

FAC CCCC

MAJ CAT STORMWATER

SUB CAT PERMIT

COMMERCIAL/INDUSTRIAL MAINTENANCE AGREEMENT

After recording return to:

Thurston County
2000 Lakeridge Drive SW
Olympia, WA 98502

Thurston County Project No. 2011100560

**“COMMERCIAL/INDUSTRIAL”
AGREEMENT TO MAINTAIN
STORMWATER FACILITIES AND TO IMPLEMENT A
POLLUTION SOURCE CONTROL PLAN**

For purposes of this agreement and for indexing by the Auditor as required by R.C.W. Ch. 65.04, the parties of this agreement are Washington State Department of Corrections (DOC), **Owner**, and Thurston County.

LEGAL DESCRIPTION OF PROPERTY: NW ¼ of Section 12, Township 16 North, Range 4 West

Assessor Parcel No.(s)

14612000000



(COMMERCIAL/INDUSTRIAL VERSION)

**AGREEMENT TO MAINTAIN
STORMWATER FACILITIES AND TO IMPLEMENT A
POLLUTION SOURCE CONTROL PLAN
BY AND BETWEEN THURSTON COUNTY, AND
Washington State Department of Corrections, AND
ITS HEIRS, SUCCESSORS, OR ASSIGNS
(HEREINAFTER "OWNER")**

The upkeep and maintenance of stormwater facilities and the implementation of pollution source control best management practices (BMPs) are essential to the protection of water resources in Thurston County. All property owners are expected to conduct business in a manner that promotes environmental protection. This Agreement contains specific provisions with respect to maintenance of stormwater facilities and use of pollution source control BMPs. The authority to require maintenance and pollution source control is provided by Thurston County Code.

LEGAL DESCRIPTION:

NW ¼ of Section 12, Township 16 North, Range 4 West

RECITALS

WHEREAS, OWNER is the owner of certain real property in Thurston County, Washington, described as set forth in the legal description contained herein and referred to in this agreement as the "Property".

and

WHEREAS, In connection with the OWNER'S proposed development of the Property, Thurston County has required and OWNER has agreed to construct stormwater facilities and to implement a pollution source control plan. The stormwater facilities and pollution source control plan were prepared by PHA for the OWNER'S property and is on file with Thurston County.

and

WHEREAS, OWNER has constructed improvements, including but not limited to, buildings, pavement, and stormwater facilities on the Property, in order to further the goals of Thurston County to ensure the protection and enhancement of Thurston County's water resources, THURSTON COUNTY and OWNER hereby enter into this Agreement. The responsibilities of each party to this Agreement are identified below.

OWNER SHALL:

- (1) Implement the stormwater facility maintenance program included herein as Attachment "A".
- (2) Implement the pollution source control program included herein as Attachment "B".

- (3) Maintain a record (in the form of a log book) of steps taken to implement the programs referenced in (1) and (2) above. The log book shall be available for inspection by THURSTON COUNTY at Maintenance Office during normal business hours. The log book shall catalog the action taken, who took it, when it was done, how it was done, and any problems encountered or follow-on actions recommended. Maintenance items ("problems") listed in Attachment "A" shall be inspected as specified in the attached instructions or more frequently if necessary. OWNER is encouraged to photocopy the individual checklists in Attachment "A" and use them to complete its monthly inspections. These completed checklists would then, in combination, comprise the log book.
- (4) Submit an annual report to THURSTON COUNTY regarding implementation of the programs referenced in (1) and (2) above. The report must be submitted on or before August 31 of each calendar year and shall contain, at a minimum, the following:
 - (a) Name, address, and telephone number of the business, the person, or the firm responsible for plan implementation, and the person completing the report.
 - (b) Time period covered by the report.
 - (c) A chronological summary of activities conducted to implement the programs referenced in (1) and (2) above. A photocopy of the applicable sections of the log book, with any additional explanation needed, shall normally suffice. For any activities conducted by paid parties not affiliated with OWNER, include a copy of the invoice for services.
 - (d) An outline of planned activities for the next year.
- (5) Prevent any unauthorized modifications to the drainage system and prevent it from being dismantled, revised, altered or removed except as necessary for maintenance, repair or replacement. Any such actions will be covered under item 4 above and shall be approved of by THURSTON COUNTY. Modifications to the stormwater quantity control and stormwater quality system must be approved in advance by THURSTON COUNTY and may require the submittal of revised design drawings, supporting calculations, modifications to maintenance requirements, and applications for permits.

THURSTON COUNTY WILL, AS RESOURCES ALLOW:

- (1) Provide technical assistance to OWNER in support of its operation and maintenance activities conducted pursuant to its maintenance and source control programs. Said assistance shall be provided upon request, as County time and resources permit and at no charge to OWNER.
- (2) Review the annual report and conduct occasional site visits to discuss performance and problems with OWNER.
- (3) Review this Agreement with OWNER and modify it as necessary.

REMEDIES:

(1) If THURSTON COUNTY determines that maintenance or repair work is required to be done to the stormwater facility existing on the OWNER'S property, THURSTON COUNTY shall give OWNER, and the person or agent in control of said property if different, written notice in accordance with the Notice Section of this Agreement, of the specific maintenance and/or repair required. THURSTON COUNTY shall set a reasonable time in which such work is to be completed by the persons who were given notice. If the above required maintenance and/or repair is not completed within the time set by THURSTON COUNTY, written notice will be sent to the persons who were given notice stating THURSTON COUNTY'S intention to perform such maintenance and bill the owner for all incurred expenses. THURSTON COUNTY may also adjust stormwater utility charges if required maintenance is not performed.

(2) If at any time THURSTON COUNTY determines that the existing system creates any imminent threat to public health, welfare or water quality THURSTON COUNTY may take immediate measures to remedy said threat. No notice to the persons listed in Remedies (1), above, shall be required under such circumstances, however, THURSTON COUNTY shall take reasonable steps to immediately notify OWNER of such imminent threat to the public health and welfare. All other responsibilities shall remain in effect.

(3) OWNER grants unrestricted authority to THURSTON COUNTY for access to any and all stormwater system features for the purpose of routine inspections and/or performing maintenance, repair and/or retrofit as may become necessary under Remedies (1) and/or (2).

(4) OWNER shall assume all responsibility for the cost of any maintenance and for repairs to the stormwater facility. Such responsibility shall include reimbursement to THURSTON COUNTY within 30 days of the receipt of the invoice for any such work performed. Overdue payments will require payment of interest at the current legal rate for liquidated judgments. If legal action ensues, any costs or fees incurred by THURSTON COUNTY will be borne by the parties responsible for said reimbursements.

(5) OWNER hereby grants to the THURSTON COUNTY a lien against the above-described property in an amount equal to the cost incurred by THURSTON COUNTY to perform the maintenance or repair work described herein.

NOTICE:

Whenever a party is required or permitted under this Agreement to provide the other party with any notice, request, demand, consent, or approval ("Notice"), such Notice will be given in writing and will be delivered to the other party at the address or facsimile number set forth below: (a) personally; (b) by a reputable overnight courier service; (c) by certified mail, postage prepaid, return receipt requested; or (d) by e-mail or facsimile transmission. A party may change its address for Notice by written notice to the other party delivered in the manner set forth above. Notice will be deemed to have been duly given: (i) on the date personally delivered; (ii) one (1) business day after delivery to an overnight courier service with next-day service requested; (iii) on the third (3rd) business day after mailing, if mailed using certified mail; or (iv) on the date sent when delivered by facsimile or e-mail (so long as the sender sends such facsimile or email on a business day and receives electronic confirmation of receipt and a copy of the Notice is sent by one of the other means permitted hereunder on or before the next business day). The initial addresses for Notice are as follows:

IF TO OWNER:

Jack Olson
Enironmental Manager
Department of Corrections
7345 Linderson Way SW
MS: 41112
Tumwater, WA 98504-1112
Telephone: 360.725.8342
Fax: 360 586-8723
E-mail: jaolson@DOC1.WA.GOV

IF TO THURSTON COUNTY:

Thurston County
Storm and Surface Water Utility
929 Lakeridge Dr SW
Bldg. 4, Room 100
Olympia, WA 98502
Telephone: (360) 754-4681
Fax: (360) 754-4682
Web:
<http://www.co.thurston.wa.us/stormwater/>



Cedar Creek Corrections Center – Compost Building

Maintenance Plan

This plan shall be kept in the CCCC Maintenance building office for inspection during normal hours.

The Stormwater facilities for the Compost Building are as follows:

- The roof area is collected in downspouts and tight-lined around the building.
- Road way stormwater is collected in catch basins and also connected to the roof downspouts.
- The fill area south of the building has a ditch/swale that collects any runoff from that area.
- All of the above facilities drain to the dispersion trench located SW of the building.

See Drainage Site Plan for locations of the items listed above.

**THURSTON REGION
FACILITY SUMMARY FORM**

Complete one (1) for each facility (detention/retention, coalescing plate filter, etc.) on the project site. Attach 8 1/2 X 11 sketch showing location of facility.

Proponent's Facility Name or Identifier (e.g. Pond A): **Dispersion Trench**

Name of Road or Street to Access Facility: **12200 Bordeaux Road**

Hearings Examiner Case Number: _____

Development Rev. Project No./Bldg Permit No.: _____

Parcel Number: **51302300000**

To be completed by Utility Staff:

Utility Facility Number _____

Project Number (num) _____

Parcel Number Status (num, 1ch) _____
0, Known; 1, Public; 2, Unknown; 3, Unassigned

Basin and Subbasin: (num, 6ch) _____
(2ch for basin, 2ch for subbasin, 2ch future)

Responsible jurisdiction: (alpha, 1ch) _____

PART I – PROJECT NAME AND PROPONENT

PROJECT NAME: **Cedar Creek Correction Center Compost Building**

PROJECT OWNER: **Department of Corrections**

PROJECT CONTACT: **Jack Olson**

ADDRESS: **12200 Bordeaux Road**

PROJECT PROPONENT (IF DIFFERENT):

ADDRESS: _____

PHONE: **360.725.8342**

PROJECT ENGINEER: **Chris Cramer, P.E.**

FIRM: **Patrick Harron & Assoc.**

PHONE: **360.459.1102**

Section 12

Township 16N

Range 4W

NAMES AND ADDRESSES OF ADJACENT PROPERTY OWNERS:

None, DNR Land

PART 3 -- TYPE OF PERMIT APPLICATION

TYPE OF PERMIT (E.G., COMMERCIAL BLDG): Commerical

Other Permits (circle)

DOF/W HPA

COE 404

COE Wetland

DOE Dam Safety

FEMA

Floodplain

Shoreline Mgmt

Rockery/Retaining Wall

Encroachment

Grading

NPDES

Other Construction

Other Agencies (Federal, State, Local, etc.) that have had or will review this Drainage Erosion Control Plan:

Thurston County

Part 4 – Proposed Project Description

What stream basin is this project in (e.g., Percival, Woodland): Mill Creek

Project Size, acres: 9.5

Zoning: LTF

Onsite:

Residential Subdivision:

Number of Lots: _____

Lot size (average), acres: _____

Building Permit/Commercial Plat:

Building(s) Footprint, acres: 0.64

Concrete Paving, acres: _____

Gravel Surface, acres: _____

Lattice Block Paving, acres: _____

Public Roads (including gravel shoulder), acres: _____

Private Roads (including gravel shoulder), acres: 1.01

Onsite Impervious Surface Total, acres: 1.75

Part 5 – Pre-developed Project Site Characteristics

Stream through site, y/n: _____

Name: _____

DNR Type: _____

Type of feature this facility discharges to (i.e., lake, stream, intermittent stream, pothole, roadside ditch, sheetflow to adjacent property, etc.): _____

Dispersion

Swales, Ravines, y/n: _____ N

Steep slopes, (steeper than 15%) y/n: _____ N

Erosion hazard, y/n: _____ N

100 yr. Floodplain, y/n: _____ N

Lakes or Wetlands, y/n: _____ N

Seeps/Springs, y/n: _____ N

High Groundwater Table, y/n: _____ N

Wellhead Protection or Aquifer Sensitive Area, y/n: _____ N

Other: _____

Part 6 – Facility Description

Total Area Tributary to Facility Including offsite (acres):	640+
Total Onsite Area Tributary to Facility (acres):	9.5
Design Impervious Area Tributary to Facility (acres):	0.40
Design Landscaped Area Tributary to Facility (acres):	.21
Design Total Tributary Area to Facility (acres):	<u>.61</u>
Enter a one (1) for the type of facility:	
Wet pond detention	_____
Wet pond water surface area, acres	_____
Dry pond detention	_____
Underground detention	_____
Infiltration pond	_____
Dry well infiltration	_____
Coalescing plate separator	_____
Centrifuge separator	_____
Other	<u>Dispersion Trench</u>
Outlet type (Enter a one (1) for each type present)	
Filter	_____
Oil water separator	_____
Single orifice	_____
Multiple orifice	_____
Weir	_____
Spillway	_____
Pump(s)	_____
Other	_____

Part 7 – Release to Groundwater

Design Percolation Rate to Groundwater (if applicable) _____

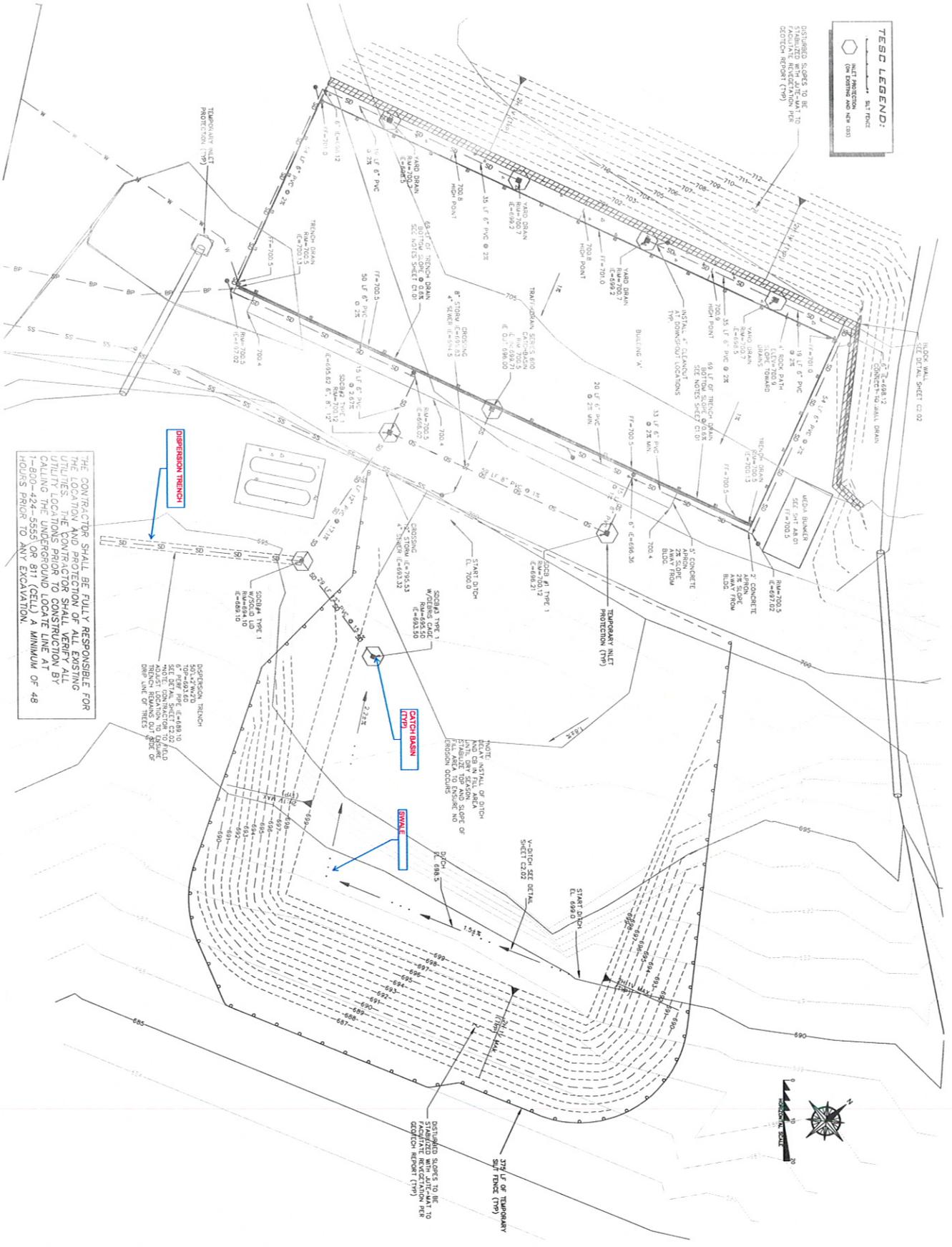
Part 8 – Release to Surface Water (if applicable)

Thurston Elevation	County MSL Present (ft)	Volume Design Full	Discharge Water (cu ft)	to Surface (cfs)
<i>Empty:</i>	<u>2'</u>	<u>100%</u>	<u>60</u>	<u>.28</u>
	<u>N/A</u>	<u>0</u>	<u>0</u>	<u>0</u>
	<u>N/A</u>	<u>0</u>	<u>0</u>	<u>0</u>
	<u>N/A</u>	<u>0</u>	<u>0</u>	<u>0</u>

TESC LEGEND:

- EXIST FENCE
- INLET PROTECTION (ON EXISTING AND NEW C&S)

DISTURBED SLOPES TO BE FACILITATE REVEGETATION PER SLOPE REPORT (TYP)

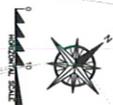


THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS UNDERGROUND LOCATE LINE AT 1-800-424-5555 OR 811 (CALL) A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

DISPERSION TRENCH

CATCH BASIN

SWALE



<p>PERMIT/IBD SET JUNE 2012</p> <p>DATE: 5/24/13</p> <p>PROJECT: 10/136</p>			<p>CDAR CREEK CORRECTIONAL CENTER NEW COMPOST FACILITY 12200 BORDEAUX RD, LITTLE ROCK, VA 98556</p>	<p>360 943 6774 360 352 7005 www.msgsarch.com</p> <p>msgs architects</p> <p>510 Capital Way South Olympia, Washington 98501</p>
<p>GRADING AND STORMWATER PLAN</p> <p>C2.01</p>				

Appendix V-C – Maintenance Guidelines

This appendix provides facility-specific maintenance standards. The standards are intended to provide conditions for determining, through inspection, if maintenance actions are required. Failure to meet these conditions at any time between inspections and/or maintenance does not automatically constitute a violation of these standards. However, the inspection and maintenance schedules must be adjusted to minimize the length of time that a facility is in a condition that requires a maintenance action.

Instructions for Use of Maintenance Checklists

The following pages contain maintenance tables for most of the BMPs included in Volume V. Where private developers, rather than Thurston County staff, are responsible for facility maintenance, they should plan to complete a checklist for all system components on the following schedule:

- (M) Monthly from October through April.
- Annually, once in late summer (preferably September)
- (S) Storm-based, after any major storm (use 1 inch in 24 hours as a guideline).

The tables contained in this appendix may be used as checklists. Maintenance personnel may use photocopies of these pages and check off items inspected and problems noted during each inspection. Actions taken and corrective action recommended should also be noted.

Table C-13. Maintenance Checklist for Catch Basins and Inlets

Frequency	Drainage Systems Feature	√	Problem	Conditions to Check For	Conditions that Shall Exist
M,S	General		Trash and Debris	Trash, debris, and sediment in or on basin	No trash or debris located immediately in front of catch basin opening. Grate is kept clean and allows water to enter.
M				Sediment or debris (in the basin) that exceeds 1/3 the depth (1-ft minimum storage remaining) from the bottom of basin to invert of the lowest pipe into or out of the basin.	No sediment or debris in the catch basin. Catch basin is dug out and clean.
M,S				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.
M			Structural Damage to Frame and/or Top Slab	Corner of frame extends more than 3/4 inch past curb face into the street (if applicable).	Frame is even with curb.
M				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.
M				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.
A			Cracks in Basin Walls/ Bottom	Cracks wider than 1/2 inch and longer than 3 feet, any evidence of soil particles entering catch basin through cracks, or maintenance person judges that structure is unsound.	Basin replaced or repaired to design standards. Contact a professional engineer for evaluation.
A				Cracks 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.	No cracks more than 1/4 inch wide at the joint of inlet/outlet pipe.

THURSTON COUNTY DRAINAGE DESIGN AND EROSION CONTROL MANUAL

Frequency	Drainage Systems Feature	√	Problem	Conditions to Check For	Conditions that Shall Exist
A			Settlement/ Misalignment	Basin has settled more than 1 inch or has rotated more than 2 inches out of alignment.	Basin replaced or repaired to design standards. Contact a professional engineer for evaluation.
A			Illicit discharges to Catch Basin	Look for connections from adjacent businesses, residences that are not part of drainage plan. If detected identify source of connection and notify Thurston County.	No connections to Catch Basins are allowed that are not part of the approved plans or authorized by permit from Thurston County.
M			Vegetation	Vegetation growing across and blocking more than 10 percent of the basin opening.	No vegetation blocking opening to basin.
M			Vegetation	Vegetation growing in inlet/outlet pipe joints that is more than 6 inches tall and less than 6 inches apart.	No vegetation or root growth present.

If you are unsure whether a problem exists, please contact Thurston County and ask for technical assistance.

Key:

A = Annual (March or April preferred)

M = Monthly (see schedule)

S = After major storms

Table C-18. Conveyance Pipes and Ditches

Frequency	Drainage Systems Feature	√	Problem	Conditions to Check For	Conditions that Shall Exist
M,S	Pipes		Sediment & Debris	Accumulated sediment that exceeds 20% of the diameter of the pipe.	Pipe cleaned of all sediment and debris.
M			Vegetation	Vegetation that reduces free movement of water through pipes.	All vegetation removed so water flows freely through pipes.
A			Damaged (rusted, bent, or crushed)	Protective coating is damaged, rust is causing more than 50% deterioration to any part of pipe.	Pipe repaired or replaced.
M				Any dent that significantly impedes flow (i.e. decreases the cross section area of pipe by more than 20%)	Pipe repaired or replaced
M				Pipe has major cracks or tears allowing groundwater leakage.	Pipe repaired or replaced.
M,S	Open ditches		Trash & debris	Dumping of yard wastes such as grass clippings and branches into basin. Unsightly accumulation of non-degradable materials such as glass, plastic, metal, foam and coated paper.	Remove trash and debris and dispose as prescribed by solid waste regulations.
M			Sediment buildup	Accumulated sediment that exceeds 20% of the design depth.	Ditch cleared of all sediment and debris so that it matches design.
A			Vegetation	Vegetation (e.g. weedy shrubs or saplings) that reduces free movements of water through ditches.	Water flows freely through ditches. Grass vegetation should be left alone.
M			Erosion on	Check around inlets and outlets for signs of erosion. Check berms for signs of sliding or settling. Action is needed where eroded damage over 2 inches deep and where there is potential for continued erosion.	Find causes of erosion and eliminate them. Then slopes should be stabilized by using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction.
A			Rock lining out of place or missing (if applicable)	Maintenance person can see native soil beneath the rock lining.	Replace rocks to design standard.

If you are unsure whether a problem exists, please contact Thurston County and ask for technical assistance.

Key:

A = Annual (March or April preferred)

M = Monthly (see schedule)

S = After major storms

Table C-21. Maintenance Checklist for Dispersion BMPs (BMP LID.05,06,07,11,12,13)

Frequency	Drainage Systems Feature	√	Problem	Conditions to Check For	Conditions that Shall Exist
M	General		Vegetation management	Any presence invasive plants, poison ivy, poison oak or other poisonous vegetation or insect nests.	No poisonous vegetation or inspect nests present in landscaped area.
M			Disturbance	Area designated for dispersion is no encroached upon vegetation is healthy and functioning.	Restore disturbed native vegetation areas (see BMP LID.01). Remove encroachments.
M,S			Trash or litter	In general there should be no evidence of visual dumping.	Remove/dispose of waste in accordance with solid waste regulations.
M,S			Erosion of ground surface	Noticeable rills or channeling is seen in dispersion areas.	Causes of erosion are identified and steps taken to slow down/spread out the water. Eroded areas are filled, contoured, and seeded.
A	Drainage		Bypass flow	Dispersed flow concentrates and isn't spread evening through dispersion area.	No evidence of dispersed flow bypassing dispersion area.
M			Inlets & Outlets	Dispersion pads and spreaders functioning correctly. See outfall maintenance checklist.	Dispersion device functions as designed.
A	Controls		Signage & fencing	Signs removed, fencing damaged or missing.	Restore fencing & signage per design.
M,S	Sedimentation		Sediment buildup	Sediment buildup around outlet of dispersion device.	Hand remove sediment buildup and replant disturbed area.

If you are unsure whether a problem exists, please contact Thurston County and ask for technical assistance.

Key:

- A = Annual (March or April preferred)
- M = Monthly (see schedule)
- S = After major storms

STORMWATER FACILITIES for Cedar Creek Correction Center O&M COST ESTIMATE

Average Annual Cost of Maintenance Subdivision

Cost of Construction

Cost of Construction = \$10,000

Facility Inventory

1. Ditches/Swales – 110 lineal feet
2. Dispersion Trenches – 1, 50 lf each, south side of road
3. Catch Basins – 4 Type 1
4. Driveway Culverts – two 12" culverts

Assumptions

- Contract Labor Cost: \$25/hour
- Volunteer Labor (DOC) for routine inspections and routine maintenance
- Pump out catch basins, flush perf pipe, once every two years
 - Edging, trimming and pruning
 - Remove trash and debris and dispose
 - Minor replanting and reseeding.

SUBDIVISION - STORMWATER FACILITIES AVERAGE ANNUAL COST OF MAINTENANCE

FACILITY	ACTIVITY	Frequency	Units	Quantity	Unit		Cost per Year
					Price*	Cost	
All	Annual & Routine Inspections by DOC	3x per year	HRS	4	\$0	\$0	\$0
All	Annual Report Insurance, Supplies, Misc.	Annual	LS	1	\$250	\$250	\$250
Catch Basins	Catch Basin Cleaning	1x 2 yrs	EA	4	\$50	\$200	\$100
Perf Pipe Culverts	Clean Debris Removal	1x 2 yrs Annual	EA	1	\$200	\$200	\$200
			EA	2	\$20	\$40	\$40
SUBTOTAL:							\$590
All	Replacement Fund**	1x 20 yrs	LS	n/a	\$2000	\$2000	\$100
TOTAL							\$690

THURSTON COUNTY, WASHINGTON

COMMERCIAL

STORMWATER POLLUTION PREVENTION SOURCE CONTROL PLAN FOR:

ASSESSOR'S PARCEL NUMBER(S): 14612000000 _____

ORGANIZATION: WASHINGTON STATE DEPARTMENT OF
CORRECTIONS

ADDRESS: 12200 BORDEAUX RD SW, OLYMPIA, WA _____

DATE PREPARED/UPDATED: 6/12/13 _____

RESPONSIBLE PERSON: JACK OLSON

PHONE/E-MAIL: 360.725.8342 _____

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ATTACHMENT C – SPILL CONTROL PLAN
ATTACHMENT D – INTEGRATED PEST MANAGEMENT PLAN
ATTACHMENT E – ANNUAL REPORT CHECKLIST
ATTACHMENT F – QUICK REFERENCE PHONE NUMBERS AND WEB SITES

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1.0 Introduction

1.1 OBJECTIVES OF THIS PLAN

1. To implement and maintain best management practices (BMPs) that identify, reduce, eliminate and/or prevent the discharge of stormwater pollutants.
2. To prevent violations of surface water quality, groundwater quality, and sediment management standards.
3. To eliminate the discharges of un-permitted process wastewater, domestic wastewater, non-contact cooling water and other illicit discharges to stormwater drainage systems.

1.2 INSTRUCTIONS FOR PREPARING PLAN

To customize this plan for your property/business do the following:

1. **Complete the cover page** with information on your information.
2. **Complete the worksheet included in Attachment A** by selecting those activities that apply to your property/business.
3. **Copy and include in Attachment B the applicable activity sheets** based on the activities selected in step 2. Copy the applicable pages of Chapter 4, Volume IV of the *Thurston County Drainage Design and Erosion Control Manual* that address the activities selected in step 2.
4. **Complete Table 2 (Operational Source Control Practices Summary) in Section 4.0** referencing the applicable activity sheets from step 3. Indicate for each activity the required and recommended operational BMPs applicable to your business.
5. **If an Emergency Spill Control Plan (SPC) is required, include it as Attachment C.** This may be required for some business types. Prepare the plan using the appropriate guidance for your business practices (i.e. fueling, chemical handling, etc.).
6. **If an Integrated Pest Management Plan (IPM) is required, include it as Attachment D.** If one of your required BMPs is the use of an Integrated Pest Management Plan, prepare the plan using the appropriate guidance and include it as Attachment D.
7. **Customize the Annual Report checklist included in Attachment E.** This checklist needs to be completed and submitted with the Annual Report required as part of your Stormwater Agreement with Thurston County. If your business/property is not subject to a Stormwater Agreement, this checklist can be used internally to perform routine audits of your source control program.

1.3 ABOUT THIS PLAN

All commercial and industrial properties and activities, including multi-family residential complexes (i.e. apartments, condominiums), non-residential special uses, and government facilities in unincorporated Thurston County that have the potential to contribute pollutants to stormwater runoff or directly to receiving waters are required to implement stormwater pollution prevention source control measures. Stormwater runoff may seep into the ground, drain to a storm drain or a drainage ditch, or flow over the ground. Regardless of the way runoff leaves your site, it ends up in a stream river, lake, wetland, groundwater or Puget Sound.

All known, available and reasonable source control BMPs shall be applied. Source control BMPs shall be selected, designed, and maintained in accordance with Volume IV of the *Thurston County Drainage Design and Erosion Control Manual*.

Many people believe that stormwater runoff is “clean” and does not harm water quality. This perception is understandable since the amount of pollution from any one place is not usually significant by itself. But when all these small amounts are combined, they can cause significant pollution problems. Contaminated stormwater can negatively affect every water body it enters. Therefore, this plan provides detailed information to reduce the contamination of surface water, groundwater, and stormwater from the property and/or business.

The federal Clean Water Act mandates that cities and counties control the quality of stormwater runoff. One way to achieve this is to implement pollution prevention measures on individual properties. By following the “Best Management Practices” for your business as described in this plan you can do your part to protect our streams, groundwater, and Puget Sound.

1.4 BEST MANAGEMENT PRACTICES ... WHAT ARE THEY?

Best Management Practices (BMPs) are a set of activities designed to reduce stormwater pollution. BMPs are separated into two broad categories: *source control* and *treatment*. Applicable BMPs for your business can be selected from the most recent published edition of the *Thurston County Drainage Design and Erosion Control Manual*, Volume IV, “Source Control.”

1.4.1 Source Control BMPs

Source control BMPs prevent contaminants from entering stormwater by controlling them at the source.

Source control BMPs prevent contaminants from entering stormwater runoff by controlling them at the source. Some source control BMPs are operational, such as checking regularly for leaks and drips from equipment and vehicles, covering materials that have potential to add pollutants to surface water if rainwater comes in contact with the materials, and minimizing use of pesticides, fertilizers, and insecticides. Other source control BMPs require use of a structure to prevent rainwater from contacting materials that will contaminate stormwater runoff such as providing a covered area or berm to prevent clean stormwater from entering work or storage areas.

1.4.2 Treatment BMPs

In contrast, *treatment BMPs* are structures that treat stormwater to remove contaminants. Treatment BMPs typically require planning, design and construction. A stormwater treatment pond is an example of a *treatment BMP*. No treatment BMP is capable of removing 100 percent of the contaminants in stormwater and the less contaminants in the stormwater the more effective the treatment BMP is.

Just because there is a stormwater collection system serving your property, it does not necessarily mean that the stormwater is treated. Many sites were developed prior to requirements to treat stormwater. Runoff from your property may go directly or indirectly to a stream or wetland without any treatment.

Keep in mind that runoff from your property may go directly or indirectly to a stream or wetland without any treatment.

This plan focuses on *source control* BMPs applicable to the routine practices of your business.

1.5 WHAT'S IN THIS PLAN?

This plan should be customized for your business. If you are trying to get a building permit you may be required to submit a copy of this plan, or its equivalent as part of your permit application and then record it with the Thurston County Auditor's office prior to receiving final approval of your project.

The plan is divided into sections as follows:

- **Introduction**
- **General Principles of Pollution Prevention**
- **Operational BMPs Applicable to All Facilities**
- **Site/Business Specific BMPs**
- **Attachments**
 - **A – Commercial and Industrial Activities Worksheet**
 - **B – Applicable Facility Activity Sheets**
 - **C – Spill Control Plan (If applicable)**
 - **D – Integrated Pest Management Plan (If applicable)**
 - **E – Annual Report Checklist**
 - **F – Quick Reference Phone Numbers and Web Sites**

2.0 General Principles of Pollution Prevention

There are 15 general principles of pollution prevention that every business owner should consider.

This section describes the 15 general principles of pollution prevention that every business owner should consider. Most of these are common sense, “housekeeping” types of solutions.

1. Avoid the activity or reduce its occurrence

Avoid potentially polluting activity or do it less frequently. Apply lawn care chemicals following directions and only as needed. Do not apply herbicides right before it rains.

2. Move the activity indoors

Move a potentially polluting activity indoors out of the weather. This prevents runoff contamination and provides more control for a cleanup if a spill occurs.

3. Cleanup spills quickly

Promptly contain and cleanup solid and liquid pollutant leaks and spills on exposed soil, vegetation, or paved areas. Use readily available absorbents such as kitty litter to absorb spills and then sweep up the material and dispose of it properly. Repair leaks on vehicles and equipment.

4. 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.

5. Use the least toxic materials available

Investigate the use of materials that are less toxic. For example, replace a caustic-type detergent or solvent with a more environmentally friendly product. If you do switch to a biodegradable product, remember that only uncontaminated water is allowed to enter the stormwater drainage system.

Only uncontaminated water is allowed to enter the stormwater drainage system.

6. Create and maintain vegetated areas near activity locations

Vegetation can filter pollutants out of stormwater. Route stormwater from parking and work areas through vegetated areas. Remember that wastewater other than stormwater runoff, such as wash water, must be discharged to a wastewater collection system (sewer or septic system).

7. Locate activities as far as possible from surface drainage paths

Locate activities away from storm drains, ditches, streams, and other water bodies to reduce the potential to pollute. It will take longer for material to reach the drainage features providing more time to react to a spill, or "housekeeping" issue and protect local waters long enough to cleanup.

8. Maintain stormwater drainage systems

Pollutants concentrate over time in catch basins, ditches, and storm drains. When a storm event occurs, turbulent runoff can mobilize these pollutants and carry them to receiving waters. Perform regular maintenance on stormwater facilities to prevent this from occurring.

9. Reduce, reuse, and recycle as much as possible

Look for ways to recycle. This saves money and keeps hazardous and non-hazardous materials out of landfills. Contact the Thurston County Solid Waste Division at (360) 357-2491 for more information on recycling opportunities at the Thurston County Waste and Recover Center.

10. Be an advocate for stormwater pollution prevention

Help friends, neighbors, 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 plan to get them thinking about how their everyday activities affect water quality.

11. Report problems

We all must do our part to protect water, fish, wildlife, and our own health by implementing proper BMPs, and reporting water quality problems that we observe. Call the Thurston County Stormwater Utility at (360) 754-4681 to report dumping to storm drains or ditches.

12. Provide oversight and training

Talk to your employees, or if you are a landlord talk to your tenants, to ensure they understand the pollution prevention source control measures and BMPs described in this plan. If you are a landlord, you are still responsible for the activities of your tenants. Monitor the activities of your tenants to ensure that they are carrying out the principles of this plan.

Do not hose down pollutants from any area to the ground, storm drain, conveyance ditch or any receiving water (stream, wetland, lake, etc.)

13. Dust control

Sweep parking and storage areas regularly to collect and dispose of dust and debris that could contaminate stormwater. Do not hose down pollutants from any area to the ground, storm drain, conveyance ditch or any receiving water (stream, wetland, lake, etc.). Do not use oil or other petroleum products for dust control. Only light watering of dirt or gravel roads or parking areas should be conducted to prevent any runoff of stormwater from the surface.

14. Eliminate illicit connections

Occasionally businesses have internal building drains, sump overflows, sump pumps, outdoor sinks and showers, and even sanitary sewer and septic system pipes that were inadvertently connected to the storm drainage system in the past.

Examine the plumbing system for your business to determine if illicit connections exist. Toilets, sinks, appliances, showers, bathtubs, floor drains, industrial process waters, and other indoor activities found to be connected to the stormwater drainage system must be immediately rerouted to the sanitary sewer or septic system, holding tanks, or process treatment system. For assistance in methods to detect and eliminate illicit connections contact the Thurston County Stormwater Utility at (360) 754-4681.

15. Dispose of waste properly

Every business and residence in Thurston County must dispose of solid and liquid wastes and contaminated stormwater properly. There are generally four options for disposal depending on the type of materials. These options include:

- Sanitary sewer and septic systems.
- Recycling facilities
- Municipal solid waste disposal facilities
- Hazardous waste treatment, storage and disposal facilities.

Do not use oil or other petroleum products for dust control. Only light watering of dirt or gravel roads or parking areas should be conducted to prevent runoff...

3.0 General Source Control BMPs

This section briefly summarizes source control BMPs that are generally applicable to all types of sites. In the next section BMPs specific to your business will be identified. In some cases the Activity Sheet will reference the BMPs in this section. In that case the *Thurston County Drainage Design and Erosion Control Manual*, Volume IV, Chapter 5, should be referenced for more detail on these general source control BMPs.

TABLE 1: GENERAL SOURCE CONTROL BMPS

BMP CATEGORY	DESCRIPTION	✓
S.1 Eliminate Illicit Stormwater Drainage System Connections	1. Use building and site plans and examine plumbing systems to determine if illegal connections exist. 2. Consider dye testing to determine where a pipe or structure drains. 3. Consider smoke testing (best done by qualified professional). 4. Contact Thurston County (360) 754-4681 for assistance. 5. Plug, disconnect or reroute to sewer/septic system any drains found connected to the stormwater drainage system.	
S.2 Dispose of Collected Runoff and Waste Materials Properly	1. Discharge liquid wastes and contaminated stormwater to the sanitary sewer – contact LOTT or local sewer provider for restrictions. 2. Use sumps or holding tanks for temporary storage. 3. Consider recycling materials where feasible. 4. Dispose of solid wastes to Thurston County WARC. 5. Dispose of dangerous or hazardous wastes at permitted facility. 6. Contact Thurston County for disposal options (360)754-4581.	
S.3 Connect Process Water Discharges to Sanitary Sewer, Holding Tank, or Water Treatment System	1. Required for all industrial and commercial activities that generate contaminated process wastewater. 2. Discharge to sanitary sewer - contact LOTT or local sewer provider for restrictions. 2. Discharge to sumps or holding tanks for temporary storage – have tanks pumped for proper disposal. 3. Construct wastewater treatment system – contact Ecology for permitting requirements. 4. If activity is conducted outdoors cover the activity and/or construct curbs, dikes or berms to prevent stormwater run-on.	
S.4 Cover the Activity with a Roof or Awning	1. Construct simple roof or awning to prevent contact with stormwater. 2. Contact Thurston County for information on permits-(360) 786-5490. 3. The area of roof cover should be sufficient to prevent precipitation from reaching the covered materials.	

BMP CATEGORY	DESCRIPTION	✓
S.5 Cover the Activity with an Anchored Tarpaulin or Plastic Sheet	1. Use where raw materials are stockpiled outdoors. 2. Use weights such as bricks, tires, or sandbags to anchor the cover. 3. Use pins or stakes to anchor tarpaulin to the ground. 4. Locate stockpile to provide wind protection (leeward side of buildings, landscaping, etc.) 5. Inspect daily.	
S.6 Pave the Activity Area and Slope to a Sump or Holding Tank	1. Apply to activities that cannot be covered adequately but that may be susceptible to spills such as chemical storage areas. 2. Enclose area within a dike, curb or berm. 3. Provide a sump or holding tank to contain spills until the liquids can be pumped out and disposed properly. 4. Ensure paving is compatible with stored material, e.g. gasoline can breakdown asphalt – use concrete paving.	
S.7 Surround the Activity Area with a Curb, Dike, or Berm or elevate the Activity	1. Containment is most applicable to spill control situations. 2. If used to prevent run-on to a covered activity area place the berm underneath the covering so rain water will not pond inside it. 3. Size containment area for 6-month storm unless other containment sizing restrictions apply. 4. Install a valve in storm drainage line from area so that excess clean stormwater can be drained from area. 5. For storage of small items, consider a tub, wading pool, or specially manufactured containment systems. 6. For spill control the volume of the containment should be the greater of either 110% of the volume of the largest tank, or 10% of the volume of all tanks if there are multiple tanks.	
S.8 Implement Integrated Pest Management Measures	1. IPM may be required by Thurston County Code. 2. Commercial, agricultural, municipal and other large scale pesticide users should adhere to integrated pest management principles. 3. Guidance information is available from Thurston County Environmental Health, the Washington State Department of Agriculture and Washington State University Extension Service. 4. If an IPM plan is required, include as Attachment D.	
S.9 Clean Catch Basins	1. Catch basins should be cleaned regularly. 2. Several companies offer catch basin cleaning services; check the yellow pages under "sewer cleaning equipment and supplies." A list of local service providers is available at: www.co.thurston.wa.us/stormwater/facilities/facilities-contractors.html 3. Do not flush catch basin sumps into the catch basin outlet pipe. 4. Check your stormwater Maintenance Plan for additional information on catch basin cleaning frequency and inspection requirements.	

4.0 Site / Business Specific BMPS

Every business in Thurston County is required to use the BMPs described in the Thurston County Drainage Manual to control stormwater pollution.

Table 2 (following pages) should be completed and include a list of all activities identified on the worksheet (Attachment A). Review the applicable Activity Sheet (should be included in Attachment B) and summarize those required and suggested BMPs or actions that are appropriate for your property/business. This table should be posted in an appropriate location for employees to see.

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Department of Corrections

TABLE 2 – OPERATIONAL SOURCE CONTROL PRACTICES SUMMARY

[ACTIVITY	SOURCE CONTROL BMPS (SEE ACTIVITY SHEET IN ATTACHMENT B FOR MORE INFORMATION)	✓
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[ACTIVITY]	SOURCE CONTROL BMPS (SEE ACTIVITY SHEET IN ATTACHMENT B FOR MORE INFORMATION)	✓
A1.3 Washing, Pressure Washing, and Steam Cleaning of Vehicles/Equipment/Building Structures	<p>Required Practices: Conduct vehicle and equipment washing in one of the following locations:</p> <ul style="list-style-type: none"> • At a commercial washing facility in which the washing occurs in an enclosure and drains to the sanitary sewer, or • In a building constructed specifically for washing of vehicles and equipment, which drains to a sanitary sewer. <p>Conduct outside washing operation in a designated wash area with the following features:</p> <ul style="list-style-type: none"> • In a paved area, constructed as a spill containment pad to prevent the run-on of stormwater from adjacent areas. Slope the spill containment area so that washwater is collected in a containment pad drain system with perimeter drains, trench drains, or catchment drains. Size the containment pad to extend out a minimum of four feet on all sides of the vehicles and/or equipment being washed. • Convey the washwater to a sump (like a grit separator) and then to a sanitary sewer (if allowed by the Thurston County Sewer Utility), or other appropriate wastewater treatment or recycle system. An NPDES permit may be required for any washwater discharge to a storm drain or receiving water after treatment. Contact the Ecology Southwest Regional Office for NPDES permit requirements. • Any discharge to the sanitary sewer requires the approval of the LOTT Alliance Industrial Pretreatment Program at (360) 528 5708 or your local sewer service provider. Contact the utility for details <p>Suggested Practices:</p> <ul style="list-style-type: none"> • The wash area should be well marked at gas stations, multifamily residences, and any other business where non-employees wash vehicles. • For uncovered wash pads, the positive control outlet valve may be manually operated, but a pneumatic or electric valve system is preferable. The valve may be on a timer circuit where it is opened upon completion of a wash cycle. The timer would then close the valve after the sump or separator is drained. • Use phosphate-free biodegradable detergents when practicable. • Consider recycling the washwater. 	

[ACTIVITY]	<p style="text-align: center;">SOURCE CONTROL BMPS</p> <p style="text-align: center;">(SEE ACTIVITY SHEET IN ATTACHMENT B FOR MORE INFORMATION)</p>	✓
	<ul style="list-style-type: none"> • Because soluble/emulsifiable detergents can be used in the wash medium, the selection of soaps and detergents and treatment BMPs should be considered carefully. Oil/water separators are ineffective in removing emulsified or water soluble detergents. • At commercial parking lots, where it is not possible to discharge the washwater to a sanitary sewer, a temporary plug or a temporary sump pump can be used at the storm drain to collect the washwater for offsite disposal. <p>Charity car washes are not allowed to discharge washwater to the county stormwater drainage system. For optional fund-raiser information, contact the Puget Sound Car Wash Association at (800) 509 9274. Online, visit: www.charitycarwash.org.</p> <ul style="list-style-type: none"> • New and used car dealerships may wash vehicles in the parking stalls without soap, or if an approved treatment system for the washwater is in place. <p>At industrial sites, contact the Ecology Southwest Regional Office for NPDES permit requirements even if soaps, detergents, and/or other chemical cleaners are not used in washing trucks.</p>	

[ACTIVITY]	SOURCE CONTROL BMPS (SEE ACTIVITY SHEET IN ATTACHMENT B FOR MORE INFORMATION)	✓
A2.1 Loading and Unloading Areas for Liquid or Solid Material	<p>Required Practices:</p> <p>At All Loading/Unloading Areas:</p> <ul style="list-style-type: none"> • A significant amount of debris can accumulate at outside, uncovered loading/unloading areas. Sweep these surfaces frequently to remove material that could be washed off by stormwater. Sweep outside areas that are covered for a period of time by containers, logs, or other material after the areas are cleared. • Place drip pans, storm drain covers or other temporary containment devices at locations where leaks or spills may occur such as hose connections, hose reels, and filler nozzles. Drip pans shall always be used when making and breaking connections (Figure 4.4). Check loading/unloading equipment such as valves, pumps, flanges, and connections regularly for leaks and repair as needed. o Consistent with applicable fire code requirements and to the extent practicable, conduct unloading or loading of solids and liquids in a manufacturing building or under a roof, lean-to, or other appropriate cover. o Berm, dike, and/or slope the loading/unloading area to prevent run-on of stormwater and to prevent the runoff or loss of any spilled material from the area. o Large loading areas frequently are not curbed along the shoreline. As a result, stormwater passes directly off the paved surface into surface water. Place curbs along the edge, or slope the edge such that the stormwater can flow to an internal stormwater drainage system that leads to an approved treatment BMP. o Pave and slope loading/unloading areas to prevent the pooling of water. The use of catch basins and drain lines within the interior of the paved area must be minimized as they will frequently be covered by material, or they should be placed in designated “alleyways” that are not covered by material, containers, or equipment. <p>Suggested Practices:</p> <ul style="list-style-type: none"> • For the transfer of pollutant liquids in areas that cannot contain a catastrophic spill, install an automatic shutoff system in case of unanticipated off-loading interruption (e.g., coupling break, hose rupture, overfill, etc.). 	

[ACTIVITY]	<p style="text-align: center;">SOURCE CONTROL BMPS</p> <p style="text-align: center;">(SEE ACTIVITY SHEET IN ATTACHMENT B FOR MORE INFORMATION)</p>	✓
	<ul style="list-style-type: none"> • To minimize the risk of accidental spillage, prepare an “Operations Plan” that describes procedures for loading/unloading. Train the employees, especially fork lift operators, in its execution and post it or otherwise have it readily available to employees and regulatory officials. • Report spills of reportable quantities to Ecology Southwest Regional Office (refer to Chapter 7 for telephone number). • Prepare and implement an emergency spill cleanup plan for the facility (BMP A7.14 Spills of Oil and Hazardous Substances) which includes the following BMPs: <ul style="list-style-type: none"> o Ensure cleanup of liquid/solid spills in the loading/unloading area immediately if a significant spill occurs, upon completion of the loading/unloading activity, or at the end of the working day. o Retain and maintain an appropriate oil spill cleanup kit on site for rapid cleanup of material spills (see BMP A7.14 Spills of Oil and Hazardous Substances). o Ensure that an employee trained in spill containment and cleanup is present during loading/unloading 	

[ACTIVITY]	SOURCE CONTROL BMPs (SEE ACTIVITY SHEET IN ATTACHMENT B FOR MORE INFORMATION)	✓
A3.5 Commercial Composting	<p>Required BMPs</p> <ul style="list-style-type: none"> • Ensure that the compost feedstocks do not contain dangerous wastes regulated under Chapter 173 303 WAC or hazardous products of a similar nature or solid wastes that are not beneficial to the composting process. Employees must be trained to screen these materials in incoming wastes. • Contact other federal, state, and Thurston County agencies with environmental or zoning authority for applicable permit and regulatory information. The Thurston County Public Health and Social Services Department is responsible for issuing solid waste handling permits for commercial compost facilities. • Apply for coverage under the general permit to Discharge Stormwater Associated with Industrial Activities if the facility discharges stormwater to surface water or a municipal stormwater system. If all stormwater from the facility infiltrates into the surrounding area, the general permit is not required. • Develop a plan of operations as outlined in the Compost Facility Resource Handbook, publication No. 97 502. • Store finished compost in a manner to prevent contamination of stormwater. • Compost pads are required for all uncovered facilities in areas of the state with wet climates (per water quality regulations). • Provide curbing for all compost pads to prevent stormwater run-on and leachate run-off. • Slope all compost pads sufficiently to direct leachate to the collection device. • Provide one or more sumps or catch basins capable of collecting all leachate generated by the design storm and conveying it to the leachate holding structure for all compost pads. • Convey all leachate from composting operations to a sanitary sewer, holding tank, or onsite treatment system designed to treat the leachate and total suspended solids. Contact the LOTT Alliance Industrial Pretreatment Program at (360) 528-5708 or your local service provider for permits and information. 	

[ACTIVITY]	<p style="text-align: center;">SOURCE CONTROL BMPs</p> <p style="text-align: center;">(SEE ACTIVITY SHEET IN ATTACHMENT B FOR MORE INFORMATION)</p>	✓
	<p>Ponds used to collect, store, or treat leachate and other contaminated waters associated with the composting process must be lined to prevent groundwater contamination. Apply all known available and reasonable methods of prevention and treatment (AKART) to all pond liners, regardless of the construction materials.</p> <p>Suggested BMPs</p> <ul style="list-style-type: none"> • Cleanup debris from yard areas regularly. • Locate stored residues in areas designed to collect leachate. • Limit storage times of residues to prevent degradation and generation of leachate. • Consider using leachate as make-up water in early stages of the composting process. Since leachate can contain pathogenic bacteria, care should be taken to avoid contaminating finished product or nearly finished product with leachate. 	

ATTACHMENT A

COMMERCIAL AND INDUSTRIAL ACTIVITIES WORKSHEET

This worksheet and the associated BMPs are organized by business activity. The goal of BMPs is to ensure that **only uncontaminated stormwater is discharged** into any stormwater drainage system.

Complete the entire worksheet by checking the appropriate boxes for all activities that occur at your work place. If you checked off any of the activities **that are being performed outdoors or can drain to the stormwater drainage system**, use the activity code on the worksheet to find the BMPs recommended for you in Chapter 4 of Volume IV of the *Thurston County Drainage Design and Erosion Control Manual*. If you perform an activity indoors and control all discharges from the activity (e.g., process water, washwater, lubricants, solvents, fugitive dust, granular material, blow down waste) so that no stormwater exposure occurs, you do not have to institute BMPs for that activity.

If you have questions, please contact the Thurston County Stormwater Utility at (360) 754-4681. They can provide assistance over the phone and also at your business site.

Activity Code	Type of Activity	Check if You Are Involved in This	
		Indoor	Outdoor
A1.1	Cleaning or Washing of Tools, Engines, and Manufacturing Equipment <ul style="list-style-type: none"> • Includes parts washers and all types of manufactured equipment components. 		
A1.2	Cleaning or Washing of Cooking Equipment <ul style="list-style-type: none"> • Includes vents, filters, pots and pans, grills, and related items. 		
A1.3	Washing, Pressure Washing, and Steam Cleaning of Vehicles/Equipment/Building Structures <ul style="list-style-type: none"> • Includes cleaning and washing at all types of establishments, including fleet vehicle yards, car dealerships, car washes, and maintenance facilities. 		X
A1.4	Collection and Disposal of Wastewater from Mobile Interior Washing Operations <ul style="list-style-type: none"> • Includes carpet cleaners, upholstery cleaners, and drapery cleaners. 		
A2.1	Loading and Unloading Areas for Liquid or Solid Material <ul style="list-style-type: none"> • Includes raw materials, intermediate products, finished products, waste, or fuel. 		X
A2.2	Fueling at Dedicated Stations <ul style="list-style-type: none"> • Includes gas stations, pumps at fleet vehicle yards or shops, and other privately owned pumps. 		

Activity Code	Type of Activity	Check if You Are Involved in This	
		Indoor	Outdoor
A2.3	Engine Repair and Maintenance <ul style="list-style-type: none"> This covers oil changes and other engine fluids. 		
A2.4	Mobile Fueling of Vehicles and Heavy Equipment <ul style="list-style-type: none"> Includes fleet fueling, wet fueling, and wet hosing. 		
A3.1	Concrete and Asphalt Mixing and Production at Stationary Sites <ul style="list-style-type: none"> Applies to mixing of raw materials on site to produce concrete or asphalt. 		
A3.2	Concrete Pouring, Concrete Cutting, and Asphalt Application at Temporary Sites <ul style="list-style-type: none"> Includes construction sites, and driveway and parking lot resurfacing. 		
A3.3	Manufacturing and Post-processing of Metal Products <ul style="list-style-type: none"> Includes machining, grinding, soldering, cutting, welding, quenching, rinsing, etc. 		
A3.4	Wood Treatment Areas <ul style="list-style-type: none"> Includes wood treatment using pressure processes or by dipping or spraying. 		
A3.5	Commercial Composting <ul style="list-style-type: none"> Includes commercial composting facilities operating outside. 	X	X
A3.6	Landscaping and Vegetation Management Activities, Including Vegetation Removal, Herbicide and Insecticide Application, Fertilizer Application, Irrigation, Watering, Gardening, and Lawn Care <ul style="list-style-type: none"> Includes businesses involved in landscaping, applying pesticides and managing vegetation. 		
A3.7	Painting, Finishing, and Coating of Vehicles, Boats, Buildings, and Equipment <ul style="list-style-type: none"> Includes surface preparation and the applications of paints, finishes, and/or coatings. 		
A3.8	Commercial Printing Operations <ul style="list-style-type: none"> Includes materials used in the printing process. 		
A3.9	Manufacturing Activities – Outside <ul style="list-style-type: none"> Includes outdoor manufacturing areas. 		
A3.10	Agricultural Crop Production <ul style="list-style-type: none"> Includes commercial scale farming. 		
A3.11	Application of Pesticides, Herbicides, Fungicides and Rodenticides for purposes other than landscaping <ul style="list-style-type: none"> Includes moss removal and outdoor insect extermination. 		
A4.1	Storage or Transfer (Outside) of Solid Raw Materials, By-products, or Finished Products		
A4.2	Storage and Treatment of Contaminated Soils <ul style="list-style-type: none"> This applies to contaminated soils that are excavated and left on site. 		

Activity Code	Type of Activity	Check if You Are Involved in This	
		Indoor	Outdoor
A4.3	Temporary Storage or Processing of Fruits or Vegetables <ul style="list-style-type: none"> Includes processing activities at wineries, fresh and frozen juice makers, and other food and beverage processing operations. 		
A4.4	Storage of Solid Wastes and Food Wastes <ul style="list-style-type: none"> Includes regular garbage and all other discarded non-liquid items. 		
A4.5	Recyclers and Scrap Yards <ul style="list-style-type: none"> Includes scrapped equipment, vehicles, empty metal drums, and assorted recyclables. 		
A4.6	Treatment, Storage, or Disposal of Dangerous Wastes <ul style="list-style-type: none"> Refer to Ecology and the Thurston County Health Department for more information, see Chapter 7. 		
A4.7	Storage of Liquid, Food Waste, or Dangerous Waste Containers <ul style="list-style-type: none"> Includes containers located outside a building and used for temporary storage. 		
A4.8	Storage of Liquids in Permanent Aboveground Tanks <ul style="list-style-type: none"> Includes all liquids in aboveground tanks. 		
A4.9	Parking and Storage for Vehicles and Equipment <ul style="list-style-type: none"> Includes public and commercial parking lots 		
A4.10	Storage of Pesticides, Fertilizers, or other products that can leach pollutants		
A5.1	Demolition of Buildings <ul style="list-style-type: none"> Applies to removal of existing buildings and subsequent clearing of the rubble. 		
A5.2	Building Repair, Remodeling, and Construction <ul style="list-style-type: none"> Applies to construction of buildings, general exterior building repair work and remodeling of buildings. 		
A6.1	Dust Control at Disturbed Land Areas and Unpaved Roadways and Parking Lots		
A6.2	Dust Control at Manufacturing Sites <ul style="list-style-type: none"> Includes grain dust, sawdust, coal, gravel, crushed rock, cement, and boiler fly ash. 		
A6.3	Soil Erosion and Sediment Control (ESC) at Industrial Sites <ul style="list-style-type: none"> Includes industrial activities that take place on soil. 		
A7.1	Commercial Animal Handling Areas <ul style="list-style-type: none"> Includes kennels, fenced pens, veterinarians, and businesses that board animals. 		
A7.2	Keeping Livestock in Stables, Pens, Pastures or Fields <ul style="list-style-type: none"> Applies to all types of livestock. 		

Activity Code	Type of Activity	Check if You Are Involved in This	
		Indoor	Outdoor
A7.3	Log Sorting and Handling <ul style="list-style-type: none"> Applies to log yards typically located at sawmills, ports, and pulp mills. 		
A7.4	Boat Building, Mooring, Maintenance, and Repair <ul style="list-style-type: none"> Includes all types of maintenance, repair, and building operations. 		
A7.5	Logging <ul style="list-style-type: none"> Applies to logging activities that fall under Class IV general forest practices. 		
A7.6	Mining and Quarrying of Sand, Gravel, Rock, Minerals, Peat, Clay, and Other Materials <ul style="list-style-type: none"> This does not include excavation at construction sites. 		
A7.7	Swimming Pool and Spa Cleaning and Maintenance <ul style="list-style-type: none"> Includes every swimming pool and spa not at a single family residence. Commercial pool cleaners are included here for all pools. 		
A7.8	De-icing and Anti-icing Operations for Airports and Streets <ul style="list-style-type: none"> Includes aircraft, runways/taxiways, streets and highways. 		
A7.9	Roof and Building Drains at Manufacturing and Commercial Buildings <ul style="list-style-type: none"> These sites will be referred to ORCAA. 		
A7.10	Urban Streets <ul style="list-style-type: none"> BMPs for addressing pollutants found on paved surfaces, including street sweeping. 		
A7.11	Railroad Yards		
A7.12	Maintenance of Public and Private Utility Corridors and Facilities <ul style="list-style-type: none"> Includes public and private utility maintenance activities. 		
A7.13	Maintenance of Roadside Ditches		
A7.14	Maintenance of Stormwater Drainage and Treatment Facilities		
A7.15	Spills of Oil and Hazardous Substances		

ATTACHMENT B

ACTIVITY SHEETS

Best Management Practices for Commercial and Industrial Activities

This Attachment coordinates with the worksheet in Attachment A. That worksheet and the BMPs are organized by the different activities that businesses perform. If you checked the column for activities performed outdoors, match the number from the worksheet to the activities listed in Volume IV, Chapter 4 of the *Thurston County Drainage Design and Erosion Control Manual* to find the suggested BMPs you should implement. Make photocopies of the applicable Activity Sheets and insert them in this section. Use the Activity Sheets to prepare a summary of the applicable required and suggested BMPs for inclusion in Table 2 (Section 4).

Explanation of Required BMPs

Every business in Thurston County is required to use the BMPs described in the *Thurston County Drainage Design and Erosion Control Manual* to control stormwater pollution. In some instances, there are BMPs mandated by various federal, state, or county laws. If you are subject to those laws and regulations via another permit or formal regulatory approval, you are encouraged, but not required to use additional BMPs to further protect water quality.

The BMPs outlined in this section are focused on source control: that is, methods to prevent pollution from reaching stormwater in the first place. The use of source control BMPs is always the first line of defense in stormwater pollution prevention.

A1.3 Washing, Pressure Washing, and Steam Cleaning of Vehicles/Equipment/Building Structures

Description of Pollutant Sources: Vehicles, aircraft, vessels, carpets, industrial equipment, and large buildings may be commercially cleaned with low or high pressure water or steam. This includes “charity” car washes at gas stations and commercial parking lots. The cleaning can include hand washing, scrubbing, sanding, etc. Washwater from cleaning activities can contain oil and grease, suspended solids, heavy metals, soluble organics, soaps, and detergents that can contaminate stormwater.

Pollutant Control Approach: The preferred approach is to cover and/or contain the cleaning activity, or conduct the activity inside a building, to separate the uncontaminated stormwater from the pollutant sources. Contact the LOTT Alliance Industrial Pretreatment Program at (360) 528-5708 or your local sewer service provider for advice and consultation on appropriate treatment and for approvals to discharge to sanitary sewer. Washwater must be conveyed to a sanitary sewer after approval by the LOTT Alliance Industrial Pretreatment Program, temporarily stored before proper disposal or recycling, with no discharge to the ground, a storm drain, or surface water.

Washwater may be discharged to the ground after proper treatment in accordance with *Ecology guidance WQ-R-95-56, “Vehicle and Equipment Washwater Discharges,” Revised 9/2007*. The quality of any discharge to the ground after proper treatment (gravity separation followed by media filtration) must comply with Ecology’s Ground Water Quality Standards, Chapter 173-200 WAC. Contact the Ecology Southwest Regional Office for an NPDES permit application for discharge of washwater to surface water or to a storm drain after onsite treatment.

Required BMPs

Conduct vehicle and equipment washing in one of the following locations:

At a commercial washing facility in which the washing occurs in an enclosure and drains to the sanitary sewer, or

In a building constructed specifically for washing of vehicles and equipment, which drains to a sanitary sewer.

Conduct outside washing operation in a designated wash area with the following features:

In a paved area, constructed as a spill containment pad to prevent the run-on of stormwater from adjacent areas. Slope the spill containment area so that washwater is collected in a containment pad drain system with perimeter drains, trench drains, or catchment drains. Size the containment pad to extend out a minimum of four feet on all sides of the vehicles and/or equipment being washed.

Convey the washwater to a sump (like a grit separator) and then to a sanitary sewer (if allowed by the Thurston County Sewer Utility), or other appropriate wastewater treatment or recycle system. An NPDES permit may be required for any washwater discharge to a storm drain or receiving water after treatment. Contact the Ecology Southwest Regional Office for NPDES permit requirements.

Any discharge to the sanitary sewer requires the approval of the LOTT Alliance Industrial Pretreatment Program at (360) 528-5708 or your local sewer service provider. Contact the utility for details on approved systems.

Suggested BMPs

The wash area should be well marked at gas stations, multifamily residences, and any other business where non-employees wash vehicles.

For uncovered wash pads, the positive control outlet valve may be manually operated, but a pneumatic or electric valve system is preferable. The valve may be on a timer circuit where it is opened upon completion of a wash cycle. The timer would then close the valve after the sump or separator is drained.

Note that the purpose of the valve is to convey only washwater and contaminated

Use phosphate-free biodegradable detergents when practicable.

Consider recycling the washwater.

Because soluble/emulsifiable detergents can be used in the wash medium, the selection of soaps and detergents and treatment BMPs should be considered carefully. Oil/water separators are ineffective in removing emulsified or water soluble detergents.

At commercial parking lots, where it is not possible to discharge the washwater to a sanitary sewer, a temporary plug or a temporary

sump pump can be used at the storm drain to collect the washwater for offsite disposal.

Charity car washes are not allowed to discharge washwater to the county stormwater drainage system. For optional fund-raiser information, contact the Puget Sound Car Wash Association at (800) 509-9274. Online, visit: www.charitycarwash.org.

New and used car dealerships may wash vehicles in the parking stalls without soap, or if an approved treatment system for the washwater is in place.

At industrial sites, contact the Ecology Southwest Regional Office for NPDES permit requirements even if soaps, detergents, and/or other chemical cleaners are not used in washing trucks.

A2.1 Loading and Unloading Areas for Liquid or Solid Material

Description of Pollutant Sources: Loading and unloading of liquid and solid materials at industrial and commercial facilities is typically conducted at shipping and receiving, outside storage, and fueling areas. Transferred materials can include raw materials, waste materials, fuels, and scrap metals. Leaks and spills of fuels, oils, powders, organics, heavy metals, salts, acids, alkalis, and other chemicals during transfer are potential causes of stormwater contamination. Spills from hydraulic line breaks are a common problem at loading docks.

Pollutant Control Approach: Cover and contain the loading/ unloading area where necessary to prevent run-on of stormwater and runoff of contaminated stormwater.

Required BMPs

At All Loading/Unloading Areas:

A significant amount of debris can accumulate at outside, uncovered loading/unloading areas. Sweep these surfaces frequently to remove material that could be washed off by stormwater. Sweep outside areas that are covered for a period of time by containers, logs, or other material after the areas are cleared.

Place drip pans, storm drain covers or other temporary containment devices at locations where leaks or spills may occur such as hose connections, hose reels, and filler nozzles. Drip pans shall always be used when making and breaking connections (Figure 4.4). Check loading/unloading equipment such as valves, pumps, flanges, and connections regularly for leaks and repair as needed.

Consistent with applicable fire code requirements and to the extent practicable, conduct unloading or loading of solids and liquids in a manufacturing building or under a roof, lean-to, or other appropriate cover.

Berm, dike, and/or slope the loading/unloading area to prevent runoff of stormwater and to prevent the runoff or loss of any spilled material from the area.

Large loading areas frequently are not curbed along the shoreline. As a result, stormwater passes directly off the paved surface into surface water. Place curbs along the edge, or slope the edge such that the stormwater can flow to an internal stormwater drainage system that leads to an approved treatment BMP.

Pave and slope loading/unloading areas to prevent the pooling of water. The use of catch basins and drain lines within the interior of the paved area must be minimized as they will frequently be covered by material, or they should be placed in designated "alleyways" that are not covered by material, containers, or equipment.



(Photo courtesy of Mark Dilley, Interstate Products, Inc.)

Figure 4.4. Drip Pan for Connections at Loading and Unloading Areas for Liquid Material.

To minimize the risk of accidental spillage, prepare an “Operations Plan” that describes procedures for loading/unloading. Train the employees, especially fork lift operators, in its execution and post it or otherwise have it readily available to employees and regulatory officials.

Report spills of reportable quantities to Ecology Southwest Regional Office (refer to Chapter 7 for telephone number).

Prepare and implement an emergency spill cleanup plan for the facility (BMP A7.14 Spills of Oil and Hazardous Substances) which includes the following BMPs:

Ensure cleanup of liquid/solid spills in the loading/unloading area immediately if a significant spill occurs, upon completion of

the loading/unloading activity, or at the end of the working day.

Retain and maintain an appropriate oil spill cleanup kit on site for rapid cleanup of material spills (see BMP A7.14 Spills of Oil and Hazardous Substances).

Ensure that an employee trained in spill containment and cleanup is present during loading/unloading.

At Rail Transfer Areas to Above/Below-ground Storage Tanks:

Install a drip pan system as illustrated (Figure 4.4) within the rails to collect spills/leaks from tank cars and hose connections, hose reels, and filler nozzles.

Loading/Unloading from/to Marine Vessels:

Facilities and procedures for the loading or unloading of petroleum products must comply with Coast Guard requirements.

Transfer of Small Quantities from Tanks and Containers:

Refer to BMPs A4.8 Storage of Liquids in Permanent Aboveground Tanks and A4.7 Storage of Liquid, Food Waste, or Dangerous Waste Containers for requirements on the transfer of small quantities from tanks and containers, respectively.

Suggested BMPs

For the transfer of pollutant liquids in areas that cannot contain a catastrophic spill, install an automatic shutoff system in case of unanticipated off-loading interruption (e.g., coupling break, hose rupture, overfill, etc.).

At Loading and Unloading Docks:

Install/maintain overhangs or door skirts that enclose the trailer end (Figures 4.5 and 4.6) to prevent contact with rainwater.

Design the loading/unloading area with berms, sloping, etc. to prevent the run-on of stormwater.

Retain on site the necessary materials for rapid cleanup of spills.



Figure 4.5. Loading Docks with an Overhang to Prevent Material Contact with Rainwater.

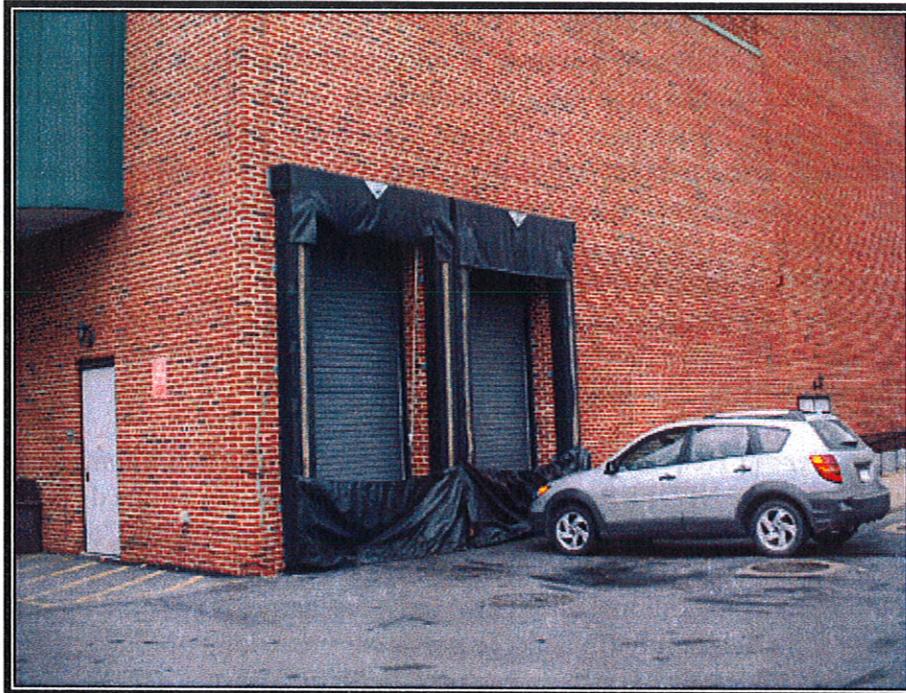


Figure 4.6. Door Skirts to Enclose the Trailer End of a Truck to Prevent Material Contact with Rainwater.

At Tanker Truck Transfer Areas to Above/Below-Ground Storage Tanks:

Pave the area on which the transfer takes place. If any transferred liquid, such as gasoline, is reactive with asphalt, pave the area with Portland cement concrete.

Slope, berm, or dike the transfer area to a dead-end sump, spill containment sump, spill control oil/water separator, or other spill control device. The minimum spill retention time should be 15 minutes at the highest fuel dispenser nozzle through-put rate or the peak flow rate of the 6-month, 24-hour storm event over the surface of the containment pad, whichever is greater. The volume of the spill containment sump shall be a minimum of 50 gallons with an adequate grit sedimentation volume.

A3.5 Commercial Composting

Description of Pollutant Sources: Commercial compost facilities operating outside without cover require large areas to decompose wastes and other feedstocks. These facilities should be designed to separate stormwater from leachate (i.e., industrial wastewater) to the greatest extent possible. When stormwater is allowed to runoff after contacting any active composting areas, including waste receiving and processing areas, it becomes leachate. Pollutants in leachate include nutrients, biochemical oxygen demand (BOD), organics, coliform bacteria, acidic pH, color, and suspended solids. Stormwater at a compost facility consists of runoff from areas at the facility that are not associated with active processing and curing, such as product storage areas, vehicle maintenance areas, and access roads.

NPDES Permit Requirements: Discharge of leachate from a compost facility will require a state or NPDES permit from Ecology, depending on the disposal method chosen for managing leachate at the facility. (See Chapter 2 in "Compost Facility Resource Handbook, Guidance for Washington State," November 1998. Publication No. 97-502.) An additional alternative, zero discharge, is possible by containing all leachate from the facility (in tanks or ponds) or preventing production of leachate (by composting under a roof or in an enclosed building).

The Thurston County Public Health and Social Services Department regulates solid waste facilities in accordance with WAC 173-304. The Health & Social Services Department should be contacted at (360) 786-5581 to obtain permits and requirements for composting and recycling facilities.

Pollutant Control Approach: Consider the leachate control specified in publication No. 97-502 or zero leachate discharge.

Required BMPs

Ensure that the compost feedstocks do not contain dangerous wastes regulated under Chapter 173-303 WAC or hazardous products of a similar nature or solid wastes that are not beneficial to the composting process. Employees must be trained to screen these materials in incoming wastes.

Contact other federal, state, and Thurston County agencies with environmental or zoning authority for applicable permit and regulatory information. The Thurston County Public Health and Social Services Department is responsible for issuing solid waste handling permits for commercial compost facilities.

Apply for coverage under the general permit to Discharge Stormwater Associated with Industrial Activities if the facility discharges stormwater to surface water or a municipal stormwater system. If all stormwater from the facility infiltrates into the surrounding area, the general permit is not required.

Develop a plan of operations as outlined in the Compost Facility Resource Handbook, publication No. 97-502.

*Refer to the
"Compost Facility
Resource
Handbook,
Guidance for
Washington State,"*

Store finished compost in a manner to prevent contamination of stormwater.

Compost pads are required for all uncovered facilities in areas of the state with wet climates (per water quality regulations).

Provide curbing for all compost pads to prevent stormwater run-on and leachate run-off.

Slope all compost pads sufficiently to direct leachate to the collection device.

Provide one or more sumps or catch basins capable of collecting all leachate generated by the design storm and conveying it to the leachate holding structure for all compost pads.

Convey all leachate from composting operations to a sanitary sewer, holding tank, or onsite treatment system designed to treat the leachate and total suspended solids. Contact the LOTT Alliance Industrial Pretreatment Program at (360) 528-5708 or your local service provider for permits and information.

Ponds used to collect, store, or treat leachate and other contaminated waters associated with the composting process must be lined to prevent groundwater contamination. Apply all known available and reasonable methods of prevention and treatment (AKART) to all pond liners, regardless of the construction materials.

Suggested BMPs

Cleanup debris from yard areas regularly.

Locate stored residues in areas designed to collect leachate.

Limit storage times of residues to prevent degradation and generation of leachate.

Consider using leachate as make-up water in early stages of the composting process. Since leachate can contain pathogenic bacteria, care should be taken to avoid contaminating finished product or nearly finished product with leachate.

ATTACHMENT C

SPILL CONTROL PLAN

[NOTE: IF REQUIRED, ATTACH THE COMPLETED SPILL CONTROL PLAN]

SPILL CONTROL PLANNING GUIDANCE

If required to prepare and implement an Emergency Spill Cleanup Plan follow the appropriate guidance required for your activity. General guidelines for implementing an Emergency Spill Cleanup Plan include:

- Prepare an Emergency Spill Control Plan (SCP), which includes:
 - A description of the facility including the owner's name and address and the name of the designated person with spill cleanup and notification responsibility.
 - The nature of the activity at the facility;
 - The general types of chemicals used or stored at the facility;
 - A site plan showing the location of storage areas for chemicals, the locations of storm drains, the areas draining to them, and the location and description of any devices to stop spills from leaving the site such as positive control valves;
 - Cleanup procedures;
 - Notification procedures to be used in the event of a spill, such as notifying key personnel, the fire department, Ecology, State Patrol, and the local Sewer Authority.
- Train key personnel. Prepare a summary of the plan and post it at appropriate points in the building, identifying the spill cleanup coordinators, location of cleanup kits, and phone numbers of regulatory agencies to be contacted in the event of a spill;
- Update the SCP regularly;
- Immediately notify Ecology and the local Sewer Authority if a spill may reach sanitary or storm sewers, ground water, or surface water, in accordance with spill reporting requirements;
- Immediately clean up spills. Do not use emulsifiers unless an appropriate disposal method for the resulting oily wastewater is implemented. Absorbent material shall not be washed down a floor drain or storm sewer; and,
- Locate emergency spill containment and cleanup kit(s) in high potential spill areas. The contents of the kit shall be appropriate for the type and quantities of chemical liquids stored at the facility.

Spill Kit Contents: Spill kits should include appropriately lined drums, absorbent pads, and granular or powdered materials for neutralizing acids or alkaline liquids where applicable. In fueling areas: absorbent should be packaged in small bags for easy use and small drums should be available for storage of absorbent and/or used absorbent. Spill kits should be deployed in a manner that allows rapid access and use by employees.

[ATTACH SPILL CONTROL PLAN]

N/A

ATTACHMENT D

INTEGRATED PEST MANAGEMENT PLAN

[NOTE: IF YOU ARE REQUIRED TO PREPARE AN INTEGRATED PEST MANAGEMENT PLAN ATTACH THE COMPLETED PLAN TO THIS SECTION]

INTEGRATED PEST MANAGEMENT GUIDANCE

Integrated Pest and Vegetation Management (IPM) is a natural, long-term, ecologically-based systems approach to controlling pest populations. IPM is used to reduce pest populations, maintain them at levels below those causing health concerns or economic damage. The goals of IPM are to both encourage optimal selective pesticide use (away from prophylactic, broad spectrum use), and to maximize natural controls to minimize environmental side effects.

Thurston County requires Integrated Pest Management Plans for certain land use projects located in Category I or II Aquifer Recharge Areas, where drinking water sources are vulnerable to contamination. These include:

1. Subdivisions of 10 lots or greater (excluding large lots).
2. Any land use project that incorporates maintained open space totally more than five acres.
3. All land use projects located within a delineated wellhead capture zone for a Group A public water supply.

For more information on Thurston County's IPM policy, visit the County web site at:
<http://www.co.thurston.wa.us/health/ehipm/index.html>

Introduction

True integrated pest and vegetation management is a powerful approach that anticipates and prevents most problems through appropriate cultural practices and careful observation. Knowledge of the life cycles of host plants and both beneficial and pest organisms is also important. The integrated pest management section of this guidance is adapted from *Least Toxic Pest Management for Lawns* by Sheila Daar. Following the integrated pest management process gives you the information you need to minimize damage by weeds, diseases, and pests and to treat those problems with the least toxic approaches.

The IPM Process

Step One: Correctly identify problem pests and understand their life cycle.

Learn more about the pest. Observe it and pay attention to any damage that may be occurring. Learn about the life cycle. Many pests are only a problem during certain seasons, or can only be treated effectively in certain phases of the life cycle.

Step Two: Establish tolerance thresholds for pests.

Every landscape has a population of some pest insects, weeds, and diseases. This is good because it supports a population of beneficial species that keep pest numbers in check. Beneficial organisms may compete with, eat, or parasitize disease or pest organisms. Decide on the level of infestation that must be exceeded before treatment needs to be considered. Pest populations under this threshold should be monitored but don't need treatment. For instance, European crane flies usually don't do serious damage to a lawn unless there are 25 to 40 larvae per square foot feeding on the turf in February (in normal weather years). Also, most people consider a lawn healthy and well maintained even with up to 20 percent weed cover, so treatment, other than continuing good maintenance practices, is generally unnecessary.

Step Three: Monitor to detect and prevent pest problems.

Regular monitoring is a key practice to anticipate and prevent major pest outbreaks. It begins with a visual evaluation of the lawn or landscape's condition. Take a few minutes before mowing to walk around and look for problems. Keep a notebook, record when and where a problem occurs, then monitor for it at about the same time in future years. Specific monitoring techniques can be used in the appropriate season for some potential problem pests, such as European crane fly.

Step Four: Modify the maintenance program to promote healthy plants and discourage pests.

A healthy landscape is resistant to most pest problems. Lawn aeration and over-seeding along with proper mowing height, fertilization, and irrigation will help the grass out-compete weeds. Correcting drainage problems and letting soil dry out between waterings in the summer may reduce the number of crane-fly larvae that survive.

Step Five: If pests exceed the tolerance thresholds ...

Use cultural, physical, mechanical, or biological controls first. If those prove insufficient, use the chemical controls described below that have the least non-target impact. When a pest outbreak strikes (or monitoring shows one is imminent), implement integrated pest management then consider control options that are the least toxic, or have the least non-target impact. Here are two examples of an integrated pest management approach:

1. **Red thread disease** is most likely under low nitrogen fertility conditions and most severe during slow growth conditions. Mow and bag the clippings to remove diseased blades. Fertilize lightly to help the grass recover, then begin grasscycling and change to fall fertilization with a slow-release or natural-organic fertilizer to provide an even supply of nutrients. Chemical fungicides are not recommended because red thread cannot kill the lawn.
2. **Crane fly damage** is most prevalent on lawns that stay wet in the winter and are irrigated in the summer. Correct the winter drainage and/or allow the soil to dry between irrigation cycles; larvae are susceptible to drying out, so these changes can reduce their numbers. It may also be possible to reduce crane fly larvae numbers by using a power de-thatcher on a cool, cloudy day when feeding is occurring close to the surface. Studies are being conducted using beneficial nematodes that parasitize the crane fly larvae; this type of treatment may eventually be a reasonable alternative.

Only after trying suitable non-chemical control methods or determining that the pest outbreak is causing too much serious damage, should chemical controls be considered. If chemical controls prove necessary, determine what products are available and choose a product that is the least toxic and has the least non-target impact. Refer to the operational BMPs for the use of pesticides below for guidelines on choosing, storing, and using lawn and garden chemicals.

Step Six: Evaluate and record the effectiveness of the control, and modify maintenance practices to support lawn or landscape recovery and prevent recurrence.

Keep records! Note when, where, and what symptoms occurred, or when monitoring revealed a potential pest problem. Note what controls were applied and when, and the effectiveness of the control. Monitor next year for the same problems. Review your landscape maintenance and cultural practices to see if they can be modified to prevent or reduce the problem.

A comprehensive integrated pest management program should also include the proper use of pesticides as a last resort, and vegetation/fertilizer management to eliminate or minimize the contamination of stormwater.

[ATTACH INTEGRATED PEST MANAGEMENT PLAN]

N/A

ATTACHMENT E

ANNUAL REPORT CHECKLIST

SOURCE CONTROL ANNUAL REPORT CHECKLIST

Your stormwater pollution prevention plan should be reviewed at least annually and updated as required. The following checklist should be completed and submitted to Thurston County along with the annual report required as part of your Stormwater Maintenance Agreement with Thurston County. If your project did not require a Stormwater Maintenance Agreement and Maintenance Plan then submittal of this annual report is not required. If submittal is required it should be mailed or hand delivered to: Thurston County Stormwater Utility; 929 Lakeridge Drive SW, Bldg 4, Room 100; Olympia, Washington 98502.

BUSINESS NAME: _____

ADDRESS: _____

ASSESSOR'S PARCEL NUMBER: _____

COMPLETED BY: _____

SIGNATURE: _____

DATE: _____

√	ACTIVITY	NOTES
	Review Activity Checklist (Attachment A) – Verify still current. List any new activities.	
	Review and Update Attachment B if new activities are identified.	
	Review and Update Table 2 for New Activities	

✓	ACTIVITY	NOTES
	Was any employee training held? If so describe.	
	Review Table 2 and verify compliance. Attach copy indicating each item has been checked.	
	Describe any significant events such as spills, illicit discharges detected/fixed, etc.	
	Was catch basin cleaning conducted? If so when, and by what company.	
	Conduct visual inspection of property for evidence of leaks, improper operations, etc. Note any items requiring attention.	
	Is a copy of Table 2 posted where visible to employees?	

✓	ACTIVITY	NOTES
	Have any additional structural or treatment BMPs been implemented on the site since the last annual report was submitted? If so describe.	
	Any other items related to stormwater source control not noted above? Describe.	
	Do you desire any technical assistance from Thurston County related to stormwater issues? If so, indicate contact person and phone number.	

ATTACHMENT F

QUICK REFERENCE PHONE NUMBERS AND WEB SITES

PHONE NUMBERS

Environmental Protection Agency (U.S. EPA) – Region X 800-424-4372

Thurston County:

Stormwater Utility	360-754-4681
Department of Public Works	360-754-4581
After-hours water and sewer emergencies (paging service)	800-926-7761
Thurston County Waste Line (automated information)	360-786-5494
LOTT Alliance Industrial Pretreatment Program	360-528-5708
Development Services – Permits	360-786-5490
Weed Control/ Noxious Chemical Use	360-786-5576

Thurston County Public Health and Social Services Department:

On-Site Sewage	360-754-3355 x 6518
Asbestos Removal	360-786-5461
Hazardous Waste Section	360-786-5457
Solid Waste	360-786-5461

University of Washington Center for Urban Water Resources 206-543-6272

Washington State Department of Agriculture 360-902-2010
877-301-4555

Washington State Department of Ecology 360-407-6000

Southwest Regional Office	360-407-6300
Dangerous/Hazardous Waste	360-407-6300
NPDES Stormwater or Wastewater Permits	360-407-6400
Spill Reporting	800-424-8802
Recycling	800-732-9253
Groundwater Quality and Protection	360-407-6400
Underground and Aboveground Storage Tanks	360-407-7170

Washington State University/Thurston County Cooperative Extension 360-867-2151

Industrial Materials Exchange 206-296-4899

Nisqually Tribe 360-456-5221

Confederated Tribes of the Chehalis 360-273-5911

Olympic Region Clean Air Agency (ORCAA) 800-422-5623

Underground Utility Locate “Call Before You Dig” 800-424-5555

WEB PAGES

Washington State Departments:

Washington State Department of Health

<<http://www.doh.wa.gov/>>

Washington Department of Fish and Wildlife

<<http://wdfw.wa.gov/>>

Washington State Government Information and Services

<<http://www.access.wa.gov/>>

Washington State Department of Ecology – Flood Information

<<http://www.ecy.wa.gov/programs/sea/floods/>>

Washington State Department of Ecology - Digital Coastal Atlas

<http://www.ecy.wa.gov/programs/sea/SMA/atlas_home.html>

Washington State Department of Ecology - Stormwater Home Page

<<http://www.ecy.wa.gov/programs/wq/stormwater/index.html>>

Salmon and Watershed Information Management (SWIM) Team

<<http://www.swim.wa.gov/>>

Federal Departments:

Federal Emergency Management Agency (FEMA)

<<http://fema.gov/>>

U.S. EPA Office of Water, Academy 2000

<<http://epa.gov/watertrain/>>

U.S. Geological Survey (USGS) Departments:

USGS Historical Water Resource Data

<<http://wa.water.usgs.gov/realtime/historical.html>>

USGS National Water Information System (NWISWeb)

<<http://water.usgs.gov/nwis/>>

TerraServer (zoom in on USGS aerial photos anywhere in the USA)

<<http://terraserver-usa.com/>>

Water Quality and NPDES:

Natural Resources Conservation Service (NRCS) and U.S. Department of Agriculture (USDA)
<<http://www.nrcs.usda.gov/>>

National Climatic Data Center Data Archive
<<http://www.ncdc.noaa.gov/>>

National Weather Service Hydrologic Forecasts (River Flooding)
<<http://ahps2.wrh.noaa.gov/ahps2/index.php?wfo=sew>>

USGS Real Time Gauging Info
<<http://wa.water.usgs.gov/realtime/current.html>>

U.S. Army Corps of Engineers Real Time Gauge Info
<<http://www.nwd-wc.usace.army.mil/nws/hh/basins/puy.html>>

The Central Puget Sound Water Suppliers' Forum
<<http://www.ci.seattle.wa.us/Forum>>

Thurston County:

Thurston County Homepage
<<http://www.co.Thurston.wa.us/>>

Thurston County Stormwater Utility
< <http://www.co.thurston.wa.us/stormwater/>>

Thurston County Mapping
<<http://www.geodata.org>>

Thurston Conservation District
<<http://www.Thurstoncountycd.org/>>

Thurston County Public Health and Social Services
<<http://www.co.thurston.wa.us/health/ehadm/index.html>>

Other Agencies:

NWS River Forecast Center - Flood Outlook
<<http://www.nwrfc.noaa.gov/river/fop.cgi>>

NOAA Tide and Current Predictions
<<http://co-ops.nos.noaa.gov/tp4days.html>>

