Stream Crossings Statutes & Rules

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NORTH DAKOTA CENTURY CODE

CHAPTER 24-01
STATE HIGHWAY SYSTEM

24-01-01.1. Definition of words and phrases. The following words and phrases when used in this title shall, for the purposes of this title, have the meanings respectively ascribed to them in this chapter:

. . .

11. "Department" means the department of transportation of this state as provided by section 24-02-01.1.

. . .

CHAPTER 24-03
CONSTRUCTION AND MAINTENANCE OF STATE HIGHWAY SYSTEM

24-03-06. Method of construction of highway ditches. All highways constructed or reconstructed by the department, board of county commissioners, board of township supervisors, their contractors, subcontractors, or agents, or by any individual firm, corporation, or limited liability company must be so designed as to permit the waters running into the ditches to drain into coulees, rivers, and lakes according to the surface and terrain where the highway or highways are constructed in accordance with the stream crossing standards prepared by the department and the state engineer so as to avoid the waters flowing into and accumulating in the ditches to overflow adjacent and adjoining lands. In the construction of highways the natural flow and drainage of surface waters to the extent required to meet the stream crossing standards prepared by the department and the state engineer may not be obstructed, but the water must be permitted to follow the natural course according to the surface and terrain of the particular terrain. The department, county, township, their contractors, subcontractors, or agents, or any individual firm, corporation, or limited liability company is not liable for any damage caused to any structure or property by water detained by the highway at the crossing if the highway crossing has been constructed in accordance with the stream crossing standards prepared by the department and the state engineer.

History: Enacted 1953; amended 1993, 1999.

24-03-08. Determinations of surface water flow and appropriate highway construction. Whenever and wherever a highway under the supervision, control, and jurisdiction of the department or under the supervision, control, and jurisdiction of the board of county commissioners of any county or the board of township supervisors has been or will be constructed over a watercourse or draw into which flow surface waters from farmlands, the state engineer, upon petition of the majority of landowners of the area affected or at the request of the board of county commissioners, township supervisors, or a water resource board, shall determine as nearly as practicable the design discharge that the crossing is required to carry to meet the stream crossing standards prepared by the department and the state engineer. When the determination

has been made by the state engineer, the department, the board of county commissioners, or the board of township supervisors, as the case may be, upon notification of the determination, shall install a culvert or bridge of sufficient capacity to permit the water to flow freely and unimpeded through the culvert or under the bridge. The department, county, and township are not liable for any damage to any structure or property caused by water detained by the highway at the crossing if the highway crossing has been constructed in accordance with the stream crossing standards prepared by the department and the state engineer.

History: Enacted 1953; amended 1999.

CHAPTER 24-06
LOCAL ROAD IMPROVEMENTS

24-06-26.1. Township road and drainage construction standards. Whenever the construction or reconstruction of a township road or bridge, the insertion of a culvert in a township road, or the construction or reconstruction of a ditch or drain in connection with a township road affects the flow of surface waters and increases the surface water flow through ditches, drains, bridges, and culverts in other townships, the board of township supervisors or the township overseer of highways of the township undertaking the construction or reconstruction shall give notice to the boards of township supervisors or township overseers of highways in all townships affected by the construction or reconstruction projects.

The boards of township supervisors of townships affected by any road or bridge construction that changes or increases the flow of surface waters shall cooperate in the construction projects expending on any portion of the projects the portions of the road and bridge tax as deemed conducive to the interests of the township. The board of township supervisors shall construct the ditches, drains, bridges, and culverts in accordance with stream crossing standards prepared by the department and the state engineer. A township, board of township supervisors, and township overseer of highways are not liable for any damage caused to any structure or property by water detained by the highway at the crossing if the highway crossing has been constructed in accordance with the stream crossing standards prepared by the department and the state engineer.

History: Enacted 1951; amended 1999.

NORTH DAKOTA ADMINISTRATIVE CODE

ARTICLE 89-14
PUBLIC HIGHWAY STREAM CROSSINGS

CHAPTER 89-14-01
STREAM CROSSING DESIGN

89-14-01-01. Standards. Except as provided in section 89-14-01-06, all highways constructed or reconstructed by the department of transportation, board of county commissioners, board of township supervisors, their contractors, subcontractors, or agents, or by any individual, firm, corporation, or limited liability company must be designed to meet the standards contained in this chapter. The department of transportation, board of county commissioners, board of township supervisors, their contractors, subcontractors, or agents, or any individual, firm, corporation, or limited liability company that fails to comply with these standards is not entitled to the immunity provided in North Dakota Century Code section 24-03-06, 24-03-08, or 24-06.26.1.

History: Effective May 1, 2001; amended effective July 27, 2001; January 1, 2015.
General Authority: NDCC 24-02-01.1, 24-02-01.5, 28-32-02, 61-03-13
Law Implemented: NDCC 24-03-06, 24-03-08, 24-06-26.1

89-14-01-02. Definitions.

1. "Constructed" means to construct a new highway on a new location or corridor.

2. "Highway, street, or road" is defined in North Dakota Century Code section 24-01-01.1.

3. "Reconstructed" means to regrade, add a lane adjacent to the existing alignment, or do full depth road surface replacement on an existing highway location. For purposes of this chapter, reconstructed also includes replacing or installing a stream crossing.

4. "Stream crossing" means an opening to permit the flow of water under, adjacent to, or because of a highway.

History: Effective May 1, 2001; amended effective January 1, 2015.
General Authority: NDCC 24-02-01.1, 24-02-01.5, 28-32-02, 61-03-13
Law Implemented: NDCC 24-03-06, 24-03-08, 24-06-26.1

89-14-01-03. Design flood frequency. The following table provides the minimum design standard recurrence interval of the event for which each type of stream crossing must be designed. Nothing contained in this chapter is intended to restrict an entity from providing greater capacity.

Type of Crossing	State Highway System						County	
	Urban System		Rural System				Rural System	
	Regional	Urban Roads	Principal Arterial		Minor Arterial	Major Collector	Major Collector	Off[4] System
			Interstate	Other				
Bridges & Reinforced Concrete Boxes	25 year[2]	25 year[2]	50 year[2]	50 year[2]	50 year [2]	25 year[2]	25 year[2, 3]	15 year[2, 3]
Roadway Culverts	25 year[2]	25 year[2]	50 year[2]	25 year[2]	25 year[2]	25 year[2]	25 year[2, 3]	15 year[2, 3, 5]
Storm Drains	10 year[1]	5 year[1]	10 year[2]	10 year[2]	10 year[2]	10 year[2]		
Underpass Storm Drains	25 year[1]	25 year[1]	50 year[2]	25 year[2]	25 year[2]	25 year[2]		

[1] Discharges must be computed using the rational method or other recognized hydrologic methods.

[2] Discharges must be computed using United States geological survey report 92-4020 or other recognized hydrologic methods.

[3] If an overflow section is provided, the pipes and the overflow section, in combination, must pass the appropriate design event within the headwater limitations provided in this chapter.

[4] Off system roads include all township roads.

[5] For township roads, the recurrence interval is 10 years.

History: Effective May 1, 2001; amended effective July 27, 2001; January 1, 2015.
General Authority: NDCC 24-02-01.1, 24-02-01.5, 28-32-02, 61-03-13
Law Implemented: NDCC 24-03-06, 24-03-08, 24-06-26.1

89-14-01-04. Floodplain consideration - Upstream development. All stream crossings must comply with applicable floodplain regulations and regulatory floodway requirements. If a stream crossing is being replaced and buildings or structures are located upstream from the crossing, the stream crossing must not be reconstructed in a manner that increases the likelihood of impacts to those upstream buildings or structures, even if the capacity of the crossing being replaced was greater than the capacity otherwise required by this chapter. Any stream crossing constructed as part of a newly constructed roadway must be constructed to pass a one hundred-year event without the resulting increase in headwater impacting any existing buildings or

structures. Structures, for the purposes of this section, include grain bins, silos, feedlots, and corrals. Structures do not include pasture fencing.

History: Effective May 1, 2001; amended effective January 1, 2015.
General Authority: NDCC 24-02-01.1, 24-02-01.5, 28-32-02, 61-03-13
Law Implemented: NDCC 24-03-06, 24-03-08, 24-06-26.1

89-14-01-05. Allowable headwater. The allowable maximum headwater when passing the design discharge must be measured from the bottom of the channel. For arch pipes, the maximum allowable headwater must be based on the rise of the pipe, and the pipe size category must be the equivalent round pipe size. For multiple pipe installations, the pipe diameter used to calculate the allowable headwater must be the diameter of the largest pipe. Tailwater resulting from downstream conditions, either natural or manmade, must be accounted for in the determination of the crossing's capacity and the resulting headwater. Additional guidance is provided in the North Dakota department of transportation design manual. If a crossing results in less than one-half foot [15.24 centimeters] of headloss when passing the appropriate design discharge, this section does not apply.

Streambed Slope (feet/mile)	Pipe Size	Allowable Headwater
< 5	24" - 54"	pipe diameter + 2 feet
	> 60"	1.5 pipe diameters
5 to 10	24" - 36"	pipe diameter + 2 feet
	42" - 54"	1.5 pipe diameters
	> 60"	2 pipe diameters
> 10	> 24"	2 pipe diameters

History: Effective May 1, 2001; amended effective January 1, 2015.
General Authority: NDCC 24-02-01.1, 24-02-01.5, 28-32-02, 61-03-13
Law Implemented: NDCC 24-03-06, 24-03-08, 24-06-26.1

89-14-01-06. Deviations. The board of county commissioners, board of township supervisors, their contractors, subcontractors, or agents, or any individual, firm, corporation, or limited liability company may deviate from the standards contained in this chapter if the deviation is approved in writing by the state engineer and the department of transportation. A request to deviate from the standards must be made in writing and must set forth the reasons for the proposed deviation. The state engineer and department of transportation may grant a deviation for good and sufficient cause after considering public safety, upstream and downstream impacts, and other relevant matters.

The department of transportation may deviate from these standards if the department determines it is appropriate to do so and the crossings are designed under scientific highway construction and engineering standards. The basis for the department's decision must be documented in writing.

Roads constructed as part of a surface coal mining operation for use solely as part of the mining operation are not subject to the requirements of this chapter. Roads constructed because of a surface coal mining operation for use by the public are bound by the requirements of this chapter, but deviations may be requested under this section.

History: Effective May 1, 2001; amended effective January 1, 2015.
General Authority: NDCC 24-02-01.1, 24-02-01.5, 28-32-02, 61-03-13
Law Implemented: NDCC 24-03-06, 24-03-08, 24-06-26.1