



DuPage River Salt Creek Workgroup

Adaptive Implementation for Biodiversity and Permit Conditions

Stephen McCracken,
DuPage River Salt Creek Workgroup

For
Des Plaines River watershed workgroup
ANNUAL MEETING



TMDLs in Upper DuPage River & Salt Creek (2004)

All streams classified as general use (highest standard)

- West Branch of the DuPage River

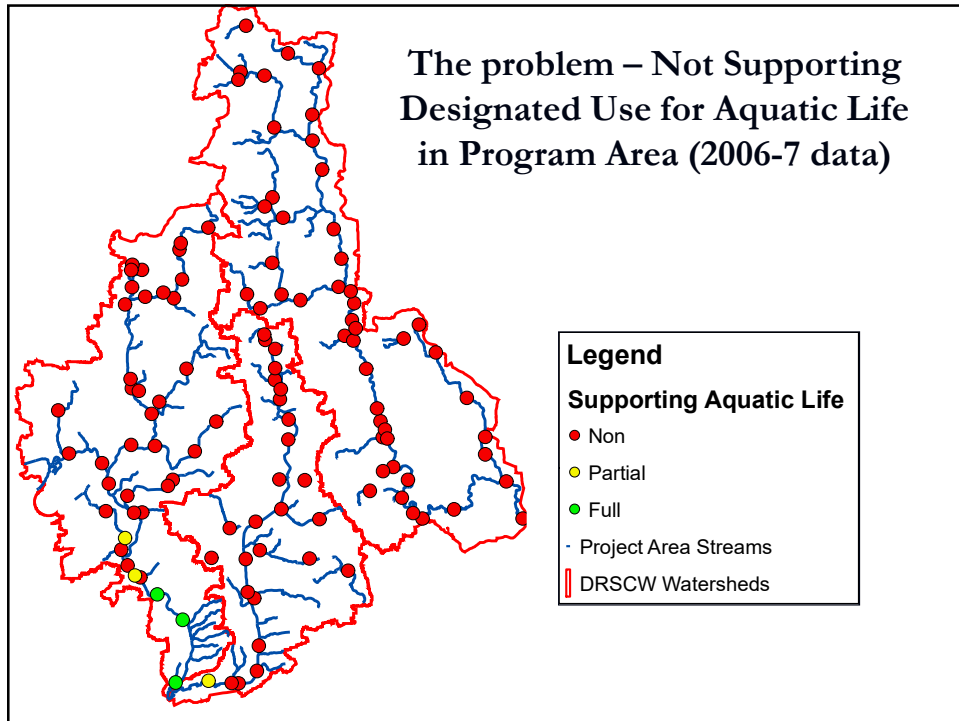
Impairments: *chloride*

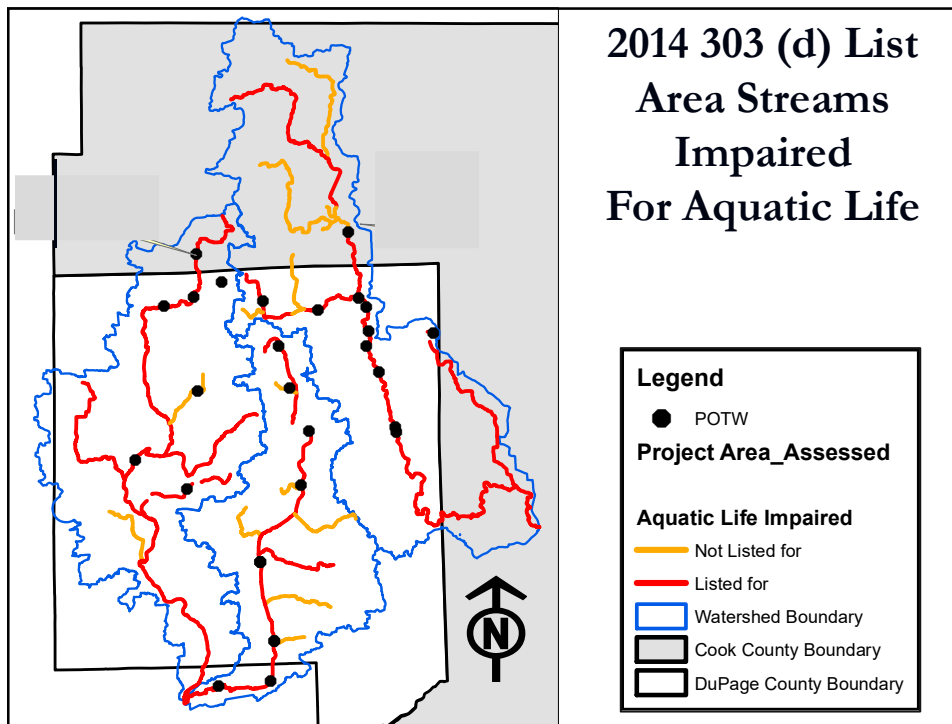
- East Branch of the DuPage River

Impairments: *conductivity, chloride and dissolved oxygen (DO)*

- Salt Creek

Impairments: *conductivity, chloride and dissolved oxygen (DO)*





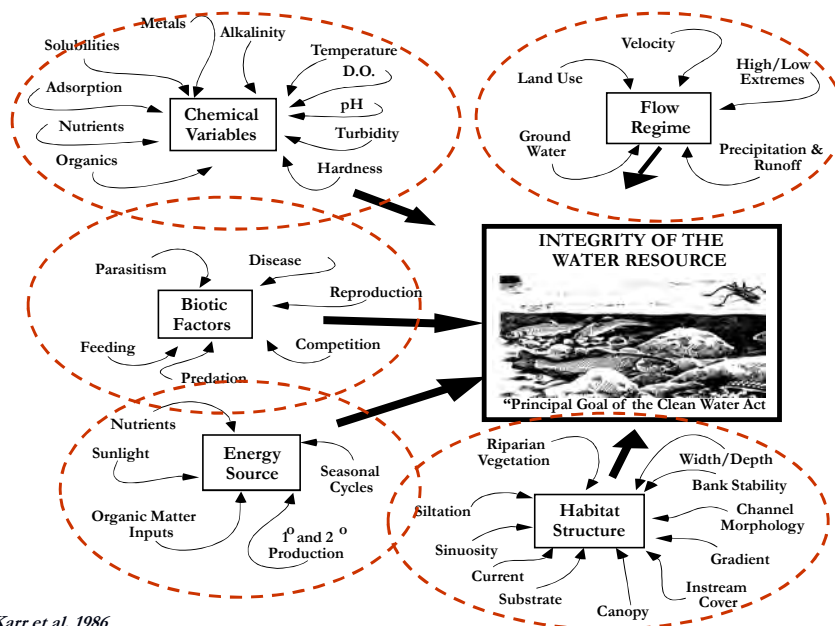
Causes and sources of impairment 2010 Integrated Report for selected segments of program area waterways

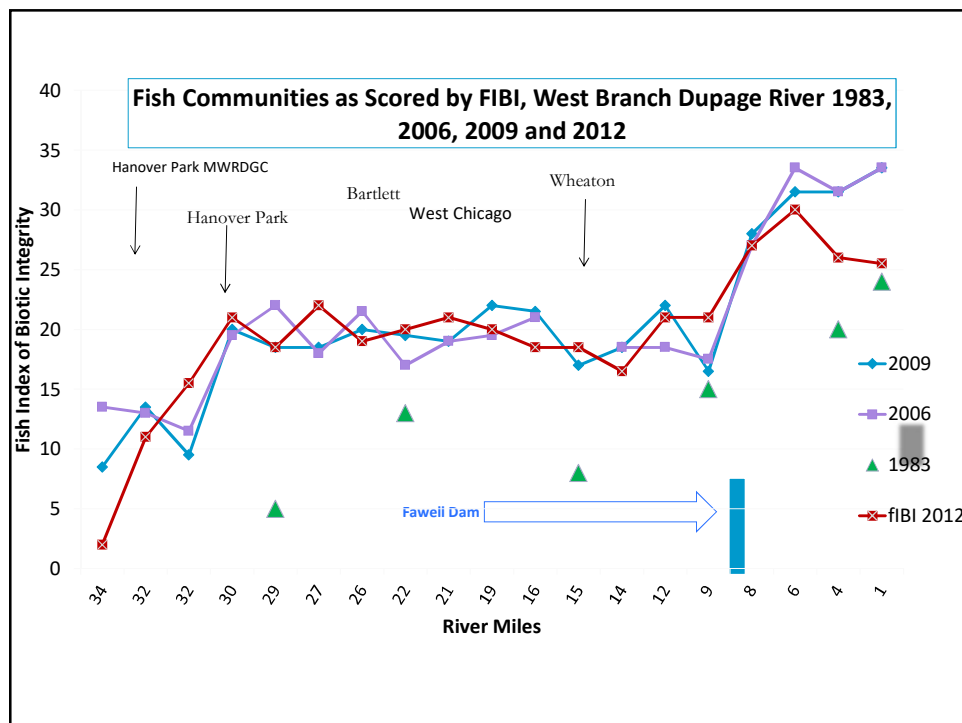
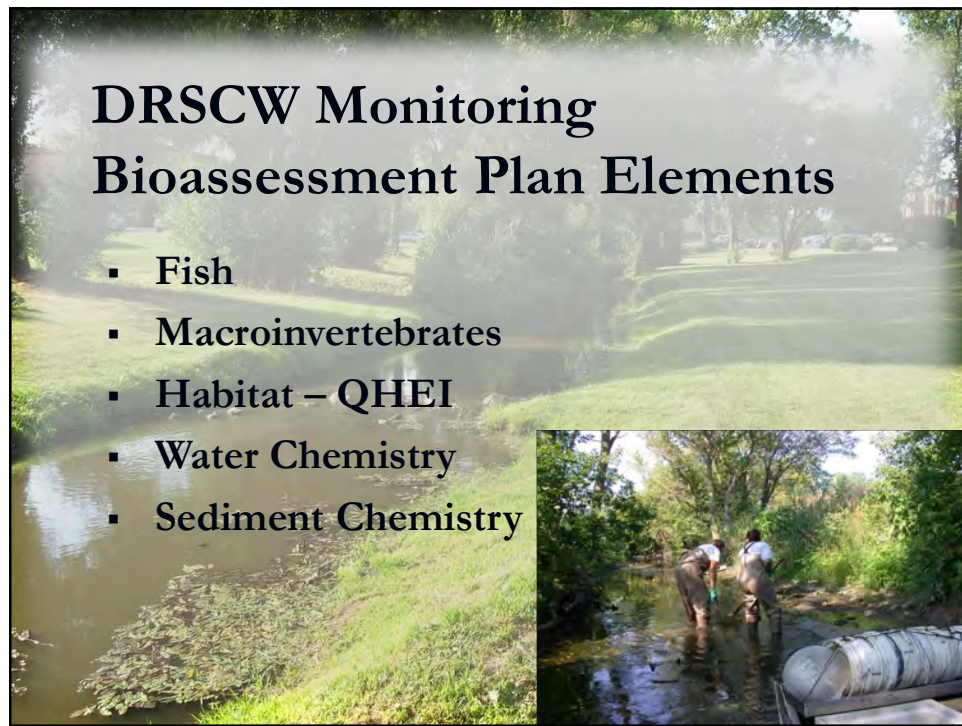
AUID	Name	Miles	Causes	Sources
IL_GBL-11	East Branch DuPage River	3.4	Alteration in stream-side or littoral vegetative covers, Other flow regime alterations, Dissolved Oxygen, Phosphorus (Total), Polychlorinated biphenyls	Loss of Riparian Habitat, Site Clearance (Land Development or Redevelopment), Streambank Modifications/destabilization, Channelization, Urban Runoff/Storm Sewers, Source Unknown, Municipal Point Source Discharges
IL_GLA-02	Addison Creek (Salt Creek)	6.7	Aldrin, Alteration in stream-side or littoral vegetative covers, Chloride, Chromium (total), DDT, Hexachlorobenzene, , Other flow regime alterations, Phosphorus (Total), Changes in Stream Depth and Velocity Patterns, Fecal Coliform	Contaminated Sediments, Channelization, Loss of Riparian Habitat, Combined Sewer Overflows, Municipal Point Source Discharges, Urban Runoff/Storm Sewers, Upstream Impoundments (e.g., PI-566 NRCS Structures), Dam or Impoundment

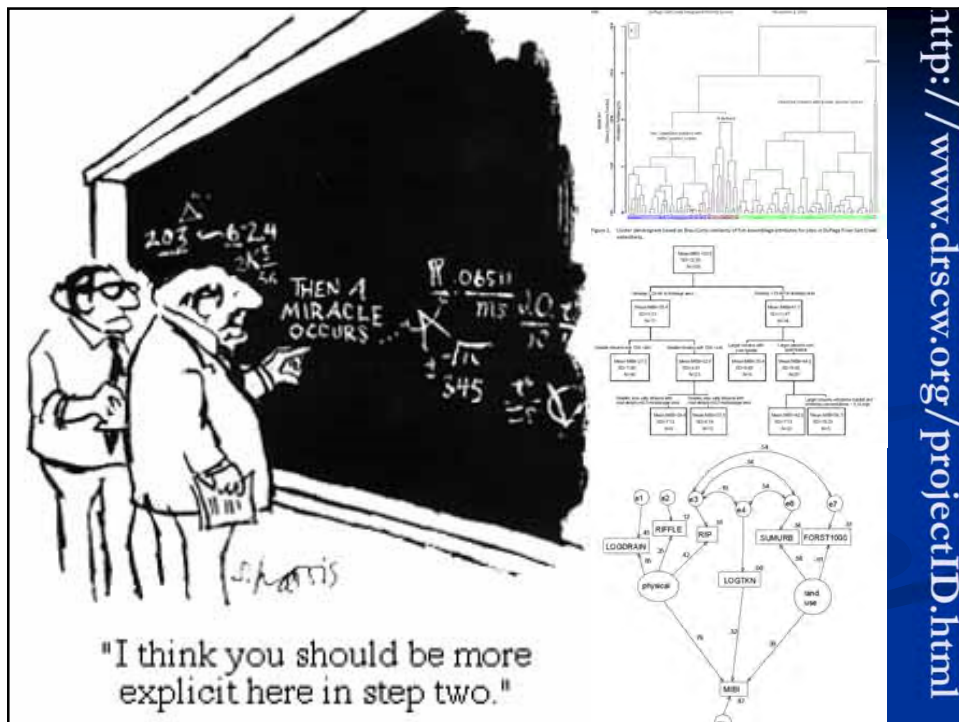
2010 303 (d) Impairment listings for selected segments of
program area waterways

Water Name	Water ID	Miles/Acres	Designated Use	Impairment Listing
E. Br. DuPage R.	IL_GBL-11	3.43	Aquatic Life	Phosphorus (Total)
Addison Cr.	IL_GLA-02	6.69	Aquatic Life	Aldrin, Chromium (total), chloride ,DDT, Hexachlorobenzene, Nickel, Phosphorus (Total)

Aquatic Life is a Function of Multiple Stressors







Statistically Demonstrated Stressor Indicators

Environmental Parameter

- ❑ Riparian Score
- ❑ Riffle Score
- ❑ Channel Score
- ❑ Substrate Score
- ❑ Pool Score
- ❑ Chloride
- ❑ TKN
- ❑ BOD
- ❑ NH3N

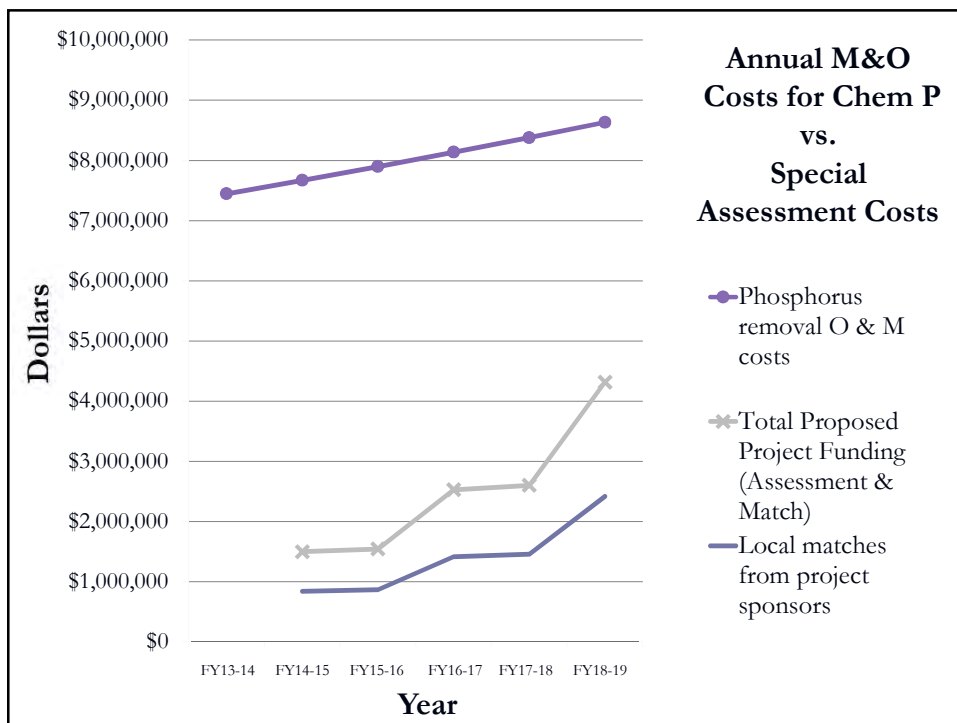
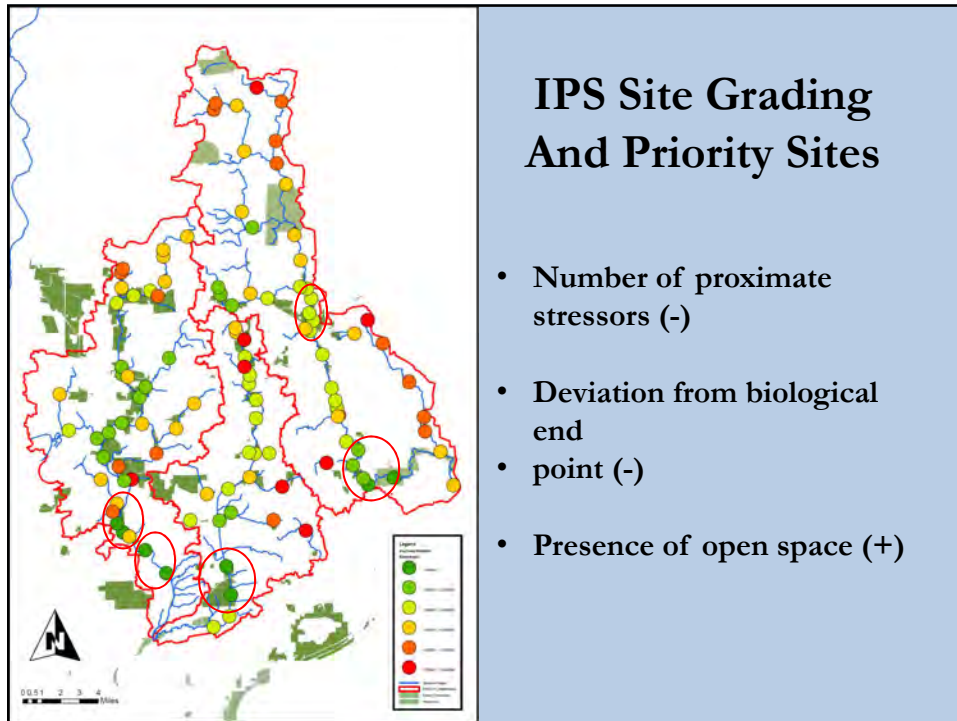


Our Proposal

- ❑ Member POTWs would pay assessments into a pooled fund to complete projects prioritized by the IPS Tool.
- ❑ DRSCW would measure the impacts of the projects and report frequently to State and EAGs .
- ❑ Phosphorous permit limits for Member POTWs would be delayed for 2 permit cycles. A P management plan would be developed

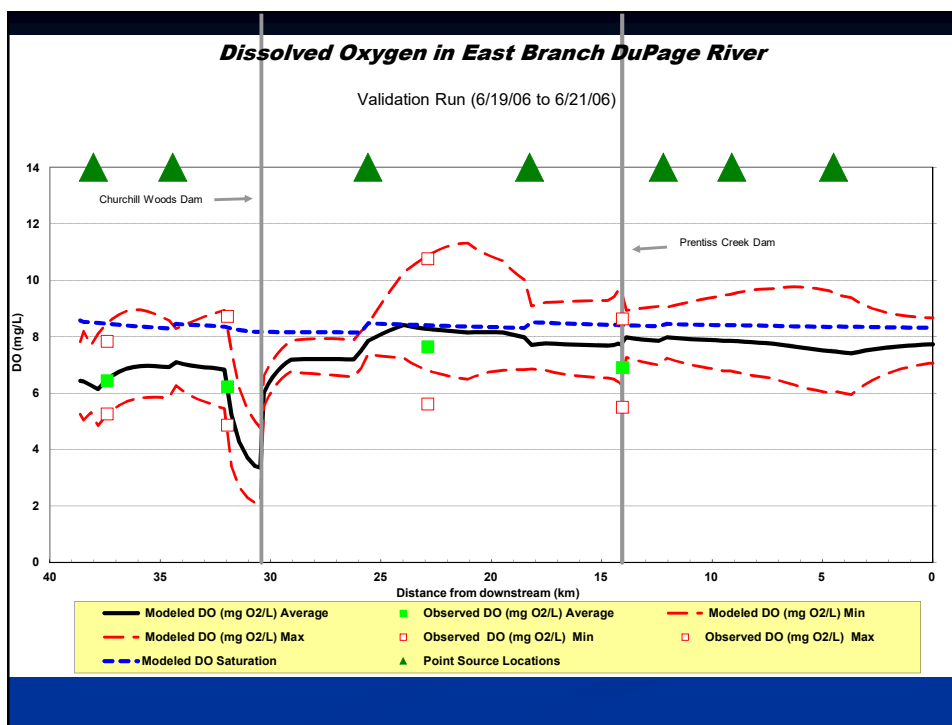
Priority Projects: First Five Years

Project Name	Anticipated Completion Date	Short Term Planning Objectives	Long Term Planning Objectives
Oak Meadows Golf Course dam removal	December 31, 2016	Improve DO	Improve fish passage
Oak Meadows Golf Course stream restoration	December 31, 2017	Improve aquatic habitat, reduce inputs of sediment/nutrients	Raise mIBI from 21 to > 35 Raise fIBI from 19 to 25 for 1.5 miles of river
Fawell Dam Modification	December 31, 2018	Modify dam to allow fish passage	Raise fIBI from 17.5 to 27 for 2 miles upstream of project
Spring Brook Restoration and dam removal	December 31, 2019	Improve aquatic habitat, reduce inputs of sediment/nutrients	Raise fIBI from 21.5 to 22 (post Fawell >27) Raise mIBI from 30.1 to >42
Fullersburg Woods dam modification and stream restoration	December 31, 2022	Improve DO, improve aquatic habitat	Raise fIBI from 17.5 to 27 Raise mIBI from 35 to > 42 for 1.5 miles of river

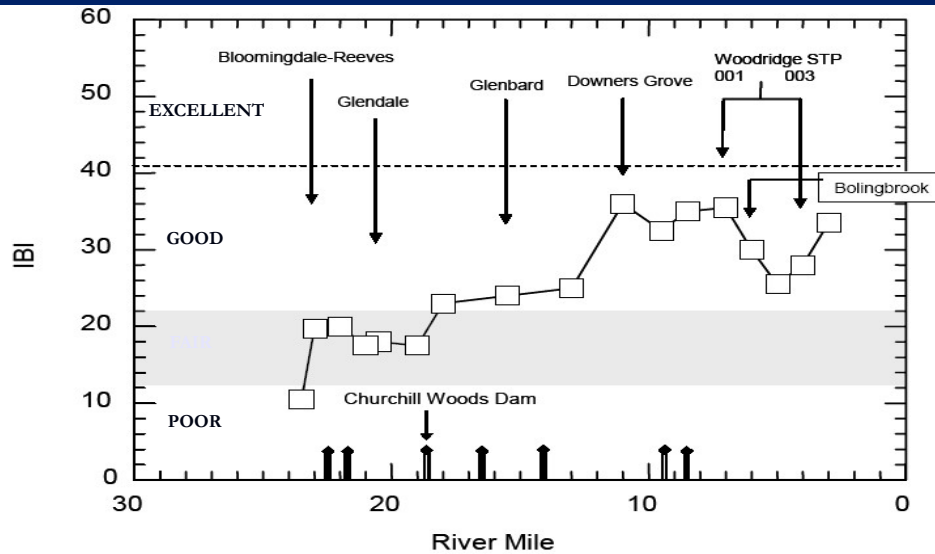


Summary

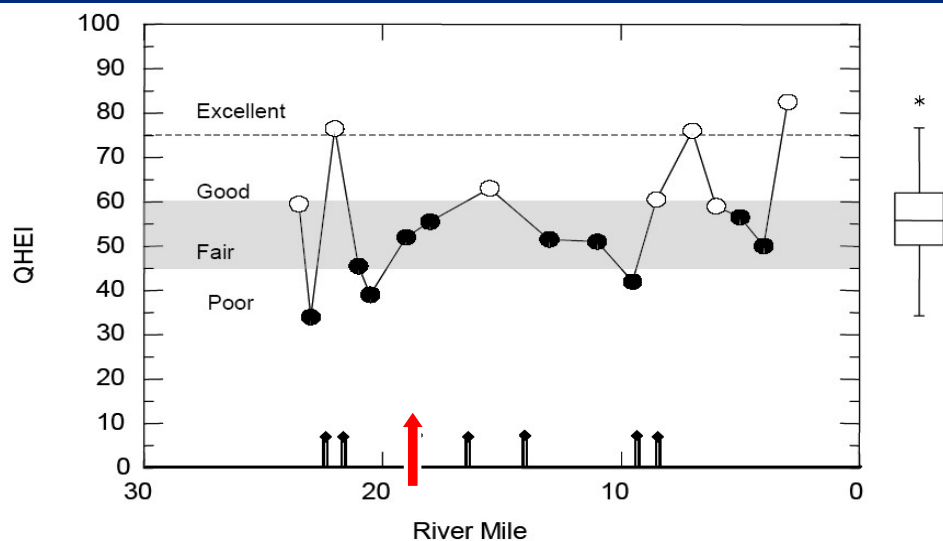
- P removal at area POTWs alone will not reverse declining stream resource quality trends; focus on most pertinent local stressors.
- Capital and O&M costs for traditional infrastructure are perpetual.
- Local entities financially own these problems, they need to own solutions.
- Negotiated NPDES permit condition gives us limited time to prove alternative concept.



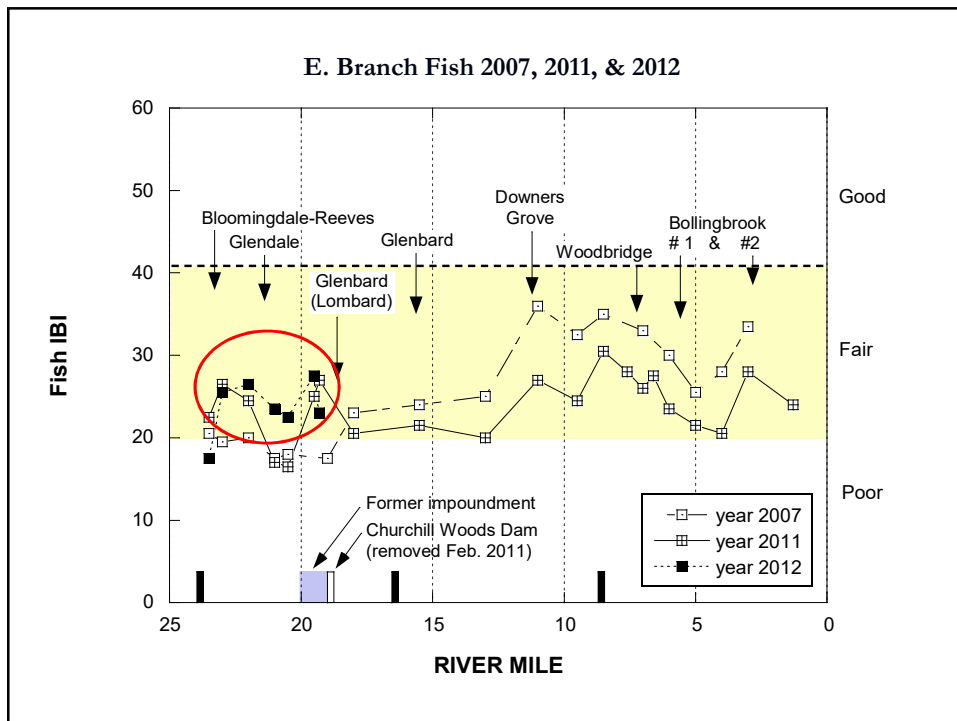
Fish IBI East Branch 2007



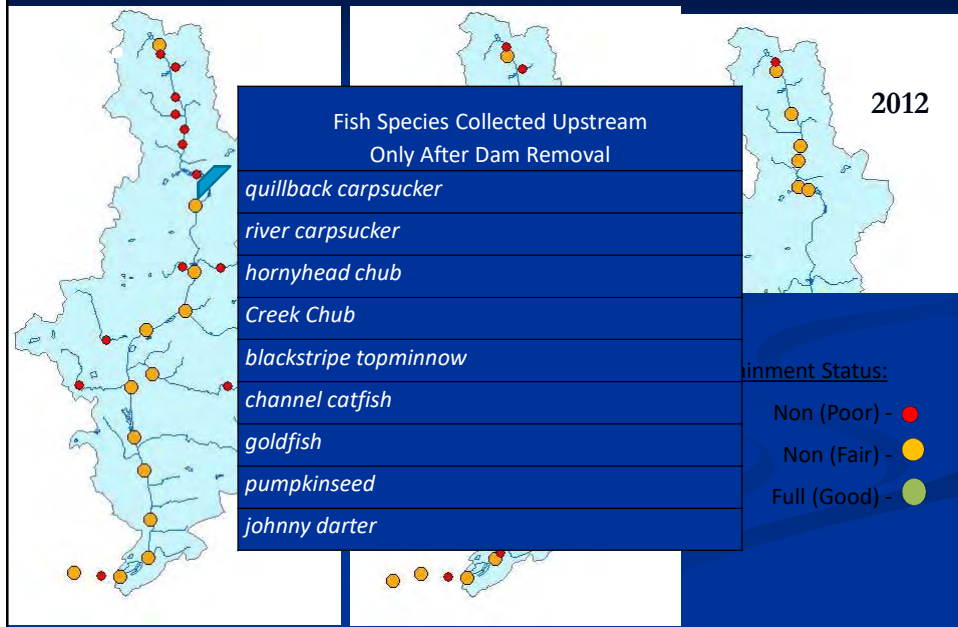
QHEI East Branch



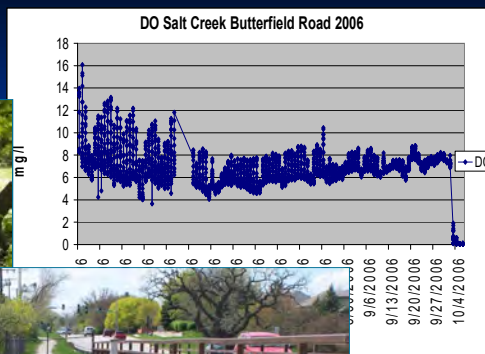


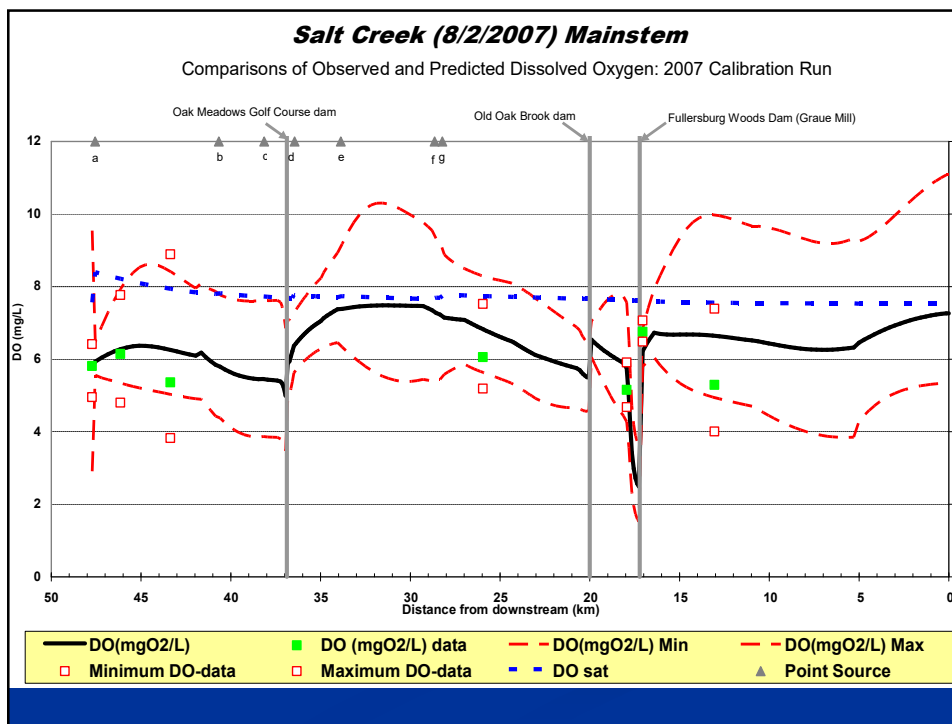


Aquatic life use attainment map for E. Branch DuPage River biological sampling sites in 2007, 2011, and 2012 (upper mainstem only)



Tackling the Dissolved Oxygen TMDL





Program Goals

- IL EPA TMDL recommended chloride load reductions
 - Salt Creek - 14% reduction
 - East Branch DuPage River - 33% reduction
 - West Branch DuPage River - 35% reduction

	Salt Creek	East Branch	West Branch	Total
TMDL Target, Tons of Cl ⁻ /yr	13,300	5,200	13,700	32,200
TMDL Baseline, Tons of Cl ⁻ /yr	15,500	7,800	21,100	44,400
DRSCW Baseline, Tons of Cl ⁻ /yr	32,600	16,900	21,200	70,700

Activities

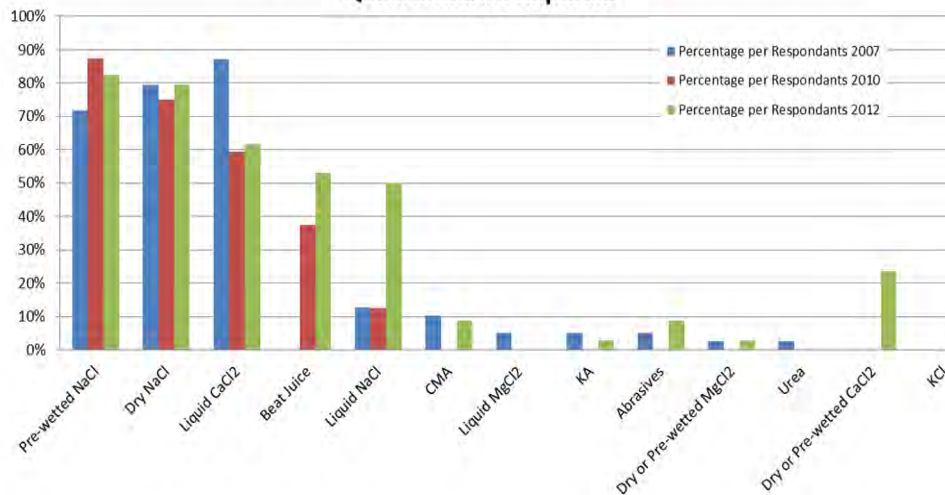
Salt Reduction Steps

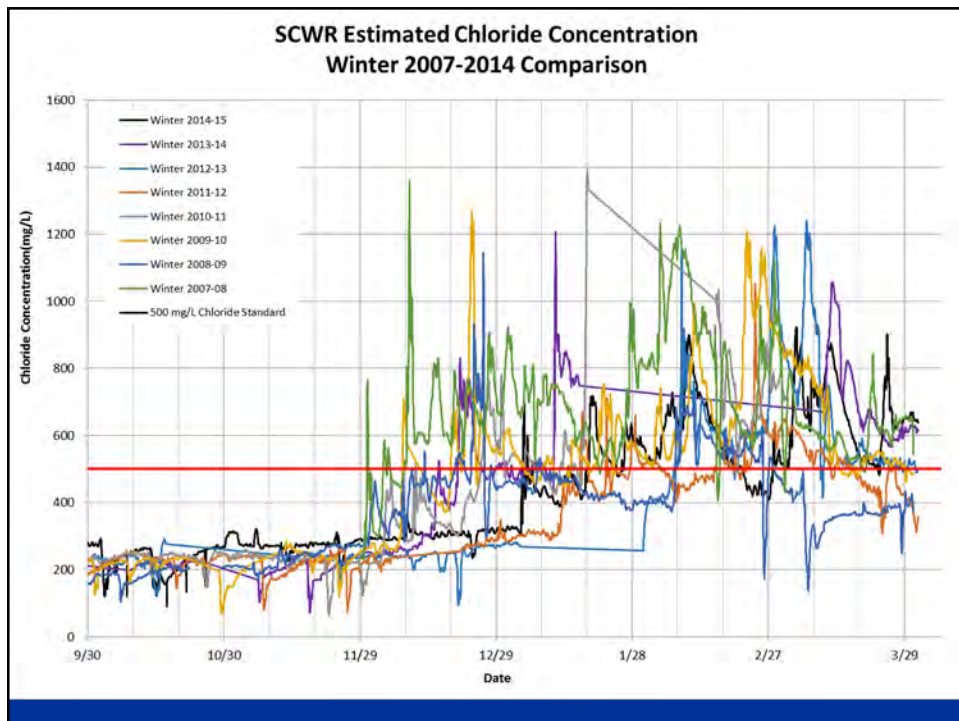
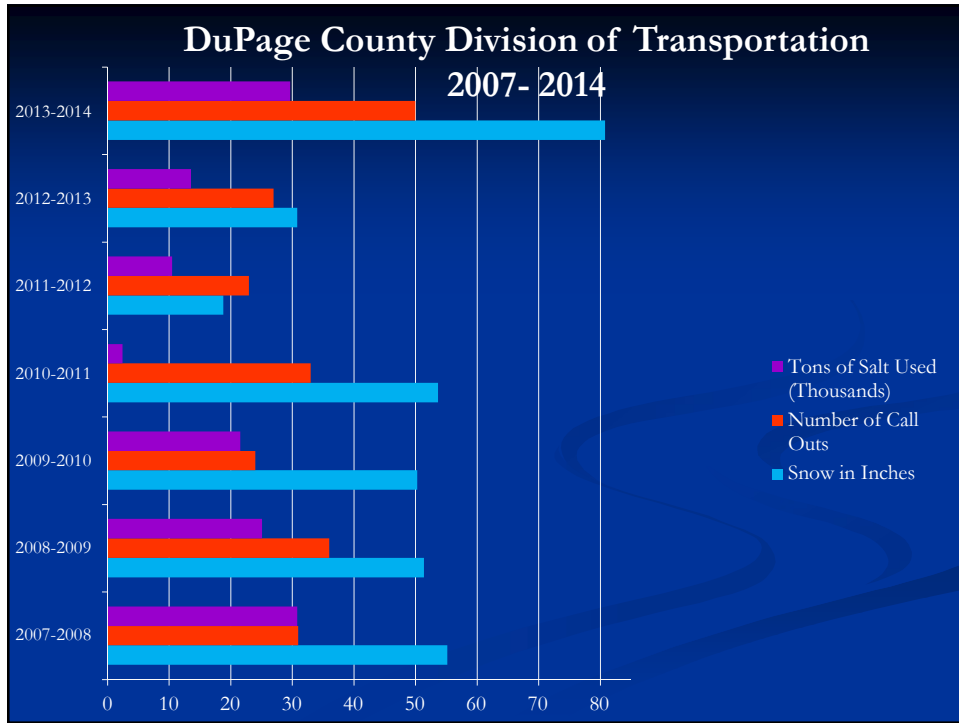
- 1) Driver training
- 2) Salt spreader calibration
- 3) Develop appropriate application rates
- 4) Pre-wet de-icer
- 5) Equipment updates
 - Speed servo controls
 - On-board pre-wet
 - Computer controls
- 6) Coordinate salt application during plowing
- 7) Control salt spread width
- 8) Prioritize road system
- 9) Anti-Ice



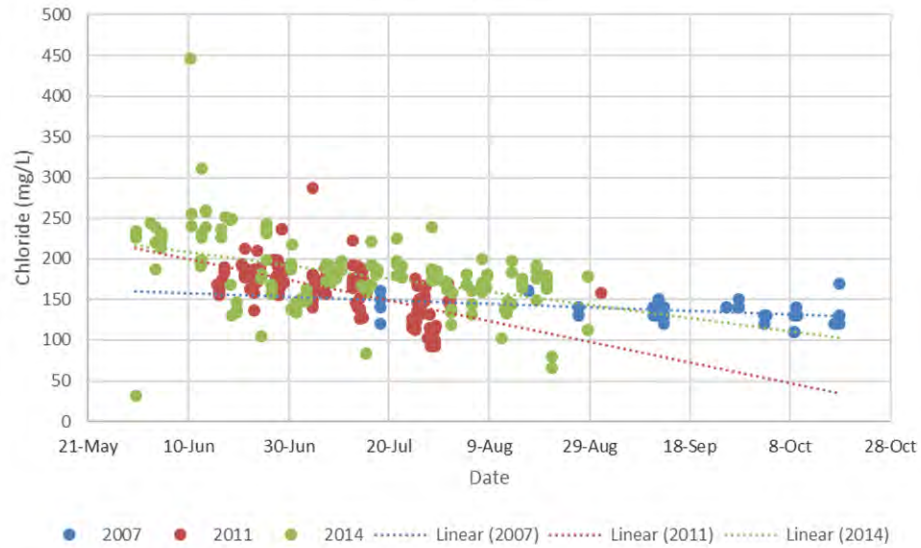
Survey Results 2007-2012- Alternative Practices

Deicing and Snow Removal Agents Questionnaire Response

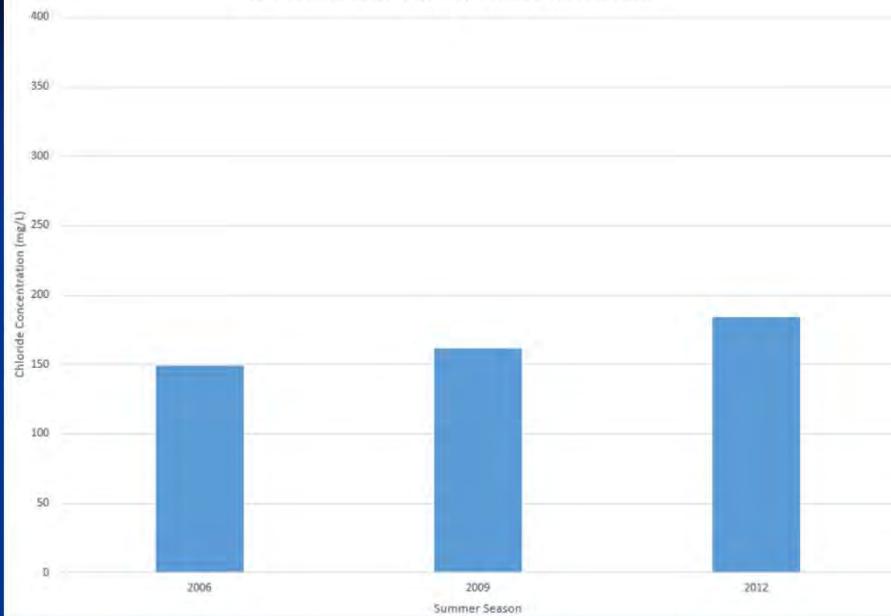


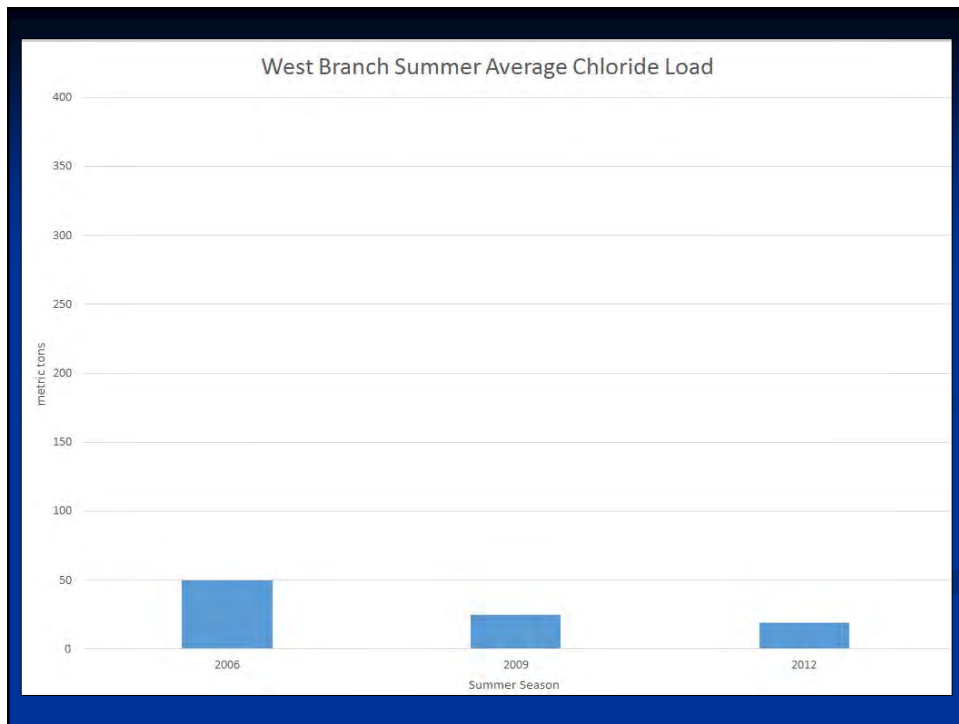


E Branch DuPage River Chloride Concentrations in the Summer Months



West Branch Summer Average Chloride Concentration





Others

- TMDL Development- data inputs and review
- MS 4 permit – Education, monitoring and chloride source reduction
- State IR report data input and review
- Member PDHs



Questions ?

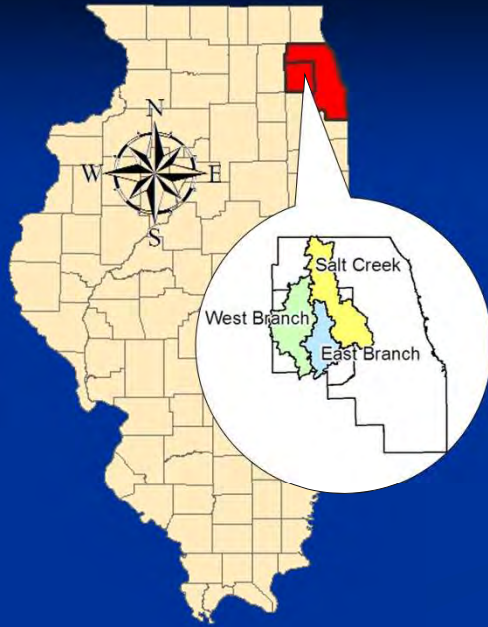


DuPage River Salt Creek Workgroup

Agency Members (blue)
Associate Members (gray)

Village of Addison • AECOM • Arcadis US • Village of Arlington Heights • Baxter & Woodman • Village of Bartlett • Village of Bensenville • Black & Veatch • Village of Bloomingdale • Village of Bolingbrook • CDM Smith • The Conservation Foundation • Village of Carol Stream • Christopher B. Burke Engineering • Village of Clarendon Hills • Clark-Dietz • Donohue & Associates • Village of Downers Grove • Downers Grove Sanitary District • DuPage County • DuPage County Health Department • City of Elmhurst • Elmhurst-Chicago Stone Company • Engineering Resource Associates • Forest Preserve District of DuPage County • Geosyntec Consultants • Glenbard Wastewater Authority • Village of Glen Ellyn • Village of Glendale Heights • HDR • HR Green • Village of Hanover Park • Hey & Associates • Village of Hinsdale • Village of Hoffman Estates • Huff & Huff • Illinois Department of Transportation • Illinois State Toll Highway Authority Inter-Fluve • Village of Itasca • K-Tech Specialty Coatings • Mary Lou Kalsted • Village of Lisle • Lisle Township Highway Dept. • Village of Lombard • Metropolitan Water Reclamation District of Greater Chicago • Monroe Truck Equipment • The Morton Arboretum • City of Naperville • Naperville Park District • Naperville Township Road Dist. • City of Northlake • City of Oakbrook Terrace • Prairie Rivers Network • RHMG Engineers • RJN Group • Robinson Engineering • Village of Roselle • Salt Creek Sanitary District • Salt Creek Watershed Network • Village of Schaumburg • Sierra Club, River Prairie Group • Strand Associates • Suburban Laboratories • Trotter & Associates • V3 Companies • Village of Villa Park • Walter E. Deuchler Associates • City of Warrenville • WellSpring Environmental Products • City of West Chicago • Village of Westmont • City of Wheaton • Wheaton Sanitary District • Village of Winfield • City of Wood Dale • Village of Woodridge • York Township Highway Department

Project Area: Cook and DuPage Counties (Northeastern Illinois)



Watershed is approximately
360 square miles.

Three waterways
(100 miles of mainstem).

55 municipal entities. 24 POTWs
156 MGD effluent
(based on DAF).

Urban to suburban:
48.7% residential,
24.7% non-residential urban,
26.6% open space (includes water).

Approved TMDLs for DO and
chloride on several reaches.

