

# Best Practices Avoiding and Minimizing Wetland Impacts for Trunk Sewer Projects

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#### I. Problem

#### III. Trunk Sewer Installation



## II. General Sewer Design





Trunk sewer pipes are installed in relatively straight, narrow corridors at specific grades designed to minimize a municipal sever's overall length and transport wastewater using gravity when possible. Subsurface installations vary in depth depending on an area's topography, geology, and existing infrastructure.



Sever pipe installations require the operation of heavy equipment, causing destruction of vegetation, soil compaction, and altered groundwater hydrology due to changes in infiltration, porosity, and permeability of the surface and subsurface soils. If wetlands are impacted as part of a project, on site wetland re-establishment or mitigation is often unfeasible or inherently difficult due to significantly altered soils and hydrology.



Sever systems avoid streams when possible but are designed to cross perpendicular to stream flow when disturbance is unavoidable to reduce unnecessary impacts to streams. Returning disturbed streams as close as possible to their original conditions is typically required by floodplain permits to avoid changes to the floodplain.

## V. Wetland Regulations by State

lowa	Wisconsin
Federal Oversight From Rock Island	Federal Oversight From Rock Island
District, Omaha District, Kansas City	District, Chicago District, St. Paul District
District USACE	USACE
Regulation derived from 1987 U.S. Army	Regulation derived from 1987 U.S. Army
Corps of Engineers Wetland Delineation	Corps of Engineers Wetland Delineation
Manual	Manual
State Specific Guidance from Regional	State Specific Guidance from Regional
Supplement to the Corps of Engineers	Supplement to the Corps of Engineers
Wetland Delineation Manual: Midwest	Wetland Delineation Manual: Midwest
Region (Version 2.0)	Region (Version 2.0) and Northcentral
	and Northeast Region (Version 2.0)
USACE bases wetland permits on	USACE bases wetland permits on
Emergent, Scrub-Shrub, Forested	Cowardin, Circular 39, Wisconsin
Wetland Types	Wetland Inventory, Curtis, Eggers and
	Reed Wetland Types
No State Equivalent to Wisconsin	2017 Wisconsin Act 183 [2017
	Assembly Bill 547], Regulation of State
	Wetlands

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## VII. Project Guidance

- Wetland delineations completed during project onset are more cost effective and successful at avoiding and minimizing wetland impacts.
- Sewer systems are designed to minimize stream crossings, but weighing the cost of stream vs wetland impacts should be considered if impacts are not completely avoidable.
- Delineating larger areas than required for trunk sewer projects may provide alternative design solutions.
- Permitting for slightly larger wetland and stream impacts than planned is recommend as construction activities within a corridor often cause more disturbance than expected.
- Accounting for the functions and values of wetlands, streams, and all other natural areas potentially impacted by a project is a must in previously undisturbed areas.

## VIII. References





