



Culverts and Stream Crossings

Office of Water Quality

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Description and Environmental Impacts:

- Culverts, bridges, and other similar stream crossings are necessary components of our infrastructure.
- Any new or modified culvert developments are regulated to minimize environmental impacts and potential stream impairment.
- General permit requirements listed in this document are intended for an expedited permitting process. If the general permit requirements are not applicable to a proposed project, the applicant may apply for an individual permit more appropriate to the specific site.

IDEM's Role:

- The Indiana Department of Environmental Management (IDEM) regulates culverts, bridges and other similar stream crossings through the Clean Water Act Section 401 Water Quality Certification Program, to ensure that these structures maintain stream integrity.
- IDEM, working with the United States Army Corps of Engineers (USACE), has established several rapid permitting mechanisms to authorize culvert and stream crossing activities that have a low risk of causing or contributing to stream impairment.
- IDEM recognizes that there is no one-size-fits-all approach for stream crossing activities and will work with the applicant and other agencies through the individual permit process for those site-specific situations where a general permit is not applicable.
- Note: Mitigation is not required for projects qualifying under the Regional General Permit (RGP).
- IDEM requirements must be met to qualify for various permits issued by USACE, as noted in the following permit information.

Requirements for Culvert Replacement:

- For culvert replacements, a USACE general permit known as a Nationwide Permit (NWP) #3 may be used. When necessary, a Pre-construction Notification is made to USACE, but no notification is required to IDEM for NWP #3.
 - NWP #3 requires that the culvert replacement:
 - Is the same type of culvert as the existing one;
 - Does not reduce the cross-sectional area under bankfull¹ elevation;
 - Does not increase the length of the total culvert to over 150 feet;
 - Has either the same slope as the existing culvert or will more closely match the slope of the stream immediately upstream and downstream of the culvert;
 - Bank stabilization and channel bottom stabilization do not exceed either one bankfull width upstream and downstream of the replacement culvert or ten linear feet, whichever is greater;
 - Channel bottom stabilization is flush with the existing stream bottom grade; and
 - Existing encapsulations over 150 feet may be replaced as long as the structure length does not change more than 20 feet upstream and 20 feet downstream.

¹ Bankfull is the point where a stream spills out of the channel and into the floodplain. The bankfull event occurs roughly every 1.5 years. For design purposes one could size the structure by computing the "bankfull" stream flow for a 24 hour storm with a 1.5 year recurrence interval and then increasing the cross sectional area of the structure by 20%. It would be acceptable to calculate the 1.5 year "storm" by means of interpolation. In entrenched streams this elevation may be well below the top of both banks. The bankfull area is the cross sectional area under the bankfull elevation. The U.S. Environmental Protection Agency (U.S. EPA) provides information on determining bankfull elevation on its website at www.epa.gov/warsss/pla/box03.htm.

- Individual Permits: An individual site specific Section 401 Water Quality Certification is required for culvert replacement projects that do not meet the above conditions.

Requirements for New Culverts:

- New culverts and crossings may be authorized under a USACE general permit known as a Regional General Permit (RGP) #1, or an individual permit.
 - RGP #1 requires a 30-day notice to IDEM and USACE prior to construction and does not involve a site specific review by IDEM. To qualify for this general permit, the culvert must meet the following conditions:
 - The cross sectional area of the culvert is at least 20 percent larger than the area under the Ordinary High Water Mark² of the stream immediately upstream and downstream of the culvert;
 - It does not exceed 150 linear feet;
 - If it has more than one opening, then one of the openings meets the cross sectional area requirement;
 - It has either no bottom (e.g., three-sided culvert) or is 20 percent embedded into the streambed (embedded area must be subtracted from the cross-sectional area); and,
 - The slope of the culvert bed matches the slope of the streambed both upstream and downstream of the culvert.
- Individual Permits: An individual site specific section 401 Water Quality Certification is required for new culvert projects that do not meet the above conditions.

Requirements for Culverts in Ditches:

- USACE defines non-tidal ditches as ditches that are constructed in uplands and receive water from or divert water to an area determined to be a water of the United States prior to the construction of the ditch.
- For most culvert projects in ditches, a USACE general permit known as Nationwide Permit #46 may be used. Pre-construction notification is made to USACE, not to IDEM.
- NWP #46 excludes:
 - Channelized streams,
 - Relocated streams, and
 - Increases in ditch capacity that causes the ditch to drain wetlands and other waters.

More Information:

- For more information on culverts and stream crossings permits, visit IDEM's Web site at: <http://www.in.gov/idem/4870.htm>.
- For more information about USACE Nationwide Permits, visit the USACE Web site at: <http://www.lrl.usace.army.mil/Missions/Regulatory/ObtainPermit/Nationwide.aspx>.
- For a copy of IDEM's Water Quality Certification of USACE nationwide permits and the regional general permit, visit: <http://www.in.gov/idem/wetlands/2358.htm>.
- For permit application and notification information, visit: <http://www.in.gov/idem/wetlands/2342.htm>.
- To contact the project manager who handles your section of the state visit: <http://www.in.gov/idem/4395.htm>.
- For more information on determining bankfull elevation, see the United States Environmental Protection Agency (USEPA) Watershed Assessment of River Stability & Sediment Supply (WARSSS) at <http://www.epa.gov/warsss/pla/box03.htm>.

² Ordinary high water mark is the line on the shore of a waterbody established by the fluctuations of water and indicated by physical characteristic such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, natural destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.