#### Rebuilding the Bridge: Generating Social Benefits from Quality Public Infrastructure

**Kinnickinnic River Watershed** 







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# Flood Risks

- Direct
  - Damages to homes/businesses
  - Loss of life or injury
- Indirect
  - Loss of wages
  - Community impacts





# 1960's "Drainage" Approach



# 1960's "Drainage" Approach



# MMSD Watercourse Program

**Objectives:** 

- Reduce flood risk for structures in 1% annual probability floodplain
- Incorporate natural functions into designs
  - Improve riparian & aquatic habitat
  - Improve public safety



### Lincoln Creek



# Milwaukee County Grounds Flood Storage Basins





# Milwaukee County Grounds – After



## Underwood Creek









# 1960's Concrete Channel Lining



# Public Safety



### **Current Conditions**



# Recreational Opportunities...









## KK River Watershed Plan Objectives

- Reduce Flood Risk
- Improve Public Safety
- Improve Riparian & Aquatic Habitat
- Leverage Additional Community
  Objectives







### KK River: 6<sup>th</sup> – 16<sup>th</sup> – Previous Floodplain



## KK River: 6<sup>th</sup> – 16<sup>th</sup> – Proposed Floodplain



#### KK River: 6<sup>th</sup> – 16<sup>th</sup> - Recommendation



#### KK River Early Out Project (2011)



#### KK River Early Out Project: 6<sup>th</sup> – I-94



#### KK River 6<sup>th</sup> – I-94: Previous Conditions



# KK River 6<sup>th</sup> – I-94: Upstream Improvements



#### KK River 6<sup>th</sup> – I-94: Downstream Improvements



## KK River 6<sup>th</sup> – I-94: Downstream Improvements



### KK River 6<sup>th</sup> – I-94: Project Summary

- Work Completed in 2012
- Total Cost = \$8 M
- Federal Grants:
  - ARRA = \$2.3 M
  - GLRI = \$1.6 M



#### KK River: $6^{th} - 16^{th}$





Combine MMSD & MCP agency efforts with stakeholder & community desires to reach the community goals:

Reduce flood risk + Make the river a community asset + Enhance area parks = Neighborhood renaissance




#### To sustain the legacy of our world class park system by managing and conserving natural, cultural, and recreational resources for the benefit of the community.

How are we doing?





# Our Product

- 15 Golf Courses with over 300,000 rounds of golf
- McKinley Marina with 700 slips
- Boerner Botanical Gardens (120,000 visitors)
- Mitchell Park Conservatory (215,000 visitors)
- Wehr Nature Center (60,000 visitors)
- 2 Community Recreation Centers
- 5,500 picnic and pavilion rentals
- Indoor Ice rink
- Up to 300 miles of trails including the 125 mile Oak Leaf Trail
- 2,000,000 square feet of buildings maintained

- 158 Parks and 11 parkways totaling 15,325 acres (10k acres natural areas)
- Farm and Fish Hatchery
- 13 pools, 31 wading pools, 7 spraygrounds
- 7 beaches (32 miles of shoreline)
- 5 disc golf courses
- 2 family aquatic centers
- 231 athletic fields
- 8 dog parks
- 113 playgrounds
- 122 tennis courts; 68 basketball courts
- 55 food & beverage locations
- 250 catering events
- 1 sportsplex
- 1 light house



# Milwaukee County Parks Overview





# *"It should be well thought of that a park exercises a very different and much greater influence upon the progress of a city in its general structure than any other ordinary public work." – Frederick Law Olmstead*



- To maintain a mature park system
- Meet public and political expectations
- Increased cost of doing business
- Managing by standards and performance measures
- Limitations to implement aggressive entrepreneurial opportunities to manage costs and improve revenue
- Create strategy focused organization



- Current resources are inadequate to properly maintain the current Milwaukee County Parks system infrastructure.
- A comprehensive, accurate and updated list of Parks infrastructure maintenance needs is necessary.
- Proper stewardship of the Milwaukee County Parks system requires alignment of the system's infrastructure needs with available resources.



#### County Financing for Capital Requests by County Depts. (2017-2021) in millions





# Opportunities





# Focus Areas

- Accreditation from the Commission for Accreditation of Park and Recreation Agencies (CAPRA) – Sustainability through Efficiency Management
- Five-year Strategic Plan
- Ten-year Park System Master Plan and 2050 Parks and Open Space Plan (Setting the Framework for the Future)
- Continue Natural Areas Management Plans
- Workforce Readiness (Succession Planning & Employee Engagement initiatives)
- Core Services Analysis and Business Plans
- Cooperative community partnerships to leverage resources to further the mission and objectives of the Parks (Linkages with the Community)
- Further the community engagement management program (GAPS-V)
- Leverage technology (POS, CityWorks, website)
- Cultivate public awareness and support of Parks (MARCOM)





# 2017 "Some" Key Accomplishments

- Received a two year \$635k Great Lakes Restoration Initiative Grant to engage and educate urban youth in the control of invasive species throughout the park system.
- Completed a green infrastructure project improving water quality and beach health in South Shore Park in collaboration with WDNR, EPA, MMSD, Great Lakes Restoration Initiative, FFLM, Wisconsin Waterways Commission, Migratory Bird Management, University of Wisconsin-Milwaukee School of Freshwater Sciences, and MillerCoors to complete the project.
- Working with MMSD at Underwood Creek, Honey Creek, and along the Kinnickinnic River at Pulaski, Jackson, KK Parkway, Pulaski, and Wilson on stormwater projects to restore streams and environmental features in parks, while improving impacted park and recreation areas.
- Finalized Johnsons Park revitalization efforts by working with community-based and non-profit
  organizations and stakeholders to address quality of life issues in the Johnsons Park
  neighborhood.
- Completed park master plans at Copernicus and Dineen parks and entered into a MOU with the City of Milwaukee for the construction of storm water facilities and park improvements.
- Received close to \$1.3M grant funding from EPA GLRI, FFLM, and WDNR Stewardship Program for improvements at Kletzsch Park waterfalls area.



- Continue MMSD KK Watershed Restoration and park improvements (Jackson, KK Parkway, Pulaski, Wilson)
- Continue work on Oak Creek Watershed Restoration Plan (SEWRPC, South Milwaukee, MMSD)
- Continue City of Milwaukee green infrastructure/stormwater management and park improvements (Dineen and Copernicus)
- Broaden outreach programming and naturalization/stewardship within Golf Course properties
- Organize UW Extension community gardens program
- Continue process of updating Trails Network Plan
- Implement the Milwaukee County Parks Urban Forestry Management Plan
- Redirect \$54k per year from the Estabrook Dam Trust Fund to Park Operations (preserve & protect natural resources).



#### Key Findings from 2016 Parks with Purpose Household Survey

Providing large parks with a variety of experiences is the most important service to provide.

2 Parks provides the services households agree they should provide.

3 Parks ranks high overall satisfaction: opportunitie s exist to move from

great.

good to

4 Deferred maintenance. marketing, and security are areas of opportunity to strengthen satisfaction.

It is more important to repair or improve existing parks facilities rather than build/acquir e new ones.

5

Partnering with local universities. businesses. & nonprofits is supported to ensure long-term success.

6

MILWAUKEE COUNTY PARKS WITH **PURP** 

PARKS MASTER PLANNING



# General Policy on Use of Park Land in Cooperation with Other Governmental Units (22 guidelines)

- 1. Demonstration of Public Benefit
- 2. Shall not increase County costs for maintenance
- 3. Multiple governments a Party to the agreement
- 4. Negotiate agreement subject to review by CEX and BOS for uses
- 5. County Policy prevails where another unit of government desires to utilize parkland
- 6. Construction shall conform to County standards and policy
- 7. Use can only be utilized for specific purpose(s)
- 8. Additional usage must be approved in advance in advance and additional fees may be required
- 9. Clear benefit to the County either through compensation or through service to the residents of the County, or a combination
- 10. Must be a suitable site available and use should not disrupt the ecosystem
- 11. May not negatively impact or displace any activity within the Park area without providing startup costs for offsetting equivalent activity
- 12. Protection must be afforded to park aesthetics



# General Policy on Use of Park Land in Cooperation with Other Governmental Units (22 guidelines)

- 13. County will not provide funding for repair, restoration or modifications
- 14. Site restoration shall be accomplished to new condition
- 15. County's out of pocket costs must be reimbursed
- 16. Provisions must be made for site restoration and structure removal if (a) the use is abandoned; (b) the agreement is not renewed or extended; (c) if unit is found to be in default
- 17. Appropriate insurance and indemnity is set forth
- 18. Uses may not pose a health hazard and conform to all Federal, State, and Local laws
- 19. Responsible for any environmental remediation
- 20. County does not represent the suitability of the Park Land
- 21. Negotiate in the best interest of the County and achieves specific County objectives
- 22. May require compensation for the loss of use of Park land



**Our Parks** 

#### IAW 2015-2020 Strategic Plan

- Broaden and Strengthen Park Stewardship
  - Conserve, preserve and protect our natural resources and parklands in a healthy condition
    - Fund natural capital projects (sustainable green environment)
    - Organize waterway operations and management program (rivers, beaches, lagoons)
  - Maintain and update our aging facilities and equipment to best serve the public
  - Optimize use of parks and facilities
    - Develop site plans
    - Explore intergovernmental agreements
- Improve cost recovery
  - Reinvest in revenue generating facilities to grow programs and services
  - Develop facility renovation, replacement and repurposing plan
- Strengthen partnerships to become more responsive to community needs
  - Partner with MMSD and municipalities on stormwater projects to restore stream and environmental features in Parks
  - Inform and engage Friends and advocacy groups
  - Collaborate with community-based organizations and stakeholders to enhance service delivery and help address quality of life issues

#### Kinnickinnic River Watershed Park System Vision Planning Process 2014-2017









#### Kinnickinnic River Watershed Park System Vision Planning Process 2014-2017











#### Pulaski Park



#### Kinnickinnic River Parkway East, Al Simmons Field & KK Sports Center



#### Jackson Park



#### Kinnickinnic River Parkway West



#### Wilson Park







#### TERRA What's in the future for this type of collaboration with MMSD and with other partner agencies, organizations, and businesses?

Milwaukee County Parks

**Dineen Park Master Plan** 





#### Final Design Process in 2017 & Construction beginning in 2018



#### The Future of the KK River & Pulaski Park, 2018-2019 El Futuro del Río KK y el Parque Pulaski, 2018-2019







"Our core purpose is to improve the physical environment for the benefit of society in a sustainable manner..."

# What Has Been Done?

MILWAUKEE COUNTY PARKS

**Five Year Strategic Plan** 

Milwaukee County Department of Parks, Recreation and Culture

 The current Kinnickinnic River Watershed planning and engineering builds on existing plans and dovetails with ongoing efforts

een infrastructure on Property Values vaukee Metropoliton Sewerage District

IMPLEMENTATION PLAN AND PRIORITY PROJECT LIST For The KINNICKINNIC RIVER WATERSHED

ning Area: Case Studies

Volume 1: Milwaukee **County Parkway Inventory Report** Wilwaukee County Parkway Syst 1+DOT ID 2867-144

REGIONAL

ASKIPARK RMWATER PLA



### **Multidisciplinary Collaboration**



# Agency Stakeholder Feedback



### Watercourse Alternative Development Process









DIVERSION ALTERNATIVE











### Green Infrastructure Alternative

2-600' long x 2' deep x 6' wide bioswale on both sides of each city block

#### Or

 4' wide porous pavement parking lanes, with stone storage layer 4.5' below

= 18% reduction in flow





#### Overview of Runoff Model Watershed



#### Overview of Runoff Model Subwatershed



### Green Infrastructure Alternative Overview of Runoff Model



# Block by block



### Overview of Runoff Model Neighborhood by neighborhood

### **Overview of Runoff Model**

Through the entire watershed



### **Green Infrastructure Alternative Results**

- 18% decrease in flows as a stand-alone alternative (doesn't entirely meet the objectives)
- Green infrastructure services an important role for increased resiliency and will be used to supplement other alternatives: in conjunction with a "blended" alternative
- Watershed Green Infrastructure Plan is currently being finalized to guide strategic investment in green infrastructure in the watershed
#### Resiliency Planning Regional setting: Upper Midwest climate trends









#### Milwaukee annual & maximum daily precipitation (inches)





#### Watershed Engineering Toolkit

## **PUSH IT or SLOW IT:** slow it down & make more space for the water

Increase waterway capacity  $\rightarrow$  water surface elevations decrease



#### Push it or Slow it Block it Buy it or Lift it Store it



#### **BLOCK IT:** physical barriers

Block floodwaters from areas with buildings and structures



#### Push it & Slow it Block it Buy it or Lift it Store it







## BUY *IT* or LIFT *IT*: acquisition & flood proofing private property

Floodproof or acquire damaged properties



Push it or Slow it Block it Buy it or Lift it Store it







**STORE IT:** floodable areas store it by "retaining" or "detaining" on public (& sometimes private property) *Includes green infrastructure strategies* 

Reduce Flows → Water Surface Elevations decrease



#### Push it or Slow it Block it Buy it or Lift it Store it





#### **Learning Objectives of this Session**

- Techniques for cross-discipline communication & collaboration
- Public engagement techniques & lessons
- The value of viewing historical achievements as blueprints for the future

Combine MMSD & MCP agency efforts with stakeholder & community desires to reach the community goals:

Reduce flood risk + Make the river a community asset + Enhance area parks = Neighborhood renaissance Building on the 1923 Vision of Milwaukee County's Park System by Charles Whitnall

Plan features:

A double loop of parkways following the county's rivers, creeks, and lakeshore, with individual parks strung along the loop like pearls on a necklace



#### **Community Feedback**

9 WHAT DO YOU THINK PLANS FOR JACKSON

MORSON PAR



## Make the KK River a Community Asset

De-channelize / Daylight / Re-naturalize

## Save Older Growth Trees

# Increase Safety











GRAEF



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Kinnickinnic River Watershed

PROPOSED KK RIVER TRAIL EXTENSION FROM S. 6TH STREET & CHASE AVENUE



Milwaukee, WI

# Concert Pavilions

# New Comunity Pavilions

### **Updated Athletic Fields**

Told and fall

# Fishing Piers

## Watercraft Launch

-

## Fabitat Islands

# Activities Embracing the River

## Activities Interacting with the River

#### Community Driven Design & Decision Making



#### The Future of the KK River & Pulaski Park, 2018-2019 El Futuro del Río KK y el Parque Pulaski, 2018-2019



MMSD

**PARKS** 

Sixteenth Street

#### Pulaski Park Playground & Basketball Court Campo de Juegos del Parque Pulaski & Cancha de Basketball





PICK 1 Elige 1



#### Pulaski Park Playground Equipment Styles Estilos de los Equipos de Juego del Parque Pulaski














## Reduce flood risk ╋ Make the river a community asset Enhance area parks Neighborhood renaissance

## Thank you!



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