Vadnais Lakes Area Watershed Management Organization

Water Management Policies Derived From

Watershed Management Plan Approved December 2007

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FOREWORD

Vadnais Lake Area Water Management Organization (VLAWMO) was organized by a Joint Powers Agreement (JPA) in 1983 in response to the Minnesota Metropolitan Surface Water Act of 1982 (Minnesota Statutes {M.S.}, Section 473.875 to 473.883). Members of the JPA are participating local government of the cities of Gem Lake, Lino Lakes, North Oaks, Vadnais Heights, White Bear Lake and White Bear Township. The JPA provides VLAWMO with the authority and the duty to prepare and implement a watershed management plan for the Vadnais Lakes Area Watershed (watershed).

The VLAWMO adopted their Third Generation Watershed Management Plan (Plan) December 17, 2007. The plan provides the management goals, policies, strategies that VLAWMO will use to protect, preserve, and manage water resources in the watershed and the need for Rules and permitting programs to take on the Land Use Authorities granted by M.S. 103B to enforce standards in the Plan. The following policies implement the plan's principles and objectives.

These policies protect the public health, safety, welfare and natural resources under VLAWMO's jurisdiction by regulating the improvement or alteration of land and waters within the watershed. In addition, these policies are intended to minimize future public expenditures and liability on issues caused by the improvement or alteration of land and waters.

Authority

The VLAWMO is required by Minnesota Statutes section 103B.231 to create a watershed management plan. The plan included a course of implementation and regulatory controls pursuant to Minnesota Rules 8410.0100, subp. 2 and 8410.0130, and the VLAWMO plan was adopted on December 19, 2007. These Policies were developed in accordance with the Plan.

Relationship with Municipalities

The VLAWMO recognizes that the control and determination of appropriate land use is the responsibility of the Local Water Planning Authorities (LWPA; i.e., municipalities and the county). VLAWMO anticipates that implementation and enforcement of these Policies will be the responsibility of the LWPA's. LWPAs are responsible for adopting Local Water Plans (LWP) that implement the directives set forth in the Plan.

LWPA's can choose to adopt the Plan without local specifications and defer to the VLAWMO for review, approval, inspection, and enforcement, provided that a fee

structure for these services is in place. LWPAs that have an adopted LWP with Rules and procedures equivalent to the VLAWMO Policies will be responsible for enforcement. To determine equivalency, the VLAWMO will evaluate how the LWPA's local water plans, rules and ordinances:

1. Follow the policies and achieve the standards and objectives of the VLAWMO as articulated in the Plan (as amended);
2. Provide for the maintenance and long term protection and operation of facilities and improvements constructed and/or authorized by the LWPAs;
3. Provide the ability for the LWPAs to enforce, monitor and inspect facilities, and improvements;
4. Incorporate public involvement and comment in the development of their LWP, rules and ordinances; and
5. Coordinate the LWP with other official regulatory controls for managing growth within the LWPA.

Otherwise, the VLAWMO will provide review and comment to the LWPA during the concept or initial LWP planning stages for activities regulated under these Policies. They will also provide review of and comment on exhibits or construction documents submitted as part of LWPAs' review processes. The VLAWMO will conduct its review of such documents within the 60-day review period within which the LWPAs must act on applications. (See Minnesota Statute section 15.99.)

The following Policies and guidance represent the VLAWMO's interpretation of how the standards and objectives in the Plan should be translated. LWPAs may adopt more restrictive standards. VLAWMO recognizes that LWPAs have different authorities and different ways of implementing programs that will necessitate language and varying approaches than presented in the following Policies. VLAWMO reserves the right to conduct periodic audits/inspections of LWPA programs and/or projects to make sure the Plan and these Policies are being followed. Furthermore, VLAWMO reserves the right to audit project approvals and permits by LWPAs in order to assess conformance with VLAWMO policies, standards, objectives and criteria.

Once, an equivalency finding has been made, or LWP approved, the VLAWMO will enter into a Memorandum of Understanding (MOU) with each LWPA detailing LWPA and VLAWMO roles and responsibilities, including reporting, tracking, coordination, notification and variance procedures. If the LWPA fails to properly implement an

adopted Local Water Plan, the VLAWMO may revoke the Local Plan Approval, administer the Policies for that LWPA, and the VLAWMO will not be responsible for liabilities, costs and damages caused by the lack of proper implementation. However, VLAWMO's preferred position is to provide oversight to ensure implementation of LWPs and to avoid unnecessary duplication of permitting programs.

Definitions

For the purposes of these Policies, unless the context otherwise requires, the following words and terms shall have the meanings set forth below. References in these Policies to specific sections of the Minnesota Statutes or Rules include amendments, revisions or recodifications of such sections. The words "shall" and "must" are mandatory; the word "may" is permissive.

Agricultural Activity – The use of land for the growing and/or production and wholesale distribution of field crops, livestock, and livestock products for the production of income or own use, including but not limited to the following:

1. Field crops, including but not limited to barley, beans, corn, hay, oats, potatoes, rye, sorghum, and sunflowers.

2. Livestock, including but not limited to dairy and beef cattle, goats, sheep, hogs, horses, poultry, game birds and other animals, including deer, rabbits and mink.

3. Livestock products, including but not limited to milk, butter, cheese, eggs, meat, fur and honey.

4. Trees, shrubs, bushes, and plants for wholesale distribution.

5. Sod farming.

6. Orchards.

Alteration or Alter – When used in connection with public waters or wetlands, is any activity that will change or diminish the course, current or cross-section of public waters or wetlands.

Applicant – Any person or political subdivision that submits an application to a Local Water Planning Authority (LWPA) under these Policies.

Best Management Practices or BMPs – Techniques proven to be effective in controlling runoff, erosion and sedimentation including those documented in the Minnesota Construction Site Erosion and Sediment Control Planning Handbook (BWSR, 1988); Protecting Water Quality in Urban Areas (MPCA, 2000); the Minnesota Urban Small Sites BMP Manual (Metropolitan Council 2001); Minnesota Storm water Manual (MPCA, 2005); and other sources as approved by the VLAWMO: as such documents may be amended,

revised or supplemented.

Board of Directors – The governing board of VLAWMO consisting of one elected official from each of the members which are parties to joint powers agreement.

Bioengineering – The use of live plantings in constructed features to stabilize streambanks and shorelines.

Buffer – An area of natural, unmaintained, vegetated ground cover abutting or surrounding a watercourse, public waters wetland, or wetland.

BWSR – The Minnesota Board of Water and Soil Resources.

Construction Activity – Disturbance to the land that results in a change in the topography, existing soil cover (both vegetative and non-vegetative), or the existing soil topography that may result in accelerated storm water runoff, leading to soil erosion and the movement of sediment into surface waters or drainage systems.

Commissioners – A person appointed by each member of the joint powers agreement to the technical commission.

Dead Storage - The permanent pool volume of a water basin, or the volume below the runout elevation of a water basin.

Detention Basin - Any natural or manmade depression for the temporary storage of runoff.

Development – The construction of any public improvement project, infrastructure, structure, street, or road, or the subdivision of land.

Dewatering – The removal of water for construction activity.

Drain or Drainage – Any method for removing or diverting water from waterbodies, including excavation of an open ditch, installation of subsurface drainage tile, filling, diking or pumping.

Easement – The right to use the land of another owner for a specified use. An easement may be granted for the purpose of constructing and maintaining walkways, roadways, subsurface sewage treatment systems, utilities, drainage, driveway, and other uses.

Energy Dissipation – Methods employed at pipe outlets to prevent erosion including but

not limited to concrete aprons, riprap, splash guards, and gabions.

Erosion – The wearing away of the ground surface as a result of wind, flowing water, ice movement or land disturbing activities.

Erosion and Sediment Control Plan – A plan of BMPs or equivalent measures designed to control runoff and erosion and to retain or control sediment on land during the period of land disturbing activities in accordance with the standards set forth in Section 3.

Excavation – The artificial removal of soil or other earth material.

Extraordinary Management Practices or Redundant BMP – A storm water management practice to control erosion and sedimentation and nutrient loading during and for two (2) years after construction using redundant best management practices.

Fill – The deposit of soil or other earth material by artificial means.

Filtration Practice – A storm water control that captures, temporarily stores, and routes storm water runoff through a filter bed to improve water quality, as described in the Minnesota Storm water Manual, 2005, and as amended.

Floodplain – The area adjacent to a waterbody that is inundated during a 100-year flood.

Groundwater Recharge – the replenishment of groundwater storage through infiltration of surface runoff into subsurface aquifers.

Hardship - As defined in Minnesota Statues, Chapter 394.

High Priority Protection Wetland - wetlands assigned the high to exceptional rating using MnRAM 3.0 for evaluating wetland functions. These wetlands are most susceptible to human impacts, are most unique, have the highest community resources significance such as rare species habitats, and similar characteristics.

Hydric Soils – A soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

Impervious Surface – A constructed hard surface that either prevents or retards the entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development. Examples include rooftops, sidewalks, patios, driveways, parking lots, storage areas, and concrete, asphalt or gravel roads. Impervious surfaces must be calculated on a site by site basis.

Infiltration Practice – A storm water retention method for the purpose of reducing the volume of storm water runoff by transmitting a flow of water into the ground through the soils, as described in the Minnesota Storm water Manual, 2005, and as amended.

Infrastructure – The system of public works for a county, state, or municipality including, but not limited to, structures, roads, bridges, culverts, sidewalks; storm water management facilities, conveyance systems and pipes; pump stations, sanitary sewers and interceptors, hydraulic structures, permanent erosion control and stream bank protection measures, water lines, gas lines, electrical lines and associated facilities, and phone lines and supporting facilities.

Land Disturbing Activity – Any change of the land surface to include removing vegetative cover, excavation, fill, grading, stockpiling soil, and the construction of any structure that may cause or contribute to erosion or the movement of sediment into water bodies. The use of land for new and continuing agricultural activities shall not constitute a land disturbing activity under these Policies.

Landlocked Basin – A basin that is one acre or more in size at the overflow elevation and does not have a natural outlet at or below the existing 100-year flood elevation.

Light Management Wetland - wetlands assigned a low to moderate rating using MnRAM 3.0 for evaluating wetland functions. These wetlands typically provide a diversity of habitats, and are connected to other wetland or upland habitats to provide wildlife habitat. These wetlands tend to be less susceptible to further impacts than the other wetland management classifications. They also have low diversity and connectivity to other wetlands and watercourses.

Local Government Unit (LGU) – Local government unit (VLAWMO or MN/DOT) responsible for administering the Wetland Conservation within the Vadnais Lake Area Watershed.

Local Water Plan – A plan adopted by each of the members of the joint powers agreement pursuant to Minnesota Statute 103B.235.

Local Water Planning Authority – Any city of township wholly or partly within the Vadnais Lake Area Watershed Management Organization responsible for resources management.

Low Floor Elevation - The finished surface of the lowest floor of a structure.

Low Opening – The lowest grade elevation adjacent to a structure.

Mining – The extraction of sand, gravel, rock, black dirt, peat, soil and other material from

the land surface and the removal thereof from the site.

MPCA – The Minnesota Pollution Control Agency.

MPCA General Construction Permit - General Permit Authorization to Discharge Storm Water Associated With Construction Activity Under the National Pollutant Discharge Elimination System/State Disposal System Permit Program Permit MN R100001 (NPDES General Construction Permit) issued by the Minnesota Pollutant Control Agency, August 1, 2008, and as amended.

Moderate Management Wetland - Wetlands assigned the moderate to high rating using MnRAM 3.0 for evaluating wetland functions. These wetlands are relatively undisturbed but exhibit evidence of more disturbance or degradation than Exceptional wetlands. High wetlands have conditions and functions that are susceptible to human impacts, are connected to other wetlands or watercourses, and may contain locally significant or rare wetland types.

Monument - An object placed to mark the physical location of a position.

Municipality – Any city or township wholly or partly within the Vadnais Lake Area Watershed Management Organization.

National Pollutant Discharge Elimination System (NPDES) – Mandated by Congress in 1972 under the Clean Water Act, a two phased national program to address nonagricultural sources of storm water discharge and prevent harmful pollutants from being washed into water bodies.

NRCS – The Natural Resources Conservation Service.

Nonpoint Source – Nutrient and pollution sources not discharged from a single point e.g. runoff from agricultural fields, feedlots or urban landscapes.

Non-degradation - Section 303 (Title 33 of United States Code [U.S.C.] 1313) of the Clean Water Act (CWA) requires states and authorized tribes to adopt water quality standards for waters of the U.S. within their applicable jurisdictions to maintain their chemical, physical and biological integrity. No signification increase in storm water runoff or pollutant loads from 2005/2006 numerical standards.

Normal Water Level - For a reservoir with a fixed overflow, means the lowest crest level of that overflow. For a reservoir whose outflow is controlled wholly or partly by movable gates, siphons or other means, it is the maximum level to which water may rise under

normal operating conditions, exclusive of any provision for flood surcharge. For a closed depression wetland, it is the maximum level to which the water may rise under normal precipitation conditions exclusive of any provision for flood surcharge.

NURP - The Nationwide Urban Runoff Program developed by the Environmental Protection Agency to study storm water runoff from urban development.

OHWL - "Ordinary high water level" as defined by the Minnesota Department of Natural Resources, means the boundary of water basins, watercourses, public waters, and public waters wetlands, and:

1. The ordinary high water level is an elevation delineating the highest water level that has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial;

2. For watercourses, the ordinary high water level is the elevation of the top of the bank of the channel; and

3. For reservoirs and flowages, the ordinary high water level is the operating elevation of the normal summer pool.

Owner – Any individual, firm, association, partnership, corporation, trust or any other legal entity having proprietary interest in the land.

Parcel – A parcel of land designated by plat, metes and bounds, registered land survey, auditors subdivision or other accepted means and separated from other parcels or portions by its designation.

Person– Any individual, trustee, partnership, unincorporated association, limited liability company or corporation.

Political Subdivision – "Political subdivision" means a county, city, town, school district, or other local government jurisdiction to which the state provides state aids or on which the state imposes state mandates.

Pre-development Condition – The land use on a site that exists immediately prior to a proposed alteration. Under pre-development conditions, the following Runoff Curve Numbers must be used for all agricultural land-uses unless site specific replacements are agreed upon by the VLAWMO. All other pre-development Runoff Curve Numbers must reference the Minnesota Hydrology Guide.

Public Health and General Welfare – Are defined in Minnesota Statutes, Section 1 03D.01 1, Subdivisions 23 and 24.

Public Waters – Any waters as defined in Minnesota Statutes, section 1 03G.005, subdivision 15.

Public Waters Wetlands – "Public waters wetland" means all types 3, 4, and 5 wetlands, as defined in United States Fish and Wildlife Service Circular No. 39 (1 971 edition), not included within the definition of public waters, that are ten or more acres in size in unincorporated areas or 2-1 /2 or more acres in incorporated areas.

Redevelopment – The rebuilding, repair, or alteration of a structure, land surface, road or street, or facility.

Retention – The prevention of direct discharge of storm water runoff into receiving water; examples include systems which discharge through percolation, exfiltration, and evaporation processes and which generally have residence times less than three days.

Runoff – Rainfall, snowmelt or irrigation water flowing over the ground surface.

Sediment – The solid mineral or organic material that is in suspension, is being transported, or has been moved from its original location by erosion and has been deposited at another location.

Sedimentation – The process or action of depositing sediment.

Shoreland District – Shoreland areas regulated by a local municipal or county Shoreland Ordinance, or by Minnesota Statues 103F. Generally Shoreland District consists of land located within a floodplain, within 1,000 feet of the OHW of a public water or public waters wetland, or within 300 feet of a stream or river.

Soil Treatment System - A system where sewage effluent is treated and disposed of into the soil by percolation and filtration, and includes trenches, seepage beds, drainfields, at-grade systems, and mound systems.

Stabilized – Exposed soil is considered to be stabilized when it has been adequately covered through temporary measures (e.g. mulch, staked sod, riprap, erosion control blanket, or other material that prevents erosion from occurring), or permanent vegetation has been established over 70% of the surface.

Standard - A preferred or desired level of quantity, quality or value.

Storm water Facility – Any facility including retention and detention ponds, wetlands, reservoirs, impoundments, infiltration practices, filtration practices, conveyance systems, and connecting infrastructure that are constructed for or serve the purpose of storm water management.

Storm Water Pollution Prevention Plan (SWPPP) - A site-specific, written document that: identifies potential sources of storm water pollution at the construction site; describes practices to reduce pollutants in storm water discharges from the construction site; and identifies procedures the operator will implement to comply with the terms and conditions of a construction general permit.

Storm Sewer Utility - A special assessment set up to generate funding specifically for storm water management with the Vadnais Lake Area Watershed. Businesses and residents within the VLAWMO pay a storm water fee, and the revenue collected directly supports maintenance of the existing storm drain systems, development of drainage plans, flood control measures, water quality programs, and funds major capital expenses.

Structure – Anything manufactured, constructed or erected which is normally attached to or positioned on land, including portable structures, earthen structures, water and storage systems, drainage facilities and parking lots.

Subdivision – The separation of an area, parcel, or tract of land under single ownership into two or more parcels, tracts, or lots.

Subsurface Sewage Treatment System - A sewage treatment system, or part thereof, serving a dwelling, or other establishment, or group thereof, and using sewage tanks followed by soil treatment and disposal or using advanced treatment devices that discharge below final grade. Subsurface sewage treatment system includes holding tanks and privies.

Subwatershed – A portion of land contributing runoff to a particular point of discharge.

Surface Water – All streams, lakes, ponds, marshes, wetlands, reservoirs, spring, rivers, drainage systems, waterways, watercourses, and irrigation systems whether natural or artificial, public or private.

Sustainable Lake Management Plan – Lake management plans which provided long-range management direction for based on economic, environmental and the social well-being of the system.

SWCD – Soil and Water Conservation District.

Total Maximum Daily Load (TMDL) - A Total Maximum Daily Load, or TMDL, is a regulation designed to improve water quality by controlling the amount of a pollutant entering a water body.

Ultimate conditions – The physical, topographic, and hydrologic characteristics of a subwatershed upon completion of the maximum level of expected development.

Utilize Basin - Documented storm water management structures designated strictly for treating and retaining storm water.

Waterbody - All surface waters, watercourses and wetlands as defined in these Policies.

Watercourse – Any natural or improved stream, river, creek, ditch, channel, culvert, drain, gully, ravine, swale or wash in which waters flow continuously or intermittently in a definite direction.

Waters of the State – All stream, lakes, ponds, wetlands, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof. Streams include both intermittent and perennial.

Watershed – A region draining to a specific watercourse or water basin.

Wellhead Protection Plan – A document that provides for the protection of a public water supply, submitted to the Minnesota Department of Health, is implemented by the public water supplier, and complies with: A) the wellhead protection elements specified in the 1986 amendments to the Federal Safe Drinking Water Act, United States Code, title 42, chapter 6A, subchapter XII, part C, section 300h-7 (1986 and as subsequently amended); and B) Minnesota Rules parts 4720.5200 to 4720.5290.

Wetland – Any wetland as defined in Minnesota Statutes, section 103G.005, subdivision 19.

Wetland Conservation Act (WCA) – The Minnesota Wetland Conservation Act of 1991, as amended.

1.0 Administrative Procedures

1.1 Policy Statement

It is the policy of the VLAWMO to limit the duplication of effort, minimize the expense incurred by the VLAWMO, the LWPA and applicant, and provide timely review of activities regulated under these Policies. The VLAWMO will conduct its reviews within the 60-day review period within which the LGUs must act on permit applications. (See Minnesota Statute section 15.99.)

1.2 Regulated Activities

Subject to an exception, the requirements of these Policies apply to:

a. Land disturbing activities that trigger a LWPA grading permit (including re-development projects), which disturb, remove, or cover surface vegetation or other surfaces of one (1) acre or more.

b. Any land disturbing activity or proposed impervious surface which requires a LWPA, state, county or federal permits.

c. Appropriation of water from public water basins within VLAWMO jurisdiction below the Minnesota Department of Natural Resources threshold of 10,000 gallons per day and 1 million gallons per year.

d. All projects affecting lakes, streams and wetlands.

1.3 Exceptions

a. These Policies do not apply to construction on an individual lot within a residential subdivision reviewed by the VLAWMO and approved by the LWPA, provided the activities comply with the original development plan.

b. These Policies will be modified for redevelopment projects where less than 50 percent of the total site area (including road right-of-way) will be disturbed. In these cases, these Policies will only apply to the disturbed area of the site.

c. Linear projects (roads, bike paths, trails, etc.) that do not disturb more than 1 acre of land, do not affect stream crossings, and do not increase imperviousness, such as mill and overlay road

reclamations or road blacktopping, are exempt from these Policies.

d. Road shoulder improvement projects are exempt from these Policies when less than two feet of impervious surface on either edge of the existing roadway is added; the project is at least 50 feet from a Water of the State; and there is no disturbance to a Water of the State or natural resources. For the purpose of this exception only, roadside ditches are not considered a Water of the State.

e. See the Wetland section (Section 4.0) for additional exceptions.

1.4 Required Exhibits

The following items, including nine (9) 11 x 17-inch plan sheets, one full size as applicable, and electronic PDFs as applicable, and certified by a professional engineer registered in the State of Minnesota, registered land surveyor, or other appropriate professional, shall be submitted to the VLAWMO [by the LWPA].

a. Names and contact information for proposed project, owner, and engineer.

b. Location map

c. Plat drawing including buffer boundaries identified as conservation easements, when required by the LWPA.

d. Grading plan/mapping exhibits

1. Property lines and delineation of lands under ownership of the applicant;

2. Two-foot topography showing existing and proposed conditions and pre-development and post-development subwatersheds, including areas necessary to determine downstream analysis for the proposed storm water management facilities;

3. Existing and proposed storm water facilities' location(s), alignment and elevation;

4. Minimum low opening elevations for each lot;

5. Delineation and elevation of the OHWL of each public water on site and bankfull levels for streams and corresponding buffers and setbacks;

6. Delineation of the existing and proposed 100-year water elevations on-site;

7. Wetland delineation and buffer boundaries, as applicable.

8. Drainage easements covering land adjacent to ponding areas, wetlands, and waterways up to the 100-year flood levels and covering all ditches and storm sewers when required by the LWPA. Access easements to these drainage easements and to other storm water management facilities shall also be shown when required by the LWPA;

9. Such other information that is necessary to determine compliance with these Policies.

e. Hydrologic/hydraulic and water quality design exhibits

1. Storm water runoff rate analysis for the 1 or 2-, 10-, and 100-year critical events under pre- and post-development conditions including a map of each modeled subwatershed and supporting model documentation.

2. Storm water runoff volume calculations including delineation of impervious areas used in calculations or references.

3. Description and calculations for any proposed storm water volume credits.

4. Geotechnical investigations including soil maps, borings, site- specific recommendations, and any additional information necessary to support the proposed storm water management design

f. Erosion and sediment control exhibits.

1. Copy of the Storm Water Pollution Prevention Plan (SWPPP) which conforms to the MPCA's General Permit for Construction Activities. The SWPPP must conform to the requirements for "Special Waters" when applicable.

g. Construction plans for all proposed storm water management facilities.

h. All necessary construction specifications and details and sequence of construction.

i. Proof of permit coverage under National Pollutant Discharge Elimination System (NPDES) program for qualifying projects.

j. Maintenance plan and schedule for the storm water management facilities.

k. Spill Prevention Plan, if applicable, including the location and detailed design of any spill and leak collection systems for the purpose of containing accidentally released hazardous or toxic materials.

l. Landscaping/vegetative plan for buffers, if applicable, including maintenance plan for the buffer.

m. Wetland delineation report, if applicable.

2.0 Storm Water Management

2.1 Policy Statement

It is the policy of the VLAWMO to:

a. Manage new development and drainage alternations by requiring each development or land disturbing activity to manage its storm water effectively, either on or off-site

b. Promote and encourage a reduction in runoff rates, encourage infiltration and promote groundwater recharge.

c. Maximize groundwater recharge as a means of maintaining drinking water supplies, preserving base flows in streams, and limiting discharges of storm water to downstream receiving waters.

d. Assure that property owners control the rate and volume of storm water runoff originating from their property so that surface water and groundwater quantity and quality is protected or improved, soil erosion is minimized, and flooding potential is reduced.

e. Protect and improve natural resources within the watershed to prevent further degradation.

2.2 Regulation

a. Rate Control

The proposed activity will not increase the peak storm water runoff rate from the site, under pre-development conditions, for anything less than a 24-hour precipitation event with a return frequency of 1- or 2-, 10- and 100-

years. The applicant must comply with the requirements of the MPCA's General Permit for Construction Activities.

b. Volume Control

Storm water runoff volume retention shall be achieved onsite in the amount equivalent to the runoff generated from one-half inch of runoff over the impervious surfaces of the development or as specified under Section 8.0. Volume control credits can be used to control up to one-half (0.5) inch of runoff as described under Section 2, Subsection 5.

c. Water Quality

Storm water management must comply with the requirements of the MPCA's General Permit for Construction Activities and guidelines set forth in total maximum daily load studies and sustainable lake management plans. No direct (untreated) discharges of storm water to natural or improved waterbodies are allowed.

d. Waste Disposal to Waters

Storm water management must not result in the discharge of any regulated substance, hazardous or biological waste, or petroleum product, whether treated or untreated, to best management practice devices that may have a deleterious effect upon water of the state (surface and groundwater), unless the discharge is in compliance with Federal, State and local regulations.

2.3 Criteria

Storm water management plans shall comply with the following criteria:

a. A hydrograph method based on sound hydrologic theory will be used to analyze runoff for the design or analysis of flows and water levels.

b. Runoff rates for the proposed activities, development or redevelopment within the watershed shall:

1. Not exceed existing runoff rates for the 1 or 2-year, 10-year and 100-year critical duration storm events;

2. Not accelerate on or off-site water course erosion, downstream nuisance, flooding or damage as demonstrated by the applicant according to paragraph 3(d) of this Section below; and

3. Runoff rates may be restricted to less than the existing rates when necessary for the public health, safety and general welfare of the VLAWMO.

c. Storm water facilities must provide:

1. An identified overflow spillway and downstream route sufficiently stabilized to convey a 100-year critical storm event;

2. Pond outlets designed to prevent short circuiting of the flow from pond inputs to the outlet;

3. A minimum depth for ponds of three (3) feet and conform to the design specifications of the Storm Water Manual, 2005.

4. An outlet skimmer to prevent migration of floatables and oils for the 2-year event; and

5. Access for future maintenance that is free of plantings and impediments.

d. Regional ponds and practices can be used to provide for storm water management based on the following criteria:

- Regional ponds are required to be designed based on ultimate conditions for the contributing subwatershed.

- Regional ponds are required to be constructed and operational prior to constructing imperviousness within the contributing drainage area.

e. Design of all best management practices will be consistent with the Minnesota Storm Water Manual, 2005, and as amended and the MPCA General Permit for Construction Activities, 2008, and as amended.

f. When using infiltration for volume control, infiltration volumes and facility sizes shall be calculated using the appropriate hydrological soil group classification and infiltration rate, and shall be capable of

infiltrating the required volume within 72 hours or as specified in the MPCA General Permit for Construction Activities.

g. In evaluating the infiltration capacity of a constructed BMP under post-development conditions, the infiltration rates in the Minnesota Storm water Manual should be used. Select the design infiltration based on the least permeable soil horizon within the first five (5) feet below the bottom elevation of the proposed infiltration facility. Site-specific infiltration measurements completed by a licensed professional (as described in the Minnesota Storm Water Manual, November 2005, and as amended) may be used in place of the values in the Minnesota Storm water Manual, and as approved by the VLAWMO.

h. All storm water retention practices designed to meet the volume control regulation must provide pretreatment of storm water runoff prior to infiltrating into the groundwater system or discharging downstream. Pretreatment methods must comply with the Minnesota Storm Water Manual, 2005, and as amended, for the proposed practice. All highly recommended and recommended design criteria must be met, unless specifically waived by VLAWMO staff and the TEC.

i. To the maximum extent practicable, the volume control Section shall be fully met onsite. Site conditions may make infiltration undesirable or impossible. The applicant must make soil corrections and/or investigate other locations on the site for feasible infiltration locations. Infiltration practices are not allowed:

    1. For runoff from fueling and vehicle maintenance areas;

    2. Within HSG D type soils;

    3. Review Wellhead Protection Plans for additional guidance.

    4. Within 50 feet of a septic tank or drain field;

    5. On areas with less than 3 feet vertical separation from the bottom of the infiltration system to the elevation of seasonal high groundwater or top of bedrock.

If the applicant claims that infiltration is not feasible or allowed onsite, the applicant must provide supporting documentation and follow Section 2,

Subsection 4.

2.4 Alternative Compliance Sequencing

For sites where infiltration practices are determined infeasible as described in Section 2, Subsection 3h, the following Alternative Compliance Sequencing steps shall be taken in the order shown:

a. Use of alternative volume control practices as described in the Minnesota Storm water Manual, 2005, and as amended, sized according to Section 2, Subsection 2b.

b. Use of on-site filtration practices and biofiltration using an impermeable liner and under drain, sized to filter a volume of runoff according to Section 2, Subsection 2b.

c. Use of off-site volume control practices sized according to Section 2, Subsection 2b. Off-site volume control practices can be used to provide for storm water management based on the following criteria:

   - Off-site practices shall be constructed within the same drainage area or subwatershed as the project site.

   - Off-site practices are required to be constructed and operational prior to constructing imperviousness within the contributing drainage area.

d. Use of wet sediment basins sized per the standard described within the MPCA General Permit for Construction Activities, 2008, and as amended.

2.5 Volume Control Credits

a. Volume control credits will be awarded as described in the Minnesota Storm water Manual, 2005, and as amended.

b. Volume control credits must be determined based on the methods outlined within Chapter 11 of the Minnesota Storm Water Manual, 2005, and as amended, for the Adjusted Water Quality Volume.

   1. The water quality volume $_{(Vwq)}$ shall be calculated by multiplying 1 inch of runoff over the proposed impervious surface.

   2. Applied credits cannot exceed a Vwq greater than 1/2 inch of runoff

over the proposed impervious area.

3. All recommended and highly recommended conditions must be met, unless specifically waived by VLAWMO staff and the TEC.

4. For Drainage to Stream, Wetland, or Shoreland Buffer Credits, the credits will apply to areas outside of the minimum buffer requirement as prescribed within these Policies.

5. Grass Channel Credits can be applied to the roadway portion of the proposed site when grass channels have been designed with water quality adaptations such as water quality berms.

2.6 Maintenance and Easement

a. Storm water management easements shall be provided by the applicant for (1) access for facility inspections and maintenance and (2) preservation of storm water runoff conveyance, infiltration, and detention areas and facilities, including the overflow route.

b. Land used by storm water management facilities shall be preserved by dedication and/or perpetual easement to the LWPA, when required by the LWPA. These easements shall cover those portions of the property which are adjacent to the facility and which lie below the 100-year flood elevation.

c. A maintenance agreement shall be recorded with the County as part of the LWPA development approval process. Minimum requirements for the maintenance agreement include:

- A list of the responsible party(s) (LWPA and facility owner/manager)
- Contact information
- A formalized maintenance schedule, with scheduled activities
- A "Failure to Perform" provision laying out remedial actions if the responsible party does not perform as expected
- Maintenance debris handling plans
- Emergency response (environmental, spill, safety)

d. Maintenance is required for all storm water practices constructed in compliance with these Policies. Each LWPA will conduct periodic inspection of storm water practices. A minimum of 20% of all storm water facilities shall be inspected annually by the LWPA. LWPAs must provide to the VLAWMO annual inspection reports detailing inspection activities and proof of maintenance where required.

e. When land used by storm water management facilities is public land or public right-of-way, easements under this section will not be required, and a written agreement between the LWPA and applicant may be executed in lieu of the recorded maintenance agreement.

3.0 Erosion and Sediment Control

3.1 Policy Statement

It is the policy of the VLAWMO to require the preparation and implementation of erosion and sediment control plans to control runoff and erosion, to retain or control sediment on land during land disturbing activities, and to prevent the degradation of resources and the loss or damage of property due to erosion and sedimentation.

3.2 Regulation

No person or political subdivision shall commence land disturbing activities, unless granted a variance per section 13.0, without first obtaining a permit from a LWPA or VLAWMO that incorporates and approves an erosion and sediment control plan for the activity, development or redevelopment.

The proposed activity will not result in an increase in sediment off the site during construction and post-construction activities and be in conformance with the MPCA General Permit Construction for Activities, and as amended.

3.3 Criteria

Erosion and sediment control plans and the land disturbing activity shall comply with the following criteria:

a. Erosion and sediment control measures shall be consistent with Best Management Practices (BMPs), and shall be sufficient to retain sediment on-site.

b. Erosion and sediment control measures shall meet the standard for the General Permit Authorization to Discharge Storm Water Associated With Construction Activity Under the National Pollutant Discharge Elimination System/State Disposal System Permit Program Permit MN R100001 (NPDES General Construction Permit) issued by the Minnesota Pollution Control Agency, August 1 2008, as amended; except where more specific requirements are provided in paragraphs 3(d) and 3(e) of this Section below.

c. The permittee or applicant must ensure final stabilization of the site in accordance with the NPDES General Construction Permit requirements. The site will be considered as having achieved final stabilization following submission of Notice of Termination by the permittee or applicant, and inspection and approval by the LWPA.

d. All on-site storm water conveyance channels shall be designed and constructed to withstand the expected velocity of flow from a 10-year frequency storm without erosion.

3.4 Exception

No permit or erosion control plan shall be required under this Section for the following land disturbing activities:

a. Minor land disturbing activities such as home gardens, repairs and maintenance work.

b. Construction, installation and maintenance of individual sewage treatment systems (ISTS) other than those on steep slopes, on riparian lots within a Shoreland District or in a bluff impact zone.

c. Installation of any fence, sign, telephone or electric poles, or other kinds of posts or poles.

d. Emergency activity necessary to protect life or prevent substantial harm to persons or property.

e. Minor wetland impacts that have received a "certificate of exemption or no loss" determination by the LGU (VLAWMO or Mn/DOT) administering the Wetland Conservation Act, as amended.

f. All maintenance, repair, resurfacing and reconditioning activities of

existing road, bridge, and highway systems which do not involve land disturbing activities outside of the existing surfaced roadway.

g. All land disturbing activities not required by this Section to obtain a permit or have an approved erosion and sediment control plan shall nevertheless be conducted in full compliance with Section 3.

4.0 Wetland

4.1 Policy statement

It is the policy of the VLAWMO to:

a. Achieve no net loss of wetlands in the watershed, in conformance with the Minnesota Wetland Conservation Act (WCA) and associated Rules (Minnesota Rules 8420).

b. Encourage wetland avoidance for all new developments and land disturbing activities.

c. Require mitigation of unavoidable wetland disturbance by replacing the lost wetland functions and values in the same major watershed with a wetland of equal or greater value.

d. Identify and preserve wetlands for water retention, recharge, soil conservation, wildlife habitat, aesthetics, and natural enhancement of water quality.

e. Manage changes in volume and quality of local storm water systems to minimize negative impacts to existing wetland functions, value, or biological diversity.

f. Replace affected wetlands where avoidance is not feasible and prudent.

4.2 Regulation

a. No person or political subdivision shall drain, fill, excavate or otherwise alter a wetland or public waters wetland without first obtaining the approval of a wetland replacement plan from the local government unit (VLAWMO or Mn/DOT) with jurisdiction over the activity.

b. For any parcel created or redeveloped after the effective date of this

Section, a buffer shall be maintained around the perimeter of all wetlands and public waters wetlands. The buffer provisions of this Section shall not apply to any parcel of record as of the date of this Section until such parcel is subdivided or developed.

c. The buffer requirement does not apply to any wetland or public waters wetland with a surface area equal to or less than the area of wetland impact allowed without replacement as de minimus under the WCA, and to those portions of wetlands that will be filled under approved wetland replacement plans per the WCA.

d. Wetland resources within VLAWMO shall be assigned a management classification. New classification may be assigned to water resources; if the water resource is not in the inventory and has not been assigned a management classification, or if information is provided to document an update to an existing classification. The management matrix and other assessment information provided in the Plan and herein should be used for all new classification assignments. New or changed management classifications shall be considered minor plan amendments to the Plan and must be approved by the Technical Commission. (*Reference Figure 2-4 of the Plan*).

    1. **"High Priority" Wetland** – are wetlands assigned the high to exceptional rating using MnRAM 3.0 for evaluating wetland functions. These wetlands are most susceptible to human impacts, are most unique, have the highest community resources significance such as rare species habitats, and similar characteristics.

    2. **"Moderate Management" Wetland** – are wetlands assigned the moderate to high rating using MnRAM 3.0 for evaluating wetland functions. These wetlands are relatively undisturbed but exhibit evidence of more disturbance or degradation than Exceptional wetlands. High wetlands have conditions and functions that are susceptible to human impacts, are connected to other wetlands or watercourses, and may contain locally significant or rare wetland types.

    3. **"Light Management" Wetlands** – are wetlands assigned a low to moderate rating using MnRAM 3.0 for

evaluating wetland functions. These wetlands typically provide a diversity of habitats, and are connected to other wetland or upland habitats to provide wildlife habitat. These wetlands tend to be less susceptible to further impacts than the other wetland management classifications. They also have low diversity and connectivity to other wetlands and watercourses.

4. **Utilize Basins** – are documented storm water management structures designated strictly for treating and retaining storm water.

4.3 Criteria

b. Any drainage, filling, excavation or other alteration of a public waters wetland or wetland shall be conducted in compliance with Minnesota Statutes, section 103G.245, the WCA, and regulations adopted thereunder.

c. A public waters wetland or wetland may be used for storm water storage and treatment only if the use will not adversely affect the function and public value of the wetland as determined by the local government unit.

d. Structures intended to provide access to or across a wetland shall be prohibited unless approval is obtained in conformance with applicable Federal, State, and local regulations.

e. Sections 2.0 and 3.0, for Storm water Management and Erosion and Sediment Control, shall be followed to minimize storm water quality impacts.

f. Wetland replacement/mitigation siting must follow the priority order below:

    1. Mitigation on-site
    2. Mitigation within the same subwatershed
    3. Mitigation within the watershed boundary

g. The following hydroperiod standards are required and should be followed when designing the manner in which storm water is routed through

natural wetlands from high priority protected wetlands to Utilize basins/storm water ponds.

TABLE 4-1
HYDROPERIOD STANDARDS
FOR WATER LEVEL FLUCTUATIONS IN WETLANDS

Category	Wetland Management Classification*			
	High Priority Protection	**Moderate Management**	**Light Management**	**Utilize Basins**
Storm Bounce	Existing	Existing plus 0.5 feet	Existing plus 1.0 feet	Existing plus 2.0 feet
Discharge Rate	Existing	Existing	Existing or Less	Existing or less
Inundation Period for 1 or 2-year Precipitation Event	Existing	Existing plus 1 day	Existing plus 2 days	Existing plus 7 days
Inundation Period for 10-year Precipitation Event	Existing	Existing plus 7 days	Existing plus 14 days	Existing plus 21 days
Run-out control elevation	No change	No change	0 to 1.0 feet above existing run out	0 to 4.0 feet above existing run out
Run-out control elevation (landlocked)	Above delineated wetland, and in conformance with **Section** 8 – Landlocked Basins	Above delineated wetland, and in conformance with **Section** 8 – Landlocked Basins	Above delineated wetland, and in conformance with **Section** 8 – Landlocked Basins	Above delineated wetland, and in conformance with **Section** 8 – Landlocked Basins

h. A wetland's functional assessment for vegetative diversity will be completed with each wetland and public waters wetlands, delineated for a project and buffers established according to the following table. The functional assessment and wetland rankings will be determined using the Minnesota Routine Assessment Method version 3.0 (MnRAM 3.0, as amended). Rankings are summarized as follows.

(Adapted from the State of Minnesota's Storm Water Advisory Group's "Storm Water and Wetlands: Planning and Evaluation Guidelines for Addressing Potential Impact of Urban Storm Water and Snow-Melt Runoff on Wetland, June 1997)

TABLE 4-2
BUFFER WIDTH

Criteria	Wetland Management			
	High Priority	Moderate Management	Light Management	Utilize Basin
Average Width, feet	50	40	20	15
Minimum width, feet	35	25	16.5	10

i. Buffer vegetation shall be established and maintained as follows:

1. When natural vegetation exists in the wetland buffer areas (with the exception of species in the Minnesota Noxious Plant List), the retention of such vegetation in an undisturbed state is preferred. A wetland buffer has acceptable natural vegetation if it:

   a. Has a continuous, dense layer of perennial grasses or forbs that have been uncultivated or unbroken for at least 5 consecutive years, or

   b. Has an overstory of trees and/or shrubs with at least 60 percent canopy closure that have been uncultivated or unbroken for at least 5 consecutive years, or

   c. Contains a mixture of the plant communities described in (a) and (b) above that have been uncultivated or unbroken for at least 5 consecutive years.

2. Notwithstanding the performance standards set forth above (i), the LGU may determine existing wetland buffer vegetation to be acceptable if:

   a. It is composed of undesirable plant species (including, but not limited to common buckthorn, purple loosestrife, leafy

spurge and/or noxious weeds as defined by Minnesota Statutes Sections 18.75-18.88 and Minnesota Rules 1505.0730 or 1505.0760).

b. It has topography that channelizes surface runoff.

c. It is unlikely to retain nutrients and sediment.

3. Where wetland buffers, or a portion thereof, are not vegetated or have been cultivated or otherwise disturbed within 5 years of the permit application, such areas shall be planted. Wetland buffer plantings must be identified on the Wetland Replacement Plan, and/or grading plan. The wetland buffer landscaping shall be according to each of the following standards:

a. Wetland buffers shall be planted with a seed mix containing 100 percent perennial plant species, except for a one-time planting of an annual nurse or cover crop such as oats or rye.

b. The seed mix used shall be broadcast at a minimum rate of 30 pounds per acre unless an alternative plan is approved by the LGU staff. The annual nurse or cover crop used shall be applied at a minimum rate of 20 pounds per acre. The seed mix shall consist of at least 12 pounds of pure live seed (PLS) per acre of native prairie grasses and 3 pounds per acre of native forbs. Native prairie grass and native forb mixes shall contain no fewer than five native prairie grasses and 15 native forb species. Seed mixes and rates shall be according to Mn/DOT, BWSR and other approved guidance and specifications.

c. Native shrubs may be substituted for native forbs, however, substitutions must be pre-approved by the LGU staff. Such shrubs may be bare root seedlings and shall be planted at a minimum rate of 60 plants-per-acre. Shrubs shall be distributed so as to provide a natural appearance and not be planted in rows.

d. Ground cover or shrub plantings installed within the wetland buffer are independent of landscaping required elsewhere by applicable LGU Rules.

e. Native prairie grasses and forbs shall be seeded or planted by a qualified contractor. Native grass and wildflower seed materials shall be acquired and installed in accordance with the Restoring and Managing Native Wetland and Upland Vegetation (MnDOT, BWSR, 2006) or the most current wetland BWSR guidance manual.

f. No fertilizer shall be used in establishing new wetland buffer vegetation, except on highly disturbed sites when deemed necessary to establish native vegetation, as indicated by an accredited soil testing laboratory.

g. All seeded areas shall be mulched immediately with Mn/DOT Type Mulch straw at a rate of 2 tons per acre and the mulch shall be anchored with disk or tackifier.

h. Wetland buffer (both natural and created), shall be protected in accordance with NPDES general permit for construction activities and shall remain in place until the plantings are established.

4. During the first two (2) full growing seasons, the Applicant must replant wetland buffer vegetation that fails to survive. If the condition of the wetland buffer changes through natural processes not caused by the landowner after two full growing seasons, the owner shall not be required to reestablish the wetland buffer to meet the standards contained in this section.

5. Wetland buffers must be kept free of all structures (including fences and play equipment). Wetland buffers must not be mowed except as approved in writing by LGU staff for maintenance purposes.

j. Alternative wetland buffer requirements shall be considered and performed as follows:

1. In instances where, because of the unique physical characteristics of a specific parcel of land, an different wetland

buffer may be necessary to allow for the reasonable use of the land. The alternative wetland buffer standard set forth below may be applied based on an assessment of the following:

a. Undue hardship would arise from not allowing the alternative or denial of the alternative would otherwise not be in the public interest
b. Size of the parcel
c. Configuration of existing roads and utilities
d. Percentage of the parcel covered by wetlands, and
e. Configuration of wetlands on the parcel.

2. The LGU shall determine whether use of alternative standards is appropriate as part of its review of a Wetland Replacement Plan. The applicant must receive VLAWMO Board approval prior to submitting a preliminary plan or plat application that applies the alternative buffer standard.

3. In instances where alternative buffer standards are approved:

   a. The applicant will be required to apply extraordinary construction and storm water management practices (extraordinary management practices) to control erosion, sedimentation, and nutrient loading during and for two (2) years after construction outside of the unscarified wetland buffer.

   b. The Applicant must demonstrate that alternatives to the recommended measures to control erosion, sedimentation, and nutrient loading will limit dissolved phosphorus concentrations to one (1) milligram per liter (mg/L) or less.

   c. The applicant shall meet wetland buffers standards established in Table 4-3.

TABLE 4-3
ALTERNATIVE WETLAND BUFFER WIDTH STANDARDS

Criteria	Wetland Management Classification*			
	High Priority	Moderate Management	Light Management	Utilize
Average Width, feet	40	30	15	10
Minimum Width, feet	30	20	10	5

d. The Applicant shall submit all of the necessary information to document that the proposed extraordinary management practices will at least duplicate the performance of the required buffers.

e. The Applicant shall also have the burden of proving that the purpose and objectives of these standards will be met through the use of these extraordinary management practices.

f. Buffers shall be monumented where each lot crosses a wetland buffer edge, to clearly designate the boundaries when using a conservation easement. Wetland buffer monuments shall have a maximum spacing of 200 feet, where the lots are wider than 200 feet. If the wetland and buffer is held as open space in a residential development, one standing monument with additional metal hubs may be used to designate the buffer at 200-foot increments. If no buffer is required, monuments shall be placed at the wetland boundary. The monument shall consist of a post and a wetland buffer sign. The post shall be of a material approved by the LWPA such as a fiberglass reinforced composite or wood with a maximum size of 4 inches by 4 inches. The sign shall be mounted on flush with the top of the post and state, "Wetland Buffer: No Mowing Allowed" or "Wetland Buffer: Vegetation Clearing Limit." The post shall be installed to a height of 4 feet above grade, set at least 36 inches in the ground, if wooden, and 18 inches, if a composite post with an expanding metal anchoring system. Monuments may be waived in unusual circumstances where the LGU determines that these signs would not serve a practical purpose.

4.4 Variances

Refer to Section 13.0

4.5 Performance Bond Requirement

Refer to Section 12.0

5.0 Shoreline and Streambank Alteration

5.1 Policy Statement

Intact, vegetated and stable shorelines and streambanks provide valuable functions to the associated water resource including prevention of erosion, reinforcement of soils through root structure, trapping of nutrients and sediments, and provision of fish and wildlife habitat. The VLAWMO promotes the preservation and enhancement of the ecological integrity and natural appearance of shorelines and streambanks with the intent of preventing erosion. When alteration is necessary, the VLAWMO encourages bioengineering, landscaping and preservation of natural vegetation practices.

5.2 Regulation

Shoreline or streambank improvement or alteration partially or wholly below the ordinary high water mark of a lake or wetland or bankfull height of a stream shall not result in detrimental effects to the lake, wetland, or stream.

5.3 Criteria

a. The use of bioengineering is encouraged as an alternative to traditional engineered stabilization techniques for its cost advantage, aesthetic superiority and ecological integrity. Bioengineering techniques should be used to the extent possible.

b. Retaining walls are to be used only when there is no adequate stabilization alternative.

6.0 Stream and Lake Crossing

6.1 Policy Statement

The VLAWMO discourages the use of beds and banks of streams and lakes for the placement of roads, driveways, and utilities. It is the policy of the VLAWMO to regulate crossings of watercourses for driveways, roads, and utilities to

maintain stream stability, conveyance capacity, and the ability to transport, without adverse effect, the flows and detritus of its watershed.

6.2 Regulation

The portion of a road, highway, utility, or associated structure that crosses the bed or bank of any waterbody shall not be installed, modified, or replaced without first demonstrating a public benefit and ensuring that the crossing will retain adequate hydraulic capacity and navigational capacity if applicable, preserve wildlife passage along each bank, not adversely affect water quality, and represent the "minimal impact" solution to a specific need with respect to all other reasonable alternatives. Projects must follow the DNR manual Best Practices for Meeting DNR General Public Waters Work Permit GP 2004-0001, when applicable.

6.3 Criteria

a. Analysis is required demonstrating the stream's physical characteristics and the effect of the project on hydraulic capacity and water quality.

b. Construction must be timed to take advantage of seasons with no or low stream flow.

c. Construction must be timed to avoid spawning seasons, if applicable.

d. Sizing and placement of stream crossings

    1. Regardless of the stream's width to depth ratio (bankfull width/mean depth), minimum culvert width shall match or exceed stream bankfull width (water surface width at discharge associated with the 1.5-year return period). Combined width of multiple culverts is satisfactory.

    2. Culvert length shall extend beyond side slope toe.

    3. Slope of culvert shall match stream thalweg slope.

    4. Culverts shall be buried 1/6th of their height.

    5. When using multiple culverts, offset culvert inverts. Use the fewest and largest multiples possible. A minimum vertical separation of 1foot is required between the lowest placed culvert and multiples.

6. Alignment of culvert shall match stream alignment.

7.0 Floodplain and Drainage Alteration

7.1 Policy Statement

It is the policy of the VLAWMO to regulate alterations within the floodplain and drainageways within the watershed to provide flood protection to natural resources, permanent structures and private lands.

7.2 Regulation

Alteration to or filling land below the 100-year flood elevation of any wetland, public water or landlocked subwatershed shall be subject to the following regulations and shall be completed in accordance with a state-approved floodplain management and shoreland ordinance:

a. No filling is allowed within the 100-year floodplain without mitigation.

b. The lowest ground level of proposed structures must be a minimum of two feet above the 100-year high water level of nearby surface waters or one foot above the emergency overflow elevation, whichever is greater, unless specified in Section 8.0 and have protection through flood proofing or by an other approved construction technique.

c. No permanent structure, with the exception of drainage conveyance structure, may be constructed in the floodway.

7.3 Criteria

a. Ultimate conditions must be used to determine the flood elevation.

b. No person shall install a culvert or other artificial means to remove or drain surface water or an obstruction to the natural flow of waters without demonstrating that there is no adverse impact on upstream or downstream landowners or water quality, habitat or fisheries.

c. There is reasonable necessity for such alteration.

8.0 Landlocked Basins

8.1 Policy Statement

Landlocked basins provide a unique storm water challenge within the VLAWMO. It is the policy of the VLAWMO to protect property owners from flooding within landlocked basins and minimize the capital expenditure associated with large flood mitigation projects and basin outlets.

8.2 Regulation

a. The proposed land-altering activity will not increase the storm water runoff volume from the site, under pre-development conditions.

b. Minimum low openings within areas draining to landlocked basins must be two feet above the 100-year elevation or the natural overflow elevation of the landlocked basin.

c. Outlets from landlocked basins are not allowed unless subwatershed planning which results in no negative impacts to downstream resources has been approved by the VLAWMO.

9.0 Groundwater Management

9.1 Policy Statement

Groundwater in the VLAWMO provides drinking water, sustains unique groundwater dependent natural resources, and maintains the base flow and thermal stability of watershed streams. It is the policy of the VLAWMO to:

a. Maintain groundwater recharge and protect groundwater from contamination.

b. Promote management practices that protect groundwater recharge and ground water quality.

c. Support enforcement of Wellhead Protection Plan, and ISTS and community septic ordinance.

d. Support development and implementation of well head protection plans.

e. Continue to administer the general permit for small appropriations.

9.2 Regulation

a. LWPAs or VLAWMO shall require all known non-compliant ISTS in the 10 year capture area of Wellhead Protection Areas (WHPA) to be upgraded to conform with Minnesota Rule 7080 within 3 years of establishment of this Section, or within 3 years of establishment of a WHPA.

b. No person or political subdivision shall appropriate water from any public water basin within the watershed without first obtaining a permit from VLAWMO.

9.3 Criteria

a. Groundwater recharge is required, where feasible, as specified under Section 2.0. and Section 8.0.

10.0 Water Appropriations

10.1 Policy Statement

An understanding of the groundwater and the surface-groundwater interactions in the VLAWMO is needed for the effective management of surface water resources and protection of groundwater dependent resources**.** Definition of the potential scope and effects of water appropriations is necessary to ensure proper stewardship of the system as a whole. It is the VLAWMO's intent to be informed of the proposed appropriation of surface or groundwater in or near the watershed. It is also the policy of the VLAWMO to carefully evaluate the potential impacts of public or private infrastructure (including private and municipal groundwater appropriations) and interference of flows on groundwater recharge, transmission and discharge.

10.2 Regulation

a. In all cases of appropriation of surface or groundwater requiring a Department of Natural Resources permit in or near the VLAWMO, a copy of the permit application and information on the location of the discharge/withdrawal must be filed with the VLAWMO for their review.

b. The effect of the proposed appropriation must be defined for consideration by the VLAWMO.

c. No person or political subdivision shall appropriate water from any public water basin within the watershed without first obtaining a permit from VLAWMO.

11.0 Fees

11.1 Policy Statement

It is a policy of the VLAWMO to charge the development site /owner a fee to cover the cost of review, inspection, and administration as incurred by the VLAWMO. These costs will be based on actual incurred costs and will be billed through the LWPA/LGU to the applicant. Fee schedules are available on VLAWMO's website (www.vlawmo.org).

12.0 Sureties and Performance Bonds

12.1 Policy Statement

It is the policy of the VLAWMO to assure compliance with these Policies where necessary by requiring a bond or other surety that is conditioned on adequate performance of the authorized activities and compliance with these Policies. The bond or surety will be held by the LWPA/LGU. Governmental units are exempt from providing sureties and performance bonds.

12.2 Regulation

If a Development Application requires landscaping of a wetland buffer, no work shall begin and no permits shall be issued until the Applicant files with LGU staff; a performance bond, cash escrow, or letter of credit with a corporation approved by LGU staff as surety thereon, or other guarantee acceptable to LGU staff and in an amount determined as set forth below:

a. Amount – The amount shall be for no less than 1.5 times the amount estimated by the LGU staff, as the cost of completing the wetland buffer landscaping. The performance bond must cover two complete growing seasons following completion of the development and must be conditioned upon complete and satisfactory implementation of the approved wetland buffer landscape plan and fall inspection of the wetland buffer by the LGU.

b. Submittal – The Applicant shall provide one copy of a signed contract with an environmental consultant to monitor and certify final completion

of the wetland buffer requirements after the end of the second full growing season.

c. Form of Application – The performance and cash escrow, letter of credit, or other guarantee acceptable to LGU staff shall be posted within 20 days of approval of the development application and prior to the commencement of the development or the preparations thereof.

13.0 Variances

13.1 Policy Statement

It is the policy of the VLAWMO to be informed of all variances to these Policies being considered by a LWPA/LGU. The VLAWMO will cooperate with and provide input to the LWPA/LGU when variances from these Policies are being considered. Variances may be necessary when the LWPA/LGU finds that due to unique physical conditions of the land or waters involved, undue hardship may result from strict compliance. Undue hardship may be found if the property in question cannot be put to a reasonable use if used under conditions allowed by the official controls, the plight of the landowner is due to circumstances unique to the property not created by the landowner, and the variance, if granted, will not alter the essential character of the locality. Economic considerations alone shall not constitute an undue hardship if reasonable use for the property exists under the terms of the applicable ordinance(s). The granting of a variance or variances will not have the effect of nullifying the intent and purpose of these Policies or the VLAWMO Watershed Management Plan.

13.2 Regulation

a. All variance requests must be submitted in writing to the LGU Staff.

b. Variances that would circumvent the intent and purposes of the standard shall not be granted.

14.0 Enforcement

It shall be the duty of each LWPA/LGU within the VLAWMO to enforce and implement the various requirements of these Policies through the development and implementation of Local Water Plans and applicable ordinances. Each LWPA/LGU shall make such amendments to its official controls, regulations, and

permitting processes as are necessary to provide it with the authority to enforce and implement these Policies. VLAWMO reserves the right to conduct periodic audits/inspections of LWPA programs and/or projects to make sure the Plan and these Policies are being followed. In addition, VLAWMO reserves the right to audit project approvals and permits by LWPAs in order to assess conformance with VLAWMO policies, standards, objectives and criteria. If the LWPA fails to properly implement an adopted Local Water Plan, the VLAWMO may revoke the Local Plan Approval, administer the Policies for that LWPA, and the VLAWMO will not be responsible for liabilities, costs and damages caused by the lack of proper implementation.