

# Stormwater Management Facilities



**Ensuring Long-Term Functionality**

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Washington County Planning and Parks Department  
Land & Water Conservation Division**

# 2009 BMP Inspection

**Inspections completed on:**

**72 Development Sites – Dating back to 1991**

## 131 Conveyance Systems

**6 Level Spreaders**  
**115 Open Channels**  
**10 Storm Sewers**

## 159 Treatment Systems

**1 Dry Retention**  
**20 Existing Kettles**  
**53 Infiltration Basins**  
**9 Pre-Treatment/Infiltration**  
**76 Wet Detention**

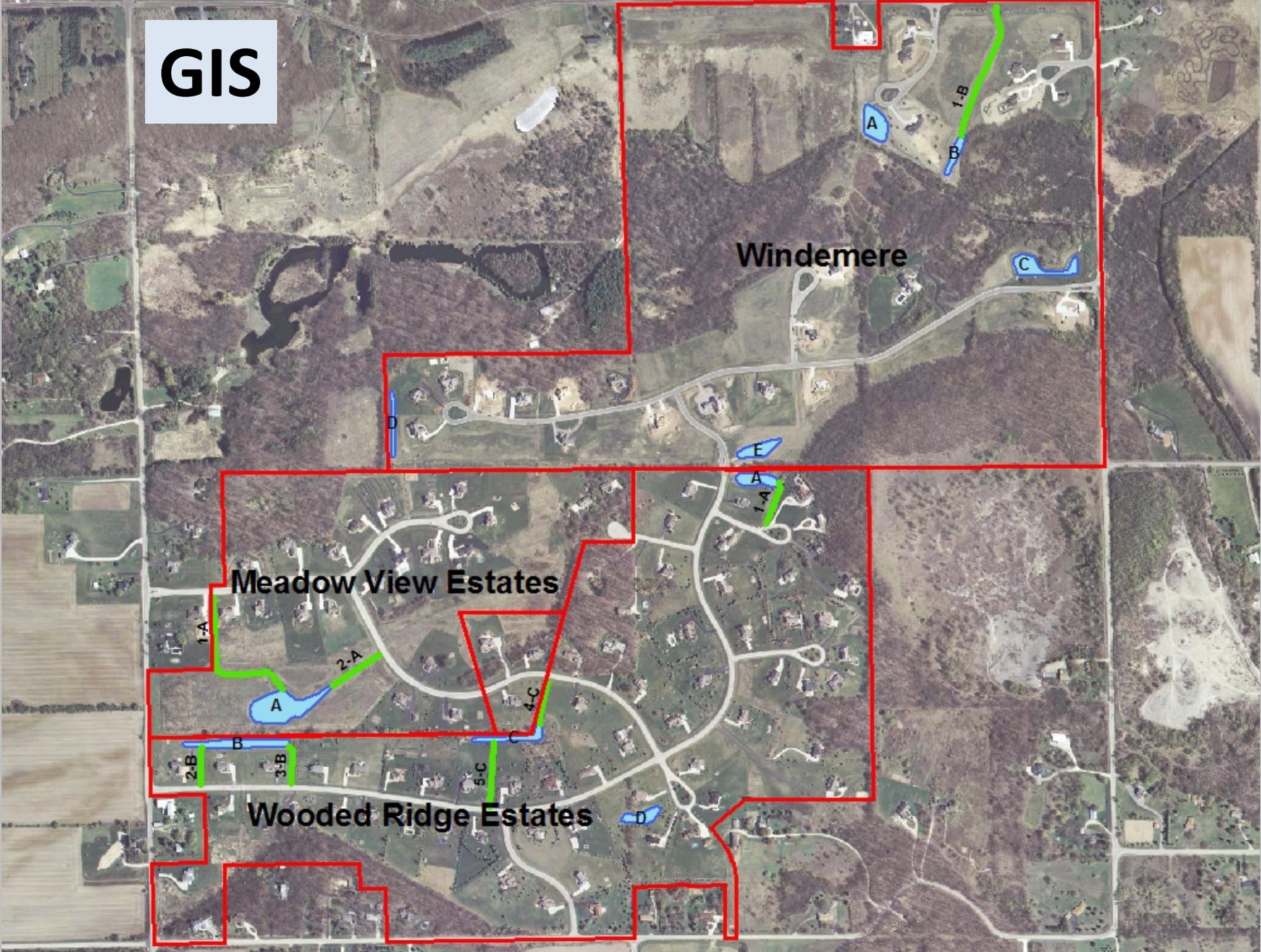
## **Inspection Reasons:**

- **Condition**
- **Functioning – Working vs Not Working**
- **Identify Maintenance Needs - Failures**
- **Dredging - Sediment Removal Determinations**
- **Lifespan**

## **County Code/Intergovernmental Agreement Requirement**

- **Database Creation**
- **Inspection (Periodically)**
- **Results and Notifications**
  - **Local Municipality**
  - **Responsible Party**
- **Enforcement (Follow-up)**

**GIS**



**Windemere**

**Meadow View Estates**

**Wooded Ridge Estates**

Showing Sites: [All Sites Shown](#)

# Sites Summary

## LWCD View

- Sum
- LWCD
- LAN
- Admin
- Edit
- Add
- Delete
- A↓ Z↓
- Z↓ A↓

Site Name	Location	Type	LWCD Typ	LWCD Pha:	LWCD Au	Staff	GIS	Site
Meadow Creek Crossings	Germantown (VLG)-33	Subdv	N/A	N/A	No		<input type="checkbox"/>	240
Meadow View Estates	Richfield (VLG)-27	Subdv	ECSM	Inspect/Mnt	Yes	Perry M. Lindquist	<input checked="" type="checkbox"/>	186
Meadowlark Subdivision	West Bend (CTY)-8	Subdv	N/A	N/A	No		<input type="checkbox"/>	295
Meadowood, LLC	Wayne (TW)-31	Subdv	N/A	N/A	No		<input type="checkbox"/>	388
Meadows of Richfield, The	Richfield (VLG)-12	Subdv	N/A	N/A	No	Scott Schmidt, P.E	<input checked="" type="checkbox"/>	497
Michael Handel Property	Erin (TW)-1	Subdv	Unknown	Unknown	Yes		<input type="checkbox"/>	382
Michels Materials	Addison (TW)-27	Unkwn	NMM	Inspect/Mnt	Yes	Scott Schmidt, P.E	<input checked="" type="checkbox"/>	207
Michels Materials - Schultz	Kewaskum (TW)-16	Unkwn	NMM	Inspect/Mnt	Yes	Scott Schmidt, P.E	<input checked="" type="checkbox"/>	498
Mid-State Power & Equipment	Polk (TW)-23	Parcel	ECSM	Inspect/Mnt	Yes	Scott Schmidt, P.E	<input checked="" type="checkbox"/>	155
Miracle Homes	Richfield (VLG)-11	Parcel	EC	Complete	Yes	Paul Sebo	<input checked="" type="checkbox"/>	121
Misty Meadow Estates	Richfield (VLG)-29	Subdv	ECSM	Inspect/Mnt	Yes	Perry M. Lindquist	<input checked="" type="checkbox"/>	17
Mockingbird Hill	Jackson (TW)-33	Subdv	ECSM	Inspect/Mnt	No	Perry M. Lindquist	<input checked="" type="checkbox"/>	52
Monches Heights	Richfield (VLG)-30	Subdv	EC	Complete	Yes	Scott Schmidt, P.E	<input checked="" type="checkbox"/>	533
Monica Meadows	Polk (TW)-25	Subdv	ECSM	Inspect/Mnt	Yes	Scott Schmidt, P.E	<input checked="" type="checkbox"/>	402

Record: 229 of 522 No Filter Search

**Filter**

Apply Filter Show All Clear Criteria

Municipality:  LWCD Authority:  LWCD Phase/Type:

Legal Type:  LAN Authority:  LAN Status:

LWCD Staff:  Plat Submit:

Exit Application

Version Info

Site Detail

**Site Name**  Original Data Source:   
**Location**    Total Acreage:  SiteID:   
Municipality Section Other  
**Legal Type:**  LWCD Authority:  LAN Authority:   
**GIS\_Digitized**  LWCD Phase:  LAN Status:   
**Disturbed Acreage**   
**Lots**  **Outlets**

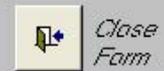
- LAN Main
- LWCD Main
- Contacts
- LWCD Action Summary
- LWCD Staff Time
- ECSM Practices
- LWCD Inspection

**Practice**

Delete	Practice Type	Code	Practice Identifier	Practice Description	GIS	Practice I
	Open Channel	1-A	North channel		✓	217
	PreTreatment/Infiltration	A	SW basin		✓	218
	Open Channel	2-A	East channel		✓	543
*					■	(New)

**Components for: PreTreatment/Infiltration - SW basin**

Add New	Component Type	Component Description	Document Hyperlink
Edit	Prereatment Area	Wet basin	
Delete	Basin Area		
	Infiltration Trench	Stone trench w/ 24 in riser pipe	
	Pipe Outlet Structure	24 in pipe between wet & dry basin & weir overflow	
	Earthen Berm	No designed outlet	

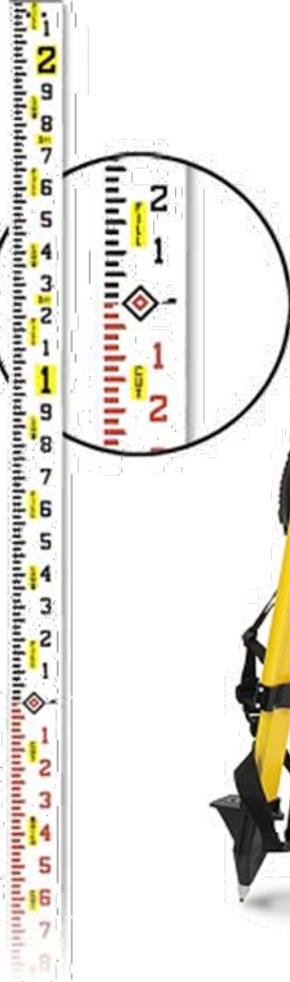
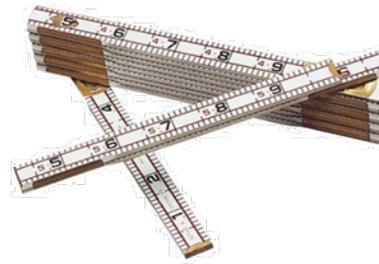


Maintenance Agreement Type: Home Owners Association

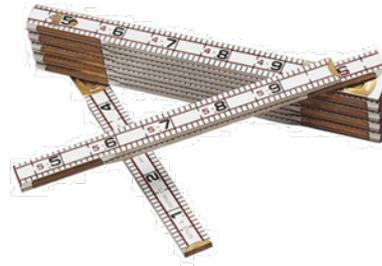
Notes

<u>Practice Type</u>	<u>Practice Detail</u>	<u>Practice Description</u>	<u>Inspected</u>	<u>Needs Follow-up</u>
Open Channel	North channel		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes
	<u>Component Type</u>	<u>Component Description</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes
Open Channel	East channel		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes
	<u>Component Type</u>	<u>Component Description</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes
PreTreatment/Infiltration	SW basin		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes
	<u>Component Type</u>	<u>Component Description</u>		
	Basin Area		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes
	Earthen Berm	No designed outlet	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes
	Infiltration Trench	Stone trench w/ 24 in riser pipe	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes
	Pipe Outlet Structure	24 in pipe between wet & dry basin & weir overflow	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes
	Pretreatment Area	Wet basin	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes

# Equipment Needs



# Equipment Used









Site Detail

**Site Name** Meadow View Estates Original Data Source: **Combination**  
**Location** Richfield (Village of) 27 NW1/4 SW1/4 Total Acreage: **64.849**  
Municipality Section Other Acreage Source: Final Plat **SiteID: 186**  
**Legal Type:** Subdivision Disturbed Acreage:   
GIS\_Digitized  Lots: **21** Outlots: **3**  
LWCD Authority: Yes LAN Authority: Approving  
LWCD Phase: Inspect/Mnt LAN Status: Complete

**Installation Date** 01/01/1997
Inspection Cycle: 1-Village of Richfield/2009  
(Inspection Cycle Start Date)

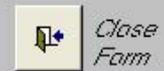
**Site Inspection Information**

Inspect Date	Staff	Lots Devlp	General Notes	FwUp Priority	Trees	Waste
9/17/2009	Paul Sebo	21		Low	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
*					<input type="checkbox"/>	<input type="checkbox"/>

**Practices Inspected: 9/17/2009 (By Paul Sebo)**

Practice	Code	Notes	FwUp	Notice	Deadline	Completed	Complete Da
Open Channel - North channel	1-A	Erosion into channel from	Low			<input type="checkbox"/>	
Open Channel - East channel	2-A	Tree removal should be	None	N/A		<input type="checkbox"/>	
PreTreatment/Infiltration - SW basin	A	Pretreatment basin dry,	None	N/A		<input type="checkbox"/>	

Double Click record to View/Edit Details



- 
- General Issues
  - Practice Failures
  - Design or Installation Issues
  - Routine Maintenance Needs
  - Oddities

**Inspection Findings:**



General Issues – Yard Debris Disposal



General Issues – Trees

6 years



General Issues – Trees



General Issues – Trees

17 years



General Issues – Trees

15 years



# Practice Failures

Infiltration - Existing Kettles

Inspected 20 – 2 Failing





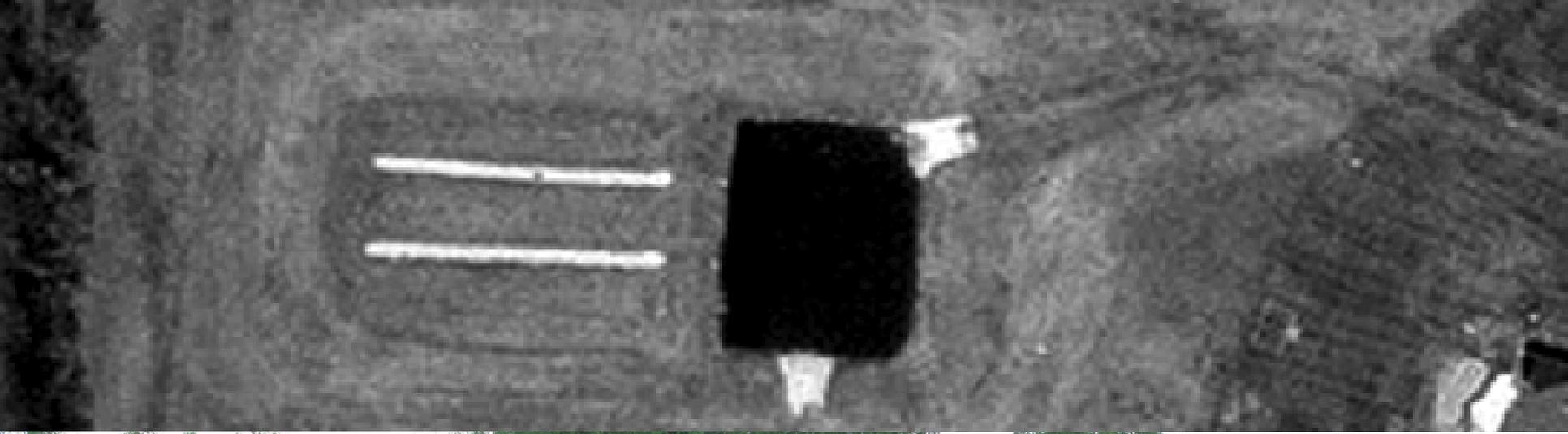
# Practice Failures

Infiltration Basins

Inspected 53 – 2 Failing



**Practice Failures**  
Wet Detention Basins  
Inspected 76 – Failing ???



**Practice Failures**  
Wet Detention Basins  
Inspected 76 – Failing ???



# Design or Installation Failures

Lack of Depth within Riprap Channel



# Design or Installation Failures

Eroding behind Riprap Chute into Basin



# Design or Installation Failures

Lack of Depth into Riprap Chute to Basin Floor



# Design or Installation Failures

Loose Banding on Pipe Installation



# Design or Installation Failures

Settling over Pipe Outlet Structure



# Design or Installation Failures

Outlet Pipe Settling away from Structure



**Design or Installation Failures**  
Rock Riprap not extended enough for safe outlet



# Design or Installation Failures

Berm between forebay and basin not protected



# Maintenance Needs - Simple

Done during Inspection



# Maintenance Needs - Simple

Done during Inspection



**Routine Maintenance Needs -**  
Tree Removal in Drainage Way / Easement Causing Erosion

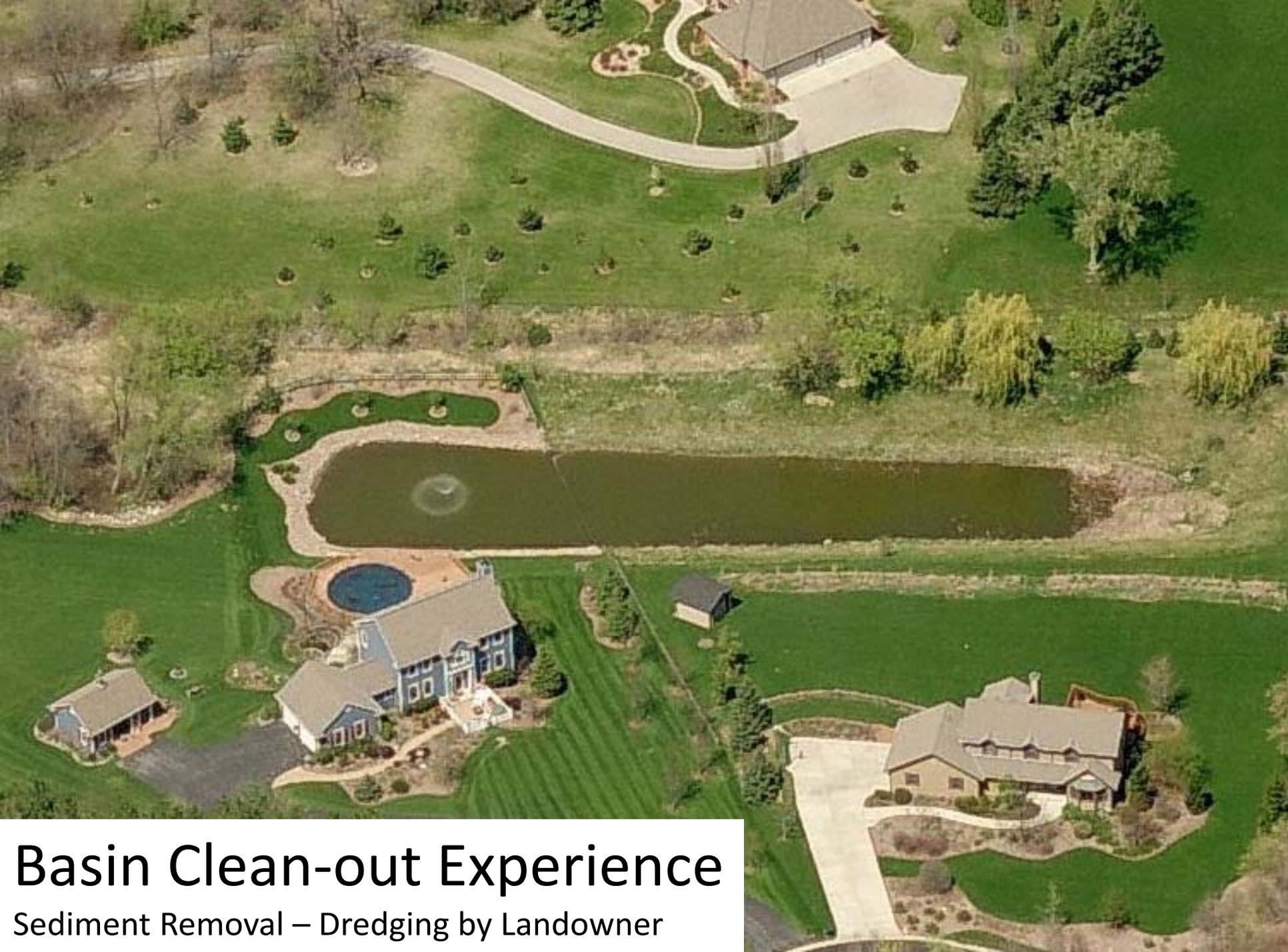
Hubertus Rd



**Routine Maintenance Needs**  
Sediment Removal - Dredging



**Routine Maintenance Needs**  
Sediment Removal – Dredging



# Basin Clean-out Experience

Sediment Removal – Dredging by Landowner



# Oddities

Broken Pipes/Orifice Plates



# Oddities

Items Out of Place



**Oddities**  
Items Out of Place



# Oddities

Items Out of Place



# Oddities

Tampering/Vandalism

# RED SWAMP CRAYFISH

(*Procambarus clarkii*)



## Description

Red swamp crayfish are dark red in color with raised bright red spots covering the body and claws and a black wedge-shaped stripe on the top of the abdomen. They may vary in length between 2 to 5 inches. Occasionally, a genetic mutation may turn the body and/or claws blue.

## Distribution

A reproducing population of red swamp crayfish was reported in a 6-acre pond in Washington County in 2009. Prior to this discovery, the species had never been documented in Wisconsin. The red swamp crayfish is native along the Gulf Coast from northern Mexico to the Florida Panhandle and ranges upstream to southern Illinois along the Mississippi River drainage basin. This species is the most widely introduced crayfish in the world and is presently found on every continent except Australia and Antarctica. Red swamp crayfish are farmed extensively in the Southeastern United States and make up the vast majority of crayfish consumed worldwide. Biological supply companies commonly sell this species as pets or for educational purposes.



## Biology and Ecology

Red swamp crayfish prefer marshes, swamps, ponds and slow moving rivers and streams, but have also become established in lakes. They are well adapted to areas with large water level fluctuations. In their native range, red swamp crayfish mate in autumn and lay eggs in spring to early summer. The females burrow into soft sediment and lay eggs. The number of eggs varies with the size of the female, with large crayfish laying as many as 650 eggs at a time. They are tolerant of fluctuating water levels and can survive long dry spells by remaining in burrows or crawling over land to other water sources.

Red swamp crayfish are omnivorous, feeding on aquatic plants, snails, insects and fish and amphibian eggs and young. They have been found to reduce amphibian populations in California and Spain through direct predation and competition for habitat. Populations have also led to declines in native crayfish species in Europe through competition and because they often carry the crayfish fungus plague.





# Oddities

Frogs, Frogs, Frogs



# Oddities

Wildlife Damage



# Oddities

Road Gravel - Washout



# Oddities

Landscape Modifications



# Oddities

Fluctuating Water Levels



An aerial photograph of a residential development. The image shows several houses with lawns, interspersed with trees and a network of roads. A thick black line is drawn across the image, outlining a specific area that includes several houses and a road. In the center of this outlined area, there is a white rectangular box containing the text "Water Budgeting???".

Water Budgeting???

## Summary:

- Inspected 284 Stormwater Practices
- Categorized by Priority
  - 6 High (2%)
  - 18 Medium (6%)
  - 66 Low (23%)
  - 31 Monitor (11%)
  - 163 No Follow-up Needed (57%)

Thank You

