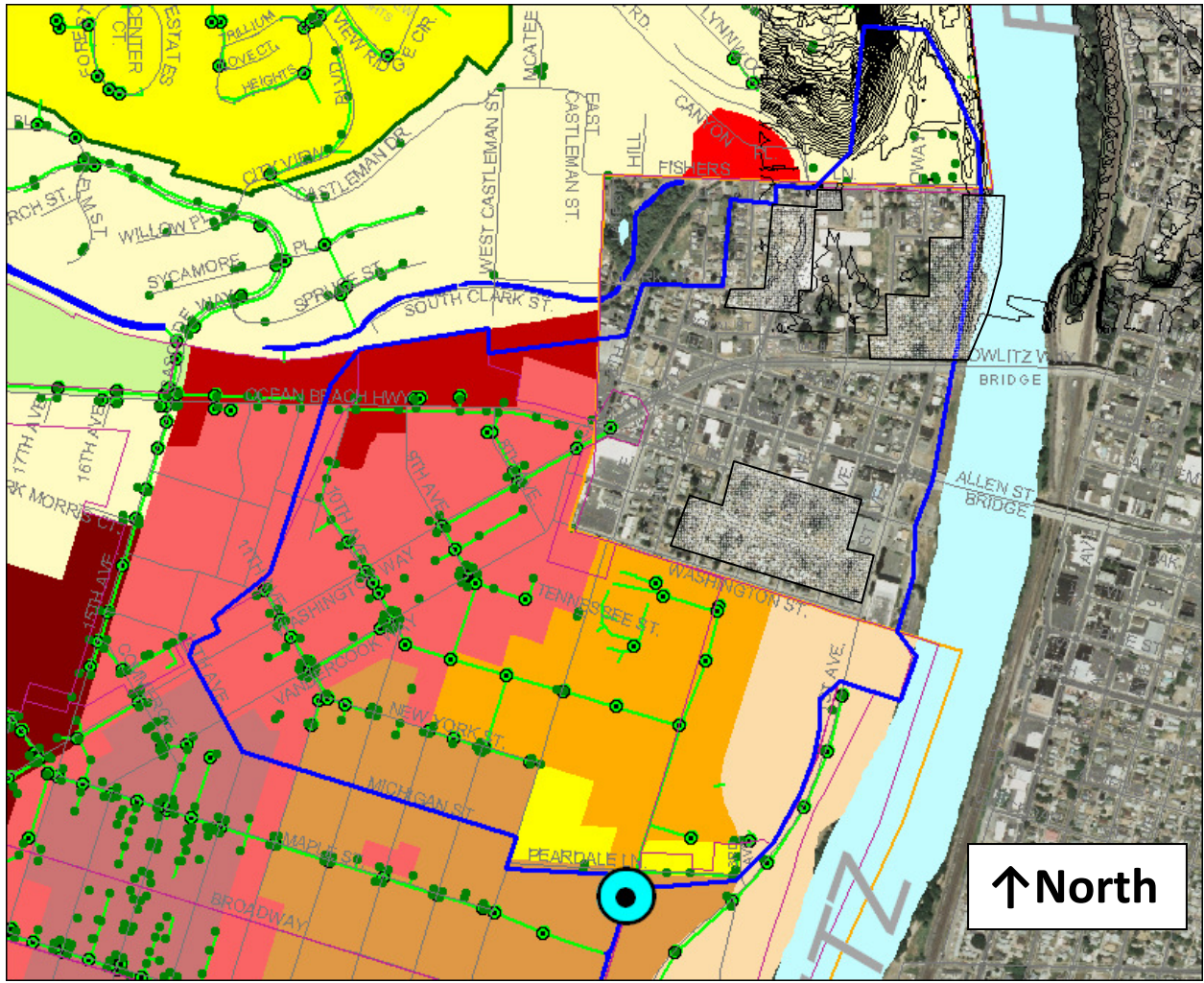
Stormwater monitoring is intended to help characterize stormwater runoff at a limited but representative number of locations in a manner that allows for the analysis of loadings and water quality changes over time. As required in the Permit and in a collaborative effort, Cowlitz County and the Cities of Longview and Kelso will partner to monitor stormwater at two locations, one “commercial” site and one “high-density residential” site. Descriptions of these sites follow.

### **Commercial Site**

Site	Start of CDID1 Ditch 4 (Peardale cul-de-sac, west). See Figures 1 and 2.
Why selected	Commercial site in Longview adjacent to County Fairgrounds and West Kelso city limit. Former sampling site for various 303(d) studies.
Site Limitations	<p><i>Access:</i> On improved ROW and CDID1 Property. Steep slope, but recently improved, and bottom is not mucky.</p> <p><i>Vandalism:</i> Only minor vandalism known at this location. No through vehicle traffic. Not a heavy pedestrian thoroughway. However, it is only a few blocks from the Jail, Court House, Work-release, Juvenile Detention, Parole, Progress Center, Bail Bonds companies, Women’s shelter, high density housing, commercial areas, etc.</p> <p><i>Power:</i> Available, but no existing service.</p> <p><i>Suitability:</i> One Outfall. Represents target land-use and partner jurisdictions.</p>
Basin Characteristics	<p><i>Size (acres):</i> 296 Acres</p> <p><i>Dominant Land-uses (%):</i> 50.9% - Commercial, 24.6 Medium – High Density Residential, 24.5% Public / Open.</p> <p><i>Other:</i> No tidal Influence. Limited baseflow (groundwater seepage from Cowlitz River). Some backwater.</p>
Water Quality Concerns	Fecal Coliform.

Figure 1: Commercial Monitoring Site Map

# Peardale Stormwater Monitoring site (Commercial)



### KEY

- Land Use
  - Reds – Commercial
  - Orange – Fairgrounds
  - Tan – Riverfront (Commercial)
  - Yellows – Residential
  -  W. Kelso Residential
- Stormwater System – Green
- Peardale Sample Site – Lt. Blue Dot
- Surface water & Basin boundary – Blue

City of Longview, WA 98632

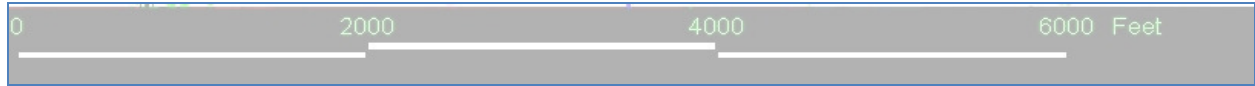




Figure 2: Photo of Commercial Monitoring Site



***High-Density Residential Site***

Site	Stormwater manhole at the intersection of 12 <sup>th</sup> Ave. and Chestnut Street. See Figures 3 and 4.
Why selected	High and medium density residential area in Kelso
Site Limitations	<i>Access:</i> Public road in right-of-way; need at least two staff to sample due to traffic control needs. <i>Vandalism:</i> Vandalism to manhole is unlikely. <i>Power:</i> Available, but no existing service. <i>Suitability:</i> Represents target land-use.
Basin Characteristics	<i>Size (acres):</i> 15 acres <i>Dominant Land-uses (%):</i> 68% - High Density Residential. 32% - Medium Density Residential. <i>Other:</i> May have influence (backwater) from lagoon. <i>Slope:</i> The area is relatively flat.
Water Quality Concerns	None known – typical for this area and land use.







Figure 4: Photo of High Density Residential Monitoring Site



## SWMP EFFECTIVENESS MONITORING

Stormwater program effectiveness monitoring is intended to improve stormwater management efforts by evaluating issues that significantly affect the success or confidence in stormwater controls. This component of the monitoring plan is designed to answer two questions of significance to the Longview-Kelso area:

### *Question One*

Question	How effective is the Nutrient, Integrated Pest Management and Herbicide Plan (Plan) at controlling herbicides in stormwater runoff from City-owned properties?
Hypothesis	Implementation of the Plan by Parks employees is effective at controlling herbicides in stormwater runoff from City-owned properties?
Measurement	<i>Parameter:</i> Herbicide array (specific EPA Standard Method to be determined) <i>Media:</i> Stormwater <i>Location:</i> Tam O'Shanter Park. Eastern parking lot at manhole. See Figure 5.
Expected Modifications	The Plan is expected to be satisfactory.
Significance	Herbicides can enter stormwater causing stormwater pollution. Herbicides have negative effects on bird populations and are a human concern as carcinogens. Roundup (used at the park) in low concentrations has been found to kill human embryonic, placental and umbilical cells.

### *Question Two*

Question	Does the construction stormwater management component of Longview's SWMP improve turbidity of runoff from construction sites citywide?
Hypothesis	Relative to areas beyond Phase I or Phase II jurisdictions in SW WA, constructions sites in the Longview-Kelso area have cleaner stormwater runoff.
Measurement (Via DMR Survey)	<i>Parameter:</i> Turbidity. <i>Media:</i> Stormwater. <i>Locations:</i> NPDES-permitted construction sites in the Longview-Kelso urbanized area and those beyond the coverage area a SW WA Municipal Stormwater NPDES Permit.
Expected Modifications	The SWMP is expected to be satisfactory, however, if Kelso-Longview construction sites trend close to rural sites, then additional inspections, better pre-construction education, and possible tougher enforcement may be necessary to improve effectiveness
Significance	Construction sites are the main contributor to the loss of topsoil to receiving waters. Sediment loss is generally deleterious to fish health because it covers spawning areas, cover gills, etc. Anecdotal evidence suggests a slower adoption of construction BMPs in this part of SW WA.



Figure 5: Photo of Sample Site at Tam O'Shanter Park's Eastern Parking Lot

