

WATER

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Township of Plumstead

APPENDIX H: HOT SPOTS

Hot spots are sites where the land use or activity produces a higher concentration of trace metals, hydrocarbons, or priority pollutants than normally found in urban runoff.

1. EXAMPLES OF STORMWATER HOT SPOTS

- vehicle salvage yards and recycling facilities
- vehicle fueling stations
- vehicle service and maintenance facilities
- vehicle and equipment cleaning facilities
- fleet storage areas (bus, truck, etc.)
- industrial sites (based on Standard Industrial Codes defined by the U.S. Department of Labor)
- marinas (service and maintenance)
- outdoor liquid container storage
- outdoor loading/unloading facilities
- public works storage areas
- facilities that generate or store hazardous materials
- commercial container nursery
- other land uses and activities as designated by an appropriate review authority

2. LAND USE AND ACTIVITIES NOT NORMALLY CONSIDERED HOT SPOTS

- residential streets and rural highways
- residential development
- institutional development
- office developments
- nonindustrial rooftops
- pervious areas, except golf courses and nurseries (which may need an Integrated Pest Management (IPM) Plan).

3. **LIST OF ACCEPTABLE BMPs for Hot Spot Treatment:** The following BMP's listed under the Best Management Practice column are BMPs appropriate for application on hot spot sites. BMPs which facilitate infiltration are prohibited by this ordinance. In many design manuals the BMPs with a * designation are designed with infiltration, however it is possible to design these without infiltration.

The numbers listed under the Design Reference Number column correlate with the Reference Table which lists materials that can be used for design guidance.

Best Management Practice	Design Reference Number
Bioretention*	4, 5, 11, 16
Capture/Reuse	4, 14
Constructed Wetlands	4, 5, 8, 10, 16
Dry Extended Detention Ponds	4, 5, 8, 12, 18
Best Management Practice	Design Reference Number
Minimum Disturbance/ Minimum Maintenance Practices	1, 9

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Significant Reduction of Existing Impervious Cover	N/A
Stormwater Filters (Sand, Peat, Compost, etc.)	4, 5, 10, 16
Vegetated Buffers/Filter Strips	2, 3, 5, 11, 16, 17
Vegetated Roofs	4, 13
Vegetated Swales	2, 3, 5, 11, 16, 17
Water Quality Inlets (Oil/Water Separators, Sediment Traps/Catch Basin Sumps, and Trash/Debris Collectors in Catch Basins)	4, 7, 15, 16, 19
Wet Detention Ponds	4, 5, 6, 8

Reference Table

Number	Design Reference Title
1	"Conservation Design For Stormwater Management – A Design Approach to Reduce Stormwater Impacts From Land Development and Achieve Multiple Objectives Related to Land Use", Delaware Department of Natural Resources and Environmental Control, The Environmental Management Center of the Brandywine Conservancy, September 1997
2	"A Current Assessment of Urban Best Management Practices: Techniques for Reducing Nonpoint Source Pollution in the Coastal Zone", Schueler, T. R., Kumble, P. and Heraty, M., Metropolitan Washington Council of Governments, 1992.
3	"Design of Roadside Channels with Flexible Linings", Federal Highway Administration, Chen, Y. H. and Cotton, G. K., Hydraulic Engineering Circular 15, FHWA-IP-87-7, McLean, Virginia, 1988.
4	"Draft Stormwater Best Management Practices Manual", Pennsylvania Department of Environmental Protection, January 2005.
5	"Evaluation and Management of Highway Runoff Water Quality", Federal Highway Administration, FHWA-PD-96-032, Washington, D.C., 1996.
6	"Evaporation Maps of the United States", U.S. Weather Bureau (now NOAA/National Weather Service) Technical Paper 37, Published by Department of Commerce, Washington D.C., 1959.
7	"Georgia Stormwater Manual", AMEC Earth and Environmental, Center for Watershed Protection, Debo and Associates, Jordan Jones and Goulding, Atlanta Regional Commission, Atlanta, Georgia, 2001.
8	"Hydraulic Design of Highway Culverts", Federal Highway Administration, FHWA HDS 5, Washington, D.C., 1985 (revised May 2005).
9	"Low Impact Development Design Strategies <i>An Integrated Design Approach</i> , Prince Georges County, Maryland Department of Environmental Resources, June 1999.

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Number	Design Reference Title
10	"Maryland Stormwater Design Manual", Maryland Department of the Environment, Baltimore, Maryland, 2000.
11	"Pennsylvania Handbook of Best Management Practices for Developing Areas", Pennsylvania Department of Environmental Protection, 1998.
12	"Recommended Procedures for Act 167 Drainage Plan Design", LVPC, Revised 1997.
13	"Roof Gardens History, Design, and Construction", Osmundson, Theodore. New York: W.W. Norton & Company, 1999.
14	"The Texas Manual on Rainwater Harvesting", Texas Water Development Board, Austin, Texas, Third Edition, 2005.
15	"VDOT Manual of Practice for Stormwater Management", Virginia Transportation Research Council, Charlottesville, Virginia, 2004.
16	"Virginia Stormwater Management Handbook", Virginia Department of Conservation and Recreation, Richmond, Virginia, 1999.
17	"Water Resources Engineering", Mays, L. W., John Wiley & Sons, Inc., 2005.
18	"Urban Hydrology for Small Watersheds", Technical Report 55, US Department of Agriculture, Natural Resources Conservation Service, 1986.
19	US EPA, Region 1 New England web site (as of August 2005) http://www.epa.gov/NE/assistance/ceitts/stormwater/techs/html .

4. RECOMMENDED PRE-TREATMENT METHODS FOR "HOT SPOT" LAND USES:

The following table recommends what is considered the best pre-treatment option for the listed land use. These methods are either a BMP or can be applied in conjunction with BMPs.

Hot Spot Land Use	Pre-treatment Method(s)
Vehicle Maintenance and Repair Facilities including Auto Parts Stores	-Water Quality Inlets -Use of Drip Pans and/or Dry Sweep Material Under Vehicles/Equipment -Use of Absorbent Devices to Reduce Liquid Releases -Spill Prevention and Response Program
Vehicle Fueling Stations	-Water Quality Inlets -Spill Prevention and Response Program
Storage Areas for Public Works	-Water Quality Inlets -Use of Drip Pans and/or Dry Sweep Material Under Vehicles/Equipment -Use of Absorbent Devices to Reduce Liquid Releases -Spill Prevention and Response Program -Diversion of Stormwater away from Potential Contamination Areas
Outdoor Storage of Liquids	-Spill Prevention and Response Program
Commercial Nursery Operations	-Vegetated Swales/Filter Strips -Constructed Wetlands -Stormwater Collection and Reuse

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Hot Spot Land Use	Pre-treatment Method(s)
Salvage Yards and Recycling Facilities*	-BMPs that are a part of a Stormwater Pollution Prevention Plan under an NPDES Permit
Fleet Storage Yards and Vehicle Cleaning Facilities*	-BMPs that are a part of a Stormwater Pollution Prevention Plan under an NPDES Permit
Facilities that Store or Generate Regulated Substances*	-BMPs that are a part of a Stormwater Pollution Prevention Plan under an NPDES Permit
Marinas*	-BMPs that are a part of a Stormwater Pollution Prevention Plan under an NPDES Permit
Certain Industrial Uses (listed under NPDES)*	-BMPs that are a part of a Stormwater Pollution Prevention Plan under an NPDES Permit

*Regulated under the NPDES Stormwater Program