

2022

Stormwater Pollution Prevention Plan (SWPPP)

18TH STREET YAKIMA COUNTY ROADS SHOP
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Section 1: Introduction

This section will explain the framework of a Stormwater Pollution Prevention Plan (SWPPP). It will provide information on the permit requirements, intended goals, and the limitations of this document.

1.1 Background

This Stormwater Pollution Prevention Plan (SWPPP) applies to the 18th Street Yakima County Roads Shop. The SWPPP provides a set of actions and practices that can be implemented to reduce the impact the facility has on water quality. The Roads Facility is located within the City of Yakima and surrounded by multiple Municipal Separate Storm Sewer System (MS4) facilities. The latest Phase II Municipal Stormwater NPDES Permit for Eastern Washington was issued August 1, 2019, and states in S5.B.6.a.i(h) that a SWPPP is a requirement for material storage, heavy equipment storage, and maintenance areas.

As stated in Phase II Permit condition S5.B.6.a.i(h), the SWPPP shall include (at a minimum) the following:

- A site map showing the facility's stormwater drainage, discharge points, and areas of potential pollutant exposure.
- An inventory of the materials and equipment stored on-site, and the activities conducted at the facility which may be exposed to precipitation or runoff and could result in stormwater pollution.
- A plan for preventing and responding to spills at the facility which could result in an illicit discharge.
- A detailed description of the operational and structural BMPs in use at the facility and a schedule for implementation of additional BMPs. BMPs selected shall be consistent with the *Stormwater Management Manual for Eastern Washington*, or other Ecology approved technical manual. The SWPPP shall be updated as needed to maintain relevancy with the facility.
- Annual inspections of the facility, including visual observations of discharges, to evaluate the effectiveness of the BMPs, identify maintenance needs, and determine if additional or different BMPs are needed. The results of these inspections shall be documented in an inspection report or check list.

1.2 Goals

The goals for this SWPPP are:

- Establish Best Management Practices (BMPs) that identify, reduce, eliminate, and/or prevent the discharge of pollutants into stormwater.
- Prevent deterioration of surface water quality and ground water quality.
- Identify potential sources of pollutants at the Yakima County Road Facility.

- Evaluate the potential for stormwater contamination from potential pollutant sources.
- Identify operations, maintenance, inspections, and record keeping needed for source control BMPs and the needed updating of this SWPPP.

BMPs identified in this SWPPP are from the following sources:

- *Washington State Department of Ecology Stormwater Management Manual for Eastern Washington 2019*
- *Yakima County Regional Stormwater Manual (YCRSM, 2010)*
- *Yakima County Stormwater Authority (YCC 12.10)*

Section 2: Site Information

This section provides an overview of the 18th Street Yakima County Roads Shop and the current stormwater drainage system.

2.1 Current Site Facility and Operations

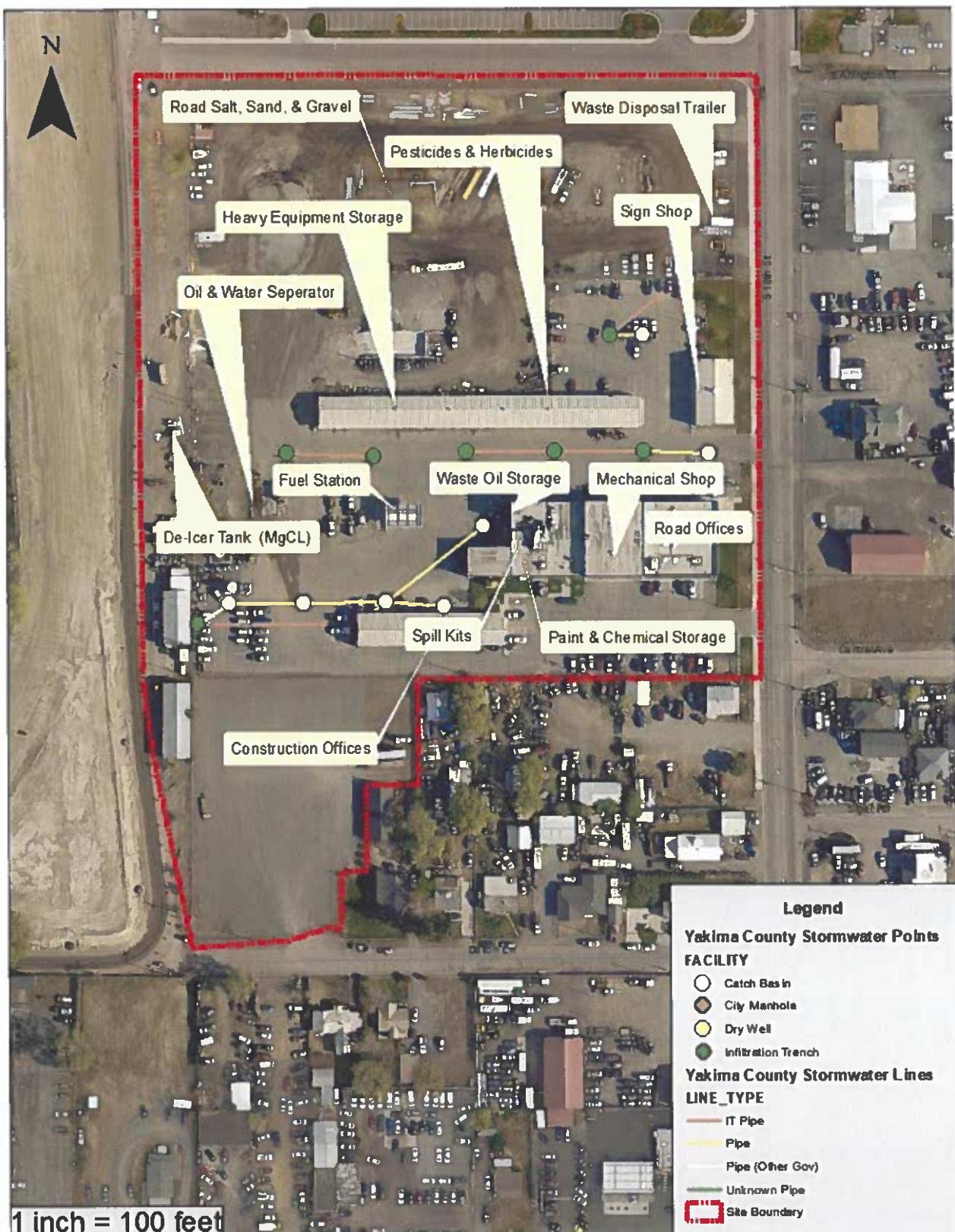
The 18th Street Yakima County Roads Shop is an 11.13-acre lot that serves the Yakima County Roads Department. There is a main office building with attached garages for employees and mechanical equipment. The entire site is located within the City of Yakima. To the north of the facility is the Yakima Valley-Technical Center. The west is State Fair Park home of the SunDome and Central Washington State Fair. To the south and east are residential units and mechanical shops.

The site is used for the following purposes:

- County Roads Administration Offices, Construction Offices, Sign Shop
- Vehicle Storage
- Heavy Equipment Storage
- Fueling Stations
- Sand/Gravel Storage
- Pesticide and Herbicide Storage
- Vehicle and Heavy Equipment Repair and Maintenance
- Park Equipment Storage
- Parts Storage
- Equipment Wash Bay
- Hazmat Storage
- Waste Disposal Trailer

A detailed map of the site is in Figure 1. A table to activities and their potential effect on stormwater is in Table 2-1

Figure 1: Site Map: 18th Street Shop



As seen in Figure 1, the main stormwater facilities are a set of catch basins connected to infiltration trenches located in the center of the facility. Along the northern and eastern perimeters are several roadside swales for roadway runoff. All stormwater is retained on site.

Table 2-1 General Activities

Activity	Description	Potential Pollutants					
		Sediment	Nutrients	Metals	Petroleum	Herbicides / Pesticides	Phosphorus
Storage of Gravel & Sand	Stored for maintenance work and road repair.	X					
Storage of Pesticides & Herbicides	Pesticides and herbicides stored in closed areas for weeds, insects, and outgrowth.	X	X			X	X
Heavy Machine Repair / Maintenance	Heavy Duty Trucks are cleaned and repaired		X			X	
Fleet Storage	Garage full of maintenance vehicles and semi trucks	X	X	X	X	X	X
Paint Storage	White paint for road markings and surveying. Located both in outside storage and shop			X		X	
Storage of Road Salts	Uncovered road salts and sand for de icing during the winter months (Nov-Mar)	X	X				X
Fuel Station	Fuel pumps for county vehicles. Contains diesel and regular unleaded.			X			X

2.2 Inventory of Materials and Chemicals

A list of materials and chemicals stored at the shop is in Table 2-2. These materials and chemicals could discharge to the storm drainage system and pose a threat to water quality. Yakima County Water Resource Staff performed a field review in May 2022 to verify the quantities of these chemicals. Since materials quantities are constantly dynamic, the provided quantities are estimates.

Table 2-2 Quantities of Materials

Table 2.2 Materials Exposed to Rainfall			
Exposed Materials	Quantity	Location	Method for Storage/Disposal
Road Salt, Sand, & Gravel	6000 cubic yds.	North Section of Shop	Containment Vaults/Used for Road Maintenance
Waste Disposal Trailer	6 tons	North East Section of Shop	Disposal Trailer/Collected as needed
Heavy Equipment Storage	15 vehicles (Max)	Center of Shop	Covered under storage
Fuel Station	12,000 gallons	South Section of Shop West of Paint & Chemical Storage	Stored in two 6,000 Fuel Tanks under Station
Pesticides/ Herbicide Storage	Up to 12-250 gallon tanks	Center of Shop East of Heavy Equipment Storage	Storage Facility
Waste Oil Storage	400 gallons	South Center of Shop West of Paint & Chemical Storage	Stored in Tank & Converted to Asphalt
De-Icer (MgCl)	10,000 gallons	Center West Section West of Fuel Station	Stored in 10,000 gal Tank
Street Paint	Up to 110-250 gallon tanks	North of Heavy Equipment Storage	Stored in 250 gal. tanks until applied
Reflected Beds	75 gallons	Paint & Chemical Storage Building	Stored in Containers on Shelves
Paint Thinner	75 gallons	Paint & Chemical Storage Building	Stored in Containers on Shelves
Diesel Exhaust Fluid	250 gallons	South Section of Shop West of Paint & Chemical Storage	Stored in 250 gal. tank
Anti-Freeze	55 gallons	Paint & Chemical Storage Building	Stored in Containers on Shelves

Section 3: Best Management Practices

This section describes the best management practices that Yakima County is currently utilizing on site and provides new BMP recommendations. BMPs range from new structures to individual tasks that will help prevent and/or reduce stormwater pollution. This section also provides outlines for training requirements and current BMPs implemented.

3.1 Current Physical BMPs.

The 18th Street Yakima County Roads Shop utilizes the following physical BMPs:

1. An inter-connected stormwater system of catch basins, pipes, and infiltration trenches.
 - a. These collect basic runoff from the parking areas and buildings. The water is treated before it is filtered into the ground.
2. An oil and water separator
 - a. Located near the vehicle storage area. This is a vault that allows petroleum in polluted runoff to rise to the top and be removed before water infiltrates.
3. Rock-lined roadside swales
 - a. These are located along the perimeter of the facility. These are used to prevent site generated stormwater runoff from discharging offsite.

3.2 Current Task-Based BMPs

Tasks based BMPs can be found in the Operation and Maintenance Plan provided in Appendix A.

3.3 Recommend Improvements

Yakima County is recommending the following improvements:

1. Cover for Stored Road Gravel, Salt, & Sand.
 - a. The site contains stored sand, gravel, and salt for maintaining roadways for winter travel. A lack of cover means that, in the case of a large storm, runoff could contain excessive pollutant concentrations and overload the existing facilities.
2. Convert Rock Lined Swales to Grass-lined
 - a. The rock lined swales surrounding the 18th Street Public Works Shop could be converted to vegetative swales. The soils will be based on WSDOT amended soil standards containing at least 1% of organic material. The new swales will be providing more pre-treatment for stormwater coming from the site.

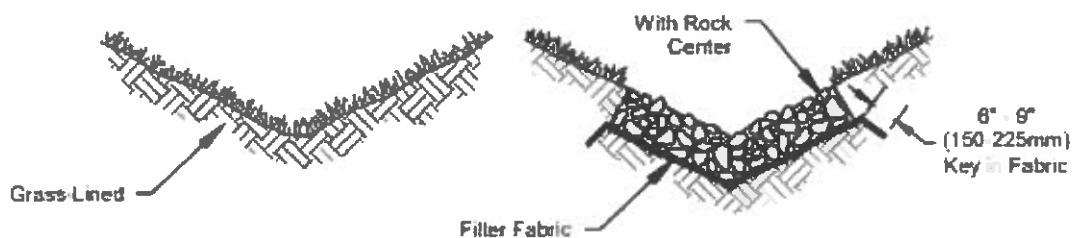
A detailed map of the recommend improvements is presented in Figure 2. A detailed cross section of the vegetative swales is presented in Figure 3.

Figure 2. Map Recommended BMPs



Figure 3. Grass Lined Channels (Eastern Washington Stormwater Manual, 2019)

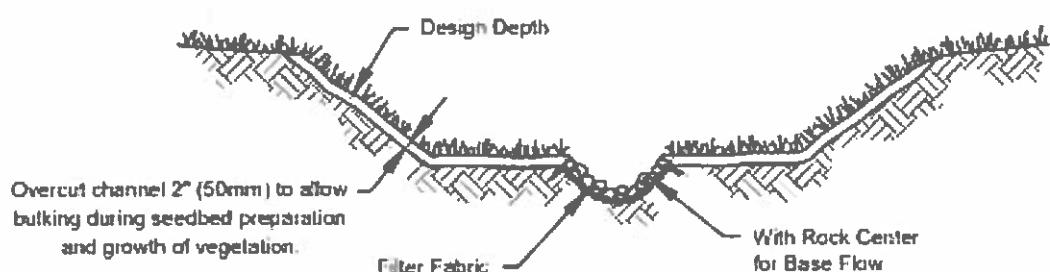
Typical V-Shaped Channel Cross-Section



Typical Parabolic Channel Cross-Section



Typical Trapezoidal Channel Cross-Section



NOT TO SCALE



DEPARTMENT OF
ECOLOGY
State of Washington

Typical Grass-Lined Channels

Revised June 2016

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Section 4: Visuals Inspections

The NPDES Permit requires visual monitoring for discharges from the site. Visual inspections will need to include both dry and wet sessions; the combination provides contrasts. The wet weather inspections will determine the effectiveness of the BMPs installed and the dry weather will confirm discharge elimination. Creating a record and monitoring trends will provide an analysis for improvements. The following maintenance activities are either recommend or already being utilized at the shop for NPDES compliance. Many of these tasks are based off the Maintenance Criteria for BMPs found in Appendix A.

4.1 Drainage & Outfall Characteristics

The SWPPP recommends quarterly visual inspections at the following locations:

- The perimeter of the site.
- The fuel stations
- The catch basins & infiltration trenches
- The oil and water separator

Each of these are marked in Figure 1.

4.2 Wet & Dry Weather Visual Inspections

Dry weather inspection should be conducted on a quarterly basis and wet weather inspections should be conducted after every major storm event (10YR-24HR). Dry weather inspections are considered the baseline for routine reviews. These ensure that routine maintenance is occurring at the site. The wet weather inspections are to determine the effectiveness of existing BMPs during storm events. Wet weather inspections may be conducted when there is visible runoff.

Visual inspections should occur immediately after storm events (wet weather) regardless of the number events that occur during the year. This action will be done to ensure that there is enough data to get an accurate view of the effectiveness of existing BMPs.

Wet weather inspections will be conducted after significant rainfall events. This event must have visible runoff present at the shop.

The inspectors should be aware of the following items that may be present:

- **Trash/Debris:** this could possibly be landscaping material, leaf litter, drinking cans, disposable plastic, discarded food waste, etc.
- **Foam:** Soap and or other cleaning products, natural or synthetic have entered the storm system. It could be turbulence from runoff so when reviewing foam, the inspector should note any other clues like odor and or sediment.

- **Sheen:** A rainbow hue on the water surface that may indicate petroleum-based substances are in the storm system. If a flammable material is suspected, like gasoline, the inspector should management immediately, and take action to prevent a fire or explosion.
- **Turbidity:** Water appears cloudy and is a sign that sediment/dirt has entered the stormwater system.
- **Odor:** Pollutants can give off specific odors, which must be accurately described. Odor descriptions can include phrases like rotten eggs, solvent, fuel/oil, cleaning agent, etc.
- **Discoloration:** A red/orange color may indicate rust or iron bacteria. Other colors such as white could indicate paint or cleaning agent emulsions.

The inspector should note whether each indicator was present or absent at the time of inspection and note the approximate magnitude for any indicators that were observed. A sample copy of the BMP Inspection Sheet, used for both dry and wet inspection, is in Appendix B.

4.3 Annual BMP Evaluation

Yakima County will evaluate existing BMPs at the 18th Street Yakima County Roads Shop to determine their effectiveness and if additional BMPs are needed. This evaluation will be done annually, and a report will be written describing findings.

4.4 SWPPP Revisions

The SWPPP will be reviewed on as need basis. Revisions would include new employees, contact information and evolving permit requirements.

Section 5: Spill Response

This section describes the Spill Response Plan (SRP) for the 18th Street Yakima County Roads Shop. All employees who work at the shop should be trained to follow the specified procedures for initial response, clean up, and public involvement. Appendix A contains the current Operation and Maintenance Plan currently in use at the shop.

5.1 Purpose

The SRP will assist Yakima County Staff in containing spills to minimize impacts to the environment and personal safety. To support current and future clean-ups, spill events will be recorded, and the following will be noted:

- Patterns of pollutant discharges to determine future BMP implementation.
- Analyzing events and develop solutions to reduce the detrimental impacts of these spills (i.e., failures in source control).
- Determining how BMPs follow National Pollutant Discharge Elimination System (NPDES) Permit requirements.

5.2 Initial Response

Employees should be trained to follow the specified procedures for initial response, clean up, and public involvement. The primary concern is safety. The Operation and Maintenance Plan in Appendix A outlines procedure for notification to external parties, spill response during regular business hours, and the spill response outside of regular business hours.

5.3 Spill Response Report

The Stormwater Call Log, included in Appendix C, must be completed after each spill event. The Call Log will document the spill and maintain a record for this SWPPP.

The documentation will include photographs, and the spill's location will be recorded on a map. Depending on the situation, authorities may come to the site to sample the material and the receiving water. Any results obtained from this sampling activity, and subsequent sampling/monitoring events should be kept with the Spill Response documents.

5.4 Spill Kits.

According to the Emergency Procedures (Appendix A), a spill kit may be used for minor leaks (less than 1-gal). These kits are in the same building as the paint and chemical storage (See Figure 1).

Section 6: Record Keeping

All forms, maintenance logs, and notes will be maintained for a minimum of 5 years.

Documentation should include the following:

- Visual Inspection Form (App. B)
- Annual BMP Evaluation Form (App. B)
- Call Log (App. C)