

# Putting a Watershed Plan into Action:

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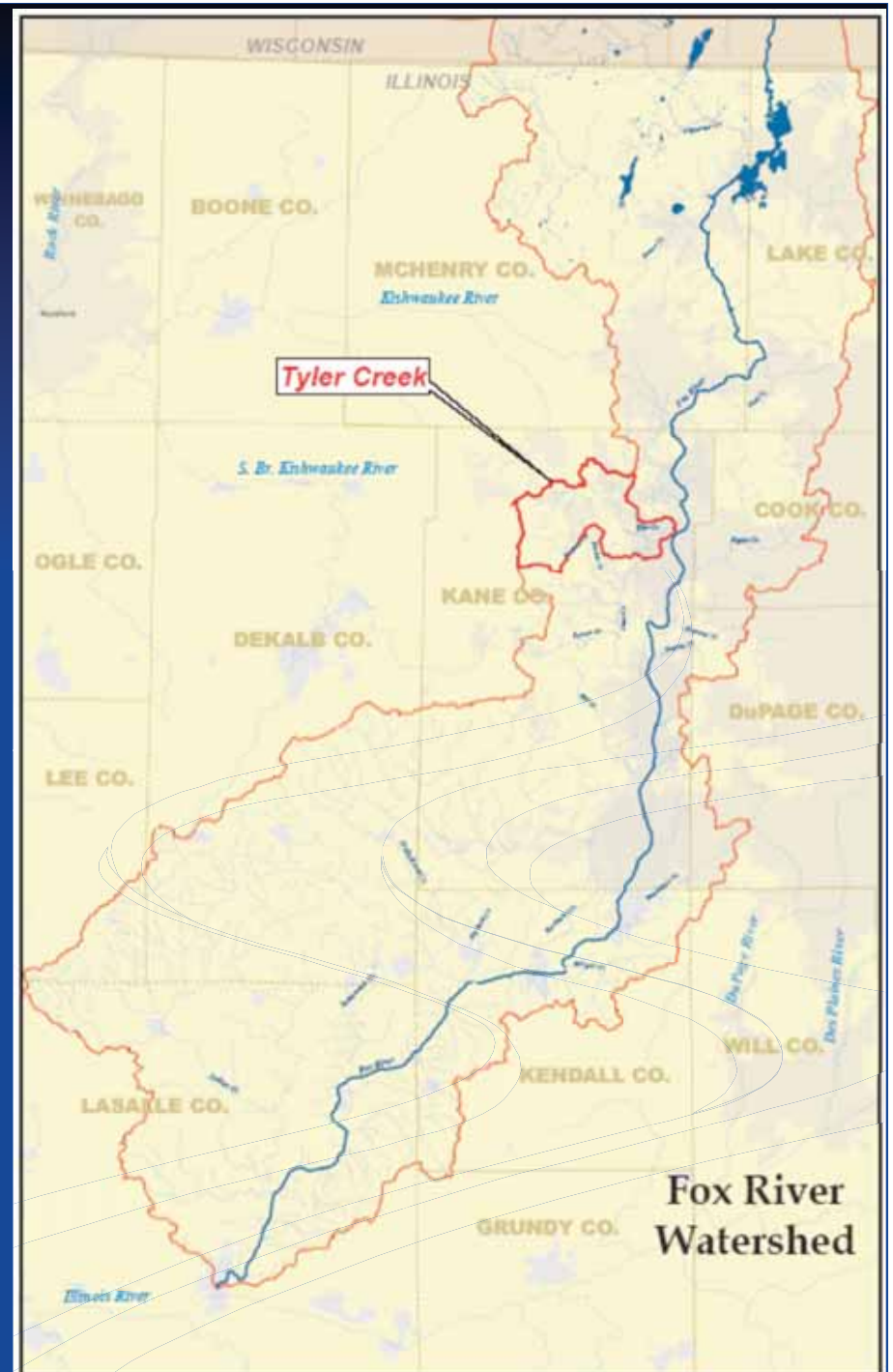
Lessons Learned in the Tyler Creek  
Watershed

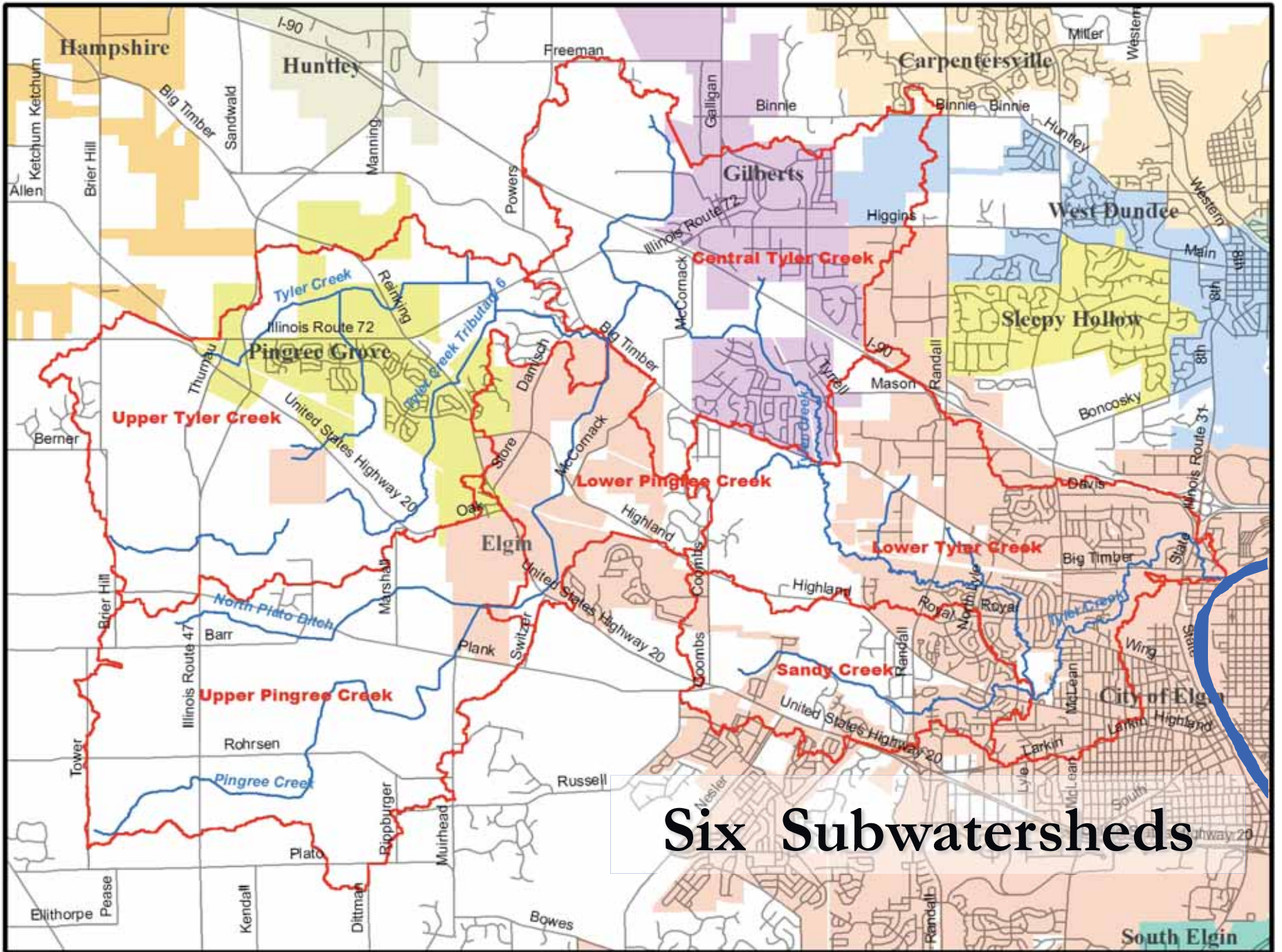
**Rob Linke, P.E., CFM**



# Watershed Details

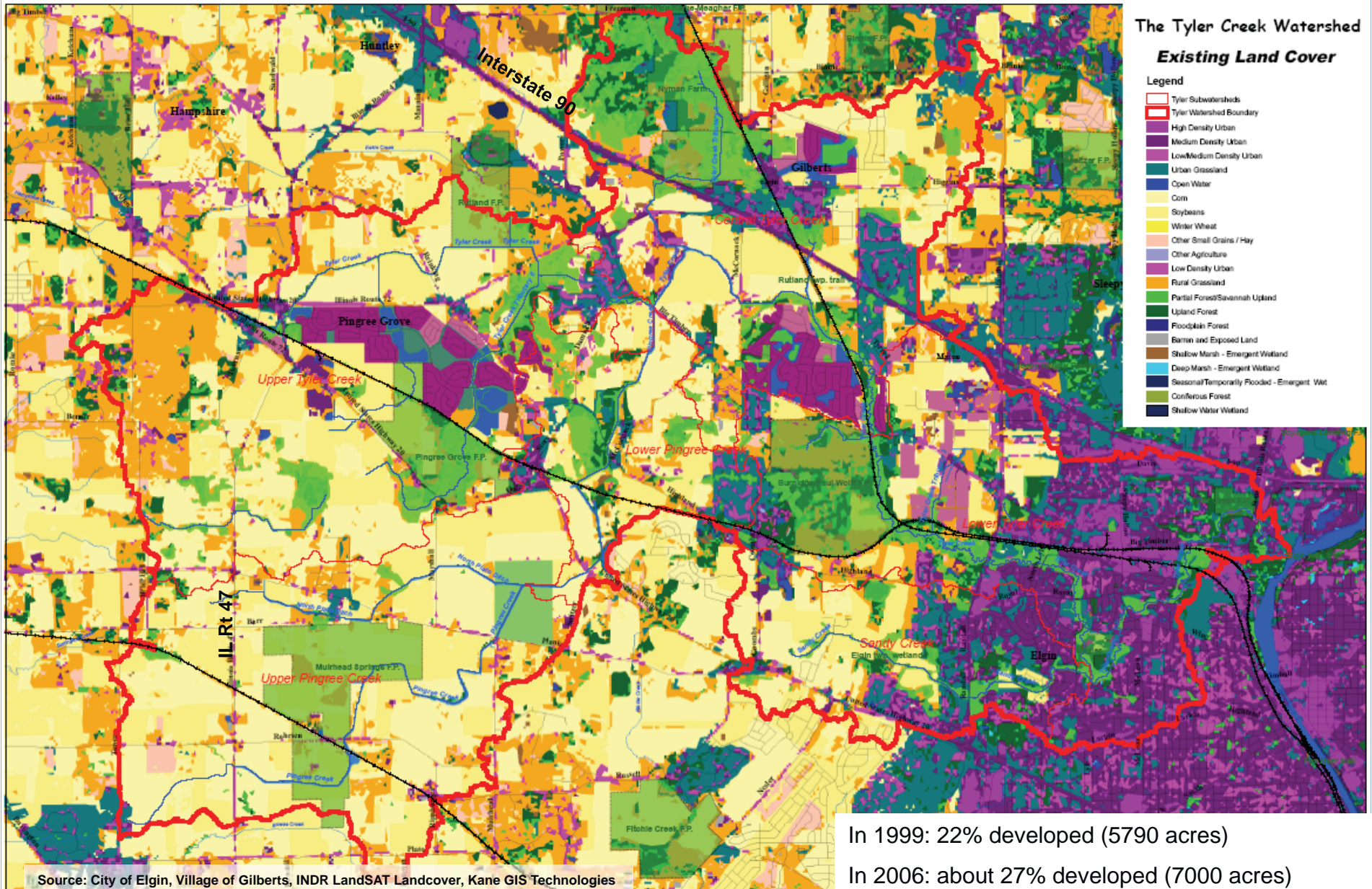
- Located in Fox River Watershed;
- 40.5 sq. mi.
- Located in high-growth corridor of central Kane County





# Six Subwatersheds

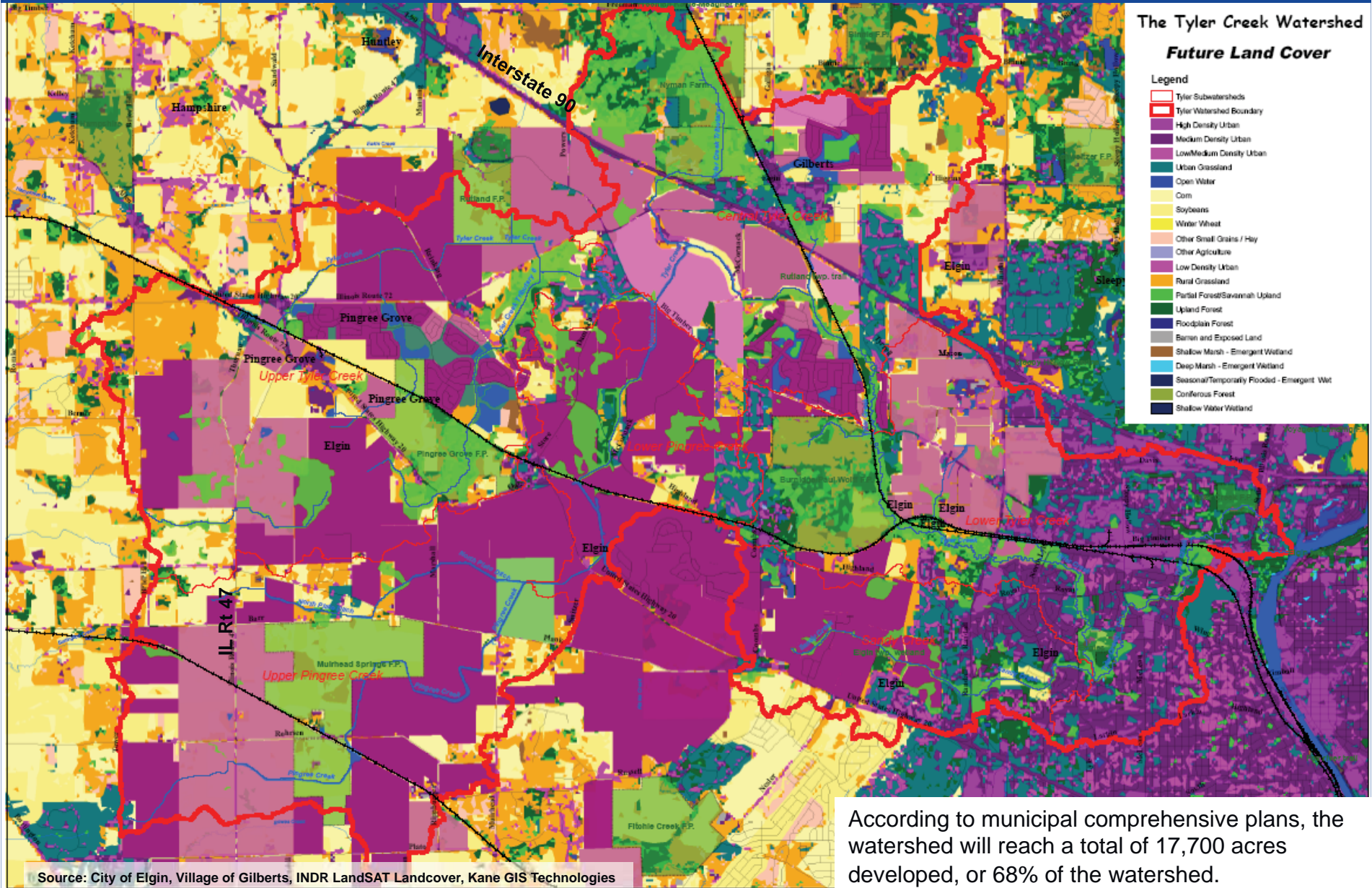
# Existing Landcover



In 1999: 22% developed (5790 acres)

In 2006: about 27% developed (7000 acres)

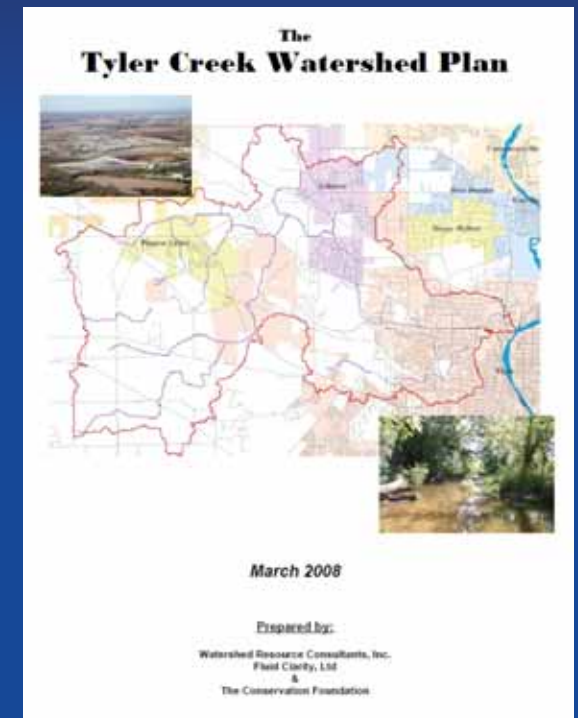
# Future Landcover



According to municipal comprehensive plans, the watershed will reach a total of 17,700 acres developed, or 68% of the watershed.

# Watershed Plan Background

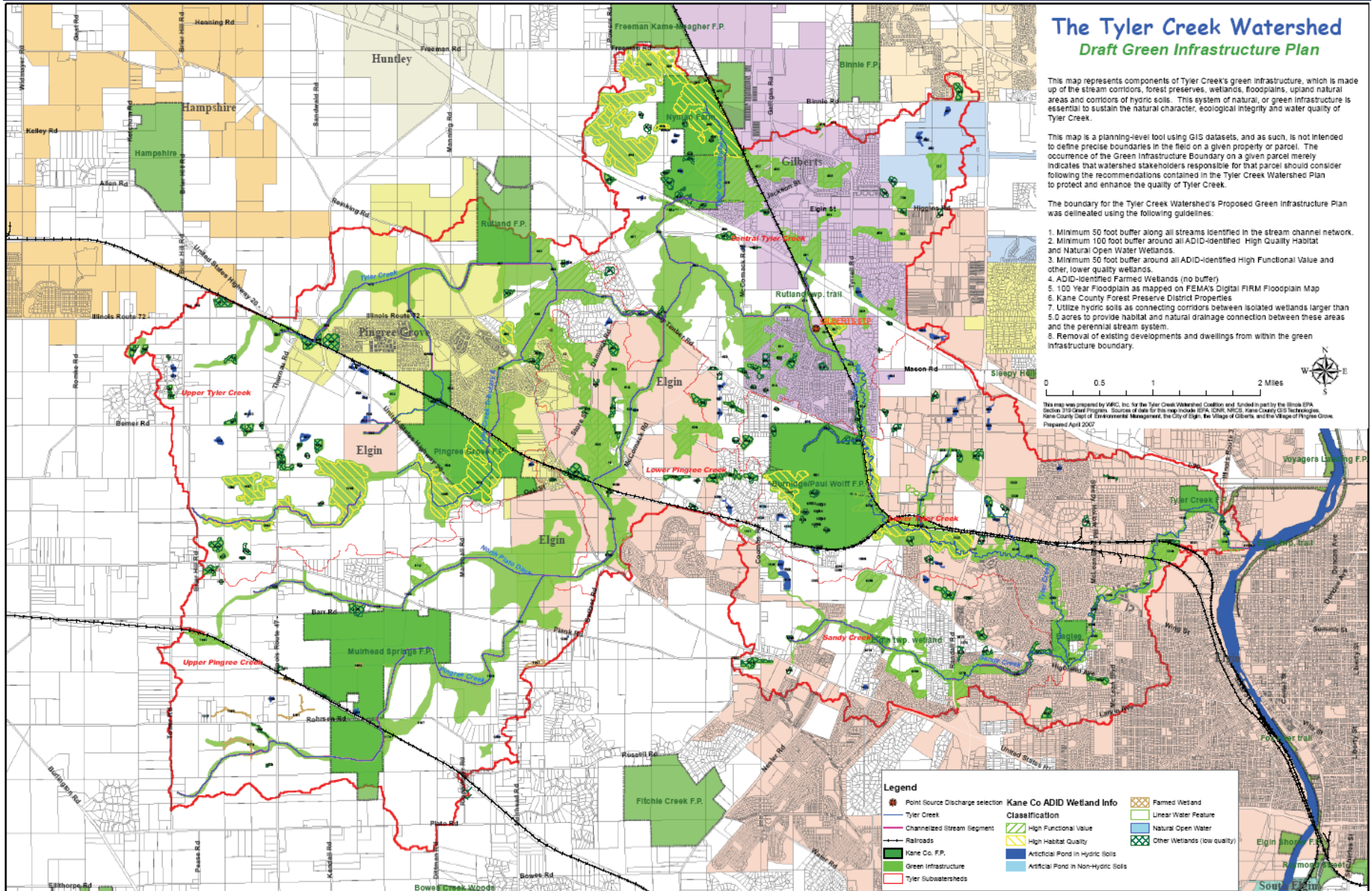
- Original plan created in 1996
  - A good plan, but lacked many specifics and didn't account for extensive development now planned for the watershed
- Area organizations seeking ways to protect watershed
  - Fox River Ecosystem Partnership
  - Fox Valley Land Foundation (Now The Conservation Foundation)
- Watershed update process began in 2005
  - Funding provided by IEPA through Section 319 Clean Water Act funds
  - Administered/Coordinated by Chicago Metropolitan Agency for Planning (CMAP)
- Final Approval by IEPA in March 2008



# Key Watershed Protection Strategies

1. Organize a Tyler Creek Watershed Coalition.
2. Protect remaining high-quality natural areas.
3. Implement water quality BMP projects in Lower Tyler Creek.
4. Incorporate Green Infrastructure Plan and innovative stormwater management into new developments.
5. Build upon water quality modeling & monitoring of the Tyler Creek Watershed by FRSG/ISWS to aid in analysis of BMP planning and assessment.

# Green Infrastructure Plan







## Tyler Creek Watershed Plan

# Recommended BMPs

### Urban

- Low Impact Development
- Retrofitting existing detention basins
- Structural WQ devices at storm outfalls
- Water Quality Inlets
- Pet Waste Management
- Street sweeping
- Streambank stabilization
- Rain Garden / Rain Barrel Programs
- Stream corridor restoration / management

## Tyler Creek Watershed Plan

# Recommended BMPs

### Agricultural

- Preserve open lands to promote infiltration
- Wetland restoration/conversion to encourage retention & infiltration
- Removal/abandonment of agricultural tile systems
- Expanded riparian buffers
- Nutrient Management Plans

# Tyler Creek Watershed Plan

## Keys to Success

1. Active coalition of watershed stakeholders willing to insure plan recommendations get done.
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3. **Active coalition of watershed stakeholders willing to insure plan recommendations get done!!**
4. Well defined watershed plan recommendations
5. Technical expertise/assistance to implement plan recommendations.

# Tyler Creek Watershed Coalition

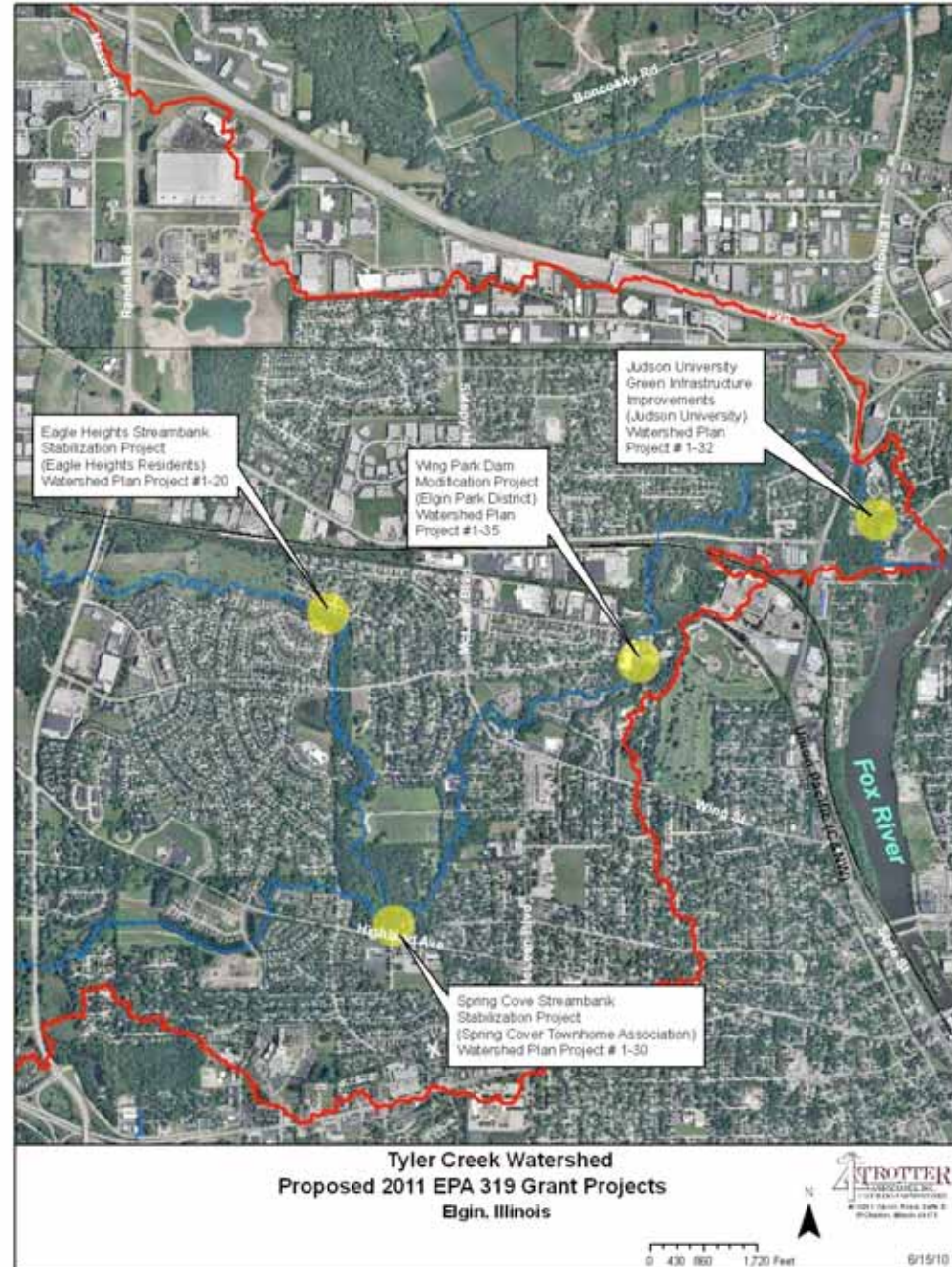
## Active Participants

- Private Landowners/HOAs
- Judson University
- City of Elgin
- Village of Gilberts
- Kane County

## More Involvement Needed From:

- Agricultural landowners
- Village of Pingree Grove
- Kane Co Forest Preserve

# Site-Specific Projects proposed for 2011/2012





**Eagle Heights Stabilization Project**

**Feb 2011 during spring melt**

# Eagle Heights Stabilization Project

Underground (??)  
Utility



Summer 2010 – normal flow



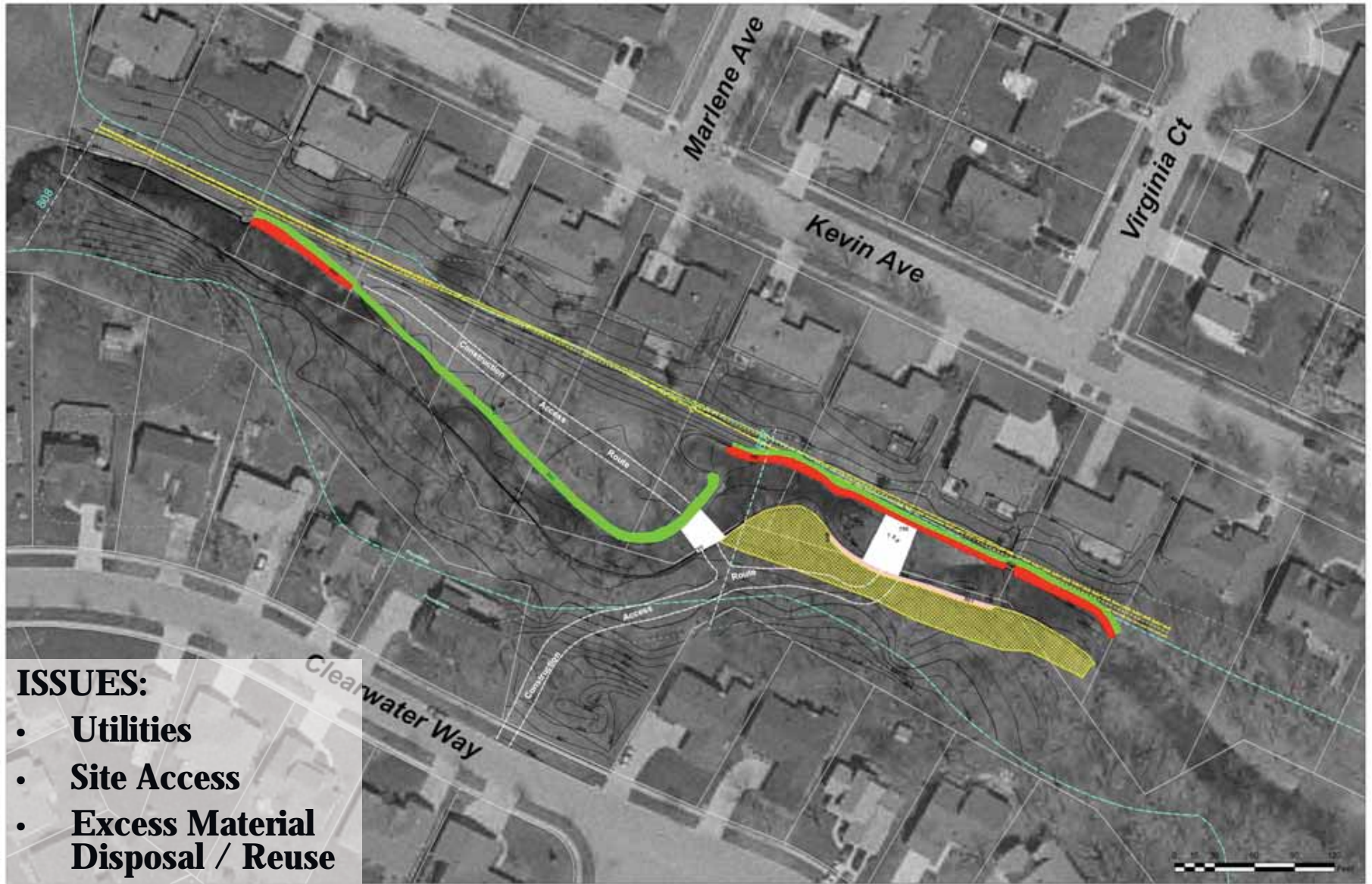
# Eagle Heights Stabilization Project



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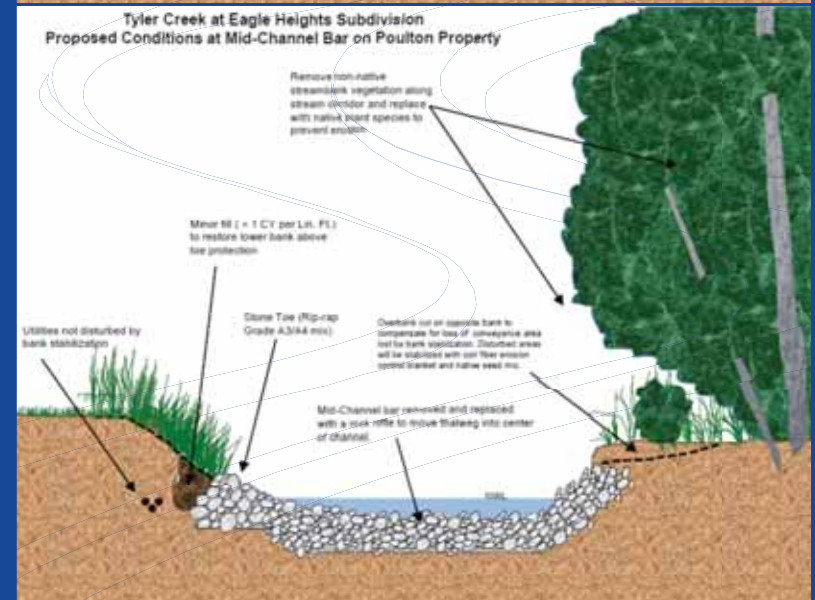
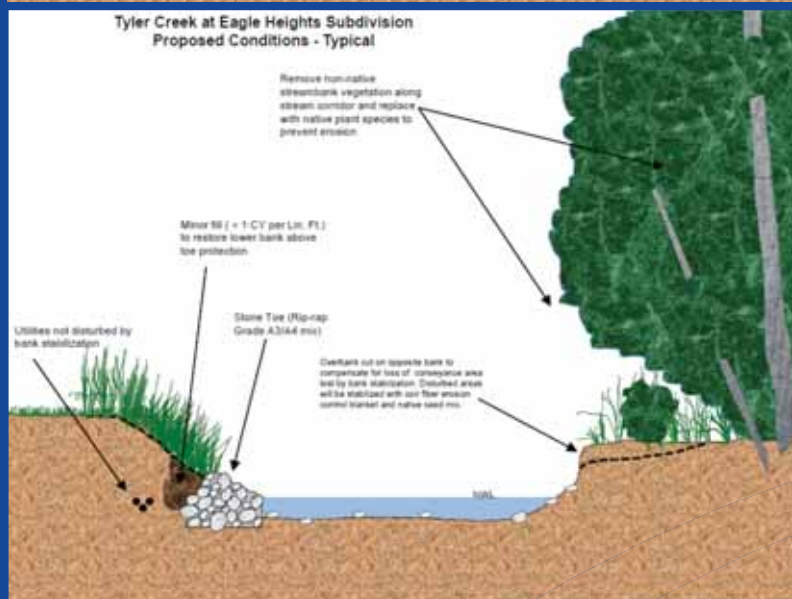
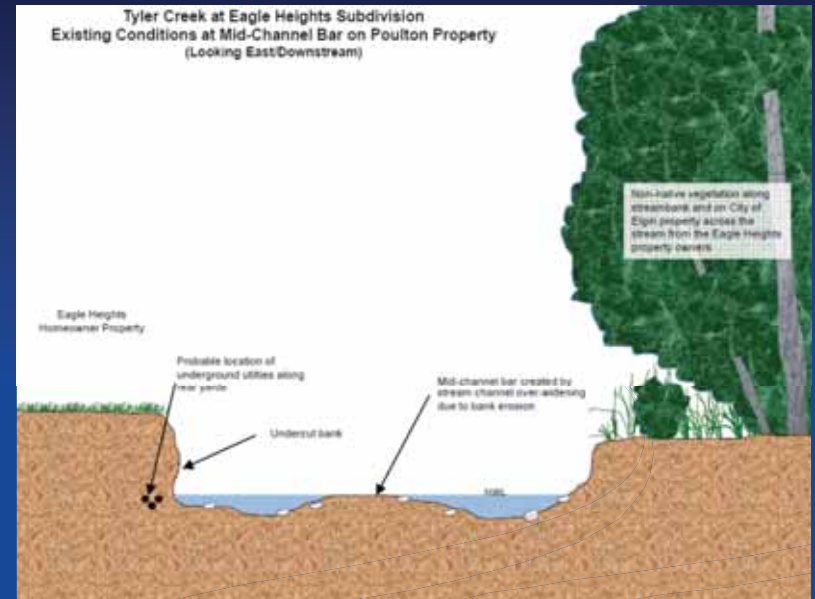
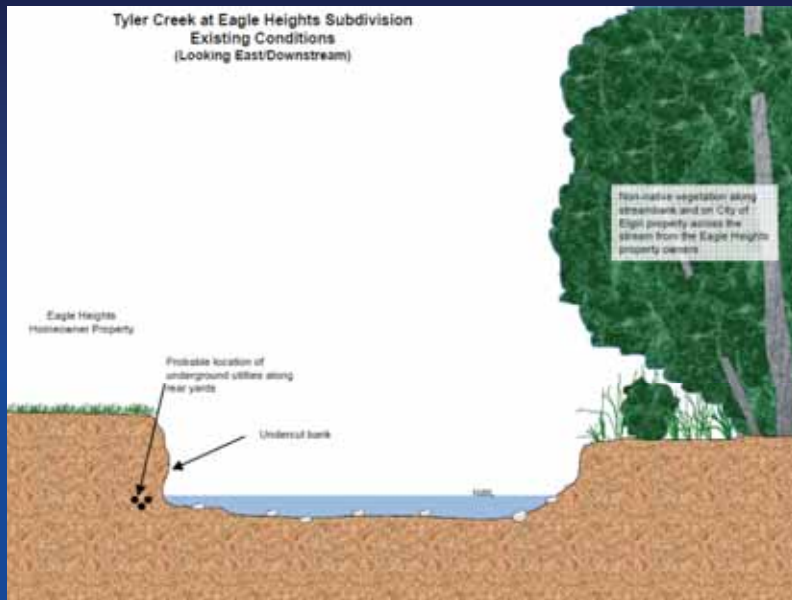


## ISSUES:

- **Utilities**
- **Site Access**
- **Excess Material Disposal / Reuse**

# Eagle Heights Stabilization Project

## Typical Sections



# Spring Cove Townhouse Association Project



# Spring Cove Townhouse Association Project



# Spring Cove Townhouse Association Project



WING PARK DAM  
EXISTING CONDITIONS





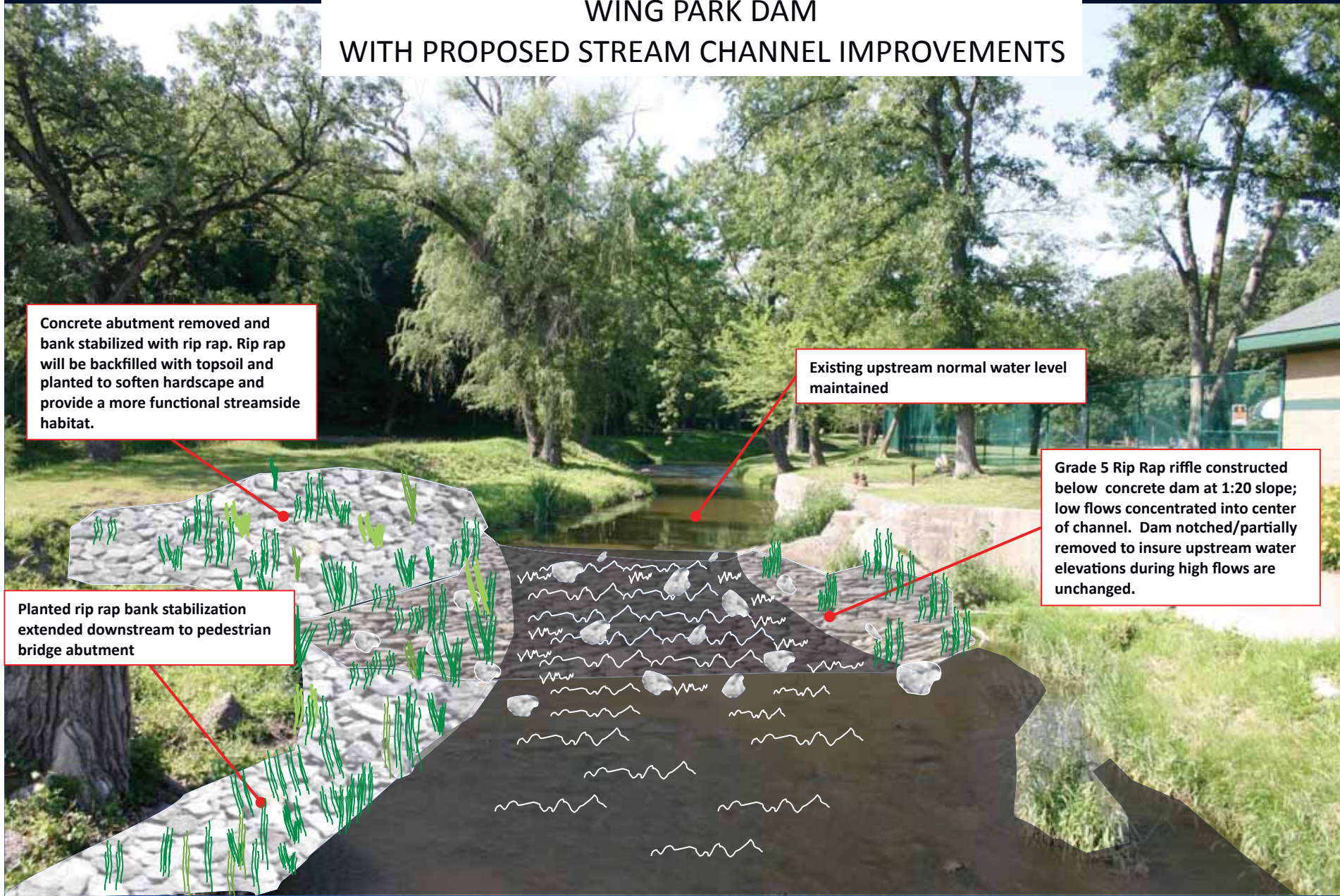
# WING PARK DAM WITH PROPOSED STREAM CHANNEL IMPROVEMENTS

Concrete abutment removed and bank stabilized with rip rap. Rip rap will be backfilled with topsoil and planted to soften hardscape and provide a more functional streamside habitat.

Existing upstream normal water level maintained

Grade 5 Rip Rap riffle constructed below concrete dam at 1:20 slope; low flows concentrated into center of channel. Dam notched/partially removed to insure upstream water elevations during high flows are unchanged.

Planted rip rap bank stabilization extended downstream to pedestrian bridge abutment



# Judson University



Tyler Creek

Fox River

# Judson University Campus Flooding

Judson stakeholders report that over last 15 years the frequency of flooding on campus has increased

Analysis: 100 Yr flood hasn't changed, but smaller floods happening more frequently



August 2007 flooding on Judson University Campus

# Judson University Campus Tyler Creek Corridor



Photo: June 2010

# Judson University Campus Tyler Creek Corridor



Photo: April 2006

# Judson University Campus Tyler Creek Corridor



Photo: April 2006

# Judson University Campus Tyler Creek Corridor



Photo: June 2010

# Judson University Campus Green Infrastructure Plan



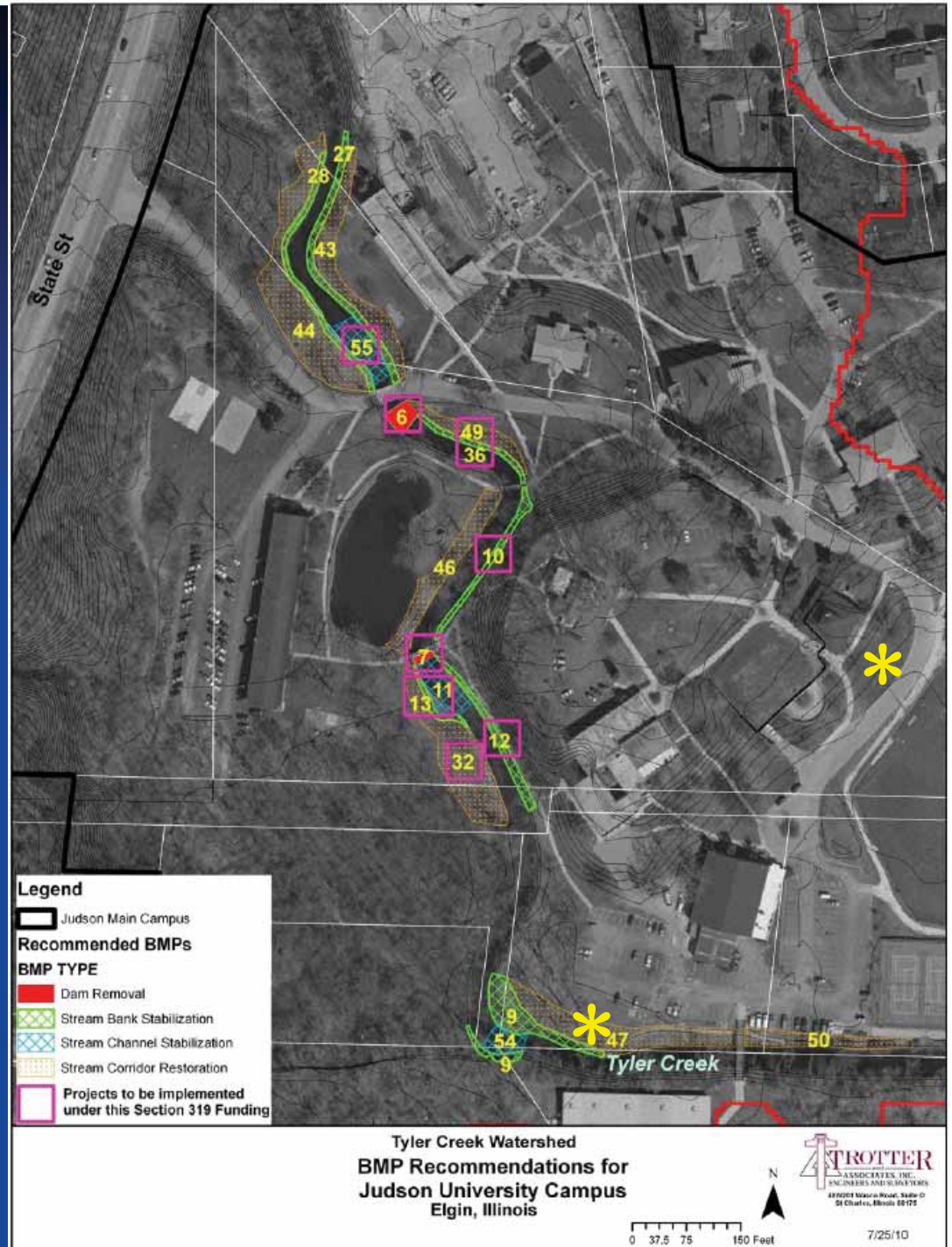


## Stream Corridor Projects – 2011/2012

- Removal of upper dam
- Channel stabilization above Judson Drive Bridge
- Streambank stabilization of Administration Hill
- Remove lower dam remnants and stabilize streambank in current alignment

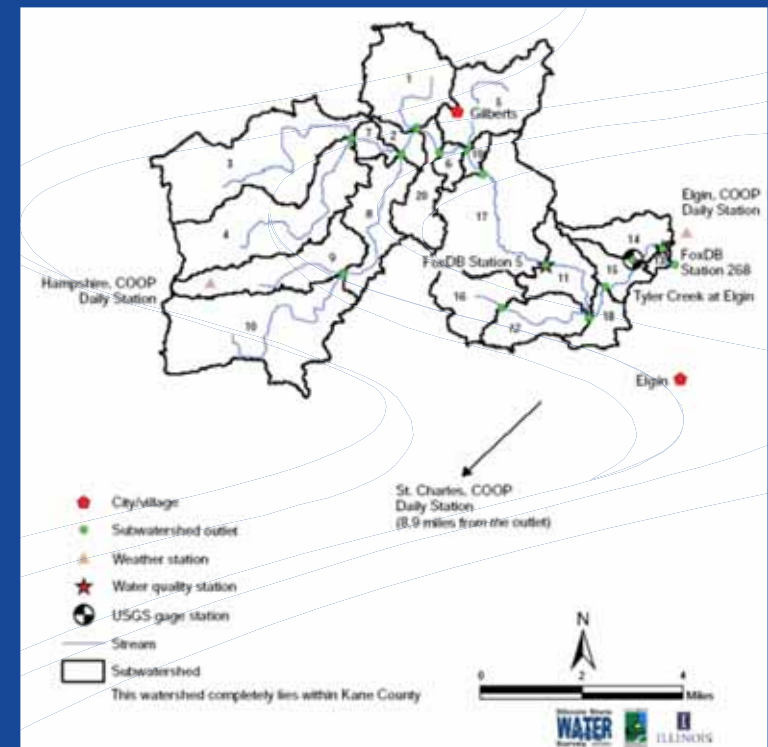
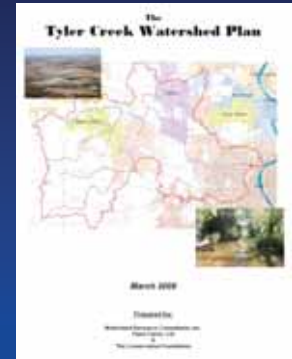
## Green Infrastructure Projects – 2011/2012

- Bioretention Basin on Presidents Drive
- Bioretention Basin at Plant Ops Parking Lot



# Coalition Activities – Moving Forward

- Support/publicize the Four Site-Specific Projects
- Water Quality Monitoring to support future analyses/studies
- Encouraging municipalities to update subdivision regs to embrace low impact development practices



Questions?