

Ohio Environmental Protection Agency

Fact Sheet for

National Pollutant Discharge Elimination System (NPDES)

General Permit for Discharges Associated with Cleaning of Bridge Joints, Scuppers and Drainage Troughs, and Seats (OHZ000001)

**I. Background**

The federal Water Pollution Control Act (also referred to as the Clean Water Act [CWA]), the Ohio Water Pollution Control Act and the Ohio Revised Code (ORC Chapter 6111) provide that the discharge of pollutants to waters of the state from any point source is unlawful unless the discharge is in compliance with an effective National Pollutant Discharge Elimination System (NPDES) permit.

Bridge cleaning is a preventive maintenance task performed on a recurring basis in order to protect bridge decks, components, and superstructure against corrosion and the accumulation of water and debris on bridge components. Cleaning bridges at the appropriate time can assure the structural integrity and significantly extend the service life of a bridge at a lower lifetime cost.

The purpose of this general permit is to authorize discharges resulting from specific bridge cleaning operations performed by public entities that are in accordance with the conditions of the general permit. Discharges associated with cleaning the following three areas of a bridge would be covered by the permit:

1. Cleaning Deck Joints. Cleaning deck joints helps the joint perform as intended. Debris that sits on top of an elastomeric seal is consolidated and compressed by traffic, which creates high pressure on the seal. The pressure ruptures the seal and creates a passageway for debris to deposit onto the bridge seat below. Cleaning the deck joints will help keep the joints, bearings and seats free from debris and functioning as designed.
2. Cleaning Debris from Scuppers and Drainage Troughs. Controlling deck drainage is important to maintaining a bridge in good condition and maintaining safe passage runoff. When deck drainage does not follow the path that was originally intended, deterioration of bridge components may rapidly accelerate. Components of the bridge that remain damp are prime locations for deterioration. Clearing debris from scuppers and drainage troughs will reduce standing water on the bridge deck, which will increase the life of the bridge, maintain the significant public investment and safety for the travelling public.
3. Cleaning Bridge Seats. Debris built up on bridge seats holds moisture against the bearings and seats, which causes accelerated deterioration. Steel sections of bearings prematurely oxidize and concrete sections prematurely spall. The debris generally deposits on the bridge seat through an open expansion deck joint or a defective deck expansion joint. Keeping the bridge seats free of debris will extend the life of the bridge.

The following identifies relevant terms and definitions that are included within this draft general permit:

1. "Abutment" means part of bridge means part of bridge substructure at either end of bridge which transfers loads from superstructure to foundation and provides lateral support for the approach roadway embankment.
2. "Backwall" means the topmost portion of an abutment above the elevation of the bridge seat, functioning primarily as a retaining wall with a live load surcharge; it may serve also as a support for the extreme end of the bridge deck and the approach slab.
3. "Bridge deck cross slope and profile" means the cross slope of the bridge deck is the first component of the drainage system that the runoff encounters. The proper cross slope and profile directs the runoff to the deck drains and eliminates or reduces ponding.
4. "Bridge seat" means the top surface of an abutment upon which the superstructure span is placed and supported; it is the surface forming the support for the superstructure and from which the backwall rises.
5. "Cleaning Bridge Seats" means removing the debris that's deposited on the bridge seat through an open expansion deck joint or a defective deck expansion joint.
6. "Cleaning Debris from Scuppers and Drainage Troughs" means removing debris from bridge scuppers and drainage troughs to allow complete drainage of storm water runoff in order to prevent rusting and freeze thaw damage.
7. "Cleaning Deck Joints" means removing debris on the bridge elastometric seals that can be compressed by high traffic, which may rupture the seal and allow debris to contact and damage joints, bearings, and seats.
8. "Cleanout plug" means the removable plug in the piping system that allows access for cleaning.
9. "Deck drains" means the deck drain is the second component of the drainage system that runoff encounters. A deck drain is a receptacle to receive water. Deck drains may be nothing more than openings in a filled grid deck, holes in a concrete deck, or slots in the base of a parapet. Inlet boxes and scuppers are also examples of deck drains. Inlet boxes have a grate, which is a ribbed or perforated cover. Grates are fabricated from steel bars that are frequently oriented with the longitudinal direction of the bridge and spaced at approximately 2 inches on center. A bicycle safety grate has steel rods placed perpendicular to the grating bars, spaced at approximately 4 inches on center. Grates keep larger debris from entering the drainage system while allowing water to pass through. They also serve to support traffic and other live loads.
10. "Downspout pipes" means when a bridge is located over a roadway, the deck drainage must be directed from the outlet pipe to a nearby storm sewer system or another appropriate release point. This is accomplished with a downspout pipe network.
11. "Drainage" means a system designed to remove water from a structure.

12. "Drainage Troughs" – Drainage troughs may be located under open joints to divert runoff away from underlying superstructure, bearings and substructure members.
13. "Expansion joint" means an opening in the deck (and superstructure) transverse to the direction of traffic that is designed to permit expansion and contraction movements. These movements are produced by temperature changes, loadings or other forces.
14. "Gutter" means a paved ditch; area adjacent to a roadway curb used for drainage.
15. "Outlet pipes" means the outlet pipe that leads water away from the drain. For bridges over roadways, the outlet pipe connects to other pipes. When the bridge is not over a roadway, the outlet pipe may simply extend just below the superstructure so that drainage water is not windblown onto the superstructure.
16. "Scupper" means an opening in the deck of a bridge to provide means for water accumulated upon the roadway surface to drain.
17. "Structure" means something, such as a bridge, that is designed and built to sustain a load.
18. "Substructure" means the abutments and piers built to support the span of a bridge superstructure.
19. "Superstructure" means the entire portion of a bridge structure that primarily receives and supports traffic loads and in turn transfers these loads to the bridge substructure.

## **II. Description of General Permit Coverage and Type of Discharges**

The general permit would be applicable statewide and authorize discharges resulting from bridge cleaning operations performed by public entities associated with the cleaning the following three areas of a bridge: (1) deck joints, (2) scuppers and drainage troughs, and (3) bridge seats. The permit would include more stringent requirements for discharges to outstanding state waters, superior high quality waters or outstanding national resource waters, other than Lake Erie, as defined by and identified in rule 3745-1-05 of the Ohio Administrative Code, or direct tributaries to these waters within one mile of these waters.

The general permit would not authorize the following discharges:

- Discharges currently covered by another NPDES permit;
- Discharges for which the Director requests an individual permit application;
- Hydro-demolition activities; and
- Surface preparation for deck sealing

Additionally, the general permit would not authorize a discharge which includes any type of detergent or other cleaning agent. The permit specifies that if water is used in the cleaning operation, it must be a clean water source without detergents.

## **III. Application Procedures**

To apply for general permit coverage, all applicants are required to submit a Notice of Intent (NOI) and \$200 application fee. The NOI will be completed and submitted to the Ohio EPA for approval to perform bridge washing on all permittee owned and maintained bridges. The NOI

electronic application form is available through the Ohio EPA eBusiness Center at:  
<https://ebiz.epa.ohio.gov/>

Submission through the Ohio EPA eBusiness Center will require establishing an Ohio EPA eBusiness Center account and obtaining a unique Personal Identification Number (PIN) for final submission of the NOI. Existing eBusiness Center account holders can access the NOI form through their existing account and submit using their existing PIN. Please see the following link for guidance:  
[http://epa.ohio.gov/portals/35/edmr/doc/STREAMSGuide%20\(Dashboard\).pdf](http://epa.ohio.gov/portals/35/edmr/doc/STREAMSGuide%20(Dashboard).pdf)

The NOI would include an attachment that identifies the bridge cleaning operation discharges that are applying for coverage under the NOI. An applicant, under one NOI, may include all scheduled bridge cleaning operations for each County for the permit term (i.e., one NOI per County for 5 year permit term). For each bridge cleaning operation, the following information would be included:

- Bridge name/identifier
- Latitude and longitude coordinates of approximate center of bridge
- Name of receiving stream(s) that will receive the discharge
- An estimated schedule for cleaning operation

#### **IV. Description of Permit Conditions**

The bridge cleaning operations will be performed such that discharges to waters of the state are minimized. The term “minimize” means to reduce and/or eliminate discharges to the extent achievable using control measures (e.g., best management practices) that are technologically available and economically practicable and achievable. The general permit would require the development of a site specific work plan. The work plan, at a minimum, would include the following:

- Identification and location of chosen best management practices (BMPs) to minimize discharge to waters of the state;
- Identification of all areas subject to sweeping and debris removal prior to washing activities;
- Evaluate the availability of a vacuum truck for collection if water is used in cleaning operation. A vacuum truck would be required if water is used over high quality waters.
- Establishment of visual inspection protocols to evaluate/observe potential impacts to waters of the state, at a minimum, halfway through the cleaning operation and immediately following completion; and
- Contingencies, in the event that the discharge will violate narrative water quality standards.

#### **V. Procedures for the Formulation of Final Determinations**

This general permit shall be issued as a final action unless the director revises the draft after consideration of the record of a public hearing or written comments, or upon disapproval by the Administrator of the U.S. Environmental Protection Agency.

Interested persons are invited to submit written comments upon the general permit. Comments should be submitted in person or by mail no later than end of day on August 31, 2016. Comments may be emailed to: [epa.dswcomments@epa.ohio.gov](mailto:epa.dswcomments@epa.ohio.gov) or to the following address:

Ohio Environmental Protection Agency  
Division of Surface Water - Permits Processing Unit  
50 West Town Street, Suite 700  
P.O. Box 1049  
Columbus, Ohio 43216-1049

The NPDES permit number (OHZ000001) should appear next to the above address on the envelope and on each page of any submitted comments. The draft permit and supporting documents may be found at: [http://epa.ohio.gov/dsw/permit/GP\\_BridgeCleaning.aspx](http://epa.ohio.gov/dsw/permit/GP_BridgeCleaning.aspx)

**VI. Additional Information**

For additional information regarding this draft general permit, please contact one of the following:

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