

# Rain Garden Information Session

Village of Deer Park

Vehe Barn

7:00 PM



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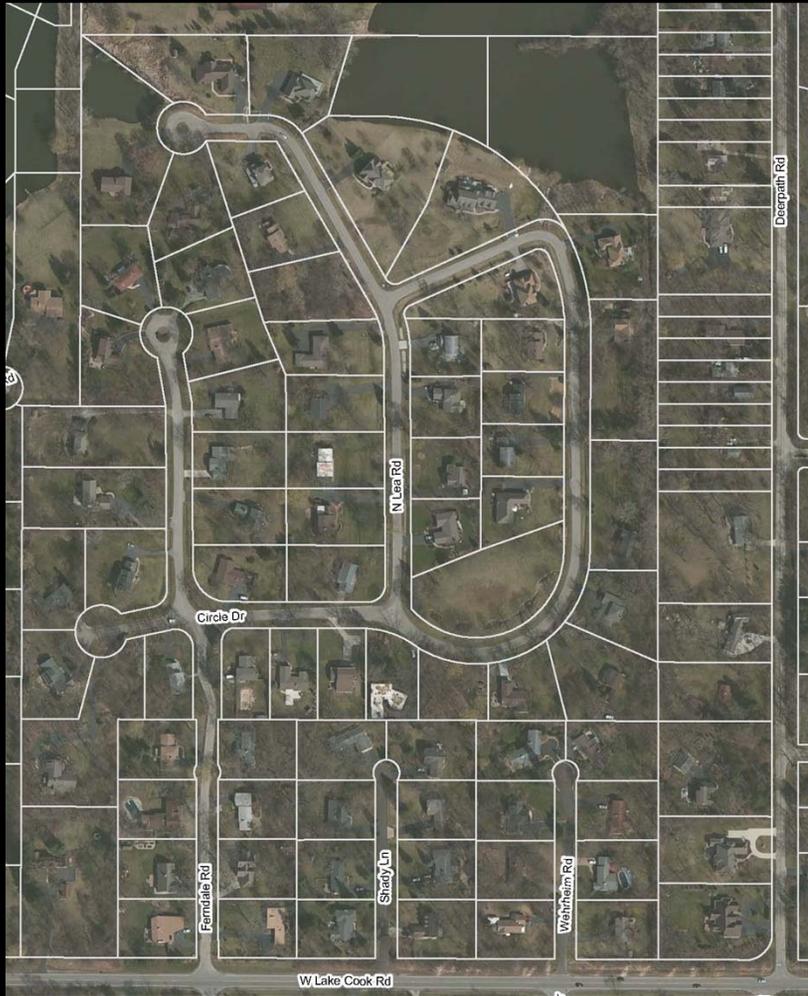
# Rain Garden Information Session Presenters

- Leo Morand, PE
  - Senior Engineer / Associates with Gewalt Hamilton Associates, Inc.
  - Village Engineer Consultant to Village of Deer Park
  - Gewalt Hamilton Associates, Inc. have represented the Village of Deer Park since 1989
- Steve Zimmerman
  - Senior Ecologist with Applied Ecological Services, Inc.

# Rain Garden Information Session Agenda

- Ferndale Woods drainage history
- What are options during design?
- Why a rain garden
- What should a rain garden look like?
- How should a rain garden be maintained?

# Ferndale Woods Subdivision Drainage History



FLOODING  
PRE-2007



# Ferndale Woods Subdivision Drainage History

Phase Three –  
Storm Sewer  
Improvements

Phase Four –  
Storm Sewer and  
Subdivision  
Pavement  
Resurfacing

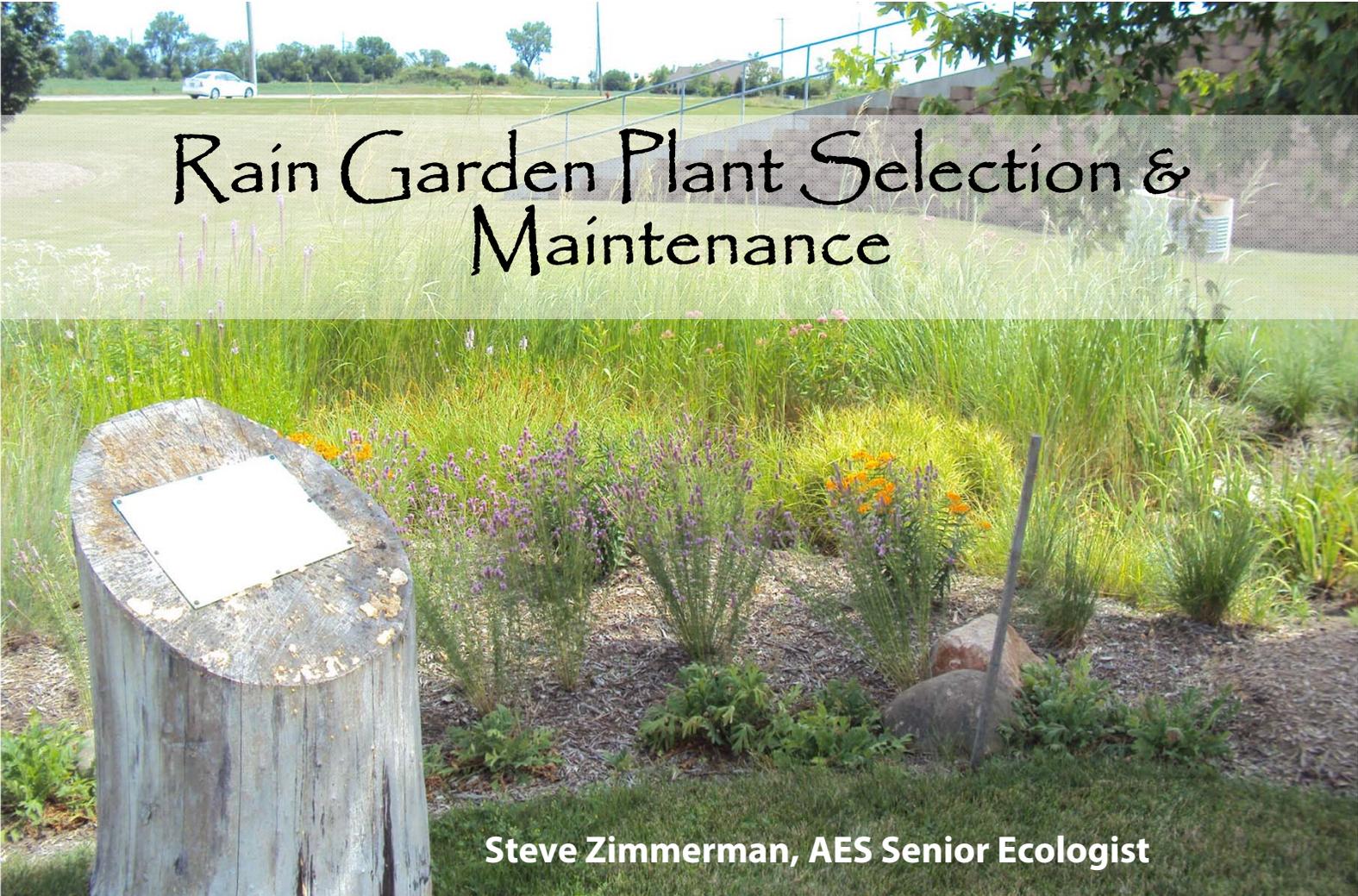


Phase One –  
Storm Sewer  
Improvements

Phase Two –  
Storm Sewer and  
Rain Garden  
Improvements

## Options During Design

- Phase One – Remove and Replace storm sewer
- Phase Two – Storm Sewer Improvements and address low (flat) area
  - Option 1 – Keep ditches as they were (possible future flooding)
  - Option 2 – Install flat storm sewers (prone to future blockage)
  - Option 3 – Rain Gardens (Received \$20,000 from Lake County SMC)
- Phase Three – Storm Sewer Improvements
- Phase Four – Storm Sewer Improvements and Subdivision Pavement Resurfacing
- Total Investment - \$500,000 Storm Sewer, \$300,000 Pavement

A photograph of a rain garden. In the foreground, a weathered wooden post stands on the left, topped with a white rectangular sign. The garden is filled with various plants, including tall grasses, purple flowers, and orange flowers. In the background, there is a concrete wall with a metal railing, a white car parked on a grassy area, and trees under a clear sky.

# Rain Garden Plant Selection & Maintenance

**Steve Zimmerman, AES Senior Ecologist**



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## CONSULTING



## CONTRACTING



## NURSERY

Source: Google

*Our Vision is to bring the science of ecology to all land use decisions*

# A Rain Garden Does More Than Just Hold Stormwater

Rain Gardens filter & clean polluted stormwater & provide food and shelter for many birds, butterflies, and other insects.



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# Plant Selection

## **\*\*SELECTION OF PLANTS IS CRITICAL\*\***

- 1) Use approximately 50:50 ratio of sedges to forbs. Why?
- 2) Natives or non-natives?
- 3) Native plants evolved for thousands of years under intense competition and do not grow “normal” when planted alone.



Remnant Prairie



Planted Prairie Plugs



# Best Rain Garden Plants

**\*\*Hundreds of native plants are available;  
only a hand full work\*\***

Scientific name	Common Name	Sun & Moisture	Spacing
<b>Grasses &amp; Sedges:</b>			
<i>Calamagrostis canadensis</i>	Blue joint grass	Sun & Moist to Wet	2.0' O.C.
<i>Carex bromoides</i>	Brome-like sedge	Part Shade & Moist to Wet	2.5' O.C.
<i>Carex comosa</i>	Bristly sedge	Sun & Moist to Wet	2.5' O.C.
<i>Carex grayi</i>	Common bur sedge	Part Sun & Moist to Wet	2.5' O.C.
<i>Carex lupulina</i>	Common hop sedge	Part Sun & Moist to Wet	2.5' O.C.
<i>Carex muskingumensis</i>	Palm sedge	Part Sun & Moist to Wet	2.5' O.C.
<i>Carex stipata</i>	Common fox sedge	Sun & Moist to Wet	2.5' O.C.
<i>Carex vulpinoidea</i>	Brown fox sedge	Sun & Moist to Wet	2.5' O.C.
<i>Glyceria striata</i>	Fowl mana grass	Part Sun & Moist to Wet	2.0' O.C.
<i>Spartina pectinata</i>	Prairie cord grass	Sun & Moist to Wet	2.5' O.C.
<b>Forbs (Flowers):</b>			
<i>Acorus calamus</i>	Sweet flag	Sun & Wet	2.0' O.C.
<i>Asclepias incarnata</i>	Swamp milkweed	Sun & Moist to Wet	2.0' O.C.
<i>Caltha palustris</i>	Marsh marigold	Part Sun & Wet	2.0' O.C.
<i>Eryngium yuccifolium</i>	Rattlesnake master	Sun & Moist	2.0' O.C.
<i>Helenium autumnale</i>	Sneezeweed	Sun & Moist to Wet	2.0' O.C.
<i>Eupatorium maculatum</i>	Joe pye weed	Sun & Moist to Wet	2.0' O.C.
<i>Iris virginiana</i>	Blue flag iris	Sun/Part Sun & Moist to Wet	2.0' O.C.
<i>Liatis spicata</i>	Marsh blazing star	Sun & Moist	1.5' O.C.
<i>Lobelia cardinalis</i>	Cardinal flower	Sun/Part Sun & Moist	1.5' O.C.
<i>Lobelia siphilitica</i>	Great blue lobelia	Sun/Part Sun & Moist	1.5' O.C.
<i>Penstemon digitalis</i>	Foxglove Beard tongue	Sun/Part Sun & Moist	2.0' O.C.
<i>Physostegia virginiana</i>	False dragonhead	Sun & Moist	2.0' O.C.
<i>Pycnanthemum virginianum</i>	Common mountain mint	Sun & Moist	2.0' O.C.
<i>Rudbeckia subtomentosa</i>	Sweet black-eyed Susan	Sun & Moist	2.0' O.C.
<i>Solidago riddellii</i>	Riddell's goldenrod	Sun & Moist	1.5' O.C.
<i>Zizia aurea</i>	Golden Alexanders	Sun/Part Sun & Moist	2.0' O.C.



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**Blue Flag Iris**    **Riddell's Goldenrod** (*Iris virginica*)    (*Solidago riddellii*)



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**Swamp Milkweed**    **False Dragonhead**  
(*Asclepias incarnata*)    (*Physostegia virginiana*)



**Great blue lobelia    Cardinal flower**  
(*Lobelia siphilitica*) (*Lobelia cardinalis*)



**Rattlesnake Master** **Prairie Blazing Star**  
(*Eryngium yuccifolium*) (*Liatris pycnostachya*)



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**Fox Sedge**  
*(Carex vulpinoidea)*



**Common Rush**  
*(Juncus effusus)*



**Spiderwort**      **Butterfly milkweed**  
(*Tradescantia ohiensis*)    (*Asclepias tuberosa*)



**Purple Prairie Clover    Stiff Coreopsis**  
*(Dalea purpurea)*    *(Coreopsis palmata)*



**Prairie Dropseed**      **Little Bluestem**  
(*Sporobolus heterolepis*)    (*Schizachyrium scoparium*)





Even the most maintained rain gardens never look completely “Formal” because native plants produce viable seed and do not like to stay in one place



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# Native Plants Change During the Growing Season



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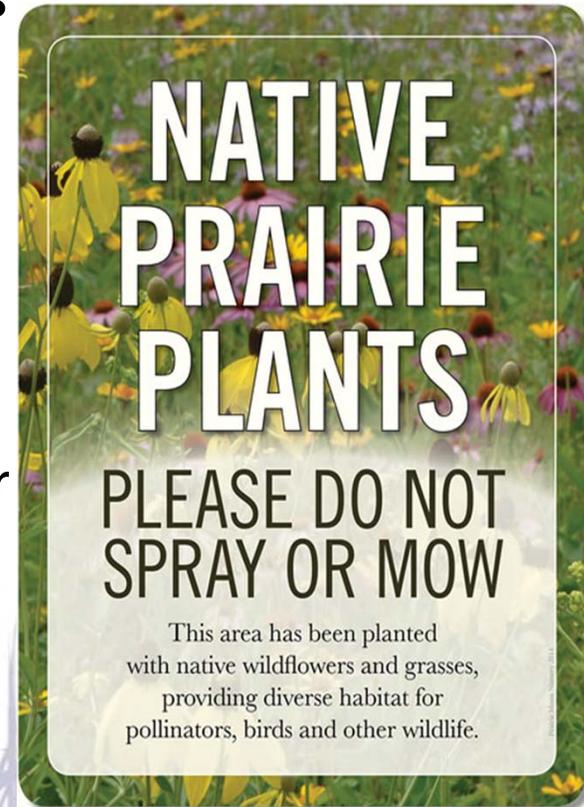
# What Could the Ferndale Woods Rain Gardens Look Like?



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# Maintenance Recommendations

- 1) Spot herbicide or hand pull weeds during establishment.
- 2) Replace plants after first growing season as needed.
- 3) Burn in fall or early spring each year if necessary.
- 4) Cut in fall or early spring each year if burning is not necessary.
- 5) Avoid mowing & mow away from rain garden.
- 6) Maintain spaded edge.



# Discussion

VILLAGE OF  
*DEER PARK*  
ESTABLISHED 1957



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**GHA** GEWALT HAMILTON  
ASSOCIATES, INC.