Geographic Information Systems (GIS)

What is it and how can it benefit your municipality

Glenda Prentiss
GIS Coordinator

Richard Crowther
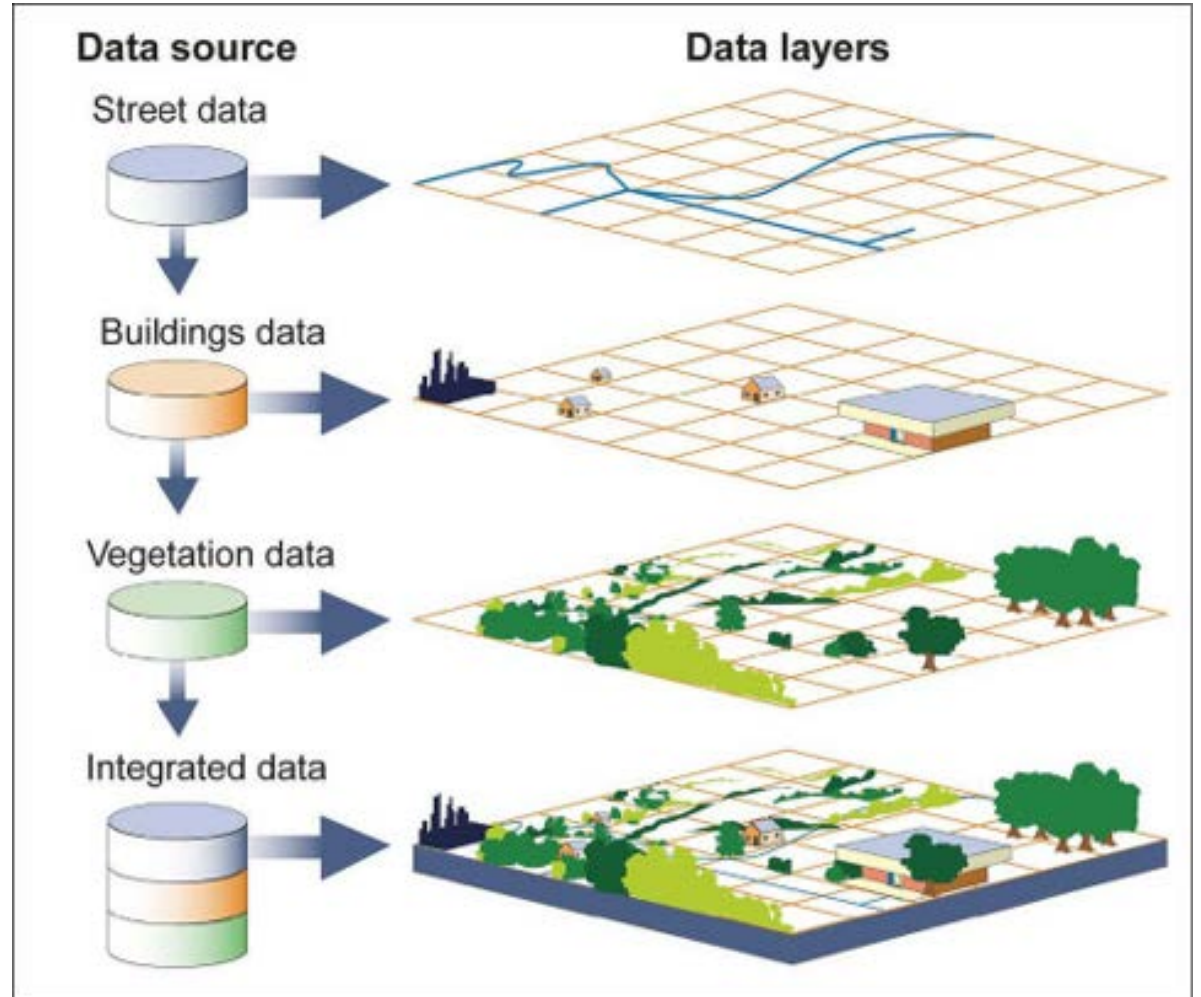Senior GIS Analyst

NAUGATUCK VALLEY
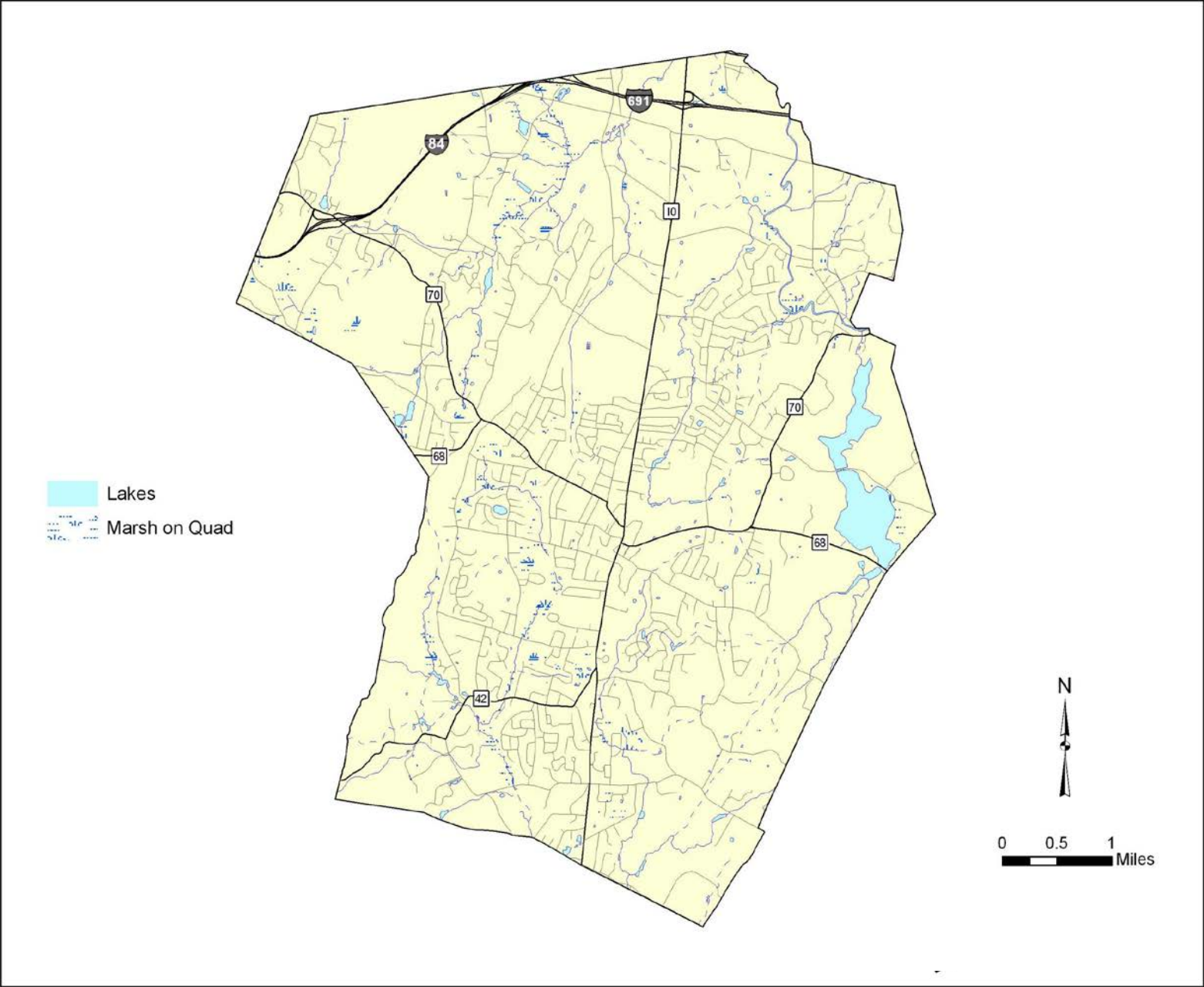**COUNCIL of GOVERNMENTS**

What is GIS?

GIS is a spatial system that creates, analyzes, and maps all types of data.

- Map information is stored in layers

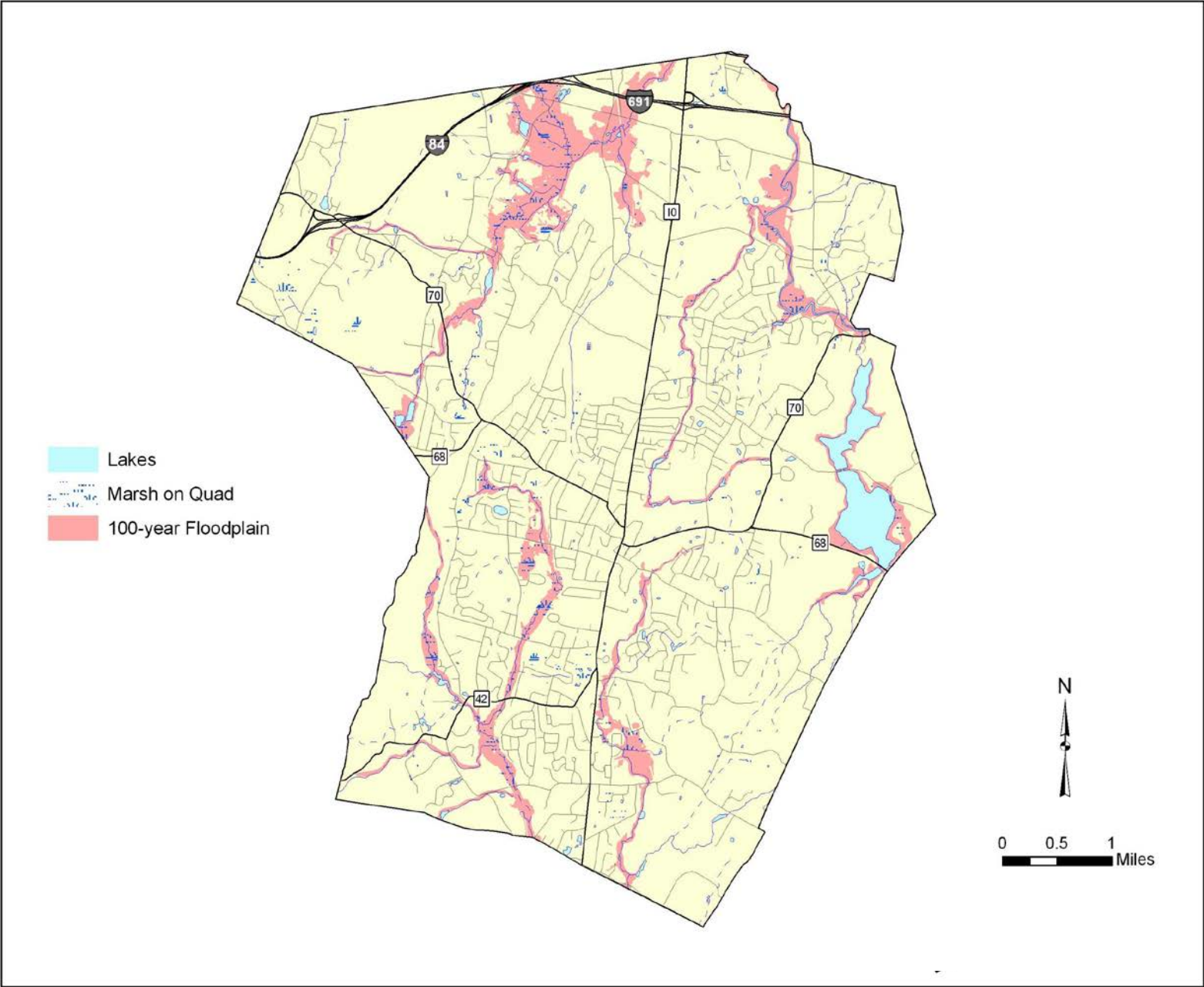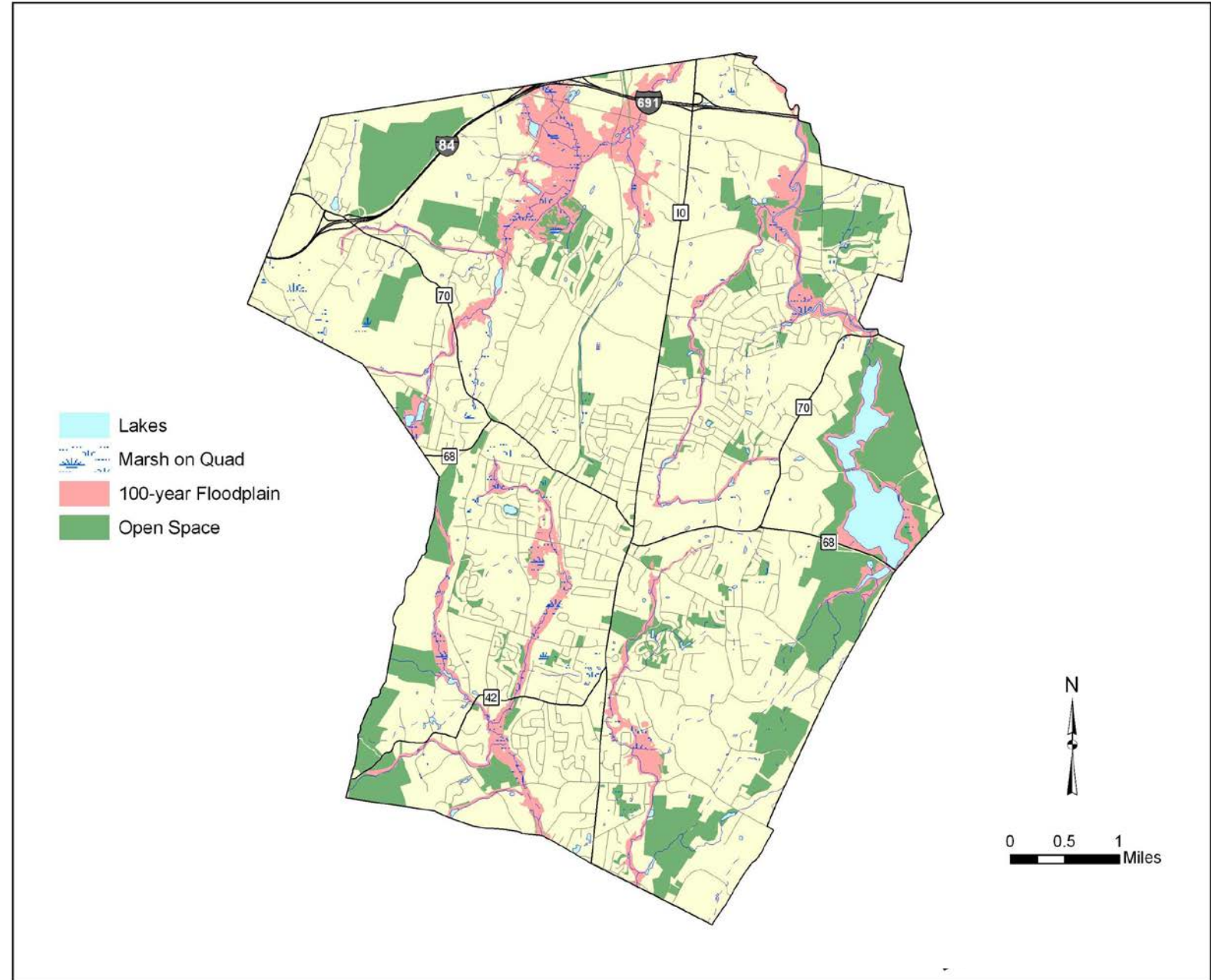- Reveals patterns and assists users in decision-making.


Source: GAO.

- Streets and Water features

- Streets and Water features
- Floodplains

- Streets and Water features
- Floodplains
- Open space

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- Streets and Water features
- Floodplains
- Open space
- Wetlands
- Aquifer Protection Areas
- Natural Diversity Database
- Archeology Sites
- Historic Buildings

Lakes
Marsh on Quad
100-year Floodplain
Open Space
Wetland Soils
Aquifer Protection Areas
Natural Diversity Database Area
Archeology Sites
Historic Building

NAUGATUCK VALLEY
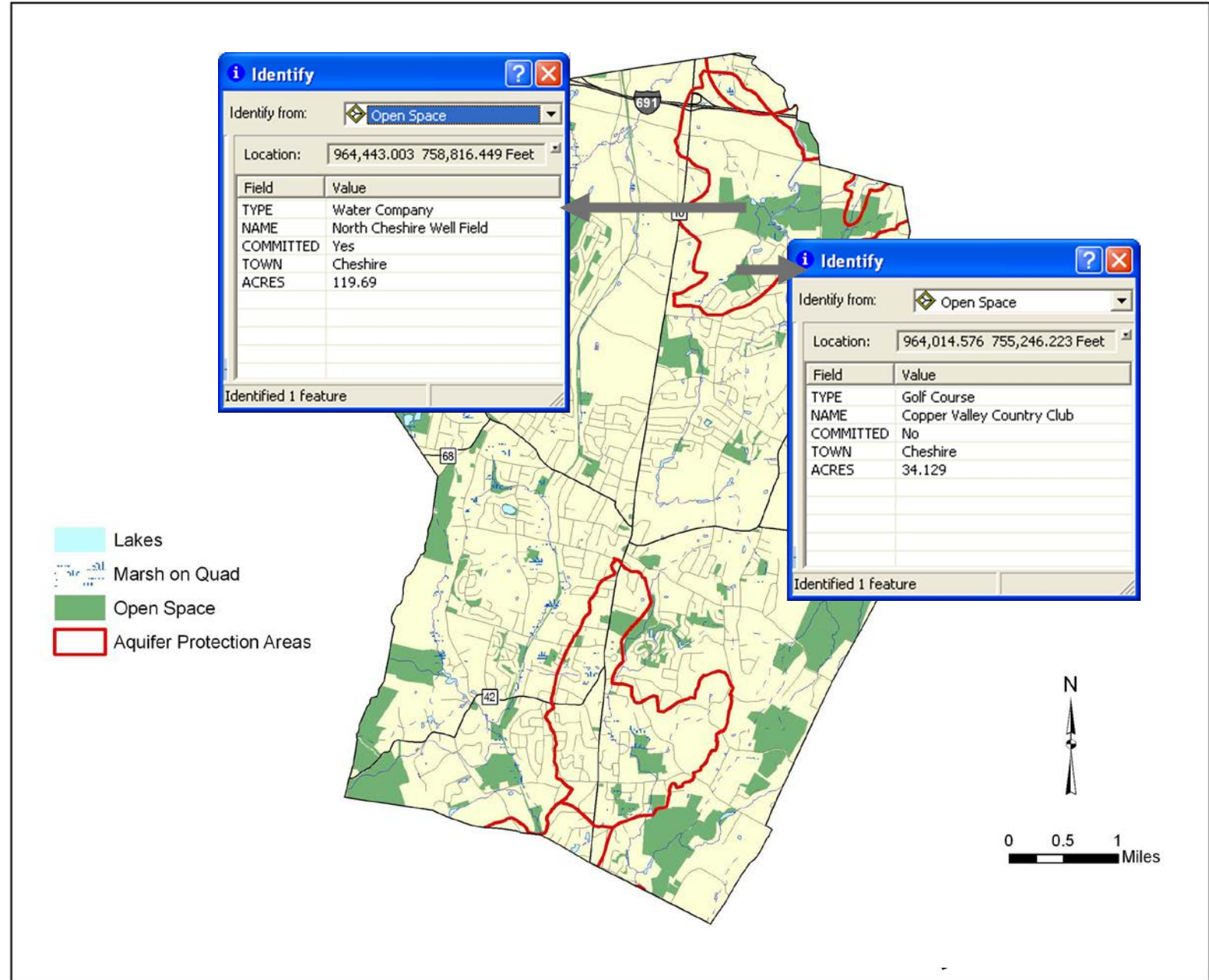COUNCIL of GOVERNMENTS
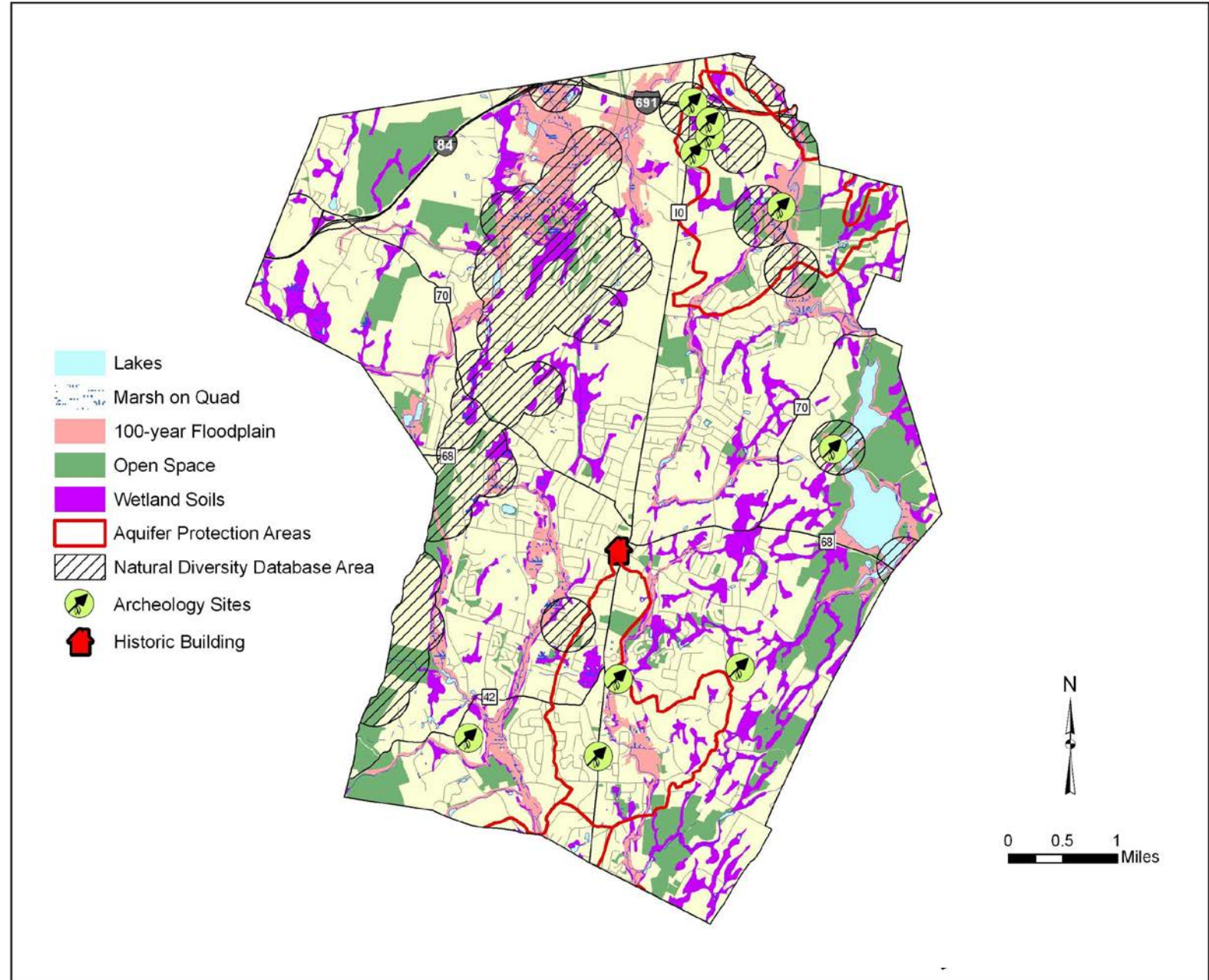
GIS Maps are More Than Pictures

A GIS is an "information system"

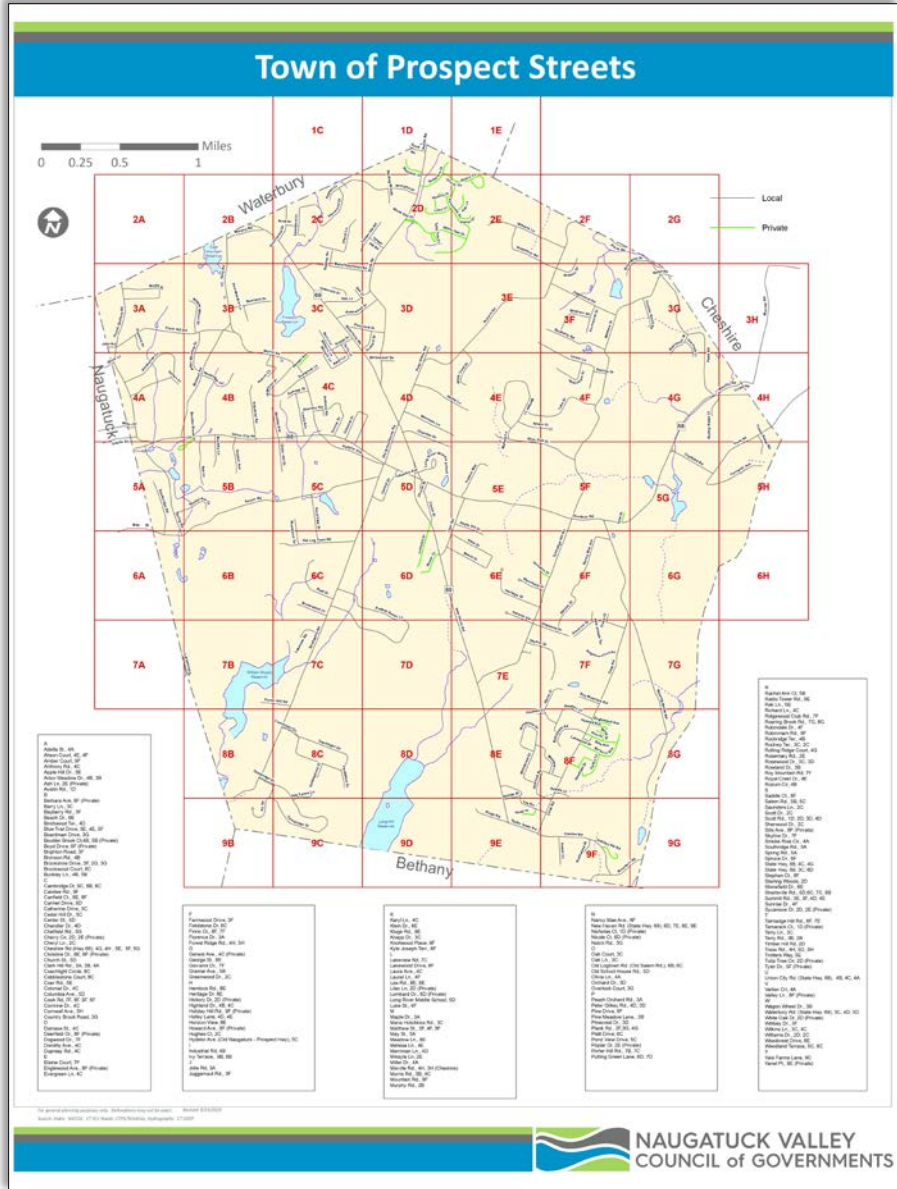Map layers are connected to descriptive database information (attributes.)

You can access this linked data by clicking on a feature when using an interactive viewer.
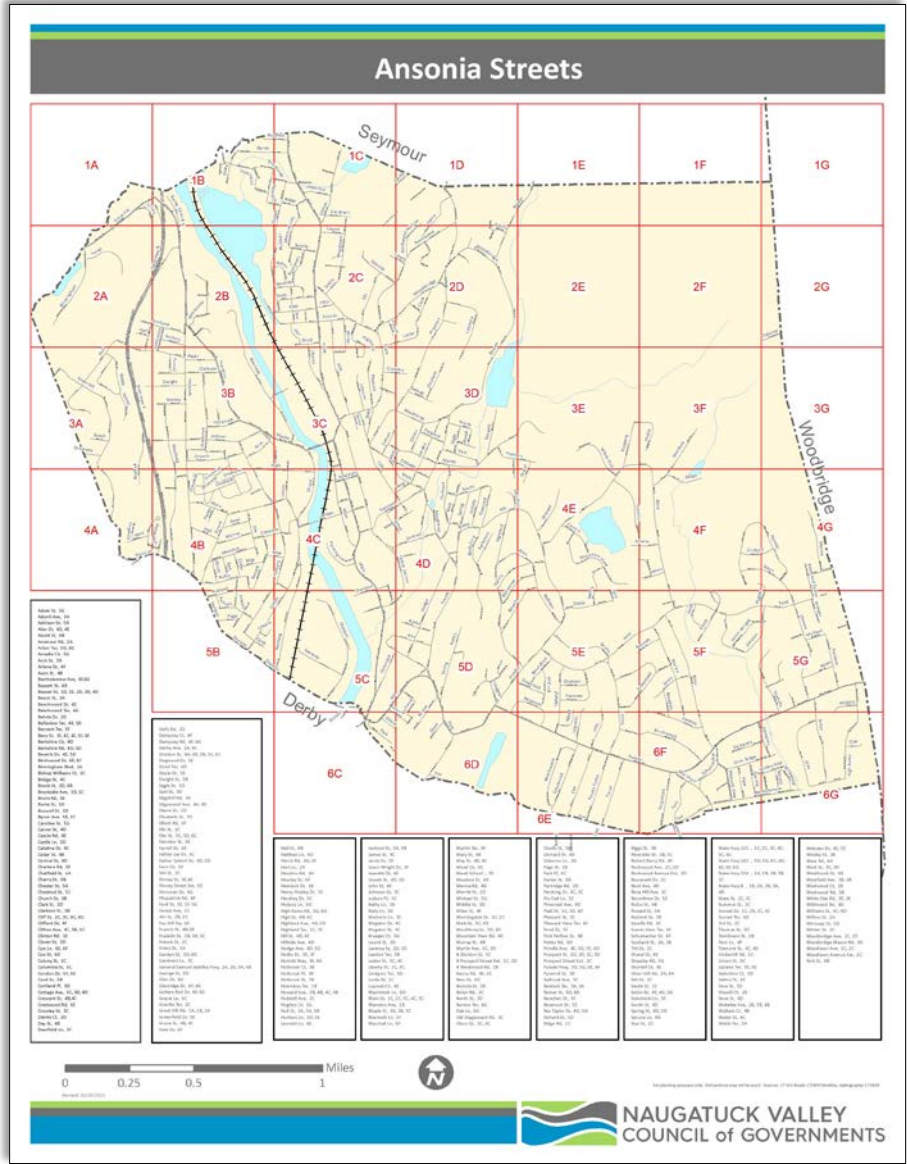
Municipal Assistance

- Create maps
- Data Collection
- Data and Spatial Analysis
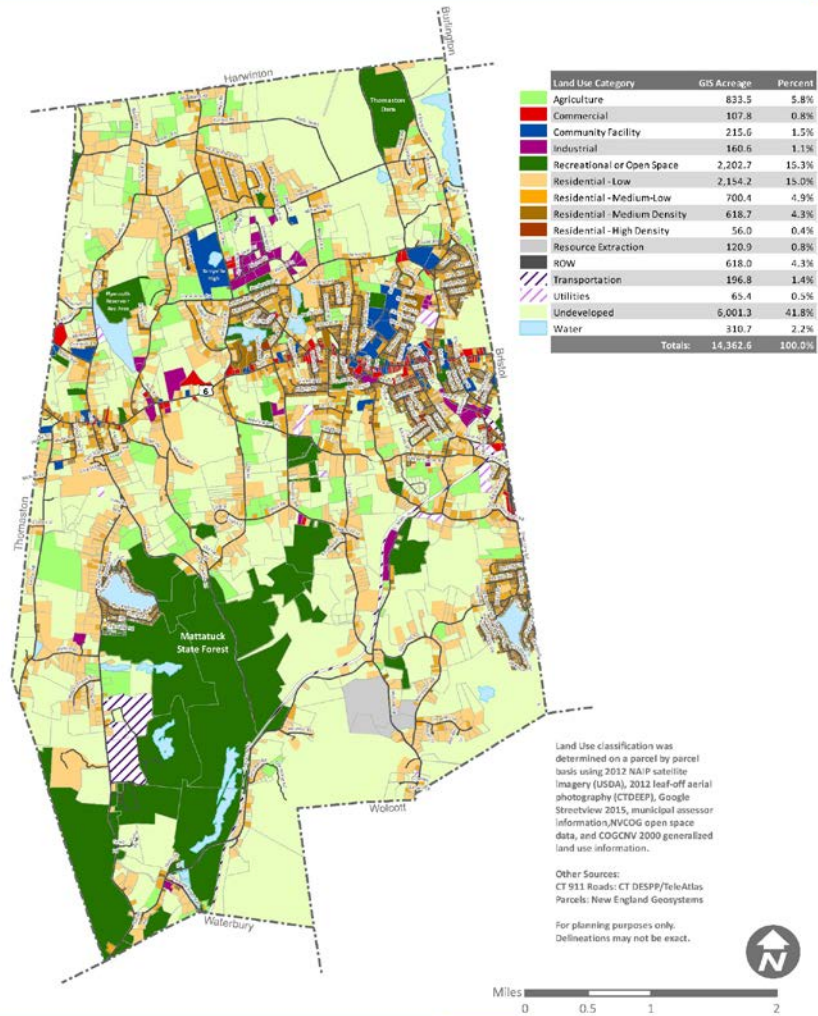- GIS Project Guidance
- Regional GIS service
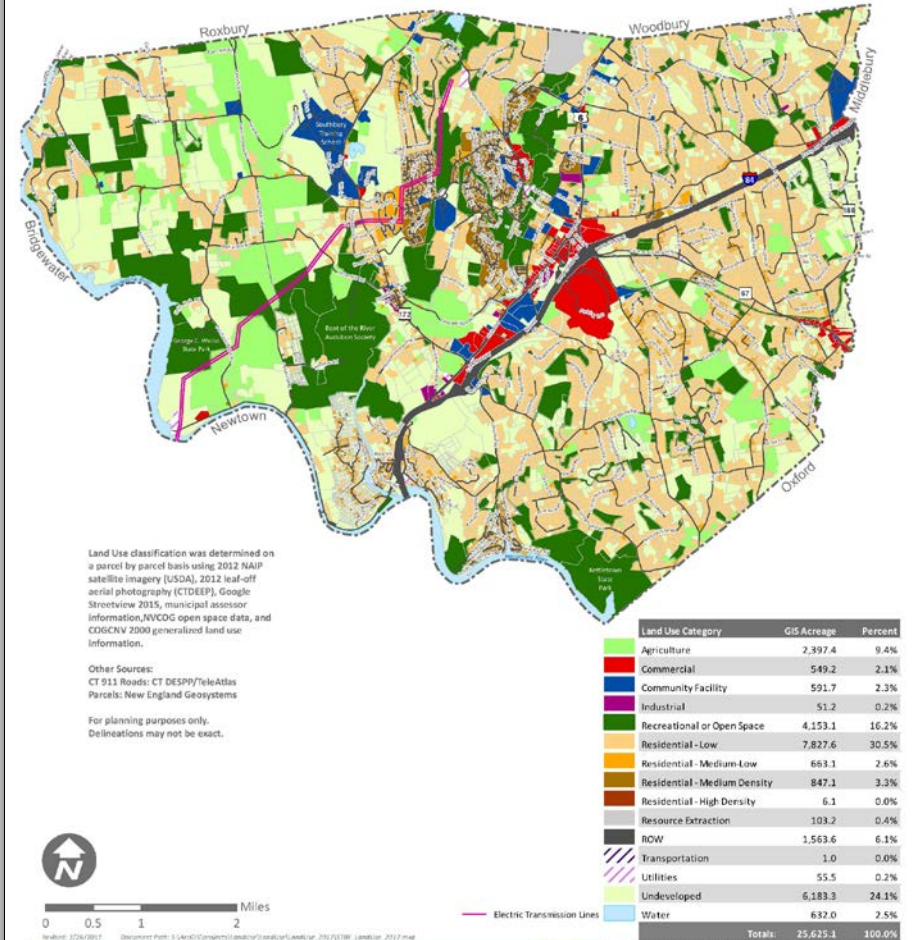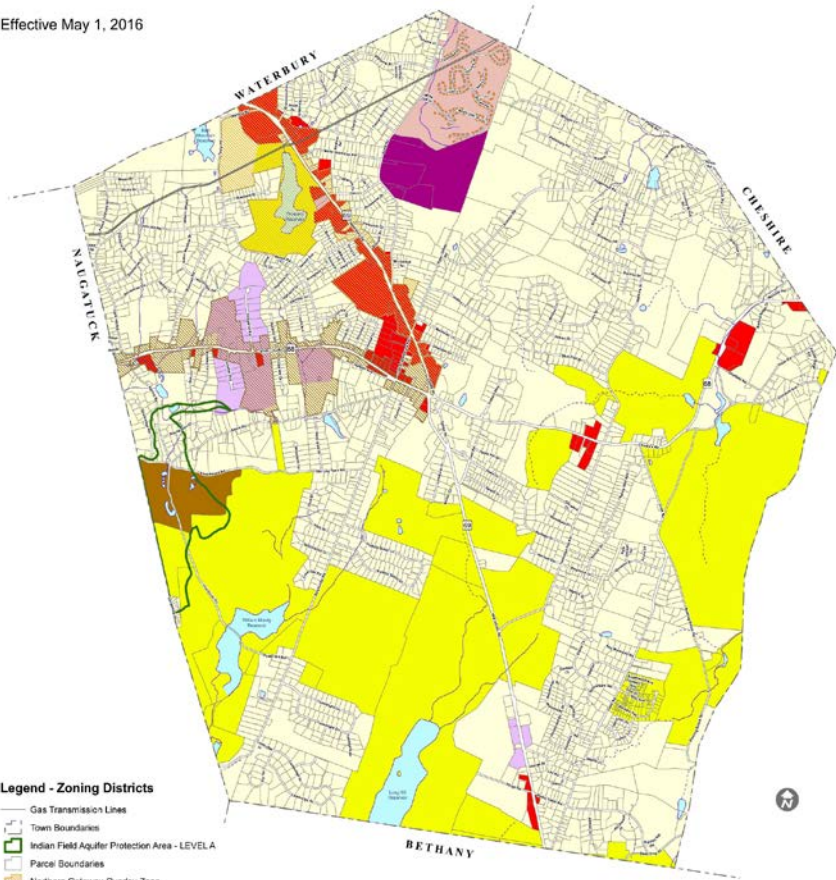
Town-wide Assistance

Street Grid

Land Use Planning

Existing Land Use
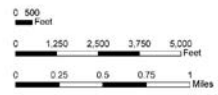
Land Use Planning

Zoning
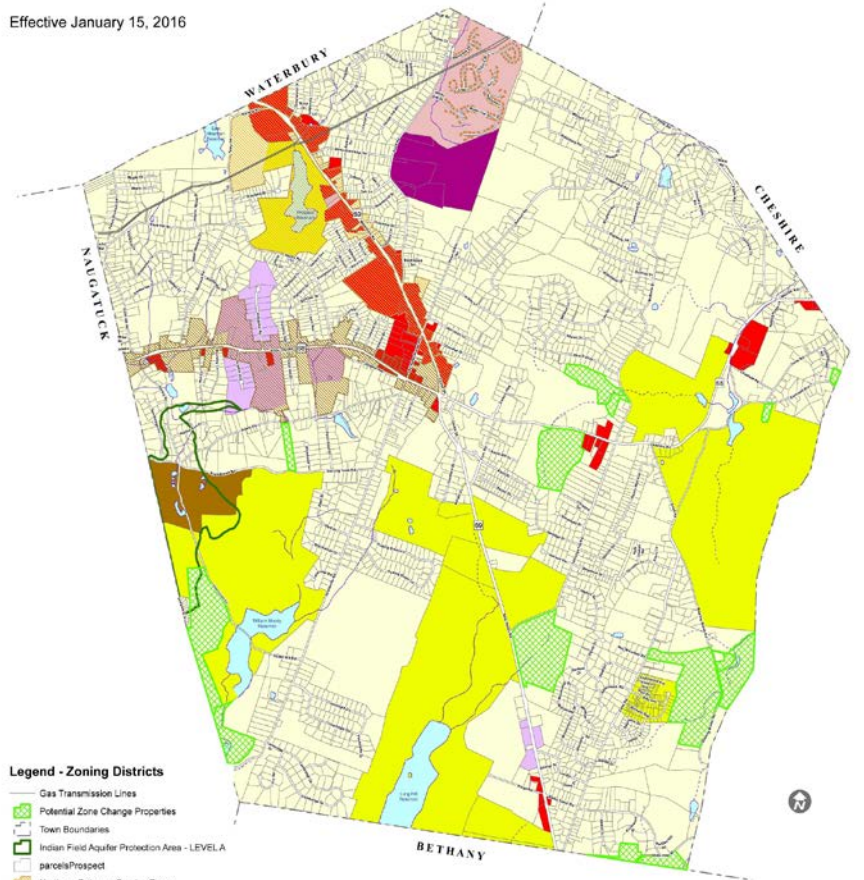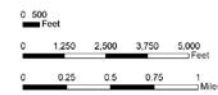
Bethlehem Contours & Elevation
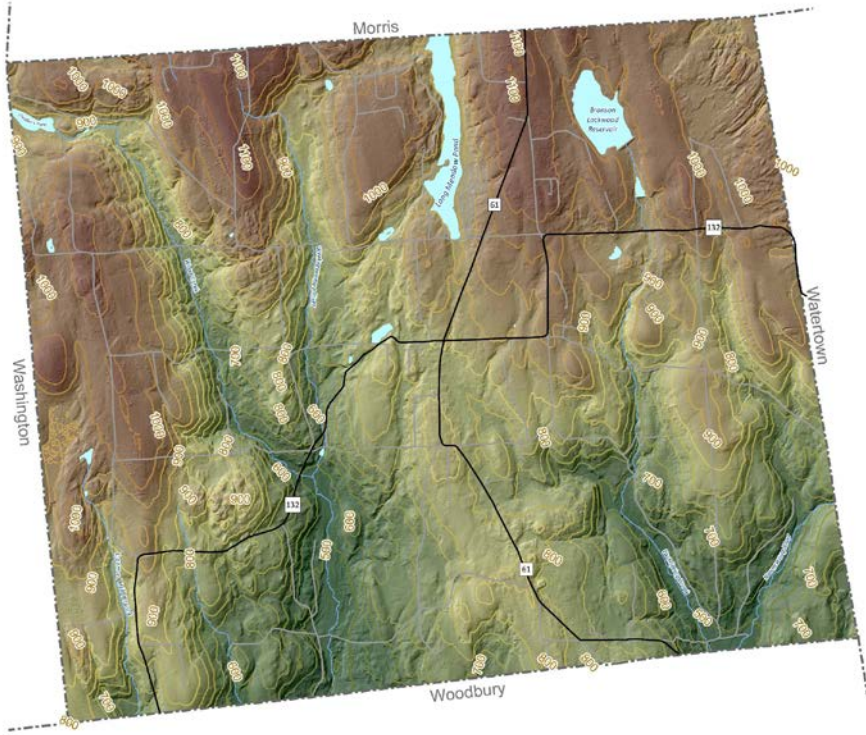
Land Use Planning

Plans of Conservation and Development

Bethlehem Farmland Soils

Public Works

Map the location of critical infrastructure such as :

- **Sewer Systems**
- Water pipelines and service area
- Utility Poles
- Outfalls
- Catch Basins
- Street Signs
- Trees
- Road Maintenance
- Snow Plow Routes

Middlebury Parcels with Sewer Status

Public Works

Map the location of critical infrastructure such as :

- Sewer Systems
- Water pipelines and service area
- Utility Poles
- **Outfalls**
- Catch Basins
- Street Signs
- Trees
- Road Maintenance
- Snow Plow Routes

Prospect Storm Water Outfalls

Public Works

Map the location of critical infrastructure such as :

- Sewer Systems
- Water pipelines and service area
- Utility Poles
- Outfalls
- Catch Basins
- Street Signs
- Trees
- **Road Maintenance**
- Snow Plow Routes

Environmental Planning

Identify areas that are environmentally sensitive and require protection.
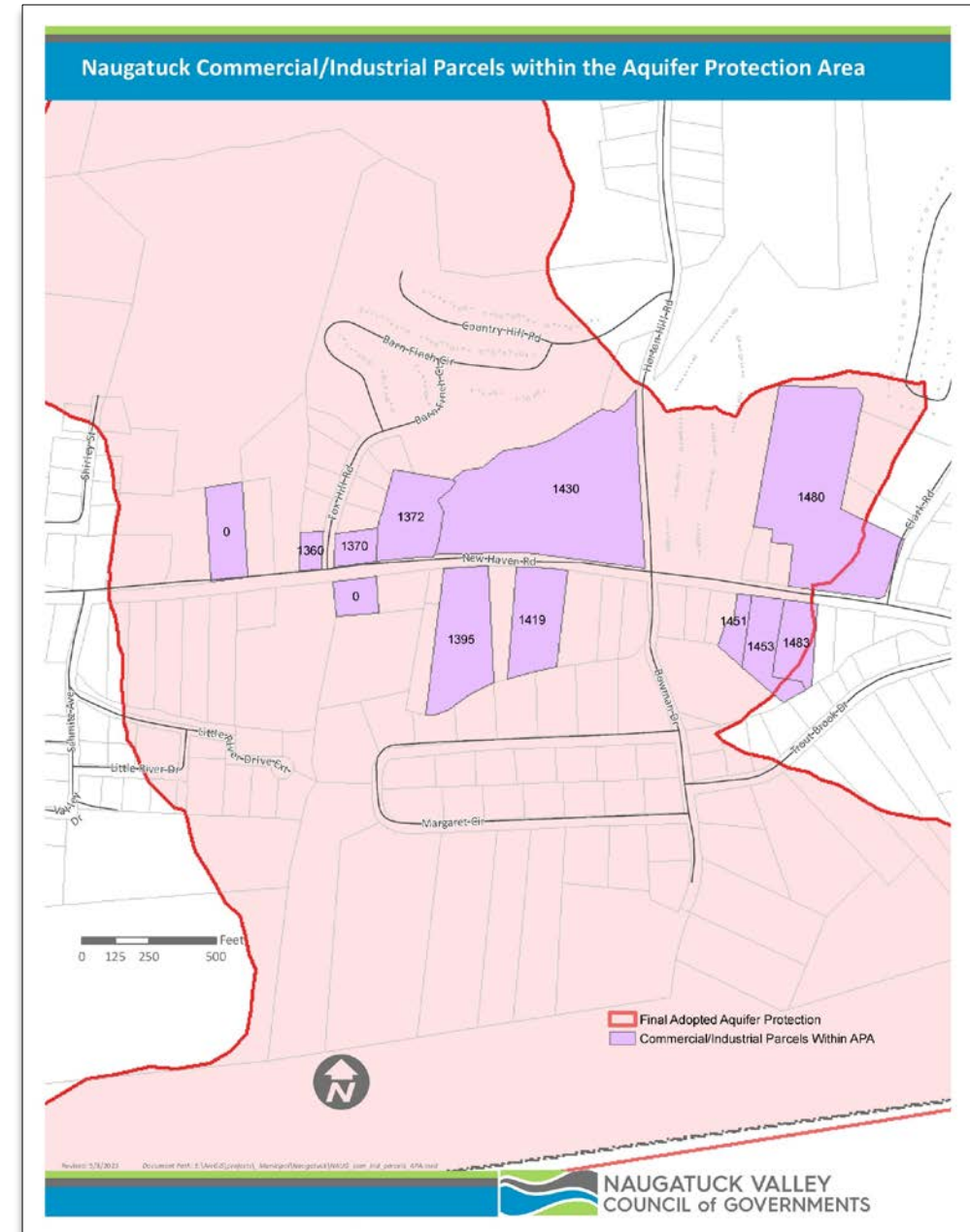
Environmental Planning

By layering flood plains over parcel boundaries, we can see whether a particular parcel is in a flood zone.
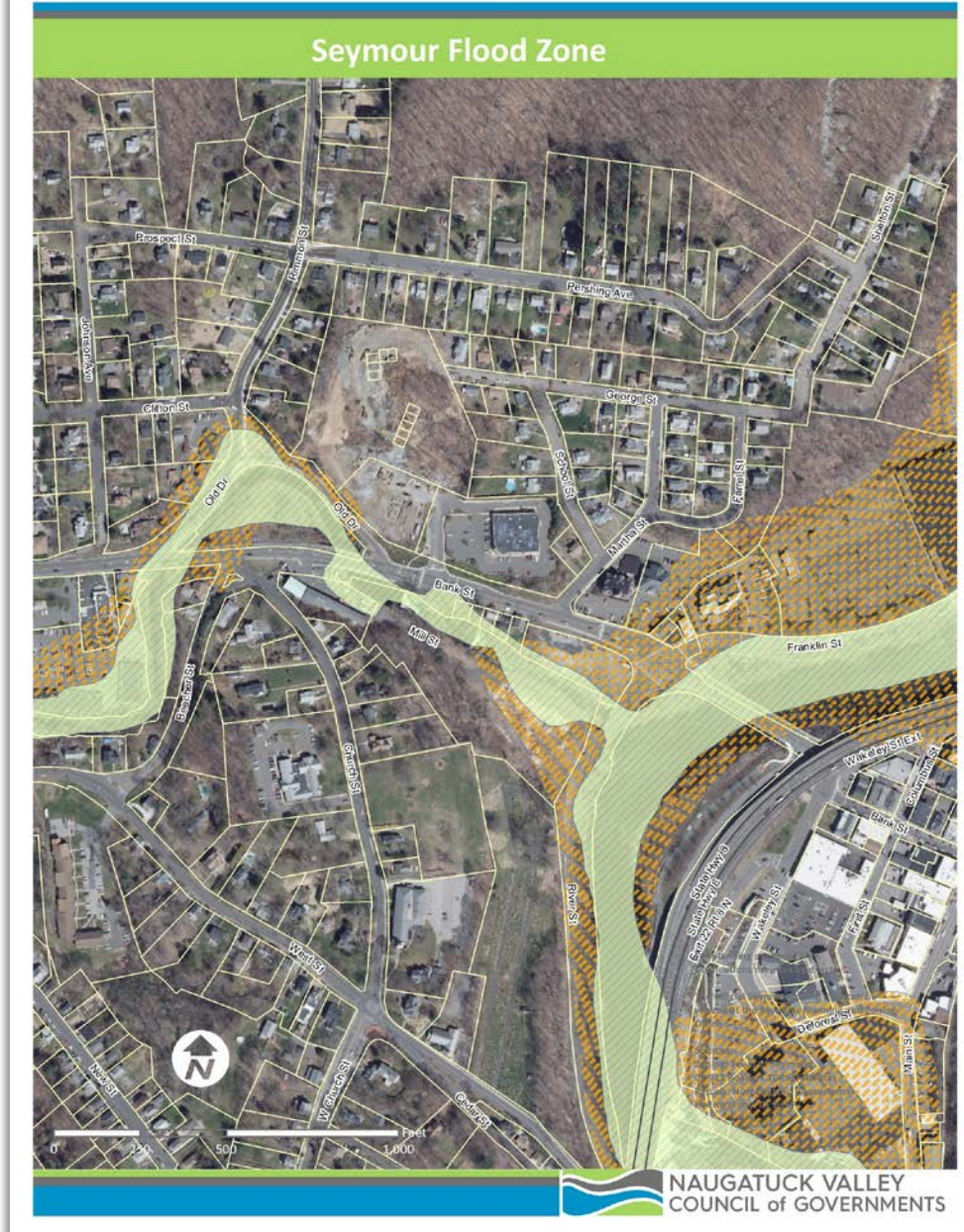
Open Space Planning/Grant Applications
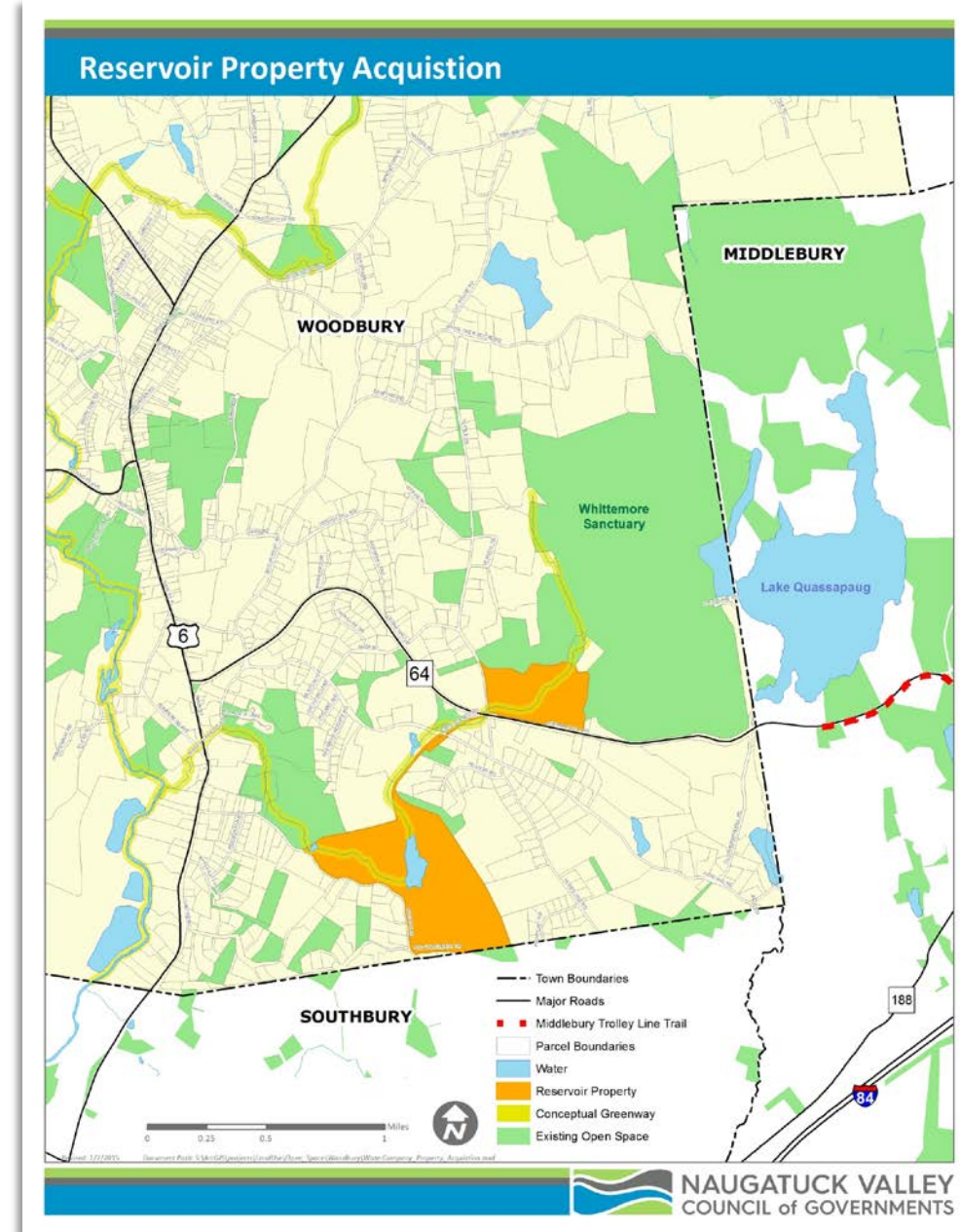
Open Space Planning/Grant Applications

Trail Planning

Naugatuck River Greenway Trailhead and Trail - Thomaston

Branch Brook Trail
Mattatuck Trail
Future NRG Trail Expansion along Old Waterbury Rd.
Funded - New Trailhead 13 Spaces + Overflow
Existing Unblazed Trail Follows Waterbury ROW
Branch Brook
Funded - New Stone Dust Multiuse Trail Section
Proposed New Bridge Location
Thomaston WPCA
Naugatuck River
Mattatuck Trail
Transfer Station
Existing Unblazed Trail to be Developed as NRG South of New Bridge
Mattatuck Trail
8
Old Trolley Bridge
N
Feet
0   125   250   500

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Trail Planning

Proposed Trails

Wolcott Preliminary Trail Evaluations

Mattatuck Trail
Connection to Peterson Park/ Mattatuck Trail
Woodtick Recreation Area/Trail
New Open Space and Potential Trail(s)

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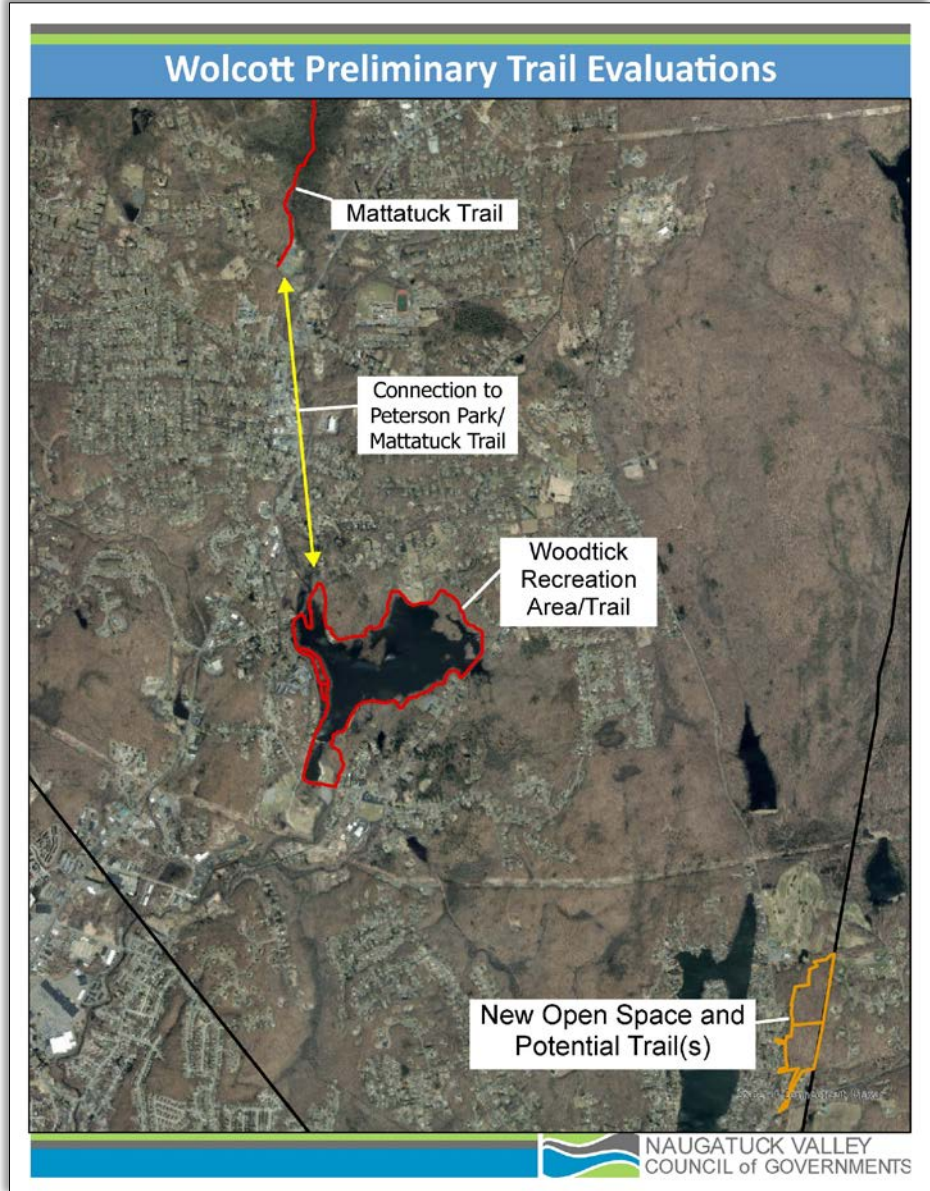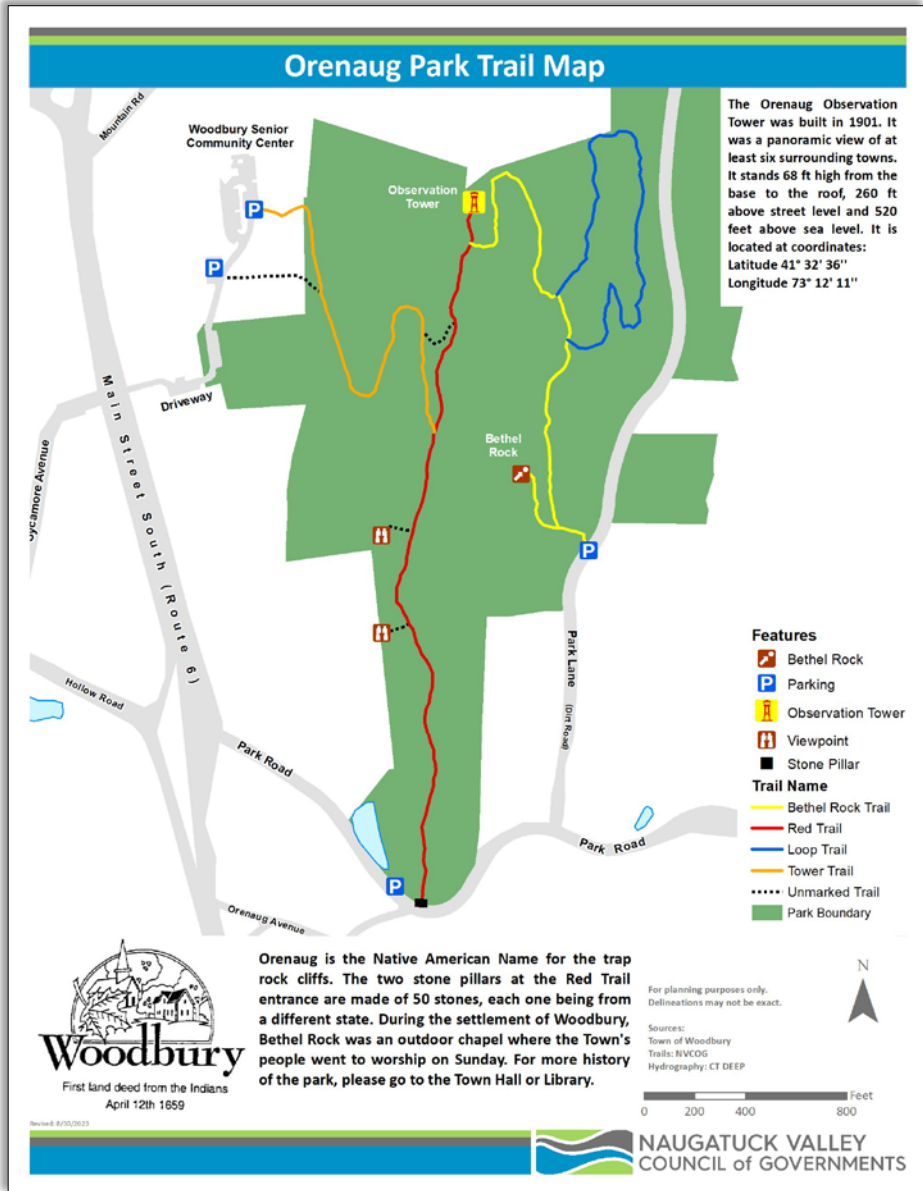
Park & Rec

Existing Trails

Wards
City of Ansonia, CT

Ward	Population
Ward 1	2,945
Ward 2	2,730
Ward 3	2,875
Ward 4	2,385
Ward 5	2,782
Ward 6	2,554
Ward 7	2,647
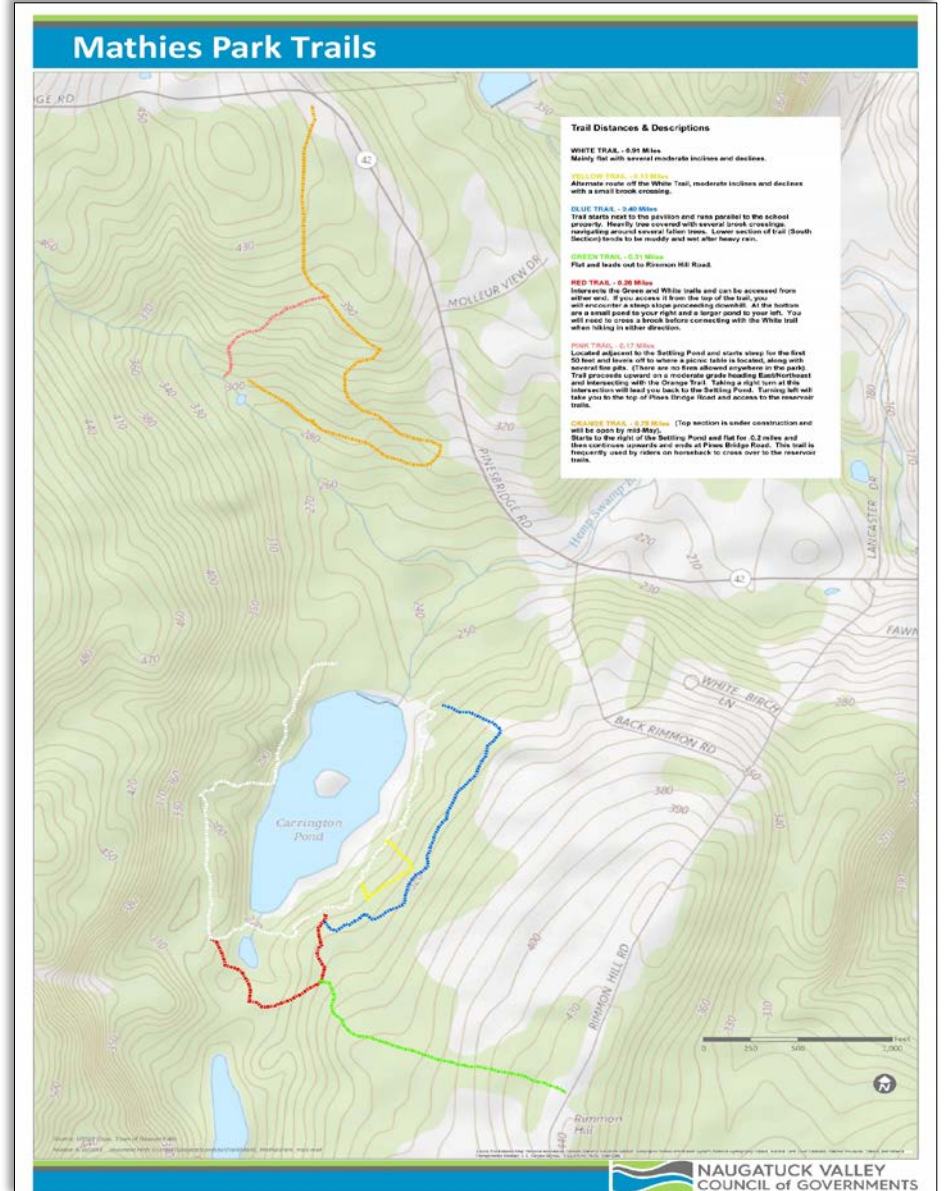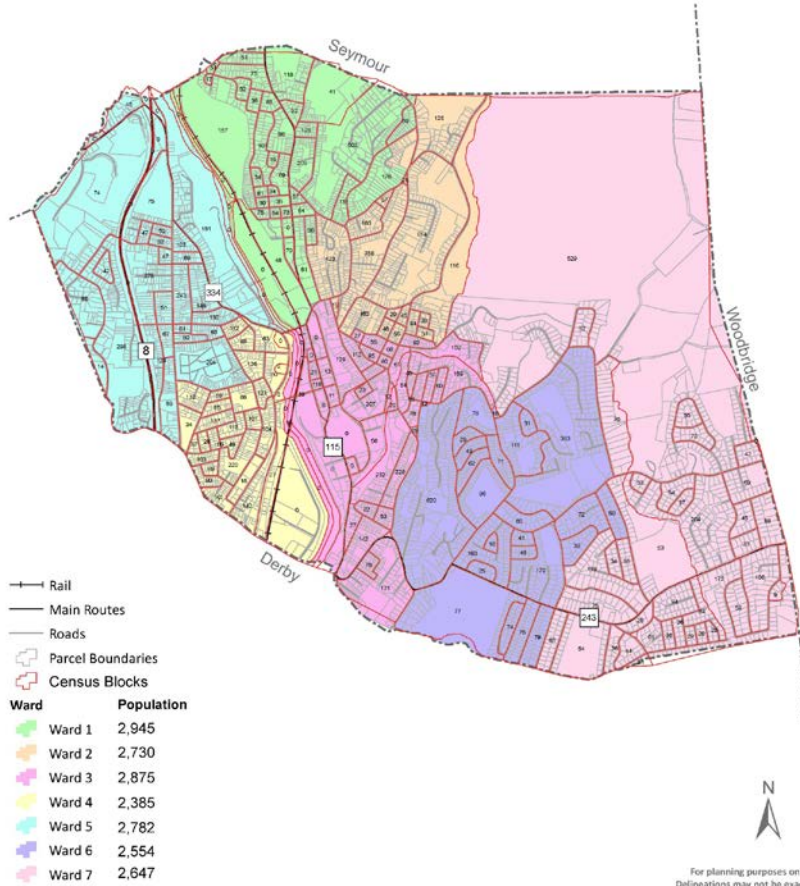
Rail
Main Routes
Roads
Parcel Boundaries
Census Blocks

For planning purposes only.
Delineations may not be exact.
Sources:
Parcels, NEGEO
U.S Census 2020

Revised: 4/22/2022

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City of Shelton, Connecticut
Ward Boundaries
Used in
Odd-Numbered Years
For Local Elections

Ward 1
Polling Location:
Elizabeth Shelton School

Ward 2
Polling Location:
Shelton Intermediate School

Ward 4
Polling Location:
Mohegan School

Ward 3
Polling Location:
Long Hill School

For planning purposes only.
Delineations may not be exact.
Sources: Parcels, NEGEO;
Wards, City of Shelton

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Registrar of Voters

Ward Boundaries

Emergency Response Planning

- Response Districts
- Fire Stations
- Fire Hydrants

Derby Fire Response District - East End Hose Company #3
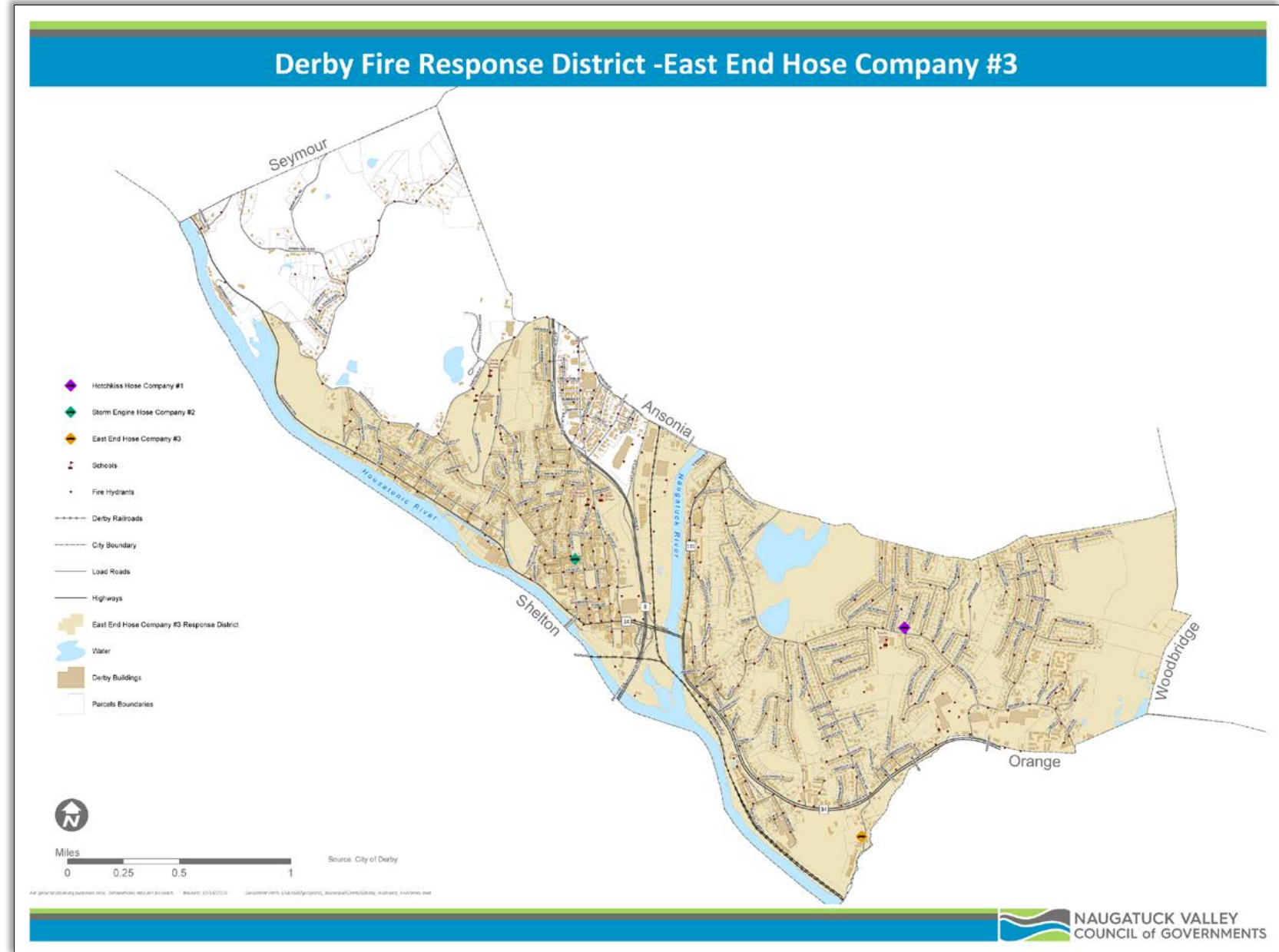
Assessor's Office

- Support for Revaluation
  - Symbolizing by assessed value shows anomalies
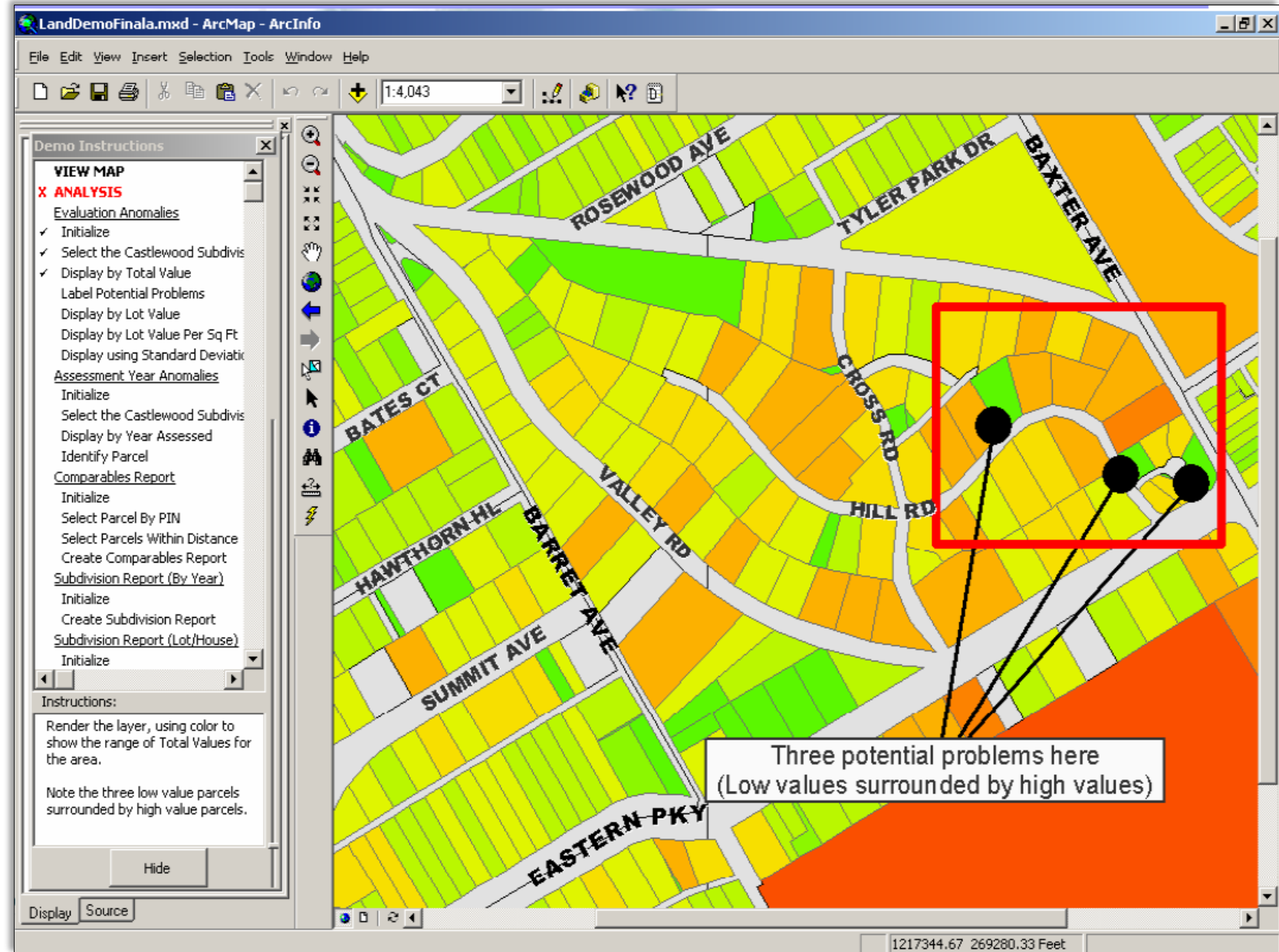
Assessor's Office

- Thematic map based on CAMA information

Town of Prospect Housing
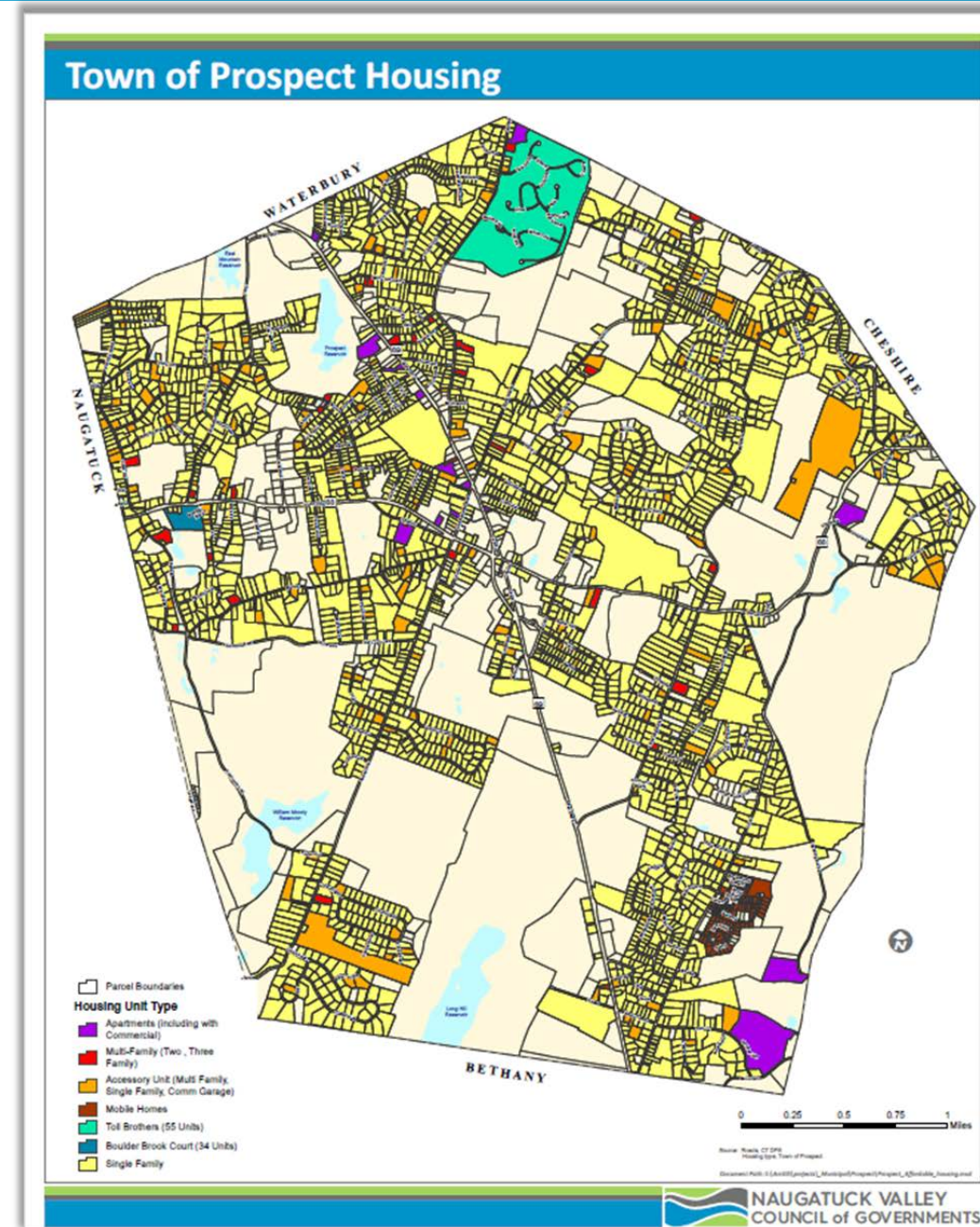
Demographic Data

- Housing Profiles
- Grant Applications
- Municipal POCDs
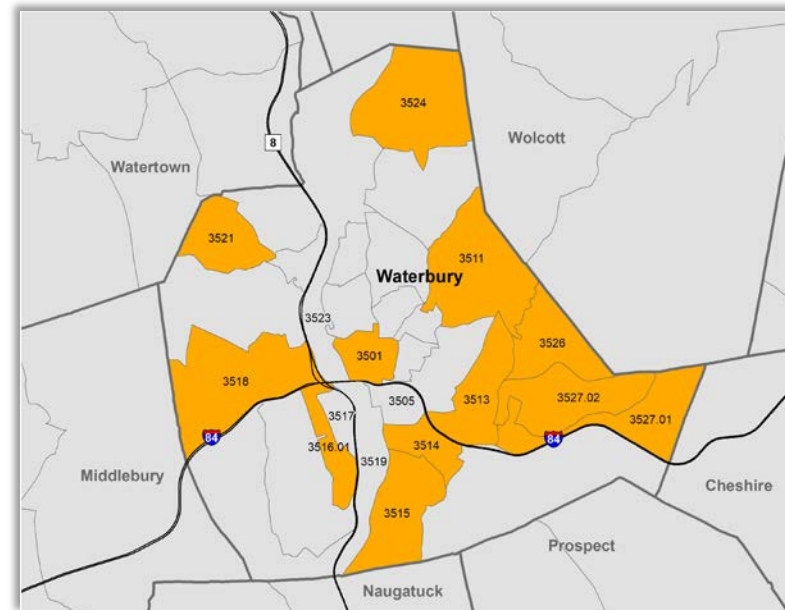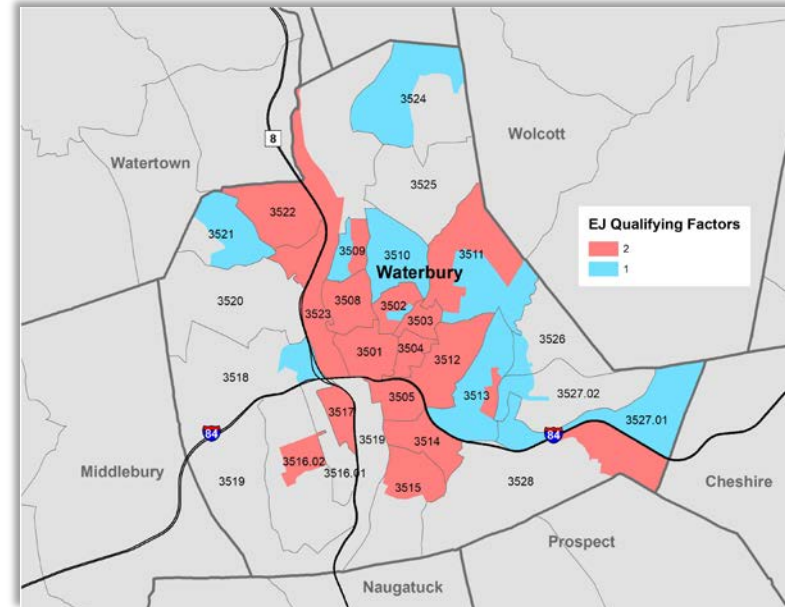
NVCOG EJ Analysis
Block Groups
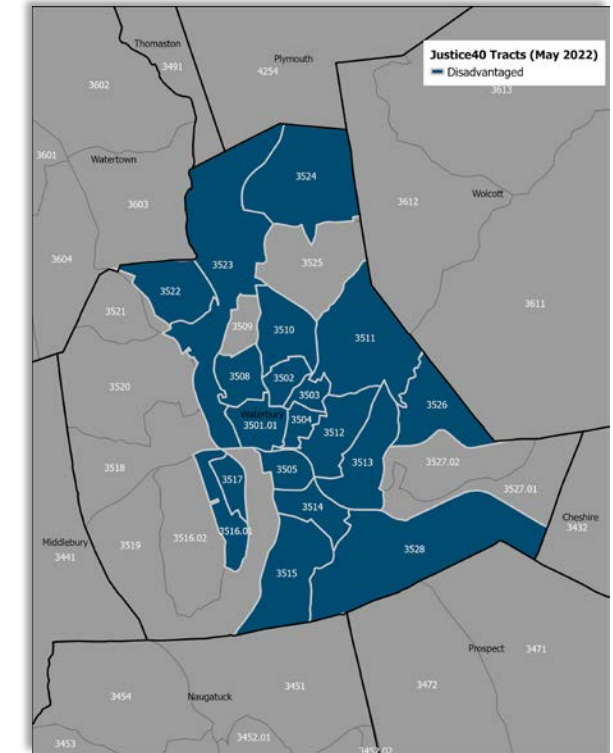
Federal Justice 40
Disadvantaged Communities

U.S. DOT Disadvantaged
Communities

Data Collection

- Three **mobile** applications for data collections.

- Phone or tablet with service can be used.

- Option for disconnected collection if necessary.

Data Collection

- Data on the go, simple click of a button

- Form-based field data collection

- Map-based data collection
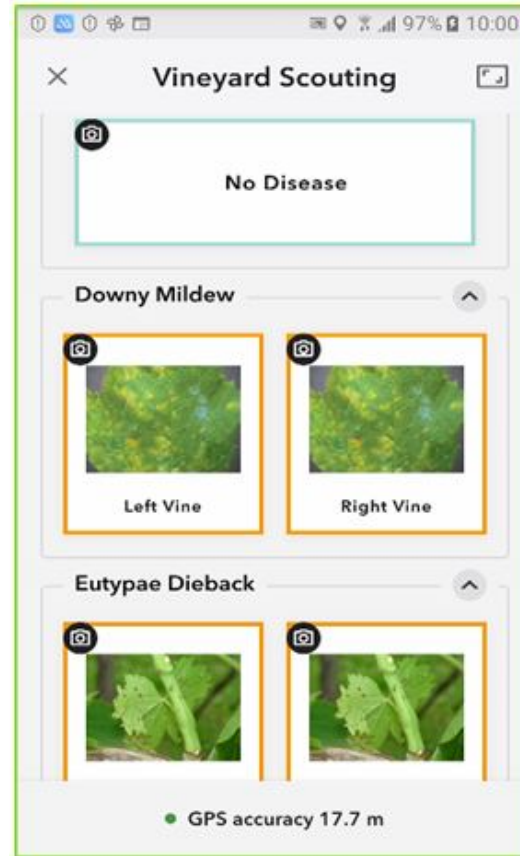
QuickCapture
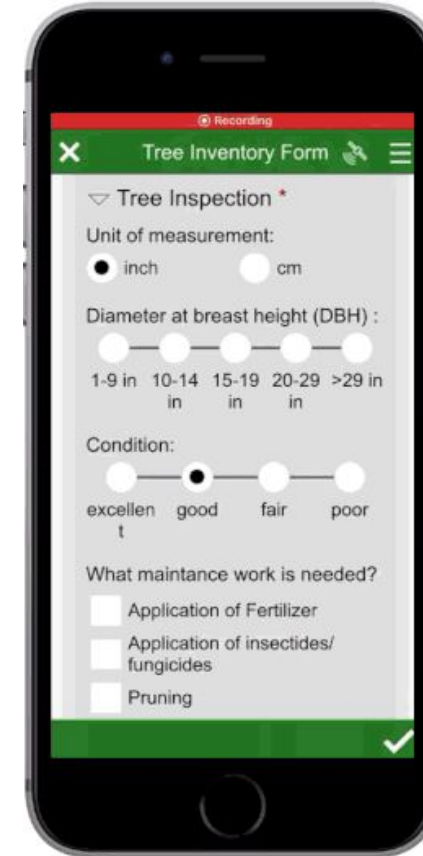
Survey 123
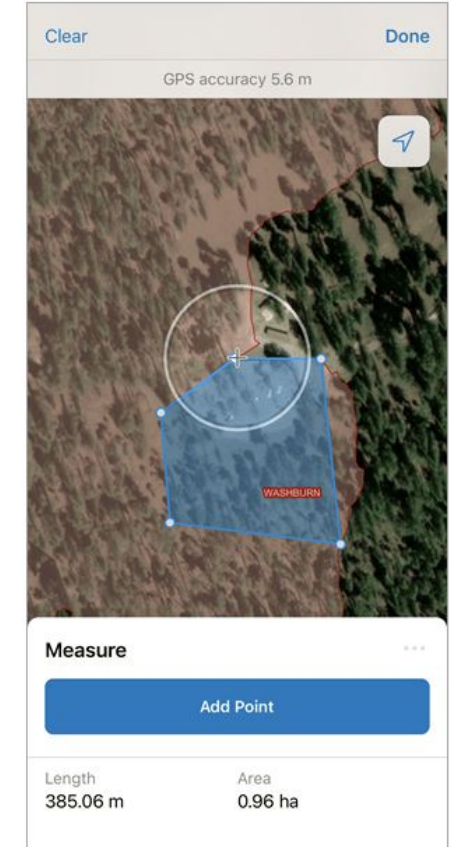
Field Maps

Spatial Analysis

Red areas are parcels in M-1 or M-2 zones and not within 250 feet of residentially zoned land or places of worship.

Spatial Analysis

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Interactive Web Applications

- StoryMaps
- Dashboards
- Web App Builder
- Experience Builder

Upcoming Projects

Open Space Inventory

Upcoming Projects

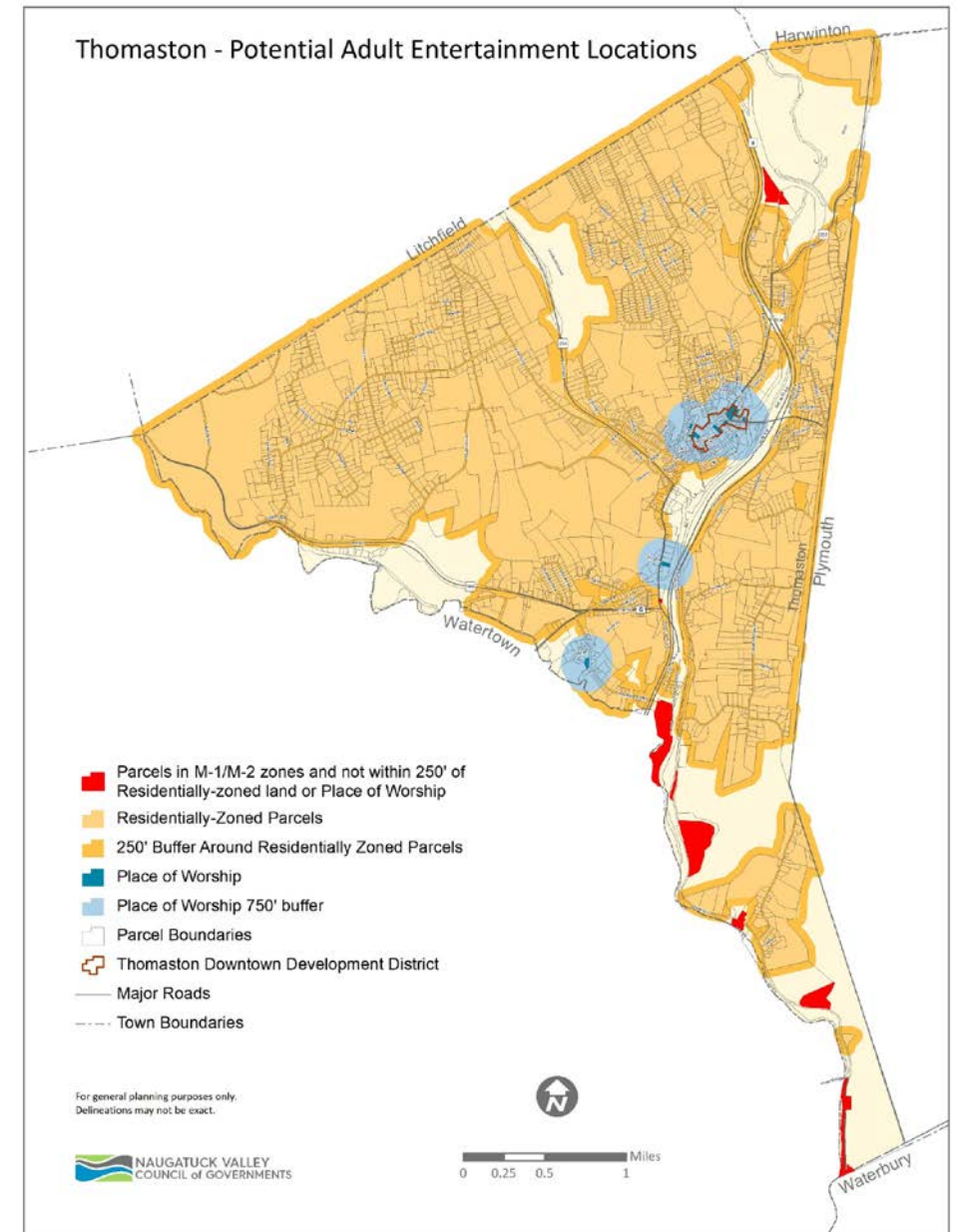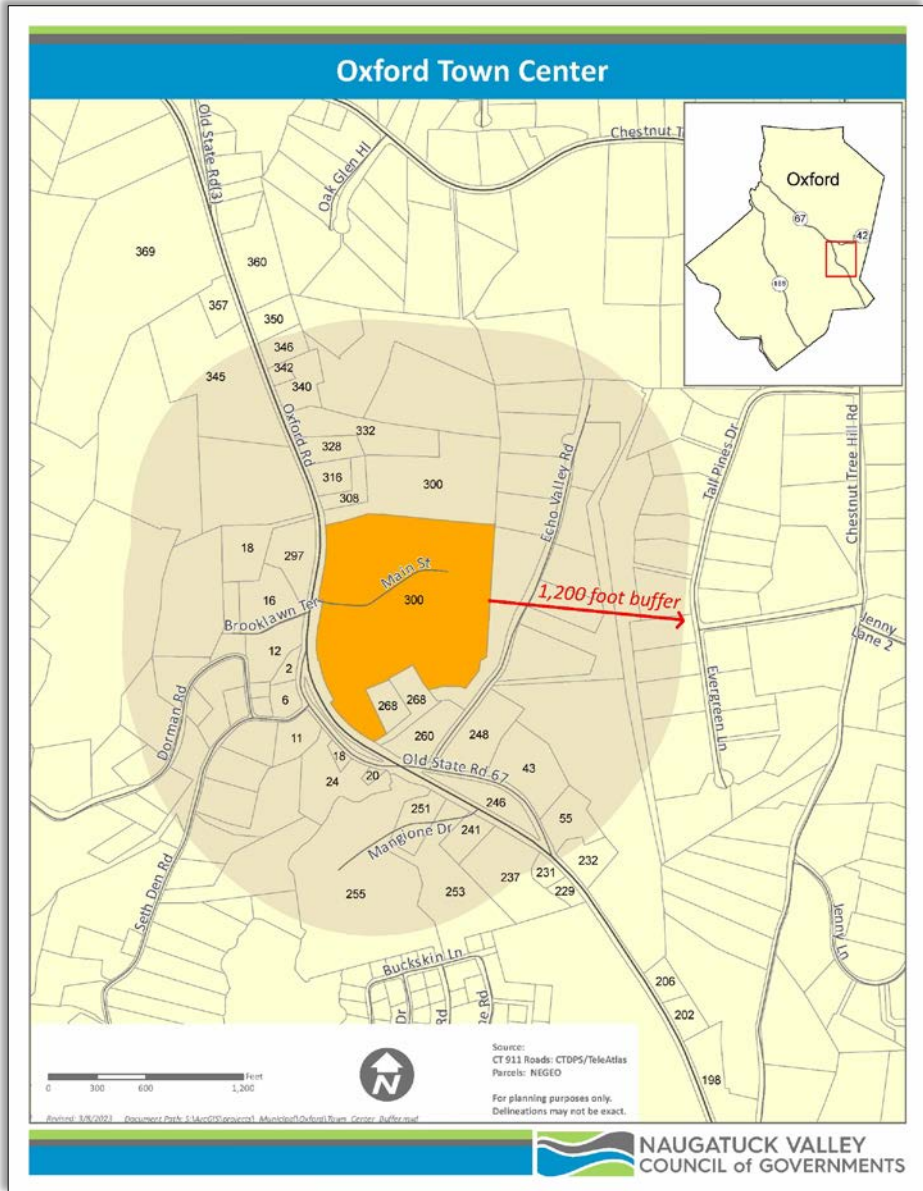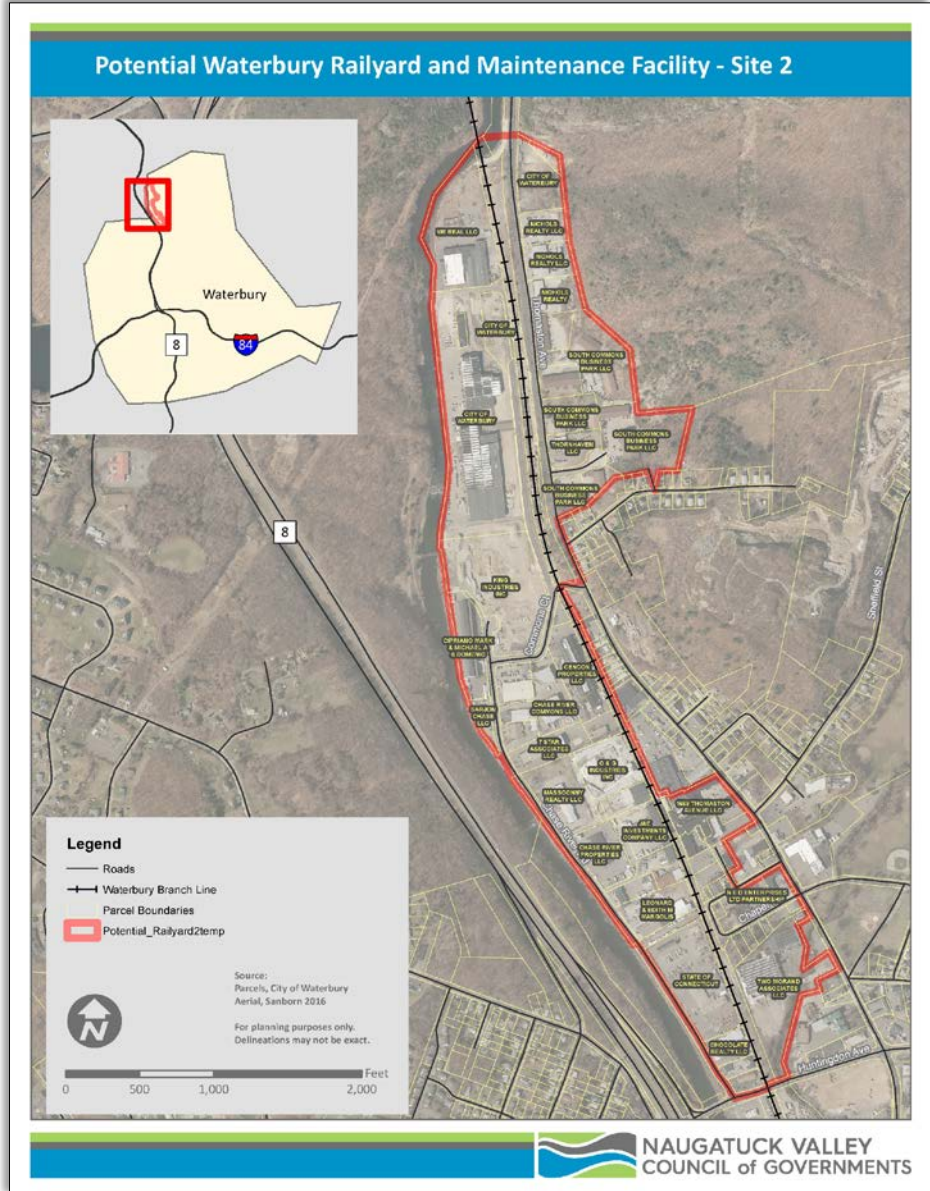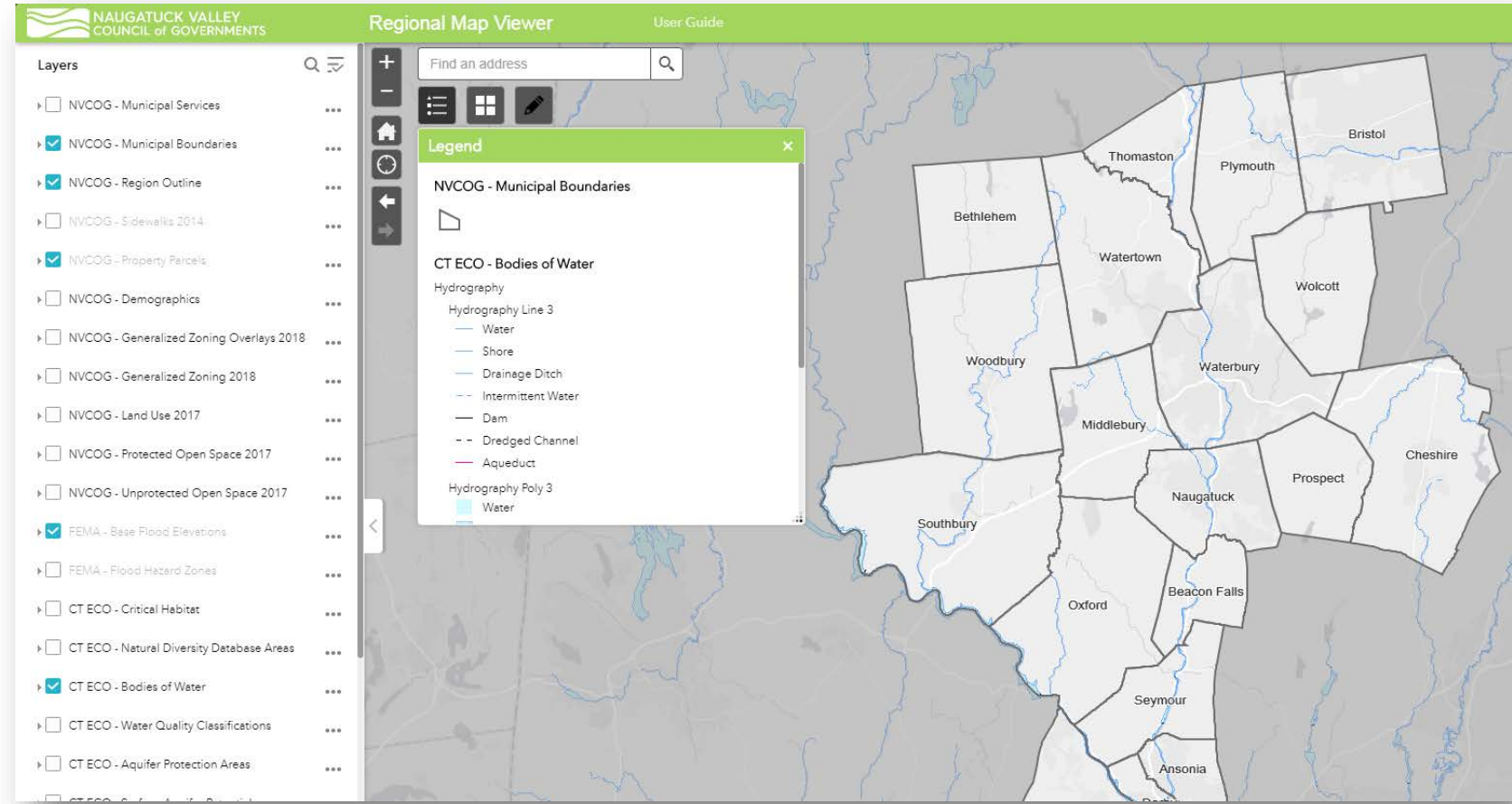| Owner	Owner_Type	Primary_Function	Secondary_Function	Public_Access	Legal_Protection	Protection_Type	Easement_Holder	P
State of Connecticut	State	Forest	<Null>	<Null>	Yes	<Null>	<Null>	
State of Connecticut	State	Forest	<Null>	<Null>	Yes	<Null>	<Null>	
State of Connecticut	State	Forest	<Null>	<Null>	Yes	<Null>	<Null>	
Plymouth Land Trust Inc.	Land Trust	Conservation	<Null>	<Null>	Yes	<Null>	<Null>	
Boy Scouts of America	Private	Recreation	<Null>	Restricted	No	<Null>	<Null>	
State of Connecticut	State	Forest	<Null>	<Null>	Yes	<Null>	<Null>	
Gentile Campground	Private	Recreation	<Null>	Restricted	No	<Null>	<Null>	
The Nature Conservancy	Private	Conservation	Recreation	Unrestricted	Yes	<Null>	<Null>	
Boy Scouts of America	Private	Recreation	<Null>	No Public Access	No	<Null>	<Null>	
Gentile Campground	Private	Recreation	<Null>	Restricted	No	<Null>	<Null>	
Gentile Campground	Private	Recreation	<Null>	Restricted	No	<Null>	<Null>	
State of Connecticut	State	Forest	<Null>	<Null>	Yes	<Null>	<Null>	
Plymouth Land Trust Inc.	Land Trust	Conservation	<Null>	<Null>	Yes	<Null>	<Null>	
Plymouth Land Trust Inc.	Land Trust	Conservation	<Null>	<Null>	Yes	<Null>	<Null>	
Plymouth Land Trust Inc.	Land Trust	Conservation	<Null>	<Null>	Yes	<Null>	<Null>	
Federal	Federal	Flood Control	<Null>	<Null>	Yes	<Null>	<Null>	
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Plymouth Land Trust Inc.	Land Trust	Conservation	<Null>	<Null>	Yes	<Null>	<Null>	

Upcoming Projects

Tree Canopy Assessment

Upcoming Projects

Tree Canopy
Assessment

Upcoming Projects

Sidewalks and Crosswalks
(Active Transportation
Plan)

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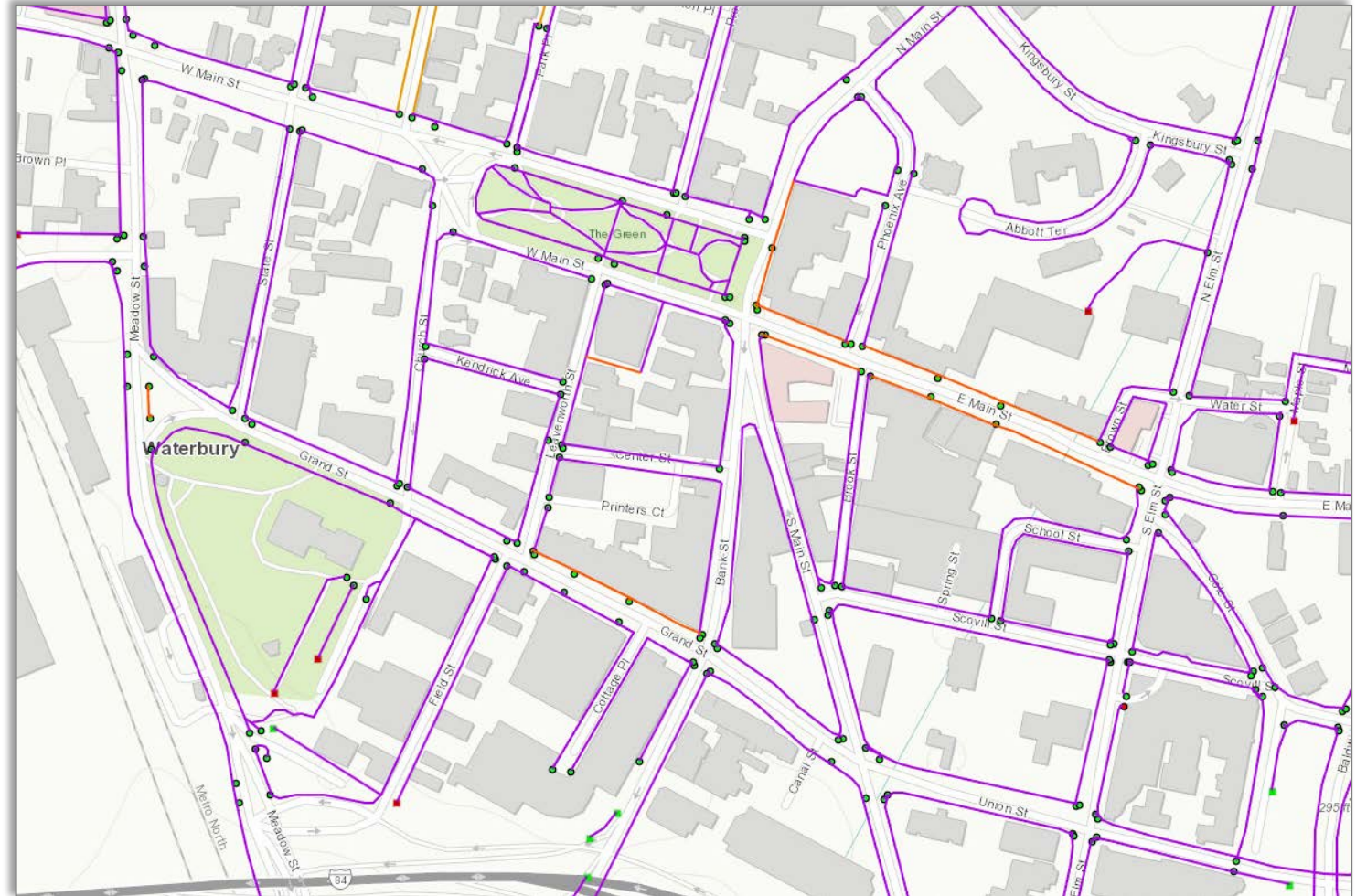
Upcoming Projects

Land Use Data Updates

Upcoming Projects

Residential Zoning-Based Buildout Analysis

Calculate the remaining buildable residentially zoned land in a town by removing:
- Non-Residentially Zoned Areas
- Already developed areas
- Committed open space
- Environmental Constraints

CommunityViz software then calculates the number of dwelling units that the acreage can support and places the dwelling units using the density and building separation rules set out in the zoning regulations.

Beacon Falls Residential Build-Out Results 2023

Build-Out Results

Residentially-Zoned Buildable Land
- Incentive Housing Zone
- Residential District R-1
- Residential District R-3
- Potential New Dwelling Units
- Build-out of PARD

Sources:
CT 911 Roads: Teleatlas/CTDPS
Beacon Falls Parcels: NEGEO
Zoning: Beacon Falls
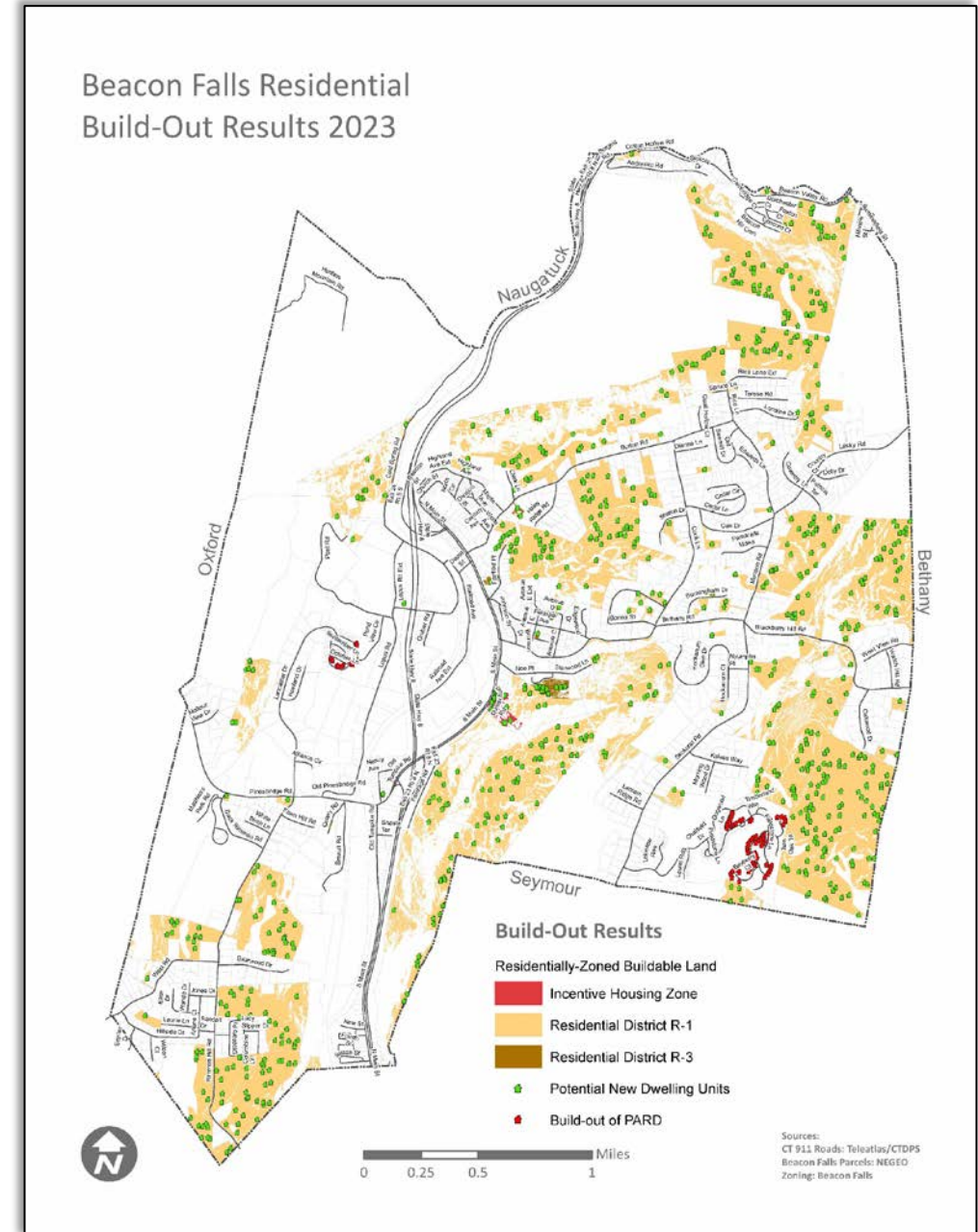
Upcoming Projects

Drone Videos, Photos, and Mapping (3D and GPS)

Data Updates

- Environmental Justice Data

- State of Connecticut GIS Office
  - Spring 2023 Aerials at 3in Resolution
  - Digital Elevation Models (DEM) & Contours (LiDAR)
  - Building Footprints & 3D Buildings

- National Agriculture Imagery Program (NAIP) from USDA
  - Summer 2023 at 6in Resolution

- Parcels and CAMA
  - Parcel metadata standardization and statewide parcel viewer
  - CAMA standardization
  - Addresses and geocoder

CT GIS Day

- Free to attend.
- Find out about projects from around the state.
- A detailed update from the State's Geographic Information Officer (GIO).
- Rich will be giving a presentation on the "Analysis of Equity Data for Grant Writing".

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Feedback

- New Regional Viewer Survey
- Link: https://arcg.is/0Ty54f

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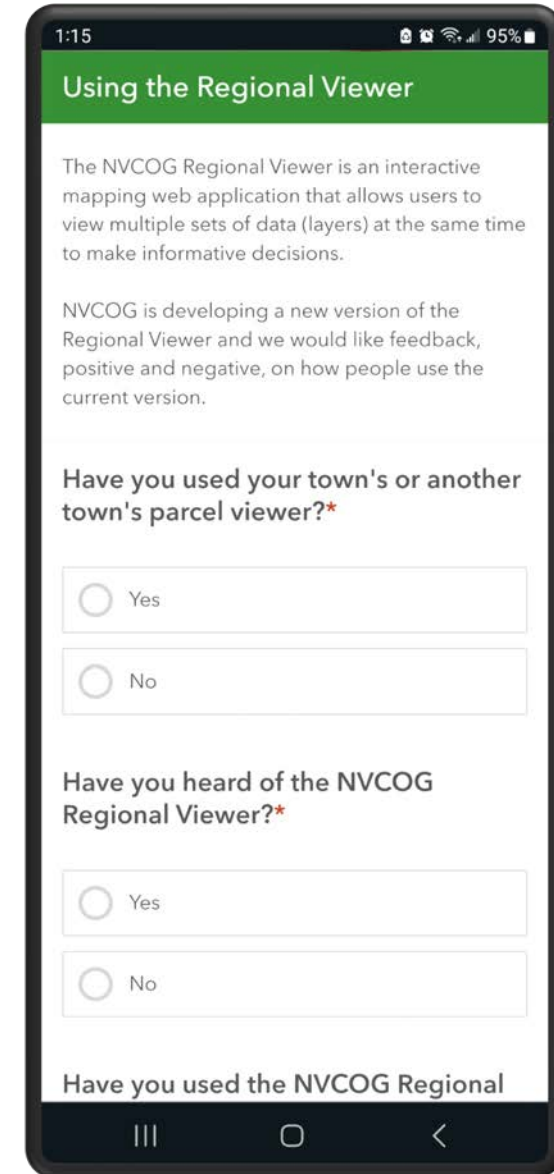
Thank you!

If you have any questions or comments after today, please feel free to contact Glenda or Rich any time.

Glenda Prentiss, GISP	**Richard Crowther Jr., GISP**
GIS Program Coordinator	**Senior GIS Analyst**
203-489-0370	203-489-0366
gprentiss@nvcogct.gov	rcrowther@nvcogct.gov

Contact information can be found on nvcogct.gov on the staff page and on the Maps & Data page.