

<b>PROBLEMS/OPTIONS</b> and Recommendation or Options	<b>Page</b>	<b>Ponds</b>	<b>How? Why?</b>	<b>Year?</b>
<b>DREDGING (OR FILL MATERIAL)</b>		<b>3 to 7</b>		
Determination if permitting is needed		3 to 7	Ask Army Corps of Eng. and Ind Dept of Env Mgmt; may not be needed	1
Costs based on project type & installation method	A4			
Conduct a detailed dredging plan prior to dredging	14	3 to 7	Hire someone, e.g., Hoosier Aquatic Management	2 to 3
Cost to dredge, re-line, and restore shore	15	3 to 5	Hoosier Aquatic Management ballpark estimate	
Dredge all of 3, not just part, if done	15	3		
Dredging & new liner for 3	9		Dredging of S. part of pond 3 more difficult after rain garden installation	2 to 3
Dredging of 4	19	4	Not an immediate concern	5 to 10
Partial dredging not recommended	A3	3 to 5	Better to dredge everything if we go that route	
Address low water levels in 3-5 before 6-7	A3-4	3 to 7	Monroe County must be consulted for pond 7 if dredged	
<b>INVASIVE SPECIES</b>				
Manage invasive/detrimental species	6	3 to 5	Mow, spray, cut; especially cattails & water primrose	1 to 3
Primrose	15	3 to 5	Consistent repetitive treatments w chemicals	1
Do not pump water from 7 to 1 until primrose gone	11		Assess primrose eradication in 2019	1
How to identify invasive species			See attachment to Caleb Asbury's Answers	
<b>BANK EROSION/RESTORATION</b>				
Do not mow to the water's edge				1 to 5
Flexamat incorrectly installed: don't remove	7	1 & 2	Manufacturer doesn't recommend removal	
Vegetation of the banks in Flexamat (do not bury)	8	1 & 2	Test soil underneath for plant growth potential	2 to 3
Restore shoreline w/o replacing liners in 6 & 7	14	6 & 7	OK to use dredged soil; must have agency approval first	
Maintain a band of unmowed grass above the rip-rap	A3	6 & 7		
Shoreline restoration in 4	19	4		2
Soil erosion in 3-5 and 6-7: restore the shoreline	12		2' - 5' unmowed buffer; add top soil to banks; seed; stones at base	1
	12		straw blankets or coconut fiber mats over bare soil; sow seed;	
	13		Mow buffer to 4"-6" 0-2 times/year	
<b>RAIN GARDEN</b>				
Rain garden slows the flow of water from creek	8	3	Get jurisdictional ruling on permitting; contact MS-4 staff	1
Treat for invasive species				1+
<b>WETLANDS</b>		<b>3 &amp; 5</b>		
Plant wetland emergent seed along N bank of 3	10	3	Best to plant when no water is leaving pond 3	
Install live vegetative plugs (pots) in N half of 3	10	3	Success more likely; plant in saturated soil or soil w little water in spring	
Seed 5 twice two yrs after primrose gone if not dredged	16	5	To combat primrose seed 5 twice during low water (fall & spring)	
	17		If plugs used: plugs cost \$8200; labor adds \$10,000	
Wetlands won't impede water flow	A2	5	Eventually will fill to level of the weirs	
<b>INFRASTRUCTURE REPAIR AND MAINTENANCE</b>				
Maintain stormwater conveyance infrastructure	13		Put stones in 4-5 at base of each; replace/repair cracked ones first	2 to 3
Expansion joint repair in the weirs	15		Weirs between 3-4 and 6-7 need minor maintenance	1
Repair damaged stormwater conveyance structures	19	1 & 2		2 to 3

Aerators, fontains, and water pumps/water level	20	5	Compare water level to the elevation of the outlet structure	1+
	A1	1 & 5 & 7	Use the pumps as needed; ok to pump to 7 ~June 2019	1
<b>WILDLIFE</b>				
Fish kills	17		May install perforated stormwater grate to keep fish out of 5	
	18		Dredging may be needed for 4-5 to < oxygen levels & improve fish habitat	
Wildlife control	18		Install deterrents: flashing lights, predator decoys; spray grass w repellent	
	21		Do not mow to water's edge	
<b>ENHANCEMENT OF THE COMMON AREAS</b>	22		Public seating and native plantings; allow space for residents who	
			do not live on a pond	
NB: "A" in a page reference means the Answers doc.				
Revised: 10/7/18				

Cost Estim.	Advantage	Disadvantage
	< of O2 & habitat for fish	Requires liner replacement
\$15,000		
\$200,000 to		
\$350,000		
	Doesn't req. liner repl.; cheaper	
\$450		
\$1750/acre		
\$1-\$2K/acre		
	leaves pond liner in	Easily overrun w invasive species
	leaves pond liner in	
\$18,200	leaves pond liner in	
	could do shoreline only	would need 2-3 years to spread