Construction Stormwater General Permit
INRA00000 (2021)
Implementation of Buffers

Introduction

The Construction Stormwater General Permit (CSGP) contains a requirement that natural buffers are to be preserved to promote water quality. The purpose of this document is to assist engineers, developers, contractors, and regulatory staff in understanding what a buffer is for purposes of implementation of the CSGP. This document clarifies this requirement to ensure consistent implementation within Indiana.

Buffers are critical to the protection and enhancement of water resources in Indiana. Buffers minimize the discharge of pollutants into aquatic environments as well as mitigating or controlling point and nonpoint source pollution by increasing infiltration. Natural buffers are complex ecosystems that help provide food and habitat for stream communities. Buffers comprised of trees also provide shading to the aquatic resource lowering the water temperature, providing bank stability, and improving habitat.

Buffers that exist prior to development should be evaluated in the planning stage. Buffers can also be used to enhance a development to create areas that are aesthetically pleasing and benefit both people and wildlife.

General Permit Requirement

The IDEM CSGP includes the preservation of natural buffers that are adjacent to waters of the United States. The preservation of buffers is a U.S. EPA requirement that is within the federal construction general permit and at the request of U.S. EPA has bene incorporated into all state issued stormwater permits. The language from Section 3.1 of the CSGP reads:

1) Preserve existing natural buffers that are adjacent to waters of the state to promote infiltration and provide protection of the water resource, unless infeasible. Activities performed by a county drainage board under IC 36-9-27 are excluded.
   (A) Natural buffers must be preserved, including the entire buffer bordering and/or surrounding the water resource. Buffers:
      1) 50 feet or more in width must be preserved to a minimum of 50 feet.
      2) Less than 50 feet in width must be preserved in their entirety.
      3) May be enhanced with vegetation that is native and promotes ecological improvement and sustainability.
   (B) Run-off directed to the natural buffer must be:
      1) Treated with appropriate erosion and sediment control measures prior to discharging to the buffer.
      2) Managed with appropriate run-off control measures to prevent erosion from occurring within the buffer area.

The CSGP defines “Natural Buffer” as an existing (prior to land disturbance) undisturbed area adjacent to or surrounding surface waters within which construction activity is restricted.

A natural buffer may include natural vegetation, exposed rock, overflow channels, or barren earth that existed prior to land-disturbing activities.

Clarification

The language in the permit is not intended to require the development or creation of buffers. The intent of the requirement is to preserve existing natural buffers. However, buffers that have characteristics to treat run-off may be utilized as a temporary or permanent measures during construction to minimize the discharge of sediment or as part of the post-construction component of a stormwater pollution prevention plan (SWP3) to mitigate the discharge of pollutants associated with the final land use.

(A) What are the water resources that exist on my project site?

The water resources that exist on a project site include all lakes, ponds, rivers, streams, creeks, drainage ditches, and wetlands, including ground water. Not all water resources require a 50-foot buffer. Generally, surface waters that have a vegetated riparian corridor or buffer will require preservation. Surface waters that are required to have a buffer are detailed below.

(B) Does my project area have a natural buffer that is required to be preserved?

When planning a project, a buffer worthy of preservation is considered an area of permanent vegetation consisting of predominantly trees, shrubs, and other perennial plants along or adjacent to surface waters that is maintained in a natural state or managed to protect and enhance water quality, stabilize stream channels and banks, and has significant environmental, economic, and/or social value. For the purposes of implementation of the CSGP buffer requirement the areas that must be preserved include ephemeral, intermittent and perennial streams with a defined bed and bank, natural lakes, and reservoirs. The following guidance should be used to determine if an area must be preserved in accordance with the CSGP.

For the purposes of this subsection:

(1) Trees are woody vegetation with a dbh (trunk diameter at 4.5 feet above the ground level) of three (3) inches or more.
(2) Tree canopy is the area of ground covered by the above ground portions of trees including leafy vegetation.
(3) Natural buffers may include:
    (a) Areas of trees, saplings, shrubs, and undergrowth with site-appropriate composition, density, and age structure.
    (b) Native species.
    (c) Non-native species if they provide ground cover or other ecological value to the water resource.

(4) Buffers are required to be preserved if the area adjacent to the stream:
   (a) Has thirty percent or greater aerial coverage by tree canopy[1] and;
   Examples:
   - *A buffer area with 30% aerial coverage of trees over a shrub layer with a 60% aerial coverage would be required to be preserved.*
   - *An area with 20% aerial coverage of trees over the same (60%) shrub layer would not be required to be preserved.*

   (b) Is contiguous along a fifty (50) foot linear section of stream and;
   Examples:
   - *A buffer area extends along a one hundred (100) foot linear section of stream. If fifty (50) feet of the buffer area is contiguous forested buffer and 50 feet of the buffer area is a farm field, only the fifty (50) feet of forested buffer would be required to be preserved.*
   - *A buffer area extends along a one hundred (100) foot linear section of stream. If forty (40) foot of the buffer area is forested buffer and 60 feet of the buffer area is a farm field, the buffer is not required to be preserved.*

   (c) Does not have breaks in tree canopy cover of fifty (50) feet or more.
   Examples:
   - *Along a two hundred (200) foot linear section of stream, if a forested buffer extends for eighty (80) feet, followed by a forty (40) foot linear section of farm field buffer, followed by another eighty (80) foot linear section of forested buffer, the entire two hundred (200) foot buffer is required to be preserved and the forty (40) foot linear section of farm field buffer must be stabilized and maintain contiguity with the adjacent forested buffer sections.*
   - *Along a two hundred (200) foot linear section of stream, if a forested buffer extends for seventy (70) feet along the stream, followed by a sixty (60) foot linear section of farm field buffer, followed by another seventy (70) foot linear section of forested buffer, the two (2) linear sections of forested buffer are required to be preserved, but the sixty (60) foot linear section of farm field buffer is not required to be preserved.*

(5) To determine the tree canopy cover, an assessment of vegetative cover can be completed as part of a desktop review of the most recently available leaf-on aerial imagery or a field assessment. Only a field assessment can be used to verify scrub shrub versus tree canopy vegetative cover.

(6) Lots that are part of a larger common plan of development or sale must preserve the natural buffer areas identified by the primary permit holder for the overall development. The natural buffer area should be included in the individual lot plan portion of the SWP3.

[1] Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm (Version 04DEC1998).

(7) If a wetland/stream mitigation exists on the project site that was required by a 401/404 authorization, state regulated wetland permit, DNR Construction in the Floodway, or other local permits/requirements those requirements supersede this guidance document.

(8) Additional assistance in making a determination for the buffer requirement may be directed to the IDEM Stormwater Program (Stormwat@idem.IN.gov) or when applicable the local Municipal Separate Storm Sewer System that has jurisdiction for the planned project.

(C) What is the required width of the buffer?

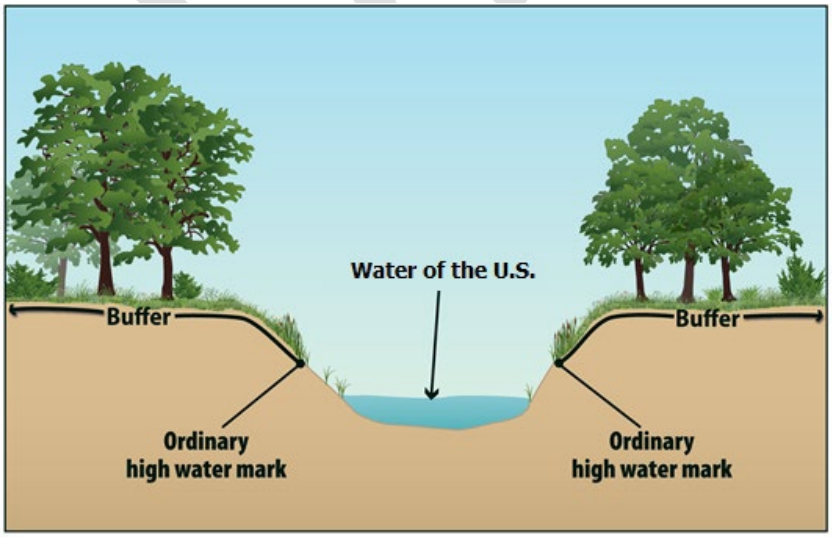
(1) If a natural buffer area exists, at least 50 feet of the natural buffer area is required to be preserved. The buffer width must be measured beginning from the ordinary high-water mark (OHWM). For example, if the buffer is 100 foot in width from the OHWM, only 50foot of that buffer is required to be preserved.

(2) It is encouraged to maintain the full width of the natural buffer or as much as feasible in areas where known sources of pollutants and/or unique landforms features, such as steep slopes and areas of high erosion potential, to maintain ecological function and water quality benefits.

(3) The buffer in its entirety should be delineated in the SWP3 including those buffers that will be preserved. If the proposed land disturbance or infrastructure encroaches on the buffer, the SWP3 should clearly show where the buffer will be preserved in other areas to accommodate the loss.

(D) How is the buffer area measured?

(1) To determine the width of a buffer, it should be measured perpendicularly from the ordinary highwater mark (OHWM) of the waterbody The OHWM is the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, absence destruction of terrestrial vegetation, and/or the presence of litter and debris.

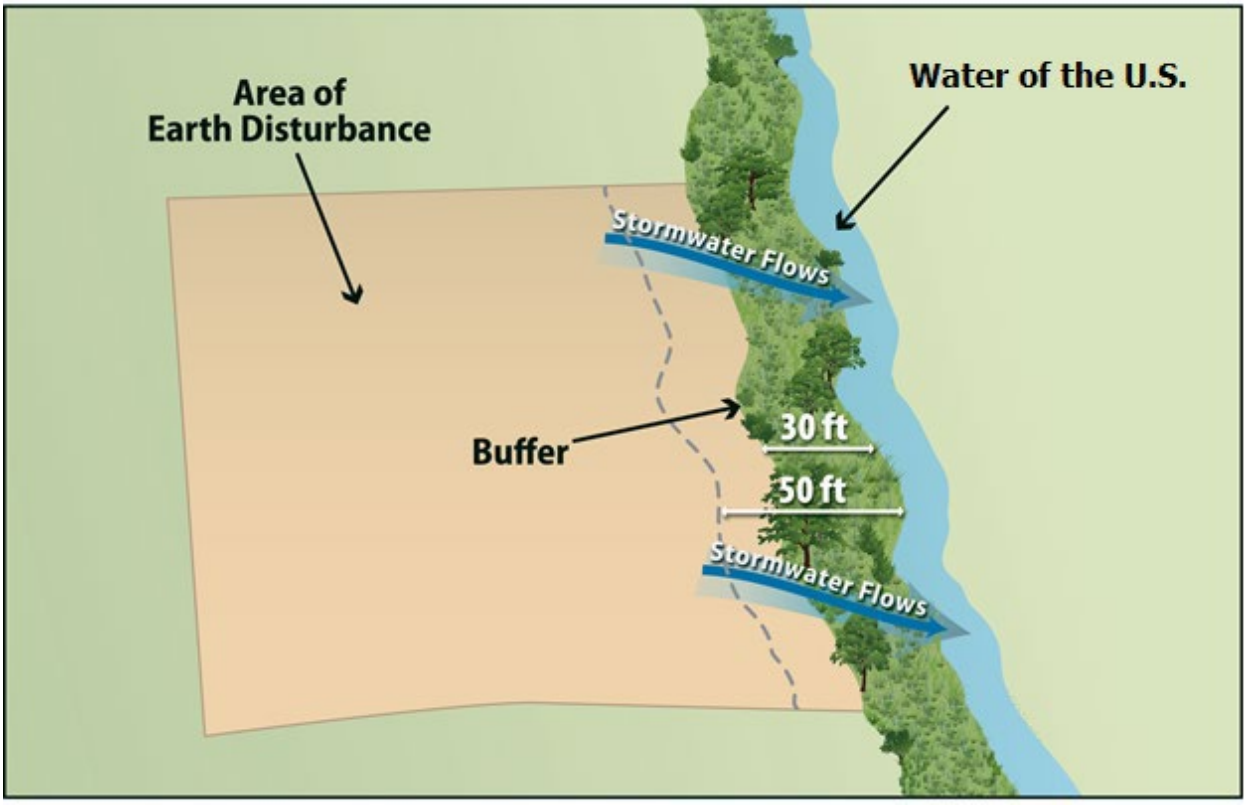


(E) How is the buffer requirement implemented?

(1) If land disturbance is planned or the project footprint is on both sides of the stream or waterbody, the buffer must be preserved on both sides of the feature. If land disturbance and the project footprint is restricted to one side, the buffer only needs to be preserved on that side.

(2) If part of the buffer area adjacent to the waterbody is owned by another party and is not under control/ownership of the project site owner, the project site owner is only required to protect and preserve that area under the project site owner's control.

(3) If the project is not adjacent to the waterbody but within the 50-foot buffer, the area of the project within the 50-foot buffer is subject to the requirement to preserve the buffer.



(F) What are allowable activities that may occur within the preserved buffer area?

Once the buffer area is identified, minimal impacts may occur within the buffer area. These proposed impacts, including a justification for the impact, must be included in the SWP3.

(1) Any existing structures or impervious surfaces, including those areas used for maintenance access that occur in the buffer may remain provided the remaining vegetated area is protected from further land-disturbing activities.

(2) Sediment control measures should be avoided in the preserved buffer area. Sediment control measures must be installed in locations between a disturbed area and the buffer. If sediment control measures fail and sediment is discharged into to the preserved buffer area, the sediment discharge should be removed with minimal impact to the buffer, and the sediment control measure should be repaired and/or replaced.

(3) The installation of post-construction measures within the buffer should be avoided unless it is infeasible to place in another location. The intent is not to replace a buffer in its entirety with a post-construction measure, but to preserve the buffer. The existing buffer may be enhanced to further function as a post-construction component of a treatment train.

(4) Foot trails/people paths whether they be impervious or pervious in nature may be established within the buffer area with minimal impact to the buffer.

(G) What are the exemptions or exempt activities to the buffer preservation requirement, and what is considered infeasible?

The following activities are allowable and may qualify as an exclusion from the requirement to preserve an existing buffer. These items may eliminate the requirement for the entire buffer or for a portion of the buffer. These items take into consideration the feasibility of preservation, including economic limitations. Any buffer outside the following exemptions must be preserved.

(1) Proposed activities that will require a Section 401 Water Quality certification/404 permit, state regulated wetland permit, or DNR Construction in a Floodway permit are authorized to be excluded from the buffer requirement. Appropriate permit coverage and/or authorization must be obtained prior to the impact. The exclusion applies to the impact area only and not the entire buffer.

(2) Specific activities such as crossings for roads or utilities are exempt from the buffer preservation requirement. The planned activity must be designed to minimize the number of crossings and the width of the disturbance within the buffer area. The width of the disturbance associated with a road and/or utility should be limited to standards associated with safety and right of way requirements that allows for maintenance. For the installation of utilities, the stabilization of the area does not require restoration to the original cover but must be stabilized with vegetative cover that allows for maintenance of the utility.

(3) Stormwater conveyances and outfalls are allowed to impact the buffer and must be designed to minimize the width of disturbance and impact to the buffer.

(4) Construction of water-dependent structures such as boat ramps are excluded from the buffer requirement. Construction must minimize the width of the disturbance within the buffer area.

(5) Buffer areas created as agricultural filter strips on farmland adjacent to waters of the United States are not required to be preserved. Although these areas are not required to be preserved, due to their water quality benefits, plan designers are encouraged to utilize these existing features as a filter strip during construction and as a post-construction stormwater quality measure. These measures should be incorporated into the SWP3.

(6) Buffers that are adjacent to existing roadside ditches, artificial conveyance systems, or existing stormwater basins are not required to be preserved.

(7) Areas where no natural buffer exist due to existing farming activities, predevelopment impacts such as structures or impervious surfaces that occurred prior to the initiation of planning for current development of the site are not required to be preserved.

(H) What discharges are allowed into a preserved buffer?

Buffers must be maintained to protect the ecosystems and promote water quality.

(1) Run-off from the area of land disturbance to the natural buffer must be treated by appropriate erosion and sediment control measures. Note: **The buffer is not being preserved to serve as a sediment control measure during active construction.**

(2) Stormwater flows directed to the buffer must utilize velocity dissipation devices to eliminate erosion from occurring within the buffer area.

(3) Discharges to the buffer after the completion of the project should include pre-treatment through an appropriate post-construction stormwater measure prior to discharging to the buffer.

(I) Once designated to be preserved, is the buffer required to be enhanced?

It is not required to enhance the quality of the vegetation that already exists in the buffer. It is permissible to enhance the buffer if the designer wishes to make such improvements. These permitted enhancements should be planned and included in the initial SWP3 description of post-construction measures. Enhancements will generally include addition of permanent vegetation that is native to the region. Enhancements do not include stormwater conveyances and/or infrastructure that are associated with the project.

Targeted plantings of species native to the region may be planted where limited vegetation exists, to enhance the function to use the buffer as a post-construction measure, or to replace any patches of noxious or invasive plants species. It is encouraged to retain deposited leaf litter, woody debris, and other biomass, as this material contributes to the water quality aspects and potential erosion protection of the buffer and to stream banks or lakeshore.

(J) Stormwater Pollution prevention Plan (SWP3) Development:

The SWP3 should be used to provide information on the buffers that are designated to be preserved. If any disturbances related to enhancement or modification of the buffer occur or if there are exemptions that are applicable to the project, they must be documented in the SWP3. **The SWP3 should include justification of all areas with existing buffers that will not be preserved.**

(1) Identify all buffers that exist at the project site and distinguish those that will be preserved in accordance with this guidance. The buffers that are identified and targeted to be preserved should be utilized in planning the project including but not limited to layout for lots, infrastructure, post-construction measures.

(2) Below are steps that should be used in making a determination:
   (a) Identify water resources on the project site.
   (b) Identify the areas that are considered buffers based on the definition of a buffer in this document. Begin to layout the project, including roads, lots, and other infrastructure taking into consideration the buffers.
   (c) Where the layout does not allow preservation of a portion of the buffer, the planner may increase the width of the buffer in other locations to compensate for the loss.