

City of Warsaw Stormwater Drainage Permit: General Requirements**General Project Information****General Information**

Engineer of Record:		
MO PE Number:		
Project Name:		
Date:		

Project Location

Address:		
Nearest Intersection:		

Type of Construction

- ☐ Redevelopment, Expansion, Renovation, Repair and/or Maintenance
- ☐ New Construction (individual construction of one single family or duplex dwelling unit)
- ☐ New Construction (all other types, including subdivision development, commercial, industrial, etc.)

Site Parameters

Total Site Drainage Area (acres)		acres
Existing Impervious Area (square feet)		square feet
Proposed Impervious Area (square feet)		square feet
Difference in Impervious Area (square feet)		square feet
Effective FEMA floodplain?		(Select Yes/No)
Describe Known Stormwater Issues:		

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Permit Requirements/Variance

Drainage Permit Required?	-	(Select Yes/No)
Request for Variance?		
Why? Explain:		

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City of Warsaw Stormwater Drainage Permit: General Requirements

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Required Maps

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Watershed Location Map. Describes the project's location within the greater watershed depicting:

1. Watershed boundary and area (acres)
2. Delineated drainage area to the project (acres)
3. Natural drainage paths
4. Water bodies (lakes, rivers, streams, creeks, wetlands, etc.)
5. Stormwater retention/detention facility location(s) in watershed affecting stormwater management at project site (if applicable)
- ☐ 6. Conveyance route for overflow system to downstream destination of runoff

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Existing Site Conditions Map. Demonstrates existing conditions of the site depicting:

1. Existing contours
2. Aerial imagery
3. Water bodies (lakes, rivers, streams, creeks, wetlands, etc.)
4. Utilities, including existing stormwater infrastructure
5. Natural drainage paths
6. Parcel boundaries
7. Impervious surfaces
- ☐ 8. Key statistics (areas of boundaries, area of impervious surfaces, etc.)

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Proposed Site Conditions Map. Demonstrates proposed conditions of the site depicting:

1. Proposed contours including finished floor elevation (FFE) and lowest opening elevation (LOE) information
2. Utilities, including existing stormwater infrastructure overland drainage paths
3. Parcel boundaries
4. Impervious surfaces and types (i.e. building, parking lot, etc.)
5. Stormwater improvements (i.e. detention/retention facilities, open and enclosed conveyance systems, storm drainage structures, etc.)
6. Drainage easements depicting maintained stormwater drainage setbacks and dimensions

City of Warsaw Stormwater Drainage Permit: General Requirements

Designer Verification of Compliance with Design Criteria

Retention

<input type="checkbox"/> Requirements Met?	Design Criteria	Retention Volume (CF)	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Easement(s) provided?	<i>Required</i>	<i>Designed</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	0.5" design storm over impervious area of the site		

Detention

<input type="checkbox"/> Requirements Met?	Design Criteria	Release Rates (cfs)	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Easement(s) provided?	<i>Maximum Allowable</i>	<i>Designed</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2-year (50% temporal distribution)		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10-year (50% temporal distribution)		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10-year (10% temporal distribution)		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	100-year (10% temporal distribution)		

Conveyance

<input type="checkbox"/> Requirements Met?	Design Criteria
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Easement(s) provided?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Natural Drainage Path Preservation / Overflow System per Section 5605
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Open system, ditches, swales per Section 5607
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Enclosed System, Gravity per Section 5606
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Enclosed System, Pressure per Section 5606
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Street Crossings / Culverts per Section 5606

Collection

<input type="checkbox"/> Requirements Met?	Design Criteria
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Inlet placement and gutter spread per Section 5604 (street applications only)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Inlets placed in low or sump areas on the site

[illegible]

[illegible]

Water Drainage Permit: Conveyance

Design Criteria Check

[illegible]

City of Warsaw Stormwater							
Inlet ID	Inlet Type	Downstream Inlet ID	Drainage Area (ac)	Incremental Peak Runoff Flowrate Q (cfs)	Total Peak Runoff Flowrate Q _c (cfs)	Street Longitudinal Slope S _L (ft/ft)	Street Cross-Slope S _x (ft/ft)
CI-001	Curb Opening						
CI-002	Grate						
CI-003	Combination						
CI-004							
CI-005							
CI-006							

Drainage Permit: Collection

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City of Warsaw Stormwater D												
Retention Facility ID	Description	Tributary Drainage Area A (acres)	Impervious Tributary Drainage Area A _{imp} (acres)	Percent Impervious I (%)	Retention Volume V _R (ac-ft)	Ponding			Material 1			
						Area A _{layer} (ft ²)	Height h _{layer} (ft)	Volume V _{layer} (ft ³)	Area A _{layer} (ft ²)	n	Height h _{layer} (ft)	Volume V _{layer} (ft ³)
BIO-01 (example)					0			0				0
					0			0				0
					0			0				0
					0			0				0
					0			0				0
					0			0				0
					0			0				0
					0			0				0
					0			0				0
					0			0				0
					0			0				0
					0			0				0
Total Required Retention Volume					0							

Drainage Permit: Retention

Material 2				Material 3				Material 4				Storage Chamber	Provided Volume (ft ³)	Provided Volume (ac-ft)
Area A _{layer} (ft ²)	n	Height h _{layer} (ft)	Volume V _{layer} (ft ³)	Area A _{layer} (ft ²)	n	Height h _{layer} (ft)	Volume V _{layer} (ft ³)	Area A _{layer} (ft ²)	n	Height h _{layer} (ft)	Volume V _{layer} (ft ³)	Volume V _{layer} (ft ³)		
			0				0				0		0	0
			0				0				0		0	0
			0				0				0		0	0
			0				0				0		0	0
			0				0				0		0	0
			0				0				0		0	0
			0				0				0		0	0
			0				0				0		0	0
											Total Provided Retention Volume	0	0	

City of Warsaw Stormwater Drainage Permit: Detention

Drainage Area	
Tributary Drainage Area to Site (acres)	
Drainage Area Tributary to Detention (acres)	
Design Parameters	
Invert Elevation of Primary Outlet (ft)	
Spillway Crest Elevation (ft)	
Top of Embankment Elevation (ft)	

Design Storm by ARI	Peak Discharge Criteria		Modeled Performance Results			Design Criteria Check	
	Allowable Discharge per Acre Drainage Area (cfs/acre)	Allowable Discharge (cfs)	Modeled Peak Discharge (cfs)	Modeled Maximum Water Surface Elevation (ft)	Modeled Maximum Storage Volume (acre-ft)	Peak Discharge (yes/no)	Water Surface Elevation (yes/no)
2-year (50% temporal distribution)	0.1						
10-year (50% temporal distribution)	0.2						
10-year (10% temporal distribution)	2						
100-year (10% temporal distribution)	3						