

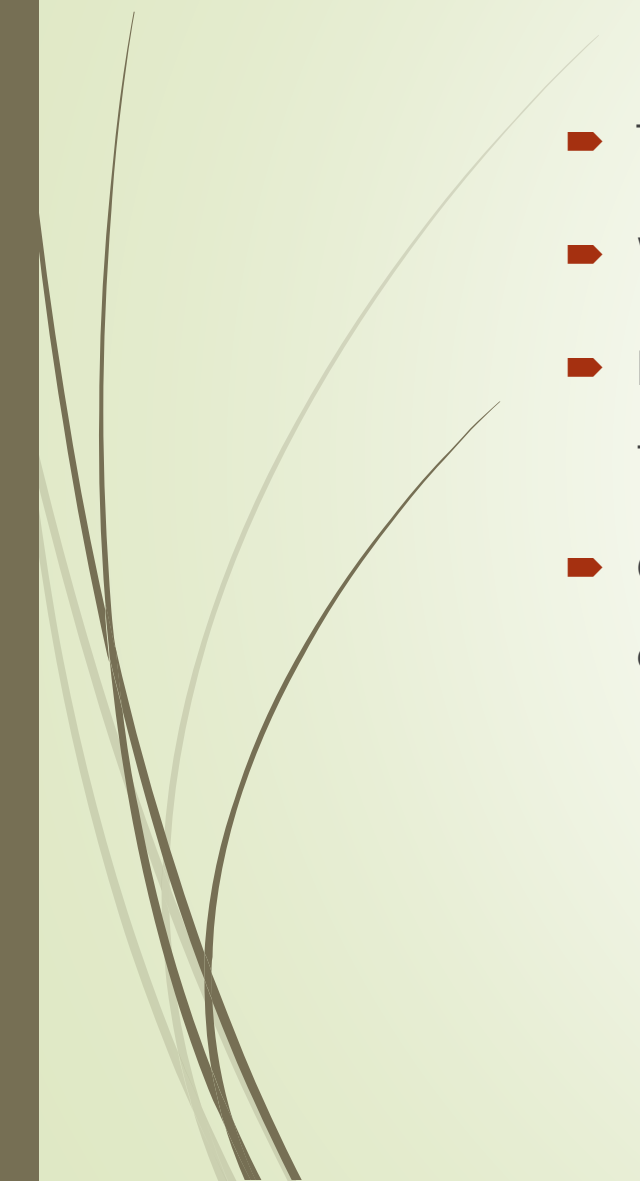


City of Red Wing Pond Inspections

-Madison Erie
City of Red Wing
Field and Lab Technician
Red Wing WWTP




Pond Information

- ▶ The City of Red Wing has 75 Stormwater ponds
 - ▶ We maintain approximately 60
 - ▶ Ponds are on an inspection and survey schedule, our MS4 permit requires us to inspect 20% annually
 - ▶ Once a pond shows over 20% infill, we monitor and make a plan to clean out the pond
- 



Time of year to Inspect and Survey:

- ▶ Pond inspections can be done throughout the year
 - ▶ Dry Ponds are surveyed spring-fall
 - ▶ Wet Ponds are surveyed during the winter, when the ponds have a layer of thick ice
- 



General Pond Inspection

- ▶ Cartegraph

- ▶ Inspection form

- Rating system

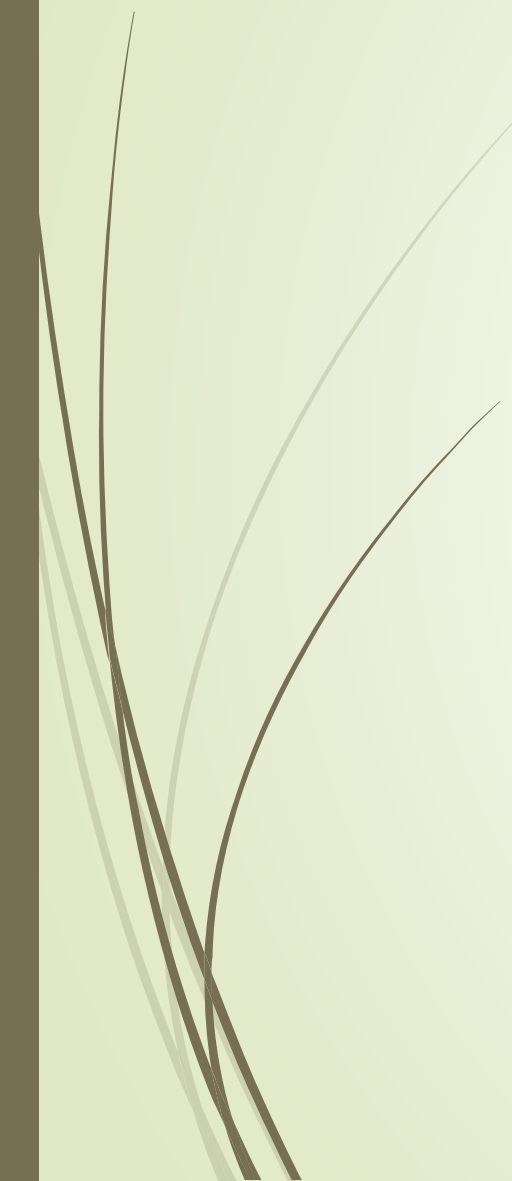
- Based on the inspection, a percentage is calculated and if/when the percentage falls below 70% a maintenance plan is made.

- ▶ Pictures

- ▶ Observations/notes



What we look for:

- ▶ Debris/trash?
 - ▶ How do the outlet structures look?
 - ▶ Cleanliness of the pond (sheen? Odor? color?)
 - ▶ Overall Operation (Is the pond doing its job?)
 - ▶ Is there erosion? If so, where?
 - ▶ Vegetation control (unwanted Trees/shrubs, how big?)
 - ▶ Any observations that may be important
- 



Signs of trouble:

- ▶ Infill is above 50%
 - ▶ Large areas of erosion that affect the structure
 - ▶ Large unwanted vegetation taking over
 - ▶ Emergency Spillway is full of sediment
 - ▶ Outlet structures are clogged or damaged
-
- ▶ Pictures are taken to document issues so our maintenance crews know what to focus on.

Example of Inspection form:

Cartègraph Requests Work **Assets** Resources Reports

Home > Assets > Storm Basin: 36 > Inspection

- Inspection Detail
- Condition Categories
- Inspection Notes
- Inspection Attachments

Inspection Detail

Basic Information

Inspection Date: 12/8/2021
Inspected By: Madison Erie
Full Name: Madison Erie
Irregularities that Indicate Upstream Pr...

Condition Categories

Trash Rack are Clear from Debris	★★★★★	100
Emergency Spillway/Outlet Structur...	★★★★★	100
Overall Cleanliness of Pond/Feature	★★★★★	100
Overall Operational Capacity and Eff...	★★★★★	100
Erosion Control	★★★★★	100
Shrub and Tree Control	★★★★★	100

Cartègraph Requests Work **Assets** Resources Reports







Home > Assets > Storm Basin: 36 > Inspection

- Inspection Detail
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Inspection Notes

Notes: Newly redone, summer 2021

Inspection Attachments

	8aa73769-9dba-4073-8648-...	0.5 MB	merie2361	12/8/2021 1:44:43 PM
	f700fb31-3f6b-4906-b228-1...	0.6 MB	merie2361	12/8/2021 1:43:56 PM
	42a50c63-e515-4265-bc50-f...	0.5 MB	merie2361	12/8/2021 1:43:56 PM
	f2f57ae0-939d-404b-9c82-0...	0.4 MB	merie2361	12/8/2021 1:43:56 PM
	979b464d-f0e8-45ff-9325-e8...	0.6 MB	merie2361	12/8/2021 1:43:56 PM
	0b0baa8f-5f28-41ba-a820-5f...	0.6 MB	merie2361	12/8/2021 1:43:56 PM

What a survey looks like:



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	#65					Point	Top of ice	Average	T.O.S	Elevation	B.O.P	Elevation	Total sed.
2	4000,234496.653,648803.689,682.604,44					4000	682.604	682.2405	1.2	681.0405	3.1	679.1405	1.9
3	4001,234491.965,648805.182,682.347,44					4001	682.347	682.2405	1.2	681.0405	2.3	679.9405	1.1
4	4002,234488.420,648808.075,682.187,44					4002	682.187	682.2405	1.2	681.0405	2	680.2405	0.8
5	4003,234482.513,648810.294,682.171,44					4003	682.171	682.2405	1.1	681.1405	2	680.2405	0.9
6	4004,234470.921,648805.769,682.329,44					4004	682.329	682.2405	1.4	680.8405	4.7	677.5405	3.3
7	4005,234475.128,648814.459,682.082,44					4005	682.082	682.2405	1.3	680.9405	2.2	680.0405	0.9
8	4006,234478.071,648819.860,682.034,44					4006	682.034	682.2405	1.1	681.1405	2	680.2405	0.9
9	4007,234467.352,648828.129,682.014,44					4007	682.014	682.2405	1.3	680.9405	2.2	680.0405	0.9
10	4008,234461.676,648817.624,682.068,44					4008	682.068	682.2405	1.4	680.8405	2.5	679.7405	1.1
11	4009,234458.666,648806.089,682.407,44					4009	682.407	682.2405	1.7	680.5405	2.9	679.3405	1.2
12	4010,234437.799,648819.236,682.302,44					4010	682.302	682.2405	1.6	680.6405	2.7	679.5405	1.1
13	4011,234444.831,648828.435,682.248,44					4011	682.248	682.2405	1	681.2405	1.8	680.4405	0.8
14	4012,234451.957,648834.223,682.224,44					4012	682.224	682.2405	1.6	680.6405	3	679.2405	1.4
15	4013,234458.420,648838.448,682.160,44					4013	682.16	682.2405	1.4	680.8405	2.5	679.7405	1.1
16	4014,234450.253,648847.121,682.186,44					4014	682.186	682.2405	1.6	680.6405	2.8	679.4405	1.2
17	4015,234442.091,648839.660,682.235,44					4015	682.235	682.2405	1	681.2405	3.4	678.8405	2.4
18	4016,234432.775,648831.923,682.293,44					4016	682.293	682.2405	0.9	681.3405	2	680.2405	1.1
19	4017,234424.690,648846.077,682.339,44					4017	682.339	682.2405	1.7	680.5405	3	679.2405	1.3
20	4018,234435.131,648852.213,682.154,44					4018	682.154	682.2405	1.6	680.6405	3	679.2405	1.4
21	4019,234443.833,648858.919,682.126,44					4019	682.126	682.2405	1.5	680.7405	2.5	679.7405	1
22	4020,234434.782,648865.474,682.125,44					4020	682.125	682.2405	1.6	680.6405	2.7	679.5405	1.1
23	4021,234426.542,648861.386,682.319,44					4021	682.319	682.2405	0.6	681.6405	2.5	679.7405	1.9
24	4022,234416.516,648855.668,682.258,44					4022	682.258	682.2405	1.7	680.5405	2.7	679.5405	1
25	4023,234408.594,648868.494,682.279,44					4023	682.279	682.2405	1.3	680.9405	2.4	679.8405	1.1
26	4024,234418.214,648873.388,682.132,44					4024	682.132	682.2405	1.4	680.8405	3.4	678.8405	2
27	4025,234428.640,648878.908,682.085,44					4025	682.085	682.2405	1.4	680.8405	2.2	680.0405	0.8
28	4026,234417.966,648890.905,682.012,44					4026	682.012	682.2405	1.7	680.5405	2.6	679.6405	0.9
29	4027,234410.781,648886.661,682.125,44					4027	682.125	682.2405	1.7	680.5405	2.5	679.7405	0.8
30	4028,234402.092,648882.390,682.367,44					4028	682.367	682.2405	1.4	680.8405	2.5	679.7405	1.1
31	4029,234403.401,648893.843,682.189,44					4029	682.189	682.2405	1.7	680.5405	2.5	679.7405	0.8
32	4030,234415.487,648900.004,682.199,44					4030	682.199	682.2405	1.5	680.7405	2.7	679.5405	1.2
33	4031,234402.835,648905.742,682.248,44					4031	682.248	682.2405	1.5	680.7405	2.5	679.7405	1
34	4032,234394.831,648910.414,682.743,44					4032	682.743	682.2405	1.2	681.0405	1.4	680.8405	0.2
35	4033,234405.192,648914.681,682.586,44					4033	682.586	682.2405	1.5	680.7405	5.6	676.6405	4.1



Pond Survey Video

► <https://www.youtube.com/watch?v=6iYCjYApXao>

► Equipment:

-Measuring rod

-Ice auger

-Spray paint

-Picture of pond

-clipboard

-pen

-GPS survey equipment



What if...

- ▶ If there is a sediment holding problem, we know the pond is over its capacity and plan to dredge the pond.
- ▶ If there is a structural failure, we would make a plan to rebuild the pond.
- We are able to catch a problem early by inspections and maintenance.
- ▶ If a new development comes into the area near one of the ponds, then the inspection frequency would increase.
- ▶ Construction project near a pond? We monitor and if changes to the pond are made or capacity is changed, we discuss cleaning out the pond or rebuilding it completely.

Questions?

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