Modeling Residential Development

Watershed Buildout Analysis:

Revealing the unexpected

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Lake Leaders 2010

Center for Land Use Education

Testing the zoning law

- Zoning and subdivision regulations prescribe how buildable land is to be developed

- Residents assume that zoning ordinances protect them from inappropriate development

- A buildout analysis allows a community to visualize its regulations and measure impacts
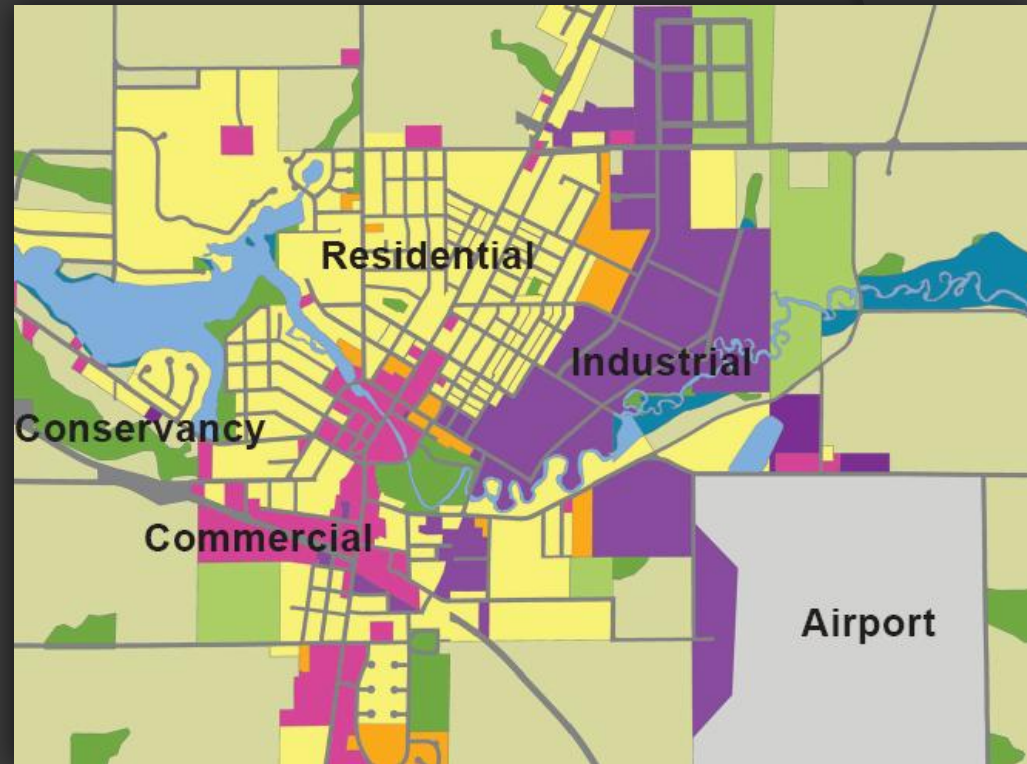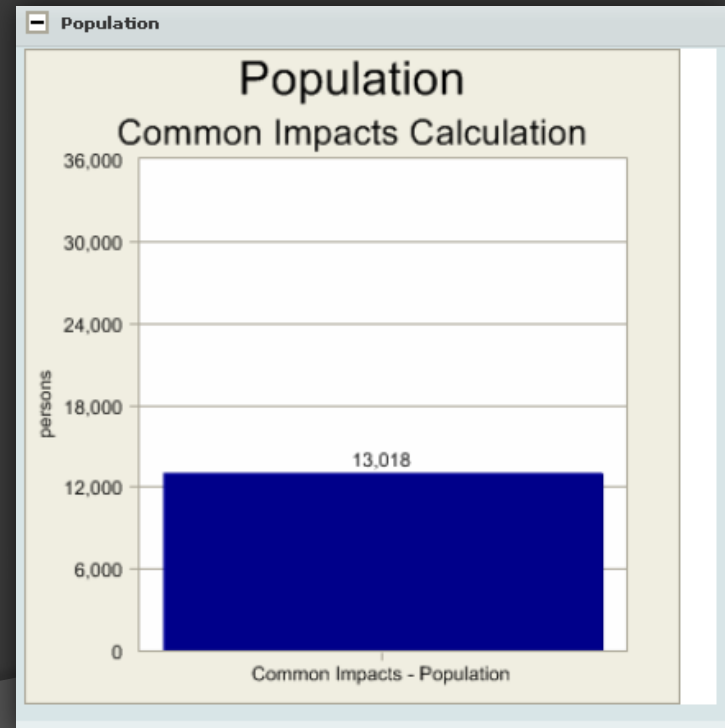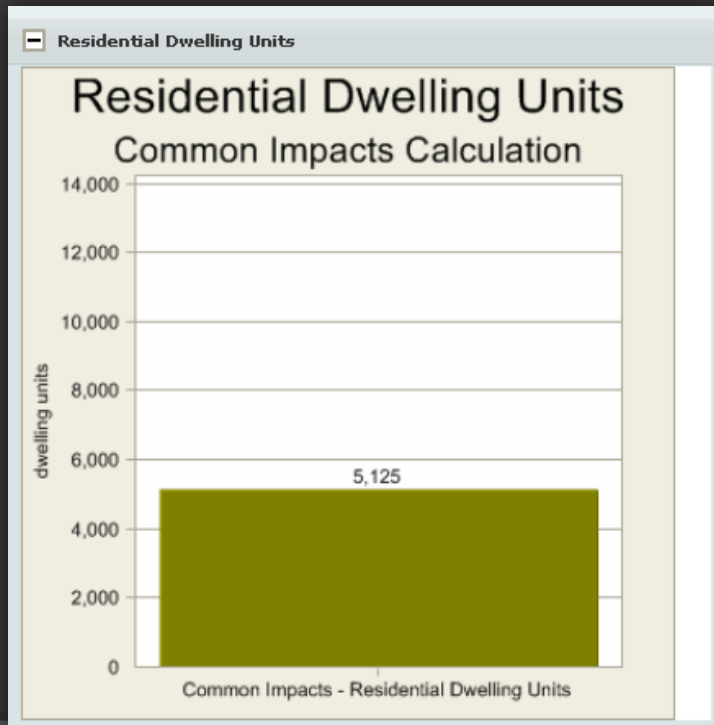
What is a buildout analysis?

- Plots potential locations of new houses that could be constructed on vacant and buildable land

What is a buildout analysis?

- A tool designed to estimate the costs/impacts of future development (population, imperviousness etc.)

Why conduct a buildout analysis?

- Visualize and simulate future development

- Encourage local action

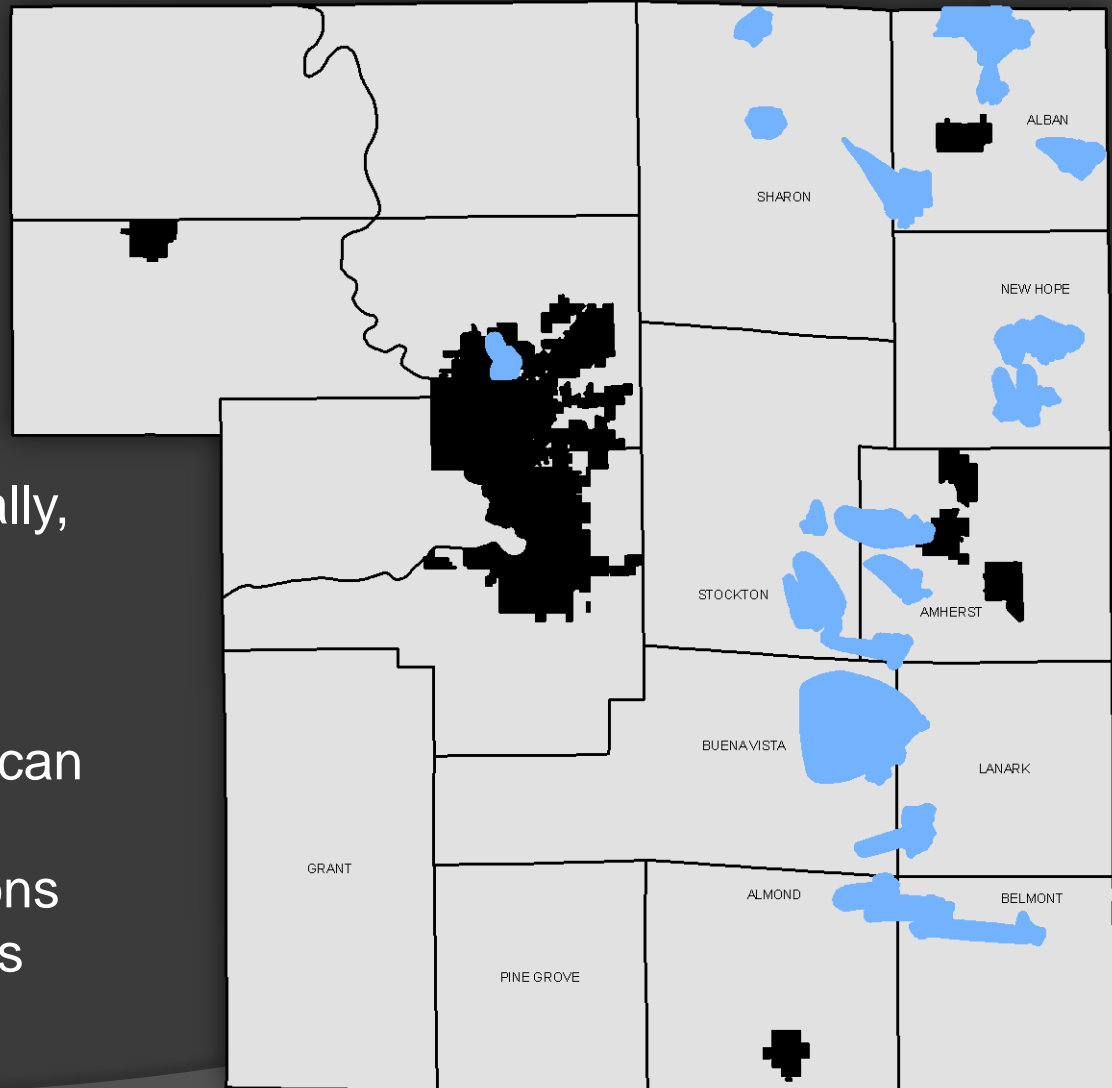- Measure consequences

Why conduct a buildout analysis?

Why conduct a buildout analysis?

Thinking Regionally

Decisions are made locally, but issues go beyond boundaries

Regional buildout maps can help groups understand how local growth decisions impact neighboring areas

Analysis Assumptions

- Only modeled residential development

- New development will occur at the minimum lot size (maximum density)

- Results are not a prediction, but show what can happen

Buildout Methods

- Data Sources:
  - Tax parcels
  - Zoning districts
  - Wetlands
  - Slope
  - Public lands
  - Roads
  - Floodplains
  - Open water/streams
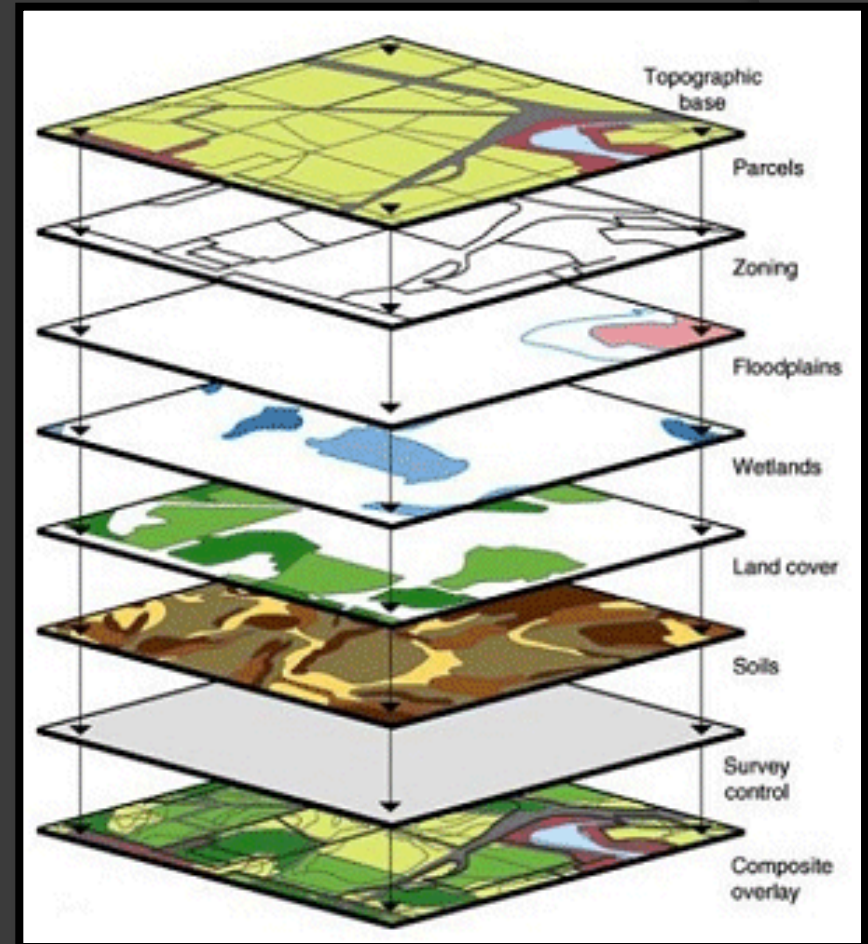
Buildout Methods

- Step 1: Start with all available lands

Spring Lake Watershed

Buildout Methods
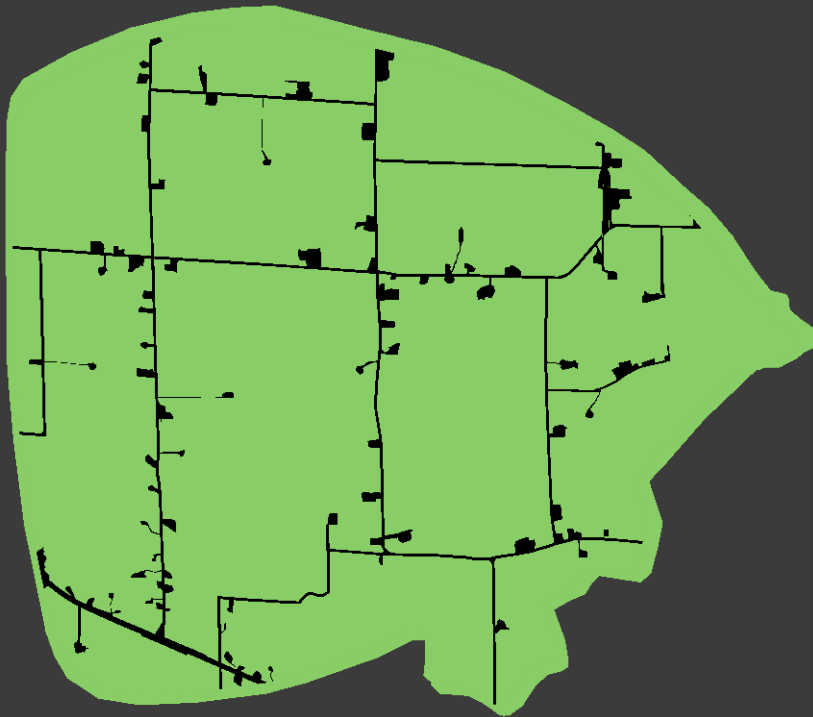
- Step 1: Subtract non developable lands

Existing development
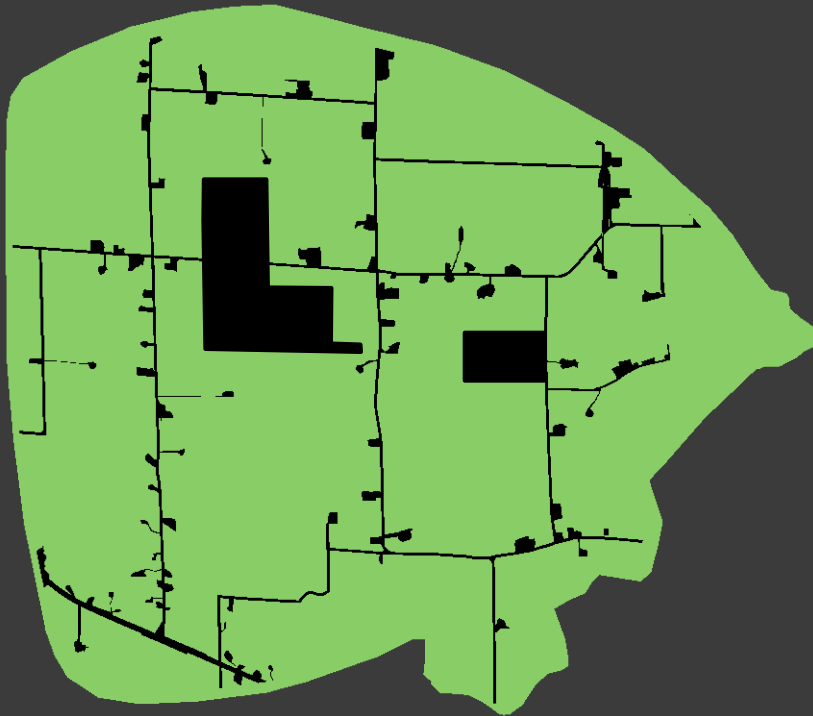
Spring Lake Watershed

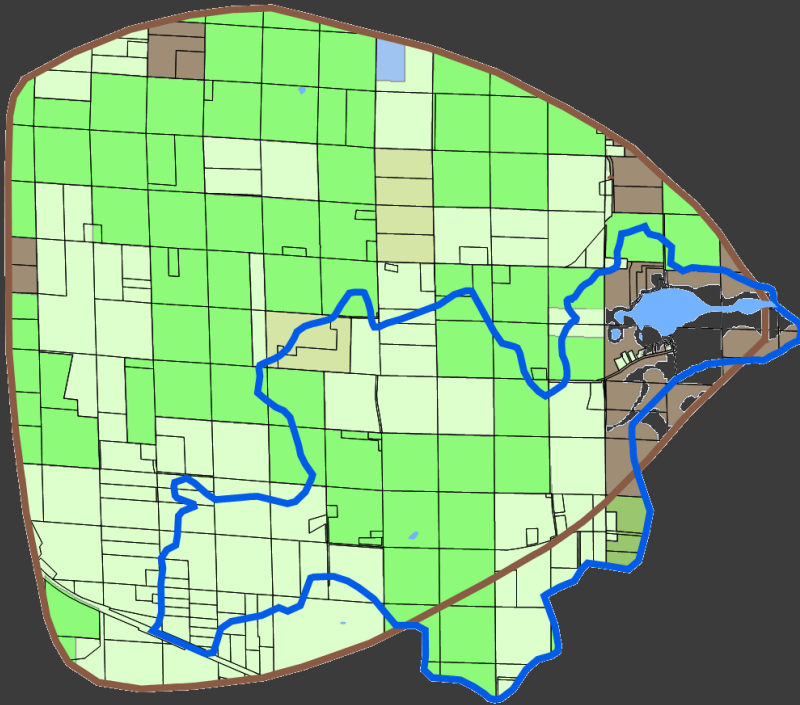# Buildout Methods

- Step 1: Subtract non developable lands

Public lands

Spring Lake Watershed

Buildout Methods

- Step 1: Subtract non developable lands
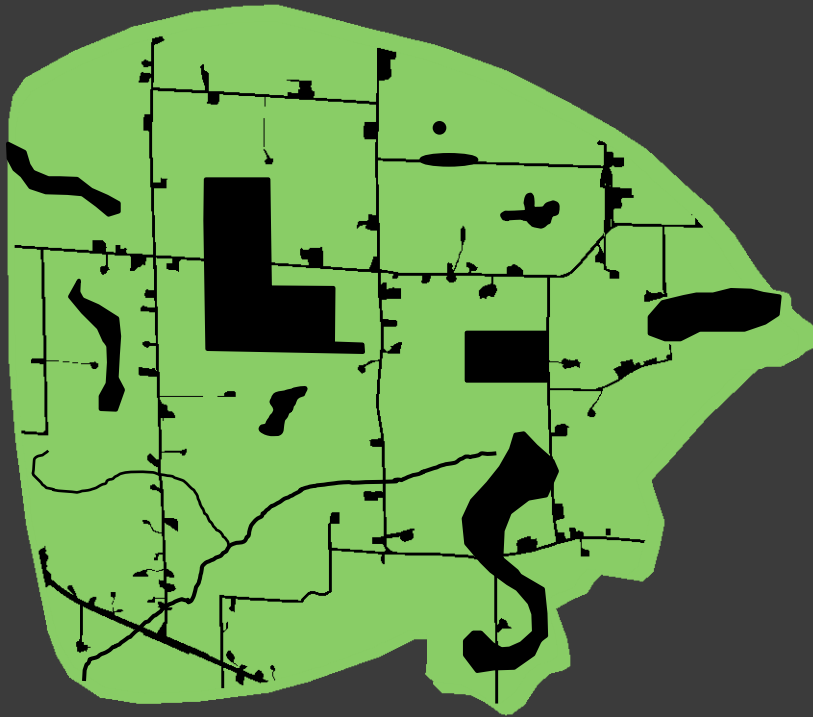
Spring Lake Watershed

Constraints

Buildout Methods

- Step 2: Merge Parcel and Zoning layers

- Regulatory tool, a police power of the local government.

- Regulates:
  Density
  Use
  Dimensions

Buildout Methods

- Step 3: ESRI ArcGIS & Community Viz

Buildout Methods

Buildout Methods

- Step 4: Estimate land cover change
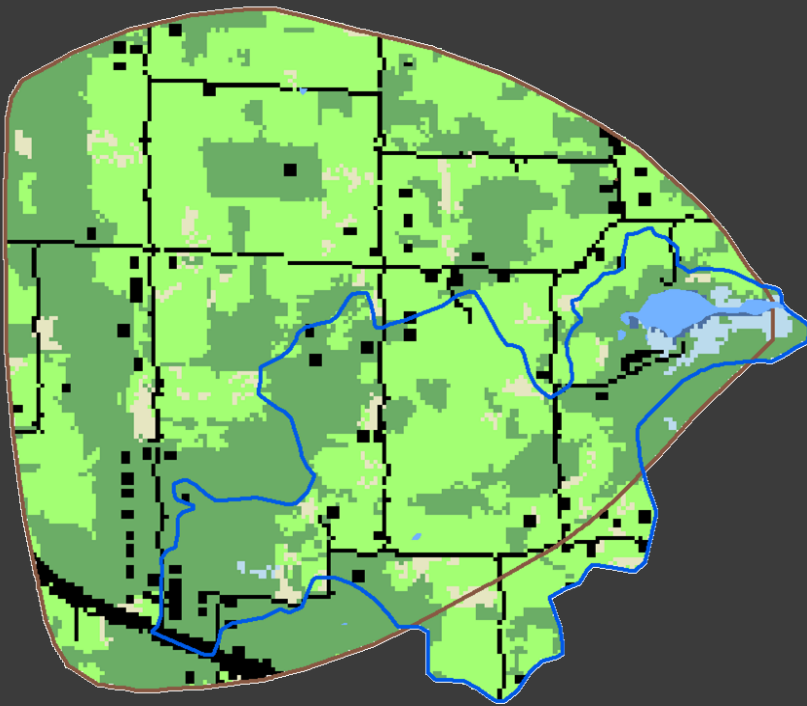
Current land cover:
2,688 developed acres
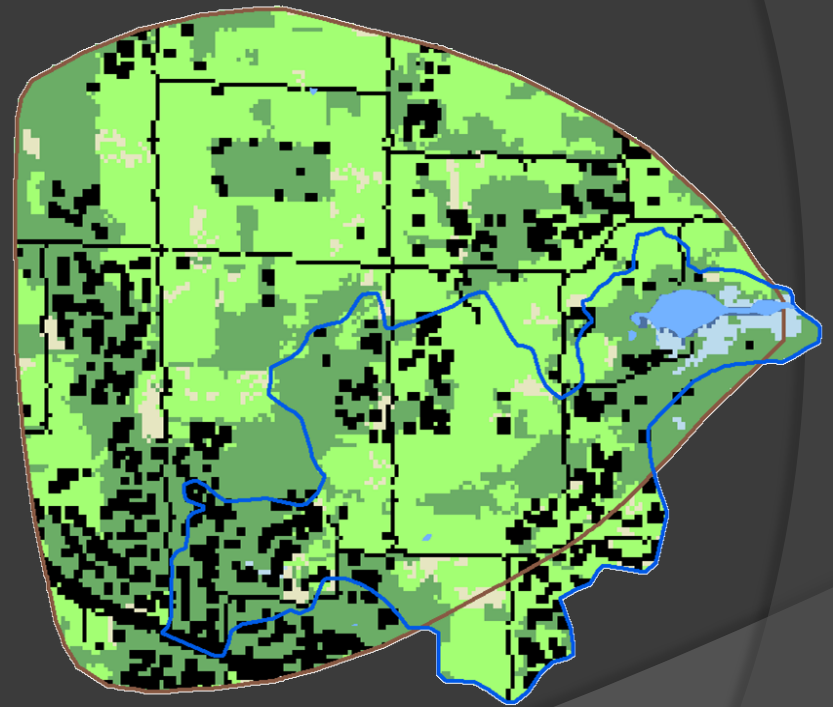
Land cover at buildout:
3,115 developed acres

Buildout Results

Importance of Thinking Regionally

SHARON

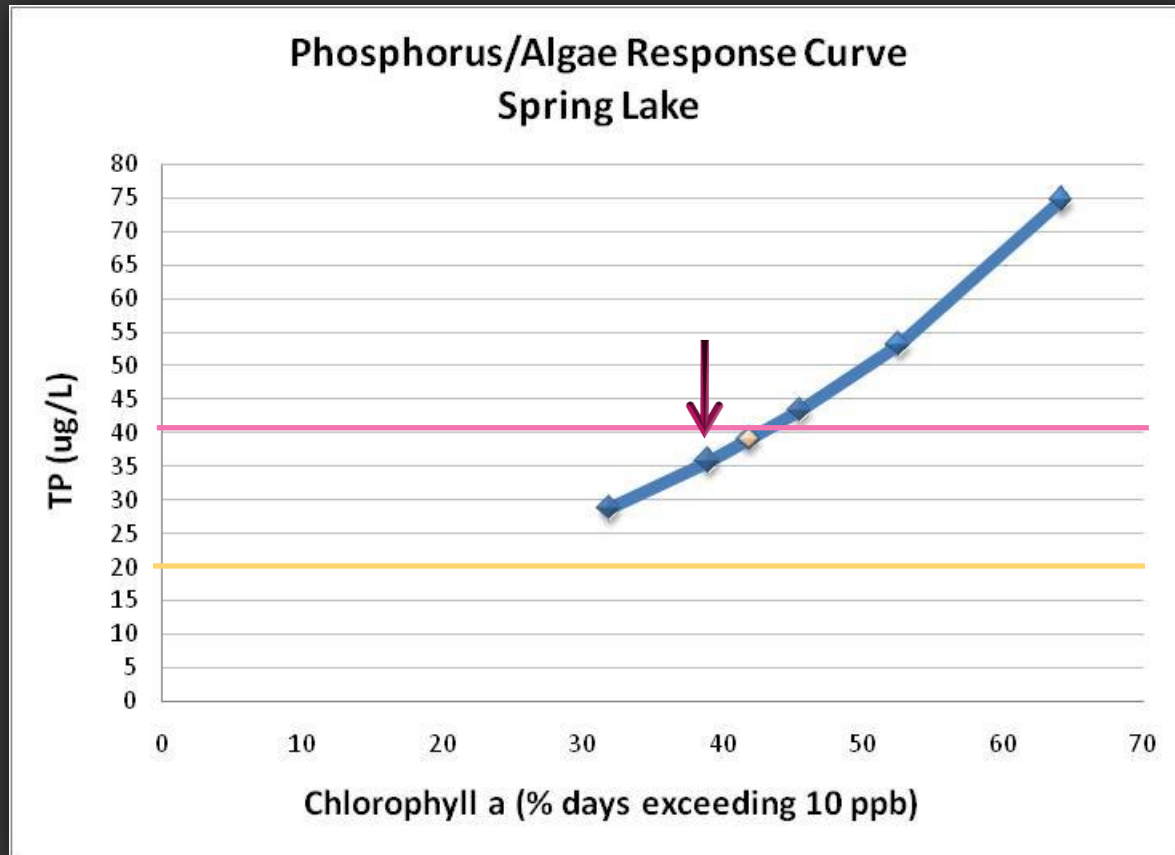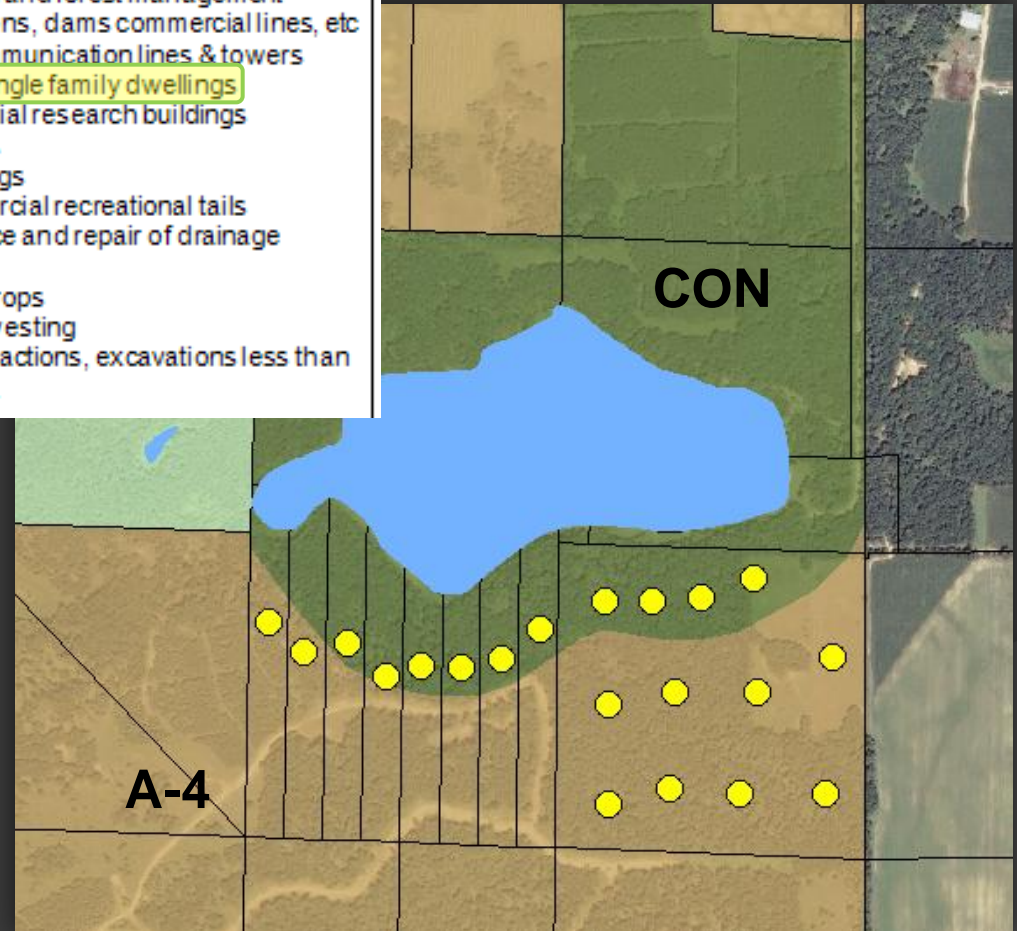ALBAN

NEW HOPE

STOCKTON

AMHERST

Policy Implications

Conservancy (CON) Min. lot size: 30,000 sq. ft.	1. Grazing 2. Wild crop harvesting 3. Hunting, fishing, trapping 4. Wildlife, fish and forest management 5. Power stations, dams commercial lines, etc 6. Utility & communication lines & towers 7. Seasonal single family dwellings 8. Nonresidential research buildings 9. Public parks 10. Boat landings 11. Noncommercial recreational tails 12. Maintenance and repair of drainage systems 13. Specialty crops 14. Timber harvesting 15. Ponds, extractions, excavations less than 30,000 sq. ft.

Questions