Chapter 500: STORMWATER MANAGEMENT

SUMMARY: This Chapter describes stormwater standards for activities licensed under the State's Stormwater Management Law and Site Location of Development Law. It also describes the conditions under which discharges of stormwater to groundwater are exempt from licensing under the Waste Discharge Law. Additional stormwater standards and requirements for federally-delegated programs may also apply in addition to the standards and requirements set forth in this Chapter

1. **Introduction.** Land use activities can cause changes in stormwater flows. Many pollutants, such as nutrients and metals, attach to fine particles of soil from throughout the watershed. Soil and attached pollutants are carried in the stormwater down to a waterbody or wetland. A project is required to meet appropriate standards to prevent and control the release of pollutants to waterbodies, wetlands, and groundwater, and reduce impacts associated with increases and changes in flow.

2. **Applicability.** This Chapter applies to a project that disturbs one acre or more of land area and requires a stormwater permit pursuant to the Stormwater Management Law 38 M.R.S. §420-D; a development that may substantially affect the environment and requires a site location of development (Site Law) permit pursuant to 38 M.R.S. §§ 481- 490; changes to a project reviewed under the Stormwater Management Law or Site Law that require a modification of the project's permit, as described in Section 16; and certain discharges of stormwater to groundwater that may be exempt from licensing under 38 M.R.S. § 413, as described in Appendix D of this Chapter. The Department may also require a Department-licensed excavation, quarry or hydropower project to meet the stormwater standards of this Chapter. Additional stormwater standards and requirements, such as those involving the Maine Pollutant Discharge Elimination System (MEPDES) program and the Municipal Separate Storm Sewer System (MS4) program may also apply in addition to the standards and requirements set forth in this Chapter

3. **Definitions**. The following terms have the following meanings as used in this Chapter and 06-096 CMR Chapter 502 (Direct Watersheds of Lakes Most at Risk from New Development and Urban Impaired Streams), unless the context otherwise indicates.

   A. **Certified Professional in Erosion and Sedimentation Control (CPESC).** "Certified Professional in Erosion and Sedimentation Control (CPESC)" means a professional certified by Enviro-Cert International in erosion and sediment control practices.

   B. **Compensation fee utilization plan.** "Compensation fee utilization plan" means a plan that specifies how funds received as a compensation fee payment will be allocated to reduce the impact of stormwater pollution to an impaired water resource.

   C. **Detention basin.** "Detention basin" means a basin designed and constructed to provide temporary storage of runoff to control stormwater outflow from the site and manage peak flows downstream and to provide gravity settling of pollutants.

   D. **Developed area.** "Developed area" means an impervious area, landscaped area, or unrevegetated area. Developed area includes all disturbed areas except an area that is returned to a condition

that existed prior to the disturbance and is revegetated within one calendar year of being disturbed, provided the area is not mowed more than twice per year.

E. **Direct watershed of a waterbody or wetland.** "Direct watershed of a waterbody or wetland" means the land area that drains via overland flow, drainageways, waterbodies, or wetlands to a given waterbody or wetland without first passing through a lake or pond.

F. **Disturbed area.** "Disturbed area" means all land areas that are stripped, graded, grubbed, filled, bulldozed or excavated at any time during the site preparation or removal of vegetation for, or construction of, a project. "Disturbed area" does not include maintenance. A land area on which the cutting of trees, without grubbing, stump removal, disturbance or exposure of soil has taken place is not considered a "disturbed area".

G. **Drainageway.** "Drainageway" means a natural or man-made channel or course to or from which surface discharge of water may occur. Drainageways include, but are not limited to streams (whether intermittent or perennial), swales, ditches, pipes, culverts, and wetlands with localized discharge of water.

H. **Erosion and sedimentation control best management practices (erosion control BMPs).** "Erosion and sedimentation control best management practices (erosion control BMPs)" means methods, techniques, designs, practices, and other means to control erosion and sedimentation.

NOTE: The Department has prepared protocols for the control of erosion and sedimentation. See "Maine Erosion and Sediment Control BMPs Maine Department of Environmental Protection."

I. **Erosion control mix.** "Erosion control mix" means a mulch that consists primarily of organic material such as shredded bark, stump grindings, composted bark, or fragmented wood generated as a by-product from log handling at wood mills. It includes a well-graded mixture of particle sizes with a mineral content that is less than 20% by weight, and is free from construction debris, refuse, and contaminants.

J. **High-use parking lot**. "High-use parking lot" means a commercial or other parking lot, where parking is used most days and each visit is typically for a duration of less than two consecutive hours, such as a parking lot serving a convenience store, high-turnover restaurant, shopping center, or supermarket.

K. **Hydrologic Soil Groups.** Hydrologic Soil Groups are a ranking of soil types for runoff potential adopted by the Natural Resources Conservation Service of the U.S. Department of Agriculture used in estimating direct runoff. The four hydrologic groups are A, B, C, or D, where group A generally has the lowest runoff potential and group D has the highest.

L. **Impervious area.** "Impervious area" means the total area of a parcel covered with a low-permeability material that is highly resistant to infiltration by water, such as asphalt, concrete, or rooftop, and areas such as gravel roads and unpaved parking areas that will be compacted through design or use to reduce their permeability. Common impervious areas include, but are not limited to, rooftops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and macadam or other surfaces which similarly impede the natural infiltration of stormwater. Pervious pavement, pervious pavers, pervious concrete and underdrained artificial turf fields are all considered impervious. For the purpose of

determining jurisdictional thresholds, the Department may, depending on the design, consider such facilities to provide alternative treatment as described in Section 4(B)(3)(e) of this Chapter.

M. Infiltration. "Infiltration" means the process by which runoff percolates through the unsaturated overburden and fractured bedrock to the water table, including any process specifically used to meet all or part of the stormwater standards of this Chapter by actively directing all or part of the stormwater into the soil. For the purposes of this Chapter, infiltration does not include:

(1) Incidental wetting of soil in ditches, detention basins or the equivalent;

(2) Wetting of underdrained basins, dry swales, or similar filtration systems that do not subsequently discharge to groundwater; or

(3) Wetting of buffers meeting Department requirements for use as stormwater control.

Discharge of runoff to areas of the site where the water will collect and percolate into the ground is considered infiltration if the volume, rate, or quality of the discharge does not meet Department standards for use of the area as a stormwater treatment buffer. Underdrained swales, underdrained ponds, and similar practices that discharge to surface waters or to buffer strips meeting Department requirements in Appendix F of this Chapter for stormwater buffers are not considered infiltration systems, although these may be used to treat runoff prior to discharge to an infiltration area.

N. Lake or pond. "Lake or pond" means a lake or pond classified as GPA under the Water Classification Program, 38 M.R.S. §464 *et seq.*

O. Landscaped area. "Landscaped area" means an area of land that has been disturbed and re-planted or covered with one or more of the following: grass or other herbaceous plants, shrubs, trees, or mulch; but not including area that has reverted to a natural, vegetated condition. An area of grass is considered landscaped if it is mowed more than twice per twelve month period.

P. Linear portion of a project. "Linear portion of a project" means that portion of a project consisting of a utility corridor, roads and road shoulders, driveway, railroad track outside a yard or station, or other similar transportation corridor. The linear portion of a project does not include roads and road shoulders within 50 feet of an impervious area of the same project that is not a sidewalk, bikepath, driveway or other road entrance, or single or two family residential buildings.

Q. Low impact development. "Low impact development" or "green infrastructure" means site planning and design strategies intended to replace or replicate predevelopment hydrology through the use of source control and relatively small-scale measures integrated throughout a site to disconnect impervious surfaces and enhance filtration, treatment, and management of stormwater runoff as close to its source as possible. Low impact development strategies may be either nonstructural or structural, except that low impact development strategies utilizing structural stormwater management techniques shall be limited to an impervious contributing drainage area equal to or less than 1 acre. Low impact development strategies include, but are not limited to: bioretention filters, grass swales and channels, vegetated filter strips, permeable pavements, rain gardens and vegetated rooftops.

R. Maintenance. "Maintenance" means an activity undertaken to maintain operating condition, original line and grade, hydraulic capacity, and original purpose of the project. Paving an

impervious gravel surface at original line, grade and hydraulic capacity is considered maintenance. Replacement of a building is not considered maintenance of the building.

S. **Major river segment.** "Major river segment" means, the rivers or portions of rivers, including any impoundments, identified as follows: Saco River; Androscoggin River; Kennebec River; West Branch Penobscot River below Elbow Lake; East Branch Penobscot River below Wassataquiok Stream; Piscataquis River below Dover-Foxcroft; St. Croix River below Grand Lake; Aroostook River below Ashland; and St. John River below the Allagash River.

T. **Medium-use parking lot.** "Medium-use parking lot" means a parking lot that is used most days and where vehicles are parked for an extended period of time, typically longer than two consecutive hours, such as an "employees only" parking lot, a school, and long-term parking at an intermodal transportation facility such as an airport, bus terminal or railroad station,

U. **New development or construction.** "New development or construction" means activity undertaken to develop property, including but not limited to: the construction of buildings, parking lots, roads and other new impervious surfaces; landscaping; and other activities that disturb land areas. New development or construction does not include redevelopment or maintenance.

V. **Nonstructural stormwater management techniques.** "Nonstructural stormwater management techniques" means stormwater management techniques that are designed to encourage the treatment, infiltration, evaporation, and transpiration of precipitation close to where it falls, while helping to maintain a more natural and functional landscape.

W. **Parcel.** "Parcel" is defined the same as "parcel of land" in rules adopted pursuant to the Site Location of Development Law, 38 M.R.S. § 481 *et seq*.

X. **Peak flow.** "Peak flow" means the greatest rate of flow in a drainageway, measured as volume per unit of time, resulting from a storm of specified frequency and duration.

Y. **Person.** "Person" is defined the same as in rules adopted pursuant to the Site Location of Development Law 38 M.R.S. § 481 *et seq*.

Z. **Practicable.** "Practicable" means available and feasible considering cost, existing technology and logistics based on the overall purpose of the project.

AA. **Pre-development area.** "Pre-development area" means an impervious or developed area created prior to the effective date of the Stormwater Management Law for a stormwater project, or the effective date of the jurisdictional threshold under which a development is licensed for a Site Law development.

BB. **Proprietary stormwater management systems.** "Proprietary stormwater management systems" means manufactured systems that use proprietary settling, filtration, absorption, vortex principles, vegetation and other processes to manage stormwater.

CC. **Protected natural resource**. "Protected natural resource" means coastal sand dunes, coastal wetlands, significant wildlife habitat, fragile mountain areas, freshwater wetlands, community public water system primary protection areas, great ponds or rivers, streams or brooks as defined in the Natural Resources Protection Act at 38 M.R.S. § 480-B.

DD. Redevelopment. "Redevelopment" means an activity, not including maintenance, undertaken to redevelop or otherwise improve property in which the newly developed area, is located within the same footprint as the existing developed area. A minor amount of undeveloped land, as determined by the Department on a case-by-case basis, may be included within the perimeter of the existing developed area.

EE. Site Law. "Site Law" means the Site Location of Development Law, 38 M.R.S. §§ 481-490.

FF. Stormwater. "Stormwater" means the part of precipitation, including runoff from rain or melting ice and snow, that flows across the surface as sheet flow, shallow concentrated flow, or in drainageways.

GG. Stormwater Management Law. "Stormwater Management Law" means the Storm Water Management Law, 38 M.R.S. § 420-D.

HH. Stream. "Stream" means a river, stream, or brook as defined in the Natural Resources Protection Act at 38 M.R.S. § 480-B.

II. Structural stormwater management techniques. "Structural stormwater management techniques" means stormwater management techniques or devices that are designed to mitigate the impact or stormwater discharges.

JJ. Subcatchment. "Subcatchment" means an area of a project site with a unique flow path to a specific point.

KK. Time of concentration. "Time of concentration" means the time it takes for runoff to travel from the hydraulically most distant point of the drainage area to the point of interest within a watershed.

LL. Two (ten, twenty-five)-year, 24-hour storm. "Two (ten, twenty-five)-year, 24-hour storm" means a precipitation event with a 50% (for two-year), 10% (for ten-year), or 4% (for 25-year) probability of being equaled or exceeded during any twenty-four hour period during any given year.

MM. Urban impaired stream. "Urban impaired stream" means a stream or stream segment that meets the criteria of 06-096 CMR 502(3)(B) and is listed in 06-096 CMR 502 Appendix B.

NN. Waterbody. "Waterbody" means a lake, pond, river or stream.

OO. Watershed. "Watershed" means the land area that drains, via overland flow, drainageways, waterbodies, or wetlands to a given waterbody or wetland.

PP. Wetlands. "Wetlands" means coastal and freshwater wetlands as defined in the Natural Resources Protection Act, 38 M.R.S. § 480-B.

4. **Stormwater standards.** The stormwater standards described in this Section include basic, general, phosphorous, urban impaired stream, flooding and other standards.

A. Applicability. This section applies to:

1) A project that requires a Stormwater Management Law permit, other than a stormwater permit by rule (PBR) issued pursuant to Section 6 of this Chapter;

2) A project that requires a Site Law permit; and

3) Changes to a project licensed pursuant to the Stormwater Management Law or Site Law that requires a modification of a project's license, as described in Section 16 of this Chapter.

For the purpose of determining the applicability of the general and phosphorous standards, when a project is located in separate watersheds, the area of the entire project is considered in determining whether a standard applies. For example, if a portion of a project drains to a lake, and another portion drains to a non-lake water body, the project needs to meet the applicable standards for each watershed.

B. Basic standards. The basic standards apply to all projects described above. The applicant must demonstrate that the erosion and sedimentation control, inspection and maintenance, and housekeeping standards specified in Appendices A, B, and C to this Chapter, respectively, are met, and that the grading or other construction activity will not impede or otherwise alter drainageways so as to have an unreasonable adverse impact on a wetland or waterbody, or an adjacent downslope parcel.

C. General standards. The general standards apply as described below in addition to the basic standards described in Section 4(B).

(1) When the general standards must be met. A project must meet the general standards if the project results in:

(a) Direct watershed of an urban impaired stream. 20,000 square feet or more of impervious area, or 5 acres or more of developed area, in the direct watershed of an urban impaired stream; or

(b) Any other non-lake watershed. One acre or more of impervious area, or 5 acres or more of developed area anywhere else for a project that is not in the direct watershed of a lake.

(2) Treatment requirements. To meet the general standards, the applicant must demonstrate that a project's stormwater management system includes treatment measures that will provide pollutant removal or treatment, and mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms and potential temperature impacts, unless the Department determines that channel protection and/or temperature control are unnecessary due to the nature of the resource. This must be achieved by using one or more of the methods described in this Section as follows:

(a) Treatment level. A project's stormwater management system must:

(i) Provide treatment of no less than 95% of the impervious area and no less than 80% of the developed area;

(ii) Where treatment of 95% of the impervious area is not practicable, the Department may allow treatment of as low as 90% of the impervious area if the applicant is able to demonstrate that treatment of a greater depth of runoff than specified in the standards will result in at least an equivalent amount of overall treatment of the

impervious area. The treatment depth of runoff must be increased by 0.05 inch for each 1% that the treatment area is decreased. Treatment must still be provided for no less than 80% of the developed area; or

(iii) Provide treatment in accordance with Table 1.

Table 1
Stormwater Treatment Based on Percentage of Parcel Developed

Percentage of Developed Area to Land Available for Development*	Percentage of Total Impervious Area Requiring Treatment**	Percentage of Total Developed Area Requiring Treatment**
>70	95	80
65	92.5	77.5
<60	90	75

* Including all contiguous land area owned by the applicant, but not including land with greater than 25% sustained slope or consisting of a protected natural resource.

** Percentage may be pro-rated for values between 60% and 70% in left-hand column.

(b) Upgradient runoff. The runoff from any upgradient area must be either directed away from the stormwater treatment measure or that measure, not including buffers, must be sized to address the runoff volume from the upgradient area at 50% of the sizing requirements for an area that is landscaped, unless the upgradient area is on soil with hydrologic condition A or B.

(c) Mitigation. The Department may allow the portion of a project's impervious or developed acreage that must be treated to be reduced through mitigation by eliminating or reducing an untreated off-site or on-site impervious stormwater source within the same watershed (see 06-096 CMR 501) if a project is not in a direct watershed of an urban impaired stream. The Department may, on a case-by-case basis, also determine that mitigation may include providing stormwater treatment for existing developed areas that do not require treatment under this Chapter.

(d) Redevelopment project. This subparagraph describes how much treatment is required for a redevelopment project.

(i) The requirement for treatment is scaled based on the pollutant discharge that, if the stormwater was untreated, would result from the redevelopment project. The Department will assign a pollutant ranking based on Table 2, and may, on a case-by-case evaluation of individual projects, modify the ranking by up to 2 points in light of project-specific features.

Table 2
Pollutant Impact Rankings of Various Redevelopment Land Uses

LAND USE	**POLLUTANT RANKING**
Roads where idling may occur periodically due to traffic volume and intersections; High use parking lots	5

Other roads; Medium use parking lots	4
Other parking lots and driveways; Flat asphalt rooftops; Roofs on an industrial facility	3
Other rooftops; Bikeways; Grassed areas mowed more than twice per year; Walkways/foot traffic-only pavement	2
Non-grass landscaped areas; Stormwater treatment/storage systems (except buffers)	1
Forest; Meadow mowed no more than twice per year;	0

The method for determining the treatment requirement for redevelopment projects includes:

a. For the existing condition, calculating a weighted average of impact by multiplying the land area (in acres) of each type of existing land use by its pollutant ranking. Add these values together to get an existing impact rating.

b. For the proposed condition, calculating a weighted average of impact by multiplying the land area (in acres) of each type of proposed redevelopment land use by its pollutant ranking. Add these values together to get a proposed impact rating.

c. Divide the existing impact rating by the number of total redevelopment acres.

d. Divide the proposed impact rating by the number of total redevelopment acres.

e. Subtract the value in Item c from the value in Item d. Note: this value can be a negative number. Use this value in the left column of Table 3 (below) to determine the applicable treatment level required for the redevelopment project.

Table 3
Treatment Levels for Redevelopment Projects

RANKED IMPACT CHANGE DUE TO REDEVELOPMENT	**PERCENTAGE OF DEVELOPED AREA THAT MUST BE TREATED**
0.0 or less	0% (Stormwater projects) 50% (Site projects)
≥ 0.0 to < 1.0	60%
> 1.0 to < 2.0	70%
> 2.0 to < 3.0	80%
> 3.0	Same treatment level as for new development

(ii) Priority for treatment must be given to areas with the highest pollutant ranking to the maximum extent practicable.

(iii) The developed area of the redevelopment project must be treated to the level required based on the pollutant impact ranking in accordance with Table 3. If the Department determines that it is not practicable to meet the general standards for redevelopment on site, the Department may allow equivalent treatment or mitigation on an off-site parcel within the same watershed as an alternative for stormwater treatment.

(iv) If a redevelopment project is located in geographically separate watersheds, treatment requirements must be calculated for each separate watershed.

(3) Types of treatment measures allowed.

(a) Wetpond. A stormwater management system using a wetpond must detain, above a wetpond's permanent pool, a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area. If located within the direct watershed of a stream, the pond must be designed to release this stored volume over a period of 24 to 48 hours through an underdrained gravel outlet. A wetpond must have a storage volume below the permanent pool elevation at least equal to 2.0 inches times the subcatchment's impervious area plus 0.8 inch times the subcatchment's non-impervious developed area, plus any required treatment for upgradient runoff in accordance with Section 4(C)(2)(b) above, and must have a mean depth of at least three feet, and a length to width ratio of 3:1 or greater. If the permanent pool volume is relatively evenly distributed (within 25% of each other) between separate wetponds in series, the required permanent pool volume may be reduced by 20%; if the permanent pool volume is relatively evenly distributed (within 25% of each other) between three separate wetponds in series, the required permanent pool volume may be reduced by 40%.

(b) Vegetated soil filter. A stormwater management system using a vegetated soil filter to control runoff must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's other landscaped area plus any required treatment for upgradient runoff in accordance with Section 4(C)(2)(b), above. The system must be designed in accordance with Section 4(C) of Appendix E of this Chapter.

Discharges to groundwater from vegetated soil filters as described in Appendix E, Section 4(B) of this Chapter are considered de minimis discharges for the purposes of the Waste Discharge Licensing Program, and do not require a waste discharge license.

(c) Infiltration. A stormwater management system using infiltration to control runoff must retain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's developed area that is landscaped, plus any required treatment for upgradient runoff in accordance with Section 4(C)(2)(b) above, and infiltrate this volume into the ground. The system must be designed in accordance with Appendix D of this Chapter. An infiltration system serving a development regulated under the Site Law may be required to meet additional standards in accordance with 06-096 CMR 375(7).

Infiltration from a stormwater infiltration system is considered *de minimis* for purposes of the Waste Discharge Licensing Program and does not require an individual waste discharge license if the standards in Appendix D to this Chapter are met.

NOTE: Drywells and subsurface fluid distribution systems may need to be registered with and meet other requirements of the Department's Underground Injection Control Program.

(d) Buffers. A stormwater management system using buffers to control runoff must meet the design and sizing requirements described in Appendix F to this Chapter.

(e) Innovative treatment measures. The Department may, on a case-by-case basis, approve alternative treatment measures to those described in Subsections 4(C)(3)(a) through 4(C)(3)(d) above. Innovative treatment measures may be either proprietary or non-proprietary, and must provide at least as much pollutant removal as the treatment measures listed above and as much channel protection and temperature control, unless the Department determines that channel protection and/or temperature control are unneeded due to the nature of the resource. Any person proposing the use of an innovative treatment measure may be required to provide reports or studies, subject to Department review and approval, demonstrating the control efficiency of the measure. The use of an innovative treatment measure does not preclude the need to meet other required Stormwater Management Law standards.

(4) Low impact development credit. Low impact development strategies can reduce stormwater storage volume requirements through the use of non-structural stormwater management techniques that minimize impervious cover, thereby reducing both the size and cost of stormwater management structures. The use of low impact development strategies is optional and voluntary for all projects, but projects using this credit are eligible to reduce the portion of the project's impervious or developed acreage that must be treated.

(a) Projects incorporating low impact development strategies under this Section must be reviewed and approved by the Department on a case-by-case basis, and must:

(i) Protect as much undisturbed land as possible to maintain pre-development hydrology and allow rainfall infiltration;

(ii) Protect natural drainage systems such as wetlands, watercourses, ponds and vernal pools to the maximum extent practicable;

(iii) Minimize land disturbance including clearing and drainage to the extent practicable;

(iv) Minimize the decrease in the time of concentration from pre-construction to post-construction to the extent practicable;

(v) Minimize soil compaction to the extent practicable;

(vi) Utilize low-maintenance landscaping that encourages the retention and planting of native vegetation, and minimizes the use of lawns, fertilizers and pesticides;

(vii) Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces to the extent practicable;

(viii) Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas; and

(ix) Provide other source controls to prevent or minimize the use or exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runoff.

(b) In order to qualify for low impact development credit, applicants must treat at least 50 percent of the runoff volume from developed areas with low impact development strategies. Low impact development credits, which reduce the amount of developed area that must be treated, will be awarded based on the percentage of developed area treated with low impact development strategies, and shall be pro-rated from between 10 percent and 20 percent, as follows:

Percentage of Developed Area Treated With Low Impact Development Measures	Low Impact Development Credit
50%	10%
75%	15%
100%	20%

(5) Exceptions from the general standards. This Section describes exceptions from the general standards.

(a) Pretreatment measures. A project that includes measures to pretreat runoff to a filter or infiltration system in a Department-approved, flow-through sedimentation device may reduce the runoff volume to each treatment measure described in Section 4(B)(3)(b) and (c) by 25%. The pre-treatment credit does not apply to subsurface underdrained filter structures using chambers.

(b) Discharge from a wetpond. A project using a wetpond for stormwater treatment that does not discharge to the direct watershed of a stream other than a major river segment is not required to incorporate channel protection storage above the wetpond's permanent pool or to install an underdrain. The underdrain may also be omitted from a wetpond when discharging to a wetland if the Department determines that filtering and temperature reduction, normally provided by an underdrain, are not necessary for maintaining the functions of the wetland.

(c) Linear portion of a project. For a linear portion of a project, treatment may be reduced to no less than 75% of the linear portion's impervious area and no less than 50% of the linear portion's developed area. This exception does not apply to a linear portion of a project subject to the urban impaired stream standard.

(d) A utility corridor or portion of a utility corridor. A utility corridor or portion of a utility corridor that meets the following criteria is not required to meet the general standards:

(i) The project or portion of the project does not include impervious area;

(ii) Disturbed areas are restored to pre-construction contours and revegetated within one month in the growing season following construction;

(iii) Mowing of the revegetated right-of-way occurs no more than once during any twelve month period; and

(iv) A vegetation management plan for the project has been reviewed and approved by the Department.

(e) Wetland road crossing. That portion of a road crossing a wetland is not required to meet the general standards if the design provides for passage of flows through a culvert(s), bridge span, or use of a permeable base material that will allow flow under the road.

(f) Roofs. Runoff from sloped, non-asphalt roofs of non-industrial facilities need to be treated for thermal impact and for channel protection only.

(g) Treatment requirement for certain developed area approved or constructed prior to January 1, 2006 and not being redeveloped. A project requiring a Site Law permit is not required to meet the general standards for runoff from developed area constructed and operated in accordance with a Stormwater Management Law permit issued prior to January 1, 2006, provided the area is not being redeveloped. If a project requiring a Site Law permit includes a developed area constructed prior to that date that did not require a Stormwater Management Law permit, then the project must provide treatment of runoff in accordance with the general standards from at least 50% of that developed area. Priority for treatment must be given to areas with the highest pollutant ranking to the maximum extent practicable, using the ranking system in Table 2 of this Chapter.

This Subsection does not apply to developed areas located within the direct watershed of an urban impaired stream or other waterbody that is impaired due to urban runoff or developed area proposed to be redeveloped.

D. Phosphorus standards. The phosphorus standard applies as described below in addition to the basic standards described in Section 4(B) of this Chapter.

(1) When the phosphorus standard must be met. If a project is located in a lake watershed, the phosphorous standard must be met as follows:

(a) When the project is located in the direct watershed of a lake most-at-risk. A development with 20,000 square feet or more of impervious area, or 5 acres or more of developed area in the direct watershed of a lake most-at risk must meet the phosphorous standard. The general standards may be used if the lake is not severely blooming and if the project results in less than 3 acres of impervious area and less than 5 acres of developed area. Severe blooming lakes are a subset of lakes most-at-risk as listed in 06-096 CMR 502; or

(b) When the project is located in any other lake watershed. A development with one acre or more of impervious area or 5 acres or more of developed area in any other lake watershed may use the general standards if the project results in less than 3 acres of impervious area and less than 5 acres of developed area.

(2) Description of phosphorus standards. An allowable per-acre phosphorus allocation for each lake will be determined by the Department. The Department's determination is based upon current water quality, potential for internal recycling of phosphorus, potential as a cold-water fishery, volume and flushing rate, and projected growth in the watershed. This allocation will be used to determine phosphorus allocations for a project unless the applicant proposes an

alternative per-acre phosphorus allocation that is approved by the Department. If the project is a road in a subdivision, only 50% of the parcel's allocation may be applied to the road unless phosphorus export from both the road and the lots is subject to this Chapter, in which case the entire allocation for the parcel may be applied. If the allocation is exceeded by a proposed project, the applicant must demonstrate that the phosphorus export using the Department's methodology will be reduced to meet the phosphorus allocation. Compensation may also be allowed in accordance with 06-096 CMR 501.

NOTE: Volume II of the Maine Stormwater Management BMP manual provides examples for calculating per-acre phosphorus allocations and determining if stormwater phosphorus export from a project meets or exceeds the parcel's allocation.

(3) Exception to the Department's phosphorus export standard. If an applicant can demonstrate that the standard calculations for determining phosphorus export are not appropriate due to unusual circumstances, such as the location and/or nature of the development proposal, and the phosphorus export will meet the project site's allocation, then the Department may make a determination that the phosphorus standard has been met.

E. Urban impaired stream standard. The urban impaired stream standard applies as described below.

(1) When the urban impaired stream standard must be met. A project must meet the urban impaired stream standard if the project is located in the direct watershed of urban impaired stream and requires a Site Law permit or permit modification.

(2) Description of the urban impaired stream standard. To meet the urban impaired stream standard, the applicant must either pay a compensation fee or mitigate project impacts by reducing or eliminating an off-site or on-site pre-development impervious stormwater source as described in 06-096 CMR 501.

(3) Exception where impervious area is replaced. Any portion of a project in which impervious area that pre-dates the Stormwater Management Law is replaced is not required to meet the urban impaired stream standard for that area provided the Department determines that the new use of the untreated area is not likely to increase stormwater impacts in the proposed project's stormwater runoff beyond the levels already present in the runoff in accordance with Table 2 of this Chapter.

(4) Where there is a Department-approved management and monitoring plan in place, and monitoring demonstrates that a stressor in the watershed, which may be either a pollutant or a failure to meet a water quality standard, is contributing to the impairment of the urban impaired stream, the Department may require the applicant to use alternative, or additional stormwater treatment measures to address the identified stressor.

F. Flooding standard. The flooding standard applies as described below.

(1) When the flooding standard must be met. A project must meet the flooding standard if the project:

(a) Results in three acres or more of impervious area or 20 acres or more of developed area; or

(b) Requires a Site Law permit or permit modification.

(2) Description of the flooding standard. To meet the flooding standard, the applicant must demonstrate that a project's stormwater management systems will meet the following:

(a) The system must detain, retain, or result in the infiltration of stormwater from 24-hour storms of the 2-year, 10-year, and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project;

(b) The design of piped or open channel systems must be based on a 10-year, 24-hour storm without overloading or flooding beyond channel limits;

(c) The areas expected to be flooded by runoff from a 10-year or 25-year, 24-hour storm must be designated in the application, and no buildings or other similar facilities may be planned within such areas. This does not preclude the use of parking areas, recreation areas, or similar areas from use for the detention of storms greater than the 10-year, 24-hour storm. The applicant shall secure drainage easements from any downstream property owners across whose property may be flooded by runoff pursuant to Section 4(G)(2)(a);

(d) Runoff from the project may not flood the primary access road to the project and any public roads bordering the project as a result of a 25-year, 24-hour storm; and

(e) If a wetpond is utilized for stormwater quality treatment under Section 4(C)(3)(a) of this Chapter, detention to meet the flooding standard must be provided above the permanent pool.

NOTE: Please see Appendix H for 24-Hour Duration Rainfalls for Various Return Periods in Maine.

3) Waiver of the flooding standard. A project is eligible for a waiver from the flooding standard as follows.

(a) Discharge to a coastal wetland, a great pond, or a major river segment. A waiver is available for a project in the watershed of a coastal wetland, a great pond, or a major river segment provided the applicant demonstrates that the project conveys stormwater exclusively in sheet flow, in a manmade open channel, or in a piped system directly into one of these resources.

In addition, the Department may allow a waiver for a project discharging directly into a river that is not a major river segment if the Department determines that the increase in peak flow from the site will not significantly affect the peak flow of the river or result in unreasonable adverse impact on any wetlands.

Prior to requesting a waiver as part of an application, the applicant shall secure drainage easements from any downstream property owners across whose property the runoff must flow to reach the ocean, great pond, or river. The applicant shall also demonstrate that any piped or open-channel system in which the runoff will flow has adequate capacity

and stability to receive the project's runoff plus any off-site runoff also passing through the system.

(b) Insignificant increases in peak flow rates from a project site. A waiver is available for a project resulting in only an insignificant increase in peak flow rates from a project site. The applicant shall demonstrate that the proposed increases in peak flow rates cannot be avoided by reasonable changes in project layout, density, and stormwater management design. The applicant shall also demonstrate that the proposed increases are insignificant because they will not unreasonably increase the extent, frequency, or duration of flooding at downstream flow controls and conveyance structures or have an unreasonable adverse effect on protected natural resources. In making its determination to allow a waiver from the flooding standard due to insignificant increases in peak flow rates, the Department shall consider cumulative impacts. If additional information is required to make a determination concerning increased flow, the Department may only consider a waiver after the applicant agrees, pursuant to 38 M.R.S. §344-B(3)(B), that the review period may be extended as necessary by the Department.

(4) Additional design standards. The municipality, the Maine Department of Transportation, or the Maine Turnpike Authority may require a project to meet additional design standards. The applicant shall contact the appropriate entity when proposing a project that may cause flooding of a primary access road or public road and receive all necessary approvals prior to beginning construction.

G. Easements and deed restrictions standard. The easements and deed restrictions standard applies as described below.

(1) When the easements and deed restrictions standard must be met. A project must meet the easements and deed restrictions standard if the project requires specific off-site areas for the control, disposal, or treatment of stormwater runoff.

(2) Description of the easements and deed restrictions standard.

(a) When an easement is required. The applicant must secure easements from affected property owners when the project results in any of the following on off-site property not owned by the applicant:

(i) The flow type changes (for example, converting from sheet flow to channelized flow);

(ii) The flow channel changes; or

(iii) The flow causes or increases flooding.

The Department may determine that the expected change in flow, channel or impact is so insignificant as to not require an easement under this Chapter. The Department may require the applicant to provide evidence that such impacts will not occur or, if they will occur, provide evidence of the extent of the impact and evidence that suitable easements have been obtained.

NOTE: The Department's decision to issue a stormwater permit, to require or not require an easement, or to specify the location or width of an easement is not intended to affect other federal, state or local requirements for easements or the availability of legal or equitable remedies for impacts due to stormwater runoff.

(b) Easement specifications and restrictions. The following specifications and restrictions apply to all easements established under this standard.

(i) Land use restrictions. Suitable land-use restrictions must be included in the easements to prevent any activity that might affect drainage to, across, or from the area affected by the easement.

(ii) Drainage easements. Drainage easements must include all off-site channels constructed to receive flows from the project and any off-site channels receiving increased peak flow rates from the project. Drainage easements must extend up to, but not include, the channel of any stream accepting flow from the project. Drainage easements must conform with the center line of the drainageway or pipe and must have a minimum width of 30 feet, or 10 feet on each side of the channel or pipe required to accommodate the flow from a 25-year, 24-hour storm, whichever is greater. A reduction in the minimum width may be approved by the Department if the full width is not available because of unavoidable physical limitations of the site. However, the minimum width allowed must still be sufficient to avoid an adverse impact on existing uses and to allow access for maintenance and repair.

(iii)Flooding easements. Flooding easements must include all off-site areas flooded due to the project. These areas include, but are not limited to, those flooded due to the project overloading storm sewers, culverts, stormwater basins, and equivalent utilities with increased runoff; filling existing areas of runoff storage; diverting flows onto off-site properties; and impeding runoff from the project parcel or off-site areas. Flooding easements must conform to the greatest extent of inundation due to the increased runoff from a 25-year, 24-hour storm.

(iv)Erosive flows. The flow through the easement or flooding within the easement may not cause erosion of soil or sedimentation.

(c) Buffers. Buffers used for stormwater control must be protected from alteration through deed restrictions.

NOTE: The Department has prepared suggested templates for deed restrictions that can be found in Appendix G of this Chapter.

H. Redistribution of stormwater discharges standard. The redistribution of stormwater discharges standard applies as described below.

(1) When the redistribution of stormwater discharges standard must be met. A project must meet the redistribution of stormwater discharges standard if the project discharges concentrated stormwater runoff through an open-channel or pipe to any point that is not an open channel, an inlet to a storm drain system, or a natural or man-made impoundment.

(2) Description of redistribution of stormwater discharges standard. To meet the redistribution of stormwater discharges standard, the applicant must demonstrate that the project's concentrated flow will be converted to sheet flow to prevent erosion of the downstream receiving area. The conversion of concentrated flow to sheet flow must be done using properly designed level spreaders meeting the criteria below.

(a) Discharge to a level spreader. The peak stormwater flow rate to a level spreader due to runoff from a 10-year, 24-hour storm must be less than 0.25 cubic feet per second (0.25 cfs) per foot length of level spreader lip.

(b Siting of level spreader. The level spreader must be sited so that flow from the level spreader will remain in sheet flow until entering a natural or man-made receiving channel.

(3) This standard is not applicable for level spreaders discharging runoff to vegetated buffers used to meet the general standards. Requirements for these level spreaders can be found in Appendix F of this Chapter.

I. **Discharge to wetlands standard.** The discharge to wetlands standard applies as described below.

(1) When the discharge to wetlands standard must be met. A project must meet the discharge to wetlands standard if the project discharges stormwater a wetland, unless the affected area of wetland qualifies for an exemption pursuant to the Natural Resources Protection Act, 38 M.R.S. § 480-Q(17), or unless the Department determines that the change in stormwater flow will not cause a loss of wetland functions and values.

(2) Description of discharge to wetlands standard. To meet the discharge to wetlands standard, the applicant must demonstrate that the project's discharges into wetlands will not significantly alter the flow of stormwater to the wetland from that which occurred. In general, new or increased stormwater discharges into wetlands must be put into sheet flow using level spreaders designed to meet the requirements in Section 4(H), above. The Department may allow alternate stormwater treatment measures if those measures will not unreasonably adversely affect the wetland.

The discharge of runoff to a wetland due to a 2-year storm may not increase the mean storage depth within a wetland more than two inches above pre-development levels for more than 24 hours from the end of the storm event, unless otherwise approved by the Department. The Department may consider cumulative impacts due to runoff from other projects when applying this standard to any wetland.

J. **Discharges to public storm sewer systems standard.** The discharges to public storm sewer systems standard applies as described below.

(1) When the discharges to public storm sewer systems standard must be met. A project must meet the discharges to public storm sewer systems standard if runoff from the project site will flow to a publicly-owned storm sewer system.

(2) Description of discharges to public storm sewer systems standard. The applicant must obtain authorization from the system's owner to discharge into the system. At its discretion, the Department may require the applicant to demonstrate that the system has adequate capacity

for any increases in peak flow rates and volumes to the system and to provide photo documentation that the outfall of the public storm sewer system is being properly maintained.

NOTE: Title 12 M.R.S.A. § 7755-A, which prohibits state agencies from issuing a permit that will significantly alter the habitat of any species designated as threatened or endangered species or violate protection guidelines may also apply.

5. **Additional controls.** If the Department determines that additional controls are necessary to avoid an unreasonable impact on any wetland or waterbody due to pollutants that are not adequately addressed by the standards described in Sections 4, a stormwater project subject to this Chapter that results in three acres or more of impervious area or 20 acres or more of developed area, or requires a Site Law permit or permit modification may be required to use additional controls. This is a case-by-case determination based upon factors such as the size, nature and intensity of the development, characteristics of the affected natural resource, topography and soils.

6. Stormwater permit by rule (PBR)

A. **When a project qualifies for a stormwater PBR.** A project needing a Stormwater Management Law permit qualifies for a stormwater PBR if it does not require a Site Law permit or permit modification and results in ;

(1) Direct watershed of a lake most at risk or urban impaired stream. Less than 20,000 square feet of impervious area and less than 5 acres of developed area in the direct watershed of a lake most at risk or urban impaired stream; or

(2) Any other watershed. Less than one acre of impervious area and less than five acres of developed area in any other watershed.

B. **Notification.** An applicant must file notice of the project with the Department and to the municipal clerk of the municipality where the project is located, prior to beginning work on the project. The applicant shall use the notification form provided by the Department and must include the required submissions. The applicant must keep a copy to serve as the permit. The notification information must be sent to the Department by certified mail (return receipt requested), or hand delivered to the Department and date stamped by the Department.

C. **Effective period.** The stormwater PBR becomes effective 14 calendar days after the Department receives the notification form, unless the Department accepts or rejects the notification prior to that date. Within this 14 calendar day period, the Department may notify the applicant in writing, including by e-mail, or through verbal communication that the notification is rejected because the notification is deficient, the project is ineligible for stormwater PBR, additional information or further review is needed, or an individual stormwater permit must be obtained pursuant to Section 6(G) of this Chapter. The stormwater PBR is effective on, and valid for two years from the date the PBR is accepted.

By signing the notification form, the applicant is representing that the activity will meet the applicability requirements and standards of this Section. In addition, by signing the notification form the applicant represents that the applicant has sufficient title, right, or interest in the property where the proposed activity is to take place.

D. **Standards.** Projects eligible for permit by rule must meet the erosion and sedimentation control standards found in Appendix A and inspection and maintenance requirements found in Section 1

of Appendix B of this Chapter, except that any PBR project proposing to use infiltration to control runoff must either meet the license by rule standards in Appendix D of this Chapter, or obtain a waste discharge license under the Waste Discharge Law.

E. Submissions. An applicant for a stormwater PBR must submit the notification form, fee and other information for the Department's review and approval. This information includes a location map, site plan, erosion and sedimentation control plan, and photographs of the area to be developed. Also, if the project is located in Essential Habitat, approval from the Maine Department of Inland Fisheries and Wildlife will need to be submitted. Specific submission requirements are described below.

(1) Plan preparation. An erosion and sedimentation control plan accompanying a stormwater PBR must be designed by a professional who is registered, licensed, or certified in a related land-use field, or by education, training, or experience is knowledgeable in erosion and sedimentation control, or has received specific training in erosion and sedimentation control at a Department-sponsored erosion and sedimentation control workshop.

NOTE: Erosion and sedimentation control practices are described in the "Citizen's Guide to Best Management Practices for Use with Maine Construction General Permit" or in "Maine Erosion and Sediment Control BMPs," Maine Department of Environmental Protection.

(2) Location map. The notification form must be accompanied by a photocopy of a portion of a 7.5 minute USGS topographic map or other atlas showing the site's location and approximate property boundaries, if the size of the parcel and scale of the map allows it. A USGS topographic map can be useful for showing the general contour and topography of the project site

(3) Site plan. Submit a scaled plan showing, at a minimum, the locations of structures and roads, the extent of disturbed land, pre-construction site topography, post-construction site topography, on-site and adjacent surface waterbodies, and all erosion and sedimentation control measures to be used on the site. Such measures include, but are not limited to, sedimentation barriers, ditch lining, rip rap, and culvert inlet and outlet designs.

An applicant may substitute the following information for surveyed pre-development and post-development site topography on the location plans:

(a) The locations of high points on the site;

(b) The locations of any ponds or other runoff storage depressions on the site;

(c) The locations and flow direction of any drainage ditches, brooks, or streams;

(d) The locations of any catch basin inlets or culvert inlets; and

(e) Arrows showing the general direction(s) of overland drainage for the site.

(4) Erosion and sedimentation control plan. In addition to a site plan, an erosion and sedimentation control plan must be included that contains, at a minimum, permanent stabilization measures to be taken (e.g., paving or planting vegetation), installation details of

the erosion control measures proposed, seeding and mulching rates, and a construction schedule with the proposed construction dates and timeframe for major earth moving and construction events. This plan and its details may be included on the site plan instead of being a separate submission.

NOTE: Other or additional standards may apply under the Natural Resources Protection Act to a project located in or adjacent to a protected natural resource. For example, a person who conducts, or causes to be conducted, an activity that involves filling, displacing or exposing soil or other earthen materials may need to take measures to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected natural resource as defined in 38 M.R.S. §480-B.

(5) Photos. Photographs of the project site that show the existing character and topography of the area proposed for development must be included with the PBR notification.

F. Approval of variations from plans. The granting of this approval is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from these plans, proposals, and supporting documents must be reviewed and approved by the Department prior to implementation. Any variation undertaken without approval of the Department is in violation of 38 M.R.S. § 420-D(8) and is subject to penalties under 38 M.R.S. § 349.

G. Discretionary authority. Notwithstanding compliance with the PBR requirements and standards set forth in this Section, the Department may require that an individual stormwater permit be obtained in any case where the Department determines that the activity:

(1) May violate the standards of the Stormwater Management Law or this Chapter;

(2) Could lead to significant environmental impacts, including cumulative impacts; or

(3) Could have an unreasonable adverse impact on a protected natural resource.

7. Submissions and pre-application meetings. This Section applies to Stormwater Management Law projects that do not qualify for a stormwater PBR. It also applies to Site Law projects. The applicant shall use the application form provided by the Department and include evidence that affirmatively demonstrates that the standards will be met, including information such as described in this Section.

A. Pre-application meetings. A pre-application meeting is required for a Stormwater Management Law project that does not qualify for a stormwater PBR, unless the requirement for such a meeting is waived by the Department based on an initial review of project plans and scope. A pre-application meeting between the applicant and the Department is an opportunity for the applicant to determine the statutory and regulatory requirements that apply to a specific project, and to identify the Department staff person who will serve as project manager for the application. A written request for a stormwater pre-application meeting must include two copies of a preliminary site plan, brief project description, and a regional map with the site marked.

B. Design requirements. A design for a stormwater management system that includes any form of conveyance structure must be prepared under the supervision of, and dated, signed and sealed by, a professional engineer registered in the State of Maine, or a landscape architect licensed in the State of Maine, who by education, training, or experience is knowledgeable in stormwater

management. Soil test data must be provided by a certified soil scientist, unless otherwise approved by the Department.

C. Basic standards submissions. An erosion and sedimentation control plan or an inspection and maintenance plan for a project that does not qualify for a stormwater PBR must be prepared by a professional engineer registered in the State of Maine, landscape architect licensed in the State of Maine, or a Certified Professional in Erosion and Sedimentation Control.

(1) Erosion and sedimentation control plan. Submit a plan showing designs for temporary and permanent stabilization measures for all disturbed areas within the project site and for all proposed stormwater management structures. Erosion and sedimentation control plan requirements are described in Appendix A of this Chapter. At a minimum, the erosion and sedimentation control plan must include the following:

(a) Location plan. Submit a plan sheet or set of plans showing, at a minimum, the location of structures, disturbed land, pre-construction site topography, post-construction site topography, on-site or adjacent water resources, and all erosion and sediment control measures;

(b) Site details. Submit a plan sheet showing the following:

(i) Erosion and sedimentation control notes. Erosion and sedimentation control notes, must include, but not limited to, permanent stabilization measures, seeding and mulching rates, and a construction schedule with the proposed construction dates and timeframe for major earth moving and construction events; and

(ii) Construction and installation details. Construction and installation details for erosion and sedimentation control measure must include, but are not limited to, sedimentation barriers, ditch lining, rip rap, and culvert inlet and outlet designs.

NOTE: The Department has prepared protocols for the control of erosion and sedimentation. See "Maine Erosion and Sediment Control BMPs Maine Department of Environmental Protection."

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(2) Inspection and maintenance plan. Submit a plan for the inspection and maintenance of the temporary and permanent erosion and sedimentation control measures for the project site as described in Appendices A and B of this Chapter:

(a) List of measures. Submit a list of the erosion control measure and stormwater management measures to be inspected and maintained (e.g., "parking lot catch basins");

(b) Inspection and maintenance tasks. Submit a list of inspection and maintenance tasks specific to each erosion control measure or stormwater management measure (e.g., "remove accumulated sediments in basin sumps"). Submit the specific qualifications of the person performing each task (e.g., "a professional engineer registered in the State of Maine will inspect the retention pond embankment");

(c) Task frequency. Indicate the required frequency of each inspection and maintenance task (e.g., "accumulated sediments will be removed from all catch basins annually in early spring");

(d) Responsible parties. Submit the name, job title, employer, employer address, phone number, and current email contact information for the person responsible for ensuring that inspection and maintenance tasks are completed. Submit the names, job titles, employer addresses, phone number, and any current email contact information of the engineers or other design professionals who designed the erosion control measures and stormwater management measures for the site. Include suppliers of proprietary erosion control measures or proprietary stormwater management measures used on the site;

(e) Maintenance plan for detention basins or retention ponds. For each stormwater management pond or basin submit, at a minimum, an inspection and maintenance plan for the pond's embankments, outlet structure, and emergency spillway. Include as part of this plan provisions for the removal and disposal of accumulated sediments in the pond and the control of woody vegetation on the pond's embankments;

(f) Maintenance plan for infiltration structures. For each infiltration structure, submit, at a minimum, an inspection and maintenance plan for the structure's pretreatment measures, embankments, surface lining, and overflow spillway. Include as part of this plan provisions for the removal and disposal of accumulated sediments in the structure and for the rehabilitation of clogged surface linings;

(g) Maintenance plan for underdrained filters. For each underdrained filter, submit, at a minimum, an inspection and maintenance plan for the filter embankments, vegetation, underdrain piping, and overflow spillway. Include as part of this plan provisions for the removal and disposal of accumulated sediments in the structure, the rehabilitation of clogged surface linings, and the flushing of underdrain piping;

(h) Maintenance plan for stormwater buffers. At a minimum, submit a plan for inspecting and maintaining the integrity and function of the project's stormwater buffers. As part of this plan, include provisions for the inspection, maintenance, and, if necessary, reconstruction of any level spreaders or ditch turnouts used to spread runoff into the buffers. Include as part of this plan provisions for the frequent removal and disposal of accumulated sediments and debris in the level spreader and turnout bays, provisions for the inspection and repair of any eroded areas within the buffer, and provisions for the reestablishment of buffer vegetation destroyed by post-construction activities;

(i) Maintenance plan for manufactured stormwater treatment systems. For each manufactured system installed on the site, submit an inspection and maintenance plan for the system's inlet, treatment chamber(s), and outlet. The plan shall conform to the inspection and maintenance guidelines recommended by the manufacturer based on the estimated runoff and pollutant load expected to the system from the project. As part of this plan, include provisions for the frequent removal of accumulated sediments, debris, and contaminated waters from the system and, if applicable, provisions for the removal, disposal, and replacement of any clogged or spent filter media; and

(j) Maintenance plan for ditches, culverts, and storm drains. Provide an inspection and maintenance plan for all stormwater conveyances to be built or installed on the site – including, but not limited to, ditches, swales, culverts, catch basins, and storm drain piping. As part of this plan, include provisions for the repair of eroded areas at the inlet, within, and at the outlet of each conveyance and include provisions for the frequent

removal and disposal of accumulated sediments and debris at the inlet, within, and at the outlet of each conveyance.

(3) Housekeeping. Submit a plan to address spill prevention, groundwater protection, fugitive sediment and dust, debris and other materials, trench or foundation de-watering, or non-stormwater charges, as applicable to the specific site. Housekeeping requirements are described in Appendix C of this Chapter.

D. General and phosphorus standards submissions. A project required to meet the general standards or phosphorus standard must provide the following information and design specifications:

(1) Narrative. A narrative describing site layout, and on-site and off-site watershed hydrology, including all new and existing buildings and facilities, which may be affected by the site runoff. Provide the total amount of disturbed area, impervious area, and developed area created by the project;

(2) Drainage Plans. All topographic features, such as buildings and other facilities, drainageways, cover type, roads, drainage easements and subcatchment boundaries for pre-construction and post-construction conditions must be shown on a plan. Show all hydrologic flow lines and hydrologic soil groups boundaries on a plan and identify each subcatchment, reach, and pond. For post-construction conditions, show all new stormwater management structures and changes to the hydrologic drainage patterns;

NOTE: Computer generated plans are recommended as hand-drawn plans can extend review time and delay approval.

(3) Calculations. The stormwater runoff calculations for measures designed to meet the general standards or phosphorus standard must be in accordance with acceptable engineering practice, including the following.

(a) Water volume. The calculations used to determine the water volume needed to be filtered, infiltrated, or detained based on the proposed project must be provided;

(b) Buffer sizing. Buffers used for runoff control must be sized according to requirements described in Appendix F of this Chapter; and

(c) Calculation table and subcatchment plan. A table must be provided to show the sizing required and provided for each subcatchment area and treatment measure. A water quality plan must clearly show each treatment measure and subcatchment.

(4) Submit a detailed log of at least one excavation or boring in the area of each proposed treatment measure. These excavations must extend to a depth of at least three feet below the lowest component (not lowest finished elevation) of the proposed structure and logs must include detailed information describing soil and overburden stratification, composition, texture, and other relevant characteristics, and elevation of seasonal high groundwater and bedrock, if encountered.

(5) Details, designs, and specifications. The applicant must submit designs, construction details, and technical specifications for each stormwater management measure that will be constructed, installed, or managed on the site.

(a) Wet Ponds. Submit a site plan and detail sheets having the following details and specifications for each stormwater management pond: a topographic plan view of the pond, a cross section of the pond embankment, a cross section and profile of the overflow spillway, soil test data, and specifications for constructing and stabilizing the pond's embankment. The peak storage depth required to meet the general standards must be shown on a cross section for each pond embankment. Submit a cross section of the gravel underdrain used to meet the standards. This cross section must specify the width and elevation of the pond bench, the thickness and gradation for the gravel drainage fill, and the diameter and material for the perforated underdrain pipe.

(b) Vegetated soil filters. Submit a site plan and detail sheets having the following details and specifications for each vegetated soil filter bed: soil test data, a plan view of the filter area, a cross section of the embankment for the filter area at the overflow spillway, a cross section and profile of the overflow spillway, a cross section of the underdrain filter, the thickness and composition of the soil filter media, the thickness and gradation of the gravel drainage fill, the layout for the perforated underdrain pipe and the stabilization of the filter bed.

(c) Infiltration. Submit a site plan and detail sheets having the following details and specifications for each infiltration measure: soil test data, a plan view of the infiltration structure, a cross section of the infiltration measure's runoff storage area, a cross section and profile of the structure's overflow spillway, and details and specifications for permanently stabilizing the infiltration area. The following information must be included, if required, as described below;

(i) Locations of any monitoring wells necessary for assessing the infiltration measure's performance or stormwater infiltration impacts on groundwater, surface irrigation sites, or subsurface wastewater disposal systems must be shown on the site plan;

(ii) Location of any existing or proposed surface irrigation site, waste disposal site, subsurface wastewater disposal system, or other facility that could be impacted by operation of the infiltration system must be shown on the site plan;

(iii) Location of any soil borings, test pits, or other explorations used to determine depth to groundwater, separation from bedrock, or other design information must be shown on the site plan;

(iv) Location of any water supply wells on-site or within 300 feet of the infiltration areas, zones of contribution for public water supply wells must be shown on the plan sheet;

(v) Location of storage for any petroleum products, pesticides, fertilizers, road salt, hazardous materials, or other materials with the potential to contaminate groundwater must be shown on the site plan;

(vi) Plans for management of any potential contaminants and soil sample analyses, such as a spill prevention, control, and countermeasure plan, must be submitted with appropriate supporting information; and

(vii)Depth to the seasonal high groundwater table, depth to bedrock, and the thickness and composition of any liner used for restricting infiltration rates must be shown on the cross section view of the infiltration structure.

(d) Buffers. Submit a topographic site plan showing the location of each buffer on the site, showing the layout of any berm level spreaders used to spread flows into each buffer, soil test data, and cover type within each buffer, and showing the land use and impervious and developed area draining to each buffer area. Provide a typical cross section for the berm level spreaders showing the geometry of the berm, the geometry of the upstream storage area, and the specifications for the berm material. Submit information demonstrating that the in slope fill material will have slopes no steeper than 3:1. Submit documentation, in the form of draft covenants and restrictions, demonstrating that buffer area(s) will be maintained as buffer.

(6) Phosphorus export calculations. An application for a project using the phosphorus standards must include phosphorus export calculations.

NOTE: The Department has prepared a protocol for determining phosphorous export. See "Phosphorus Control in Lake Watersheds," Maine Department of Environmental Protection.

(7) Maintenance contract. Submit evidence demonstrating the ability to carry out inspection and maintenance of all stormwater treatment system structures, including any proprietary devices, or a signed contract with a qualified third-party to carry out inspection and maintenance requirements in accordance with plan requirements in Appendix B of this Chapter.

E. Flooding standard submissions.

(1) Control of peak flows. If a project must meet the flooding standard, the project must be designed to control the peak flows from the 2-, 10- and 25-year, 24-hour storms.

(2) Details, designs, and specifications. The applicant must provide runoff curve number computations and time of concentration calculations for each subcatchment. Areas may qualify as subcatchments based on the characteristics of the site or the model used. The Department will review all methods of determining subcatchments on a case-by-case basis. The applicant must provide a reach description and reach routing analysis for each drainage structure and provide pond descriptions and storage routing calculation for any stormwater management structure, detention pond and culvert backwater areas. A natural or man-made waterbody is not considered an impervious area, but is treated as an immediate runoff surface in curve number calculations.

Acceptable stormwater methodologies and models include, but are not limited to, "TR-20 - Computer Program for Project Formulation - Hydrology," Second Edition, U.S. Department of Agriculture, Soil Conservation Service (March 1986); and "TR-55 - Urban Hydrology for Small Watersheds," Second Edition, U.S. Department of Agriculture, Soil Conservation Service (June 1986); "WIN TR-55 2003.00.24 Microcomputer Program," (January 12, 2003); and "HEC-HMS Flood Hydrology Package," U.S. Army Corps of Engineers (January 2001). Any methodology or model other than those listed must have prior approval from the Department.

8. **Municipal or quasi-municipal stormwater management programs.** The Department may allow a municipality or a quasi-municipal organization, such as a watershed management district, to substitute a management system for stormwater for the stormwater permit requirement pursuant to 38 M.R.S. § 420-D(2). The management system may apply to an entire watershed, or a portion of a watershed and may include multiple watersheds within the jurisdiction of the municipality or quasi-municipal organization. A project located within the area served by a management system approved by the Department is exempt from the stormwater permit requirements contained in this Chapter. For Site Law redevelopment projects only, and for the purposes of meeting the stormwater standard of 38 M.R.S. § 484(4-A), the standards for stormwater management in Section 420-D are met if the proposed development is located in a designated area served by a Department-approved management system for stormwater as described in Section 420-D(2), as long as the owner or operator of the parcel upon which the proposed development will be located enters into or obtains and remains in compliance with all agreements, permits and approvals necessary for the proposed development to be served by such management system for stormwater.

   The municipality or quasi-municipality may elect to have the substitution take effect at the time the system is approved by the Department, or at the time the system is completed as provided in the implementation schedule provided by the Department.

   A stormwater management system may not substitute for an aspect of a project that is required to meet the infiltration standards described in Appendix D of this Chapter or required to obtain a waste discharge permit.

   A. **Stormwater management system approval criteria.** The Department may review and approve a stormwater management system submitted by a municipality or a quasi-municipal organization, such as a watershed management district, to meet this exemption, provided that the municipality or quasi-municipal organization demonstrates that the following criteria are met.

      (1) Relationship to water quality. The municipality or quasi-municipal organization shall have a stormwater treatment system that, upon implementation, will result in the collective treatment of stormwater from new and existing sources within the watershed and will result in water quality in the receiving water that is as good, or better, than would be achieved with stormwater permits issued by the Department for individual projects. The stormwater system may apply to an entire watershed, or a portion of a watershed and may include multiple watersheds within the jurisdiction of the municipality or quasi-municipal organization.

      (2) Funding and implementation. The stormwater management system must include funding provisions and an implementation schedule that provides that the treatment system for new and existing sources will be in place and functioning within five years unless a longer time period, not to exceed 10 years, is approved by the Department.

      (3) Annual reporting. The stormwater management system must also include a provision for annual reporting by the municipality or quasi-municipal organization to the Department on progress toward implementation and a listing of the new developed area within the jurisdiction of the stormwater management system.

   B. **Reinstatement of permit requirement.** The Department may reinstate the stormwater permit requirement if it finds that the implementation schedule is not being met, or that either the stormwater management system or associated stormwater treatment system is not achieving the plan's objectives.

9. **Conditions of approval for Stormwater Management Law permits.** The following conditions of approval apply to an individual permit required pursuant to the Stormwater Management Law. For standard conditions of approval for a Site Law project, see 38 M.R.S. § 372 (12) and Section 10 of this Chapter.

   A. **Standard conditions of approval.** Unless otherwise specifically stated in the approval, a Department approval is subject to the following standard conditions.

      (1) Approval of variations from plans. The granting of this approval is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the permittee. Any variation from these plans, proposals, and supporting documents must be reviewed and approved by the Department prior to implementation. Any variation undertaken without approval of the Department is in violation of 38 M.R.S.§420-D(8) and is subject to penalties under 38 M.R.S. § 349.

      (2) Compliance with all terms and conditions of approval. The permittee shall submit all reports and information requested by the Department demonstrating that the permittee has complied or will comply with all terms and conditions of this approval. All preconstruction terms and conditions must be met before construction begins.

      (3) Advertising. Advertising relating to matters included in this application may not refer to this approval unless it notes that the approval has been granted WITH CONDITIONS, and indicates where copies of those conditions may be obtained.

      (4) Transfer of project. Unless otherwise provided in this approval, the applicant may not sell, lease, assign, or otherwise transfer the project or any portion thereof without written approval by the Department where the purpose or consequence of the transfer is to transfer any of the obligations of the developer as incorporated in this approval. Such approval may only be granted if the applicant or transferee demonstrates to the Department that the transferee agrees to comply with conditions of this approval and the proposals and plans contained in the application and supporting documents submitted by the applicant. Approval of a transfer of the permit must be applied for no later than two weeks after any transfer of property subject to the license.

      (5) Time frame for approvals. If the construction or operation of the activity is not begun within four years, this approval shall lapse and the applicant shall reapply to the Department for a new approval. The applicant may not begin construction or operation of the project until a new approval is granted. A reapplication for approval may include information submitted in the initial application by reference. This approval, if construction is begun within the four-year time frame, is valid for seven years. If construction is not completed within the seven-year time frame, the applicant must reapply for, and receive, approval prior to continuing construction.

      (6) Certification. Contracts must specify that "all work is to comply with the conditions of the Stormwater Permit." Work done by a contractor or subcontractor pursuant to this approval may not begin before the contractor and any subcontractors have been shown a copy of this approval with the conditions by the permittee, and the permittee and each contractor and subcontractor has certified, on a form provided by the Department, that the approval and conditions have been received and read, and that the work will be carried out in accordance

with the approval and conditions. Completed certification forms must be forwarded to the Department.

(7) Maintenance. The components of the stormwater management system must be adequately maintained to ensure that the system operates as designed, and as approved by the Department. If maintenance responsibility is to be transferred from the permittee to another entity, a transfer request must be filed with the Department which includes the name and contact information for the person or entity responsible for this maintenance. The form must be signed by the responsible person or agent of the responsible entity.

(8) Recertification requirement. Within three months of the expiration of each five-year interval from the date of issuance of the permit, the permittee shall certify the following to the Department.

(a) All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

(b) All aspects of the stormwater control system are operating as approved, have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system, as necessary.

(c) The stormwater maintenance plan for the site is being implemented as approved by the Department, and the maintenance log is being maintained.

(d) All proprietary systems have been maintained according to the manufacturer's recommendations. Where required by the Department, the permittee shall execute a 5-year maintenance contract with a qualified professional for the coming 5-year interval. The maintenance contract must include provisions for routine inspections, cleaning and general maintenance.

(e) The Department may waive some or all of these recertification requirements on a case-by-case basis for permittees subject to the Department's Multi-Sector General Permit ("MSGP") and/or Maine Pollutant Discharge Elimination System ("MEPDES") programs where it is demonstrated that these programs are providing stormwater control that is at least as effective as required pursuant to this Chapter.

(9) Transfer of property subject to the license. If any portion of the property subject to the license containing areas of flow or areas that are flooded are transferred to a new property owner, restrictive covenants protecting these areas must be included in any deeds or leases, and recorded at the appropriate county registry of deeds. Also, in all transfers of such areas and areas containing parts of the stormwater management system, deed restrictions must be included making the property transfer subject to all applicable terms and conditions of the permit. These terms and conditions must be incorporated by specific and prominent reference to the permit in the deed. All transfers must include in the restrictions the requirement that any subsequent transfer must specifically include the same restrictions unless their removal or modification is approved by the Department. These restrictions must be written to be enforceable by the Department, and must reference the permit number.

(10) Severability. The invalidity or unenforceability of any provision, or part thereof, of this permit shall not affect the remainder of the provision or any other provisions. This permit

shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

B. Special conditions. The Department may, as a term or condition of approval, establish any reasonable requirement, including the requirement that a Department- approved inspector must be obtained to oversee construction projects in the watershed of a lake most at risk or an urban impaired stream, to ensure that the proposed project will comply with the Stormwater Management Law and rules. However, terms and conditions relating to compliance with the Stormwater Management Law may not substitute for or reduce the burden of proof of the applicant to affirmatively demonstrate to the Department that each of the standards of the Stormwater Management Law and rules has been met.

10. Conditions of approval for Site Law permits. The following standard conditions of approval apply to a Site Law permit in addition to those specified in 06-096 CMR 372.

A. Approved inspector. The Department may require the Permittee to retain the services of a Department-approved inspector to oversee construction projects in the watershed of a lake most at risk or an urban impaired stream. The inspector must carry out and document inspections of erosion and sedimentation control measures and stormwater treatment measures at least weekly while construction is ongoing. The inspector must make recommendations of any needed maintenance of the measures, as well as of any other needed changes to ensure that stormwater runoff will not impact downstream waters. Any recommendations made must be submitted to the Department and followed by the permittee.

B. Recertification requirement. Within three months of the expiration of each five-year interval from the date of issuance of the permit, the permittee shall certify the following to the Department.

(1) All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

(2) All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.

(3) The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the Department, and the maintenance log is being maintained.

(4) All proprietary systems have been maintained according to the manufacturer's recommendations. Where required by the Department, the permittee shall execute a 5-year maintenance contract with a qualified professional for the coming 5-year interval. The maintenance contract must include provisions for routine inspections, cleaning and general maintenance.

(5) The Department may waive some or all of these recertification requirements on a case-by-case basis for permittees subject to the Department's Multi-Sector General Permit ("MSGP") and/or Maine Pollutant Discharge Elimination System ("MEPDES") programs where it is demonstrated that these programs are providing stormwater control that is at least as effective as required pursuant to this Chapter.

11. **Recording of order.** The Department shall record each order approving or modifying a permit pursuant to Chapters 500 and 502 in the appropriate registry of deeds.

12. **Severability**. Should any provision of this Chapter be declared invalid or ineffective by court decision, the decision shall not invalidate any other provision of this Chapter.

13. **Transition and jurisdictional threshold for Stormwater Management Law projects.** For purposes of the Stormwater Management Law only, a stormwater permit is required if a person constructs, or causes to be constructed, a project that includes one acre or more of disturbed area on or after September 17, 2005.

    A. If a person has a project that required approval under the Stormwater Management Law prior to September 17, 2005, the project and subsequent modifications to it continues to require approval on and after September 17, 2005.

    B. If a person has a project that did not require approval under the Stormwater Management Law prior to September 17, 2005, and the person proposes to construct or cause to be constructed a project that includes one or more acres of disturbed area on or after September 17, 2005, then a stormwater permit is required. Only the construction on or after September 17, 2005 requires a Stormwater Management Law permit.

    C. A disturbed area of less than one acre continues to be counted toward the one-acre permit threshold under the Stormwater Management Law following permanent stabilization to the extent it is considered developed area as defined in this Chapter.

14. **Permit shield**. If a stormwater best management practice is approved by the Department and, although adequately and appropriately constructed and maintained by the permittee, as determined by the Department, it fails to meet an applicable standard provided in Section 4 or 5 of this Chapter, the permittee is not in violation for failing to comply with that standard.

    A. ~~This Section does not apply if innovative treatment measures are approved pursuant to Section 4(C)(3)(e) of this Chapter. See Section 15.~~ This Section does not apply to the requirements of Appendix D of this Chapter.

    B. This Section does not apply to the need for a license pursuant to 38 M.R.S. § 413, the Waste Discharge Law. A wastewater discharge license is required for any stormwater discharge that the Department determines will contribute to a violation of a water quality standard or is a significant contributor of pollutants to waters of the State. See 06-096 CMR 521(9)(a)(1)(v). For the permit shield provision applicable to the Waste Discharge Law, see 38 M.R.S. § 414(8) "Effect of license".

    C. Nothing in this Section alters or affects the liability of the permittee if a violation has occurred prior to permit issuance.

15. **Permit shield for innovative measures**. The Department may, on a case-by-case basis, approve a best management practice or stormwater treatment measure pursuant to Section 4(C)(3)(e) of this Chapter when requested by an applicant. ~~However, in this case, the "permit shield" provision in Section 14 will not apply, and t~~The Department may require the applicant to collect and submit sufficient information on the performance of the best management practice or stormwater treatment measure to allow evaluation. If the best management practice or stormwater treatment measure does not perform at least as well as would have been expected from otherwise available best management

practices or stormwater treatment measures, the Department may require the permittee to replace or otherwise redesign the system.

The Department may only approve an experimental system on a site where it would be possible to replace or redesign the experimental system if necessary.

16. **Modification.** If a project has required a permit pursuant to the Stormwater Management Law or Site Law, all subsequent changes to the project that could affect the project's stormwater quality or quantity and require a modification of the project's license are also required to meet the stormwater standards of Section 4. When the applicable standard depends upon an area threshold, the area of the entire licensed project, including the proposed project changes is included.

17. **Effect of 2014 Rule Amendments on Existing Permits.** A permittee who obtained a permit under the Stormwater Management Law or the Site Law prior to the effective date of the 2014 amendments to this Chapter shall continue to be subject to the terms of the prior permit with respect to any developed area constructed under the prior permit.

APPENDICES -- BASIC PERFORMANCE STANDARDS

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APPENDIX A. Erosion and sedimentation control

This appendix applies to all projects.

A person who conducts, or causes to be conducted, an activity that involves filling, displacing or exposing soil or other earthen materials shall take measures to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected natural resource as defined in 38 M.R.S. § 480-B. Erosion control measures must be in place before the activity begins. Measures must remain in place and functional until the site is permanently stabilized. Adequate and timely temporary and permanent stabilization measures must be taken.

NOTE: Other requirements may apply, including, but not limited to the Natural Resources Protection Act 38 M.R.S. § 480-B.

NOTE: The Department has prepared protocols for the control of erosion and sedimentation. See "Maine Erosion and Sediment Control BMPs Maine Department of Environmental Protection."

1. **Pollution prevention.** Minimize disturbed areas and protect natural downgradient buffer areas to the extent practicable. Control stormwater volume and velocity within the site to minimize soil erosion. Minimize the disturbance of steep slopes. Control stormwater discharges, including both peak flow rates and volume, to minimize erosion at outlets. The discharge may not result in erosion of any open drainage channels, swales, stream channels or stream banks, upland, or coastal or freshwater wetlands off the project site.

   Whenever practicable, no disturbance activities should take place within 50 feet of any protected natural resource. If disturbance activities take place between 30 feet and 50 feet of any protected natural resource, and stormwater discharges through the disturbed areas toward the protected natural resource, perimeter erosion controls must be doubled. If disturbance activities take place less than 30 feet from any protected natural resource, and stormwater discharges through the disturbed areas toward the protected natural resource, perimeter erosion controls must be doubled and disturbed areas must be temporarily or permanently stabilized within 7 days.

   NOTE: Buffers improve water quality by helping to filter pollutants in run-off both during and after construction. Minimizing disturbed areas through phasing limits the amount of exposed soil on the site through retention of natural cover and by retiring areas as permanently stabilized. Less exposed soil results in fewer erosion controls to install and maintain. If work within an area is not anticipated to begin within two weeks' time, consider leaving the area in its naturally existing cover.

   NOTE: Many construction activities within 75 feet of a protected natural resource require a permit under the Natural Resources Protection Act prior to initiation. For more information regarding the applicability of the NRPA to your project, you can visit the Department's website at http://www.maine.gov/dep/land/nrpa/index.html or contact staff of the Division of Land Resource Regulation at the nearest regional office.

2. **Sediment barriers.** Prior to construction, properly install sediment barriers at the downgradient edge of any area to be disturbed and adjacent to any drainage channels within the disturbed area. Sediment barriers should be installed downgradient of soil or sediment stockpiles and stormwater prevented from running onto the stockpile. Maintain the sediment barriers by removing accumulated sediment, or removing and replacing the barrier, until the disturbed area is permanently stabilized. Where a

discharge to a storm drain inlet occurs, if the storm drain carries water directly to a surface water and you have authority to access the storm drain inlet, you must install and maintain protection measures that remove sediment from the discharge.

3. **Stabilized construction entrance.** Prior to construction, properly install a stabilized construction entrance (SCE) at all points of egress from the site. The SCE is a stabilized pad of aggregate, underlain by a geotextile filter fabric, used to prevent traffic from tracking material away from the site onto public ROWs. Maintain the SCE until all disturbed areas are stabilized.

4. **Temporary stabilization.** Within 7 days of the cessation of construction activities in an area that will not be worked for more than 7 days, stabilize any exposed soil with mulch, or other non-erodable cover. Stabilize areas within 75 feet of a wetland or waterbody within 48 hours of the initial disturbance of the soil or prior to any storm event, whichever comes first.

5. **Removal of temporary measures.** Remove any temporary control measures, such as silt fence, within 30 days after permanent stabilization is attained. Remove any accumulated sediments and stabilize.

NOTE: It is recommended that silt fences be removed by cutting the fence materials at ground level to avoid additional soil disturbance.

6. **Permanent stabilization.** If the area will not be worked for more than one year or has been brought to final grade, then permanently stabilize the area within 7 days by planting vegetation, seeding, sod, or through the use of permanent mulch, or riprap, or road sub-base. If using vegetation for stabilization, select the proper vegetation for the light, moisture, and soil conditions; amend areas of disturbed subsoils with topsoil, compost, or fertilizers; protect seeded areas with mulch or, if necessary, erosion control blankets; and schedule sodding, planting, and seeding so to avoid die-off from summer drought and fall frosts. Newly seeded or sodded areas must be protected from vehicle traffic, excessive pedestrian traffic, and concentrated runoff until the vegetation is well-established with 90% cover by healthy vegetation. If necessary, areas must be reworked and restabilized if germination is sparse, plant coverage is spotty, or topsoil erosion is evident. One or more of the following may apply to a particular site.

   (a) Seeded areas. For seeded areas, permanent stabilization means a 90% cover of the disturbed area with mature, healthy plants with no evidence of washing or rilling of the topsoil.

   (b) Sodded areas. For sodded areas, permanent stabilization means the complete binding of the sod roots into the underlying soil with no slumping of the sod or die-off.

   (c) Permanent Mulch. For mulched areas, permanent mulching means total coverage of the exposed area with an approved mulch material. Erosion Control Mix may be used as mulch for permanent stabilization according to the approved application rates and limitations.

   (d) Riprap. For areas stabilized with riprap, permanent stabilization means that slopes stabilized with riprap have an appropriate backing of a well-graded gravel or approved geotextile to prevent soil movement from behind the riprap. Stone must be sized appropriately. It is recommended that angular stone be used.

   (e) Agricultural use. For construction projects on land used for agricultural purposes (e.g., pipelines across crop land), permanent stabilization may be accomplished by returning the disturbed land to agricultural use.

(f) Paved areas. For paved areas, permanent stabilization means the placement of the compacted gravel subbase is completed, provided it is free of fine materials that may runoff with a rain event

(g) Ditches, channels, and swales. For open channels, permanent stabilization means the channel is stabilized with a 90% cover of healthy vegetation, with a well-graded riprap lining, turf reinforcement mat, or with another non-erosive lining such as concrete or asphalt pavement. There must be no evidence of slumping of the channel lining, undercutting of the channel banks, or down-cutting of the channel."

7. **Winter Construction.** "Winter construction" is construction activity performed during the period from November 1 through April 15. If disturbed areas are not stabilized with permanent measures by November 1 or new soil disturbance occurs after November 1, but before April 15, then these areas must be protected and runoff from them must be controlled by additional measures and restrictions.

(a) Site Stabilization. For winter stabilization, hay mulch is applied at twice the standard temporary stabilization rate. At the end of each construction day, areas that have been brought to final grade must be stabilized. Mulch may not be spread on top of snow.

(b) Sediment Barriers. All areas within 75 feet of a protected natural resource must be protected with a double row of sediment barriers.

(c) Ditch. All vegetated ditch lines that have not been stabilized by November 1, or will be worked during the winter construction period, must be stabilized with an appropriate stone lining backed by an appropriate gravel bed or geotextile unless specifically released from this standard by the Department.

(d) Slopes. Mulch netting must be used to anchor mulch on all slopes greater than 8% unless erosion control blankets or erosion control mix is being used on these slopes.

NOTE: The Department has prepared protocols for the control of erosion and sedimentation during the winter months. See "Maine Erosion and Sediment Control BMPs Maine Department of Environmental Protection."

8. **Stormwater channels.** Ditches, swales, and other open stormwater channels must be designed, constructed, and stabilized using measures that achieve long-term erosion control. Ditches, swales and other open stormwater channels must be sized to handle, at a minimum, the expected volume run-off. Each channel should be constructed in sections so that the section's grading, shaping, and installation of the permanent lining can be completed the same day. If a channel's final grading or lining installation must be delayed, then diversion berms must be used to divert stormwater away from the channel, properly-spaced check dams must be installed in the channel to slow the water velocity, and a temporary lining installed along the channel to prevent scouring. Permanent stabilization for channels is addressed under Appendix A(5)(g) above.

(a) The channel should receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or side slopes.

(b) When the watershed draining to a ditch or swale is less than 1 acre of total drainage and less than ¼ acre of impervious area, diversion of runoff to adjacent wooded or otherwise vegetated buffer areas is encouraged where the opportunity exists.

9. **Sediment basins.** Sediment basins must be designed to provide storage for either the calculated runoff from a 2-year, 24-hour storm or provide for 3,600 cubic feet of capacity per acre draining to the basin. Outlet structures must discharge water from the surface of the basin whenever possible. Erosion controls and velocity dissipation devices must be used if the discharging waters are likely to create erosion. Accumulated sediment must be removed as needed from the basin to maintain at least ½ of the design capacity of the basin.

   The use of cationic treatment chemicals, such as polymers, flocculants, or other chemicals that contain an overall positive charge designed to reduce turbidity in stormwater must receive prior approval from the Department. When requesting approval to use cationic treatment chemicals, you must describe appropriate controls and implementation procedures to ensure the use will not lead to a violation of water quality standards. In addition, you must specify the type(s) of soil likely to be treated on the site, chemicals to be used and how they are to be applied and in what quantity, any manufacturer's recommendations, and any training had by personnel who will handle and apply the chemicals.

10. **Roads.** Gravel and paved roads must be designed and constructed with crowns or other measures, such as water bars, to ensure that stormwater is delivered immediately to adjacent stable ditches, vegetated buffer areas, catch basin inlets, or street gutters.

NOTE: (1) Gravel and paved roads should be maintained so that they continue to conform to this standard in order to prevent erosion problems. (2) The Department recommends that impervious surfaces, including roads, be designed and constructed so that stormwater is distributed in sheet flow to natural vegetated buffer areas wherever such areas are available. Road ditches should be designed so that stormwater is frequently (at least every 100 to 200 feet) discharged via ditch turnouts in sheet flow to adjacent natural buffer areas wherever possible.

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11. **Culverts.** Culverts must be sized to avoid unintended flooding of upstream areas or frequent overtopping of roadways. Culvert inlets must be protected with appropriate materials for the expected entrance velocity, and protection must extend at least as high as the expected maximum elevation of storage behind the culvert. Culvert outlet design must incorporate measures, such as aprons, to prevent scour of the stream channel. Outlet protection measures must be designed to stay within the channel limits. The design must take account of tailwater depth.

12. **Parking areas**. Parking areas must be constructed to ensure runoff is delivered to adjacent swales, catch basins, curb gutters, or buffer areas without eroding areas downslope. The parking area's subbase compaction and grading must be done to ensure runoff is evenly distributed to adjacent buffers or side slopes. Catch basins must be located and set to provide enough storage depth at the inlet to allow inflow of peak runoff rates without by-pass of runoff to other areas.

13. **Additional requirements.** Additional requirements may be applied on a site-specific basis.

APPENDIX B. Inspection and maintenance

This appendix applies to all projects, except that a project that is eligible for stormwater PBR need only meet the standards in Section 1.

See Appendix D(5) for additional maintenance requirements related to infiltration of stormwater.

1. **During construction.** The following standards must be met during construction.

   (a) Inspection and corrective action. Inspect disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. Inspect these areas at least once a week as well as before and within 24 hours after a storm event (rainfall), and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct the inspections.

   (b) Maintenance. If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If additional BMPs or significant repair of BMPs are necessary, implementation must be completed within 7 calendar days and prior to any storm event (rainfall). All measures must be maintained in effective operating condition until areas are permanently stabilized.

   (c) Documentation. Keep a log (report) summarizing the inspections and any corrective action taken. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicles access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

   The log must be made accessible to Department staff and a copy must be provided upon request. The permittee shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

2. **Post-construction.** The following standards must be met after construction.

   (a) Plan. Carry out an approved inspection and maintenance plan that is consistent with the minimum requirements of this section. The plan must address inspection and maintenance of the project's permanent erosion control measures and stormwater management system. This plan may be combined with the plan listed in Section 2(a) of this appendix. See Section 7(C)(2) for submission requirements.

   (b) Inspection and maintenance. All measures must be maintained in effective operating condition. A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct the inspections. The following areas, facilities, and measures must be inspected and identified deficiencies must be corrected. Areas, facilities, and measures other than those listed below may also require inspection on a specific site. Inspection or maintenance tasks other than those discussed below must be included in the maintenance plan developed for a specific site.

NOTE: Expanded and more-detailed descriptions for specific maintenance tasks may be found in the Maine DEP's "Stormwater Management for Maine: Best Management Practices."

(i) Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows. See permanent stabilization standards in Appendix A(5).

(ii) Inspect ditches, swales and other open stormwater channels in the spring, in late fall, and after heavy rains to remove any obstructions to flow, remove accumulated sediments and debris, to control vegetated growth that could obstruct flow, and to repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or sideslopes.

(iii) Inspect culverts in the spring, in late fall, and after heavy rains to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to repair any erosion damage at the culvert's inlet and outlet.

(iv) Inspect and clean out catch basins. Clean-out must include the removal and legal disposal of any accumulated sediments and debris at the bottom of the basin, at any inlet grates, at any inflow channels to the basin, and at any pipes between basins. If the basin outlet is designed to trap floatable materials, then remove the floating debris and any floating oils (using oil-absorptive pads).

(v) Inspect resource and treatment buffers once a year for evidence of erosion, concentrating flow, and encroachment by development. If flows are concentrating within a buffer, site grading, level spreaders, or ditch turn-outs must be used to ensure a more even distribution of flow into a buffer. Check down slope of all spreaders and turn-outs for erosion. If erosion is present, adjust or modify the spreader's or turnout's lip to ensure a better distribution of flow into a buffer. Clean-out any accumulation of sediment within the spreader bays or turn-out pools.

(vi) Inspect at least once per year, each stormwater management pond or basin, including the pond's embankments, outlet structure, and emergency spillway. Remove and dispose of accumulated sediments in the pond. Control woody vegetation on the pond's embankments.

(vii) Inspect at least one per year, each underdrained filter, including the filter embankments, vegetation, underdrain piping, and overflow spillway. Remove and dispose of accumulated sediments in the filter. If needed, rehabilitate any clogged surface linings, and flush underdrain piping.

(viii) Inspect each manufactured system installed on the site, including the system's inlet, treatment chamber(s), and outlet at least once per year, or in accordance with the maintenance guidelines recommended by the manufacturer based on the estimated runoff and pollutant load expected to the system from the project. Remove and dispose of accumulated sediments,

debris, and contaminated waters from the system and, if applicable, remove and replace any clogged or spent filter media.

(c) Regular maintenance

(i) Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader. Grading of gravel roads, or grading of the gravel shoulders of gravel or paved roads, must be routinely performed to ensure that stormwater drains immediately off the road surface to adjacent buffer areas or stable ditches, and is not impeded by accumulations of graded material on the road shoulder or by excavation of false ditches in the shoulder. If water bars or open-top culverts are used to divert runoff from road surfaces, clean-out any sediments within or at the outlet of these structures to restore their function.

(ii) Manage each buffer's vegetation consistently with the requirements in any deed restrictions for the buffer. Wooded buffers must remain fully wooded and have no disturbance to the duff layer. Vegetation in non-wooded buffers may not be cut more than three times per year, and may not be cut shorter than six inches.

NOTE: Contact the Department's Division of Watershed Management (Maine DEP) for assistance developing inspection and maintenance requirements for other drainage control and runoff treatment measures installed on the site. The maintenance needs for most measures may be found in the Maine DEP's "Stormwater Management for Maine: Best Management Practices."

(d) Documentation. Keep a log (report) summarizing inspections, maintenance, and any corrective actions taken. The log must include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal. The log must be made accessible to Department staff and a copy provided to the Department upon request. The permittee shall retain a copy of the log for a period of at least five years from the completion of permanent stabilization.

3. **Re-certification.** Submit a certification of the following to the Department within three months of the expiration of each five-year interval from the date of issuance of the permit.

(a) Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

(b) Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.

(c) Maintenance. The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the Department, and the maintenance log is being maintained.

Municipalities with separate storm sewer systems regulated under the Maine Pollutant Discharge Elimination System (MPDES) Program may report on all regulated systems under their control as part of their required annual reporting in lieu of separate certification of each system. Municipalities not regulated by the MPDES Program, but that are responsible for maintenance of permitted stormwater systems, may report on multiple stormwater systems in one report.

4. **Duration of maintenance.** Perform maintenance as described and required in the permit unless and until the system is formally accepted by the municipality or quasi-municipal district, or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system. If a municipality or quasi-municipal district chooses to accept a stormwater management system, or a component of a stormwater system, it must provide a letter to the Department stating that it assumes responsibility for the system. The letter must specify the components of the system for which the municipality or district will assume responsibility, and that the municipality or district agrees to maintain those components of the system in compliance with Department standards. Upon such assumption of responsibility, and approval by the Department, the municipality, quasi-municipal district, or association becomes a co-permittee for this purpose only and must comply with all terms and conditions of the permit.

5. **Additional requirements.** Additional requirements may be applied on a site-specific basis.

APPENDIX C. Housekeeping

These performance standards apply to all projects except for stormwater PBR projects.

1. **Spill prevention.** Controls must be used to prevent pollutants from construction and waste materials stored on site to enter stormwater, which includes storage practices to minimize exposure of the materials to stormwater. The site contractor or operator must develop, and implement as necessary, appropriate spill prevention, containment, and response planning measures.

   NOTE: Any spill or release of toxic or hazardous substances must be reported to the Department. For oil spills, call 1-800-482-0777 which is available 24 hours a day. For spills of toxic or hazardous material, call 1-800-452-4664 which is available 24 hours a day. For more information, visit the Department's website at : http://www.maine.gov/dep/spills/emergspillresp/

2. **Groundwater protection.** During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials. Any project proposing infiltration of stormwater must provide adequate pre-treatment of stormwater prior to discharge of stormwater to the infiltration area, or provide for treatment within the infiltration area, in order to prevent the accumulation of fines, reduction in infiltration rate, and consequent flooding and destabilization.

   See Appendix D for license by rule standards for infiltration of stormwater.

   NOTE: Lack of appropriate pollutant removal best management practices (BMPs) may result in violations of the groundwater quality standard established by 38 M.R.S.A. §465-C(1).

3. **Fugitive sediment and dust.** Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control, but other water additives may be considered as needed. A stabilized construction entrance (SCE) should be included to minimize tracking of mud and sediment. If off-site tracking occurs, public roads should be swept immediately and no less than once a week and prior to significant storm events. Operations during dry months, that experience fugitive dust problems, should wet down unpaved access roads once a week or more frequently as needed with a water additive to suppress fugitive sediment and dust."

   NOTE: Dewatering a stream without a permit from the Department may violate state water quality standards and the Natural Resources Protection Act.

4. **Debris and other materials.** Minimize the exposure of construction debris, building and landscaping materials, trash, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials to precipitation and stormwater runoff. These materials must be prevented from becoming a pollutant source.

   NOTE: To prevent these materials from becoming a source of pollutants, construction and post-construction activities related to a project may be required to comply with applicable

provision of rules related to solid, universal, and hazardous waste, including, but not limited to, the Maine solid waste and hazardous waste management rules; Maine hazardous waste management rules; Maine oil conveyance and storage rules; and Maine pesticide requirements.

5. **Excavation de-watering.** Excavation de-watering is the removal of water from trenches, foundations, coffer dams, ponds, and other areas within the construction area that retain water after excavation. In most cases the collected water is heavily silted and hinders correct and safe construction practices. The collected water removed from the ponded area, either through gravity or pumping, must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the Department.

NOTE: Dewatering controls are discussed in the "Maine Erosion and Sediment Control BMPs, Maine Department of Environmental Protection."

6. **Authorized Non-stormwater discharges.** Identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:

(a) Discharges from firefighting activity;

(b) Fire hydrant flushings;

(c) Vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);

(d) Dust control runoff in accordance with permit conditions and Appendix (C)(3);

(e) Routine external building washdown, not including surface paint removal, that does not involve detergents;

(f) Pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;

(g) Uncontaminated air conditioning or compressor condensate;

(h) Uncontaminated groundwater or spring water;

(i) Foundation or footer drain-water where flows are not contaminated;

(j) Uncontaminated excavation dewatering (see requirements in Appendix C(5));

(k) Potable water sources including waterline flushings; and

(l) Landscape irrigation.

7. **Unauthorized non-stormwater discharges .** The Department's approval under this Chapter does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with Appendix C (6). Specifically, the Department's approval does not authorize discharges of the following:

   (a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;

   (b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;

   (c) Soaps, solvents, or detergents used in vehicle and equipment washing; and

   (d) Toxic or hazardous substances from a spill or other release.

(8) Additional requirements. Additional requirements may be applied on a site-specific basis.

APPENDIX D. Infiltration basins, dry wells, and subsurface fluid distribution systems

Any project proposing infiltration of stormwater must provide adequate pre-treatment of stormwater prior to discharge of stormwater to the infiltration area, or provide for treatment within the infiltration area. Pre-treatment systems provide for removal of a portion of pollutant load before the runoff enters the infiltration area. The infiltration area must minimize discharge of soluble pollutants to groundwater, and must be maintained to assure that its capacity for infiltration and pollutant removal is unimpaired. The Department will determine the adequacy of a pre-treatment system or treatment system based on its assessment of factors including but not limited to: nature of activities with exposure to stormwater within the drainage area of the infiltration system; area to be treated; proximity of drinking water wells; and site conditions, including soils, depth to high groundwater table and depth to bedrock. All drywells and subsurface fluid distribution systems must be registered with and meet all other requirements of the department's Underground Injection Control Program.

Lack of appropriate pollutant removal best management practices (BMPs) may result in violations of the groundwater quality standard established by 38 M.R.S. § 465-C(1). Many pollutants found in stormwater accumulate in the soils in infiltration areas and are released due to chemical changes that occur in the infiltration area over time. Consequently, runoff quality often underestimates the long-term adverse effects on groundwater quality due to these contaminants, and cannot be used as a direct indicator of anticipated adverse effects. Maintenance of the infiltration area may be required to prevent clogging, development of anaerobic conditions, or other conditions that could impair the functioning of the area or increase the risk of pollutant discharge from the infiltration area.

Provided that the standards in this appendix are met, a discharge to groundwater from a stormwater infiltration system will not have a significant effect on the quality or classification of waters of the state and is considered a *de minimis* discharge that is exempt from the waste discharge licensing requirement of the Waste Discharge Licensing Program pursuant to 38 M.R.S. § 413(1-A). However, nothing in this Chapter may be construed to limit the Department's licensing or enforcement authority under 38 M.R.S. Articles 4-A or 6. The Department may make a site-specific determination that discharges from a site will be *de minimis* in certain cases where the separation from bedrock and seasonal high water table cannot be met and potential discharges of pollutants to groundwater are absent or minimal. All other requirements of this Appendix must be met, and this *de minimis* finding does not constitute a permit shield or other exemption from the requirements of 38 M.R.S. Articles 4-A and 6. Regardless of this determination, the Department may require monitoring of water levels or water quality to demonstrate compliance with applicable requirements of 38 M.R.S. Articles 4-A and 6, and other requirements of this Chapter.

NOTE: Stormwater infiltration systems not meeting the standards described in Appendix D may require a waste discharge permit. An infiltration system serving a development regulated under the Site Location of Development Act may be required to meet additional standards. For definitions and provisions associated with the Waste Discharge program, see 38 M.R.S.A. §§ 413 *et seq.*, and department Rules chapters 520 *et seq.*

1. **Definitions.** As used in this appendix, the following terms have the following meanings.

(a) Drywell. A well or other facility deeper than it is wide, completed above the water table so that its bottom and sides are typically dry except when receiving fluids.

(b) Infiltration basin. A structure wider than it is deep and designed to hold runoff without any means of discharge other than evapotranspiration, infiltration, or emergency bypass.

(c) Non-stormwater discharges. Any discharge to a stormwater management system that is not composed entirely of stormwater, other than discharges directly resulting from fire-fighting at the facility. Non-stormwater discharges can originate from direct connections to industrial, commercial, or residential facilities, or indirectly as surface or subsurface discharges to the stormwater collection system.

(d) Public water supply. Any publicly or privately-owned water-supply system that serves at least 25 people or 15 service connections for at least 60 days per year.

(e) Subsurface fluid distribution system. Any system designed to dispose of stormwater beneath the surface of the earth, including, but not limited to, wells, settling tanks, disposal fields, pretreatment filters, pipes, or any other fixture, mechanism, or apparatus used for this purpose.

(f) Zone of contribution or delineated contributing area. The area that contributes water to a water supply well, generally represented as the projection of the three-dimensional volume of water flowing to a discharging well onto a two-dimensional map view.

2. Limitations on the use of infiltration for stormwater treatment

(a) Storage or handling of petroleum products, pesticides, fertilizers, and hazardous substances. Infiltration of runoff from a draining area on which petroleum products, pesticides, fertilizers, hazardous substances, or other materials with the potential to contaminate groundwater are stored or handled, is not allowed unless containment structures are used to isolate these materials from precipitation and provided that they are operated in accordance with a spill prevention, control, and countermeasure plan; operation and maintenance plan; or equivalent document as required by Section 7(D)(5)(c)(vi) of this Chapter. This restriction does not apply to storage of heating oil in a tank or tanks with a total volume of 550 gallons or less and serving a single consumptive residential or commercial user.

(b) Storage or handling of road salt or similar materials. Infiltration of runoff from an area on which road salt or similar materials are stored or handled in bulk is not allowed.

(c) Containment structures. Storage and handling areas for petroleum products, road salt, and other potential groundwater contaminants may be isolated within containment structures, buildings, or other enclosures to effectively remove those areas from exposure to stormwater so that infiltration structures may be constructed to serve the remaining drainage areas, provided that the facility is operated in accordance with a spill prevention, control, and countermeasures plan; operation and maintenance plan; or equivalent document as required by Section (7)(D)(5)(c)(vi) of this Chapter.

(d) Infiltration of runoff from asphalt or concrete paving or equivalent material. Infiltration of runoff from a total of one acre or more of asphalt or concrete paving or equivalent material at a given project is not allowed except by means of infiltration basins located, designed, operated, and maintained in accordance with this appendix. This limitation does not apply to roads entirely within subdivisions consisting of lots for single-family detached residential housing or to use of pavement alternatives approved by the Department. Use of pavement alternatives is limited by sections 2(a) and 2(b) of this Appendix, and other requirements of this chapter.

(e) Infiltration of runoff from lawn areas, vegetated areas, and roofs. Infiltration of runoff from lawn areas and other vegetated areas, playing fields, and roofs of residential and commercial structures where no manufacturing or processing occurs, other than for home-based industries, is allowed, provided that any application of fertilizers, pesticides, and similar turf-management chemicals, is in accordance with a Department-approved management plan and no part of the areas used for infiltration is in the delineated contributing area of a well that is part of a public water supply system. Lawn areas on individual lots that are sold or developed as part of a residential subdivision consisting of lots for single-family detached residential housing are exempt from this requirement.

(f) Non-stormwater discharges, and stormwater from off-site drainage systems. Non-stormwater discharges and stormwater from off-site drainage systems may not be discharged to an infiltration system, unless the Department determines the additional discharge will not have a negative impact on groundwater quality.

(g) Industrial and vehicle maintenance facilities. Infiltration of runoff from industrial facilities where materials are stored or processed in areas exposed to precipitation and vehicle maintenance facilities where maintenance or storage of equipment occurs in areas exposed to precipitation is not permitted, unless the Department determines the additional discharge will not have a negative impact on groundwater quality.

(h) Certain commercial facilities. Infiltration of runoff from facilities with high use parking lots, drive-up windows, or similar sources of elevated hydrocarbon pollution, is not permitted, unless the Department determines the additional discharge will not have a negative impact on groundwater quality.

(i) Use of vegetated soil filter beds. Discharges to groundwater from infiltrating soil filters as described in Appendix E, subsection 4(c)(ii) are considered *de minimis* discharges for the purposes of the Waste Discharge Licensing Program, and do not require a waste discharge license.

3. Location

(a) Drinking water supply wells. Unless specifically approved by the Department in consultation with the Department of Health and Human Services' Drinking Water Program, infiltration systems must be located no less than 300 feet from any private drinking water supply well, must not be located within the delineated contributing area of a public drinking water supply well, and must be located as far downgradient of any drinking water supply well as practical. Department approval of a reduced setback will be subsequent to Department review and approval of a study by a Maine Certified Geologist demonstrating that discharges from the infiltration system will not result in an unreasonable adverse impact on the quality or quantity of water provided by the well or wells. The Department may require a groundwater monitoring program or place other requirements on the design and operation of the infiltration system or infiltrating soil filter for the protection of the water supply well or wells.

(b) Subsurface wastewater disposal systems. Infiltration systems must be located to meet or exceed the minimum setback distances from existing and proposed subsurface wastewater disposal systems provided in Table 7B of the Maine Subsurface Wastewater Disposal Rules, 144A CMR 241. Setback distances may be required by the Department, the local plumbing inspector, or the Department of Health and Human Services' Division of Environmental Health. An infiltration

system is considered a major watercourse for the purposes of Table 700.2 determining applicable setback requirements of the Maine Subsurface Wastewater Disposal Rules, 144A CMR 241.

Allowance for lesser setbacks for onsite disposal systems or other disposal systems owned or controlled by the applicant may be requested from the Department, the Department of Health and Human Services, and the local plumbing inspector, but must be approved as part of the Department permit. Infiltration systems must be located as far downgradient of any component of a subsurface wastewater disposal system as practical.

(c) Protected natural resources. Infiltration systems must be located no less than 25 feet from any protected natural resources as defined at 38 M.R.S.A §480-B, other than fragile mountain areas, and must be located as far upgradient of any such resources as practical.

(d) Surface grade. The pre-construction surface grade must be 20% or less at the location of the proposed infiltration system.

(e) Separation from bedrock. Infiltration systems serving one acre or more of impervious area must be located in areas with more than five feet of saturated overburden above the bedrock surface, as measured during the seasonal low water table. This restriction does not apply to runoff from areas of non-asphalt roofing on a building or other facility in which no manufacturing or processing occurs, other than for home-based industries. Separation from bedrock and depth to the water table may be demonstrated by means of test pits, borings, or similar invasive explorations, or by non-invasive geophysical methods such as seismic surveys. Thickness of blast rock or similar disturbed or artificially placed material is not counted toward the required thickness of overburden; blast rock or similar material is not considered as bedrock. Demonstration of a continuous in-situ layer, at least five feet in thickness, of unfractured basal till or marine, estuarine, or lacustrine clay between bedrock and the infiltration structure may substitute for this requirement, at the discretion of the Department.

4. Design and operation

(a) Soil permeability. The permeability of the soil at the depth of the base of the proposed infiltration system must be no greater than 2.41 inches per hour, unless a medium with equivalent pollutant removal properties is approved by the Department. Infiltration basins must be lined with a suitable soil filter material, which must be installed over the base and sides of the proposed infiltration system. The soil filter material must be fine enough to filter fine sediments and provide effective absorption of pollutants, but coarse enough to slowly drain the stored stormwater within a 24 to 48 hour period. The soil filter material must be well blended and graded and must contain sufficient organic matter to facilitate the removal and treatment of hydrocarbons. Unless otherwise approved by the Department on a case-by-case basis, the soil filter must be at least 18 inches thick, and the surface area of the filter must be no less than 5% of the contributing impervious drainage area. The Department may consider alternative lining materials, such as materials with higher organic content, provided that the applicant can demonstrate that contact time, pollutant removal, and other relevant features of the liner are at least as protective of groundwater quality. The Department may require monitoring of groundwater quality to determine the effectiveness of any treatment.

(b) Vegetation of infiltration basins. All areas of the basin not covered by stone or other non-vegetative covers must be maintained as grass.

(c) Separation from seasonal high water table. The bottom of the infiltration system, including any stone layer or other material below the depth of any manufactured components of the system, must be at least three feet above the elevation of the seasonal high water table.

(d) Time for drainage. The infiltration system, including the full thickness of the soil filter bed, must be designed to drain completely within 24 to 48 hours following the runoff event. The applicant must provide information on the permeability of the native soils at the depth of the proposed basin, such as in-place well or parameter testing, analyses of soil gradation, or other means acceptable to the Department, indicating that the permeability of the native soils is suitable to allow such drainage, and the Department may require an analysis demonstrating that the level of water table mounding under the system will be below the bottom of the soil filter within 48 hours after the end of the storm event.

(e) Impact on depth to groundwater. Infiltration of stormwater may not increase the elevation to the seasonal high water table beneath a surface-irrigation site, land-disposal area for septage or other waste, or other waste management or wastewater management facility, without specific approval by the Department and, if applicable, the Department of Health and Human Services.

(f) Impact on groundwater flow. Stormwater infiltration may not affect the direction of groundwater flows so as to impair any groundwater monitoring programs or cause the migration of existing contaminated groundwater that would result in unreasonable adverse impact on the quality of surface water, groundwater, or drinking water supplies, or to impair any groundwater monitoring programs.

(g) Mounding and seepage. Groundwater mounding due to stormwater infiltration, especially on clay, bedrock, or other low-permeability surfaces, or stormwater discharges to highly permeable materials such as gravel or blast rock, may not cause seepage, high pore-pressures, or other effects that will adversely affect the stability of slopes or conditions of existing infrastructure in the vicinity of the activity. A qualified professional shall assess the potential for seepage and reduction in slope stability, and submit a report of findings, including logs of test borings or other subsurface explorations, modeling, or other means of analysis as determined to be necessary and applicable.

(h) Conveyance of overflow. Infiltration systems must include measures to convey overflow to a stable discharge location.

(i) Control of access. Access to any infiltration area must be controlled during and after construction to prevent compaction of the soil.

(j) Sediment discharge to infiltration structures. Grassed swales, underdrained swales, sediment traps, or similar practices must be incorporated in the design to minimize discharge of sediment to the infiltration system.

(k) Devices to trap petroleum products. Dry wells or subsurface fluid distribution systems receiving runoff from areas of asphalt or concrete paving not prohibited from using infiltration under Section 2 must include sump skimmers, sorbent booms, or similar devices to remove petroleum products from runoff. These devices must provide enough sorptive capacity to trap petroleum products for at least six months after construction and after any resurfacing, repaving ~~or~~ reconstruction, or similar activity.

5. Maintenance

(a) Snow storage prohibited. Snow removed from any on-site or off-site areas may not be stored over an infiltration area.

(b) Groundwater monitoring. Groundwater quality monitoring may be required by the Department if necessary to demonstrate that the infiltration system will operate in compliance with the Water Classification Program. Groundwater quality monitoring will generally be required for activities infiltrating water from areas of heavy turf-chemical use, such as golf courses and certain athletic fields, and large connected impervious areas, such as parking lots and runways. Groundwater quality monitoring will generally not be required for activities infiltrating water from lawn areas and other vegetated areas, residential developments except for those with large parking areas, playing fields, low-use roads such as residential subdivision roads, and roofs of residential and commercial structures.

(c) Pollution-control devices. Pollution-control devices such as oil–water separators, skimmers, and booms must be inspected regularly to determine if they need to be cleaned or replaced.

(d) Observation wells, measure of sediment accumulation, and points of access for sediment removal. Observation wells to determine the system's performance and access points to allow for the removal of accumulated sediment must be included in the design of subsurface fluid distribution systems. Dry wells and infiltration basins must have staff gauges, marked rods, or similar instrumentation to measure the accumulation of sediment and determine how quickly the system drains after a storm. The maintenance plan for the infiltration system prepared in accordance with Appendix B, Section 2 must indicate the expected rate of drainage of the infiltration system and provide for removal of sediment from the infiltration system.

(e) Sediment removal and maintenance of system performance. Sediment must be removed from the system to prevent deterioration of system performance. The system must be rehabilitated or replaced if its performance is degraded to the point that applicable stormwater standards are not met.

6. Additional requirements. Additional requirements may be applied on a site-specific basis.

APPENDIX E. Stormwater basins, ponds and underdrained vegetated soil filter beds

This appendix applies to all projects using stormwater basins, ponds or underdrained, vegetated soil filters, and outlines the criteria for siting, designing, and constructing detention basins and ponds used for meeting the Department's stormwater management rules. The Department may require additional measures to address geotechnical, hydrologic, structural, hydraulic, and construction concerns. For example, the Department may require that the designer assess the impoundment's hazard potential for determining the appropriate design storm for the impoundment because the design storm may have a greater rainfall depth and larger recurrence interval than the 25-year, 24-hour storm used for the Department's stormwater management program.

1. **Basin and pond types.** A variety of stormwater management basins and ponds are used to control runoff quantity and improve runoff quality from developments. All need professional siting and design to avoid unreasonable impacts to wetlands, surface waters, and groundwater and to ensure long-term stability, pollutant removal performance, and control of peak flow rates. General restrictions and requirements for all basins and ponds are provided below.

NOTE: Examples of siting and design criteria for each type of stormwater management structure can be found in the Department's manual "Stormwater Management for Maine: Best Management Practices."

2. **Siting restrictions.** The Department has placed the following general restrictions on the siting of stormwater basins and ponds. Additional restrictions may be required based on drainage, geotechnical, wildlife, and safety concerns.

   (a) Rivers, streams and brooks. A basin or pond may not be located in or within 75 feet, measured horizontally, of the normal high water line of a river, stream, or brook (intermittent or perennial) unless approved by the Department pursuant to, or exempted from, the Natural Resources Protection Act (NRPA).

   (b) Wetlands. A basin or pond may not be constructed in or adjacent to a wetland and no dam, wall, berm, or embankment may be placed within or adjacent to a wetland as part of a stormwater management system, unless approved by the Department pursuant to the NRPA. The use of natural wetlands for runoff detention or retention storage to meet the standards in this chapter is prohibited unless the flooding standards in Section 4(H) are met and a Natural Resources Protection Act permit is obtained if required.

   (c) Discharge of flows. When detention is used on a site, the pre-construction flow condition to off-site areas, whether sheet or concentrated, must be maintained in the post-construction condition unless drainage easements are obtained from affected property owners.

   (d) Underground detention. Where underground detention is required because of limited space or other restrictions, runoff must at a minimum receive treatment to remove sediment and debris prior to discharge to the underground storage facility. The Department may require treatment to remove other pollutants if it determines that underground storage poses a threat to groundwater quality in which case all requirements in Appendix D must be met. The outlet control structure and the storage chambers for the underground detention structure must be accessible from the surface for maintenance, debris removal, and, if necessary, future modification.

3. **Pond and basin design requirements**

(a) Principal spillways. Basins and ponds designed to control flows so as to meet the flooding standard must have principal spillways capable of controlling runoff from 24-hour storms of the 2-year, 10-year, and 25-year frequencies. Basins and ponds designed to provide channel protection detention must have principal spillways capable of providing extended detention of twelve hours for runoff from a 24-hour storm of a one-year frequency. In both cases, the principal spillway must control the maximum flows from the design storm(s) without activating the emergency spillway.

(i) Trash racks. Any pipe, orifice, or culvert serving as a basin or pond outlet must have a trash rack to control clogging by debris and to provide safety to the public. The surface area of each rack must be at least four times the outlet opening it is protecting. A significantly larger trash rack ratio may be required for openings less than twenty-four inches in diameter. The spacing between rack bars must be no more than six inches or one-half the dimension of the smallest outlet opening behind it, whichever is less. If possible, trash racks should be inclined so to be self-cleaning.

(ii) Seepage controls. All smooth outlet pipes greater than eight inches and all corrugated outlet pipes greater than 12 inches must have seepage controls to prevent the piping of soil along the outside of the pipe. This standard applies to both dry detention basins and ponds with permanent pools.

(iii) Anti-floatation design. All outlets employing a riser structure must be designed to prevent the riser from floating.

(b) Emergency spillways. Each stormwater basin and pond must have an emergency spillway designed to independently convey the routed runoff from at least the 25-year, 24-hour storm (as described under Section 3(c)(i) (crest elevation) of this Appendix. All spillways must meet the following criteria.

(i) Location. Emergency spillways must be located on undisturbed, non-fill soil wherever possible. If the spillway must be located on fill soils, then the spillway must be horizontally offset at least 20 feet from the principal outlet and be designed with a riprap lining, reinforced-turf lining, or a non-flexible lining.

(ii) Exit channel grade. The maximum grade of the spillway's exit channel may not exceed 20% unless a non-flexible lining is used to control erosion within the channel. Vegetation, reinforced turf, riprap, and modular blocks are considered flexible linings. All linings must be evaluated for stability at the channel grade chosen.

(iii) Flow depth. The design flow depth in the exit channel may not exceed one-half the d50 stone size for channels lined with riprap. The design flow depth in the exit channel may not exceed three inches for channels lined with un-reinforced vegetation.

(c) Embankments. Basin and pond embankments must be designed by a professional engineer registered in the State of Maine. The design must include an investigation of the subsurface conditions at the proposed embankment location to evaluate settlement potential, groundwater impacts, and the need for seepage controls. The Department will require the submittal of a geotechnical report from a geotechnical engineer for any embankment over 10 feet in effective height or which the Department determines poses a significant threat to downstream property or life.

(i) Crest elevation. The minimum elevation of the top of the settled embankment must be at least one foot above the peak water surface in the basin with the emergency spillway flowing at design depth for the design storm routed through just the emergency spillway.

(ii) Crest width. The minimum crest width for any embankment must be as shown in Table 6:

Table 6
Effective Height of Embankment Based on Crest Width

Effective height of embankment (feet)	**Crest Width (feet)**
less than 10	6
10 - 15	8
15 - 20	10
20 25	12
25 – 35	14
more than 35	15

(iii) Construction. The selection of fill materials must be subject to approval of the design engineer or inspecting engineer. Fill must be free of frozen soil, rocks over six inches, and sod, brush, stumps, tree roots, wood, or other perishable materials. Embankment fills less than 10 feet in fill height must be compacted using compaction methods that would reasonably guarantee that the fill density is at least 90% of the maximum density as determined by standard proctor (ASTM-698). All embankment fills more than 10 feet in fill height must be compacted to at least 90% of the maximum density as determined by standard proctor (ASTM-698) and must have their density verified by field density testing.

(iv) Slopes. The embankment's slopes may not be steeper than 3 horizontal to one vertical.

(d) Gravel outlet with an underdrain. The outlet of wetponds discharging directly to a stream must be designed to meet the general standards for channel protection pursuant to Section 4(c)(2) of this Chapter and must be fitted with a gravel outlet with an underdrain.

(i) Pond bench. The bed of the gravel outlet must be built on a pond bench having a width of at least eight feet and a length that equivalent to 3 feet per 1000 cubic feet of volume for channel protection. The bench elevation must be set at the permanent pool elevation such that the channel protection volume will be stored between the bench surface elevation and the elevation of the principal spillway's lowest control outlet. The bench must be located at or near the end of the pond furthest from the principal inflow.

(ii) Underdrain pipe. The underdrain pipe must be installed down the centerline of the gravel trench. The pipe may be either perforated PVC pipe or corrugated, polyethylene drainage tubing. The slope of the installed underdrain pipe must be 1% or greater.

(iii) Gravel trench. A gravel filled trench with a minimum width of 4 feet and a minimum depth of 3 feet must be installed in the pond bench at least 2 feet from the pond side edge of the bench. The underdrain pipe must be bedded in clean, well-graded gravel (MDOT specification 703.22 Type B) extending 24 inches over the top of the drainage pipe, with at least six inches to the sides of the pipe, and six inches below the pipe.

(iv) Underdrain outlet. The underdrain outlet must discharge to an area capable of withstanding concentrated flows and saturated conditions without eroding.

4. **Vegetated Soil Filter Bed Design Requirements.** Soil filters are designed to provide pollutant removal and channel protection as they provide the slow release of runoff. The filter also provides cooling of the discharge reducing thermal

NOTE: Examples of specific design criteria for each type of filter bed structure and design can be found in the Department's BMP manual "Stormwater Management for Maine."

(a) Soil filter beds designed to meet the general standards for soil filters must be designed to meet the following criteria.

(i) Volume stored and treated. The soil filter basin must store and filter at least 1.0 inch of stormwater runoff from the impervious area draining to it, and 0.4 inches of stormwater runoff from the landscaped area draining to it. A stable overflow outlet must be provided for stormwater in excess of the volume to be stored for treatment.

(ii) Soil filter. The soil filter basin must consist of depressional surface storage over a densely vegetated soil filter that is underlain with underdrain bedding and drained by perforated underdrain pipe. The soil filter material must be fine enough to filter fine sediments and provide effective adsorption of pollutants, but coarse enough to drain the stored volume over a period of no less than 24 hours and no greater than 48 hours. The soil filter material must be well blended and graded and must contain sufficient organic matter to facilitate the removal and treatment of hydrocarbons. Unless otherwise approved by the Department on a case-by-case basis, the soil filter must be at least 18 inches thick and the surface area of the filter must be no less than 5% of the contributing impervious drainage area.

(iii) Basin design. The soil filter must be constructed with an underdrain system and with a liner to prevent infiltration into the in-situ soil unless all the conditions for either (b) or (c) below are met, and must be designed to discharge its stored volume in one of the following two ways. Otherwise, the requirements from Appendix D must be met.

(b) If located over soil in hydrologic group C or D, unless the soil material consists of ablation till, stratified drift or aeolian sand soils, the soil filter may be constructed with an underdrain system and without a liner to prevent infiltration into the in-situ soil if the following conditions are met.

(i) There is a separation in in-situ soils of at least 18 inches between the bottom of the underdrain bedding material and bedrock, and

(ii) The bottom of the filter media is no lower than the elevation of the seasonal high water table; or

(c) If located over highly permeable soils, such as those derived from ablation till, stratified drift, aeolian sand, or other highly permeable overburden, the soil filter may be constructed without

a liner to prevent infiltration into the in-situ soil if it has been constructed with an underdrain system and the following requirements are met:

(i) The filter drains no greater than one acre of asphalt or concrete paving or equivalent material, and no greater than 2 acres of developed land area;

(ii) There is a separation in in-situ soils of at least 18 inches between the bottom of the underdrain bedding material and both the high seasonal water table and bedrock;

(iii) The stored runoff volume is stored to a depth no greater than 18 inches;

(iv) The area draining to the filter does not include any:

a. public roads;

b. fuel service facilities;

c. high use parking lots and drive through lanes;

d. any storage or handling areas for petroleum products, road salt or other potential groundwater contaminants unless those areas are isolated within containment structures that are operated and maintained in accordance with a spill prevention, control and countermeasures plan; operation and maintenance plan; or equivalent document approved by the Department;

e. industrial facilities where facilities are stored and processed in areas exposed to precipitation;

f. vehicle maintenance facilities where maintenance or storage of equipment occurs in areas exposed to precipitation; and

g. lawns not on individual residential lots, unless all application of fertilizers, pesticides and similar turf-management chemicals are performed in accordance with a Department-approved management plan; and

(v) The filter is located no less than 300 feet from any private drinking water supply well, is not located within the delineated contributing area of or closer than 300 feet from any public drinking water supply well, and is located as far down gradient of any drinking water supply well as practicable. The filter must also be set back from any subsurface wastewater disposal system at least the distance required in the Maine Subsurface Water Disposal Rules, 144A CMR 241, for setbacks from watercourses;

(d) If the above requirements and the following additional requirements are met, the filter may be constructed without an underdrain system and may drain in less than 24 hours;

(i) The permeability of the in-situ soils at the elevation of the bottom of the soil filter is greater than the minimum permeability of the soil filter media; and

(ii) An analysis is performed demonstrating that the level of water table mounding under the system will be below the bottom of the soil filter 48 hours after the end of the storm event.

(e) Underdrain pipe bedding. The interface between the underdrain bedding material and the soil filter material must be designed to minimize the risk of clogging at the interface while preventing significant loss of fine soil material from the soil filter layer. The underdrain bedding material must be sufficiently coarse to allow flow of treated water to the underdrain pipe.

(f) Underdrain outlet. The underdrain system and the overflow must discharge to areas capable of withstanding concentrated flows and saturated conditions without eroding.

(g) Non-stormwater discharges, and stormwater from outside drainage systems. Non-stormwater discharges and stormwater from drainage systems outside the project area may not be discharged to the soil filter bed, unless the Department determines the additional discharge will not have a negative impact on groundwater quality.

5. Additional requirements. Additional requirements may be applied on a site-specific basis.

APPENDIX F. Vegetated buffers

This appendix applies to all projects using vegetated buffers for stormwater control. A buffer is a natural vegetated, non-lawn area or areas located down gradient from a project that serves to store and remove pollutants from stormwater runoff flowing from a project. Buffers must not be interrupted by intermittent or perennial stream channels or other drainageways and must have a relatively uniform slope so that stormwater does not concentrate in channels. This appendix describes the design and sizing requirements for vegetated buffers designed to meet the general standards. Requirements are described for four different types of buffers, each of which is appropriate for specific situations.

1. **Types of vegetated buffers.** The applicability of each of the four types of vegetated buffers is as follows.

   (a) Vegetated buffer with stone bermed level lip spreaders. A vegetated buffer with stone bermed level lip spreaders must be used when treating stormwater runoff from any of the following:

      (i) An impervious area greater than one acre;

      (ii) Impervious areas where the flow path across the impervious area exceeds 150 feet; or

      (iii) Developed areas, including lawns and impervious surfaces, where runoff is concentrated, intentionally or unintentionally, so that it does not run off in well-distributed sheet flow when it enters the upper end of a buffer, except that road ditch runoff may be treated using a ditch turn-out buffer.

   (b) Buffer adjacent to the down hill side of a road. A buffer located along the down hill side of a road may only be used when the runoff from the road surface and shoulder sheets immediately into a buffer. In no instance may runoff from areas other than the adjacent road surface and shoulder be directed to these buffers.

   (c) Ditch turn-out buffer. A ditch turn-out buffer may only be used when runoff from a road ditch is diverted to a 20-foot stone bermed level lip spreader that distributes runoff into a buffer. No areas other than the road surface, road shoulder and road ditch may be directed into a buffer. No more than 400 feet of road and ditch may be treated in any ditch turn-out buffer, and no more than 250 feet may be treated if more than one travel lane is draining to the ditch.

   (d) Buffer adjacent to residential, largely pervious or small impervious areas. A buffer adjacent to a residential, largely pervious or small impervious area that does not require that runoff be distributed by means of a level spreader may only be used when:

      (i) A buffer is located immediately downhill of the developed area; and

      (ii) Runoff from the developed area is not concentrated and enters a buffer in well distributed sheet flow.

   Only runoff from the following areas may be treated using this type buffer:

      (iii) A single family residential lot;

(iv) A developed area that is less than 10% impervious where the flow path over the portion of the developed area for which treatment is being credited does not exceed 150 feet; or

(v) An impervious area of less than one acre, where the flow path across the impervious area does not exceed 100 feet.

2. **Design requirements for all buffer types.** The following design requirements apply to all types of buffers.

(a) Topography. The topography of a buffer area must be such that stormwater runoff will not concentrate as it flows across a buffer, but will remain well-distributed. Flow paths of runoff through a buffer must not converge, but must be essentially parallel or diverging.

(b) Vegetative cover. The vegetative cover type of a buffer must be either forest or meadow. In most instances the sizing of a buffer varies depending on vegetative cover type.

(i) Forest buffer. A forest buffer must have a well distributed stand of trees with essentially complete canopy cover, and must be maintained as such. A forested buffer must also have an undisturbed layer of duff covering the mineral soil. Activities that may result in disturbance of the duff layer are prohibited in a buffer.

(ii) Meadow buffer. A meadow buffer must have a dense cover of grasses, or a combination of grasses and shrubs or trees. A buffer must be maintained as a meadow with a generally tall stand of grass, not as a lawn. It must not be mown more than twice per calendar year. If a buffer is not located on natural soils, but is constructed on fill or reshaped slopes, a buffer surface must either be isolated from stormwater discharge until a dense sod is established, or must be protected by a three inch layer of erosion control mix or other woodwaste material approved by the Department before stormwater is directed to it, with vegetation must be established using an appropriate seed mix.

(iii) Mixed meadow and forest buffer. If a buffer is part meadow and part forest, the required sizing of a buffer must be determined as a weighted average, based on the percent of a buffer in meadow and the percent in forest, of the required sizing for meadow and forest buffers.

(c) Deed restrictions and covenants. Areas designated as vegetated buffers must be clearly identified on site plans and protected from disturbance by deed restrictions and covenants.

3. **Design specifications and sizing tables for a vegetated buffer with stone bermed level lip spreaders.** Stormwater runoff must be delivered to a vegetated buffer with stone bermed level lip spreaders in either sheet or concentrated flow. These design specifications direct runoff behind a stone berm constructed along the contour at the upper margin of a buffer area. As a result of restriction of flow through the berm, the runoff then spreads out behind the berm so that it seeps through the entire length of the berm and is evenly distributed across the top of a buffer. The stone must be coarse enough that it will not clog with sediment. The berm must be well-graded and contain some small stone and gravel so that flow through the berm will be restricted enough to cause it to spread out behind the berm.

(a) Stone berm specifications. The stone berm must be at least 1.5 feet high and 2.0 feet across the top with 2:1 side slopes constructed along the contour and closed at the ends. Unless otherwise approved by the Department, the design must include a shallow, 6-inch deep trapezoidal trough with a minimum bottom width of three feet, and with a level downhill edge excavated along the

contour on the uphill edge of the stone berm. Stone for stone bermed level lip spreaders must consist of sound durable rock that will not disintegrate by exposure to water or weather. Fieldstone, rough quarried stone, blasted ledge rock or tailings may be used. The rock must be well-graded within the limits of Table 7, or as otherwise approved by the Department.

Table 7
Percent of Rock Required to Pass Through Square Mesh Sieves

Sieve Designation (Metric)	Sieve Designation (US Customary)	Percent by Weight passing Square Mesh Sieves
300 mm	12 in	100
150 mm	6 in	84-100
75 mm	3 in	68-83
25.4 mm	1 in	42-55
4.75 mm	No. 4	8-12

(b) Buffer sizing. The required size of a buffer area below the stone-bermed level lip spreader varies with the size and imperviousness of the developed area draining to a buffer, the type of soil in a buffer area, the slope of a buffer, and the vegetative cover type. The following table indicates the required berm length per acre of impervious area and lawn draining to a buffer for a given length of flow path through a buffer. Required berm length varies by the Hydrologic Soil Group of the soils in a buffer and by the length of flow path through a buffer. If more than one soil type is found in a buffer, the required sizing of a buffer must be determined as weighted average, based on the percent of a buffer in each soil type, of the required sizing for each soil type buffer. Alternative sizing may be allowed if it is determined by a site-specific hydrologic buffer design model approved by the Department. A buffer meeting this standard is not allowed on Hydrologic Soil Group D soils that are identified as wetland soils, unless measures are taken to improve infiltrative capacity, as approved by the Department. A buffer meeting this standard is not allowed on natural slopes in excess of 15% unless a buffer has been evaluated using a site-specific hydrologic buffer design model approved by the Department, and measures have been included to ensure that runoff remains well-distributed as it passes through a buffer.

Table 8 below applies to a buffer with slopes ranging from 0 to 8%. For a buffer with slopes between 9% and 15%, the indicated berm length must be increased by 20%.

NOTE: The following tables were developed using a 1.25 inch, 24 hour storm of type III distribution, giving a maximum unit flow rate of less than 0.009 cfs per foot.

Table 8
Sizing Requirements for buffer with 0–8% slope and stone bermed level lip spreader.

Hydrologic Soil Group	Length of flow path through buffer (feet)	Berm length for a forested buffer (feet)		Berm length for a meadow buffer (feet)	
		Per acre of impervious area	Per acre of lawn	Per acre of impervious area	Per acre of lawn
Soil Group A	75	75	25	125	35
	100	65	20	75	25
	150	50	15	60	20
Soil Group B	75	100	30	150	45
	100	80	25	100	30
	150	65	20	75	25
Soil Group C sandy loam or loamy sand	75	125	35	150	45
	100	100	30	125	35
	150	75	25	100	30
Soil Group C silt loam, clay loam or silty clay loam	100	150	45	200	60
	150	100	30	150	45
Soil Group D non-wetland	150	150	45	200	60

4. **Design specifications and sizing tables for a buffer adjacent to the down hill side of a road.** A buffer adjacent to a disturbed area of less than one acre that continues to be a road may only be used when a buffer is located such that the runoff from the road surface and shoulder sheets immediately into a buffer. Required buffer design and sizing for this type of buffer does not vary with soil type or slope, except that a buffer meeting this standard is not allowed on soils identified as wetland soils or on natural slopes in excess of 20%, unless the Department finds that the buffer will have adequate adsorptive capacity, and measures have been included to ensure that runoff remains well-distributed as it passes through the buffer. Sizing depends on the vegetative cover type of a buffer and the number of travel lanes draining to a buffer as indicated in Table 9.

Table 9
Required Flow Path Length of a Buffer Receiving Road Runoff

	Length of flow path for a forested buffer (feet)	Length of flow path for a meadow buffer (feet)
One travel lane draining to buffer	35	50
Two travel lanes draining to buffer	55	80

The inslope of the road bed may be included as part of a meadow buffer only if it is designed and constructed to allow infiltration. Design and construction to allow infiltration includes, but is not limited to, the inslope fill material having slopes no steeper than 3:1; loaming and seeding to meadow grasses; and maintaining a buffer area as a meadow buffer.

5. **Design specifications and sizing tables for a ditch turn-out buffer.** A ditch turn-out buffer may only be used when runoff from a road ditch is diverted to a 20-foot stone bermed level lip spreader that distributes runoff into a buffer. No areas other than the road surface, road shoulder, road ditch, and ditch back slopes may be directed to the stone bermed level lip spreader.

   (a) Stone berm specifications. The stone berm to which the ditch turn-out delivers the runoff must be at least 20 feet in length and must be constructed along the contour. It must be at least one- foot high and two feet across the top with 2:1 side slopes. Stone for the berm must consist of sound durable rock that will not disintegrate by exposure to water or weather. Fieldstone, rough quarried stone, blasted ledge rock or tailings may be used. The rock must be well-graded with a median size of approximately 3 inches and a maximum size of 6 inches.

   (b) Buffer sizing. The required size of a buffer area below the stone bermed level lip spreader varies with the type of soil in a buffer area, the slope of a buffer, the length of road ditch draining to a buffer and the vegetative cover type within a buffer. A buffer meeting this standard is not allowed on Hydrologic Soil Group D soils, unless measures are taken to improve infiltrative capacity, as approved by the Department. A buffer meeting this standard is not allowed on slopes in excess of 15%, unless the Department finds that the buffer will have adequate adsorptive capacity, and measures have been included to ensure that runoff remains well-distributed as it passes through the buffer. Table 10 indicates the required length of the flow path through a buffer for various vegetative covers and ditch lengths. The tables below apply to a buffer with slopes ranging from 0 to 8%. For a buffer with slopes between 9% and 15%, the indicated length of flow path should be increased by 20%. If two travel lanes drain to the ditch, as in the case of a super elevated road, the length of flow path indicated for 400 feet of road must be used, but no more than 250 feet of ditch may drain to each turn-out.

Table 10
Sizing Requirements for Buffer Based on Length of Road or Ditch

Hydrologic soil group of soil in buffer	Length of road or ditch draining to a buffer (feet)	Length of flow path for a forested buffer (feet)	Length of flow path for a meadow buffer (feet)
A	200	50	70
	300	50	85
	400	60	100
B	200	50	70
	300	50	85
	400	60	100
C Loamy Sand or Sandy Loam	200	60	100
	300	75	120
	400	100	Not applicable
C Silt Loam, Clay Loam, or Silty Clay Loam	200	75	120
	300	100	Not applicable
D Non-wetland	200	100	150

6. **Design specifications and sizing tables for a buffer adjacent to a residential lot; developed area that is less than 10% impervious, where the flow path over the portion of the developed area for which treatment is being credited does not exceed 150 feet; or an impervious area where the flow path across the impervious area does not exceed 100 feet.** The design specifications and sizing tables below may only be used when a buffer is located immediately adjacent to the downhill side of a developed area, and where the topography and buildings and other facilities within the developed area do not cause any significant concentration of runoff.

   This design is appropriate for residential lots and other mostly pervious areas with relatively uniform topography and for small impervious areas. This design is not appropriate for treating large impervious areas because, even if pavement is graded evenly, it is likely that some concentration of runoff will occur as the stormwater travels across large areas of pavement. For large areas of pavement where the average path of flow across the pavement exceeds 100 feet, or where runoff will not be evenly distributed across the downhill edge of the pavement, a stone bermed level lip spreader must be used and the berm and buffer must be sized according to the specifications in Section 3 above.

   Table 11 below indicates the required minimum length of the flow path through a buffer for various soil types and vegetative cover types. Unless otherwise approved by the Department, the following apply:

   (a) Length of flow paths defined in this table apply to buffers with slopes between 0 and 8%.

   (b) For buffers with slopes between 9% and 15%, the indicated length of flow path must be increased by 20%.

(c) A buffer meeting this standard is not allowed on slopes in excess of 15% or Hydrologic Soil Group D soils except that a forested buffer is allowed if the D soils in a buffer are not wetland soils.

(d) Buffers described by this section must be located downhill of the entire developed area for which it is providing stormwater treatment, such that all runoff from the entire developed area has a flow path through a buffer at least as long as the required length of flow path.

Table 11
Buffer Size Requirements Based on Soil and Vegetative Cover Types

Hydrologic soil group of soil in buffer	Length of flow path for a forested buffer (feet)	Length of flow path for a meadow buffer (feet)
A	45	75
B	60	85
C Loamy Sand or Sandy Loam	75	100
C Silt Loam, Clay Loam, or Silty Clay Loam	100	150
D Non-wetland	150	Not applicable

7. Alternative buffer design for residential subdivision lots. This buffer design may be used as a Department approved alternative treatment measure to meet either the general standards at Section 4(B) or the phosphorus standard using compensation as provided in 06-096 CMR 501, but only under the conditions described below. This design applies only to buffers adjacent to subdivision projects in which all lots are for single or two-family detached, residential housing, common areas or open space where: 1) the buffer is located immediately downhill of the developed area; 2) runoff enters the buffer as sheet flow without a level spreader; and 3) the flow path over the portion of the developed area being treated by the buffer does not exceed 150 feet.

(a) Slope: To meet this alternative design, a buffer is not allowed on natural slopes in excess of 15%

(b) Soil restrictions: Such a buffer is allowed on Hydrologic Soil Group D soils only if it is forested and non-wetland unless measures are taken to improve infiltrative capacity, as approved by the Department.

(c) Buffer sizing: Table 12 below indicates the required buffer flow path length based on soil types and vegetative cover types. Buffers must be located downhill of the entire developed area for which they are providing stormwater treatment; and with no converging contour, such that all runoff from the developed area passes in sheet flow through the buffer for a distance at least as long as the required length of flow path.

(d) Minimum sizing for phosphorus standard. If this buffer standard is being used in a mitigation project to meet the phosphorus standard and its size is being adjusted to provide a specific treatment factor, the minimum sizing for this type of buffer is a flow path of 35 feet.

Table 12
Alternative Buffer Size Requirements for Residential Subdivisions

Required minimum length of flow path through the buffer Based on a slope no greater than 15%		
Hydrologic soil	**For a forested buffer (feet)**	**For a meadow buffer (feet)**
A	35	50
B	45	60
C Loamy sand or sandy loam	50	70
C Silt loam, clay loam or Silty clay loam	70	100
D	100	Not Applicable

APPENDIX G. Suggested templates for deed restrictions and conservation easements for use under the Stormwater Management Law

1. Forested buffer, limited disturbance

DECLARATION OF RESTRICTIONS (Forested Buffer, Limited Disturbance)

THIS DECLARATION OF RESTRICTIONS is made this _____day of _____, 20___, by _____ , _____,
(name) (street address)
_____, _____County, Maine, _____, (herein referred to as the
(city or town) (county) (zip code)
"Declarant"), pursuant to a permit received from the Maine Department of Environmental Protection under the Stormwater Management Law, to preserve a buffer area on a parcel of land near _____,_____ .
(road name) (known feature and/or town)

WHEREAS, the Declarant holds title to certain real property situated in _____, Maine
(town)
described in a deed from_____ to _____dated
(name) (name of Declarant)
_____, 20____, and recorded in Book ____ Page ____ at the _____County Registry of Deeds, herein referred to as the "property"; and

WHEREAS, Declarant desires to place certain restrictions, under the terms and conditions herein, over a portion of said real property (hereinafter referred to as the "Restricted Buffer") described as follows: (Note: Insert description of restricted buffer area location here)

WHEREAS, pursuant to the Stormwater Management Law, 38 M.R.S. Section 420-D and Chapter 500 of rules promulgated by the Maine Board of Environmental Protection ("Stormwater Management Rules"), Declarant has agreed to impose certain restrictions on the Restricted Buffer Area as more particularly set forth herein and has agreed that these restrictions may be enforced by the Maine Department of Environmental Protection or any successor (hereinafter the "MDEP"),

NOW, THEREFORE, the Declarant hereby declares that the Restricted Buffer Area is and shall forever be held, transferred, sold, conveyed, occupied and maintained subject to the conditions and restrictions set forth herein. The Restrictions shall run with the Restricted Buffer Area and shall be binding on all parties having any right, title or interest in and to the Restricted Buffer Area, or any portion thereof, and their heirs, personal representatives, successors, and assigns. Any present or future owner or occupant of the Restricted Buffer Area or any portion thereof, by the acceptance of a deed of conveyance of all or part of the Covenant Area or an instrument conveying any interest therein, whether or not the deed or instrument shall so express, shall be deemed to have accepted the Restricted Buffer Area subject to the Restrictions and shall agree to be bound by, to comply with and to be subject to each and every one of the Restrictions hereinafter set forth.

1. Restrictions on Restricted Buffer Area. Unless the owner of the Restricted Buffer Area, or any successors or assigns, obtains the prior written approval of the MDEP, the Restricted Buffer Area must remain undeveloped in perpetuity. To maintain the ability of the Restricted Buffer Area to filter and absorb stormwater, and to maintain compliance with the Stormwater Management Law and the permit issued thereunder to the Declarant, the use of the Restricted Buffer Area is hereinafter limited as follows.

   a. No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk waste, pollutants or other fill material may be placed, stored or dumped on the Restricted Buffer Area, nor may the topography of the area be altered or manipulated in any way;

   b. Any removal of trees or other vegetation within the Restricted Buffer Area must be limited to the following:

      (i) No purposefully cleared openings may be created and an evenly distributed stand of trees and other vegetation must be maintained. An "evenly distributed stand of trees" is defined as maintaining a minimum rating score of 24 points in any 25 foot by 50 foot rectangle (1,250 square feet) area, as determined by the rating scheme in Table 13:

Table 13.
Point System for Determining an Evenly
Distributed Stand of Trees

Diameter of tree at 4½ feet above ground level	Points
2 - 4 inches	1
4 - 8 inches	2
8 - 12 inches	4
>12 inches	8

Where existing trees and other vegetation result in a rating score less than 24 points, no trees may be cut or sprayed with biocides except for the normal maintenance of dead, windblown or damaged trees and for pruning of tree branches below a height of 12 feet provided two thirds of the tree's canopy is maintained;

      (ii) No undergrowth, ground cover vegetation, leaf litter, organic duff layer or mineral soil may be disturbed except that one winding path, that is no wider than six feet and that does not provide a downhill channel for runoff, is allowed through the area;

   c. No building or other temporary or permanent structure may be constructed, placed or permitted to remain on the Restricted Buffer Area, except for a sign, utility pole (whether constructed of wood, steel or other materials) and appurtenant equipment such as guys and guy anchors, or fence;

   d. No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes, or other motorized vehicles or mechanical equipment may be permitted on the Restricted Buffer Area;

e. Any level lip spreader directing flow to the Restricted Buffer Area must be regularly inspected and adequately maintained to preserve the function of the level spreader.

Any activity on or use of the Restricted Buffer Area inconsistent with the purpose of these Restrictions is prohibited. Any future alterations or changes in use of the Restricted Buffer Area must receive prior approval in writing from the MDEP. The MDEP may approve such alterations and changes in use if such alterations and uses do not impede the stormwater control and treatment capability of the Restricted Buffer Area or if adequate and appropriate alternative means of stormwater control and treatment are provided.

2. Enforcement. The MDEP may enforce any of the Restrictions set forth in Section 1 above.

3. Binding Effect. The restrictions set forth herein shall be binding on any present or future owner of the Restricted Buffer Area. If the Restricted Buffer Area is at any time owned by more than one owner, each owner shall be bound by the foregoing restrictions to the extent that any of the Restricted Buffer Area is included within such owner's property.

4. Amendment. Any provision contained in this Declaration may be amended or revoked only by the recording of a written instrument or instruments specifying the amendment or the revocation signed by the owner or owners of the Restricted Buffer Area and by the MDEP.

5. Effective Provisions of Declaration. Each provision of this Declaration, and any agreement, promise, covenant and undertaking to comply with each provision of this Declaration, shall be deemed a land use restriction running with the land as a burden and upon the title to the Restricted Buffer Area.

6. Severability. Invalidity or unenforceability of any provision of this Declaration in whole or in part shall not affect the validity or enforceability of any other provision or any valid and enforceable part of a provision of this Declaration.

7. Governing Law. This Declaration shall be governed by and interpreted in accordance with the laws of the State of Maine.

_____
(NAME)

STATE OF MAINE_____ County, _____, 20__.
(County) (date)

Personally appeared before me the above named _____, who swore to the truth of the foregoing to the best of (his/her) knowledge, information and belief and acknowledged the foregoing instrument to be (his/her) free act and deed.

_____
Notary Public

_____

2. Forested buffer, no disturbance

DECLARATION OF RESTRICTIONS (Forested Buffer, No Disturbance)

THIS DECLARATION OF RESTRICTIONS is made this _____day of _____ , 20___, by _____, _____ , (name) (street address) _____, _____County, Maine, _____ , (herein referred to as the (city or town) (county) (zip code) "Declarant", pursuant to a permit received from the Maine Department of Environmental Protection under the Stormwater Management Law, to preserve a buffer area on a parcel of land near _____, _____ . (road name) (known feature and/or town)

WHEREAS, the Declarant holds title to certain real property situated in _____, Maine (town) described in a deed from _____to _____, dated (name) (name of Declarant) _____, 20____, and recorded in Book ____ Page ____ at the _____County Registry of Deeds, herein referred to as the "property"; and

WHEREAS, Declarant desires to place certain restrictions, under the terms and conditions herein, over a portion of said real property (hereinafter referred to as the "Restricted Buffer") described as follows: (Note: Insert description of restricted buffer location here)

WHEREAS, pursuant to the Stormwater Management Law, 38 M.R.S. Section 420-D and Chapter 500 of rules promulgated by the Maine Board of Environmental Protection ("Stormwater Management Rules"), Declarant has agreed to impose certain restrictions on the Restricted Buffer Area as more particularly set forth herein and has agreed that these restrictions may be enforced by the Maine Department of Environmental Protection or any successor (hereinafter the "MDEP"),

NOW, THEREFORE, the Declarant hereby declares that the Restricted Buffer Area is and shall forever be held, transferred, sold, conveyed, occupied and maintained subject to the conditions and restrictions set forth herein. The Restrictions shall run with the Restricted Buffer Area and shall be binding on all parties having any right, title or interest in and to the Restricted Buffer Area, or any portion thereof, and their heirs, personal representatives, successors, and assigns. Any present or future owner or occupant of the Restricted Buffer Area or any portion thereof, by the acceptance of a deed of conveyance of all or part of the Covenant Area or an instrument conveying any interest therein, whether or not the deed or instrument shall so express, shall be deemed to have accepted the Restricted Buffer Area subject to the Restrictions

and shall agree to be bound by, to comply with and to be subject to each and every one of the Restrictions hereinafter set forth.

1. Restrictions on Restricted Buffer Area. Unless the owner of the Restricted Buffer Area, or any successors or assigns, obtains the prior written approval of the MDEP, the Restricted Buffer Area must remain undeveloped in perpetuity. To maintain the ability of the Restricted Buffer Area to filter and absorb stormwater, and to maintain compliance with the Stormwater Management Law and the permit issued thereunder to the Declarant, the use of the Restricted Buffer Area is hereinafter limited as follows.

   a. No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk waste, pollutants or other fill material will be placed, stored or dumped on the Restricted Buffer Area, nor shall the topography of the area be altered or manipulated in any way;

   b. No trees may be cut or sprayed with biocides except for the normal maintenance of dead, windblown or damaged trees and for pruning of tree branches below a height of 12 feet provided two thirds of the tree's canopy is maintained;

   c. No undergrowth, ground cover vegetation, leaf litter, organic duff layer or mineral soil may be disturbed except that one winding path, that is no wider than six feet and that does not provide a downhill channel for runoff, is allowed through the area;

   d. No building or other temporary or permanent structure may be constructed, placed or permitted to remain on the Restricted Buffer Area, except for a sign, utility pole or fence (whether constructed of wood, steel or other materials) and appurtenant equipment such as guys and guy anchors;

   e. No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes, or other motorized vehicles or mechanical equipment may be permitted on the Restricted Buffer Area;

   f. Any level lip spreader directing flow to the Restricted Buffer Area must be regularly inspected and adequately maintained to preserve the function of the level spreader.

Any activity on or use of the Restricted Buffer Area inconsistent with the purpose of these Restrictions is prohibited. Any future alterations or changes in use of the Restricted Buffer Area must receive prior approval in writing from the MDEP. The MDEP may approve such alterations and changes in use if such alterations and uses do not impede the stormwater control and treatment capability of the Restricted Buffer Area or if adequate and appropriate alternative means of stormwater control and treatment are provided.

2. Enforcement. The MDEP may enforce any of the Restrictions set forth in Section 1 above.

3. Binding Effect. The restrictions set forth herein shall be binding on any present or future owner of the Restricted Buffer Area. If the Restricted Buffer Area is at any time owned by more than one owner, each owner shall be bound by the foregoing restrictions to the extent that any of the Restricted Buffer Area is included within such owner's property.

4. Amendment. Any provision contained in this Declaration may be amended or revoked only by the recording of a written instrument or instruments specifying the amendment or the revocation signed by the owner or owners of the Restricted Buffer Area and by the MDEP.

5. Effective Provisions of Declaration. Each provision of this Declaration, and any agreement, promise, covenant and undertaking to comply with each provision of this Declaration, shall be deemed a land use restriction running with the land as a burden and upon the title to the Restricted Buffer Area.

6. Severability. Invalidity or unenforceability of any provision of this Declaration in whole or in part shall not affect the validity or enforceability of any other provision or any valid and enforceable part of a provision of this Declaration.

7. Governing Law. This Declaration shall be governed by and interpreted in accordance with the laws of the State of Maine.

_____

(NAME)

STATE OF MAINE, _____ County, dated _____, 20__.
(County)

Personally appeared before me the above named _____, who swore to the truth of the foregoing to the best of (his/her) knowledge, information and belief and acknowledged the foregoing instrument to be (his/her) free act and deed.

_____
Notary Public

_____

3. Meadow buffer

DECLARATION OF RESTRICTIONS (Non-Wooded Meadow Buffer)

THIS DECLARATION OF RESTRICTIONS is made this _____day of _____, 20___, by _____, _____
(name) (street address)
_____, _____County, Maine,_____, (herein referred to as the
(city or town) (county) (zip code)
"Declarant"), pursuant to a permit received from the Maine Department of Environmental Protection under the Stormwater Management Law, to preserve a buffer area on a parcel of land near _____, _____ .
(road name) (known feature and/or town)

WHEREAS, the Declarant holds title to certain real property situated in _____, Maine
(town)
described in a deed from _____ to _____, dated
(name) (name of Declarant)
_____, 20____, and recorded in Book ____ Page ____ at the _____County Registry of Deeds, herein referred to as the "property"; and

WHEREAS, Declarant desires to place certain restrictions, under the terms and conditions herein, over a portion of said real property (hereinafter referred to as the "Restricted Buffer") described as follows: (Note: Insert description of restricted buffer location here)

WHEREAS, pursuant to the Stormwater Management Law, 38 M.R.S. Section 420-D and Chapter 500 of rules promulgated by the Maine Board of Environmental Protection ("Stormwater Management Rules"), Declarant has agreed to impose certain restrictions on the Restricted Buffer Area as more particularly set forth herein and has agreed that these restrictions may be enforced by the Maine Department of Environmental Protection or any successor (hereinafter the "MDEP"),

NOW, THEREFORE, the Declarant hereby declares that the Restricted Buffer Area is and shall forever be held, transferred, sold, conveyed, occupied and maintained subject to the conditions and restrictions set forth herein. The Restrictions shall run with the Restricted Buffer Area and shall be binding on all parties having any right, title or interest in and to the Restricted Buffer Area, or any portion thereof, and their heirs, personal representatives, successors, and assigns. Any present or future owner or occupant of the Restricted Buffer Area or any portion thereof, by the acceptance of a deed of conveyance of all or part of the Covenant Area or an instrument conveying any interest therein, whether or not the deed or instrument shall so express, shall be deemed to have accepted the Restricted Buffer Area subject to the Restrictions and shall agree to be bound by, to comply with and to be subject to each and every one of the Restrictions hereinafter set forth.

1. Restrictions on Restricted Buffer Area. Unless the owner of the Restricted Buffer Area, or any successors or assigns, obtains the prior written approval of the MDEP, the Restricted Buffer Area must remain undeveloped in perpetuity. To maintain the ability of the Restricted Buffer Area to filter and absorb stormwater, and to maintain compliance with the Stormwater Management Law and the permit issued thereunder to the Declarant, the use of the Restricted Buffer Area is hereinafter limited as follows.

   a. No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk waste, pollutants or other fill material will be placed, stored or dumped on the Restricted Buffer Area, nor may the topography or the natural mineral soil of the area be altered or manipulated in any way;

   b. A dense cover of grassy vegetation must be maintained over the Restricted Buffer Area, except that shrubs, trees and other woody vegetation may also be planted or allowed to grow in the area. The Restricted Buffer Area may not be maintained as a lawn or used as a pasture. If vegetation in the Restricted Buffer Area is mowed, it may be mown no more than two times per year.

   c. No building or other temporary or permanent structure may be constructed, placed or permitted to remain on the Restricted Buffer Area, except for a sign, utility pole or fence (whether constructed of wood, steel or other materials) and appurtenant equipment such as guys and guy anchors;

   d. No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes, or other motorized vehicles or mechanical equipment may be permitted on the Restricted Buffer Area, except for vehicles used in mowing;

   e. Any level lip spreader directing flow to the Restricted Buffer Area must be regularly inspected and adequately maintained to preserve the function of the level spreader.

   Any activity on or use of the Restricted Buffer Area inconsistent with the purpose of these Restrictions is prohibited. Any future alterations or changes in use of the Restricted Buffer Area must receive prior approval in writing from the MDEP. The MDEP may approve such alterations and changes in use if such alterations and uses do not impede the stormwater control and treatment capability of the Restricted Buffer Area or if adequate and appropriate alternative means of stormwater control and treatment are provided.

2. Enforcement. The MDEP may enforce any of the Restrictions set forth in Section 1 above.

3. Binding Effect. The restrictions set forth herein shall be binding on any present or future owner of the Restricted Buffer Area. If the Restricted Buffer Area is at any time owned by more than one owner, each owner shall be bound by the foregoing restrictions to the extent that any of the Restricted Buffer Area is included within such owner's property.

4. Amendment. Any provision contained in this Declaration may be amended or revoked only by the recording of a written instrument or instruments specifying the amendment or the revocation signed by the owner or owners of the Restricted Buffer Area and by the MDEP.

5. Effective Provisions of Declaration. Each provision of this Declaration, and any agreement, promise, covenant and undertaking to comply with each provision of this Declaration, shall be deemed a land use restriction running with the land as a burden and upon the title to the Restricted Buffer Area.

6. Severability. Invalidity or unenforceability of any provision of this Declaration in whole or in part shall not affect the validity or enforceability of any other provision or any valid and enforceable part of a provision of this Declaration.

7. Governing Law. This Declaration shall be governed by and interpreted in accordance with the laws of the State of Maine.

_____
(NAME)

STATE OF MAINE, _____, County, dated _____, 20__ .
(County)

Personally appeared before me the above named _____, who swore to the truth of the foregoing to the best of (his/her) knowledge, information and belief and acknowledged the foregoing instrument to be (his/her) free act and deed.

_____
Notary Public

_____

APPENDIX H. 24-Hour Duration Rainfalls for Various Return Periods

COUNTY	Storm Type	1-YR	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR	500-YR
ANDROSCOGGIN	III	2.5	3.0	3.7	4.3	5.4	6.4	7.6	11.1
AROOSTOOK C (Presque Isle Area)	II	1.9	2.3	2.8	3.2	3.9	4.6	5.3	7.6
AROOSTOOK N (Fort Kent Area)	II	1.9	2.2	2.7	3.1	3.7	4.3	5.0	7.0
AROOSTOOK S (Houlton Area)	II	2.1	2.5	3.0	3.4	4.1	4.7	5.4	7.5
CUMBERLAND NW (Bridgton Area)	III	2.5	3.0	3.7	4.3	5.4	6.3	7.5	10.9
CUMBERLAND SE (N Windham Area)	III	2.6	3.1	3.9	4.6	5.8	6.9	8.1	12.1
FRANKLIN	II	2.0	2.4	2.9	3.4	4.2	4.9	5.7	8.2
HANCOCK	III	2.5	2.9	3.6	4.2	5.2	6.1	7.2	10.5
KENNEBEC	III	2.4	2.8	3.5	4.2	5.2	6.1	7.2	10.6
KNOX	III	2.6	3.2	3.9	4.6	5.7	6.7	7.9	11.5
LINCOLN	III	2.5	3.1	3.8	4.5	5.5	6.5	7.6	11.1
OXFORD E (Rumford Area)	II[1]	2.3	2.7	3.3	3.9	4.8	5.7	6.7	9.7
OXFORD W (Gilead Area)	II	2.2	2.7	3.4	4.0	4.9	5.8	6.9	10.1
PENOBSCOT N (Millinocket Area)	II	2.2	2.6	3.2	3.8	4.7	5.6	6.5	9.5
PENOBSCOT S (Hudson Area)	II	2.3	2.7	3.4	3.9	4.9	5.7	6.7	9.7
PISCATAQUIS N (Chesuncook Area)	II	2.0	2.4	2.9	3.4	4.2	5.0	5.8	8.5
PISCATAQUIS S (Monson Area)	II	2.2	2.7	3.3	3.9	4.8	5.7	6.8	10.0
SAGADAHOC	III	2.6	3.2	3.9	4.6	5.7	6.7	7.8	11.4
SOMERSET N (Pittston Farm Area)	II	2.0	2.3	2.8	3.3	4.0	4.7	5.4	7.8
SOMERSET S (Solon Area)	II	2.3	2.7	3.4	3.9	4.9	5.7	6.7	9.8
WALDO	III	2.4	2.9	3.6	4.2	5.2	6.1	7.2	10.5
WASHINGTON	III	2.5	2.8	3.4	3.9	4.8	5.5	6.4	9.0
YORK	III	2.6	3.3	4.1	4.9	6.2	7.3	8.7	13.2

1 Use Type III rainfall for the towns of Brownfield, Buckfield, Denmark, Hartford, Hebron, Hiram, Oxford, and Porter.

Source: Data extracted by the Maine Department of Environmental Protection from the Northeast Regional Climate Center website (http://precip.eas.cornell.edu), Extreme Precipitation Tables. Data from this website was obtained from the National Oceanic and Atmospheric Administration's Regional Climate Center Program.
June 2014