Spring Lake Stormwater Integrated Assessment Project

"Rein in the Runoff"

Stakeholder Steering Committee Meeting

June 4, 2008

Elaine Sterrett Isely
Alan D. Steinman
Annis Water Resources Institute
Grand Valley State University

Photo credit: NOAA

Agenda

- Project Review/Update (10 min.)
- Technical Update (15 min.)
- Work Session (30 min.)
- Upcoming Meetings/Events (5 min.)

Photo credit: E. Isely


Photo credit: AWRI

Integrated Assessment

- Applying existing scientific information
- Educating and involving stakeholders
- Our policy question:
  - Stormwater management alternatives
  - Allowing for future development
  - Mitigate impacts
  - Improve water quality

Project Work Plan

1. Step 1: Document status/trends of stormwater problem
   - ✓ Examine existing datasets and information
   - ❑ Identify the scope of the stormwater problem in Spring Lake watershed
   - ✓ Develop conceptual ecological model

2. Step 2: Describe environmental, social, economic causes
   - ✓ Presentations to stakeholders
   - ✓ Stakeholder Steering Committee
   - ❑ Public meetings
   - ❑ Feedback and input

3. Step 3: Generate forecasts
   - ❑ Model simulations (PAM, L-THIA, Pload)
   - ❑ Stakeholders review future development scenarios
   - ❑ Develop menu of site-specific BMPs

4. Step 4: Provide technical guidance implementing BMPs

5. Step 5: Present final options
   - ❑ Review and revise findings
   - ❑ Final report and presentations

Stakeholder Steering Committee

- Quarterly project update meetings
- Assistance in promoting project goals
- Assistance in identifying stormwater opportunities and challenges

Photo credit: E. Isely

- Input and review of project goals, progress and products

Last Meeting

- Stormwater topics of concern
- Project name/identity
  - Rein in the Runoff
  - Website: http://www.gvsu.edu/wri/reinintherunoff
- Public meeting/open house
  - Spring Lake Library: 6/25/08
  - Open House: 5:00 – 7:00 p.m.
  - Informational Presentation: 7:00 – 7:30 p.m.
- Project communications

Project Update

Photo credit: E. Isely

- Project Flyers
- “Rein in the Runoff” Water Quality Survey
- Identifying scope of stormwater problem in Spring Lake watershed

Photo credit: E. Isely

Photo credit: E. Isely

Land Use

BMPs

Water Quality & Population Models

Water Quality

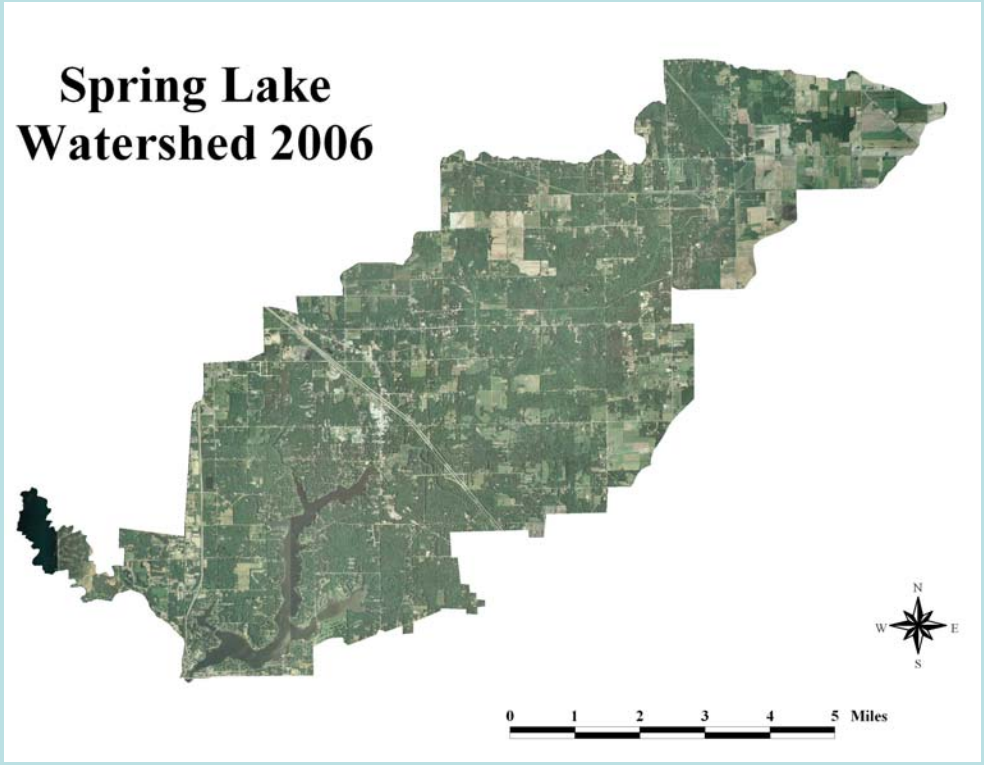
Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices

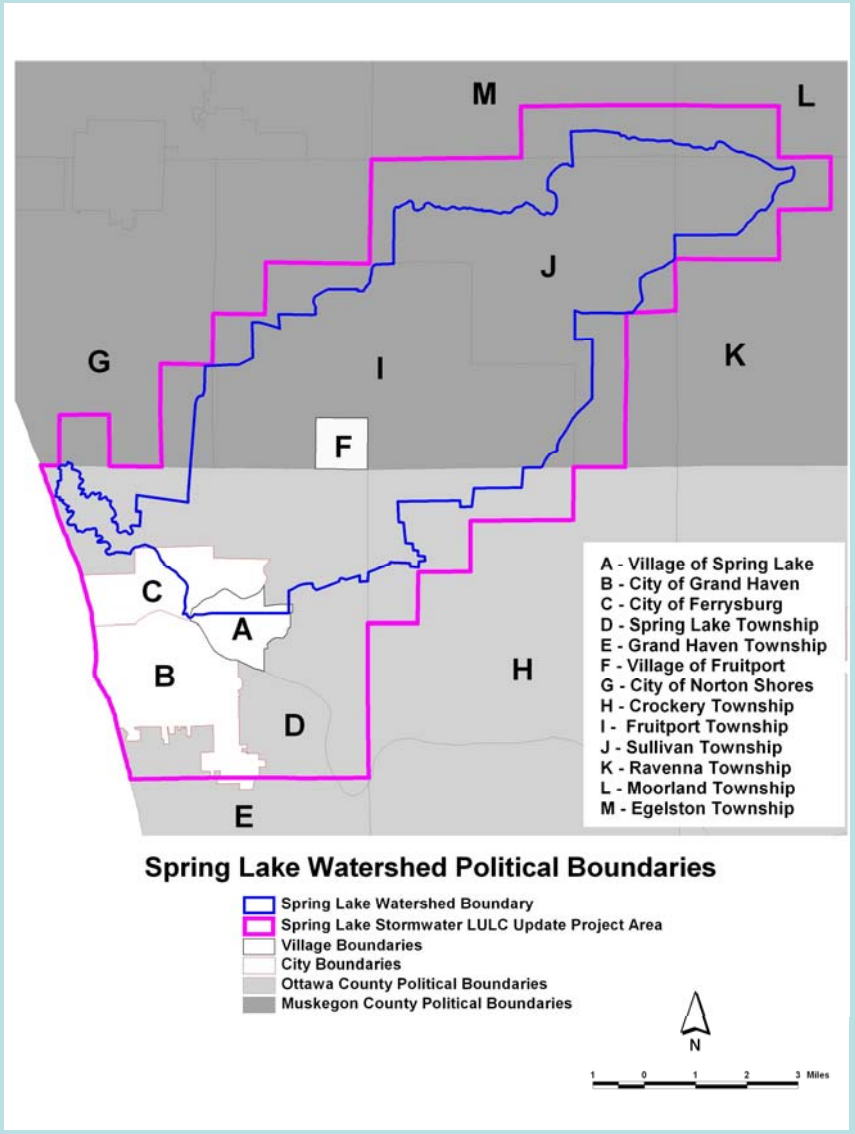
Stormwater Impacts

- Impervious surfaces increase runoff volume, velocity and pollutants
- Reduced recharge to aquifers
- Increased erosion and sedimentation
- Potentially toxic to stream biota

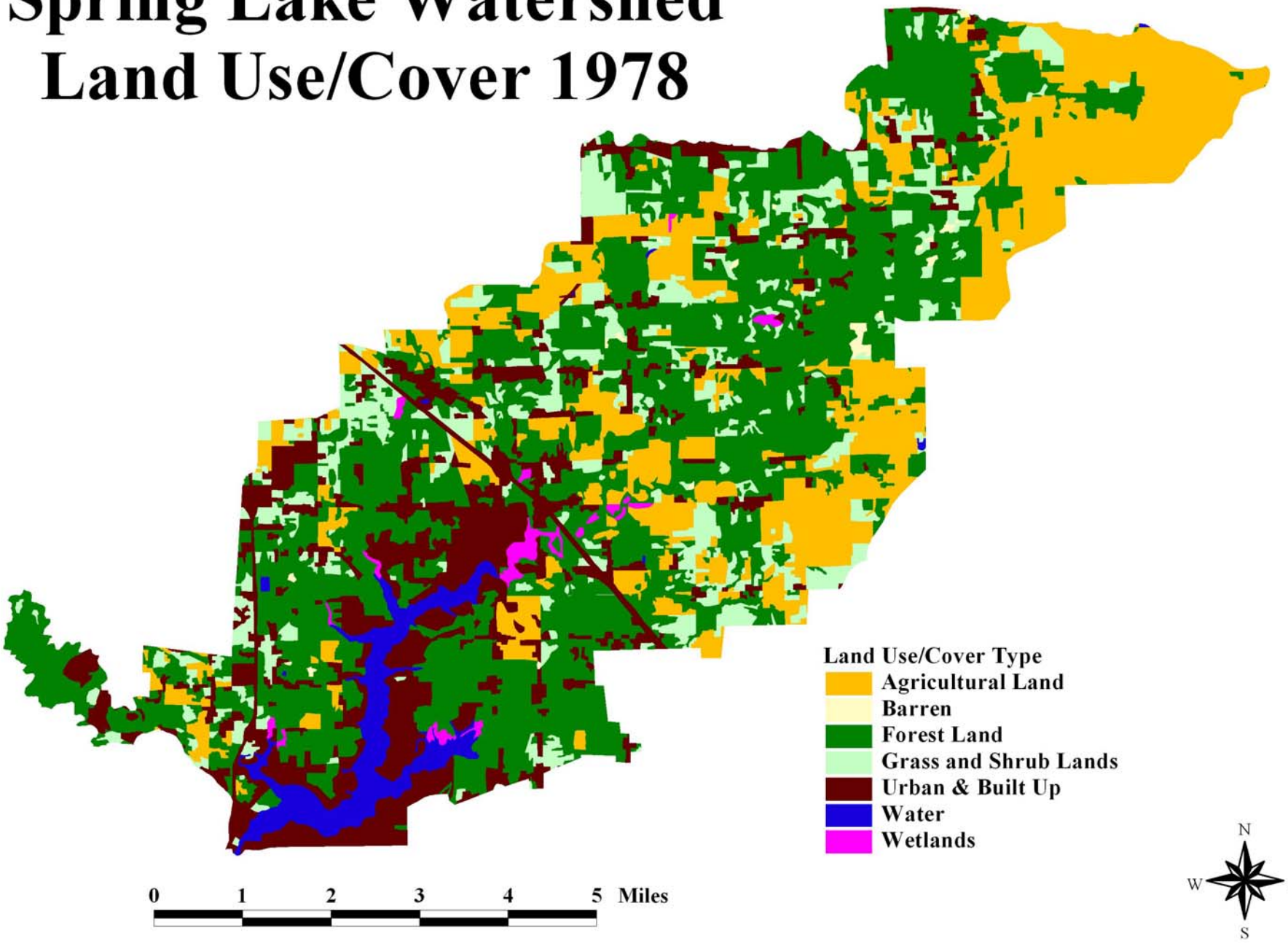
Photo credit: E. Isely

Spring Lake Watershed

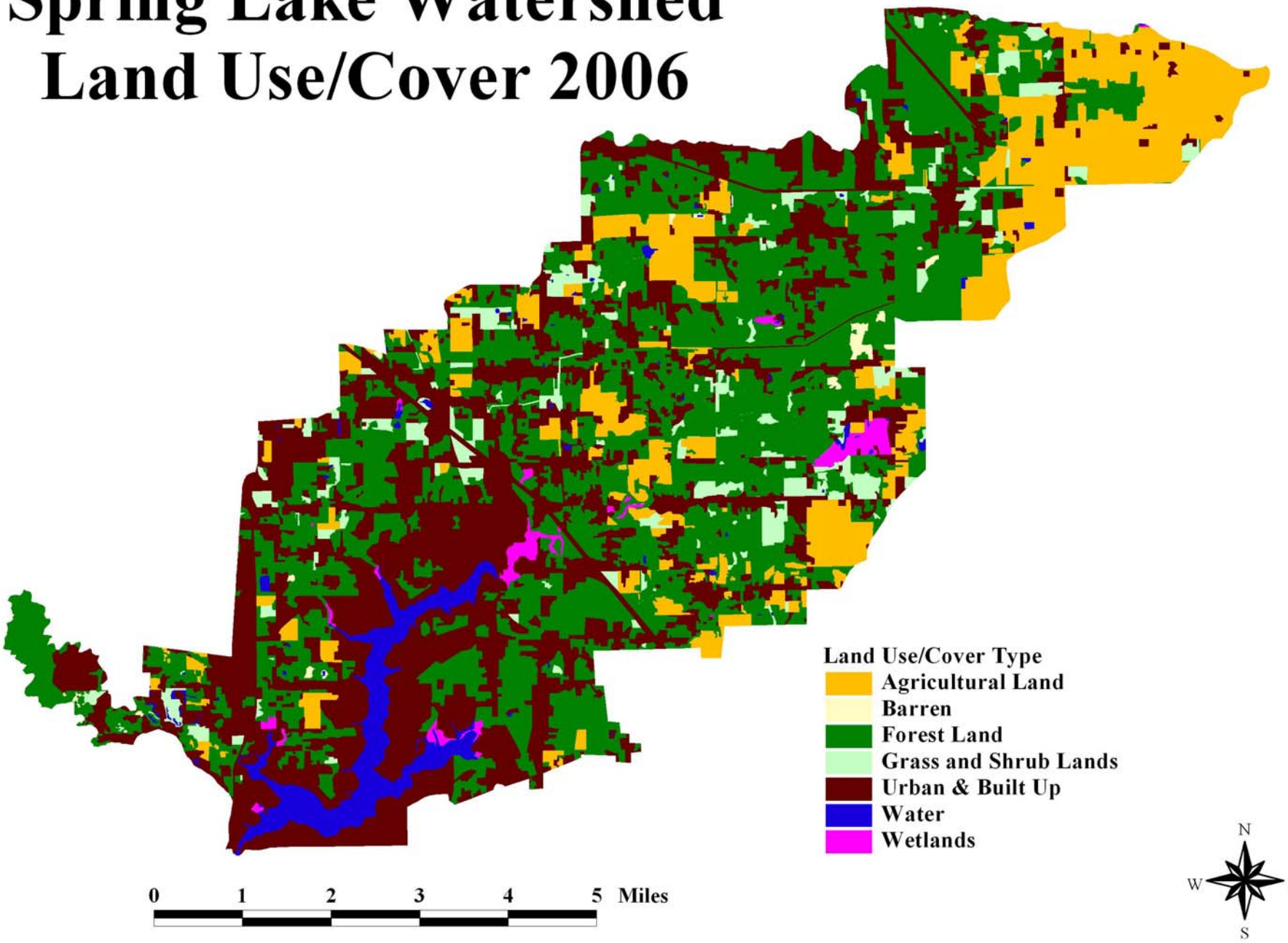




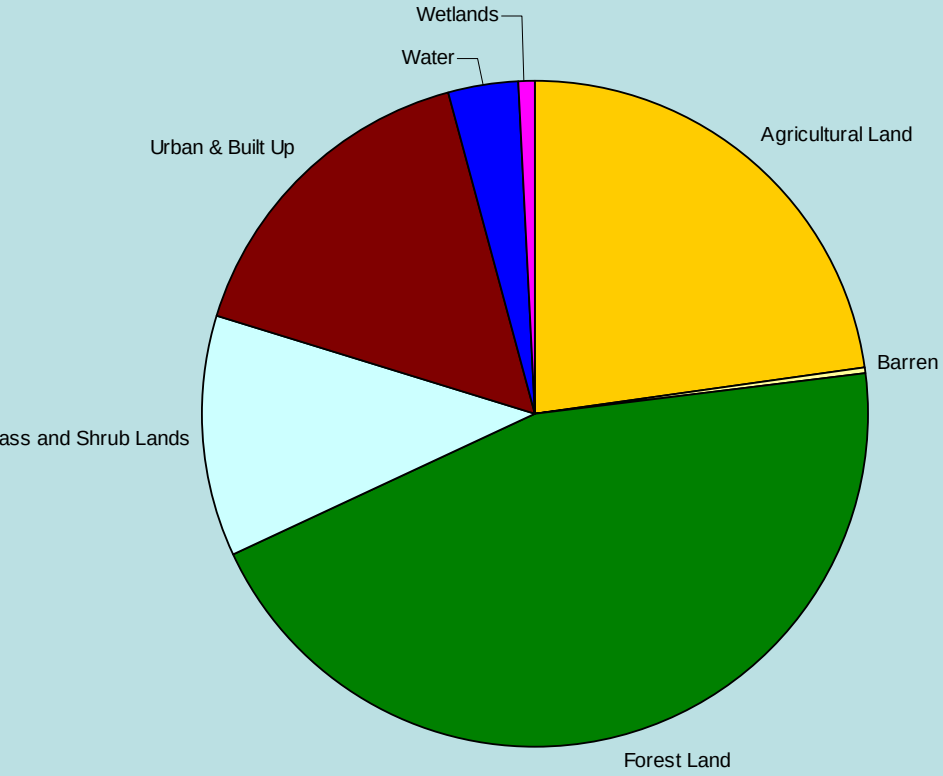
Spring Lake Watershed Land Use/Cover 1978



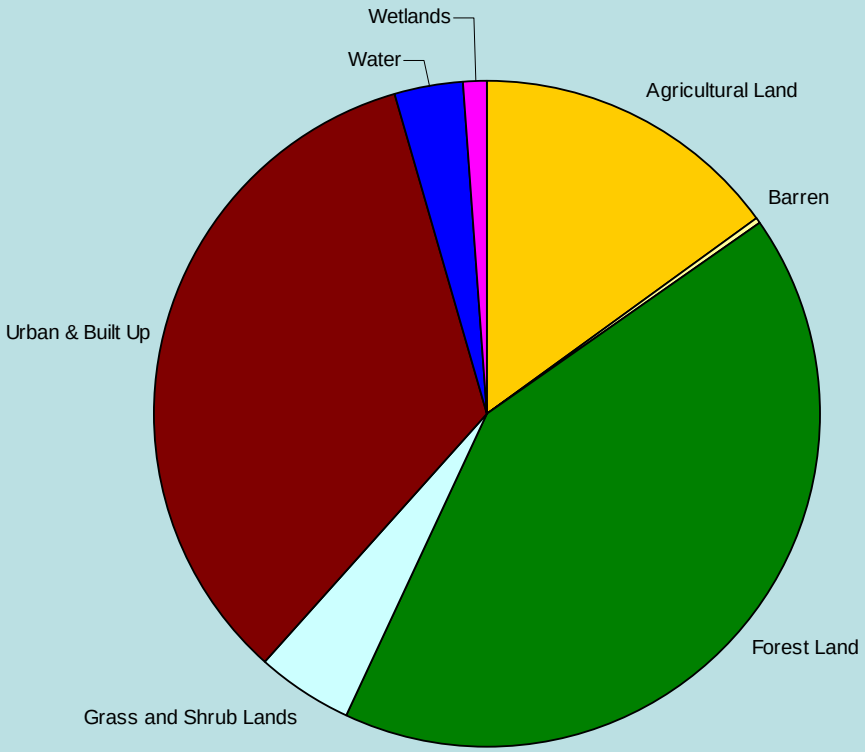
Spring Lake Watershed Land Use/Cover 2006



Spring Lake Watershed Land Use Change

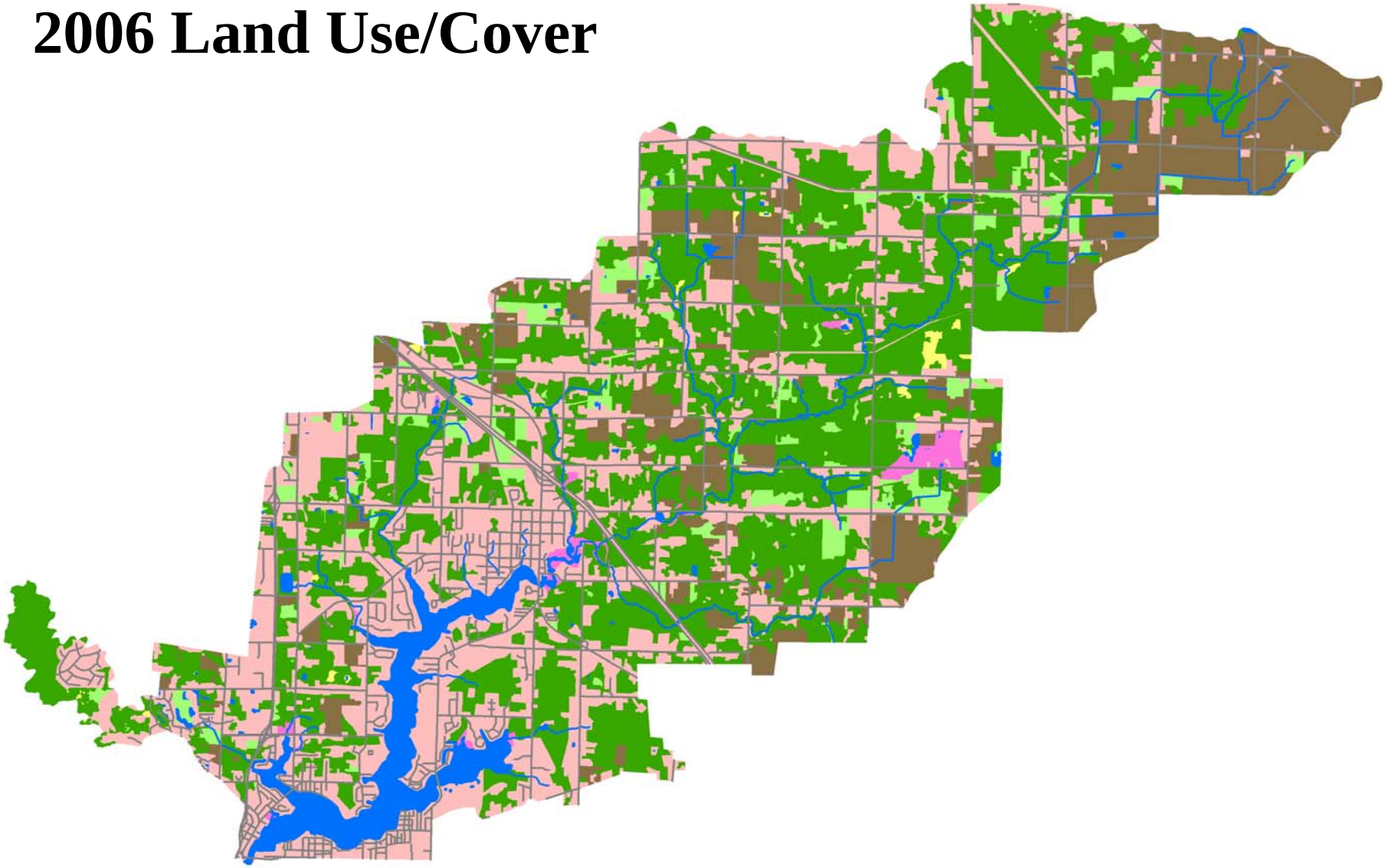


1978

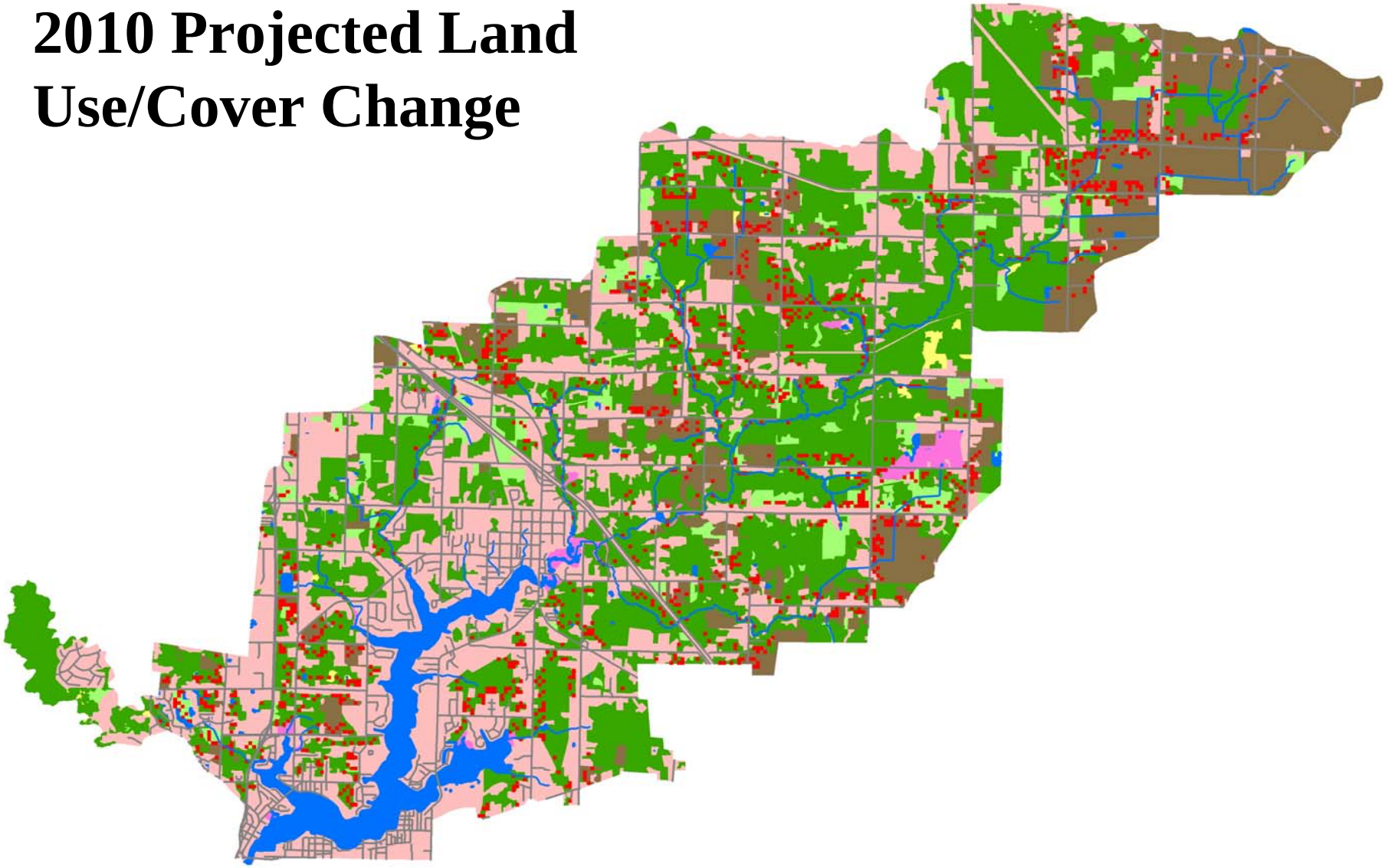


2006

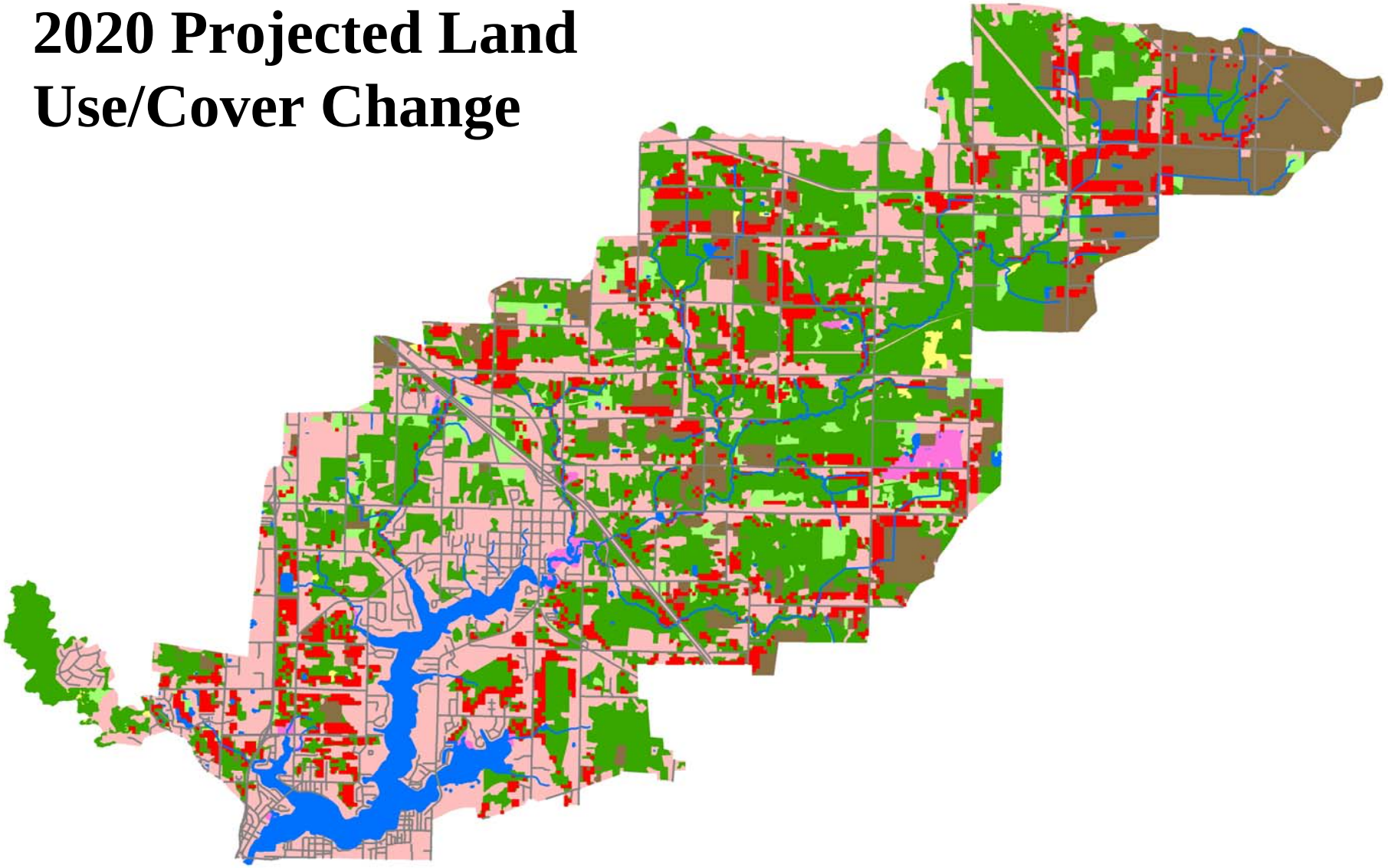
2006 Land Use/Cover



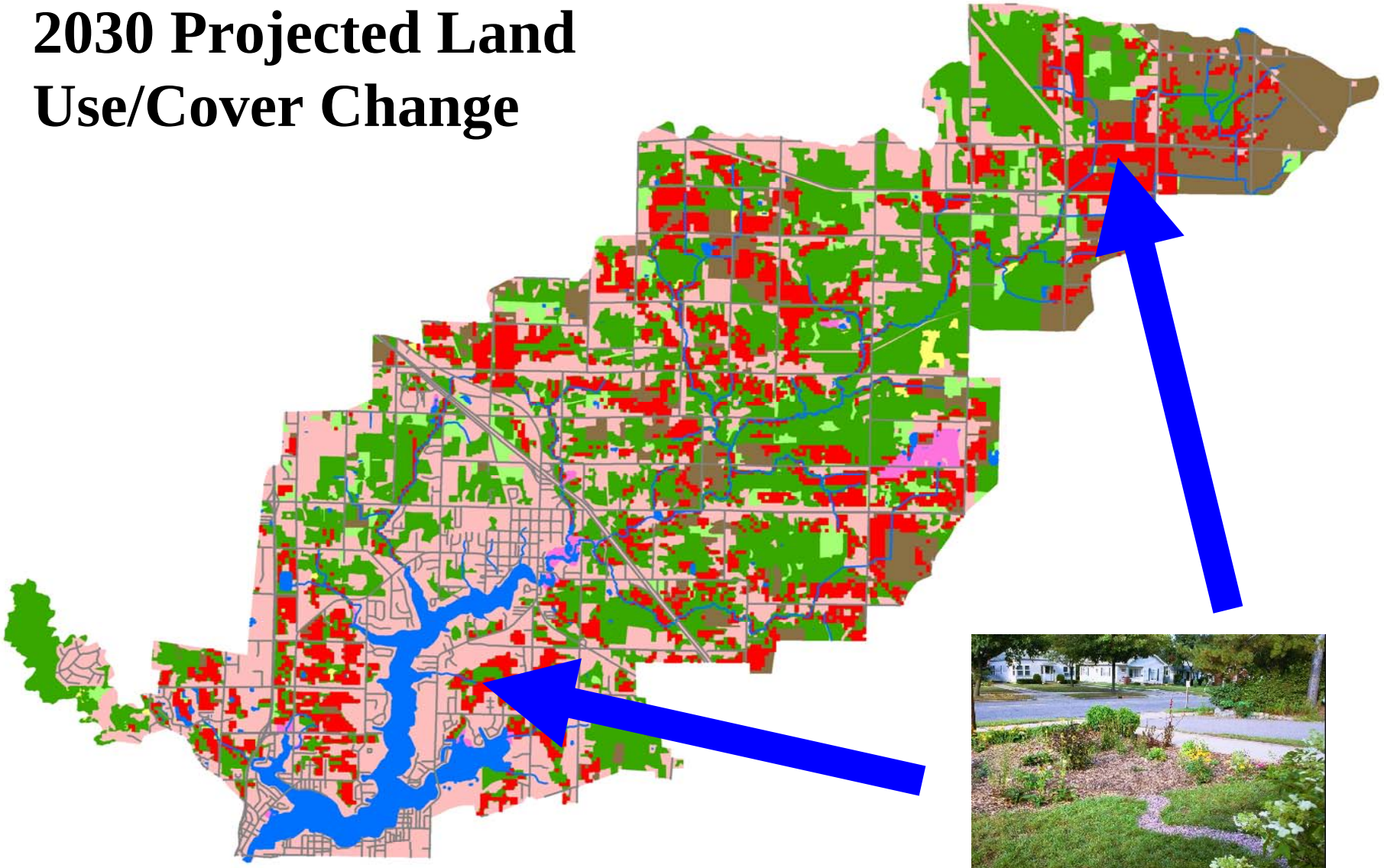
2010 Projected Land Use/Cover Change



2020 Projected Land Use/Cover Change



2030 Projected Land Use/Cover Change



BMPs

The primary way to control stormwater discharges is through the use of best management practices (BMPs)

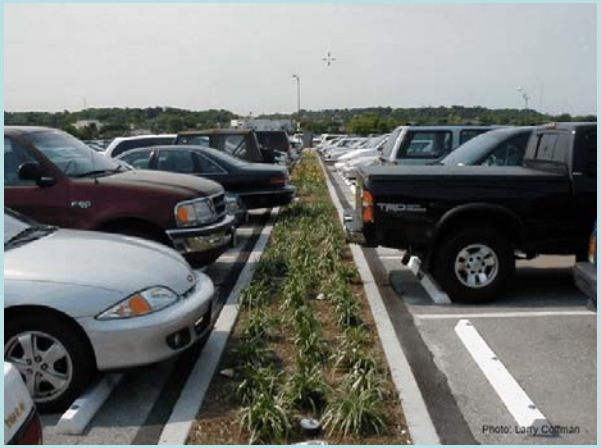


Photo credit: MDEQ

Photo credit: greenroofs.com

Photo credit: E. Isely

Bioretention Areas/Rain Gardens

Photo credit: R. Denning

Photo credit: Raingardens.org

- Shallow vegetated landscape depressions
- Manage stormwater through rapid infiltration and enhanced evapotranspiration

Green Roofs

- Vegetated layer installed on flat or sloped roof
- Retain rainfall
- Provide flow attenuation, aesthetic benefit, reduced air pollution, improved water quality

Photo credit: WMEAC

Photo credit: greenroofs.com

Porous Pavement

- Porous asphalt or concrete, modular blocks, grass or gravel pavers

- Good for low-traffic or load-bearing areas
  - Driveways
  - Sidewalks
  - Parking lots
  - Residential streets

Photo credit: MDEQ

Stormwater Planters

Photo credit: MDEQ

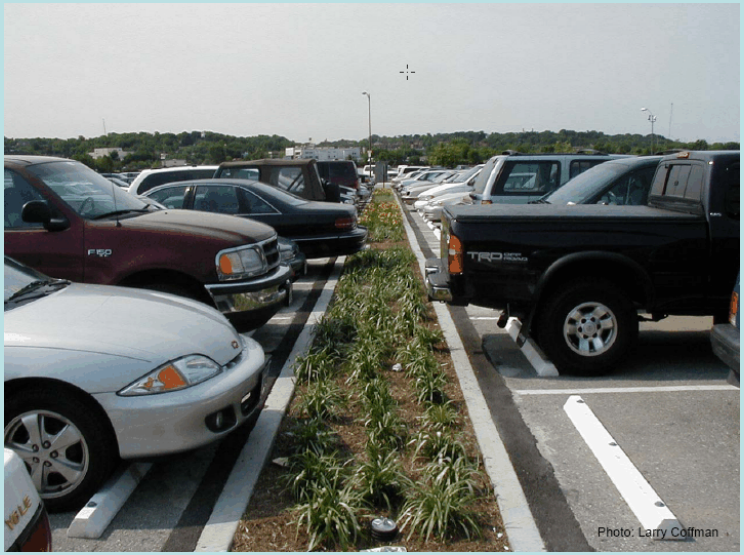


Photo credit: MDEQ

- Trees and vegetation planted in urban areas
  - Parking lots
  - Rights-of-way
  - Along streets
  - Open urban greenspace

Other BMPs

- Rain barrels
- Cisterns
- Vegetated buffer strips
- Grassed swales
- Pocket wetlands

Photo credit: E. Isely

Photo credit: Spicer Group

Tonight's Activities

- Identify watershed areas
  - To limit building/development
  - Where stormwater runoff problems exist

- What BMPs are important to Spring Lake?
- Where would you like to see these BMPs?

Upcoming Meetings/Events

Photo credit: E. Isely

- Spring Lake Heritage Festival
  - Flea market: 6/17-18
  - Family Fun Night: 6/18
  - Music on the Point: 6/19
  - Car Show: 6/20
- Rein in the Runoff Open House
  - Spring Lake Library: 6/25 from 5:00 – 7:00 p.m.
- Rein in the Runoff Public Presentation
  - Spring Lake Library: 6/25 from 7:00 – 7:30 p.m.

Contact Information

Alan D. Steinman
Principal Investigator
(616) 331-3749
steinmaa@gvsu.edu

Elaine Sterrett Isely
Project Manager
(616) 331-8788
iselyel@gvsu.edu

www.gvsu.edu/wri/director/

Grand Valley State
ANNIS WATER RESOURCES INSTITUTE
Lake Michigan Center

Sea Grant
Michigan