

Temporary natural buffers for surface waters and permanent buffers for special waters

The National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit issued by the Minnesota Pollution Control Agency (MPCA) has two distinct buffer zone requirements, each with a different purpose. During construction, a temporary undisturbed buffer of not less than 50 feet from any “Surface Water” such as lakes, rivers, streams and wetlands is required as a sediment control Best Management Practice (BMP). For the purpose of the natural buffer requirement, surface water buffers are not required adjacent to road ditches, judicial ditches, county ditches, stormwater conveyance channels, storm drain inlets and sediment basins.

A permanent undisturbed buffer of not less than 100 linear feet from a “Special Water” is required to provide protection from urban runoff and preserve scenic quality after construction is complete. Special Waters and Natural Buffers are defined in Section 23 and Section 25 of the permit, respectively. Determining if your site is near a Special Water can be quickly verified using the online mapping tool: <https://pca-gis02.pca.state.mn.us/CSW/index.html>

Function of buffers

A riparian buffer is a band of vegetation bordering a body of water. Riparian buffers improve water quality, wildlife and property value. Buffers provide a number of water quality safeguards including trapping and removal of sediment and other contaminants in stormwater as well as maintenance of fish and wildlife habitat. Scientific studies on buffer function demonstrate that to provide these safeguards effectively, buffers must be at least 50 feet wide. To be most effective, however, buffers should be coupled with on-site management of pollutants, including good stormwater management and erosion and sedimentation control.

Permit requirements for a temporary 50-foot natural buffer

When working near any surface water, the general permit requires that a temporary undisturbed natural buffer zone of 50 feet must be preserved during construction when surface water is located within 50 feet of the project’s earth disturbances and stormwater flows to the surface water. Natural buffer preservation is not required adjacent to road ditches, judicial ditches, county ditches, stormwater conveyance channels, storm drain inlets, and sediment basins. The 50-foot natural buffer is not intended to take the place of other required erosion and sediment control measures. Runoff and flow must be treated by perimeter control and other BMP’s prior to the stormwater being discharged into the existing natural vegetated buffer area. The permittee is not required to enhance the quality of the existing vegetation although enhancement of existing vegetation is allowed and encouraged. As an example, 50 feet of existing landscaping including bare ground would satisfy the natural buffer requirement. Delineating the buffer area in your Stormwater Pollution Prevention Plan (SWPPP) is highly recommended. The 50-foot buffer does not apply if there is no stormwater discharging to the surface water or all stormwater flows have been diverted.

If the required buffer is infeasible, redundant sediment control BMPs are required. Redundant sediment controls must be placed at least 5 feet apart unless limited by lack of available space. This means the permittee will need to provide another level of protection in addition to the usual perimeter control BMP that is required in order to reasonably insure the same amount of pollutant removal that a natural vegetated buffer would provide. Sediment control BMPs include, but are not limited to, silt fence, bio rolls, earth dikes, drainage swales,

rock logs and compost logs. Guidance for proper design and placement of these BMP's can be found in the Minnesota Stormwater Manual http://stormwater.pca.state.mn.us/index.php/Main_Page or on EPA's Construction Stormwater web page <https://www.epa.gov/npdes/stormwater-discharges-construction-activities> <https://www.epa.gov/npdes/stormwater-discharges-construction-activities>. Permit requirements for a permanent 100-foot buffer zone.

When working near Special Waters, the general permit requires that a permanent undisturbed buffer zone of at least 100 feet be maintained at all times, both during construction and as a permanent feature post construction. The permit provides for exceptions to this requirement when a water crossing or other encroachment is necessary to complete the project. There may be other situations where construction within the buffer is unavoidable. Other examples may include work being done to restore the buffer or remove refuse from within the buffer zone. Existing impervious surfaces (structures or pavement, e.g.) can be replaced by new impervious surfaces of the same size or smaller. The new impervious surface may be located in a different area within the buffer but should not be moved closer to the water body.

If the project involves the relocation of impervious surfaces, any environmental or scenic impacts over the existing conditions must be mitigated. If the impervious surface cannot be sited on a parcel without encroaching upon the buffer, the project may still be allowed coverage under this general permit if all water quality and scenic impacts are mitigated and documented in the SWPPP. An entire structure or a majority of a structure must not be located within the buffer zone unless it is a replacement. Scenic impacts must consider the aesthetic change caused by the project from all views from outside the project area.

Contact the MPCA during the design phase of the project to determine what additional BMP's may be necessary. If, after discussing the proposed project with the MPCA, and determination is made that the project will qualify for the listed exception, restoration of the buffer zone must blend into and match the adjacent landscape visually. BMPs must also be selected to blend into surrounding area as much as possible. Restoration of the buffer must be with the same/similar vegetation that existed prior to disturbance or that would exist in a natural condition if not previously altered by human activities.

Trout streams

Trout are a unique species of fish that rely on cold water habitats for survival. Exposure to sunlight can cause adverse warming of the water. The shade provided by trees is very important to minimizing thermal impacts to trout streams. The removal of woody vegetation and replacement with grassy vegetation is not allowed by this permit unless the reasons are absolutely necessary and completely documented on the SWPPP.

Encroachment on the buffer zone

Construction activity under this general permit is not allowed when encroaching on the buffer zone if additional stormwater treatment BMPs are not possible. BMPs must address both erosion-prevention and sediment-control during construction and post-construction stormwater treatment if new impervious surfaces are being created. For example, in some areas it may not be possible to construct stormwater treatment systems such as an infiltration area because of the proximity to bedrock. In this situation, an enhanced swale or another practice may be used as an alternative.

If encroachment into the buffer zone is necessary, additional BMPs must be utilized to mitigate any water-quality or scenic impacts or to preserve the wilderness, scientific, recreational or other special characteristics that make the water an Outstanding Resource Value Water.

BMP selection

BMPs should be selected with the designation of the receiving water in mind.

For example, if the receiving water is designated as a trout stream, as much stormwater as possible should be infiltrated or other methods that will minimize stormwater temperature increases must be used. If the receiving water is designated as a Scenic or Recreational River Segment, the SWPPP should include methods of minimizing

the aesthetic impacts from structures within the buffer such as screening with trees in addition to water quality BMPs.

Consider another example: If a portion of a structure must be located within the buffer zone, stormwater should be routed away from the receiving water whenever possible. If stormwater cannot be directed away, it should be routed using BMPs such as enhanced grass swales or flow over vegetated areas. Other common erosion and sediment control measures that could be used include silt fence, diversion berms, sod strips, fiber rolls, straw bales, ditch checks and sediment ponds. A combination of erosion and sediment control BMPs may be used as well. Buffer zone BMPs must be maintained throughout the duration of all land disturbing activities and lagging of the buffer zone prior to any land disturbing activities is highly recommended.

Local requirements

In addition to the requirements for buffer impacts set forth by the NPDES program. Permittees should be aware of additional local requirements. Examples include Mississippi River Management Plan, North Shore Management Plan or any state or local shoreline ordinance.

More information

For more information, call the MPCA Stormwater Hotline at 651-757-2119 or 800-657-3804.