

Public Information Meetings Campbell Creek Stormwater Management Plan

March 19 and March 26, 2008
Westhaven Golf Course Clubhouse

John Fitzpatrick, Acting City Manager

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Overview

- Purpose of Plan
- Watershed Areas
- Flooding History
- Flooding Analysis
- Water Quality Analysis
- Recommendation
- Other Concerns
- Funding



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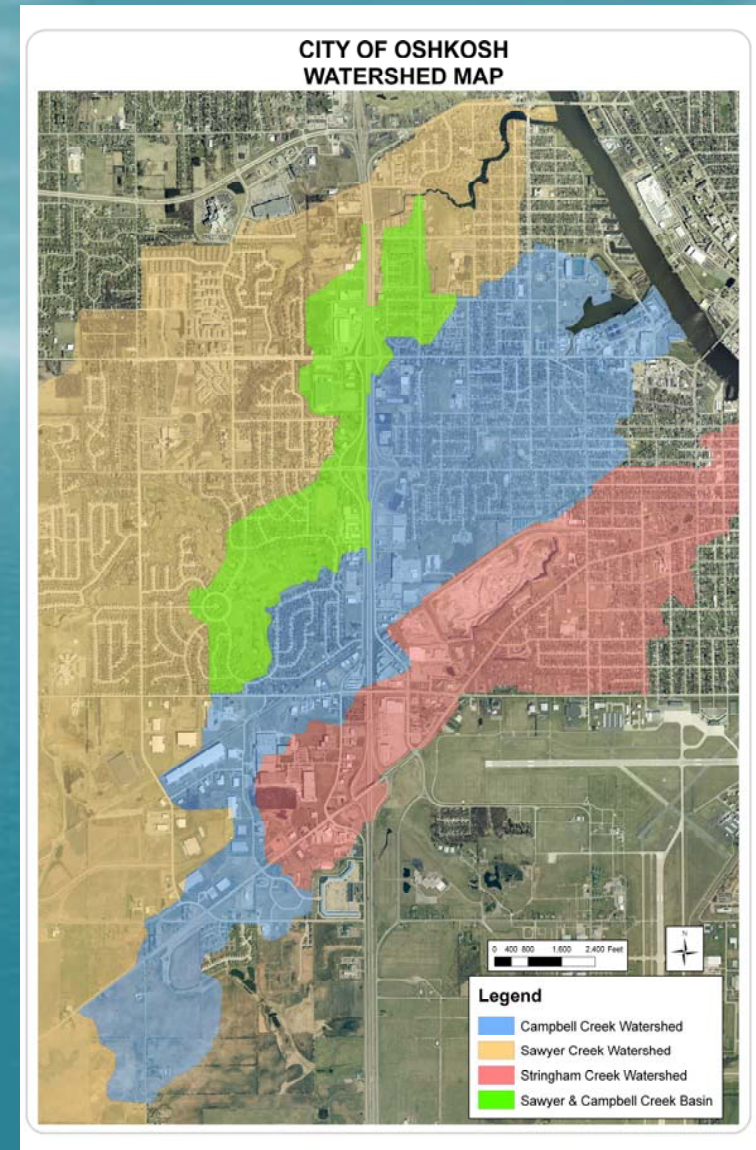
Purpose of Plan

- City of Oshkosh frequently experiences flooding during rain events.
- EPA mandated DNR to administer storm water discharge regulations under Clean Water Act.
- DNR mandated storm water quality improvements for storm water.



Watershed Areas

- Campbell Creek
 - Blue Area
 - Green Area
- Sawyer Creek
 - Orange Area
 - Green Area
- Stringham Creek
 - Red Area



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Flooding History

Flooding Incidents Since 1990

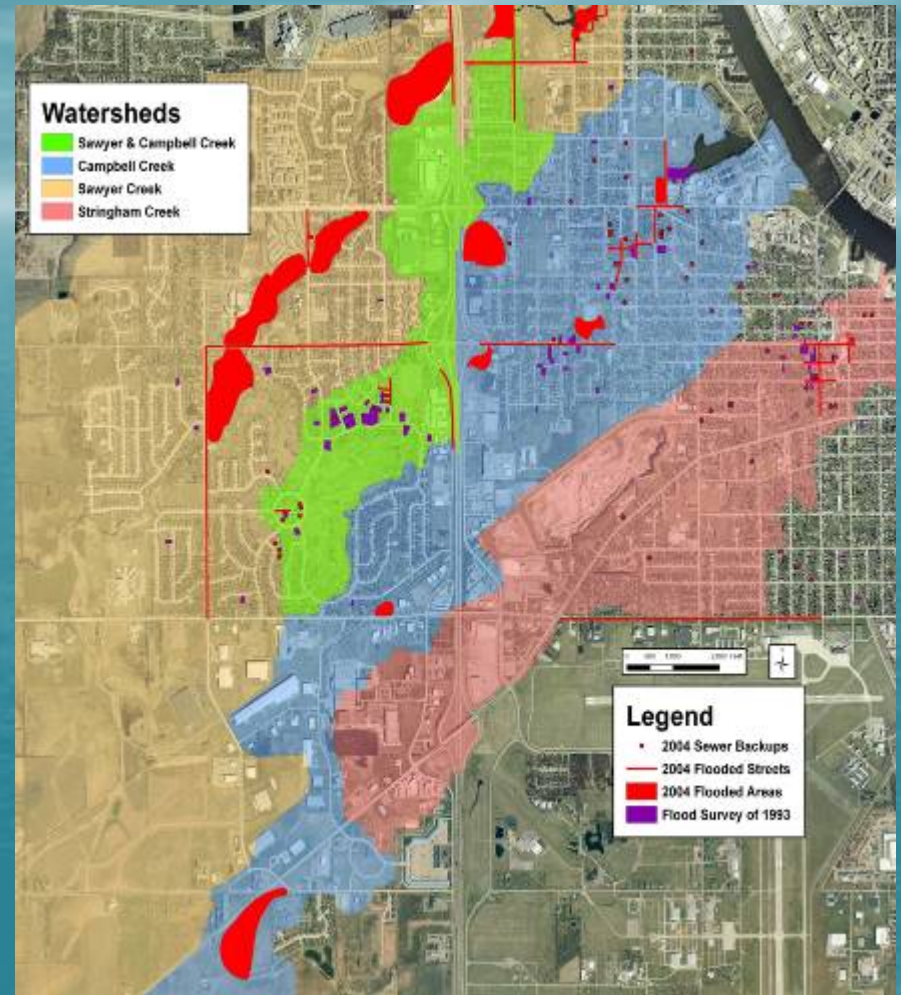
- Four Presidential Disaster Declarations
 - 1990, 1993, 2001, 2004
- Four Minor Flooding Incidents
 - 1996, 1999 (2), 2000

Source: Winnebago County Hazard Mitigation Plan: 2004-2008



Flooding History

- Reported Flooding from the June 2004 and June 1993 Flood Events.
- Only includes flooding incidents reported to the Department of Public Works.

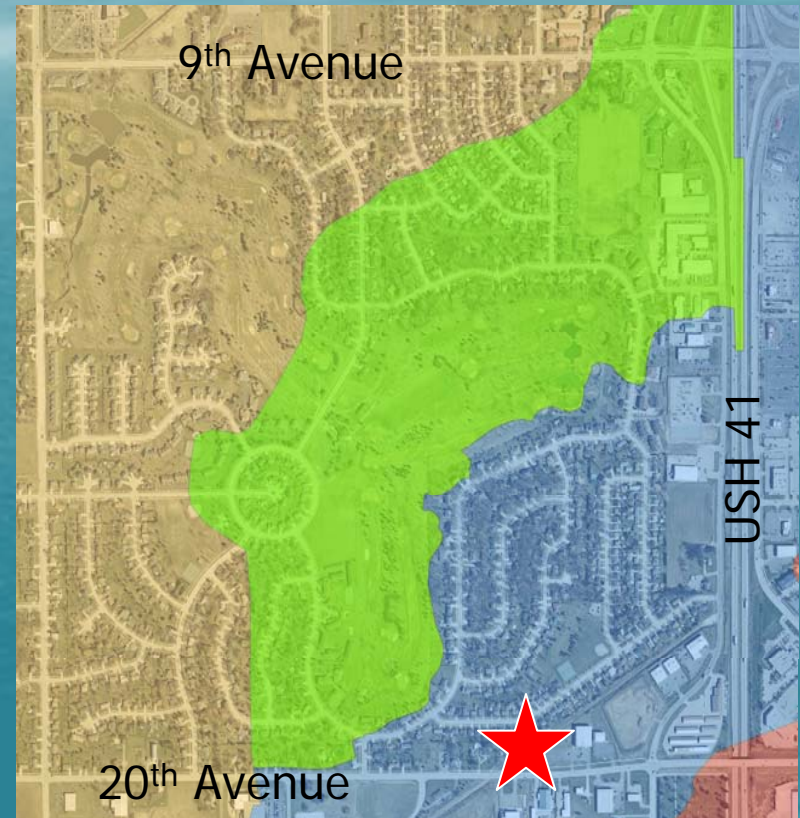


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Flooding History



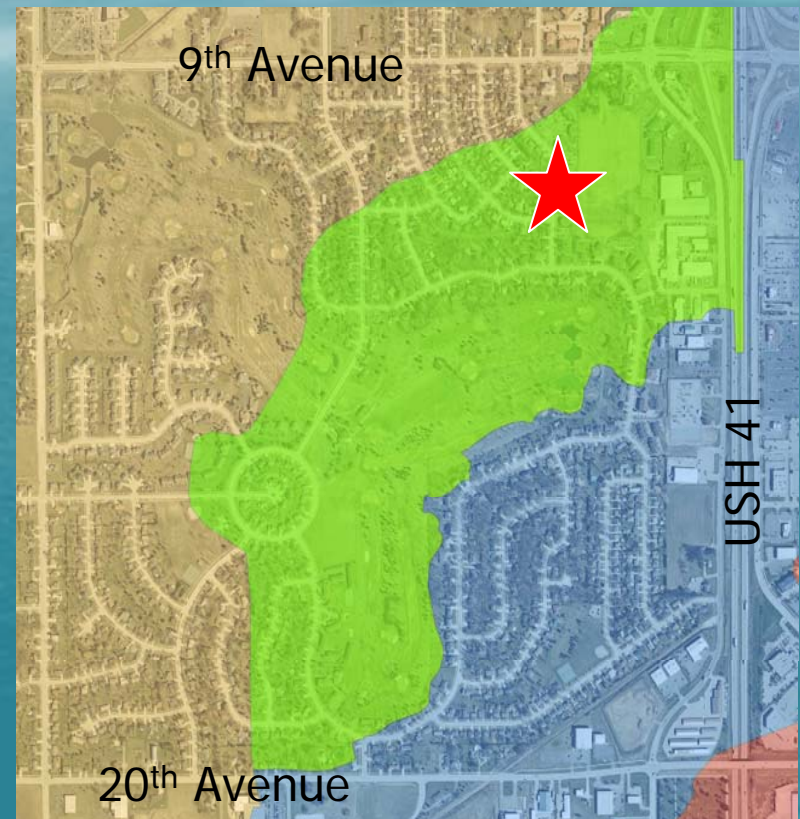
Campbell Creek overflows banks, washing out railroad, flooding a parking lot, and flooding residential properties and structures. June, 2004



Flooding History



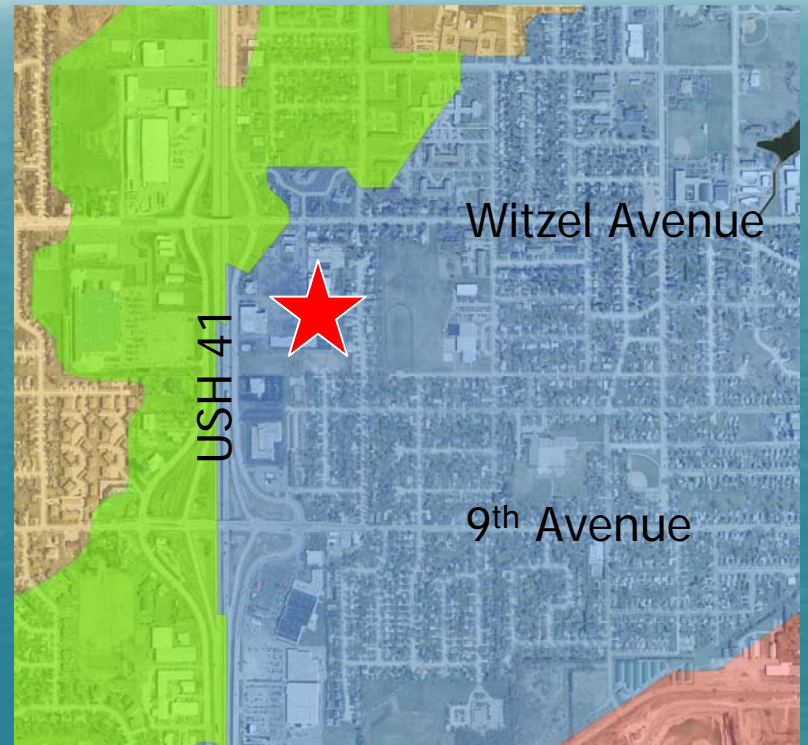
Street flooding at Ardmore Trail and Cumberland Trail.
June, 2004



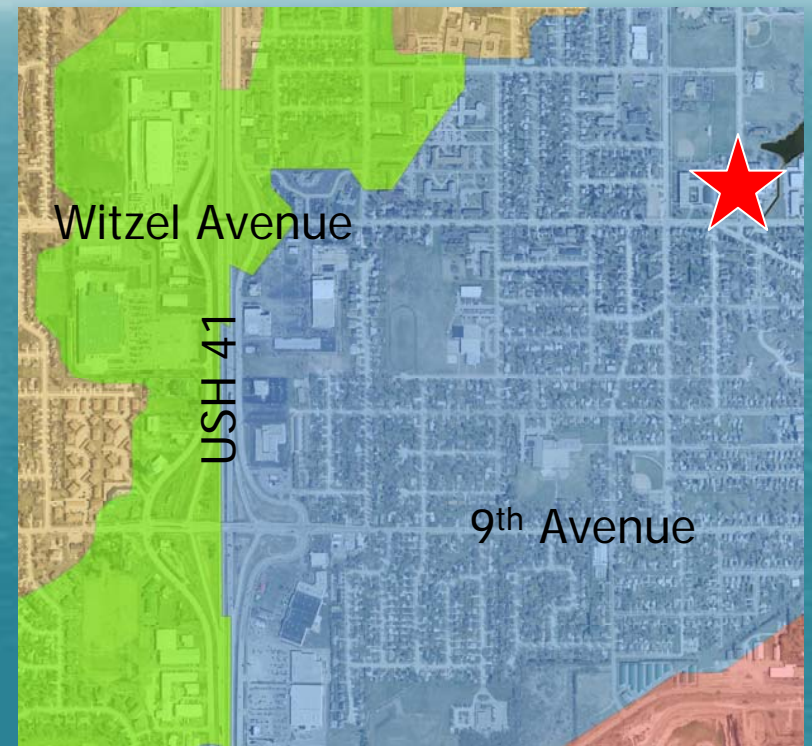
Flooding History



Campbell Creek overflows banks, flooding parking lot and buildings at Landmark Plaza. Substantial damage to contents of stores. June, 2004



Flooding History



Flooding near Josslyn Street and Witzel Avenue backs up flood water onto the Lourdes Academy construction site.
June, 2004



Flooding Analysis


- City staff worked with Consultant to review undeveloped land for consideration.
 - 9th and Washburn
 - Westhaven Golf Course
 - Adjacent to Bemis on Universal Street
 - Northwest corner of STH 44 and Universal Street
 - Northeast corner of STH 44 and Waukau Avenue
 - Agricultural Land outside of City Limits
- All above alternatives include Tipler Middle School Dry Detention and Armory Wet Detention Sites.



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Flooding Analysis

 Pond Analyzed

 Pond Location Not Feasible



Northeast Corner STH 44/Waukau



9th & Washburn



Agricultural Land Outside of City Limits



Westhaven Golf Course



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Flooding Analysis

Alternative Description	Watershed-Wide Benefit Rank	Meets Landmark Plaza Criteria	City Storage Provided (Acre-Feet)	Opinion of Probable Cost	Cost per Acre-Foot of City Storage Provided
9 th and Washburn and Expanded Armory	4	Yes	101.1	\$18,311,700	\$181,100
Westhaven Golf Course and Reduced Armory	2	Yes	215.1	\$16,609,700	\$77,200
Northeast Corner of STH 44 and Waukau Avenue and Expanded Armory	5	Yes	98.5	\$14,003,500	\$142,200
Agricultural Land Outside of City Limits and Expanded Armory	6	Yes	110.2	\$11,067,900	\$100,400
Westhaven Golf Course and Expanded Armory	1	Yes	221.5	\$21,060,500	\$95,100

- Notes:**
1. Costs do not include the stormwater quality portion of the detention ponds (excavation below normal WSEL).
 2. All Alternatives include the Tipler Middle School Dry Detention Basin.
 3. An Acre-Foot is a unit of volume equal to one foot of depth spread over an acre of area (1Ac-ft = 43,560 ft³).



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Water Quality Analysis

- Wisconsin DNR Storm Water Discharge Permit Coverage issued on January 2, 2007
- Permit requires reduction of pollution to waters of the state
- Pollutant of Interest: Total Suspended Solids (TSS)
- Must reduce Base Load by 40%



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Water Quality Analysis

- City of Oshkosh TSS Pollution Information
 - Base Load: 1693 tons/year
 - Required Reduction: 677 tons/year (40% of 1693)
 - Current Practices Reduction: 309 tons/year
 - Additional Reduction Required: 368 tons/year (677-309)



Water Quality Analysis

- 9th & Washburn: 13.8 tons/year
- Westhaven Golf Course: 68.1 tons/year
 - Front Nine: 49.2 tons/year (Campbell Creek Side)
 - Back Nine: 18.9 tons/year (Sawyer Creek Side)
- STH 44 & Waukau: 2.0 tons/year
- Agricultural Land Outside City: 0.0 tons/year

Tipler Dry Detention provides no water quality benefit.
Armory Wet Detention has no water quality benefit calculated due to navigable waterway adjacent to pond location. DNR typically requires small storm events (which carry majority of pollutants) to remain within waterway.



Recommendation

Pond Location	Pros	Cons
9 th and Washburn	<ul style="list-style-type: none"> Reasonable Water Quality Benefit 	<ul style="list-style-type: none"> Commercially Developable Land Wetland on South Edge of Property
Westhaven Golf Course	<ul style="list-style-type: none"> Most Water Quality Benefit Most Cost Effective 	<ul style="list-style-type: none"> Loss of Golf Course
STH 44 and Waukau	<ul style="list-style-type: none"> Second Lowest Total Cost 	<ul style="list-style-type: none"> Minimal Water Quality Benefit
Agricultural Land Outside City Limits	<ul style="list-style-type: none"> Lowest Total Cost 	<ul style="list-style-type: none"> Zero Water Quality Benefit

All Alternatives meet goals of study at Landmark Plaza.
 These pros and cons are only for purpose of evaluating the alternatives against each other. Other areas of concern are discussed later.



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Recommendation

- The Westhaven Golf Course Alternative has been recommended for several reasons
 - Most cost effective solution (\$/Ac-Ft)
 - Provides the most water quality benefit
 - Provides land for flood storage for both Campbell Creek and Sawyer Creek Watersheds.



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Recommendation

- Landmark Plaza-Conveyance Improvements
- Tipler Dry Detention Basin
- Armory
 - New Wet Detention Basin
 - Upstream Pipe Upsizing
- Westhaven Golf Course Park/Pond
- WisDOT
 - Upgrading Storm Sewer Along USH 41 to 50-Year Design Storm



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Recommendation

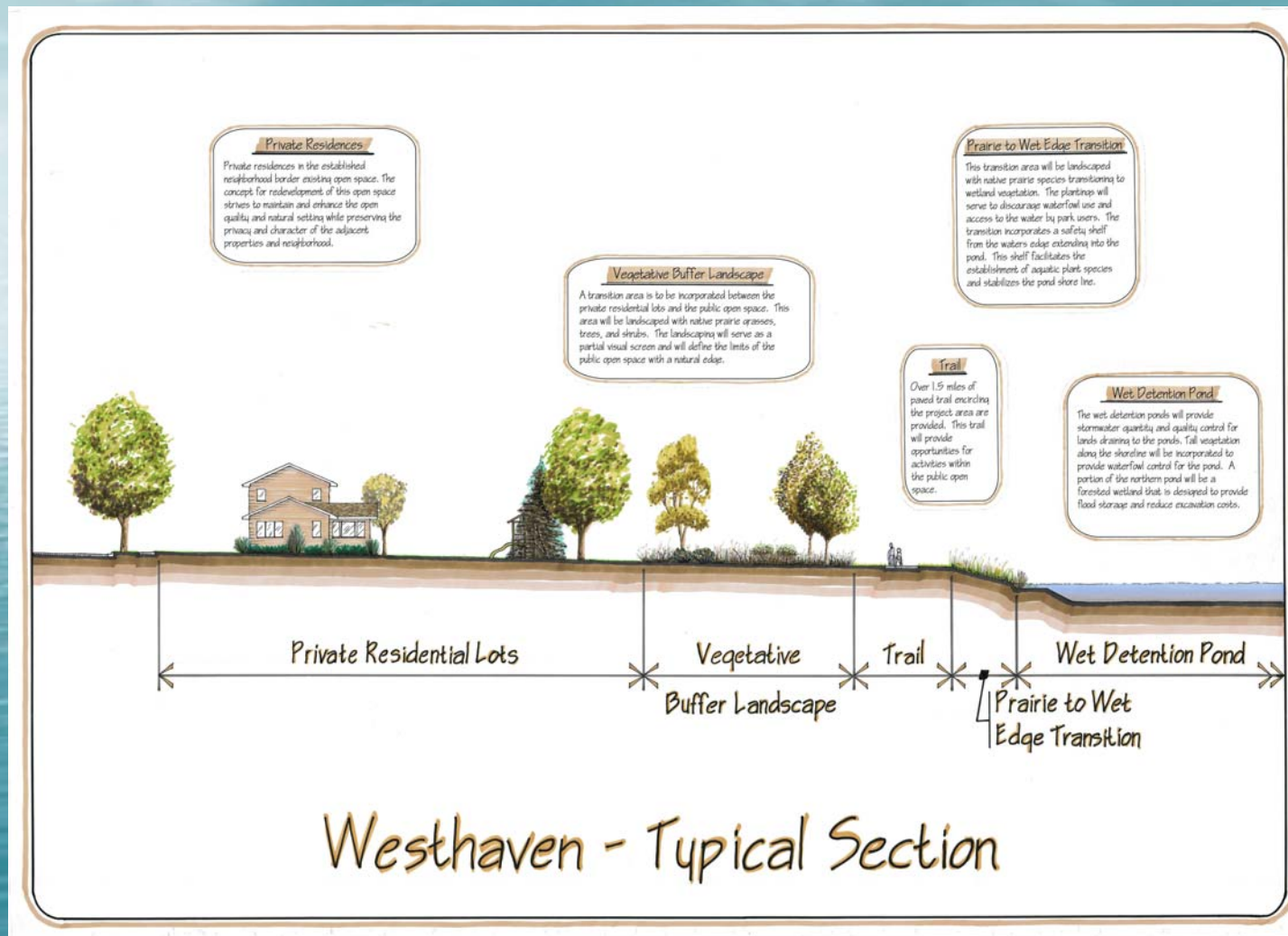


Birds Eye View Rendering



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Recommendation



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Other Concerns

- Aesthetics
- Safety
- Geese
- Mosquitoes
- Adjacent Property Values



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Other Concerns

- Aesthetics
 - Pond side slopes will be planted with a mixture of flowering and non-flowering native prairie plants.
 - Vegetated Landscape Buffer between recreation trail and residential properties will be planted with native prairie plants, trees and shrubs. Buffer will provide privacy to residents adjacent to facility.
 - Recreation Trail could be asphalt or stone chips. WIOUWASH Trail is stone chips.



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Other Concerns

- Safety
 - City of Oshkosh design standards exceed recommendations of Wisconsin DNR.

Description	DNR	City of Oshkosh
Slopes Above Water	Max. 3:1 (H:V)	Max. 4:1
Safety Shelf Width	8 feet	10 feet
Safety Shelf Slope	Max. 10:1 (H:V)	Flat
Safety Shelf Water Depth	0 – 1.5 feet	1 foot



Other Concerns

- Safety
 - Native prairie vegetation creates a vegetative barrier to discourage use.
 - Emergent plantings on safety shelf create a further vegetative barrier to discourage use.
 - Minimum 10 foot wide area on each side of recreation trail planted in “low-grow” vegetation to create open feel around trail.
 - Pipe ends and outlet structure grated.



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Other Concerns

- Geese
 - Geese use water bodies that allow easy access from water surface to shore lands.
 - Emergent plantings on safety shelf create a vegetative barrier that geese cannot walk or swim through.



Other Concerns

- Mosquitoes
 - Mosquitoes breed in very small stagnant pools of water (bird baths and old tires for example)
 - Water depth in wet ponds is prohibitive to mosquito breeding:
 - Permanent pools in ponds are typically 5-6 feet in depth.
 - Safety Shelf is 1 foot in depth.
 - Native prairie plantings provide habitat that encourages inhabitation by predators (dragonflies and birds for example)



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Other Concerns

- Adjacent Property Values
 - Property values adjacent to a wet stormwater pond increased by 4% to 23%.
 - Homes within 300 feet of water sell for up to 28% more than comparable homes elsewhere.
 - Peoples preference for living location (most to least preferred): Next to pond, adjacent to natural area, on dead end street, next to golf course, adjacent to public park.

Source: "How to Win Land Development Issues" by Community & Environmental Defense Services, January 2003, updated September, 2007



Funding

- Stormwater Utility
- Municipal Flood Control Grant Program
 - State 70% / Local 30% Match
 - Maximum Grant is \$200,000
- UNPS and Stormwater Grant Program
 - State 50% / Local 50% Match
 - Maximum Grant is \$150,000 (Construction) plus \$50,000 for property acquisition
- FEMA PDM (Pre-Disaster Mitigation) Program
 - Federal 75% / Local 25% Match
 - Maximum Grant is \$3 million



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Questions?

Staff will be available at each display station to answer questions.

Questions and comments may be left in the comment box. Staff will respond to each as quickly as possible.

Thank you for your time!



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