

ATTACHMENT “A”

**OPERATIONS AND MAINTENANCE MANUAL
FOR DRAINAGE FACILITIES**

FOR

**2412 Inter Ave
Puyallup, Washington**

**Revised June 2025
September 2023**

**Prepared for:
Through Terra**

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Project#20083

Section 1 – Project Description

Site Address: 2412 Inter Ave Puyallup, WA 98372

Developer Address: 2412 Inter Ave
Puyallup, WA

Tax Parcel Numbers: 2105200320, 2105200350, 2105200340 and 2105200361

Ownership/Maintenance: Property Owner

The 2412 Inter Ave project proposes the paving of an existing gravel parking lot and accompanying storm facilities on a 1.86-acre site comprised of four parcels (2105200320, 2105200350, 2105200340 and 2105200361) zoned Limited Manufacturing (ML). The site is accessed from Inter Ave with two commercial driveway approaches. The project site proposes approximately 44,578 sq.ft. of asphalt paving across onsite improvements and offsite driveway approach improvements. The project proposes a detention pond (BMP D.1) for flow control of the site improvements, and runoff treatment is provided by a combined wet pond (BMP T10.40) underneath the detention pond and two continuous inflow biofiltration swales (BMP T9.30) within the right-of-way. All disturbed areas which are not converted to impervious surface apply soil amendments in accordance with BMP T5.13. The average annual cost for maintenance is approximated to be \$10,000.00.

Section 2 – Maintenance Importance and Intent

“The importance of maintenance for the proper functioning of stormwater control facilities cannot be over-emphasized. A substantial portion of failures (clogging of filters, resuspension of sediments, loss of storage capacity, etc.) are due to inadequate maintenance. Stormwater BMP maintenance is essential to ensure that BMPs function as intended throughout their full life cycle.

The fundamental goals of maintenance activities are to ensure the entire flow regime and treatment train designed for this site continue to fully function. For this site these include:

- Maintain the ability of storm facility to attenuate flows.
- Maintain ability to safely convey design stormwater flows.
- Preserve soil and plant health, as well as stormwater flow contact with plant and soil systems.
- Clearly identify systems so they can be protected
- Keep maintenance costs low
- Prevent large-scale or expensive stormwater system failures
- Prevent water quality violations or damage to downstream properties.

Section 3 – Responsible Parties

Stormwater drainage facilities will be installed, constructed, and maintained with documentation of maintenance by the homeowner. This maintenance plan shall be kept onsite and must be made available for inspection by the City of Puyallup upon request.

Section 4 – Facilities Requiring Maintenance

The following stormwater facilities/Best Management Practices require maintenance:

- Combined Detention/Wet Pond
- Continuous Inflow Biofiltration Swale
- Conveyance Pipes and Catch Basins.
- Amended Soils
- Landscaping

Section 5 – Maintenance Instructions

“The parties responsible for maintenance must review and apply the maintenance requirements contained herein. These maintenance instructions outline conditions for determining if maintenance actions are required, as identified through inspection. However, they are not intended to be measures of the facility’s required condition at all times between inspections. Exceedance of these conditions at any time between inspections or maintenance activity does not automatically constitute a violation of these standards. However, based upon inspection observations, the inspection and maintenance presented in these checklists shall be adjusted to minimize the length of time that a facility is in a condition that requires a maintenance action. For facilities not owned and maintained by the City, a log of maintenance activity that indicates what actions were taken must be kept on site and be available for inspection by the City.”

The following pages contain maintenance needs for most of the components that are part of your drainage system, as well as for some components that you may not have. Let the City know if there are any components that are missing from these pages. Ignore the requirements that do not apply to your system. You should plan to complete a checklist for all system components on the following schedule:

1. Monthly from November through April.
2. Once in late summer (preferably in September).
3. After any major storm (use 1-inch in 24-hours as a guideline).

Using photocopies of the checklist pages check off the problems that you looked for each time you did an inspection. Add comments on problems found and actions taken. Keep these “checked” sheets in your files, as they will be used to write your annual report. Some items do not need to be looked at every time an inspection is done. Use the suggested frequency at the left of each item as a guideline for your inspection.

Section 6 – Vegetation Maintenance

Plant material affecting the storm water system consists of grass, leaves, and yard debris. Maintenance checklists on the following pages and instructions listed above address appropriate maintenance requirements.

REQUIRED ACTIONS: The following actions shall be taken to ensure that pollution generated on site shall be minimized:

1. Warning signs (e.g., "Dump No Waste-Drains to Stream") shall be painted or embossed on or adjacent to all storm drain inlets. They shall be repainted as needed.
2. Sediment removed from the catch basins and storm system shall be disposed of in a proper manner. Contact the City of Puyallup for instruction prior to completing this task.

ATTACHMENT "A"

**MAINTAINANCE PROGRAM
COVER SHEET**

Inspection Period: _____

Number of Sheets Attached: _____

Date Inspected: _____

Name of Inspector: _____

Inspector's Signature: _____

Basic Biofiltration Swale

Basic Biofiltration Swale			
Drainage System	Potential Defect	Conditions When Needed	Minimum Performance Standard
Feature		Note: table spans multiple pages.	
General	Sediment Accumulation on Grass	Sediment depth exceeds 2 inches.	Grass treatment area of the swale is free of accumulated sediment deposits. Swale bottom is level from side to side and drains freely toward outlet. There should be no areas of standing water once inflow has ceased.
	Standing Water	When water stands in the swale between storms and does not drain freely.	Water drains from swale per design standards after a storm. (Any of the following may apply: remove sediment or trash blockages, improve

Basic Biofiltration Swale			
Drainage System	Potential Defect	Conditions When Needed	Minimum Performance Standard
Feature			Note: table spans multiple pages.
			grade from head to foot of swale, remove clogged check dams, add underdrains, or convert to a wet biofiltration swale.)
	Flow Spreader	Flow spreader uneven or clogged so that flows are not uniformly distributed through entire swale width	Spreader is level and clean so that flows are spread evenly over entire filter width.
	Constant Baseflow	When small quantities of water continually flow through the swale, even when it has been dry for weeks, and an eroded, muddy channel has formed in the swale bottom.	A low-flow pea-gravel drain the length of the swale has been added or a by-pass created for the baseflow around the swale.
	Poor Vegetation Coverage	When grass is sparse or bare or eroded patches occur in more than 10% of the swale bottom.	Grass coverage has been restored to good condition and facility meets design function.
	Vegetation	When the grass becomes excessively tall (greater than 10 inches); when nuisance weeds and other vegetation starts to take over.	Vegetation is mowed to less 3"-4" height. Nuisance vegetation has been removed such that flow is not impeded. Grass clippings removed from swale.
	Excessive Shading	Grass growth is poor because sunlight does not reach swale.	Overhanging limbs and brushy vegetation on adjacent slopes has been trimmed back to (extent based on acceptable aesthetics and maintained plant health) to allow adequate sunlight to reach grass in swale.
	Inlet/Outlet	Inlet/outlet areas clogged with sediment and/or debris.	Material has been removed and there is no clogging or blockage in the inlet and outlet area.
	Trash and Debris Accumulation	Trash and debris accumulated in the bio-swale.	Remove trash and debris from bioswale.
	Erosion/Scouring	Eroded or scoured swale bottom due to flow channelization, or higher flows.	Eroded/scoured areas have been repaired and facility filters stormwater per design function. (Ruts or bare areas less than 12 inches wide may be repaired filling damaged portion with crushed gravel; grass will creep in over the rock in time. For large bare areas [generally >12" wide], the swale should be re-graded and re-seeded. For smaller bare areas, over-seed when bare spots are evident, or take plugs of grass from the upper slope and plant in the swale bottom at 8-inch intervals.)

Catch Basin

Catch Basin			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
Note: table spans multiple pages.			
General	Trash and Debris	Trash or debris which is located immediately in front of the catch basin opening or is blocking inletting capacity of the basin by more than 10%.	No trash or debris located immediately in front of catch basin or on grate opening.
		Trash or debris (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of six inches clearance from the debris surface to the invert of the lowest pipe.	No trash or debris in the catch basin.
		Trash or debris in any inlet or outlet pipe blocking more than 1/3 of its height.	Inlet and outlet pipes free of trash or debris.
		Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).	No dead animals or vegetation present within the catch basin.
	Sediment	Sediment (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches clearance from the sediment surface to the invert of the lowest pipe.	No sediment in the catch basin.
	Structure Damage to Frame and/or Top Slab	Top slab has holes larger than 2 square inches or cracks wider than 1/4 inch. (Intent is to make sure no material is running into basin.)	Top slab is free of holes and cracks.
		Frame not sitting flush on top slab, i.e., separation of more than 3/4 inch of the frame from the top slab. Frame not securely attached.	Frame is sitting flush on the riser rings or top slab and firmly attached.
	Fractures or Cracks in	Maintenance person judges that structure is unsound.	Basin replaced or repaired to design standards.

	Basin Walls/ Bottom	Grout fillet has separated or cracked wider than 1/2 inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks.	Pipe is regouted and secure at basin wall.
	Settlement/ Misalignment	Catch basin has settled more than 1 inch or has rotated more than 2 inches out of alignment.	Basin replaced or repaired to design standards.
	Vegetation Inhibiting System	Vegetation growing across and blocking more than 10% of the basin opening.	No vegetation blocking opening to basin.
		Vegetation growing in inlet/outlet pipe joints that is more than six inches tall and less than six inches apart.	No vegetation or root growth present.
	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants. Sheen, obvious oil, or other contaminants present. • Identify and remove source	No contaminants or pollutants present.
Catch Basin Cover	Cover Not in Place	Cover is missing or only partially in place. Any open catch basin requires maintenance.	Catch basin cover is closed.
	Locking Mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread. One or more bolts are missing.	Mechanism opens with proper tools. All bolts are seated and no bolts are missing. Cover is secure.
	Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure (Intent is to keep cover from sealing off access to maintenance).	Cover can be removed by one maintenance person.
Metal Grates (If Applicable)	Grate Opening Unsafe	Grate with opening wider than 7/8 inch.	Grate opening meets design standards.
	Trash and Debris	Trash and debris that is blocking more than 20% of grate surface inletting capacity.	Grate free of trash and debris.
	Damaged or Missing	Grate missing or broken member(s) of the grate.	Grate is in place and meets design standards.
Oil/Debris Trap (If Applicable)	Dislodged	Oil or debris trap is misaligned with or dislodged from the outlet pipe.	Trap is connected to and aligned with outlet pipe.

Compost-Amended Soil

Compost-Amended Soil			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
Soil Media	Soils Waterlogged or Not Infiltrating	Soils become waterlogged, or otherwise do not appear to be infiltrating.	Soils have been aerated or amended such that infiltration occurs and soils do not remain completely saturated, per design specifications.
	Erosion/Scouring	Areas of potential erosion are visible, such as gullies or scouring.	Any eroded areas have been repaired, and sources of erosion addressed to prevent further soil erosion.
Vegetation	Vegetation in Poor Health	Less than 75% of planted vegetation is healthy with a generally good appearance.	At least 75% of planted vegetation is healthy with generally good appearance. Any conditions found that were deleterious to plant health have been corrected where possible. Routine maintenance schedule has been updated as necessary to ensure continued plant health and satisfactory appearance.
	Poisonous Plants and Noxious Weeds	Any poisonous plants or nuisance vegetation which may constitute a hazard to maintenance personnel or the public. Any evidence of noxious weeds as defined by State or local regulations.	No danger of poisonous vegetation where maintenance personnel or the public might normally be. Eradication of Class A weeds as required by State law. Control of other listed weeds as directed by local policies. Apply requirements of adopted IPM policy for the use of herbicides.
	Other Weeds Present	Other weeds (not listed on City/State noxious weed lists) are present on site.	Weeds have been removed per the routine maintenance schedule, following IPM protocols.

Control Structure/Flow Restrictor

Control Structure/Flow Restrictor			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
Structure	Trash and debris	Trash or debris of more than ½ cubic foot which is located immediately in front of the structure opening or is blocking capacity of the structure by more than 10%.	No Trash or debris blocking or potentially blocking entrance to structure.
		Trash or debris in the structure that exceeds 1/3 the depth from the bottom of basin to invert the lowest pipe into or out of the basin.	No trash or debris in the structure.
		Deposits of garbage exceeding 1 cubic foot in volume.	No condition present which would attract or support the breeding of insects or rodents.
	Sediment	Sediment exceeds 60% of the depth from the bottom of the structure to the invert of the lowest pipe into or out of the structure or the bottom of the FROP-T section or is within 6 inches of the invert of the lowest pipe into or out of the structure or the bottom of the FROP-T section.	Sump of structure contains no sediment.
	Damage to frame and/or top slab	Top slab has holes larger than 2 square inches or cracks wider than ¼ inch.	Top slab is free of holes and cracks.
		Frame not sitting flush on top slab, i.e., separation of more than ¾ inch of the frame from the top slab.	Frame is sitting flush on top slab.
	Cracks in walls or bottom	Cracks wider than ½ inch and longer than 3 feet, any evidence of soil particles entering structure through cracks, or maintenance person judges that structure is unsound.	Structure is sealed and structurally sound.
		Cracks wider than ½ inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering structure through cracks.	No cracks more than 1/4 inch wide at the joint of inlet/outlet pipe.
	Settlement/misalignment	Structure has settled more than 1 inch or has rotated more than 2 inches out of alignment.	Basin replaced or repaired to design standards.
	Damaged pipe joints	Cracks wider than ½-inch at the joint of the inlet/outlet pipes or any evidence of soil entering the structure at the joint of the inlet/outlet pipes.	No cracks more than ¼-inch wide at the joint of inlet/outlet pipes.
Contaminants and pollution	Any evidence of contaminants or pollution such as oil, gasoline, concrete slurries or paint.	Materials removed and disposed of according to applicable regulations. Source control BMPs implemented if appropriate. No contaminants present other than a surface oil film.	
Ladder rungs missing or unsafe	Ladder is unsafe due to missing rungs, misalignment, rust, cracks, or sharp edges.	Ladder meets design standards and allows maintenance person safe access.	
FROP-T Section	Damage	T section is not securely attached to structure wall and outlet pipe structure should support at least 1,000 lbs of up or down pressure.	T section securely attached to wall and outlet pipe.
		Structure is not in upright position (allow up to 10% from plumb).	Structure in correct position.
		Connections to outlet pipe are not watertight or show signs of deteriorated grout.	Connections to outlet pipe are water tight; structure repaired or replaced and works as designed.
		Any holes—other than designed holes—in the structure.	Structure has no holes other than designed holes.
Shear Gate	Damaged or missing	Shear gate is missing.	Replace shear gate.
		Shear gate is not watertight.	Gate is watertight and works as designed.

		Gate cannot be moved up and down by one maintenance person.	Gate moves up and down easily and is watertight.
		Chain/rod leading to gate is missing or damaged.	Chain is in place and works as designed.
Orifice Plate	Damaged or missing	Control device is not working properly due to missing, out of place, or bent orifice plate.	Plate is in place and works as designed.
	Obstructions	Any trash, debris, sediment, or vegetation blocking the plate.	Plate is free of all obstructions and works as designed.
Overflow Pipe	Obstructions	Any trash or debris blocking (or having the potential of blocking) the overflow pipe.	Pipe is free of all obstructions and works as designed.
	Deformed lip or damaged lip	Overflow pipe is bent or deformed.	Overflow pipe does not allow overflow at an elevation lower than design
Inlet/Outlet Pipe	Damaged	Cracks wider than 1/2-inch at the joint of the inlet/outlet pipes or any evidence of soil entering at the joints of the inlet/outlet pipes.	No cracks more than 1/4-inch wide at the joint of the inlet/outlet pipe.
Metal Grates (If Applicable)	Unsafe grate opening	Grate with opening wider than 7/8 inch.	Grate opening meets design standards.
	Trash and debris	Trash and debris that is blocking more than 20% of grate surface.	Grate free of trash and debris.
	Damaged or missing	Grate missing or broken member(s) of the grate.	Grate is in place and meets design standards.
Manhole Cover/Lid	Cover/lid not in place	Cover/lid is missing or only partially in place. Any open structure requires urgent maintenance	Cover/lid protects opening to structure.
	Locking mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts cannot be seated. Self-locking cover/lid does not work.	Mechanism opens with proper tools.
	Cover/lid difficult to Remove	One maintenance person cannot remove cover/lid after applying 80 lbs. of lift.	Cover/lid can be removed and reinstalled by one maintenance person.

Conveyance Pipe

Conveyance Pipe			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
General	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants. Sheen, obvious oil, or other contaminants present. <ul style="list-style-type: none"> Identify and remove source. 	No contaminants or pollutants present.
	Obstructions, Including Roots	Root enters or deforms pipe, reducing flow.	Roots have been removed from pipe (using mechanical methods; do not put root-dissolving chemicals in storm sewer pipes). If necessary, vegetation over the line removed.
	Sediment and Debris	Sediment depth is greater than 20% of pipe diameter.	Pipe has been cleaned and is free of sediment/ debris. (Upstream debris traps installed where applicable.)
	Debris Barrier or Trash Rack Missing	Stormwater pipes > than 18 inches need debris barrier.	Debris barrier present on all stormwater pipes 18 inches and greater.
	Damage to protective coating or corrosion	Protective coating is damaged; rust or corrosion is weakening the structural integrity of any part of pipe.	Pipe repaired or replaced.
	Damaged	Any dent that decreases the cross section area of pipe by more than 20% or is determined to have weakened structural integrity of the pipe.	Pipe repaired or replaced.

Debris Barrier & Access Barrier (e.g. Trash Rack)

Debris Barrier			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
General	Trash and Debris	Trash or debris that is plugging more than 20% of the openings in the barrier.	Barrier cleared to design flow capacity.
	Damaged/ Missing Bars	Bars are bent out of shape more than 3 inches.	Bars in place with no bends more than 3/4 inch.
		Bars are missing or entire barrier missing.	Bars in place according to design specifications.
		Bars are loose and rust is causing 50% deterioration to any part of barrier.	Barrier replaced or repaired to design specifications.
	Missing or Damaged Debris Barrier	Debris barrier missing or not attached to inlet/ outlet pipe.	Barrier is in place and firmly attached to pipe.

Detention Pond

Detention Pond			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
Note: table spans multiple pages.			
General	Trash and Debris	<p>Any trash and debris which exceed 1 cubic foot per 1,000 square feet. In general, there should be no visual evidence of dumping.</p> <p>If less than threshold all trash and debris will be removed as part of next scheduled maintenance.</p>	Site is free of trash and debris.
	Poisonous Plants and Noxious Weeds	<p>Any poisonous plants or nuisance vegetation which may constitute a hazard to maintenance personnel or the public.</p> <p>Any evidence of noxious weeds as defined by State or local regulations.</p>	<p>No danger of poisonous vegetation where maintenance personnel or the public might normally be.</p> <p>Eradication of Class A weeds as required by State law. Control of other listed weeds as directed by local policies.</p> <p>Apply requirements of adopted IPM policy for the use of herbicides.</p>
	Vegetation Growth and Hazard Trees	<p>Vegetation growth does not allow maintenance access or interferes with maintenance activity (i.e., slope mowing, silt removal, vacuuming, or equipment movements). If trees are not interfering with access or maintenance, do not remove.</p> <p>Dead, diseased, or dying trees are identified. (Use a certified Arborist to determine health of tree or removal requirements.)</p>	<p>Vegetation does not hinder maintenance activities. Harvested vegetation should be recycled into mulch or other beneficial uses (e.g., alders for firewood).</p> <p>Remove hazard trees.</p>
	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants. (Coordinate removal/cleanup with local water quality response agency.)	No contaminants or pollutants present.
	Rodent Holes	Any evidence of rodent holes if facility is acting as a dam or berm, or any evidence of water piping through dam or berm via rodent holes.	Rodents destroyed and dam or berm repaired.
	Beaver Dams	Dam results in change or function of the facility.	<p>Facility is returned to design function.</p> <p>(Coordinate trapping of beavers and removal of dams with appropriate permitting agencies.)</p>
	Insects	When insects such as wasps and hornets interfere with maintenance activities.	<p>Insects destroyed or removed from site.</p> <p>Apply insecticides in compliance with adopted IPM Plan.</p>

Side Slopes of Pond	Erosion	<p>Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion.</p> <p>Any erosion observed on a compacted berm embankment.</p>	<p>Slopes have been stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction.</p> <p>If erosion is occurring on compacted berms a licensed civil engineer should be consulted to resolve source of erosion.</p>
Storage Area	Sediment	Accumulated sediment that exceeds 10% (typically 6" to 12") of the designed pond depth unless otherwise specified or affects inletting or outletting condition of the facility.	Sediment cleaned out to designed pond shape and depth; pond reseeded if necessary to control erosion.
	Liner (If Applicable)	Liner is visible and has more than three 1/4-inch holes in it.	Liner repaired or replaced. Liner is fully covered.
Pond Berms (Dikes)	Settlements	<p>Any part of berm which has settled 4 inches lower than the design elevation.</p> <p>If settlement is apparent, measure berm to determine amount of settlement.</p> <p>Settling can be an indication of more severe problems with the berm or outlet works. A licensed civil engineer should be consulted to determine the source of the settlement.</p>	Dike is built back to the design elevation.
	Piping	<p>Discernible water flow through pond berm. Ongoing erosion with potential for erosion to continue.</p> <p>(Recommend a Geotechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.</p>	Piping eliminated. Erosion potential resolved.
	Tree Growth	Tree growth on berms over 4 feet in height may lead to piping through the berm which could lead to failure of the berm.	Trees removed. If root system is small (base less than 4 inches) the root system may be left in place. Otherwise the roots should be removed and the berm restored. A licensed civil engineer should be consulted for proper berm/spillway restoration.
	Erosion	<p>Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion.</p> <p>Any erosion observed on a compacted berm embankment.</p>	<p>Slopes have been stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction.</p> <p>If erosion is occurring on compacted berms a licensed civil engineer should be consulted to resolve source of erosion.</p>

Emergency Overflow/ Spillway	Tree Growth	Tree growth on emergency spillways creates blockage problems and may cause failure of the berm due to uncontrolled overtopping.	Trees removed. If root system is small (base less than 4 inches) the root system may be left in place. Otherwise the roots should be removed and the berm restored. A licensed civil engineer should be consulted for proper berm/spillway restoration.
	Rock Missing	Only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil at the top of flow path of spillway.	Rocks and pad depth are restored to design standards.

Energy Dissipater / Outfall Protection

Energy Dissipaters			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
External:			
Rock Pad	Missing or Moved Rock	Only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil.	Rock pad has been replaced to design function.
	Erosion	Soil erosion in or adjacent to rock pad.	Rock pad has been replaced to design function.
	Sediment	Sediment on top of rock pad exceeds 10% of the surface.	Rock pad has been cleared of sediment.
	Poisonous Plants and Noxious Weeds	Any poisonous plants or nuisance vegetation which may constitute a hazard to maintenance personnel or the public. Any evidence of noxious weeds as defined by State or local regulations.	No danger of poisonous vegetation where maintenance personnel or the public might normally be. Eradication of Class A weeds as required by State law. Control of other listed weeds as directed by local policies. Apply requirements of adopted IPM policy for the use of herbicides.
	Other Weeds	Other weeds (not listed on State noxious weed lists) are present on the rock pad.	Weeds have been removed per the routine maintenance schedule, following IPM protocols.
Dispersion Trench	Pipe Plugged with Sediment	Accumulated sediment that exceeds 20% of the design depth.	Pipe is free of sediment and meets design specifications.
	Not Discharging Water Properly	Visual evidence of water discharging at concentrated points along trench (normal condition is a "sheet flow" of water along trench). Intent is to prevent erosion damage.	Trench has been repaired or modified such that it does not discharge at concentrated points and meets design function.
	Perforations Plugged	Over 1/2 of perforations in pipe are plugged with debris and sediment.	Perforated pipe has been cleaned or replaced and <25% of perforations are plugged.
	Water Flows Out Top of "Distributor" Catch Basin	Maintenance person observes or receives credible report of water flowing out during any storm less than the design storm or its causing or appears likely to cause damage.	Facility rebuilt per design specifications or redesigned to meet approved City standards.
	Receiving Area Over-Saturated	Water in receiving area is causing or has potential of causing landslide problems.	No danger of landslides.
Gabions	Damaged Mesh	Mesh of gabion broken, twisted or deformed so structure is weakened or rock may fall out.	Mesh is intact, no rock missing.
	Corrosion	Gabion mesh shows corrosion through more than 1/4 of its gage.	All gabion mesh capable of containing rock and retaining designed form.

Energy Dissipaters			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
	Collapsed or Deformed Baskets	Gabion basket shape deformed due to any cause.	All gabion baskets intact, structure stands as designed.
	Missing Rock	Any rock missing that could cause gabion to lose structural integrity.	No rock missing.
Internal:			
Manhole/ Chamber	Worn or Damaged Post, Baffles, Side of Chamber	Structure dissipating flow deteriorates to 1/2 of original size or any concentrated worn spot exceeding one square foot which would make structure unsound.	Structure replaced to design standards.

Fencing/Gates/Bollards/Water Quality Sign

Fencing/Gates/Bollards/Water Quality Sign			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
Fencing (Site)	Site erosion or holes under fence	Erosion or holes more than 4 inches high and 12-18 inches wide permitting access through an opening under a fence.	No access under the fence.
Fencing (Wood Posts, Boards, and Cross Members)	Missing or damaged parts	Missing or broken boards, post out of plumb by more than 6 inches or cross members broken	No gaps on fence due to missing or broken boards, post plumb to within 1½ inches, cross members sound.
	Weakened by rotting or insects	Any part showing structural deterioration due to rotting or insect damage	All parts of fence are structurally sound.
	Damaged or failed post foundation	Concrete or metal attachments deteriorated or unable to support posts.	Post foundation capable of supporting posts even in strong wind.
Fencing (Metal Posts, Rails, and Fabric)	Damaged parts	Post out of plumb more than 6 inches.	Post plumb to within 1½ inches.
		Top rails bent more than 6 inches.	Top rail free of bends greater than 1 inch.
		Any part of fence (including post, top rails, and fabric) more than 1 foot out of design alignment.	Fence is aligned and meets design standards.
		Missing or loose tension wire.	Tension wire in place and holding fabric.
	Deteriorated paint or protective coating	Part or parts that have a rusting or scaling condition that has affected structural adequacy.	Structurally adequate posts or parts with a uniform protective coating.
	Openings in fabric	Openings in fabric are such that an 8-inch diameter ball could fit through.	Fabric mesh openings within 50% of grid size.
Chain Link Fencing Gate	Damaged or missing members	Missing gate.	Gates in place.
		Broken or missing hinges such that gate cannot be easily opened and closed by a maintenance person.	Hinges intact and lubed. Gate is working freely.
		Gate is out of plumb more than 6 inches and more than 1 foot out of design alignment.	Gate is aligned and vertical.
		Missing stretcher bar, stretcher bands, and ties.	Stretcher bar, bands, and ties in place.
	Locking mechanism does not lock gate	Locking device missing, non-functioning or does not link to all parts.	Locking mechanism prevents opening of gate.
		Openings in fabric	Openings in fabric are such that an 8-inch diameter ball could fit through.

Fencing/Gates/Bollards/Water Quality Sign			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
Bollards	Damaged or missing	Bollard broken, missing, does not fit into support hole or hinge broken or missing.	No access for motorized vehicles to get into facility.
	Does not lock	Locking assembly or lock missing or cannot be attached to lock bollard in place.	No access for motorized vehicles to get into facility.
Water Quality Sign	Sign is Damaged or Missing	Water quality sign is leaning more than 8 inches off vertical.	Sign reset to plumb.
		Water quality sign is missing or 20% of the surface is unreadable.	Sign replaced.

Wetpond			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
Site	Trash and debris	Any trash and debris accumulated on the wetpond site.	Wetpond site free of any trash or debris.
	Noxious weeds	Any noxious or nuisance vegetation which may constitute a hazard to County personnel or the public.	Noxious and nuisance vegetation removed according to applicable regulations. No danger of noxious vegetation where County personnel or the public might normally be.
	Contaminants and pollution	Any evidence of contaminants or pollution such as oil, gasoline, concrete slurries or paint.	Materials removed and disposed of according to applicable regulations. Source control BMPs implemented if appropriate. No contaminants present other than a surface oil film.
	Grass/ground cover	Grass or groundcover exceeds 18 inches in height.	Grass or groundcover mowed to a height no greater than 6 inches.
Side Slopes of Dam, Berm, internal berm or Embankment	Rodent holes	Any evidence of rodent holes if facility is acting as a dam or berm, or any evidence of water piping through dam or berm via rodent holes.	Rodents removed or destroyed and dam or berm repaired.
	Tree growth	Tree growth threatens integrity of dams, berms or slopes, does not allow maintenance access, or interferes with maintenance activity. If trees are not a threat to dam, berm or embankment integrity, are not interfering with access or maintenance or leaves do not cause a plugging problem they do not need to be removed.	Trees do not hinder facility performance or maintenance activities.
	Erosion	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Any erosion observed on a compacted slope.	Slopes stabilized using appropriate erosion control measures. If erosion is occurring on compacted slope, a licensed civil engineer should be consulted to resolve source of erosion.
Top or Side Slopes of Dam, Berm, internal berm or Embankment	Settlement	Any part of a dam, berm or embankment that has settled 4 inches lower than the design elevation.	Top or side slope restored to design dimensions. If settlement is significant, a licensed civil engineer should be consulted to determine the cause of the settlement.
	Irregular surface on internal berm	Top of berm not uniform and level.	Top of berm graded to design elevation.

Wetpond			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
Pond Areas	Sediment accumulation (except first wetpool cell)	Accumulated sediment that exceeds 10% of the designed pond depth.	Sediment cleaned out to designed pond shape and depth.
	Sediment accumulation (first wetpool cell)	Sediment accumulations in pond bottom that exceeds the depth of sediment storage (1 foot) plus 6 inches.	Sediment storage contains no sediment.
	Liner damaged (If Applicable)	Liner is visible or pond does not hold water as designed.	Liner repaired or replaced.
	Water level (all wetpool cells)	Cell level(s) drops more than 12 inches in any 7-day period.	Cell level(s) drops less than 12 inches in any 7-day period.
	Algae mats (first wetpool cell)	Algae mats develop over more than 10% of the water surface should be removed.	Algae mats removed (usually in the late summer before Fall rains, especially in Sensitive Lake Protection Areas.)
	Overgrowth (all wetpool cells)	Cattail or other emergent, rooted vegetation covers 50% of the pond surface area AND there is clear indication that stormwater inflow or facility effectiveness is being impeded.	Vegetation and sediment have been removed and cell restored to as-built condition.
Emergency Overflow Spillway	Tree growth	Tree growth impedes flow or threatens stability of spillway.	Trees removed.
	Rock missing	Only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil at the top of out flow path of spillway. Rip-rap on inside slopes need not be replaced.	Spillway restored to design standards.
Inlet/ Outlet Pipe	Sediment accumulation	Sediment filling 20% or more of the pipe.	Inlet/outlet pipes clear of sediment.
	Trash and debris	Trash and debris accumulated in inlet/outlet pipes (includes floatables and non-floatables).	No trash or debris in pipes.
	Damaged	Cracks wider than 1/2-inch at the joint of the inlet/outlet pipes or any evidence of soil entering at the joints of the inlet/outlet pipes.	No cracks more than 1/4-inch wide at the joint of the inlet/outlet pipe.

ATTACHMENT “B”

**POLLUTION SOURCE CONTROL MANUAL
FOR COMMERCIAL / INDUSTRIAL
ACTIVITIES**

FOR

**2412 Inter Ave
Puyallup, Washington**

**Revised June 2025
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Pollution Source Control Program for Commercial/Industrial Activities

Pollution source controls are actions taken by a person or business to reduce the amount of pollution reaching the surface and ground waters. Controls, also called “best management practices” or (BMPs), include:

- ❖ Altering the activity (e.g., substitute non-toxic products, recycle used oil, reroute floor drains to sanitary sewer from storm sewer)
- ❖ Enclosing or covering the activity (e.g., building a roof)
- ❖ Segregating the activity (e.g., diverting runoff away from an area that is contaminated)
- ❖ Routing runoff from the activity to a treatment alternative (e.g., to a wastewater treatment facility, sanitary sewer, or stormwater treatment area)

Pollution source controls are needed because of the contamination found in runoff from commercial areas and the effect of this contamination on aquatic life and human health.

BMPs to Consider for all Activities

Before we get to the list of activity specific BMPs, here is a summary of items that each business should consider. Most of these are common sense, housekeeping types of solutions, but if each business would take some action on each of these, the improvement in water quality would be substantial.

1. **Avoid the activity or reduce its occurrence.** If you can, avoid the activity or do it less frequently. Is there a suitable process or a different material you can use to get the job done? Can you do a larger run of a process at one time? For instance, raw materials could be delivered close to the time of use instead of being stockpiled and exposed to the weather. Perhaps you could avoid one solvent-washing step altogether. The department of Ecology or the Tacoma-Pierce County Health Department can provide pollution prevention assistance.
2. **Move the activity indoors.** Sometimes it is fairly easy to move an activity out of the weather. The benefits of this are twofold; you prevent runoff contamination, and you provide for easier, more controlled cleanup if a spill occurs. An example would be unloading and storing barrels of chemicals inside a garage area instead of doing it outside. Please be aware

that moving storage areas indoors may require installation of fire suppression equipment or other building modifications as required by the Uniform Building Code, the Uniform Fire Code, local ordinances.

3. **Use less material.** Don't buy or use more material than you really need. This not only helps keep potential disposal, storage and pollution problems to a minimum, but will probably save you money, too.
4. **Use the least toxic materials available.** Investigate the use of materials that are less toxic than what you use now. Perhaps a caustic-type detergent or a solvent could be replaced with a more environmentally friendly product. Such a change might allow you to discharge process water to the sanitary sewer instead of paying for expensive disposal (contact Pierce County Utilities at 565-3013 to find out about allowable sanitary discharges and pretreatment permits). Remember that even if you do switch to a biodegradable product, nothing but uncontaminated water is allowed to enter the storm drain system.
5. **Create and maintain vegetated areas near activity locations.** Vegetation of various kinds can help filter pollutants out of stormwater, so it is advisable to route stormwater through vegetated areas located near your activity. For instance, many parking lots contain grassy islands, typically formed in a "hump". By creating those islands as depressions instead of humps, they can be used to treat runoff from the parking lot or roof. Also, don't forget the erosion control benefits of vegetation at your site.
6. **Locate activities as far as possible from surface drainage paths.** Activities located as far as possible from known drainage paths, ditches, streams, and drains will be less likely to pollute, since it will take longer for material to reach the drainage feature. This gives you more time to react in the event of a spill, or if it is a "housekeeping" issue, may protect the local waters long enough for you to clean up the area around the activity. Don't forget that groundwater issues are always prominent, no matter where the activity is located, so the actions taken on your site on a day-to-day basis are always important, even in dry weather.
7. **Keep storm drain systems clean.** Pollutants can concentrate over time in storm drainage structures such as catch basins, ditches and storm drains. When a large storm event occurs, it can mobilize these pollutants and carry them to receiving waters. Develop and implement

maintenance practices, inspections, and schedules for treatment devices (e.g., detention ponds, oil/water separators, vegetated swales, etc.).

8. **Reduce, reuse and recycle as much as possible.** Always look for ways to recycle instead of just disposing. This can save money as well as keep both hazardous and non-hazardous materials out of the landfills. You can learn more about other businesses that have made process changes allowing recycling of chemicals by calling the DOE at 1-800-RECYCLE and requesting publication #92-45 and 90-22. Another unique recycling opportunity for businesses is available through the Industrial Materials Exchange (IMEX). This free service acts as a waste or surplus "matchmaker", helping one company's waste become another company's asset. For instance, waste peach pits from a cannery become potpourri ingredients to another business. Call IMEX at 206625-6232 to list your potentially usable solid or chemical waste in their publication.
9. **Be an advocate for stormwater pollution prevention.** Help friends, partners and business associates find ways to reduce stormwater pollution in their activities. Most people want clean water, and do not pollute intentionally. Share your ideas and the BMPs in this manual to get them thinking about how their everyday activities affect water quality.
10. **Report violators.** Allowing anyone to pollute our water resources is wrong. We all must do our part to protect water, fish, wildlife and our own health, by employing proper BMPs, and reporting those who are causing pollution. In Pierce County, call Pretreatment Inspections at 565-3013 to report dumping to sewers, and Surface Water Management at 798-2725 to report incidents involving storm drains or ditches.

Site specific BMPs are to include, but are not limited to:

1. Pressure Washing of Building Facades, Rooftops, Pavement, Boats and other Large Objects

This activity applies to businesses and public agencies engaged in pressure washing of large objects such as building facades, fences and masonry, rooftops and boats on a site- to-site basis. Pressure washing can contribute directly to water quality degradation since the runoff from such operations typically travels straight into the storm drainage system. Pressure washing of boats in boatyards, marinas and drydock areas requires a National Pollutant Discharge Elimination System (NPDES) permit. Contact the Department of Ecology to apply for this permit. Businesses

already covered by an NPDES permit are not required to enact the BMPs listed below, since they will be meeting other requirements as specified by Ecology.

Pollutants of Concern: Suspended solids, heavy metals, Biochemical oxygen demand (BOD), Chemical oxygen demand (COD), nutrients.

Required BMPS

The following BMPs or equivalent measures are required of all businesses and public agencies engaged in pressure washing of large objects:

- ❖ Employees must be educated in measures to control pollution from pressure washing operations.
- ❖ All runoff must be collected and disposed of properly or filtered to remove pollutants. No runoff should leave the site, either overland or by entering the storm drainage system. Temporary curbs, dikes or berms can be used to direct the water to one or more collection areas, where it can then be sucked up and removed off site to be disposed of in the sanitary sewer (provided it is not considered a hazardous waste). Catch basin covers can help facilitate collection. An alternative would be to use catch basin filters to remove pollutants from the wash water before it enters the storm drainage system.
- ❖ If the pressure washing wastewater does not collect in a centralized area, such as when the area is very flat, or you are on a grassed area, a tarp or sheet must be placed under the washing area to collect paint chips and other debris that is loosened by the spray.
- ❖ Pressure washing of boats (not at boatyards, marinas or drydocks) must be done on land where runoff control can be achieved.

Suggested BMPs

The following BMPs are not required, but can provide additional pollution protection:

- ❖ If detergents or cleaners must be used, use the least toxic ones that will still do the job. Use detergents that contain no phosphorus.
- ❖ Spread filter fabric underneath the object being washed to trap particulates for later disposal. This is in addition to collecting the runoff for disposal.
- ❖ Limit the amount of water you use.

2. Landscaping and Vegetation Management Activities, Including Vegetation Removal, Herbicide and Insecticide Applications, Fertilizer Applications, Irrigation, Watering, Gardening and Lawn Care

This broad activity applies to all aspects of landscaping and vegetation management, from small-scale yard maintenance to large-scale commercial landscaping businesses to municipalities maintaining public parks and roadside ditches. It includes practices aimed at controlling unwanted vegetation growth, such as herbicide spraying, cutting or pulling. This can occur on lawns, in gardens and other landscaped areas, as well as roadside ditches. It also applies to all practices aimed at enhancing the growth of vegetation. Fertilizers and insecticides are typically used in this context, as is extensive watering. This activity also covers leaf raking, lawn mowing, shrub and tree pruning and a variety of other lawn care practices.

Businesses involved in pesticide application must comply with Tacoma-Pierce County Health Department regulations and Washington State Department of Agriculture regulations regarding pesticide usage. The BMPs listed below are intended to complement other regulatory requirements. Pierce County maintenance departments for parks, utilities and roads have procedures that utilize these BMPs.

Pollutants of Concern: Toxic organic compounds, heavy metals, Chemical oxygen demand (COD), Biochemical oxygen demand (BOD), suspended solids, nutrients, oils, bacteria

Required BMPs

The following BMPs or equivalent measures are required of all businesses and public agencies performing landscaping and vegetation management activities:

- ❖ Employees must be educated about the pollution potential of improper pesticide usage, improper disposal of lawn clippings, over fertilization and over watering. Emphasis on proper storage, handling, application and disposal practices is a must.
- ❖ Herbicide, insecticide and fungicide application must not be conducted within 100 feet of surface waters such as lakes, ponds, wetlands and streams. This buffer distance is specified in the Washington State Department of Ecology Stormwater Management Manual for the Puget Sound Basin. All applications must follow manufacturers' recommendations. Pesticides must

not be applied when raining or windy. The use of aquatic herbicides requires a permit from the Department of Ecology on a site-by-site basis.

- ❖ Pesticide containers and fertilizers, whether in open piles or bags, must be stored in protected places when not in use.
- ❖ Areas where soils are temporarily stripped bare for more than two weeks must comply with the requirements in Section 8.5 from The Pierce County Stormwater Management Manual. Call Pierce County Surface Water Management at (253) 798-2725 for a copy.
- ❖ Avoid Planting noxious plant species, such as reed canary grass, purple loosestrife or tansy, particularly near lakes, wetlands and riparian areas. Contact Pierce County/WSU Cooperative Extension at 798-7980 or the Pierce County Weed Control Board at 798 -7263 for information on noxious plants.

Suggested BMPs

The following BMPs are not required but can provide additional pollution protection:

- ❖ When watering, you should attempt to minimize the amount of water used. Never water to the point of runoff.
- ❖ Grass clippings, leaves, sticks and other collected vegetation should be composted, ground and used as mulch, or disposed as garbage. Never pile or dump clippings in or near storm drains, streams, lakes, drainage ways, or other water bodies. Several local companies take landscaping and land clearing waste and convert it to a high-quality compost product suitable for landscaping use. See Recycling Services in the yellow pages of your phone book for companies nearest you. Vegetation cutting near open waters and in drainage ditches should be done carefully so that the cut material can be collected. Burning of cut vegetation is no longer an option in the urbanized area of Tacoma and Pierce County due to air quality regulations.
- ❖ Where possible, fertilizer should be worked into the soil rather than dumped on the surface.
- ❖ Sweep driveways, gutters and storm drains to remove accumulations of grass, leaves and twigs after trimming. Dispose of the material by composting, mulching, or recycling.

- ❖ Integrated pest management (IPM) is a comprehensive approach to the use of pesticides. IPM minimizes pesticide application and stresses selection of proper products and tailored application rates. It is a sensible long-term strategy rather than a hit-and-run operation, and as such is probably the most effective BMP measure that can be practiced for herbicide, insecticide, and fungicide use.
- ❖ Fertilizers should be applied carefully. Soils should be tested to determine the proper application rate, type of fertilizer and timing for the type of soil and vegetation involved.
- ❖ Use mechanical methods of vegetation removal rather than apply herbicides.
- ❖ One of the most effective measures that can be taken to reduce the necessity for pesticide use, excessive watering, and removal of dead vegetation involves careful soil mixing and layering prior to planting. Quite often, the native vegetation is cleared, leaving the mineral soil exposed underneath. Many people tend to plant directly into this, and then cover with bark mulch. This practice usually results in heavy plant mortality and excessive water usage. By using a topsoil mix or composted organic matter that is mixed into the soil, a transition layer is created that allows for healthier, deeper root development. This can improve the health of the plants, resulting in better disease and insect resistance, and reduced water demand.
- ❖ Mulching mowers are highly recommended. They add organic matter and nutrients directly back to lawns with no disposal hassles.

3. Storage of Liquid Chemicals, Waste Oils, Solvents or Petroleum Products in Portable Containers

This activity applies to businesses and public agencies that store any type of liquid chemicals, waste oils, solvents or petroleum products in portable containers (such as drums). This activity covers permanent storage as well as temporary storage areas at temporary sites. This activity does not apply to businesses that are permitted by the Department of Ecology to treat, store or dispose of dangerous wastes. Storage of all types of flammable liquids must comply with the fire code. Businesses involved in storage of petroleum products must comply with EPA, Ecology and Tacoma-Pierce County Health Department regulations regarding spill control and prevention.

Pollutants of Concern: Toxic organic compounds, oils and greases, heavy metals, pH, nutrients, Chemical oxygen demand (COD)

Required BMPs

The following BMPs or equivalent measures are required of all businesses and public agencies storing liquid chemicals, waste oils, solvents or petroleum products in portable containers:

- ❖ Liquid chemicals, waste oils and petroleum products shall be stored in such a manner and location that if the container is ruptured or toppled the contents will not discharge, flow, be washed or fall into the storm drainage system, surface waters or groundwater. This may be accomplished by designating a container storage area and providing portable or stationary containment berms or dikes, providing a spill containment sump, secondary containment or other similarly effective measure.
- ❖ Do not store containers in direct contact with the ground.
- ❖ Leaking, cracked, corroded or otherwise deteriorating storage containers must be replaced with containers in good condition. If the liquid chemicals are corrosive, containers made of compatible materials must be used instead of metal drums.
- ❖ Employees must be trained to check for leaks and spills and trained in safe handling techniques.
- ❖ Appropriate cleanup materials must be available in a plainly labeled location near the container storage area, and employees must be trained in proper spill cleanup procedures.
- ❖ Tight-fitting lids must be present on all stored containers. Containers in active use (such as a used oil barrel with a funnel) must be protected from rain.
- ❖ If storm drains could potentially be impacted, use storm drain covers or equivalent containment devices during filling or removal of containers. Collect and recycle, or dispose of properly, all liquids that accumulate before removing the storm drain cover.

Suggested BMPs

The following BMPs are not required but can provide additional pollution protection:

- ❖ Cover the designated storage area.

- ❖ Drip pans or absorbent materials should be used beneath all mounted container taps, and also at all potential drip and spill locations during filling and unloading of containers. Any collected liquids or soiled absorbent materials must be recycled or properly disposed of
- ❖ To minimize spills, use funnels to pour liquids into storage containers.
- ❖ Separate funnels should be designated and labeled for different liquids, if applicable.
- ❖ The storage area should be swept and cleaned weekly, but never hosed down to a storm drain.
- ❖ If a sump or holding tank is used for spill containment (not required), sump drains must be inspected weekly to determine if spilled materials need to be pumped.
- ❖ In addition to covering, the designated area should be paved and sloped to a drain, and a sump or holding tank provided to capture all of the drainage.
- ❖ Reuse and recycle waste oils and excess liquids. Check your phone book for the numbers of local waste oil recyclers. For other liquids, call the Industrial Materials Exchange (IMEX) to advertise your waste, which may be someone else's asset. Contact IMEX at (206) 296-4899 or use the IMEX computer bulletin board modem access number at 1 -800-858-6625.
- ❖ Use one or a combination of the following treatment BMPs:
 - Filtration with media designed for removal of petroleum products, if they are the only type of liquid stored.
 - Constructed wetlands.
 - Oil/water separators are highly recommended for treatment of runoff from areas used for storage of petroleum products.

4. Building Repair, Remodeling, Painting and Construction

This activity refers to activities associated with construction of buildings and other structures, remodeling of existing buildings and houses, painting of building exteriors, and general exterior building repair work. Concrete pouring is covered under A3.2 Concrete Pouring and Asphalt Application at Temporary Sites.

Pollutants of Concern: Toxic hydrocarbons, toxic organics, suspended solids, heavy metals, pH, oils and greases

Required BMPs

The following BMPs or equivalent measures are required of all businesses engaged in building repair, remodeling, painting and construction:

- ❖ Employees must be educated about the need to control site activities to prevent stormwater pollution, and also trained in spill cleanup procedures.
- ❖ Spill cleanup materials, appropriate to the chemicals being used on site, must be available at the work site at all times.
- ❖ The work site must be cleaned up at the end of each workday, with materials such as paints and solvents put away indoors or covered and secured so that vandals will not have access to them.
- ❖ The area must be swept daily to collect loose litter, paint chips, grit, and dirt.
- ❖ Absolutely no substance can be dumped on pavement, on the ground, in or toward storm drains, regardless of its content. unless it is water only.
- ❖ Ground or drop cloths must be used underneath outdoor painting, scraping, and sandblasting work. Ground cloths, buckets, or tubs must also be used anywhere that work materials are laid down.
- ❖ Paint brushes and other tools that are covered with water-based paints must be cleaned in sinks connected to sanitary sewers or in portable containers that can subsequently be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents for recycling or proper disposal.
- ❖ Storm drain covers or similarly effective devices must be used if dust, grit, wash water, or other pollutants may escape the work area. This is particularly necessary on rainy days. The cover or containment device shall be placed over the storm drain at the beginning of the workday and accumulated dirty runoff and solids must be collected and disposed of before removing the cover at the end of the day.

Suggested BMPs

The following BMPs are not required but can provide additional pollution protection:

- ❖ Recycle materials whenever possible.
- ❖ Light spraying of water on the work site can control some of the dust and grit that can blow away. Oils must never be used for dust control. Never spray to the point of runoff from the site.
- ❖ Activities such as paint mixing, and tool cleaning should occur over a ground cloth or within a containment device such as a tub.
- ❖ Catch basin filter inserts should be considered if work will be ongoing for an extended period of time or if significant amounts of hydrocarbons, oils and greases, heavy metals, or suspended solids are expected in site runoff.

5. Vehicle and Equipment Parking and Storage

This activity applies to all types of parking lots (commercial, public and private), fleet vehicle lots and yards (including rental car lots and car dealerships), equipment sale and rental lots, and driveways. Because this activity is so difficult to manage in terms of pollution control, the BMPs listed below, if used throughout the County and City, will give a cumulative large benefit in terms of pollution protection.

Pollutants of Concern: Toxic hydrocarbons, toxic organics, oils and greases, heavy metals, nutrients, suspended solids, pH

Required BMPs

The following BMPs or equivalent measures are required of all businesses and public agencies with parking lots and driveways:

- ❖ The use of soaps or detergents to wash vehicles or equipment in any area that drains to a storm drain, ditch, stream, or other water body is not allowed. Soapy wash waters must discharge to the sanitary sewer or suitable treatment system. Call Pierce County Water Resources Permits at 798-2737 for information on connecting to the sewer.

- ❖ Parking areas, storage areas, and driveways shall be swept (not hosed to a storm drain) at least once per month to collect dirt, litter and debris. Make sure to dispose of these materials properly.
- ❖ Gutters, drains and catch basins must be checked frequently for evidence of dirt and debris, and cleaned as needed. Storm drain inlets and gutters on the property must be cleaned at least once per month, without hosing sediments and other debris into the storm drain. Catch basins should be cleaned a minimum of twice per year, and more frequently if needed.
- ❖ An oil/water separator or oil absorbent pillow insert for catch basins or other treatment BMP must be installed for treatment of runoff if other measures do not sufficiently reduce the problem of contaminated runoff.

Suggested BMPs

The following BMPs are not required but can provide additional pollution protection:

- ❖ Garbage cans with lids should be provided to reduce parking lot litter.
- ❖ Divert runoff to vegetated areas near the parking lot.
- ❖ Through the use of incentives and discounts, businesses should encourage employees and customers to carpool and use public transit.
- ❖ Implement one of the following stormwater treatment BMPs:
 - Catch basin filter insert
 - Infiltration basin
 - Wet pond or vault
 - Constructed wetland
 - Vegetated biofilter
 - Filtration