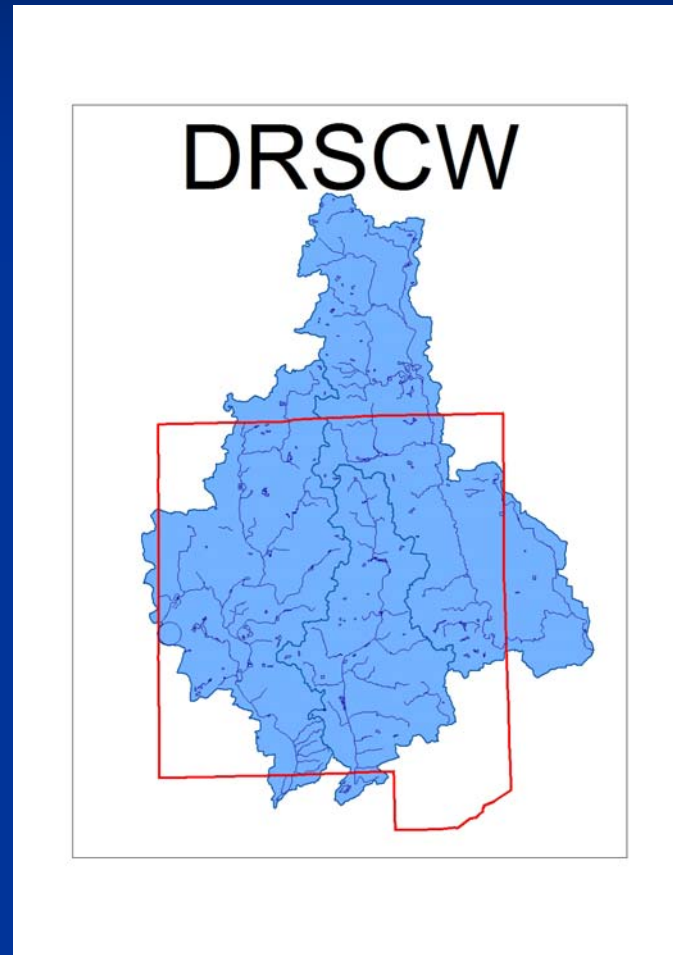


Watershed Approach for Dealing with TMDLs for Salt Creek and the East and West Branches of the DuPage River

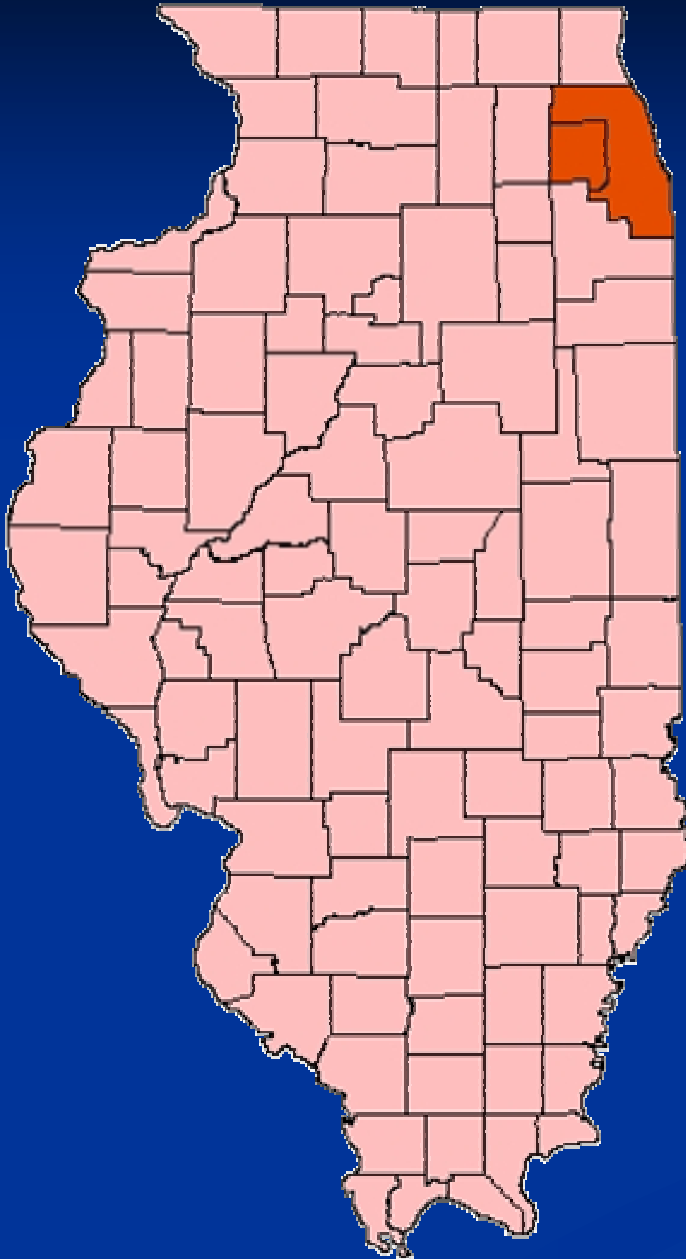
Lawrence C. Cox, General Manager
Downers Grove Sanitary District

MWRDGC R&D Department 2006 Seminar Series
September 29, 2006

The DuPage River Salt Creek Workgroup

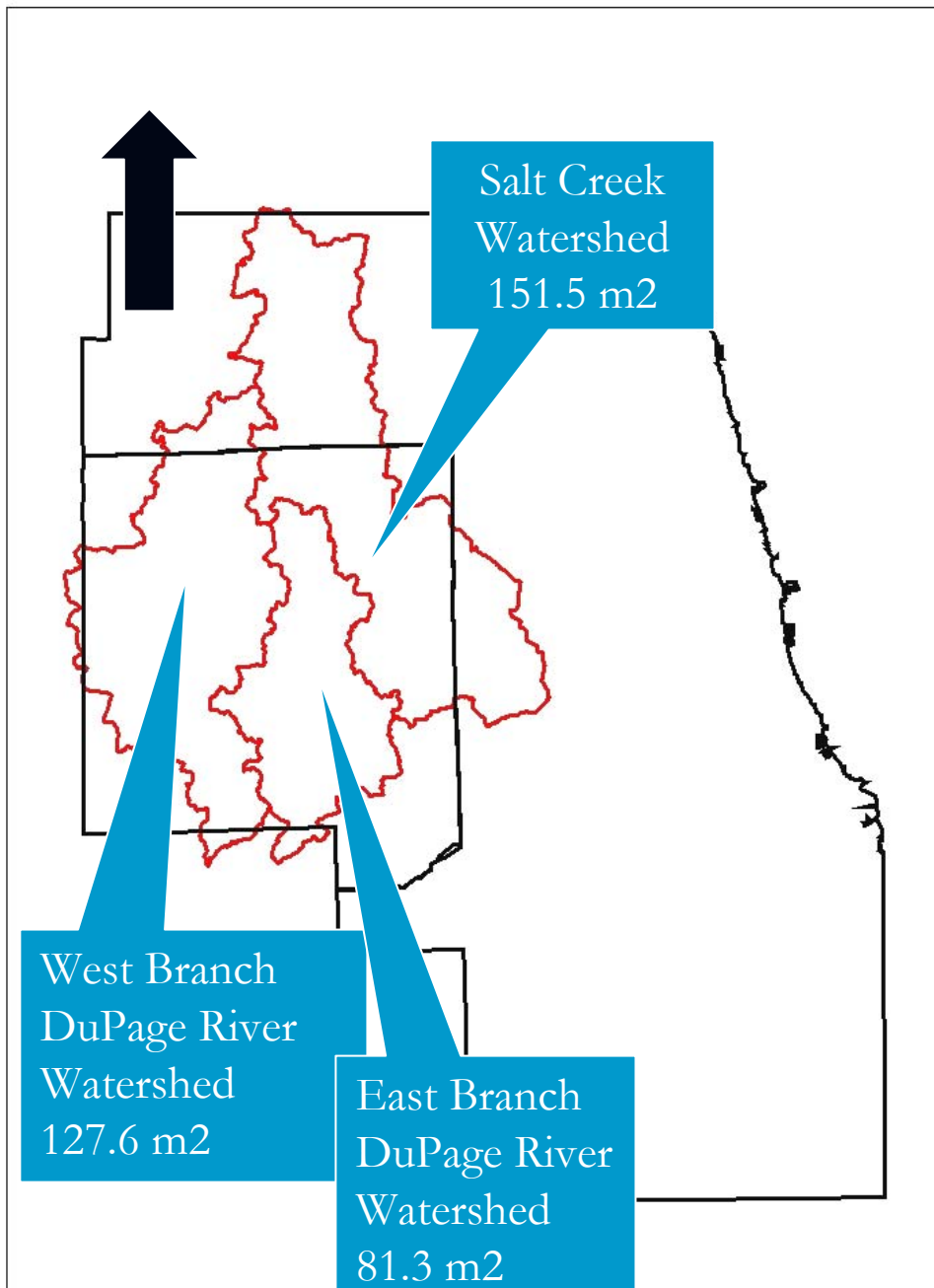


Project Area



- Project Area lies in Cook County and DuPage County (NE Illinois)

Project Area



- 360.4 square miles of watershed
- Three waterways (100 miles of main stem stream)
- Lies in 2 Counties
- 55 municipal entities
- 156 MGD of effluent (based on DAF) from 25 POTW operators
- Heavily urbanized

What is a TMDL

- IEPA is required to prepare a TMDL assessment for waters that are not meeting applicable water quality standards and designated uses
- The TMDL process determines the greatest amount of loading that a water can receive without violating water quality standards and designated uses

Why are TMDLs required?

All three streams are classified as general use, the highest standard, however the following impairments were listed by IEPA for each stream

Salt Creek

Chlorides

Dissolved oxygen

(DO)

East Branch

DuPage River

Chlorides

Dissolved oxygen

(DO)

West Branch

DuPage River

Chlorides

TMDL Timeline

The TMDL process for these three streams occurred over a five year period beginning in 2000 and culminating in September 2004 with the approval of the TMDL reports by USEPA

TMDL Recommendations

- Develop and implement BMPs for road de-icing activities
- Lower effluent limits for ammonia and CBOD for sewage treatment plants that discharge wastewater to these streams (8 mg/L CBOD5 and 1 mg/L ammonia-N levels recommended)
- Evaluate in-stream aeration or dam removal and implement if cost effective
- Manage storm water and combined sewer overflows to reduce organic loading

Problems with the TMDLs

- Water quality data based on limited sampling
- Currently POTWs all discharging at levels below the proposed new limits (no changes in practices were actually proposed)
- POTW approach alone very expensive and not likely to attain water quality standards
- Dams and in stream aeration –who coordinates and pays for the project
- Recommendations do not take into consideration nutrients

Birth of the Workgroup

- Set up in response to the shortcomings of the TMDLs
- Illinois Association of Wastewater Agencies (IAWA) sent letter to IEPA asking for time to investigate issue
- Representatives from the Downers Grove Sanitary District and the City of Elmhurst approached The Conservation Foundation about a partnership to address the TMDLs
- Municipalities, environmental organizations, POTWs, and DuPage County commenced regular meetings in April 2004 to investigate TMDL issues

Birth of the Workgroup

- IEPA agreed to watershed approach as a phased and adaptive implementation process
- IEPA and USEPA Region 5 consider the Workgroup to be a model for future watershed activities in other areas.

DRSCW

- Formed April 2005
- Gained status of Illinois not for profit corporation in November 2005
- IEPA offered a initial \$80,000 grant and a second grant of \$597,000
- Currently has 36 members generating \$261,000 in annual dues
- Uses a watershed approach



Workgroup Mission

The mission of the Workgroup is to bring together a diverse coalition of stakeholders to work together to preserve and enhance water quality in the East Branch DuPage River, West Branch DuPage River, Salt Creek and their tributaries.

Workgroup Objectives

- Develop and implement a dynamic plan that will achieve attainment of water quality standards and designated uses for the East Branch DuPage River, West Branch DuPage River, Salt Creek and their tributaries.
- Develop and implement a comprehensive, long-term monitoring program that will include chemical, physical and biological components to accurately identify the quality of the river ecosystems as well as stressors associated with non-attainment of water quality standards and designated uses.

Workgroup Objectives

- Develop and implement long-term viable management strategies that accurately address water quality problems identified by the monitoring program.
- Identify point and nonpoint source pollution issues and develop and implement short-term and long-term strategies to address these issues.
- Develop and maintain appropriate computer models of the watersheds to assess attainment of these objectives.

Structure of the Workgroup

Officers and Executive Board Members

- President – Lawrence C. Cox, Downers Grove Sanitary District
- Vice President – Dennis Streicher, City of Elmhurst
- Secretary-Treasurer – Richard Lanyon, Metropolitan Water Reclamation District of Greater Chicago
- Monitoring Committee Chairperson – Jennifer Hammer, The Conservation Foundation
- East Branch DuPage River Committee Chairperson – Kevin Buoy, DuPage County Public Works Department
- West Branch DuPage River Committee Chairperson – Jim Knudsen, Village of Carol Stream
- Salt Creek Committee Chairperson – Tom Richardson, Sierra Club-River Prairie Group

Dues Structure

Agency Member (NPDES permit holder)

- DRSCW annual dues are calculated based on effluent flows for POTWs and tributary acreage for municipalities

Associate Member

- Organizations not eligible for Agency membership may join as an Associate Member

Calculation of Agency Dues

Assessment Parameter	Assessment Unit	%Allocation of Annual Revenue	Total Assessment Units	Rates at 100% Participation	Factor for Nonparticipating Agencies	Recommended Rates	
WWTP Load	DAF MGD	66.67%	\$133,333.33	156.91 MGD	\$849.74 per MGD	1.5	\$1,275 per MGD
Storm Water	Acreage	33.33%	66,666.67	226,444 Acres	\$0.29 per acre	1.5	\$0.44 per acre
			\$200,000.00				

Workgroup Members

- Made up of Sanitary Districts, Municipalities, private groups and environmental non-profits

Village of Addison

Village of Arlington Heights

Village of Bloomingdale

Village of Bolingbrook

Village of Carol Stream

Village of Downers Grove

Downers Grove Sanitary District

DuPage County

City of Elmhurst

Glenbard WW Authority

Village of Glen Ellyn

Village of Glendale Heights

Village of Hanover Park

Village of Hinsdale

Village of Hoffman Estates

Village of Itasca

Village of Lisle

Village of Lombard

MWRDGC

Village of Oak Brook

City of Oak Brook Terrace

Village of Roselle

Salt Creek Sanitary District

Village of Schaumburg

Village of Villa Park

City of Wheaton

Wheaton Sanitary District

City of Wood Dale

Forest Preserve District of
DuPage County

IDOT

York Township Highway Dept.

Clark Dietz

The Conservation Foundation

Hey and Associates

Huff & Huff, Inc.

Prairie Rivers Network

Salt Creek Watershed Network

Sierra Club, Prairie River Group

Strand & Associates

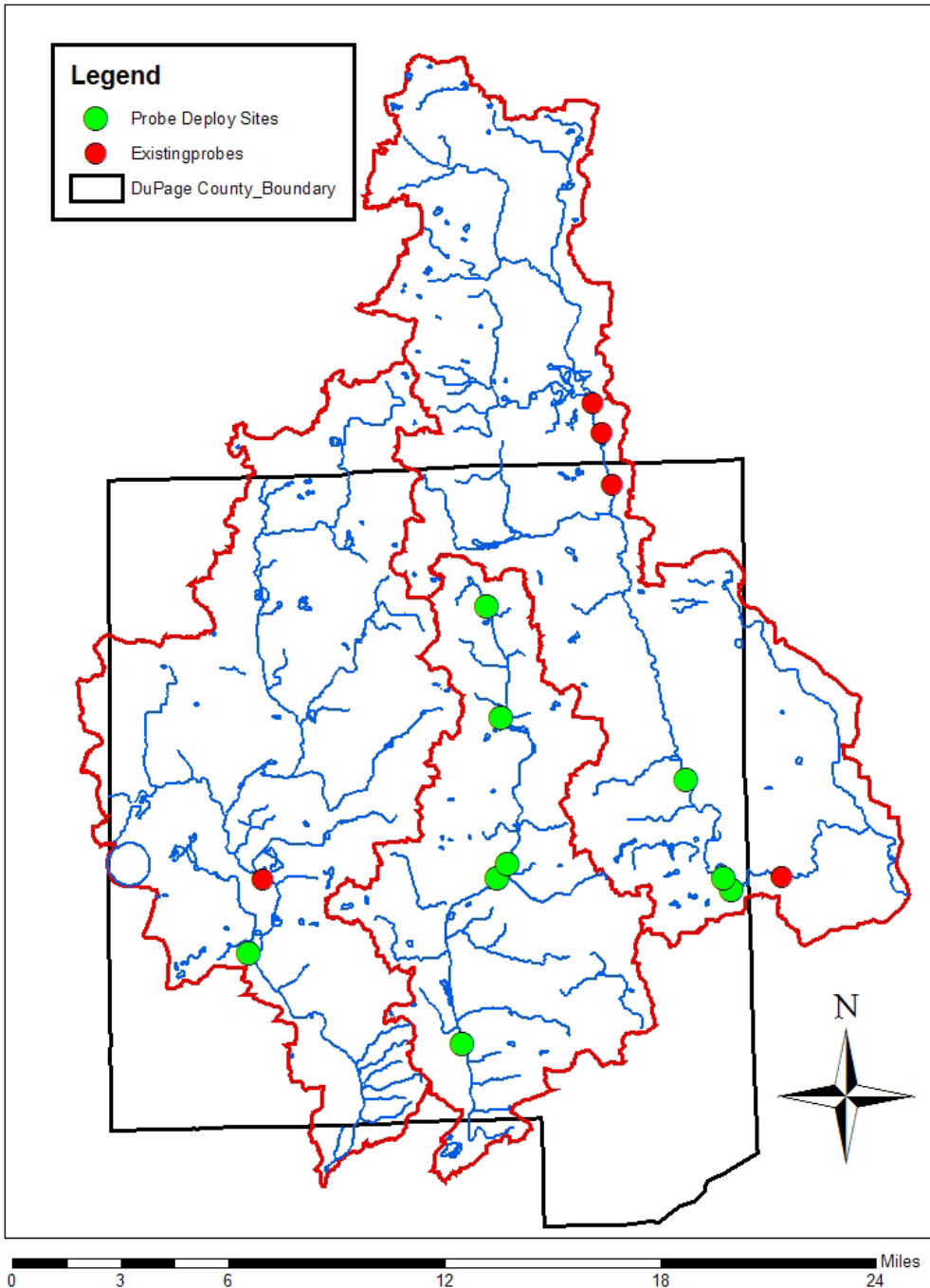
Current Activities

- DO Monitoring Project
- USGS Aerial Mapping Project
- Comprehensive Monitoring Program
- DO Improvement Feasibility Study
- Chloride Reduction And Education Study

DO Monitoring Project

- Continuous DO monitoring
 - Purchased 9 Hydrolab probes
 - Completed DO monitoring at 1/2 mile intervals and extensive field work and aerial image analysis to chose station locations
 - Solicited Agency members to install and maintain each probe

Map 1. DO Probe Deployment Sites, July 2006



DO Project

- Green Icons probes deployed by Workgroup
- Red Icons probes deployed by Workgroup agencies

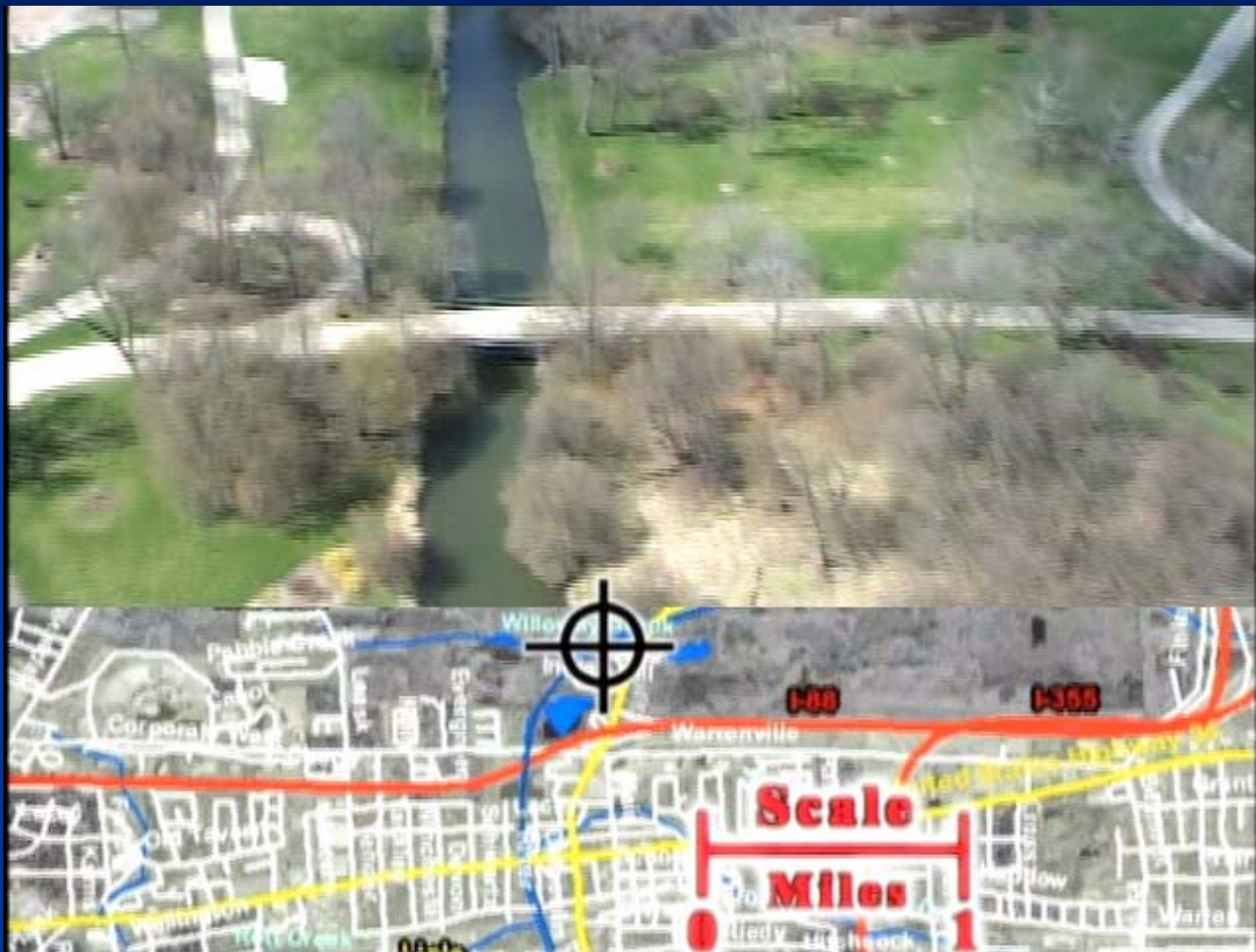




USGS Aerial Mapping Project

- Low level, digital flyovers completed for each watershed
- Physical impairments to the stream reaches identified (log jams, small dams, sediment depositions etc.)
- Impairments mapped and placed in GIS shape files format (geo-referenced information)
- GIS database (dams, monitoring sites, outfalls)

USGS Aerial Mapping Project

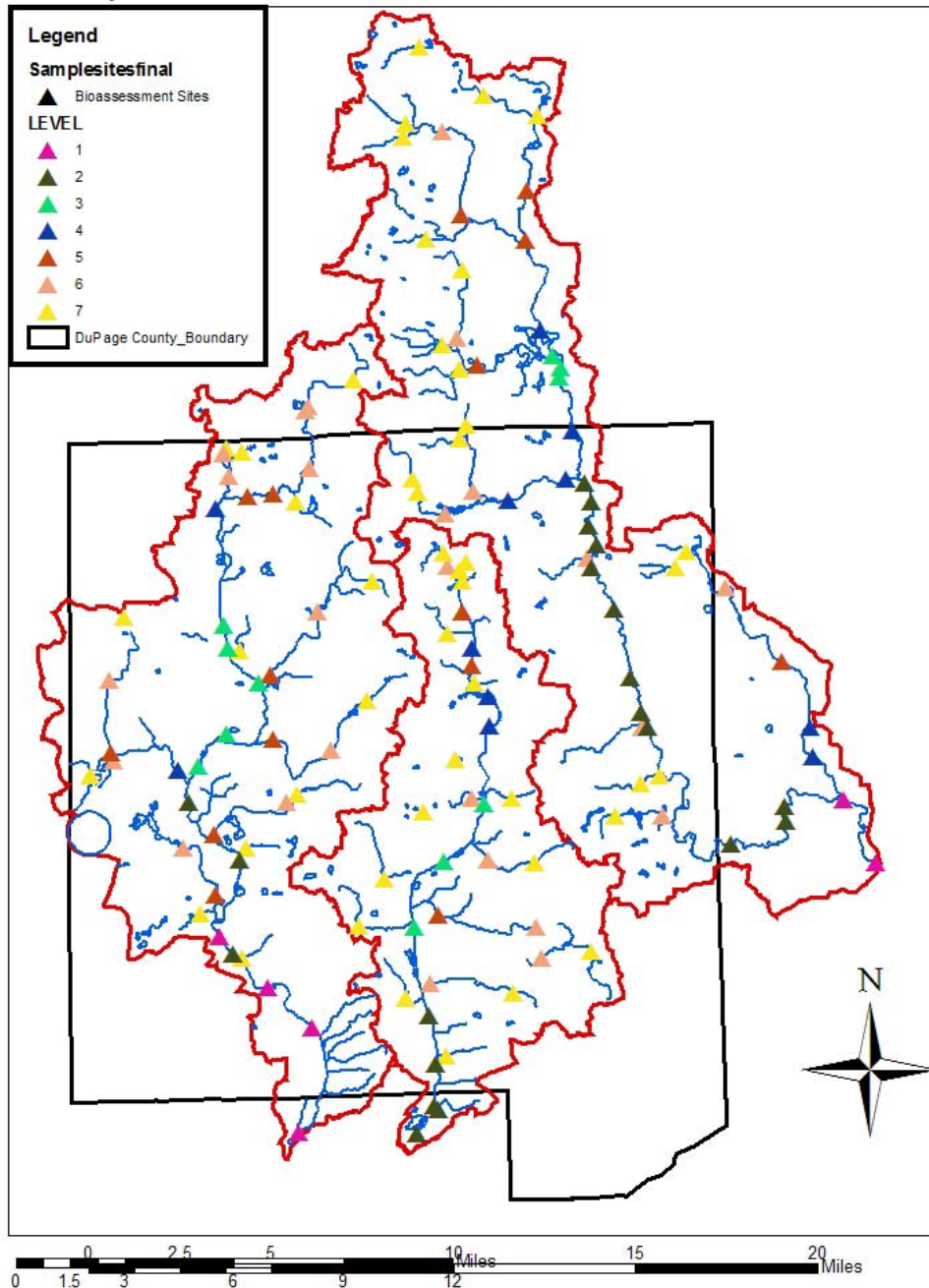


Comprehensive Monitoring Program

- Biological and Habitat Assessment Component & Chemical/Nutrient Component
- Contracts finalized with Midwest Biodiversity Institute (MBI) and Suburban Laboratories
- Commenced assessments in the 2006 field season
- 135 sites throughout the project area



Map 2. Bioassessment Sites Geometric Levels



Bioassessment Plan

- 135 sites
- Geometric/
targeted design
- 3 year cycle

Why Biology and Habitat?

- Biology and habitat play a key role in the assessment by IEPA of the water quality and attainment of designated uses
- Sets up a base line of existing conditions
- Directly measures the impact of selected projects
- Avoids overemphasis on chemical parameters

DO Improvement Feasibility Study

Study Objective

Determine the feasibility and cost benefit of the following projects on Salt Creek and the East Branch DuPage River:

- Dam modification or removal
- Construction and operation of in-stream aeration

DO Improvement Feasibility Study

- HDR Engineering hired to conduct study
- Consultant to update stream models used in the IEPA TMDL reports by utilizing the continuous DO monitoring results, USGS aerial mapping work, and effluent data from dischargers in the watersheds
- 16 sites were also sampled for Sediment Oxygen Demand (SOD)

DO Improvement Feasibility Study

Other Components

- Series of information meetings with general public, affected land owners and other stakeholders
- Creation of project website with commonly asked questions (Saltcreekeastbranch.com)
- Cost estimates of alternatives
- Talking to public officials at the municipal level





Chloride Reduction and Education Study



Due Date: August 23rd

Time: 4:30 PM

Receipt Location: Village Hall
Engineering Services Department

500 N. Gary Avenue

Carol Stream, IL 60188



Future DRSCW Efforts

- Implement DO improvement projects
- Continue monitoring
- Investigate watershed-based permitting

Contacts

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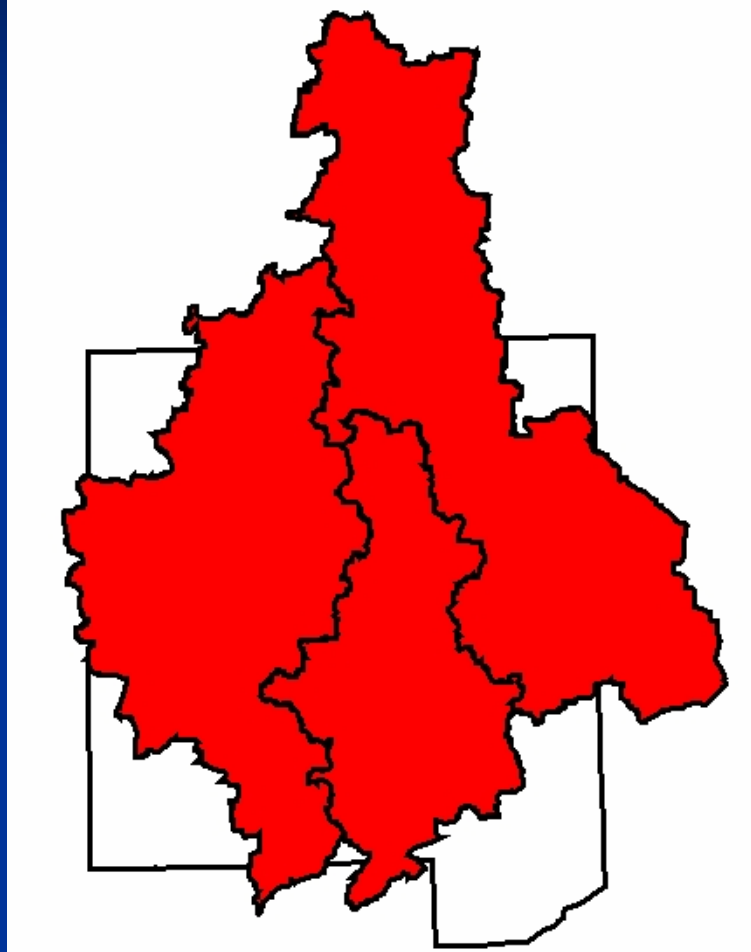
- Stephen McCracken

The Conservation Foundation

smccracken@theconservationfoundation.org

630-768-7427

Questions?



www.drscw.org