Central Iowa Watershed Efforts

John Swanson
Watershed Management Authority Coordinator

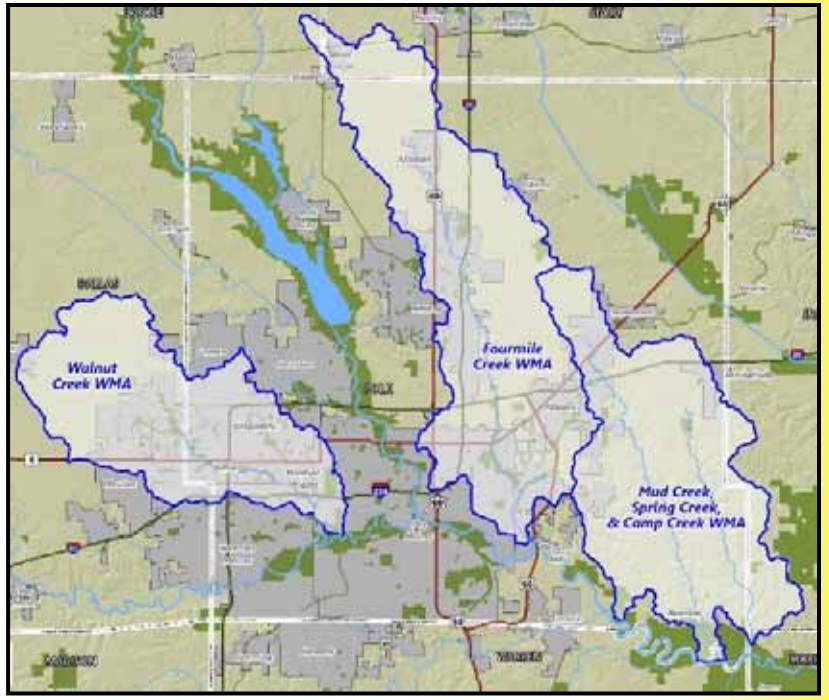
Jennifer Welch
Urban Conservationist

Polk SWCD

Polk SWCD has been participated in planning and implementation of watershed based efforts

Watershed Management Authorities

- Eleven Watershed Management Authorities (WMA's) have organized in Iowa to improve water quality and promote flood control in watersheds across Iowa.
- WMA's bring together Soil and Water Conservation Districts with local units of governments and other stakeholders.
- The Des Moines metro communities have seen the value of developing watershed management plans and unifying policies that will improve and protect water quality in the region.
- These watershed scale planning efforts have also shown these communities the benefit of working with farmers to make improvements on the agricultural lands.



Watershed Projects

Dangerous Blue–Green Alga on Big Creek Lake

- Big Creek
- Camp Creek
- DMACC Lake
- Easter Lake
- Fourmile Creek
- Mud, Camp, Spring Creek
- Oxley Creek
- Walfley Creek
- Walnut Creek

WALNUT CREEK WATERSHED

management plan update

RDG PLANNING • DESIGN

DES MOINES AREA MPO METROPOLITAN PLANNING ORGANIZATION

SNYDER & ASSOCIATES Engineers and Planners

Polk Soil & Water CONSERVATION DISTRICT

Process Overview

Walnut Creek WMA

- Board Meetings
- Executive Committee

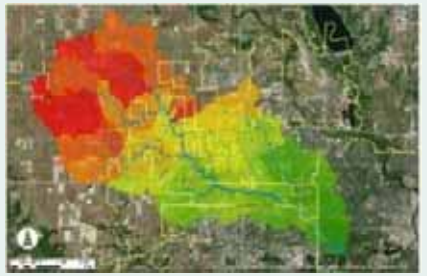
Public Interaction

- Open House Events
- Stakeholder Meetings
- Individual Discussions

Plan Development

- Windshield Survey
- Stream Assessment Walks
- Quadcopter Video Collection
- Water Quality Monitoring

Boots on the Ground



- GIS Analysis
- Computer Modeling & Simulation

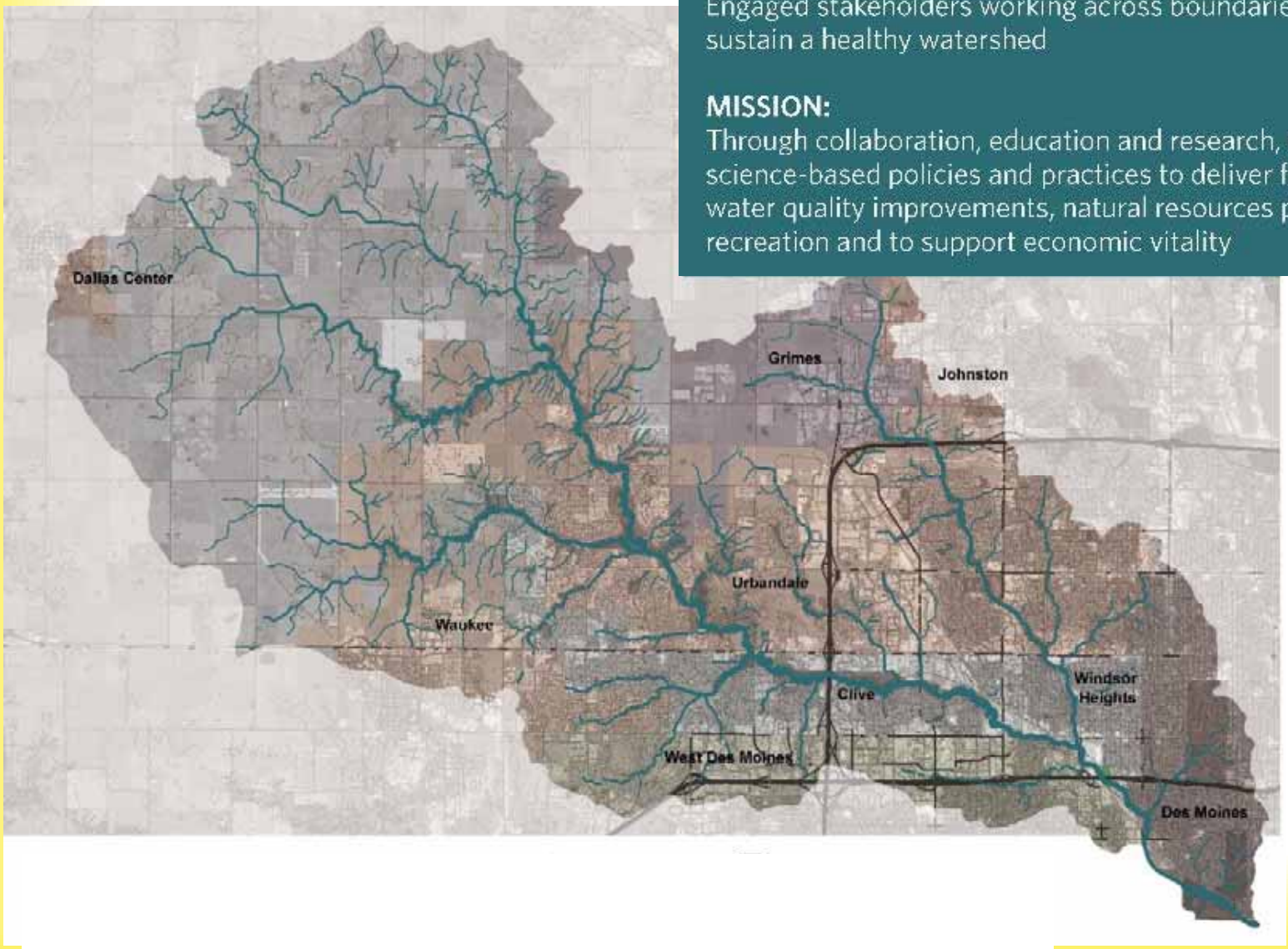
Desktop Assessments

Process Overview

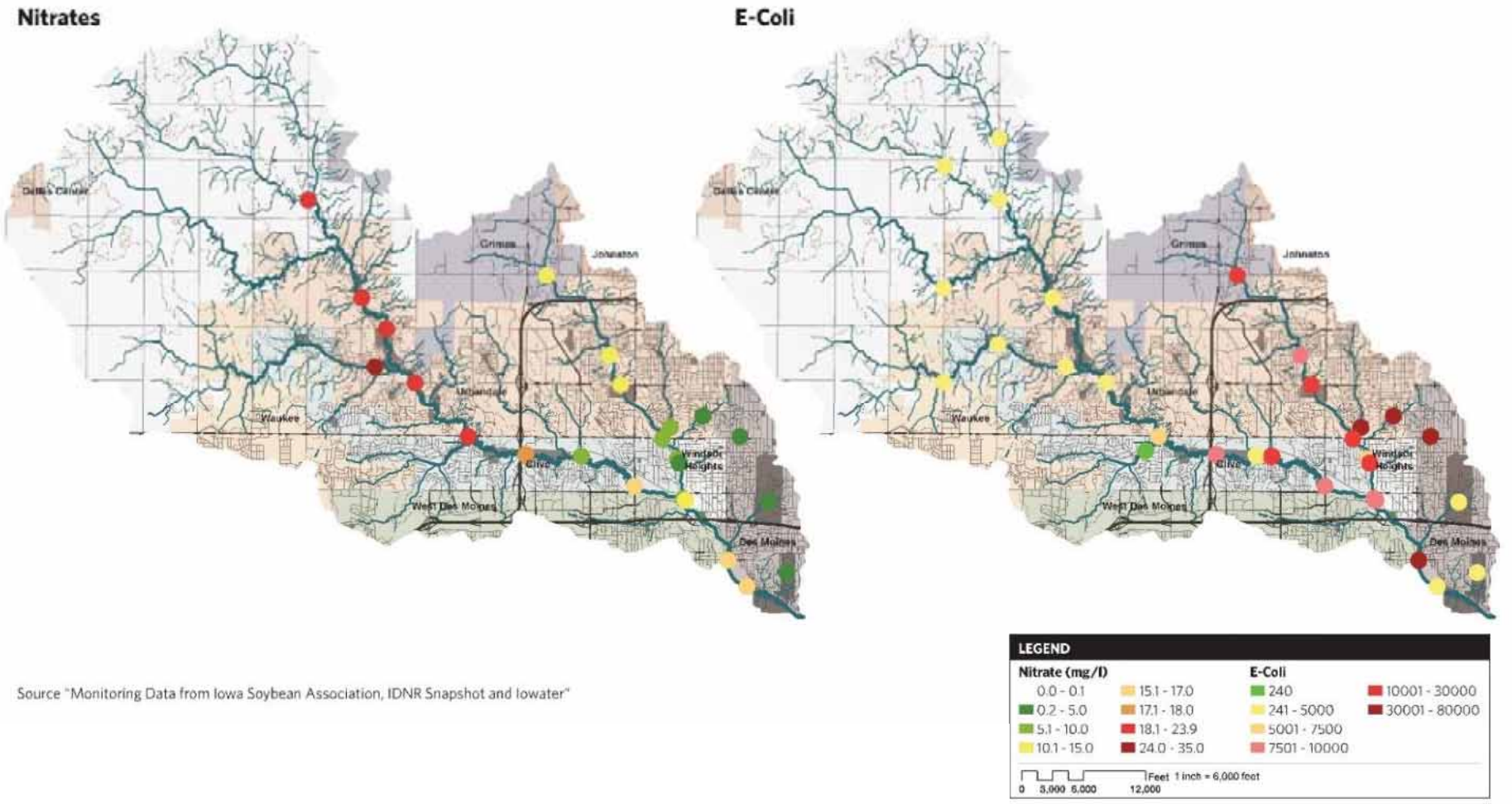
Watershed Geography

VISION:
Engaged stakeholders working across boundaries to create and sustain a healthy watershed

MISSION:
Through collaboration, education and research, implement science-based policies and practices to deliver flood mitigation, water quality improvements, natural resources protection, recreation and to support economic vitality

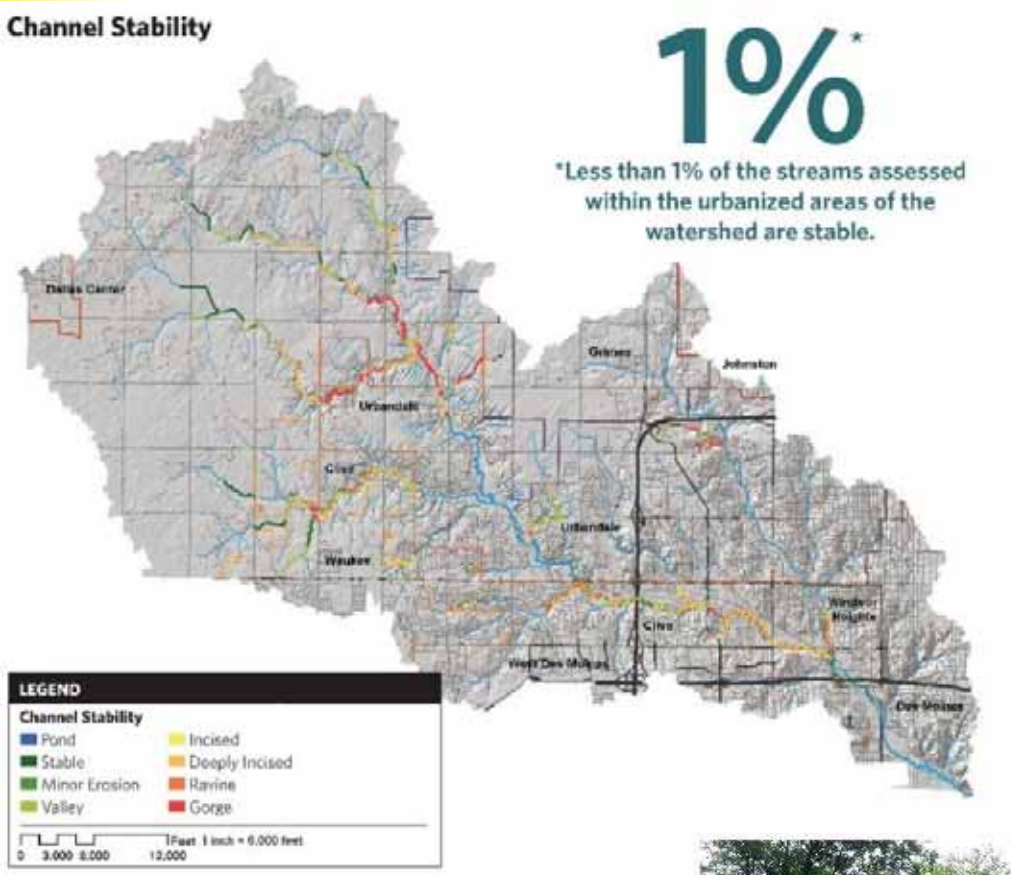


Key Pollutants and Sources



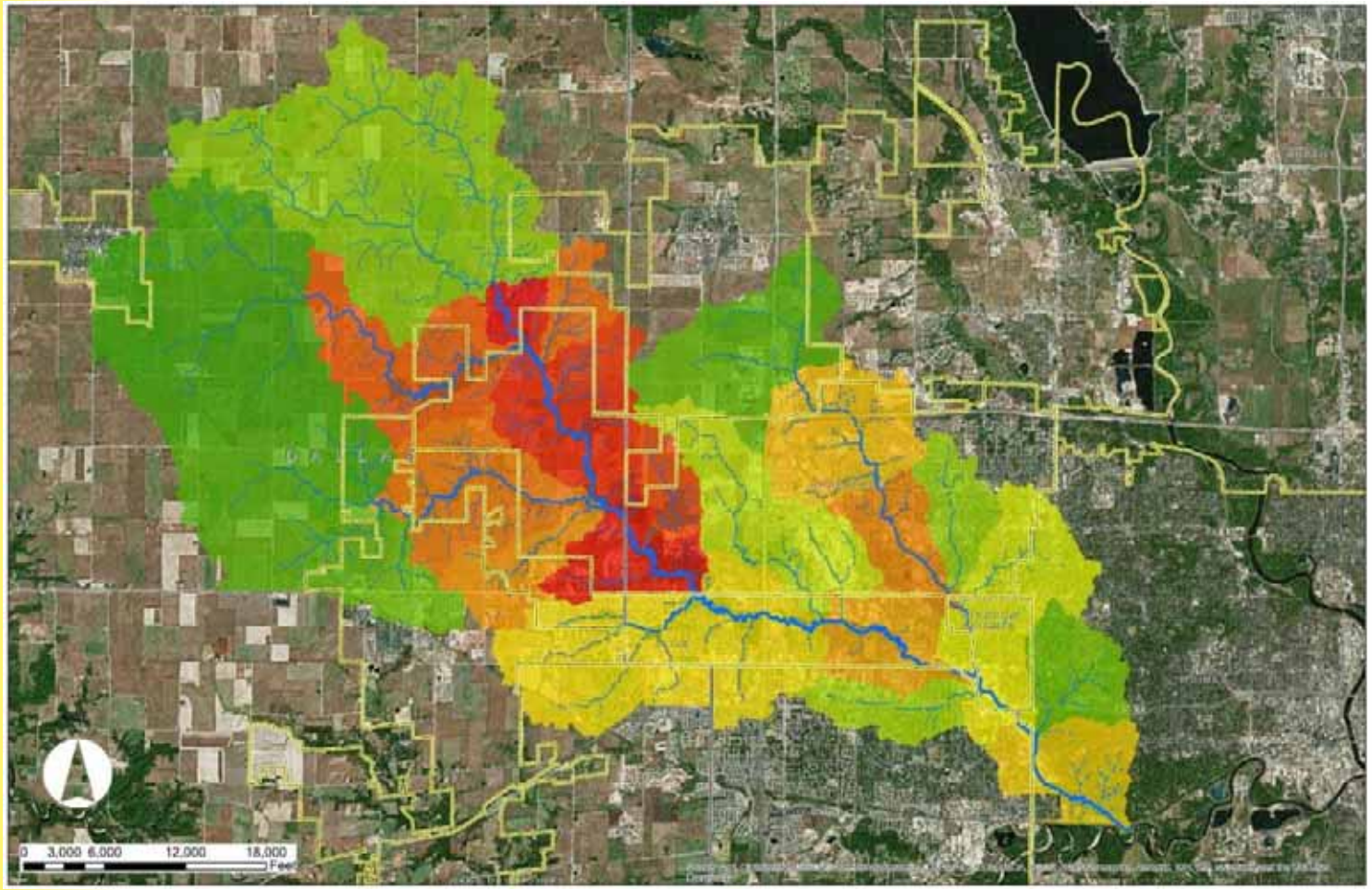
Source "Monitoring Data from Iowa Soybean Association, IDNR Snapshot and Iowater"

Character of Streams



Key Pollutants and Sources

Watershed – Sources of Sediment Loading (Annual Rate p Acre)



0.08

Source Loading (pounds per acre per year)

Note: Does not include Construction Site Loading

1.91

Strategic Framework

GOALS

- Reduce flooding
- Improve water quality (sediment, N, P, bacteria)
- Enhance recreation and public health
- Deliver education and programming
- Support community vitality and economic health (use multi-benefit projects)
- Collaborate and implement

Polk SWCD Implementation Services

Staffing and Coordination:

- Education & Outreach
- Practice Implementation
- Funding Acquisition
- Monitoring Support
- Ordinance Changes
- Administrative

Polk SWCD's role:

- Collaborative
- Implementing
- Facilitative

Water Quality Initiative & Regional Conservation Partnership Program Grants

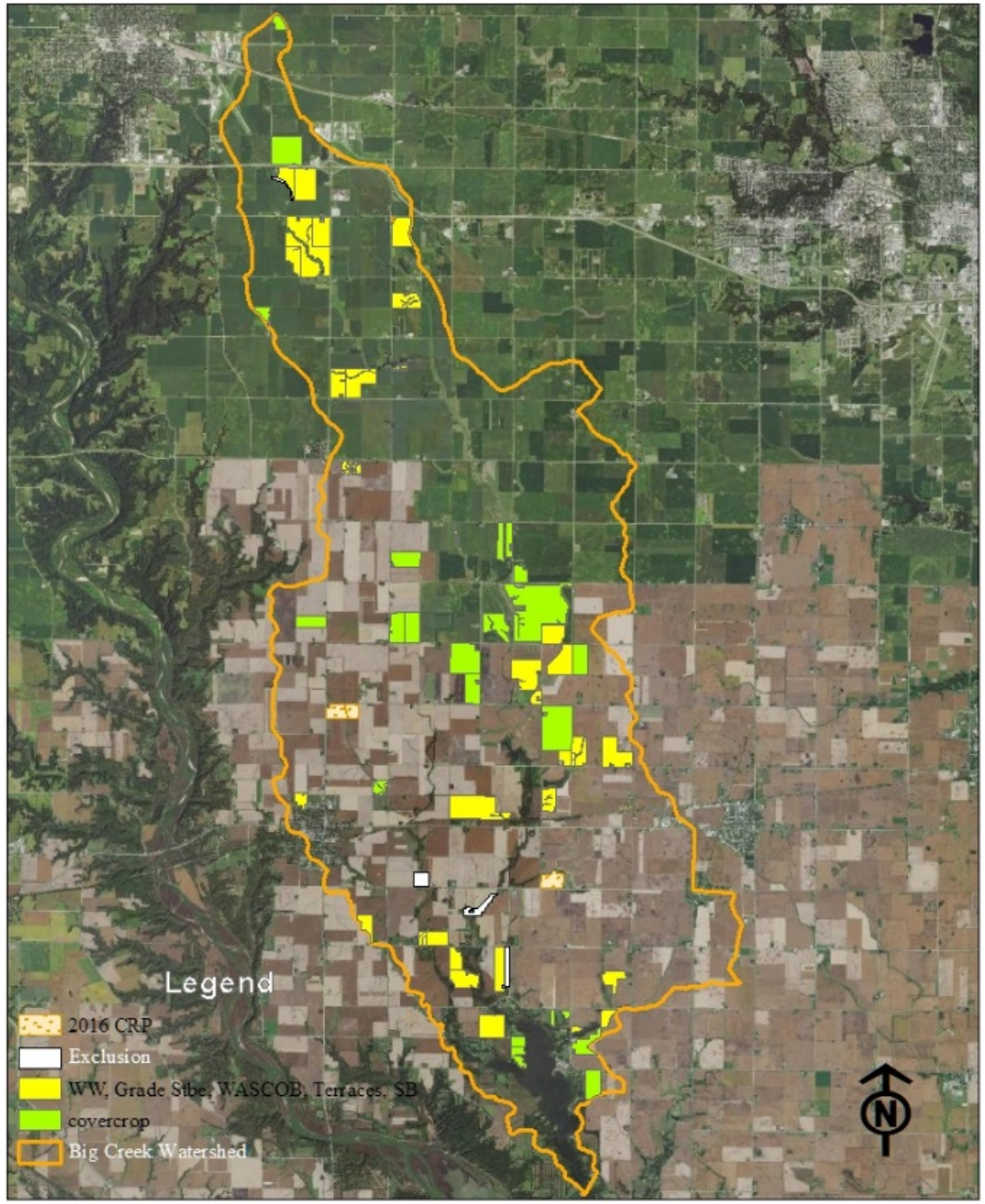
- State and Federal Grants funding agricultural practices
- Focus areas:
  - Walnut Creek Watershed
  - Fourmile Creek Watershed
  - Mud, Camp, Spring Creek Watersheds
- Implement conservation practices
  - Cover crops
  - Saturated buffers
  - Bioreactors
  - Wetlands
- Soil health and water monitoring
- Outreach & Education

Big Creek Lake Watershed Project

- Watershed Management Plan completed in 2011, implementation began in 2012
- Installed practices have reduced 1,516 tons of sediment and 2,274 pounds of phosphorous from entering Big Creek Lake each year
- 35,000 feet of grassed waterways, 40 acres of streamside buffers, and over 30 water & sediment control basins installed
- Led multifaceted outreach plan targeting rural landowners and farmers

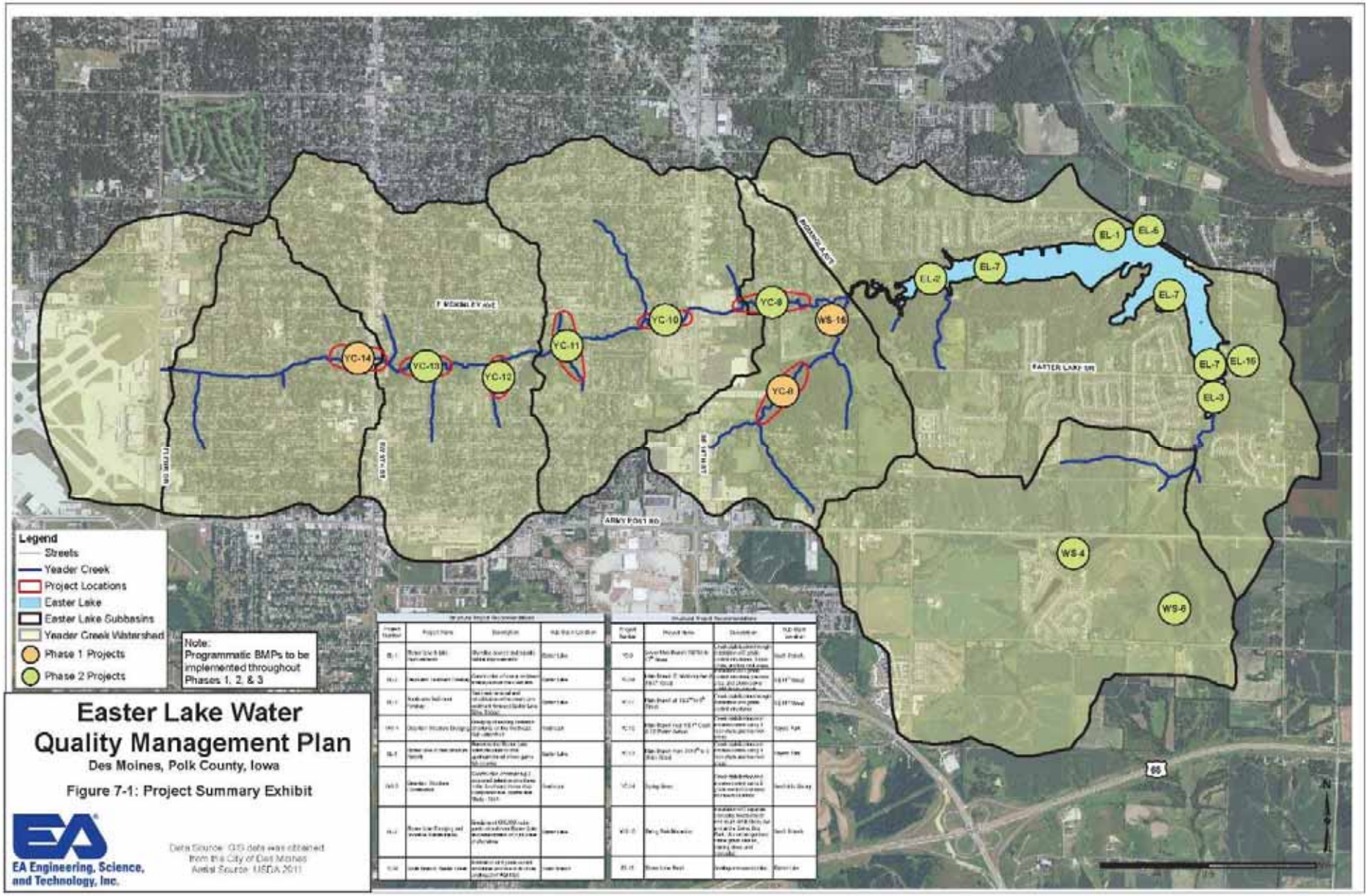
Pond Structure stabilizing large gully depositing sediment into Big Creek Lake

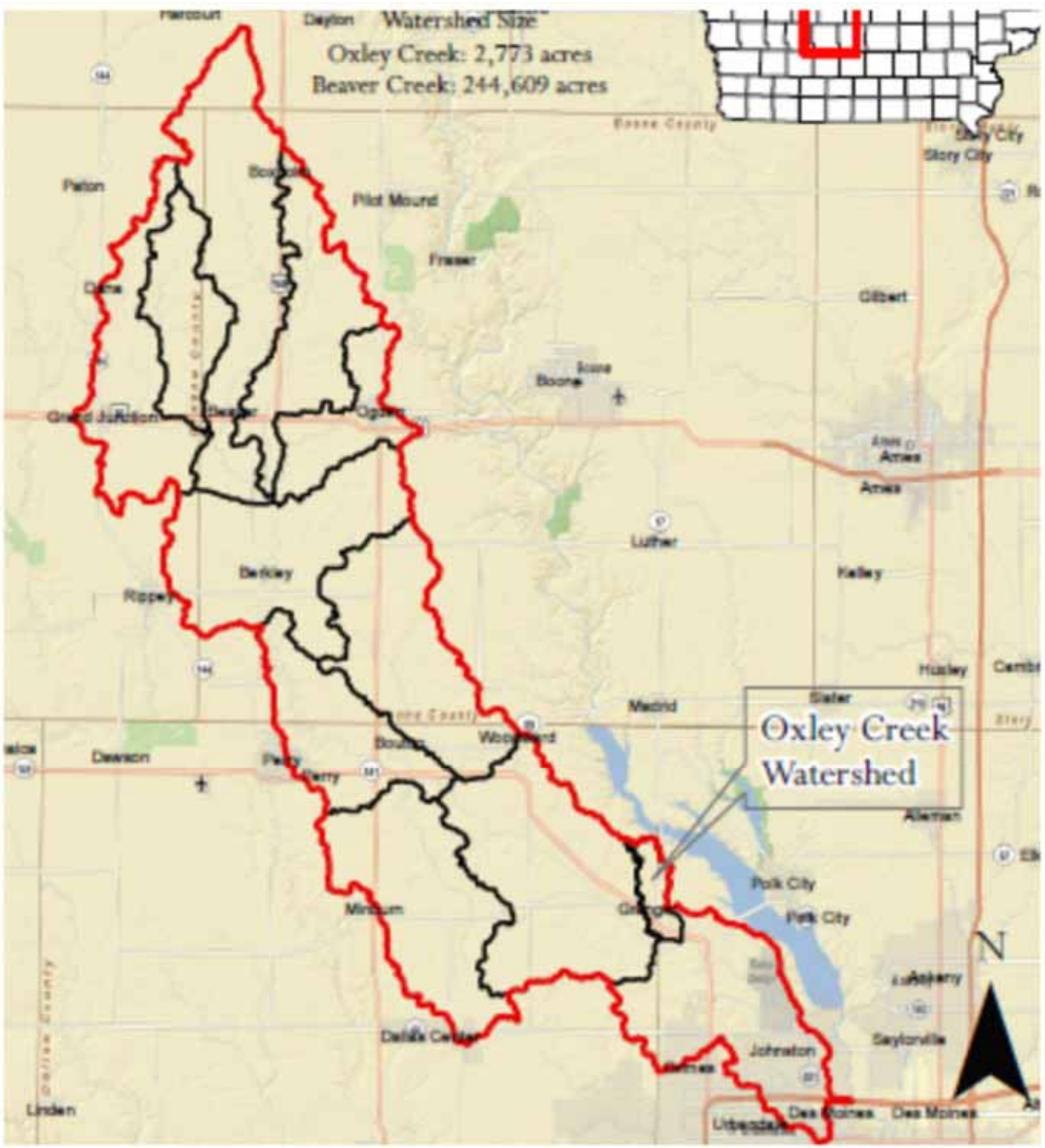
Big Creek Implementation



Easter Lake Watershed Project

- Watershed Management Plan completed in 2012, implementation began in 2013
- $15 million lake and watershed renovation project
- Outreach plan interacting with 1200+ watershed residents and 35 educational events per year
- Over 150 urban stormwater practices installed


Legend
Streets
Yeader Creek
Project Locations
Easter Lake
Easter Lake Subbasins
Yeader Creek Watershed
Phase 1 Projects
Phase 2 Projects
Note:
Programmatic BMPs to be implemented throughout Phases 1, 2, & 3
Easter Lake Water Quality Management Plan
Des Moines, Polk County, Iowa
Figure 7-1: Project Summary Exhibit
EA Engineering, Science, and Technology, Inc.
Data Source: GIS data was obtained from the City of Des Moines
Aerial Source: USDA 2011
YC-14
YC-13
YC-12
YC-11
YC-10
YC-9
YC-8
WS-16
WS-4
WS-6
EL-1
EL-2
EL-3
EL-5
EL-7
EL-10
EASTER LAKE DR
ARMY POST RD
N


Watershed Size
Oxley Creek: 2,773 acres
Beaver Creek: 244,609 acres
Oxley Creek Watershed
N
Patton
Pilot Mound
Fraser
Gilbert
Boone
Ames
Luther
Berkley
Ripley
Kelley
Madrid
Slater
Dawson
Perry
Polk City
Johnston
Saylorville
Des Moines
Linden
Dallas County
Story City

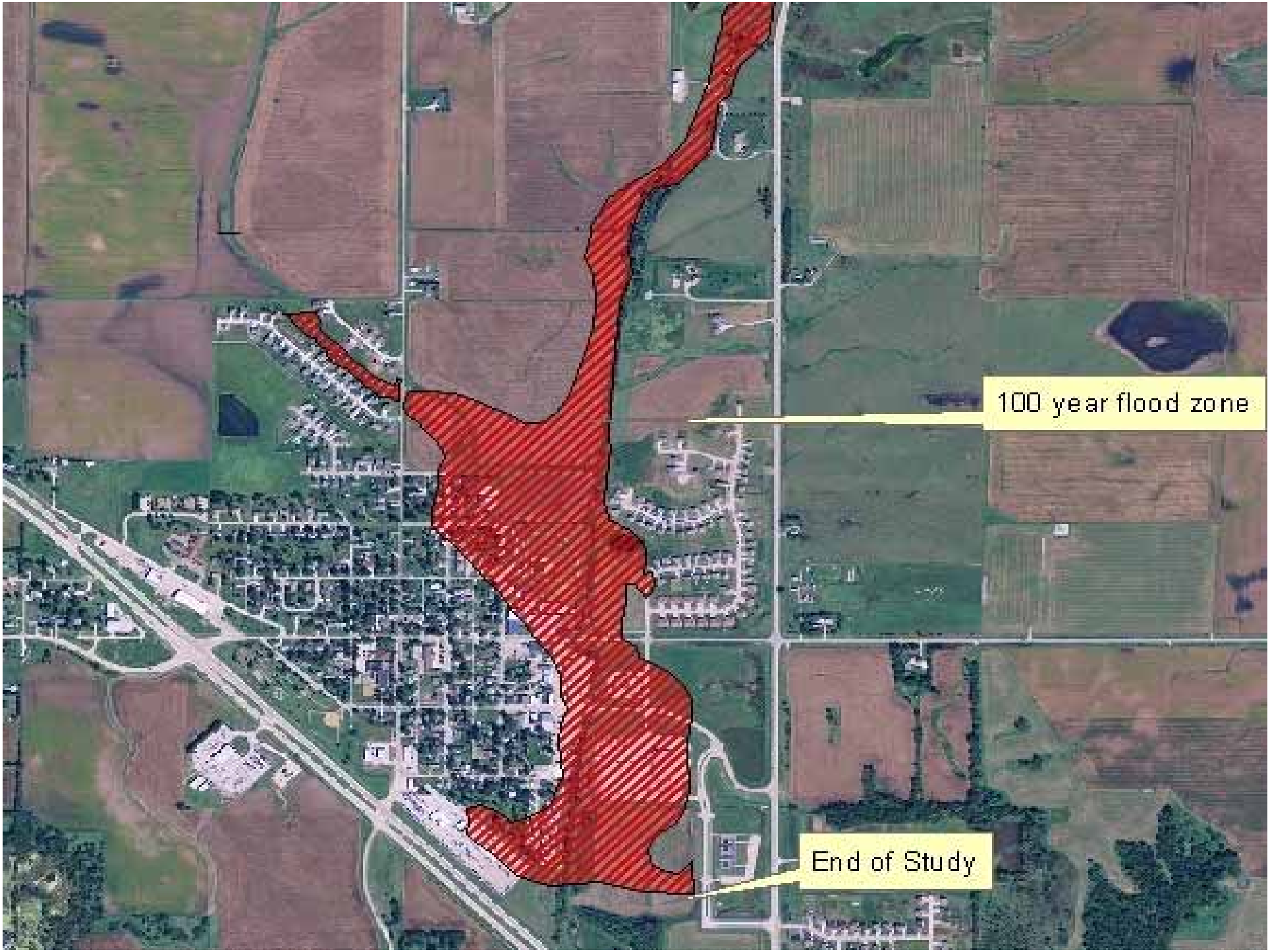
Oxley Creek Planning and Development Project

- Watershed Description:
  - 2,773 acres
  - 1.5 miles wide
  - 4 miles long
  - Empties into Beaver Creek
  - Mix of Ag and Urban
- Impairments / Concerns
  - Flashy stream flows
  - Indicator bacteria
  - Erosion
  - Rapid growth
- Outcome
  - WPF / WSPF Proposal written
  - SRF Sponsored Project $
  - WQI Funding


Ave
Sycamore St
Birch St
Maple St
Lowell St
Linden St
Linden St
Sycamore St
Chery St
Elm St
West St
Locust St
Walnut St
A
Granger
Co Hwy F31
Woodward
Granger
Elementary
190th St
Co Rd D
Willow Way Ct
NW 142nd St
17

To achieve different development patterns—Granger Comprehensive Plan

- Allow for LID approach
- Update plan to a sustainable, natural resource, watershed-based approach
  - Add conservation subdivision zoning classification
  - Adoption of riparian & wetland setbacks
  - Watershed-based comprehensive plan
  - Land conservation thru easements / acquisition
- Minimize property loss by flooding
- Create safer places to live
- Increase the quality of life in Granger

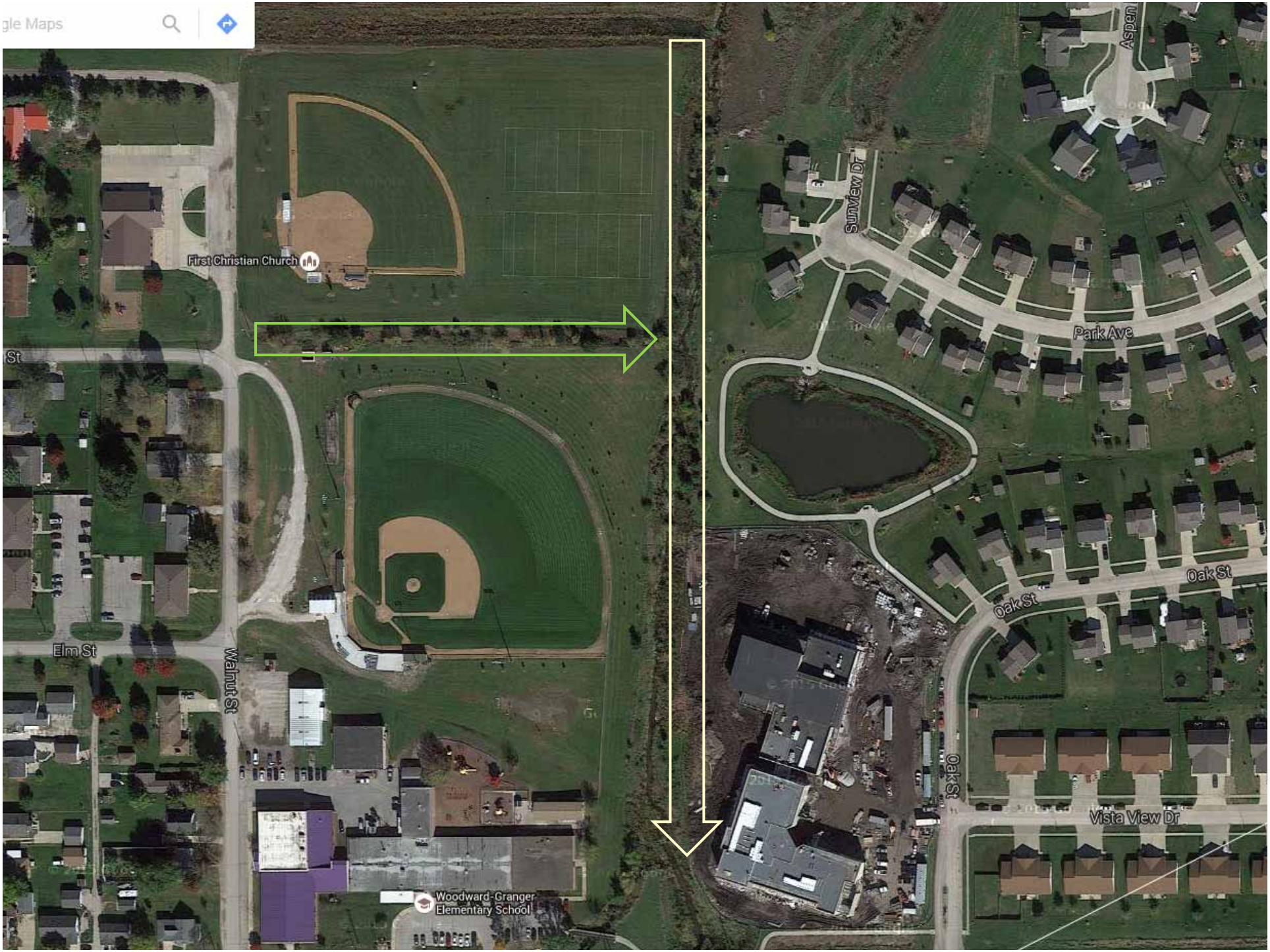

100 year flood zone
End of Study

Watershed Management Plan Recommendations

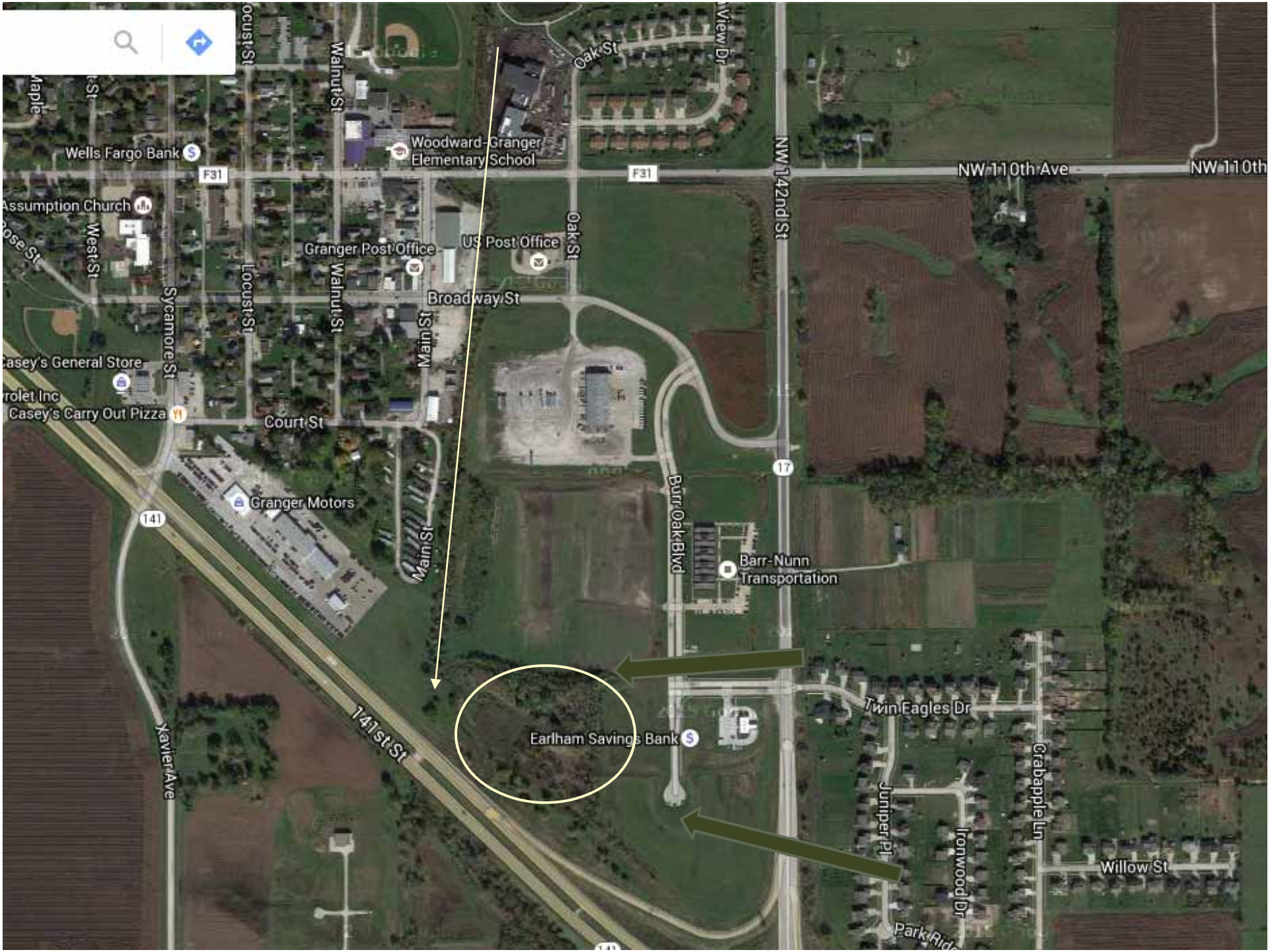
- Flood control ($1.8 Million)
- Stream corridor stabilization
- Reducing and treating runoff from agricultural land
- Reducing and treating runoff from urban land
- Changing existing ordinances / policies to foster sustainable growth
  - Infiltration of WQv (1.25 inch)
  - Buffer ordinances to protect stream corridors and flood prone areas
  - Floodplain ordinances

Oxley Creek Watershed

- Funded Water Quality Improvements
  - Bioswale
  - Streambank stabilization
  - Stream buffer plantings
  - Stormwater wetland
    - Funding
      - SRF water quality sponsored project
      - Urban Water Quality Initiative (WQI)
- Watershed plan for agricultural land
  - Plan written for grant funding opportunities


gle Maps
First Christian Church
St
Elm St
Walnut St
Woodward-Granger
Elementary School
Sunview Dr
Aspen
Park Ave
Oak St
Oak St
Oak St
Vista View Dr

Bioswale


Wells Fargo Bank
Woodward-Granger Elementary School
F31
NW 110th Ave
NW 110th
NW 142nd St
Oak St
View Dr
Assumption Church
West St
Granger Post Office
US Post Office
Broadway St
Locust St
Walnut St
Main St
Sycamore St
Casey's General Store
Casey's Carry Out Pizza
Court St
Granger Motors
141
17
Burr Oak Blvd
Barr-Nunn Transportation
Twin Eagles Dr
Earlham Savings Bank
141st St
Xavier Ave
Juniper Pl
Crabapple Ln
Ironwood Dr
Willow St

Thank you!

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Polk Soil & Water
CONSERVATION DISTRICT