Developing a GIS tool to support resource management in the Upper Delaware Scenic & Recreational River corridor

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Dr. Claire A. Jantz	Director and Professor
Ms. Antonia Price	Project Coordinator
Mr. Alfonso Yáñez	GIS Analyst
Mr. Jonathon Chester	Student Fellow

Center for Land Use and Sustainability
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About the CLUS

- We are housed within the Department of Geography-Earth Science at Shippensburg University

- Vision: To become a nationally recognized interdisciplinary center that that leverages the expertise of SU faculty, staff, and students to promote sustainable land use, economic development, and communities at local, regional, and global scales.
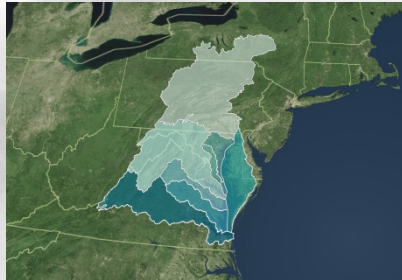
Areas of Expertise

- Geographic Information Systems
- Global Navigation Satellite Systems
- Physical and environmental sciences
- Land use planning, economics, and transportation
- Applied history and archaeology
- Sustainable business
- Community sustainability
- Grant writing and project management

Center for Land Use
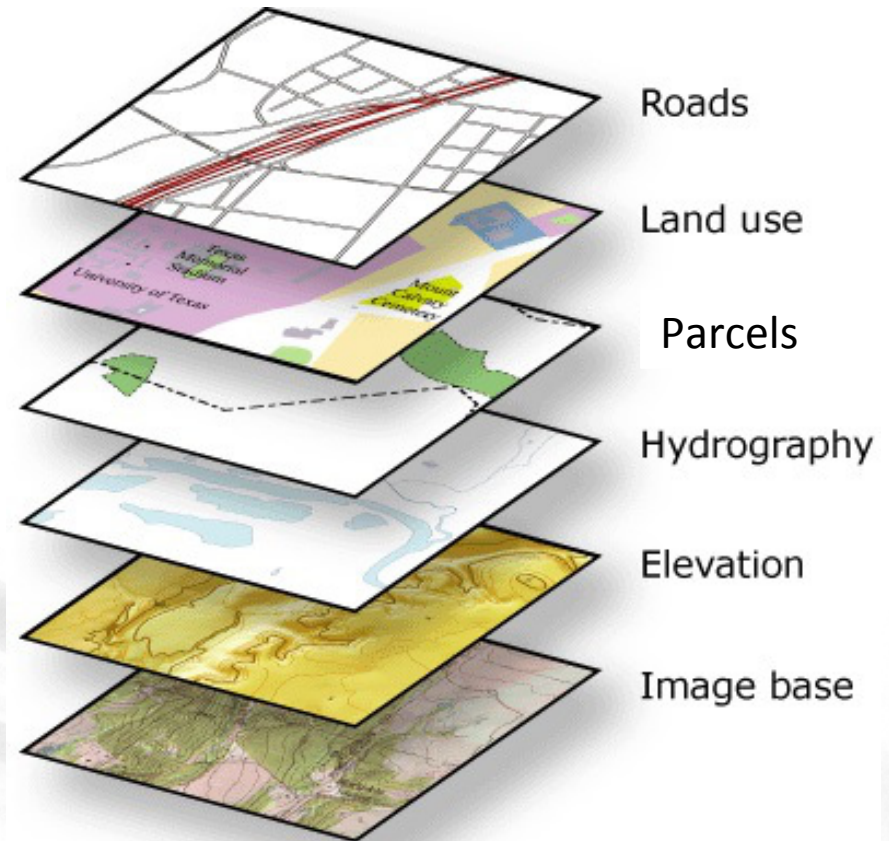and Sustainability
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What is GIS?

- A geographic information system (or GIS) is a system designed to capture, store, manipulate, analyze, manage, and present spatial or geographical data.

Ask

Acquire Data

Examine & Explore

Analyze

Act

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GIS and land use planning

- Customize the data that *you need*

- Visualize the data, *all in one place*

- Spatial overlays

Roads

Land use

Parcels

Hydrography

Elevation

Image base

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UPDE – CLUS partnership

- ***Our objective:*** To complete and launch an effective and efficient, on-line spatial decision support tool for substantial conformance and project review.

- ***Our target audience:*** The GIS tool will be used by the Upper Delaware Partners – local municipalities, counties, states, UDC, and NPS.

Ask

Acquire Data

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Act

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Substantial conformance & project review

Image source: S.L. Thol 2016

Target parcel

Is it in the corridor?

What municipality?

Scenic or recreational?

Damascus

Berlin

Atco

Recreational

Scenic

Narrowsburg

Darbytown
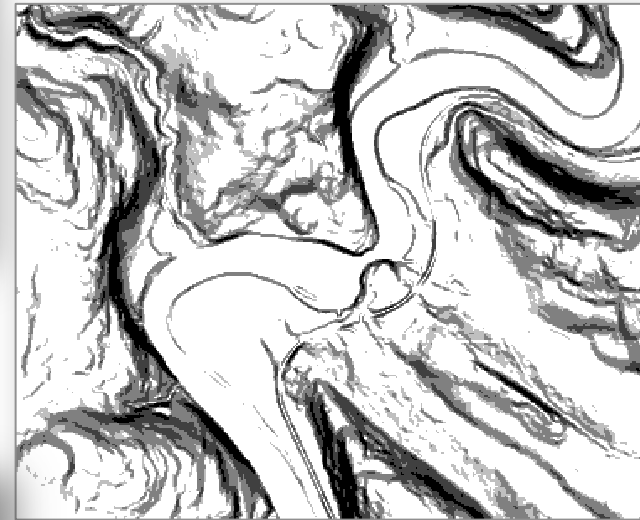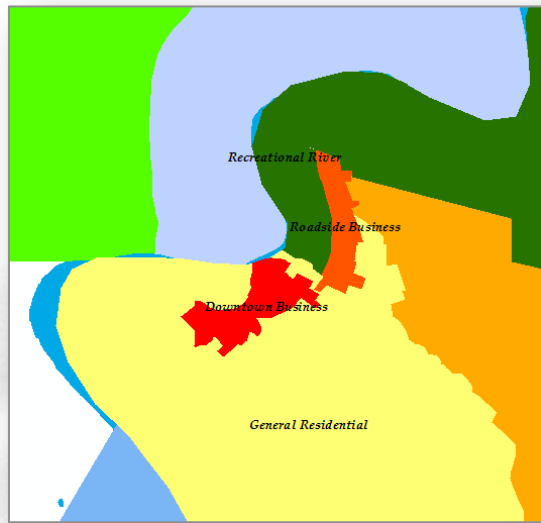
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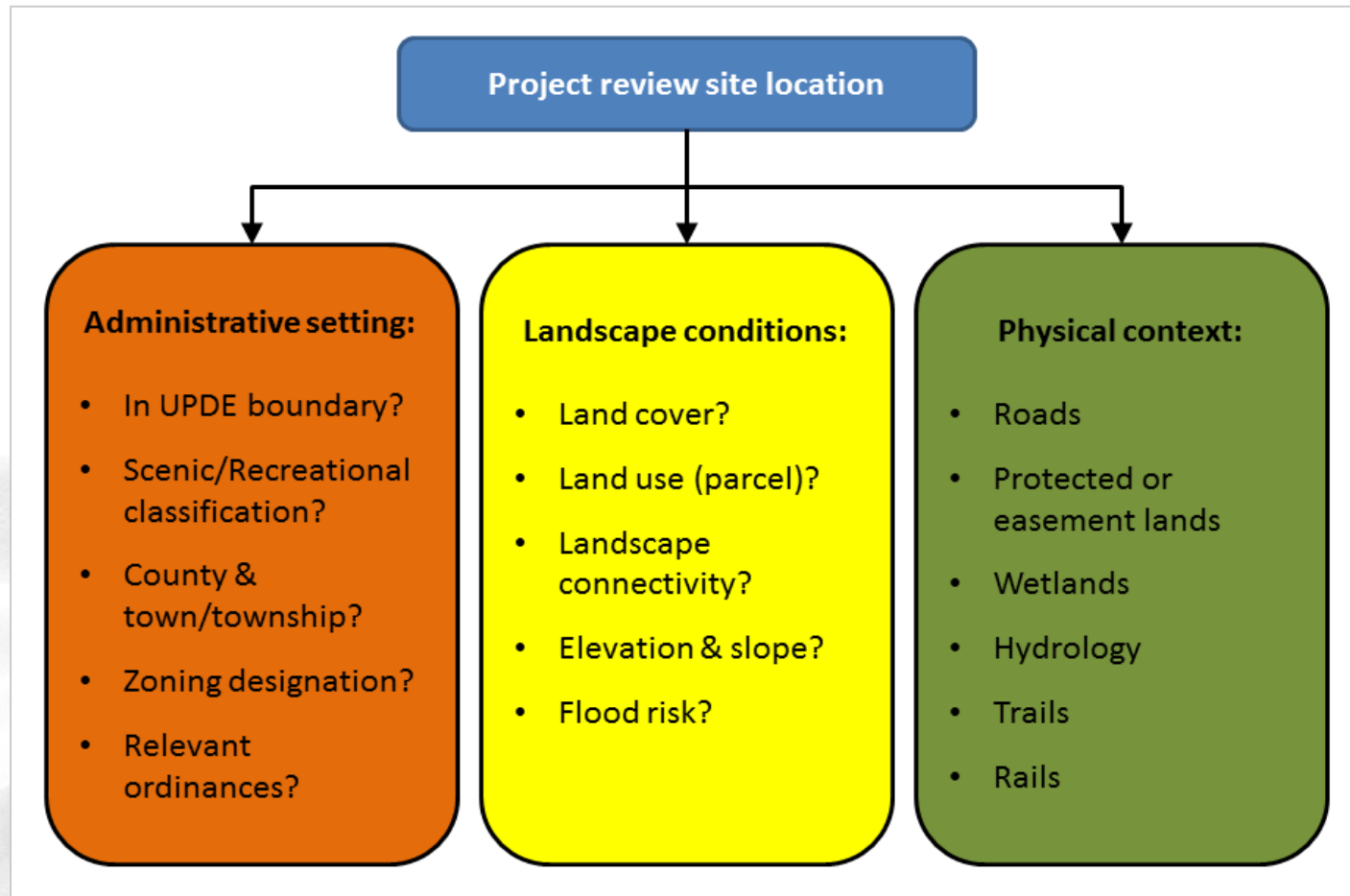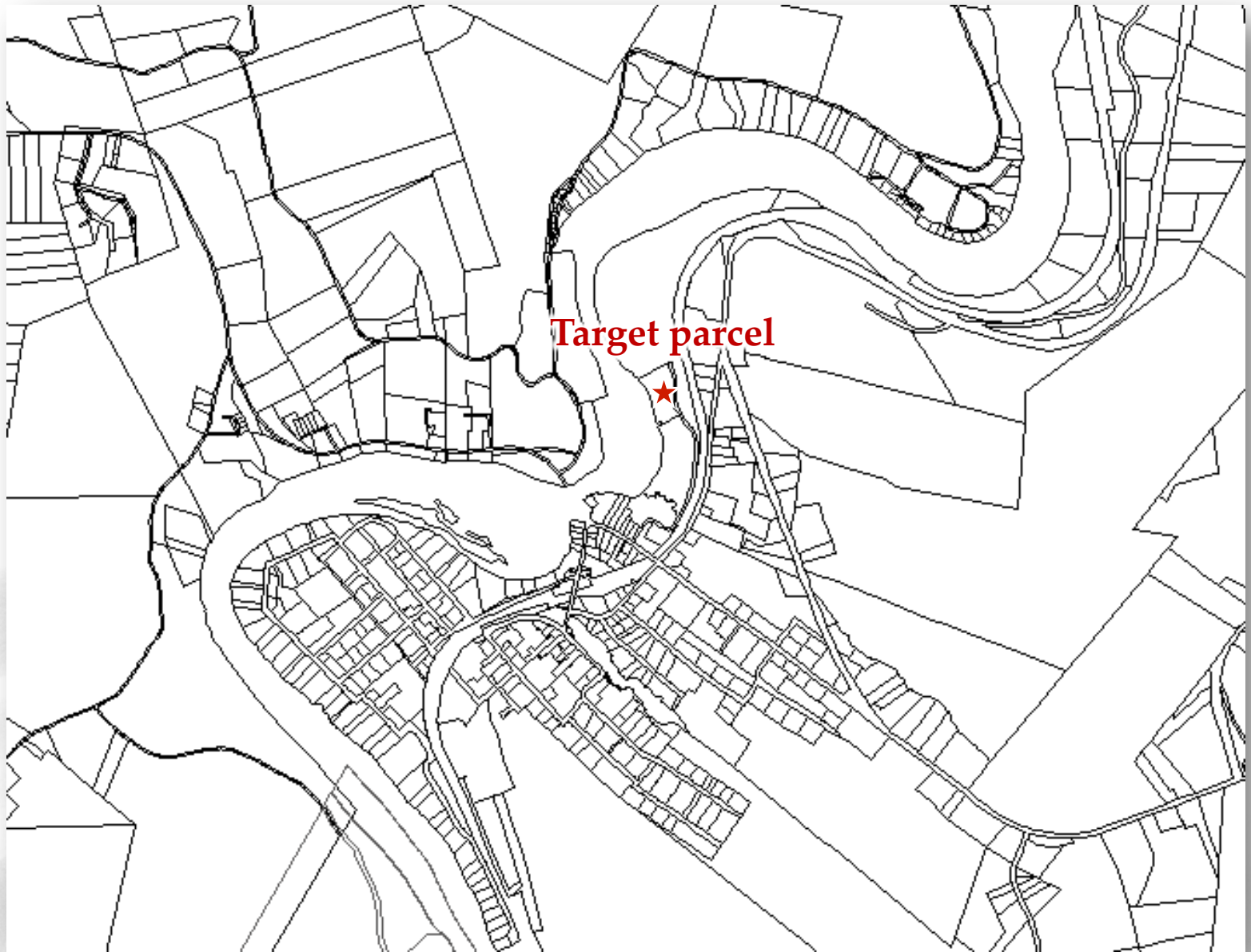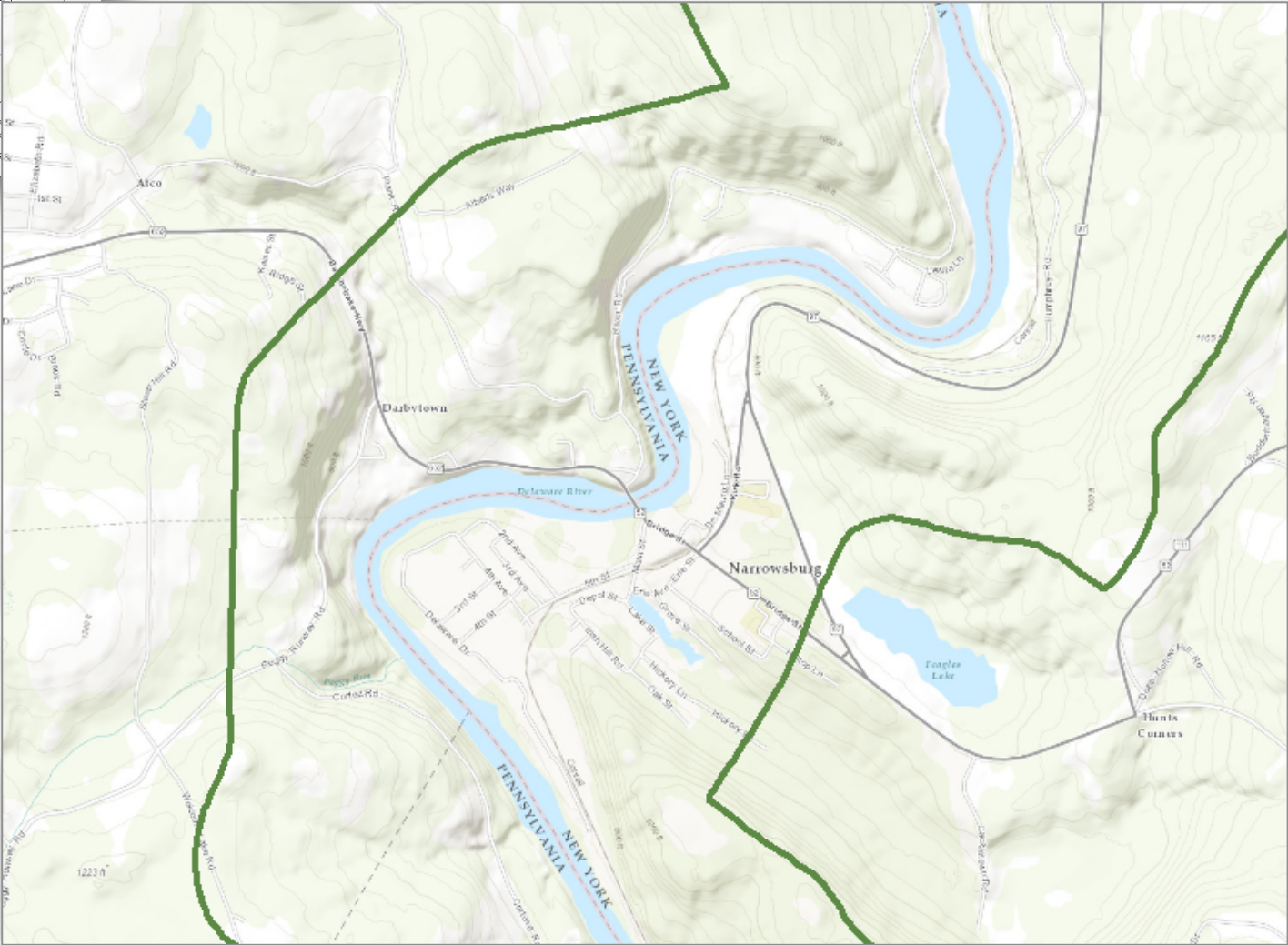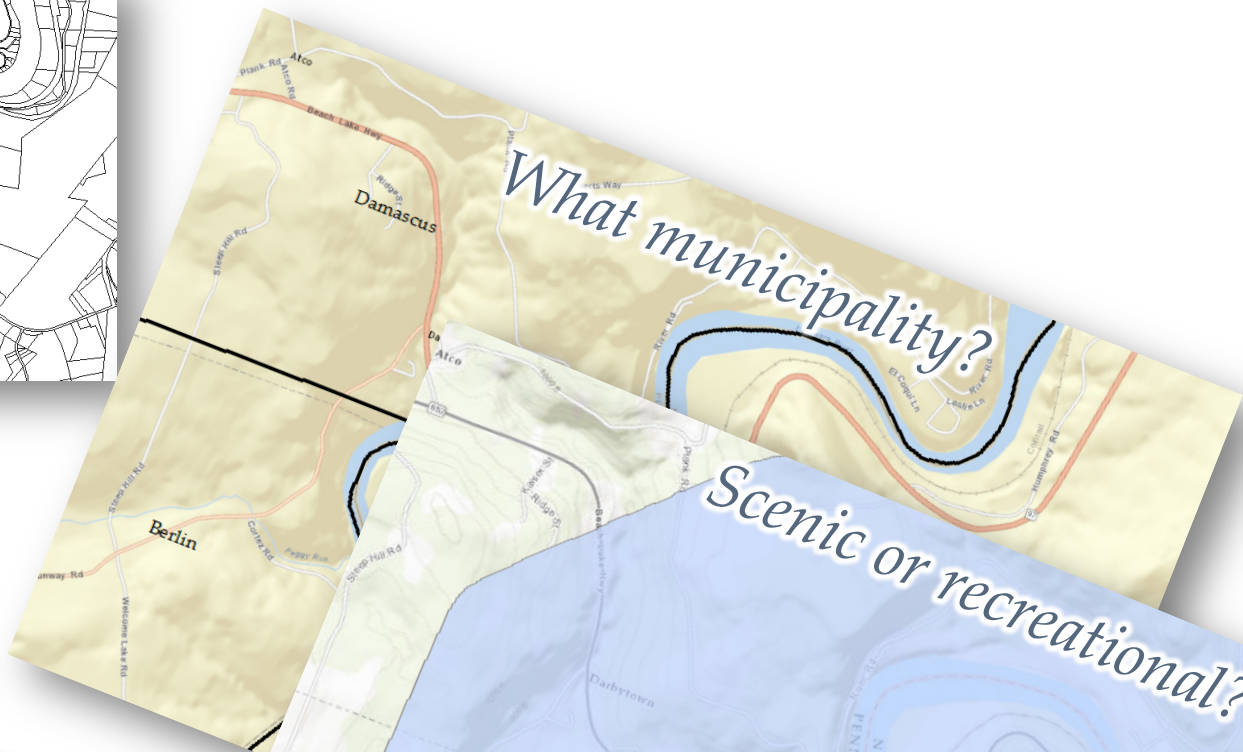
Are there wetlands?

Are there slopes >15%?

What is the zoning?

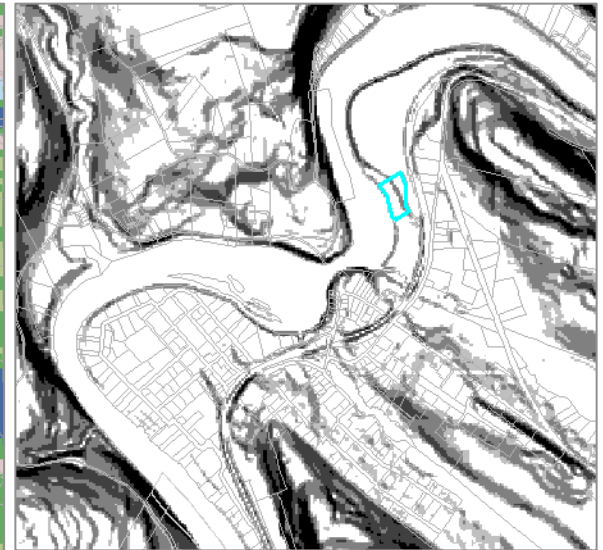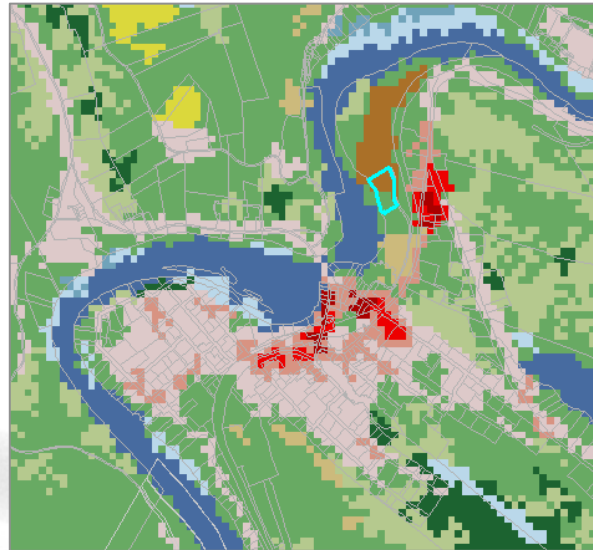Recreational River

Roadside Business

Downtown Business

General Residential

What is the land cover?
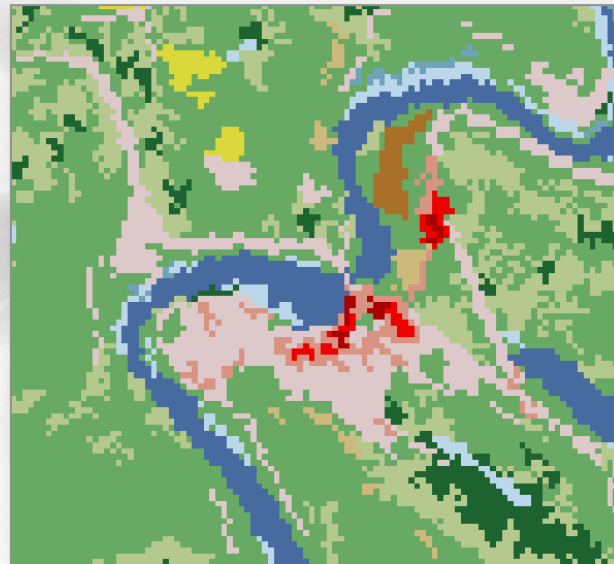
The GIS tool will allow for quick, easy, and accurate visual assessment
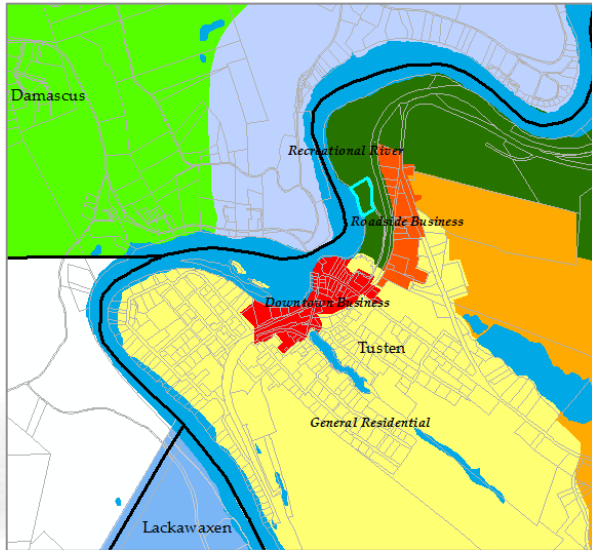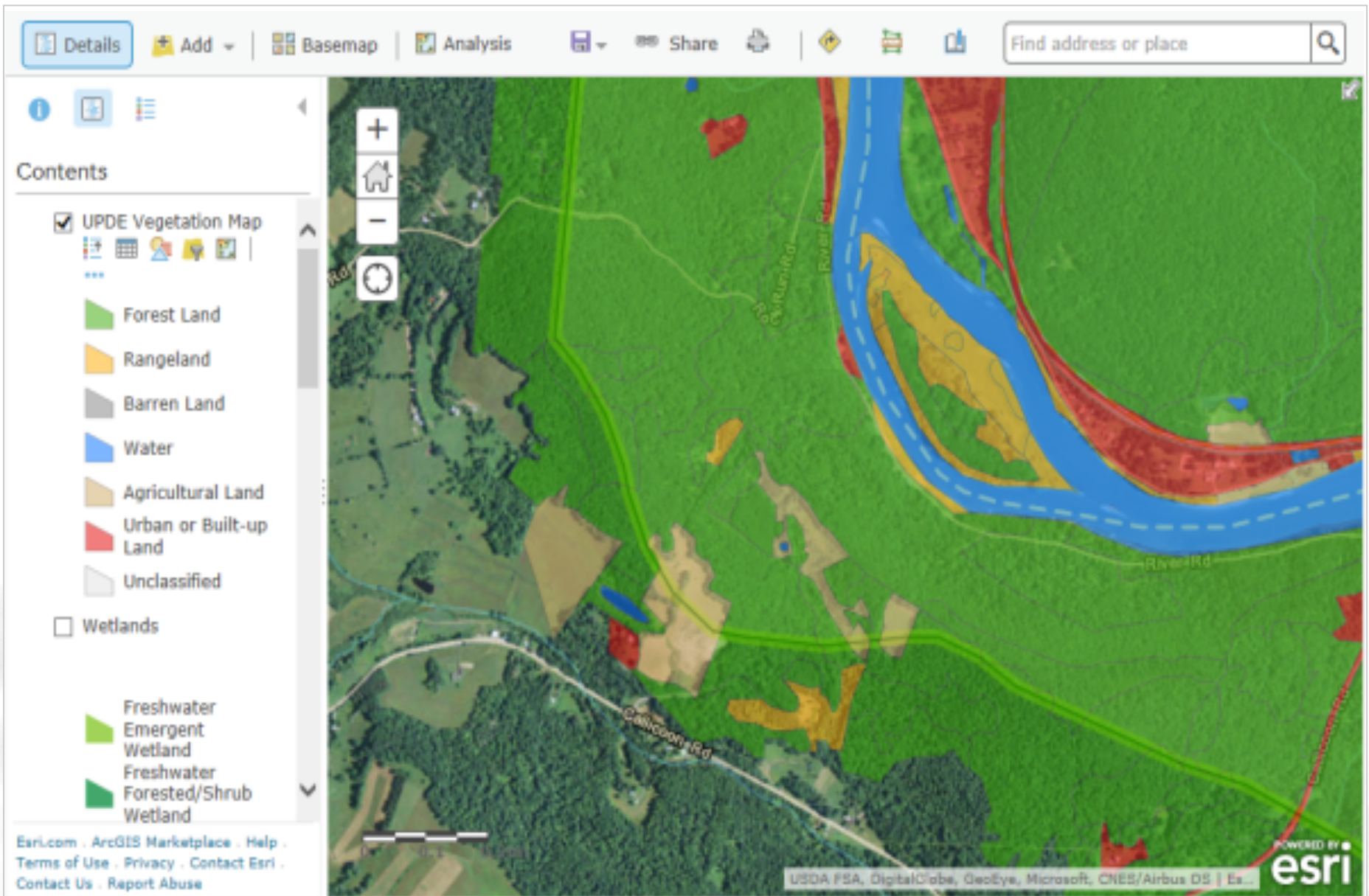
Image source: S.L. Thol 2016

Project background and origins

Developing a Geographic Information System for the Upper Delaware Scenic and Recreational River

Shannon L. Thol

GEOG 596B: Capstone Project Report

Advisor: Jim Detwiler

Spring, 2016

The Pennsylvania State University

Master of Geographic Information Systems Program

Moving forward: Project objectives

1. Collect, process, and create web services for data identified as essential components of UPDE's project review GIS.

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Information of interest	Required data	Data source
Street address? (for precisely locating sites)	911 point shapefiles	Upper Delaware counties and towns/townships
In UPDE boundary?	UPDE boundary shapefile	National Park Service
Scenic/recreational classification?	Scenic and recreational segments shapefile	National Park Service
County & town/township?	County & county subdivisions shapefiles	U.S. Census Bureau
Zoning designation?	Zoning maps/shapefiles	Upper Delaware counties and towns/townships
Relevant ordinances?	Zoning codes and ordinances	Upper Delaware counties and towns/townships
Vegetation land cover?	Vegetation map shapefile	National Park Service
Other land cover?	Discrete land cover rasters	USGS National Land Cover Dataset
Land use (parcel)?	Tax parcel shapefiles	Upper Delaware counties and townships
Elevation and slope?	Slope raster derived from DEM	USGS National Elevation Dataset
Flood risk?	Flood insurance rate maps and shapefiles	FEMA
Proximate roads and rails?	TIGER/Line® road and rail shapefiles	U.S. Census Bureau
Proximate public lands?	Protected Areas Data shapefile	USGS National Gap Analysis Program
Proximate wetlands?	National Wetland Inventory shapefile	US Fish and Wildlife Service
Proximate hydrology?	National Hydrography Dataset shapefiles	USGS
Landscape context?	Satellite images/aerial photos/topographic base maps	Esri

Moving forward: Project objectives

1. Collect, process, and create web services for data identified as essential components of UPDE's project review GIS.

2. Complete development of a webmapping application for UPDE's project review GIS.

3. Roll out and technical support for implementation

4. Maintain UPDE's project review GIS system so that it remains up to date and relevant.

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Project contacts

At CLUS:

Ms. Antonia Price

Project Coordinator

afprice@ship.edu

717-477-1519

Dr. Claire Jantz

Project Director

cajant@ship.edu

717-477-1399

At NPS:

Ms. Carla Hahn

Park Ranger, Management

Upper Delaware Scenic and Recreational River

carla_hahn@nps.gov

570-729-8251 X2226

http://centerforlanduse.org/projects/upde/

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January 5, 2017 | Upper Delaware Council | Narrowsburg, NY

Thank you!