Mill Creek Watershed-based Planning

Steering Committee Kick-off Meeting

WELCOME!

Kane County Government Center, Geneva
July 18, 2018
Agenda

• Welcomes and Introductions
• Agenda Review
• Project Purpose, Requirements, Timeline
• Watershed Resource Inventory
• Visioning Exercise and Discussion of Key Issues & Opportunities
• Public Outreach Strategy & Discussion
• Watershed News, Announcements
• Next Steps
Kane County Stormwater Ordinance Update

- Process started Spring 2017
- First major update since originally adopted in 2002
- No changes to release rates / detention volumes
- Changes to BMP requirements to address WQ & IEPA NPDES Permits
- Correct inconsistencies, provide better clarifications
- Final Ordinance Expected to be adopted Spring 2019
Fox River Study Group

- Group started in 2002
- Local Government & Environmental Orgs working together to address WQ impairments in Fox River Watershed
- Extensive WQ Sampling
- WQ Model of watershed
- Recommendations to reduce phosphorus & improve dissolved oxygen in Fox River
FRSG Water Quality Modeling

- Watershed loading model
  - 31 Tributaries + Areas draining directly to Fox R.
  - 33 HSPF Models (Tribs + 2 for the Fox)

- Receiving stream model
  - QUAL2K (1 model)
  - Steady State
Watershed-based Planning: Purpose, Requirements, Timeline

Mill Creek
Watershed-based Planning
Watershed
Why Watershed-based Planning?

- **Federal Clean Water Act**
  - Section 305(b), 303(d)
  - Section 319(h): Nonpoint Source Management Program
  - 9 Minimum Elements of a Watershed-based Plan (U.S. EPA, Illinois EPA)
    - implementation $$

- **Regional Planning (CMAP)**
  - Areawide Water Quality Management Plan
    - CWA Section 604(b) funds
  - Go To 2040 → On To 2050
  - Water 2050

- **Local Planning & Initiatives**
To enhance & expand Kane county’s green infrastructure network by providing functional connections between water resources, natural areas, forest preserves, cultural & historic sites, and communities as part of the region’s Green Infrastructure Vision.
Wisconsin-Illinois
Fox River Water Trail Initiative

The Fox River Water Trail from Lisbon, Wisconsin, to the confluence with the Illinois River in Ottawa, IL provides suitable access to the public, to enjoy the quiet and active recreation, scenic beauty, abundant wildlife, and historic and cultural features. Communities along the Fox River embrace stewardship and public engagement to provide a sense of place.
Why Mill Creek?

Mill Creek Watershed-based Planning Partners

- **Illinois EPA** - Financial Assistance Agreement #604171: grant admin., plan review & approval

- **CMAP**: project management & admin., facilitating stakeholder participation, field data collection, site visits, preparing plan

- **Kane County** - Local Technical Assistance program MOU: data/info sharing, collaboration & assistance w/ meeting and plan preparation, plan endorsement

- **Fox River Ecosystem Partnership**: public info & outreach services (website, e-newsletter, field trips)

- **Fox River Study Group**: data/info sharing, modeling support

- **Steering Committee**: representing local munis, districts, orgs; data/info/knowledge sharing; links to greater community - help w/ community outreach & education, vision, recommendations & decisions influencing the process & outcomes, plan endorsement
Watershed-based Plan Focus

address Nonpoint Source (NPS) Pollution to restore and protect impaired waters
U.S. EPA’s 9 Minimum Elements of a Watershed-based Plan

a) Identify causes of impairment & sources of pollution
b) Estimate pollutant load reductions needed to meet WQ standards
c) Identify the NPS management measures needed to achieve load reductions
d) Estimate amount of technical & financial assistance needed, and sources & authorities
e) Provide a public information and education component
f) Include a schedule for implementing the NPS management measures
g) Describe interim, measurable milestones to measure progress
h) Establish criteria to determine if load reductions being achieved
i) Provide a monitoring component to determine if progress being made toward attaining or maintaining WQ standards
Watershed planning is a collaborative, iterative, and adaptive process...
Watershed-based Plan Outline

1) Introduction
2) Mill Creek Watershed
3) Watershed Resource Inventory
   • Local Governments and Districts
   • Population and Demographics
   • Physical and Natural Features
   • Land use and Land Cover
   • Water Resource Conditions
   • Pollutant Sources
   • Land and Water Management Practices
   • Previous Watershed Planning and Implementation Activities
4) Watershed Protection Measures
   • Planning, Policy, and Programming
   • Best Management Practice (BMP) Implementation Projects
     • “watershed-wide”
     • site-specific
   • Public Information and Outreach
   • Funding and Tech Assistance
   • Ecosystem Services Evaluation
5) Monitoring Success
   • Implementation Schedule
   • Criteria for Determining Progress
   • Monitoring to Evaluate Effectiveness
• Appendices
Watershed-based Plan Timeline

1. Project initiation
2. Watershed resource inventory
3. Draft plan development
4. Public meetings and input
5. Plan completion and approvals

http://www.cmap.illinois.gov/programs/lta/mill-creek
Watershed Resource Inventory Overview

Mill Creek
Watershed-based Plan
Watershed Resource Inventory Overview

Mill Creek
Watershed-based Plan
Mill Creek Watershed

- Lower Fox Subbasin (HUC 8: 07120007)
- 31.2 square miles (19,990.8 acres)
- Population: ~47,383
Mill Creek Watershed

• Mill Creek –
  – 16 miles long
  – Tributary to the Fox

• Other major waterbodies
  – Peck Lake
  – Brundige Tributary
  – McKee Rd. Tributary
Mill Creek Watershed

- Major HUC 12 watershed:
  - Mill Creek  } 16 miles
  - Major waterbodies
    - Peck Lake
    - Brundige Tributary
    - McKee Rd. Tributary

- 11 subwatersheds
Local Governments & Districts

- 49 jurisdictions
  - 1 county, 5 municipalities, 5 townships
  - 5 library districts, 2 libraries
  - 5 school districts, 13 schools (elementary/secondary, community college)
  - 4 sanitary districts, 2 WWTP facilities
  - 1 mosquito abatement district
  - 4 park/open space districts, 1 forest preserve district
  - 1 soil conservation district
Soils – Hydrologic Soil Groups (HSGs)

- Soils have relatively high runoff potential
  - B: 8,524 acres (43%)
  - C: 4,157 acres (21%)

<table>
<thead>
<tr>
<th>HSG</th>
<th>Definition/Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Soils have a low runoff potential when thoroughly wet. Water is transmitted freely through the soil.</td>
</tr>
<tr>
<td>A/D</td>
<td>The first letter applies to the drained condition and the second to the undrained condition.</td>
</tr>
<tr>
<td>B</td>
<td>Soils have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.</td>
</tr>
<tr>
<td>B/D</td>
<td>The first letter applies to the drained condition and the second to the undrained condition.</td>
</tr>
<tr>
<td>C</td>
<td>Soils have moderately high runoff potential when thoroughly wet. Water transmission through soil is somewhat restricted.</td>
</tr>
<tr>
<td>C/D</td>
<td>The first letter applies to the drained condition and the second to the undrained condition.</td>
</tr>
<tr>
<td>Unclassified</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Soils – Hydric Soils

- 40% of the watershed features “not hydric” soils
- 15% of the watershed features “all hydric” soils

<table>
<thead>
<tr>
<th>Hydric Soil Class</th>
<th>Area (ac.)</th>
<th>Percent of Planning Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonhydric (0%)</td>
<td>7,914.4</td>
<td>39.6</td>
</tr>
<tr>
<td>Predominantly nonhydric (1-32%)</td>
<td>6.691.7</td>
<td>33.5</td>
</tr>
<tr>
<td>Partially hydric (33-65%)</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Predominantly hydric (66-99%)</td>
<td>2,330.7</td>
<td>11.66</td>
</tr>
<tr>
<td>Hydric</td>
<td>3,054.0</td>
<td>15.28</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>19,990.8</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Floodplains

- 1,991 acres of floodplains
  - #5: 343.18 acres
  - #8: 323.12 acres

<table>
<thead>
<tr>
<th>Floodplain</th>
<th>Area (acres)</th>
<th>Percent of Planning Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floodway</td>
<td>653.59</td>
<td>3.27</td>
</tr>
<tr>
<td>100-year</td>
<td>1,275.74</td>
<td>6.38</td>
</tr>
<tr>
<td>500-year</td>
<td>61.75</td>
<td>0.31</td>
</tr>
<tr>
<td>Totals</td>
<td>1,991.09</td>
<td>9.96</td>
</tr>
</tbody>
</table>
Open Space Reserve

- ~3,070 acres of dedicated open space

<table>
<thead>
<tr>
<th>Open Space Reserve</th>
<th>Area (acres)</th>
<th>Percent of Planning Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest preserves (Kane County)</td>
<td>1,192.05</td>
<td>5.0</td>
</tr>
<tr>
<td>Nature preserves (IDNR)</td>
<td>116.07</td>
<td>6.0</td>
</tr>
<tr>
<td>Parks (Municipal/Township)</td>
<td>991.50</td>
<td>0.6</td>
</tr>
<tr>
<td>Greenways and trails</td>
<td>24.32</td>
<td>0.1</td>
</tr>
<tr>
<td>Golf courses / other</td>
<td>573.12</td>
<td>2.9</td>
</tr>
<tr>
<td>Conservation easements</td>
<td>176.00</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>3,069.77</strong></td>
<td><strong>15.5</strong></td>
</tr>
</tbody>
</table>

- Supporting ecosystems:
  - Oak communities: 830.4 acres
  - Prairie: 556.9 acres
  - Wetlands: 1,630.4 acres
• 1,630.4 acres of wetlands
  – Subwatersheds #2 and #8 have the most wetlands
  – 89.5 acres of artificial ponds intersect hydric soils

<table>
<thead>
<tr>
<th>Wetland Type</th>
<th>Area (acres)</th>
<th>Percent of Planning Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upland area within wetlands</td>
<td>101.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Farmed wetlands</td>
<td>15.9</td>
<td>0.1</td>
</tr>
<tr>
<td>Other wetlands</td>
<td>1,338.9</td>
<td>6.7</td>
</tr>
<tr>
<td>Linear water feature</td>
<td>63.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Artificial ponds</td>
<td>110.7</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>1,630.4</strong></td>
<td><strong>8.2</strong></td>
</tr>
</tbody>
</table>
### Land Use

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Area (acres)</th>
<th>Area (sq. mi.)</th>
<th>Percent of Planning Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family Residential</td>
<td>5,077.2</td>
<td>7.933</td>
<td>25.4</td>
</tr>
<tr>
<td>Multi-family Residential</td>
<td>76.3</td>
<td>0.119</td>
<td>0.4</td>
</tr>
<tr>
<td>Commercial</td>
<td>682.9</td>
<td>1.067</td>
<td>3.4</td>
</tr>
<tr>
<td>Institutional</td>
<td>1,640.6</td>
<td>2.563</td>
<td>8.2</td>
</tr>
<tr>
<td>Industrial</td>
<td>188.2</td>
<td>0.294</td>
<td>0.9</td>
</tr>
<tr>
<td>Open Space</td>
<td>3,761.8</td>
<td>5.878</td>
<td>18.8</td>
</tr>
<tr>
<td>Agriculture</td>
<td>5,578.4</td>
<td>8.716</td>
<td>27.9</td>
</tr>
<tr>
<td>T/C/U</td>
<td>2,324.5</td>
<td>3.632</td>
<td>11.6</td>
</tr>
<tr>
<td>Vacant</td>
<td>635.6</td>
<td>0.993</td>
<td>3.2</td>
</tr>
<tr>
<td>Under Construction</td>
<td>22.8</td>
<td>0.036</td>
<td>0.1</td>
</tr>
<tr>
<td>Unclassifiable/other</td>
<td>0.0</td>
<td>0.000</td>
<td>0.0</td>
</tr>
<tr>
<td>Water</td>
<td>2.4</td>
<td>0.004</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>19,990.8</strong></td>
<td><strong>31.2</strong></td>
<td><strong>100.0</strong></td>
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</tbody>
</table>
### Agriculture Composition

<table>
<thead>
<tr>
<th>Cropland Type</th>
<th>Area (acres) by year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2007</td>
</tr>
<tr>
<td>Alfalfa</td>
<td>50.4</td>
</tr>
<tr>
<td>Barren</td>
<td>54.2</td>
</tr>
<tr>
<td>Corn</td>
<td>2,906.7</td>
</tr>
<tr>
<td>Double crop: Winter wheat/soybeans</td>
<td>0.8</td>
</tr>
<tr>
<td>Fallow/idle cropland</td>
<td>34.1</td>
</tr>
<tr>
<td>Grass/pasture</td>
<td>3,524.3</td>
</tr>
<tr>
<td>Oats</td>
<td>10.8</td>
</tr>
<tr>
<td>Other crops</td>
<td>27.1</td>
</tr>
<tr>
<td>Other hay/non alfalfa</td>
<td>--</td>
</tr>
<tr>
<td>Peas</td>
<td>--</td>
</tr>
<tr>
<td>Potatoes</td>
<td>2.3</td>
</tr>
<tr>
<td>Sod/grass seed</td>
<td>--</td>
</tr>
<tr>
<td>Soybeans</td>
<td>1,309.6</td>
</tr>
<tr>
<td>Spring wheat</td>
<td>2.3</td>
</tr>
<tr>
<td>Sweet corn</td>
<td>--</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>64,432.9</td>
</tr>
</tbody>
</table>
57% of planning area is impervious to varying degrees
- 18% is completely impervious
Stream Health

- “Sensitive/approaching impacted” - #1, 3, 4
- “Impacted” - #2, 5, 6, 7, 9, 10, 11
- “Non-supporting” - #8

Stream Health Categories relative to extent of Impervious Cover

<table>
<thead>
<tr>
<th>Percent of Impervious Cover</th>
<th>Stream Health Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5%</td>
<td>Sensitive</td>
</tr>
<tr>
<td>6-10%</td>
<td>Sensitive/Approaching Impacted</td>
</tr>
<tr>
<td>11-25%</td>
<td>Impacted</td>
</tr>
<tr>
<td>26-59%</td>
<td>Non-Supporting</td>
</tr>
<tr>
<td>60-100%</td>
<td>Non-Supporting/Urban Drainage</td>
</tr>
</tbody>
</table>
Pollutant Load Modeling

- STEPL
  - Spreadsheet Tool for Estimating Pollutant Loads
  - Compiled on a subwatershed scale
  - Limited to N, P, TSS, BOD
Stream and Lake Impairment Status

- 6 IEPA water quality monitoring stations
- 3.34 miles of streams assessed, primary contact
- No lakes assessed
Land Management Planning

- 14 local plans
  - Municipalities
  - Park Districts
  - Forest Preserve District
  - Kane County

- 176 acres under conservation easements

- Soil erosion & sediment control
- Floodplain management
- Native landscaping
- Stream & wetland protection
- Natural areas & open space
- Water access & recreation
- Transportation
- Parking
- Pollution Prevention
- Education and outreach
- Development
WQ Implementation projects

- 1 IDA SSRP project
Additional WRI topics

• Topography / elevation
• **Ecosystems** – wetlands, prairies, oak communities
• **Water supply** – wells, well setbacks, groundwater use restrictions
• **Wastewater management** – FPAs, WWTPs, NPDES permits
Upcoming fieldwork

- Detention basin assessments
- Streambank assessments
Visioning Exercise and Discussion of Key Issues & Opportunities

Mill Creek
Watershed-based Planning
Visioning Exercise

1) Your vision for the future of Mill Creek ~10 years from now
2) Strengths of the Mill Creek Watershed
3) Key issues of concern
4) Specific projects or actions to address your concerns or issues
5) Names of key persons or groups from which we should gain input

Discussion of Issues & Opportunities
Public Outreach Strategy and Discussion

Mill Creek
Watershed-based Planning
Stakeholder Engagement Structures

- Core WBP Development Team
- Open Public Meetings
- Board Mtgs
- Mtgs w/ Key SHs
- Key Partner
- Core WBP Development Team
- Key Partner
- Workgrp Mtgs
- Mtgs w/ Key SHs
- Public Wrkshps
- Mtgs w/ Key SHs
- Vol Data Coll.
- Open Public Meetings
- On-Line BMP Survey Tool
- Vol Data Coll.
Stakeholder Engagement Structures

- Core WBP Development Team
  - Public Kickoff Mtg
  - Cvr Crop & Soil Health Wrkshp
- Public Wrap-Up Mtg
- Public Open Houses / Wrkshps
- 1-on-1 Landowner Mtgs
- Core WBP Development Team
  - Steering Cmte
  - Mtgs w/ Key SHs
  - Vol Data Coll.
  - On-Line BMP Survey Tool
- Board Mtgs
- Citizen Grps
Stakeholder Categories

Technical Experts
Specific knowledge & skills, Advisors, Decision makers

Interested Folks
Want to contribute

General Public
“Population uninterested or unaware of environmental implications of their everyday actions.”

* slide modified from presentation by Mary Mitros, DuPage Co.
Watershed Stakeholders – a diversity of people and groups

- Homeowners, HOAs
- Farm owners, operators
- Business & industry reps
- Schools, Colleges, Universities
- Community service orgs
- Religious orgs
- Libraries
- Land trusts
- Native American tribes
- Environ/Conserv groups
- Vol monitors/stewards
- Recreation-based clubs: fishing, hunting, sailing, canoeing, rowing ...
- Municipal, Twp, County, State, Fed gov’t agencies
- Regional planning cmsn.
- Park / Forest Preserve Districts
- Soil & Water Cons. Dists.
- Irrigation Dists.
- ...

...
Watershed News, Announcements

Mill Creek
Watershed-based Planning
Next Steps

Mill Creek
Watershed-based Planning
<table>
<thead>
<tr>
<th>Key Activities</th>
<th>2018 - 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Steering Committee meeting #1 - TODAY</strong></td>
<td>July 18, 2018</td>
</tr>
<tr>
<td>Project page on FREP website</td>
<td>Aug</td>
</tr>
<tr>
<td>Field data collection by CMAP: Physical stream conditions, Detention basin assessments</td>
<td>July - Aug</td>
</tr>
<tr>
<td>Data &amp; info from SC (ph, email; surveys, questionnaires)</td>
<td>July - Sept</td>
</tr>
<tr>
<td>HSPF modeling of pollutant loads, BMP framework</td>
<td>Aug - Dec</td>
</tr>
<tr>
<td>Public Outreach: Key stakeholder interviews, Open house</td>
<td>Sept</td>
</tr>
<tr>
<td>Public Outreach: Board/cmte./org. presentations</td>
<td>Aug - Oct</td>
</tr>
<tr>
<td>Revised draft WRI</td>
<td>Sept/Oct</td>
</tr>
<tr>
<td><strong>Steering Committee meeting #2</strong></td>
<td>Oct/Nov</td>
</tr>
<tr>
<td>Plan recommendations development</td>
<td>Sept-July</td>
</tr>
<tr>
<td><strong>Steering Committee meeting #3</strong></td>
<td>Feb/Mar</td>
</tr>
<tr>
<td><strong>Steering Committee meeting #4</strong></td>
<td>June</td>
</tr>
<tr>
<td>Draft watershed plan due to IEPA</td>
<td>July 1, 2019</td>
</tr>
<tr>
<td><strong>Steering Committee meeting #5</strong></td>
<td>Aug</td>
</tr>
<tr>
<td>Final draft watershed plan due to IEPA</td>
<td>Sept 1, 2019</td>
</tr>
<tr>
<td>Final watershed plan</td>
<td>Sept 30, 2019</td>
</tr>
</tbody>
</table>
Questions and Comments

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