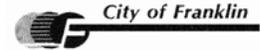


Storm Water Management Checklist



Project Name: _____

Date Submitted: _____

Project Location : _____
(general description of nearby streets):

Watershed Name(s): _____
(From City's Stormwater Management Plan)

Subwatershed Name(s): _____
(From City's Stormwater Management Plan)

Existing area of impervious surface: _____	Acres
Area of impervious surface after project completion: _____	Acres
Difference: _____	Acres
[If difference < 0.5 acres, stop; if difference ≥ 0.5 acres, proceed with checklist.]	

Water Quantity Design

Existing Conditions

Number of outfalls: _____

Table 1 - Existing Watershed Characteristics	Watershed Name/Number (Project Specific)	Area [Acres]	Percent Impervious	Hydrologic Soil Group(s)	Runoff Curve Number (RCN)	Time of Concentration (Tc)* [min]	Peak Runoff Flow ¹ (Include Hydrographs)	
							Q ₂	Q ₁₀₀
							[cfs]	[cfs]
	Total Site			—		—	<small>(flows to be added hydraulically)</small>	
	Offsite Contribution							

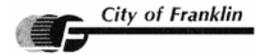
Proposed Conditions

Number of outfalls: _____

Table 2 - Proposed Watershed Characteristics	Watershed Name/Number (Project Specific)	Area [Acres]	Percent Impervious	Hydrologic Soil Group(s)	Runoff Curve Number (RCN)	Time of Concentration (Tc)* [min]	Peak Runoff Flow ¹ (Include Hydrographs)	
							Q ₂	Q ₁₀₀
							[cfs]	[cfs]
	Total Site			—		—	<small>(flows to be added hydraulically)</small>	
	Offsite Contribution							

* - Include calculations for Times of Concentration

Storm Water Management Checklist



Project Name: _____

Water Quantity Design (continued)

Summary of On-site detention

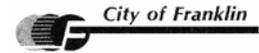
Table 3 - Pond Characteristics	Pond Name/Number	Contributing Watershed Names(s) (from Table 2)	Total Area to Pond [Acres]	Peak Inflow ¹ (Include Hydrographs)	
				Q ₂ [cfs]	Q ₁₀₀ [cfs]
				_____	_____
_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	

Table 4 - Pond Storage Volume	Pond Name/Number	NWL [Elevation]	Area [Acres]	Top of Pond [Elevation]	Area [Acres]	Storage Volume [Ac-ft]					
							_____	_____	_____	_____	_____
							_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____						
_____	_____	_____	_____	_____	_____						

Table 5 - Discharge Characteristics	Pond Name/Number	Discharge Pipe Size and Material	Peak Outflow ¹ (Include Hydrographs)		Peak Elevation		Maximum Runoff Release Rate ²	
			Q ₂ [cfs]	Q ₁₀₀ [cfs]	Elev ₂	Elev ₁₀₀	2-year [cfs/acre]	100-year [cfs/acre]
			_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	

Describe the characteristics of the downstream stormwater feature for each detention pond. (I.e. Is the downstream feature a wetland, ditch, storm sewer, etc. Does it have a tailwater elevation that affects the discharge of the pond):

Storm Water Management Checklist



Project Name: _____

Water Quality Design

Table 6 - Pond Permanent Pool			Permanent Pool ³					
	Pond Name/Number	Total Area to Pond [Acres]	Surface Area [Acres]	Percent of Watershed [%]	Max. Depth [feet]	Avg. Depth [feet]	Pool Volume [Ac-ft]	Required Volume [Ac-ft]
	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____

Table 7 - Pond Cells			Forebay ³			
	Pond Name/Number	Forebay Included	Surface Area [Acres]	Percent of Permanent Pool [%]	Number of Cells Excluding Forebay	
	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	_____	_____	
	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	_____	_____	
	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	_____	_____	
	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	_____	_____	

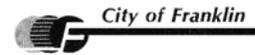
Pond Configuration⁴

Table 8 - Pond Configuration			Side Slopes		Emergency Spillway	
	Pond Name/Number	Above NWL	Safety Shelf	Below NWL	Invert Elevation	Width [feet]
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____

Storm Water Management Plan

Table 9 - Additional Information	<input type="checkbox"/> SWMP Narrative ⁵	<input type="checkbox"/> Pond Maintenance Plan
	<input type="checkbox"/> Erosion Control Plan	<input type="checkbox"/> Topographic Map of Surrounding Area
	<input type="checkbox"/> Outlet Control Structure Detail	<input type="checkbox"/> Site Drainage Plan ⁶
	<input type="checkbox"/> Vegetation/Planting Plan	<input type="checkbox"/> Drainage Basin Delineation
	<input type="checkbox"/> Pond Access Location	<input type="checkbox"/> Interim SWMP

Storm Water Management Checklist



1

2-year rain event(50% recurrence): 2.57 inches of rain, 24 hour duration, SCS type II distribution
 100-year rain event(1% recurrence): 5.88 inches of rain, 24 hour duration, SCS type II distribution

Q₂ means the peak flow due to the 2-year rain event
 Q₁₀₀ means the peak flow due to the 100-year rain event

2

Maximum Runoff Release Rate according to Milwaukee Metropolitan Sewage District Chapter 13 Surface Water and Stormwater Rule:

Rain Event	Maximum Release Rate
2-year	0.15 cfs/acre
100-year	0.50 cfs/acre

3

Water Quality Design Criteria:

- ▶ Permanent Pool Surface Area to be 1.0% of drainage area for residential development, 2.0% of the drainage area for business and institutional development, and 2.5% of drainage area for commercial and manufacturing development
- ▶ Maximum depth of the Permanent Pool ≥ 4 feet
- ▶ Permanent Pool Volume to be equal to or greater than the runoff volume resulting from a 1.5-inch, 4-hour rainfall, with a SCS Type II distribution over the drainage area under post-developed conditions
- ▶ A sediment forebay, located at the pond inlet, is required. It shall be a minimum of 12% of the Permanent Pool Surface Area.

4

Pond Configuration Standards:

- ▶ Side slopes to be a maximum of 4 horizontal to 1 vertical above and below the pond normal water level (with the exception of the safety shelf)
- ▶ A safety shelf is required for all ponds. The shelf shall be located from pond normal water level to one foot below normal water level. The maximum slope shall be 10 horizontal to 1 vertical. The minimum width shall be 10 feet.
- ▶ An emergency spillway is required for all ponds.

5

SWMP Narrative

- ▶ Site Location
- ▶ Description of existing and proposed conditions
- ▶ Methods used for analysis
- ▶ Summary of calculations and results

6

Site Plan

- ▶ Owner's property line
- ▶ Municipal easements
- ▶ Public streets
- ▶ State plane coordinate reference
- ▶ Watercourses, drainage ways and overflow paths
- ▶ Storm Sewers
- ▶ Offsite drainage entry point
- ▶ Offsite drainage watershed delineation
- ▶ Existing detention facilities including those of adjacent properties if affected by drainage from the site
- ▶ Existing natural storage areas
- ▶ Existing buildings and structures
- ▶ Existing contours at a minimum of 2-foot intervals
- ▶ Proposed contours at a minimum of 2-foot intervals
- ▶ Proposed impervious areas