



## MILWAUKEE COUNTY LAND & WATER RESOURCE MANAGEMENT PLAN

By: Stevan Keith and Tim Detzer

## Milwaukee County

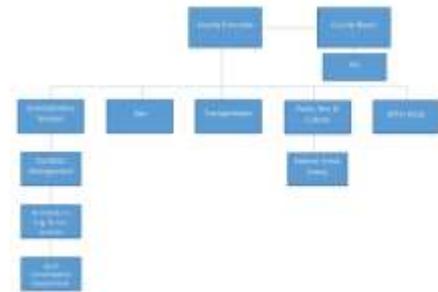


## Milwaukee County



- Urban—8.6% Agriculture
- Entirely Incorporated
- Large Parks and Natural Areas System
  - 140 parks and parkways
  - nearly 15,000 acres
- 45 Rivers and Streams
  - over 100 miles
- 68 County-owned waterbodies

## Milwaukee County



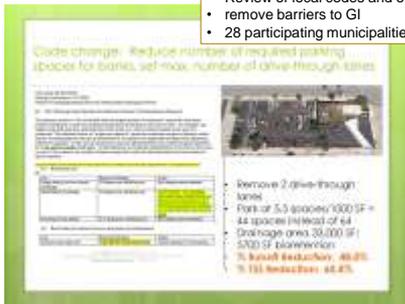
## Milwaukee County LWRMP Goals

- **Goal 1 Improve Water Quality through the Reduction of Sediment and Nutrient Delivery to Surface Waters in Milwaukee County**
- **Goal 2 Protect, Maintain, and Restore Land and Water Resources in Milwaukee County**
- **Goal 3 Enhance Lake Michigan Bluff Protection Initiatives**
- **Goal 4 Maintain the Existing Information Network and Land Information Web Portal**
- **Goal 5 Limit the Introduction and Reduce the Spread of Invasive Species in Milwaukee County**

## Goal 1 Improve Water Quality through the Reduction of Sediment and Nutrient Delivery to Surface Water

- 1 workshop on fertilizer reduction for turf quality
- 3 presentations on Franklin Sports Complex permeable paver parking lot
- 2 presentations on *Stormwater BMP Design Guide for Parking Lots*
- 3 workshops on permeable paver projects; design and successes
- 1 SE Area Land & Water Fall Conservation Tour Conservation Tour
- 2 seminars on native landscaping for stormwater design
- 1 presentation on green infrastructure planning
- 1 presentation on Codes and Ordinances for green infrastructure
- 1 presentation on collaborative planning for regional green infrastructure.

Goal 1 Improve Water Quality. . .  
Codes & Ordinances Project



- Review of local codes and ordinances
- remove barriers to GI
- 28 participating municipalities

Goal 1 Improve Water Quality. . .  
Stormwater BMP Guide for Parking Lots

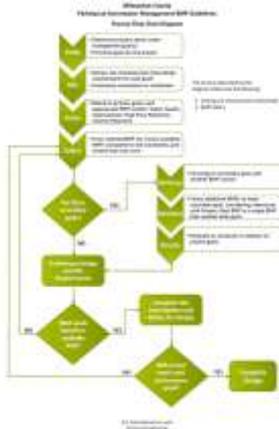


- Milwaukee County maintains > 140 parking lots
- Replace 4-5/year
- Current practice was to replace as is
- Design staff was unfamiliar with stormwater BMP options



BMP Guide

- Process Flow Chart
- Site Considerations
  - Soil types
  - Available Space
- Individual BMP Summary Sheets
  - Provides an Overview of Each BMP
  - Pictures
  - Provides Design Specifics and Examples



Goal 1 Improve Water Quality. . .  
Green Infrastructure / Best Management Practices

Milwaukee County Best Management Practices (BMPs) List

BMP	Description
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Goal 1 Improve Water Quality. . .  
Milwaukee County Sports Complex



5-acre parking lot  
2 acres pervious pavement  
200' native vegetated swale

Goal 1 Improve Water Quality. . .  
Menomonee River Parkway



Goal 1 Improve Water Quality...  
Menomonee River Wetland

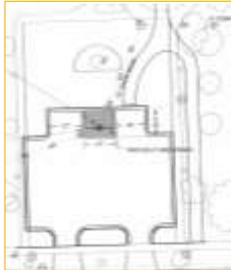


Goal 1 Improve Water Quality...  
Menomonee River Wetland



Goal 1 Improve Water Quality...  
Dineen Park Parking Lot

- Dineen Park
  - Reduced Lot Size by 50%
  - Added Pervious Paver Area



Goal 1 Improve Water Quality...  
Rawson Ave (CTH BB)



Goal 1 Improve Water Quality...  
GMIA Baggage Claim Green Roof



Stormwater Maintenance Project



Goal 1 Improve Water Quality. . .  
Reduce Bacterial Contamination at Beaches



- Groom Beaches
  - Gull Abatement Activities
  - Work with UWM
- Department of Freshwater Sciences

Goal 1 Improve Water Quality. . .  
McKinley Marina Masterplan



Goal 1 Improve Water Quality. . .  
South Shore Park



Goal 1 Improve Water Quality. . .  
Erosion Control Project - Pleasant Valley Park



Goal 1 Improve Water Quality. . .  
Erosion Control project - Bluffs at Bradford Beach

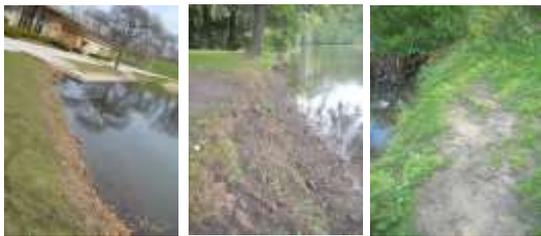


Goal 1 Improve Water Quality. . .  
Erosion Control Projects

- Estabrook Oak Leaf Trail
- Oak Creek Parkway
- Estabrook-Wilson
- Grant Park
- Big Bay
- Riverside Park
- Juneau Park Bluff
- Beer Line Trail



Goal 1 Improve Water Quality through the Reduction of Sediment and Nutrient Delivery to Surface Water



Goal 1 Improve Water Quality through the Reduction of Sediment and Nutrient Delivery to Surface Water



Goal 2 Protect, Maintain, and Restore Land and Water Resources in Milwaukee County

Natural Areas Program

- ▣ Create Restoration and Management Plans
- ▣ Invasive Species Control
- ▣ Maintain 48.5 miles of hiking trails
- ▣ Increase awareness of urban natural resource management through partnerships
- ▣ Citizen Science Initiative
- ▣ Coyote Management Plan
- ▣ Breeding Bird Atlas
- ▣ <https://www.facebook.com/MilCntyNaturalAreas/>

Goal 2 Protect, Maintain, and Restore Land and Water Resources in Milwaukee County

Natural Areas Program (2015)

- ▣ partnered with 73 organizations
- ▣ engaged 1,420 volunteers who donated 40,456 hours
- ▣ restoration projects for 1,565 acres
- ▣ maintained and stabilized 21.7 miles of the Forked Aster Hiking Trail System
- ▣ opened another 3.0 miles of trails with Student Conservation Association, AmeriCorps, and staff
- ▣ Developed and implemented 13 Restoration & Management Plans for natural areas within the Park System



Goal 2 Protect, Maintain, and Restore Land and Water Resources in Milwaukee County



- ▣ Grant Park
  - ▣ 5 acres of turf converted to native shrubs and hardwoods
  - ▣ 1 acre of turf converted to native prairie
  - ▣ 4 parking lot medians converted to native pollinator gardens
- ▣ Bender Park 48-acres of agricultural land converted to native prairie
- ▣ 6.9 acres of County-owned agricultural land converted to native trees and shrubs along the Root River Parkway
- ▣ 11.6 acres of County-owned agricultural land being converted to native trees and shrubs along the Root River Parkway in fall of 2016

Goal 3 Enhance Lake Michigan Bluff Protection Initiatives



- ▣ Grant Park
- ▣ Big Bay
- ▣ Juneau Park Bluff
- ▣ Bradford Beach
- ▣ Warnimont Park
- ▣ Seven Bridges Ravine System Grant Park

Goal 4 Maintain the Existing Information Network and Land Information Web Portal

- maintains over 140 information layers
- aerial imagery 1928 to present
- provides cadastral, planimetric, and topographic data
- <http://county.milwaukee.gov/mclio>



Goal 5 Limit the Introduction and Reduce the Spread of Invasive Species in Milwaukee County



Goal 5 Limit the Introduction and Reduce the Spread of Invasive Species in Milwaukee County



- 2015 Invasive Species Removal
  - 693 volunteers; 16 sites
  - Natural Areas Crew 38 sites
  - control of 40 different species of invasive plants
  - implementing EAB preparedness plan
  - aerial applications for gypsy moth
  - GIS mapping invasives



Thanks!

Presented by:  
Stevan Keith and Tim Detzer  
Milwaukee County