VLAWMO
Vadnais Lake Area
Water Management Organization

Includes Updates Approved for
Administrative Clarification only –

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Vadnais Lake Area Water Management Organization

Water Management Policy

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Table of Contents

1 FOREWORD

Vadnais Lake Area Water Management Organization (VLAWMO or WMO) was organized by a Joint Powers Agreement (JPA) in 1983 in response to the Minnesota Metropolitan Surface Water Act. Members of the JPA are 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 to accomplish its' statutory purpose of conservation, protection and management of water resources within its boundary. The JPA also necessitates that VLAWMO prepare and implement a watershed management plan (Plan) for the Vadnais Lakes Area Watershed (watershed).

The WMO has adopted a Plan pursuant to the Act. These Policies implement the Plan's principles and objectives. The member local governments are required to adopt a Local Water Plan (LWP) that is consistent with VLAWMO's Plan. They are also required to adopt and enforce regulation as needed to implement the plan. VLAWMO does not operate a regulatory program for development review or enforcement. The one exception is the Minnesota Wetland Conservation Act (WCA). VLAWMO is designated the responsible local government unit for administering the WCA.

Policies in this document are intended to: provide a framework for implementation by the member cities and township, which are referred to herein as the Local Water Planning Authorities (LWPA); to help protect the public health, safety, welfare and natural resources within; and to minimize future public expenditures and liability on issues caused by the improvement or alteration of land and waters.

1.1 Relationship with Municipalities

Each of the LWPAs are a zoning authority that have adopted their own zoning regulations. They are responsible for determining which land uses are allowed with their community, conducting development reviews, deciding whether to approve land use applications, and for enforcing its zoning regulations. The implementation and enforcement of the Policies outlined in this document, except for the WCA Policies, are the responsibility of the LWPAs. LWPAs are responsible for adopting a LWP that implement the directives set forth in the Plan. LWPAs may adopt more restrictive requirements. VLAWMO recognizes that LWPAs have different authorities and different ways of implementing programs that will necessitate language and approaches that vary from those presented in this document. VLAWMO reserves the right to conduct periodic audits/inspections of LWPA programs, project approvals and permits to assess conformance with these Policies.

VLAWMO will provide general oversight and assistance in the implementation of LWPs by the LWPA's, but VLAWMO is not responsible for development reviews or the implementation or enforcement of LWP's. If VLAWMO determines a LWPA is not properly implementing its LWP, it may Take action as provided under law to bring LWPA into compliance.

2 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 Minnesota Rules include amendments, revisions or recodifications of such sections. The words "shall" and "must" indicate a policy is mandatory; the word "may" indicates a policy is permissive.

Abstractions – Removal of storm water from runoff, by such methods as infiltration, evaporation, transpiration by vegetation, and capture and reuse, such as capturing runoff for use as irrigation water.

Agricultural Activity – The use of land for the growing and/or production of agronomic, horticultural, or silvicultural crops, including nursery stock, sod, fruits, vegetables, flowers, cover crops, grains, Christmas trees and grazing.

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 Vadnais Lake Area Watershed Management Organization or a Local Water Planning Authority under these Policies.

Best Management Practices or BMPs – One of many different structural or non-structural methods used to treat runoff, including such diverse measures as ponding, street sweeping, filtration through a rain garden and infiltration to a gravel trench.

Board of Directors – The governing board of Vadnais Lake Area Watershed Management Organization consisting of one elected official from each of the members that are parties to the Joint Powers Agreement.

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

Buffer – An area of specified width with natural, unmaintained, vegetated ground cover abutting or surrounding a watercourse, public waters wetland, or wetland delineated using current delineation standards.

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 existing soil topography and 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.

County – Ramsey

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.

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

Environmentally Sensitive Area - Land and/or water areas containing natural features or ecological functions of such significance as to warrant their protection.

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.

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

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 Statutes, Chapter 394.

Impaired Water - A waterbody that does not meet state water quality standards and that has been included on the Minnesota Pollution Control Agency Section 303(d) list of Impaired Waters of the state.

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.

Incidental Wetland – Wetland areas that the landowner can demonstrate, to the satisfaction of the local government unit, were created in nonwetland areas solely by actions, the purpose of which was not to create the wetland. Incidental wetlands include drainage ditches, impoundments, or excavations constructed in nonwetlands solely for the purpose of effluent treatment, containment of waste material, storm water retention or detention, drainage, soil and water conservation practices, and water quality improvements and not as part of a wetland replacement process that may, over time, take on wetland characteristics.

Infiltration – A passage of water into the ground through the soils.

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.

Local Government Unit (LGU) – Local government unit (Vadnais Lake Area Watershed Management Organization or Minnesota Department of Transportation) responsible for administering the Wetland Conservation Act within the Vadnais Lake Area Watershed.

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

Local Water Planning Authority (LWPA) – 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 Ground Elevation – The lowest natural elevation of the ground surface, prior to construction, next to the proposed walls of a building.

Low Opening Elevation – The elevation of the lowest opening of a structure.

MnDOT – Minnesota Department of Transportation

MPCA – 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, 2013, and as amended.

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.

NPDES – National Pollutant Discharge Elimination System

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

Normal Water Level – For a reservoir with a fixed overflow, means the lowest crest level of that overflow. For a reservoir with outflow 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.

Ordinary High Water Level (OHWL) – Ordinary high water level, as defined by the Minnesota Department of Natural Resources, means the boundary of water bodys, watercourses, public waters, and public waters wetlands, and:

a. The OHWL 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;
b. For watercourses, the OHWL is the elevation of the top of the bank of the channel; and
c. For reservoirs and flowages, the OHWL 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, meets 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 – 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. All pre-development Runoff Curve Numbers must reference the Minnesota Stormwater Manual.

Public Health and General Welfare – This is defined in Minnesota Statutes Section 103D.01 1, Subdivisions 23 and 24.

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

Public Waters Wetlands – All type 3, 4, and 5 wetlands, as defined in U.S. Fish and Wildlife Service Circular No. 39 (1971 edition), not included within the definition of public waters, that are 10 or more acres in size in unincorporated areas or 2.5 or more acres in incorporated areas.

Redevelopment – Any construction, alteration, or improvement that disturbs greater than or equal to 10,000 square feet of existing impervious cover and is performed on sites where the existing land use is commercial, industrial, institutional, or residential.

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 fewer than 3 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 – Shoreland areas regulated by a local municipal or county Shoreland Ordinance, or by Minnesota Statutes Section 103F. Generally, Shoreland District consists of land located within a floodplain, within 1,000 feet of the OHWL of a public water or public waters wetland, or within 300 feet of a stream or river. Also refer to section 10 wetlands.

Soil Treatment System – A system in which 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 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 percent 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 a 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 Vadnais Lake Area Watershed pay a storm water fee, and the revenue collected directly supports maintenance of the existing storm drain systems; supports development of drainage plans, flood control measures, and water quality programs; and funds major capital expenses.

Structure – Anything manufactured, constructed or erected that 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, springs, rivers, drainage systems, waterways, watercourses, and irrigation systems regardless of whether natural or artificial, public or private.

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

Thalweg – A line following the lowest points of a valley.

Total Maximum Daily Load (TMDL) – 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.

Vadnais Lake Area Water Management Organization (VLAWMO or WMO) – Organization of participating local governments with the statutory purpose of conservation, protection and management of water resources within the Vadnais Lake Area Watershed.

Water body – 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 streams, lakes, ponds, wetlands, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and 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 body.

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.

3 Administrative Procedures

3.1 Regulated Activity and Threshold

a. Land disturbing activities of 10,000 sq ft or more, including environmentally sensitive areas.
b. Alteration or infilling of land below the projected 100-year high water elevation of a waterbody.
c. Surface water appropriations up to 10,000 gallons per day and up to 1,000,000 gallons per year for a nonessential use.
d. Improvement or alteration of the shoreline of a water body or the bank of a watercourse, including but not limited to a bioengineered installation, riprap, a retaining wall, a sand blanket or a boat ramp.
e. Maintenance of an existing riprap or otherwise hard-armored shoreline or streambank that involves the addition of new material or structural change to the improvement
f. Development, redevelopment, or drainage alterations (including roads) creating or fully reconstructing new impervious areas greater than 10,000 square feet (sq. ft.).
g. Crossing a bed or bank of a waterbody by a road, highway, utility, or associated structures.
h. Activities Impacting Wetlands Pursuant to the WCA.

3.2 Exceptions

a. The following land-disturbing activity shall not be subject to the standards below:
    1. Minor land disturbing activities such as home gardens, repairs and maintenance work.
    2. Installation of any fence, sign, telephone or electric pole, or other kinds of posts or poles.
    3. Emergency activity immediately necessary to protect life or prevent substantial physical harm to person or property, provided that erosion control measures, including any necessary remedial action, are implemented as soon as possible.
    4. Minor wetland impacts that have received a “certificate of exemption or no loss” determination by the LGU (VLAWMO or MnDOT) administering the WCA, as amended.
    5. All maintenance, repair, resurfacing and reconditioning activities of existing road, bridge, and highway systems that do not involve land disturbing activities.
    6. Agricultural activity.
b. Floodplain and drainage alterations if the 100-year high water elevation of a waterbody is entirely within a municipality, the waterbody does not outlet during the 100-year event, and the municipality has adopted a floodplain ordinance prescribing an allowable degree of floodplain encroachment.

c. Shoreline or streambank maintenance of an existing improvement that has not degraded to a natural state.
d. Stream or lake crossing a waterbody that has been significantly altered from a natural state and degraded and that the proposed application would provide ecological restoration and a greater degree of resource protection than would strict compliance with the standard.

3.3 Required Exhibits

The following items shall be submitted to the VLAWMO by the project owner.

a. Nine 11- x 17-inch plan sheets, one full size sheet (as applicable),and electronic PDFs (as applicable); these shall be certified by a professional engineer registered in the State of Minnesota, registered land surveyor, or other appropriate professional.
b. Names and contact information for proposed project, owner, and engineer.
c. Location map.
d. Plat drawing including buffer boundaries identified as conservation easements, when required by the LWPA.
e. Grading plan/mapping exhibits that include the following information:
    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 facility locations, alignment and elevation;
    4. Minimum low opening, low ground and low floor elevations for each lot along with existing building elevations of adjacent structures;
    5. Delineation and elevation of the OHWL of each public water onsite 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.
    10. Adjacent properties, buildings, stormwater facilities with flow arrows and emergency overflow elevatioins.
f. Hydrologic/hydraulic and water quality design exhibits shall include:
    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 (taken at location of proposed stormwater management feature), ground water level, site-specific recommendations, and any additional information necessary to support the proposed storm water management design
5. Erosion and sediment control exhibits.
6. Copy of the Storm Water Pollution Prevention Plan (SWPPP) that conforms to the MPCA's General Permit for Construction Activities. The SWPPP must conform to the requirements for MPCA 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 the NPDES program, for qualifying projects.
j. Maintenance plan and schedule for the storm water management facilities, wetland buffers and mitigation sites.
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 all projects and buffers, including a maintenance plan.
m. Wetland delineation report, if applicable.

3.4 Fees

It is a policy of the VLAWMO to charge the development site/owner a fee to cover the costs of review, inspection, and administration 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 (http://www.vlawmo.org/).

3.5 Sureties and Performance Bonds

3.5.1 Policy Statement

It is the policy of the VLAWMO to require 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.

3.5.2 Standards

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 of Signed Contract – 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. Submittal of Surety – 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.

3.6 Variances

3.6.1 Policy Statement

It is the policy of the VLAWMO to be informed of all variances to these Policies being considered by a LWPA. VLAWMO will cooperate with and provide input to the LWPA when variances from these Policies are being considered. However, the LWPA is responsible for processing and acting on variance requests. Variances should only be granted when the applicant is able to demonstrate that practical difficulties would result from strictly complying with the requirements of these Policies due to unique physical conditions of the land or waters involved.

Practical difficulties may be found if the property in question cannot be put to a reasonable use under conditions allowed by the official controls; the plight of the landowner is due to circumstances unique to the property and not created by the landowner; and the variance will not alter the essential character of the locality. Economic considerations alone shall not constitute a practical difficulty 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 Plan.

3.6.2 Standards

a. All variance requests must be submitted in writing to the LWPA staff and be processed and acted on in accordance with the local government's regulations.
   Variances that would circumvent the intent and purposes of the standard shall not be granted.

3.7 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 LWP 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 verify 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 LWP, the VLAWMO may revoke the Local Plan Approval and administer the Policies for that LWPA; the VLAWMO will not be responsible for liabilities, costs and damages caused by the lack of proper implementation.

4 Erosion and Sediment Control

4.1 Policy Statement

It is the policy of VLAWMO to:

a. Require the preparation and implementation of erosion and sediment control plans to control runoff and erosion.
b. Retain or control sediment on land during land disturbing activities.
c. Minimize disturbance of natural soil cover and vegetation.
d. Prevent the degradation of resources and the loss or damage of property due to erosion and sedimentation.
e. Protect receiving water bodies, wetland and storm sewer inlets.

4.2 Regulated Activity and Threshold

Land disturbing activities of 10,000sq ft or more, including environmentally sensitive areas.

4.3 Exception

The following land-disturbing activity shall not be subject to the standards below:

a. Minor land disturbing activities (e.g., home gardens, repairs, maintenance work).
b. Installation of any fence, sign, telephone or electric pole, or other kinds of posts or poles.
c. Emergency activity immediately necessary to protect life or prevent substantial physical harm to person or property, provided that erosion control measures, including any necessary remedial action, are implemented as soon as possible.
d. Minor wetland impacts that have received a “certificate of exemption or no loss” determination by the LGU (VLAWMO or MnDOT) administering the WCA, as amended.
e. All maintenance, repair, resurfacing and reconditioning activities of existing road, bridge, and highway systems that do not involve land disturbing activities outside of the existing surfaced roadway.
f. Agricultural activity.

4.4 Standards

a. Erosion and sediment control plans shall meet the standards of Parts III and IV 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, 2013, as amended, except where more specific requirements are provided in the Chapter.
b. In all cases requiring a grading plan for the LWPA and/or a MPCA General Construction Permit in or near the VLAWMO, a copy of the permit application

shall be filed with the VLAWMO for review.

5 Floodplain and Drainage Alteration

5.1 Policy Statement

It is the policy of the VLAWMO to:

a. Regulate alterations within the floodplain and drainage ways within the watershed to provide flood protection to natural resources, permanent structures and private lands.
b. Preserve existing water storage capacity below the 100-year high water elevation of all waterbodies in the watershed to minimize the frequency and severity of high water.
c. Minimize development below the 100-year high water elevation that will unduly restrict flood flows or aggravate known high water problems.

5.2 Regulated activity and threshold

Alteration or infilling of land below the projected 100-year high water elevation of a waterbody.

5.3 Exception

If the 100-year high water elevation of a waterbody is entirely within a municipality, the waterbody does not outlet during the 100-year event, and the municipality has adopted a floodplain ordinance prescribing an allowable degree of floodplain encroachment, the ordinance governs the allowable degree of encroachment.

5.4 Standards

a. Fill shall not cause a net decrease in storage capacity below the projected 100-year high water elevation nor an increase in the 100-year elevation of a waterbody.
b. The allowable fill area shall be calculated by a professional engineer registered in the State of Minnesota. Creation of floodplain storage capacity to offset fill shall occur before any fill is placed in the floodplain, unless it has been demonstrated that doing so is impractical and that placement of fill and creation of storage capacity can be achieved concurrently. Any placement of fill prior to creation of floodplain storage capacity will only be allowed upon a demonstration by a registered professional engineer that such work will not aggravate high water conditions.
c. All new residential, commercial, industrial and institutional structures shall be constructed such that all door and window openings are at a minimum of 2 feet above the 100-year high water elevation.
d. No person shall install or remove a culvert or other artificial means to remove or drain surface water, create artificial pond areas, or obstruct the natural flow of waters without demonstrating that there is no adverse impact on upstream or downstream landowners or water quality, habitat or fisheries.

6 Groundwater Management

6.1 Policy Statement

It is the policy of 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 individual subsurface sewage treatment system (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.
f. Review appropriations requests for surface or groundwater in or near the watershed.
g. 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.

6.2 Regulated Activities and Threshold

Surface appropriations up to 10,000 gallons per day and up to 1,000,000 gallons per year for a nonessential use.

6.3 Standards

a. No person or political subdivision shall appropriate water from any public water body within the watershed without first obtaining a permit through VLAWMO's general permit process for appropriations (see VLAWMO Permit Application or the Minnesota Department of Natural Resources {DNR}).
b. In all cases of appropriation of surface or groundwater requiring a DNR permit in or near the VLAWMO, a copy of the permit application and information on the location of the discharge/withdrawal shall be filed with the VLAWMO for review.
c. All known non-compliant ISTS in the 10-year capture area of Wellhead Protection Areas (WHPA) are 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.

7 Shoreland and Streambank Alteration

7.1 Policy

It is the policy of VLAWMO to:

a. Preserve the natural appearance of intact, vegetated and stable shoreland and streambanks that 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.
b. Preserve water quality and the ecological integrity of the riparian environment, including wildlife, fisheries, and recreational water resources.
c. Promote the preservation and enhancement of the ecological integrity and natural appearance of shoreland and streambanks with the intent of preventing erosion.
d. When alteration is necessary, VLAWMO encourages and fosters bioengineering, landscaping and preservation of natural vegetation practices.

7.2 Regulated Activity and Threshold

a. Improvement or alteration of the shoreland of a water body or the bank of a watercourse, including but not limited to a bioengineered installation, riprap, a retaining wall, a sand blanket or a boat ramp.
b. Maintenance of an existing riprap or otherwise hard-armored shoreland or streambank that involves the addition of new material or structural change to the improvement.

7.3 Exception

Maintenance of an existing improvement that has not degraded to a natural state.

7.4 Standards

7.4.1 Shoreline Erosion Intensity Calculation

Projects for shoreland improvements or alterations shall complete the Erosion Intensity Scoresheet to document the shoreline erosion intensity (low, medium, high). The Erosion Intensity Scoresheet will be maintained and periodically updated to account for changing conditions and improved understanding of shoreline erosion factors. The proposed shoreline stabilization practice shall be consistent with the shoreline erosion intensity calculated (low, medium, high).

a. ***Low*** erosion intensity shorelines shall utilize biological stabilization practices, such as:
    1. Live plantings incorporated into the shoreline or bank shall be native aquatic and/or native upland vegetation known to occur in the North Central Hardwood Forest eco-region of Minnesota (refer to the Minnesota

Department of Natural Resources “Lakescaping for Wildlife and Water Quality” and the Minnesota Pollution Control Agency “Plants for Stormwater Design”); or

2. Vegetative treatments shall be installed in accordance with the Natural Resource Conservation Service “Engineering Field Handbook Chapter 16.”

b. ***Medium*** erosion intensity shorelines shall utilize biological or bioengineering stabilization practices, such as:
   1. Wave barriers located within the 3-foot water depth or less and that may not create an obstruction to navigation and must be removed within 2 years of the installation;
   2. Bioengineered stabilization; or
   3. Biological stabilization practices.

c. ***High*** erosion intensity shorelines shall utilize biological, bioengineering or structural stabilization practices.
   1. Hard armoring inert material, such as riprap, shall be considered wetland fill only if proposed to be placed within an area identified as a wetland;
   2. Riprap shall extend no higher than the top of the bank, or 2 feet above the 100-year high water elevation, whichever is lower;
   3. Riprap materials shall be durable stone meeting the size and gradation requirements of MnDOT Class III or IV riprap. Toe boulders shall be at least 50 percent buried and may be as large as 30 inches in diameter;
   4. A transitional granular filter meeting requirements of MnDOT 3601.B, at least 6 inches in depth, shall be placed between the native shoreline and the riprap to prevent erosion of fine grained soils. A geotextile filter fabric meeting the requirements of MnDOT 3733 shall be placed beneath the granular filler where appropriate;
   5. Structural stabilization practices, including riprap, are recommended to include plantings between individual boulders or native upland plantings to retard runoff and prevent erosion wherever feasible and practical;

7.4.2 Streambank Erosion Intensity Calculation

a. Projects for streambank improvements or alterations shall complete and report bankfull velocity, and shear stress using the equations below.

   1. Bankfull Stream Velocity, using Manning’s equation:

$$v = \frac{Q}{A} = \left(\frac{1.49}{n}\right) R^{2/3} S^{1/2}$$

v = average velocity of flow, feet/second

Q = bankfull flow, cubic feet/second

A = area of flow, square feet

n = roughness coefficient

R = hydraulic radius, feet

S = slope of the channel bottom, foot/foot

2. Shear stress on the streambank equation

$$\tau = d \times \mu \times S$$

τ = shear stress, pounds / square feet

d = bankfull flow depth, feet

μ = unit weight of water, 62.4 pounds/cubic feet

S = slope of channel bottom, foot/foot

b. The proposed improvement or alternation shall be consistent with the shear stress calculated (low, medium, high).
   1. Low erosion intensity streambanks are those where the shear stress calculated is less than or equal to 2.5 pounds per square foot and shall utilize biological stabilization practices, as noted above.
   2. Medium erosion intensity streambanks are those where the shear stress calculated is between 2.5 and 5 pounds per square foot and shall utilize biological or bioengineering stabilization practices, as noted above.
   3. High erosion intensity streambanks are those where the shear stress calculated is greater than 5 pounds per square foot and shall utilize biological, bioengineering or structural stabilization practices, as noted above.

7.5 Alternative Measures

Where it is believed that, as a result of site-specific conditions, the shoreline erosion intensity, Shoreline Erosion Intensity Calculation, or the streambank erosion intensity, , may inaccurately predict the degree of erosion, alternative stabilization techniques that provide sufficient evidence to demonstrate that the proposed stabilization practice represents the minimal impact solution with respect to all other reasonable alternatives, may be approved.

8 Storm Water Management

8.1 Policy Statement

It is the policy of the VLAWMO to:

a. Manage new development, redevelopment 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. Require 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.
f. Use design standards included in the NPDES permit and the MN Stormwater Manual.
g. Utilize National Weather Service's Atlas 14 data.

8.2 Regulated Activities and Threshold

Development, redevelopment, and drainage alterations (including roads) creating or fully reconstructing new impervious areas of 10,000 square feet (sq. ft.) or more.

8.3 Standards

a. Rate Control
    1. New development: The storm water runoff rate for new development shall not exceed the predevelopment rate for every discharge point.
    2. Redevelopment: The storm water runoff rate for redevelopment shall not exceed the existing runoff rate.
b. Volume
    1. New Development: For new, nonlinear developments that create or fully reconstruct 10,000 sq. ft. or more of new impervious surface on sites without restrictions, the post-construction storm water runoff volume retained onsite from all impervious surfaces on site shall be equivalent to 1.1 inches of runoff.
    2. Redevelopment: Nonlinear redevelopment projects on sites without restrictions that create or fully reconstruct 10,000 sq. ft. or more of new and/or fully reconstructed impervious surfaces to exposure of underlying soils shall capture and retain onsite 1.1 inches of runoff from the new and/or fully reconstructed impervious surfaces.

3. Linear projects on sites without restrictions that create or fully reconstruct10,000 sq. ft. or greater of new and/or fully reconstructed impervious surfaces, shall capture and retain the larger of the following:
    a. 0.55 inches of runoff from the new and fully reconstructed impervious surfaces
    b. 1.1 inches of runoff from the net increase in impervious area

c. Credits
    1. Volume control credits will be awarded as described in the Minnesota Stormwater Manual v3.0 - Wiki, as amended.

d. Maintenance and Easement
    1. All storm water management structures and facilities must be designed for maintenance access and properly maintained in perpetuity so that they continue to function as designed.
    2. A maintenance plan that identifies and protects the design, capacity and functionality of onsite and offsite storm water management facilities; specifies the methods, schedule and responsible parties for maintenance shall be developed for every storm water management facility.
    3. The maintenance agreement shall be recorded with the County as part of the LWPA development approval process.
    4. A public entity assuming maintenance obligation may submit a written executed agreement in lieu of the recorded maintenance agreement.
    5. MNDOT can use their MS4 SWPPP as documentation of maintenance agreement.

8.4 Alternative Measures

For sites were infiltration is infeasible, comply with Part III. D of the NPDES General Construction Permit, issued by the Minnesota Pollution Control Agency, August 1, 2013, as amended.

9 Stream and Lake Crossing

9.1 Policy Statement

It is the policy of VLAWMO to:

a. Discourage the use of beds and banks of streams and lakes for the placement of roads, driveways, and utilities;
b. 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.
c. Preserve the ecological integrity of the riparian and aquatic environment, including wildlife and fisheries habitat and recreational water resources.
d. Encourage improvement of wildlife passage and habitat, especially for larger projects involving culvert and public right-of-way in or near natural corridors.

9.2 Regulated Activities and Threshold

The portion of a road, highway, utility, or associated structure that crosses the bed or bank of any waterbody.

9.3 Exception

A waterbody that has been significantly altered from a natural state and degraded and for which the proposed application would provide ecological restoration and a greater degree of resource protection than would strict compliance with the standard.

9.4 Standards

Use of the bed or bank shall:

a. Demonstrate a public benefit; demonstrate 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.
b. Retain adequate hydraulic capacity. For watercourses, changes in the hydraulic capacity may not result in upstream or downstream increase in flood stage.
c. Provide a declaration or other recordable instrument stating terms for maintenance of hydraulic capacity and show that the declaration or recordable instrument was recorded in the office of the County recorder or registrar before activity commences. In lieu of recordation, a public permittee or a permittee without a property interest sufficient for recordation may assume the maintenance obligation by means of a written agreement. The agreement shall state that if the ownership of the structure is transferred, the public body shall require the transferee to comply with this subsection.
d. Preserve aquatic and upland wildlife passage

e. Follow the DNR manual Best Practices for Meeting DNR General Public Waters Work Permit GP 2004-0001, when applicable.

9.5 Alternative Measures

Where it is believed that, as a result of site-specific conditions, hydraulic capacity and/or public benefit may be inaccurately predicted through use of the tool, alternative techniques that provide sufficient evidence to demonstrate that the proposed practice represents the minimal impact solution with respect to all other reasonable alternatives, may be approved.

10 Wetlands

10.1 Policy Statement

It is the policy of the VLAWMO to:

a. Achieve no net loss in the quantity, quality and biological diversity of wetlands in the watershed.
b. Increase the quantity, quality and biological diversity of wetlands by restoring or enhancing diminished or drained wetlands.
c. Manage changes in volume and quality of local storm water systems to minimize negative impacts to existing wetland functions, value, or biological diversity.
d. Identify and preserve wetlands for water retention, recharge, soil conservation, wildlife habitat, aesthetics, and natural enhancement of water quality.
e. Encourage wetland avoidance for all land disturbing activities.
f. 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.
g. Replace affected wetlands where avoidance is not feasible and prudent.
h. Prohibit direct discharge into wetlands, pre-treatment required.

10.2 Regulated Activities and Threshold

VLAWMO regulates activities impacting wetlands pursuant to the WCA. As the LGU under the WCA, a permit is required for activities impacting wetlands or requiring wetland buffers from VLAWMO. MNDOT is the WCA LGU on its' right-of-way.

10.3 Standards

a. Wetland Replacement
    1. Project-specific replacement wetland must be sited in the following priority order, which replaces the siting priority in Minnesota Rules section 8420.0522:
        a. On site;
        b. Within the same subwatershed as the affected wetland; and
        c. In the Vadnais Lake Area watershed boundary.
    2. Pursuant to Minnesota Rules section 8420.0522, subp.7, as it may be amended, when reasonable, practical and environmentally beneficial replacement opportunities are not available in a siting priority area in accordance with subsection 7.3(a), the applicant may seek opportunities to purchase public or private credit outside of the VLAWMO and provide additional storm water treatment within the subwatershed of the affected wetland.
b. Excavation
    1. Excavation in wetlands is subject to the following requirements.
        a. Excavation is governed by the substantive and procedural standards, criteria and requirements set forth in the WCA, as amended, and the rules implementing the WCA as set forth in Minnesota Rules chapter 8420, as amended, including all exemptions, with the exception that replacement for

excavation not subject to the WCA shall be at the ratio of 2:1. Excavation in incidental wetland is not subject to the requirements of this section. The priority siting requirements of section 7.3(a), Wetland Replacement, apply to replacement of excavated wetland under this section.

b. Excavation of a wetland performed for public benefit, including excavation to remove or control invasive species, shall be deemed self-replacing if the applicant demonstrates that the wetland to be excavated is degraded; the proposed activity would increase the wetland's function and value, as determined using the current version of the Minnesota Routine Assessment Method (MnRAM) or other method approved by the VLAWMO; and the enhanced wetland function and value are likely to be preserved. Excavation must not result in a change of wetland type, unless the applicant demonstrates that public benefit is not obtainable absent such impact.

11 Buffers

11.1 Policy Statement

It is the policy of the VLAWMO that:

WCA does not have buffer requirements unless the WCA application per section 10 above includes a mitigated wetland.

1. Any activity for which a permit is required under this Wetland Policy and the Storm Water Management Policy that increases the imperviousness of the subject parcel must provide for buffer adjacent to each wetland and public waters wetland. Buffer must be provided on that part of the wetland edge that is downgradient from the activity or construction and around each wetland that will be disturbed.
2. Buffer width will be determined as presented in Table 1 and discussed below:

Table 1: Buffer Width Requirements

Management Class	Base Buffer Width, feet	Minimum Applied Buffer Width, feet
Manage 3 (storm ponds)	20	16
Manage 2	30	24
Manage 1	40	34
Preserve	75	67

3. The Base Buffer Width shall be determined by the management class of the wetland, as evaluated by the current version of the MnRAM. Storm water sensitivity parameters must be analyzed and results included in the evaluation, unless all storm water flow to wetlands is managed in compliance with the bounce, inundation and runout-elevation control criteria Table 2.

Table 2: Hydroperiod Requirement for Water level Fluctuations in Wetlands

Management Class	Permitted Bounce for 1-, 10-, and 100-Year Event	Inundation Period for 1-Year Event	Inundation Period for 10- and 100-Year Event	Runout Control Elevation
Manage 3 (storm ponds)	No limit	Existing plus 7 days	Existing plus 21 days	0 to 4.0 feet above existing

				runout
Manage 2	Existing plus 1 foot	Existing plus 2 days	Existing plus 14 days	0 to 1.0 foot above existing runout
Manage 1	Existing plus 0.5 feet	Existing plus 1 day	Existing plus 2 days	No change
Preserve	Existing	Existing	Existing	No change

4. The Applied Buffer Width, the actual width of wetland buffer(s) required for a permitted project, shall be the Base Buffer Width as reduced by beneficial slope or soil conditions pursuant to the following formulas:
   a. For every 5 percent decrease in average buffer slope from 20 percent, the Base Buffer Width may be reduced 2 feet.
   b. For every grade of Hydrologic Soil Group above Type D for the predominant buffer soil condition, the Base Buffer Width may be reduced 2 feet.
5. Reductions for beneficial slope or soil conditions shall not reduce the buffer width to less than the applicable Minimum Applied Buffer Width.
   a. Buffer width may vary based on demonstrated site constraints, provided that a width of at least 50 percent of the Applied Buffer Width is maintained at all points; there is no reduction in total buffer area; and the buffer provides wetland and habitat protection at least equivalent to a buffer of uniform Applied Buffer Width. A buffer width averaging calculation will exclude any part of the buffer exceeding 200 percent of the Applied Buffer Width. The area of any path or trail allowed in the buffer will be added to the total area required by the Applied Buffer Width, except that construction of a trail or path of no more than 4 feet in width to provide riparian access through the buffer will not increase the required buffer area.
   b. The Applied Buffer Width may be further reduced by the District upon a demonstration by the applicant that the proposed buffer conditions clearly provide function and value equal to or greater than would be provided by a buffer of the applicable Applied Buffer Width, but may not be reduced to less than 50 percent of the applicable Applied Buffer Width.
   c. The Applied Buffer Width for Linear Reconstruction Projects shall be limited to the extent of available right-of-way. A buffer is not required for resurfacing of an existing road, sidewalk or trail that does not increase the area of impervious surface.
6. Buffers shall be documented by declaration or other recordable instrument approved by the District and recorded in the office of the County recorder. A buffer on public land or right-of-way may be documented in a written agreement executed with the WMO in place of a recorded instrument. The agreement shall state that if the land containing the buffer is conveyed, the public body shall require the buyer to comply with this subsection.

d. Wetland Buffer Vegetation
    1. Buffer vegetation shall not be cultivated, cropped, pastured, mowed, fertilized, subject to the placement of mulch or yard waste, or otherwise disturbed, except for periodic cutting or burning that promotes the health of the buffer, actions to address disease or invasive species, mowing for purposes of public safety, temporary disturbance for placement or repair of buried utilities, or other actions to maintain or improve buffer quality, each as approved by VLAWMO staff or when implemented pursuant to a written maintenance plan approved by the WMO. Pesticides and herbicides may be used in accordance with Minnesota Department of Agriculture rules and guidelines. No new structure or hard surface shall be placed within a buffer, except as provided in Section 8.3C.2.c. No fill, debris or other material shall be excavated from or placed within a buffer.
    2. Buffer areas, or portions thereof, that are not vegetated or will be disturbed by grading or other site activities during construction shall be replanted and maintained according to the following standards:
        a. Soils must be decompacted to a depth of 18 inches, and organic matter must be incorporated into soils before revegetation. Decompaction shall be accomplished solely by incorporation of organic matter within the drip line or critical root zone of trees or within 10 feet of underground utilities.
        b. Buffers shall be planted with a native seed mix and/or native plantings approved by the WMO.
        c. Buffer maintenance and monitoring shall be performed in accordance with section 8.3e, Wetland Buffer Monitoring, of these Policies.

e. Wetland Buffer Monitoring
    1. For buffer areas required to be established or replaced under Section 8.3d, setting standards for buffer establishment and maintenance:
        a. Upon final establishment, wetland buffers shall contain little or no bare soil and shall exhibit a dominance of native vegetation.
        b. The applicant shall submit to the WMO an annual Wetland Buffer Inspection Report for WCA wetland replacement plans on or before January 1 of each year for 5 years. Alternatively, applicants may request that the VLAWMO perform the Wetland Buffer Inspection and produce the report for a fee equal to the WMO's actual costs to perform the work.
            i. The applicant may submit a written request to cease annual monitoring by year three if the wetland buffer is well established pending VLAWMO approval.
            ii. If the wetland buffer is poorly established at the end of the 5-year monitoring period, the WMO may require continued monitoring and maintenance.
    2. The annual Wetland Buffer Inspection Report shall include:
        a. Site plan showing:
            i. Location of permitted buffer area;
            ii. Areas of bare soil or erosion;
            iii. Areas of invasive vegetation; and
            iv. Location and type of any encroachments on the buffer (structures, unapproved mowing, trails, etc.).
        b. Color photos of the wetland buffer taken during the growing season. Vantage

points for these photos shall be labeled on the site plan.

c. Description of buffer vegetation including:
    i. List of dominant plant species and their estimated percent cover.
    ii. Comparison of the species present to the approved planting/seeding plan.
        1. A written narrative that identifies the management strategies that will be utilized during the upcoming growing season to manage invasive species, improve percent vegetative cover and species diversity, and mitigate any encroachments on the buffer.

11.2 Sureties and Performance Bonds

Refer to Section 3.5

11.3 Variances

Refer to Section 1.6