Case Study: Viewshed Protection Area Zoning Law for the Town of Day

GIS Support to Local Government

NYS Adirondack Park Agency

Adirondack Park Agency

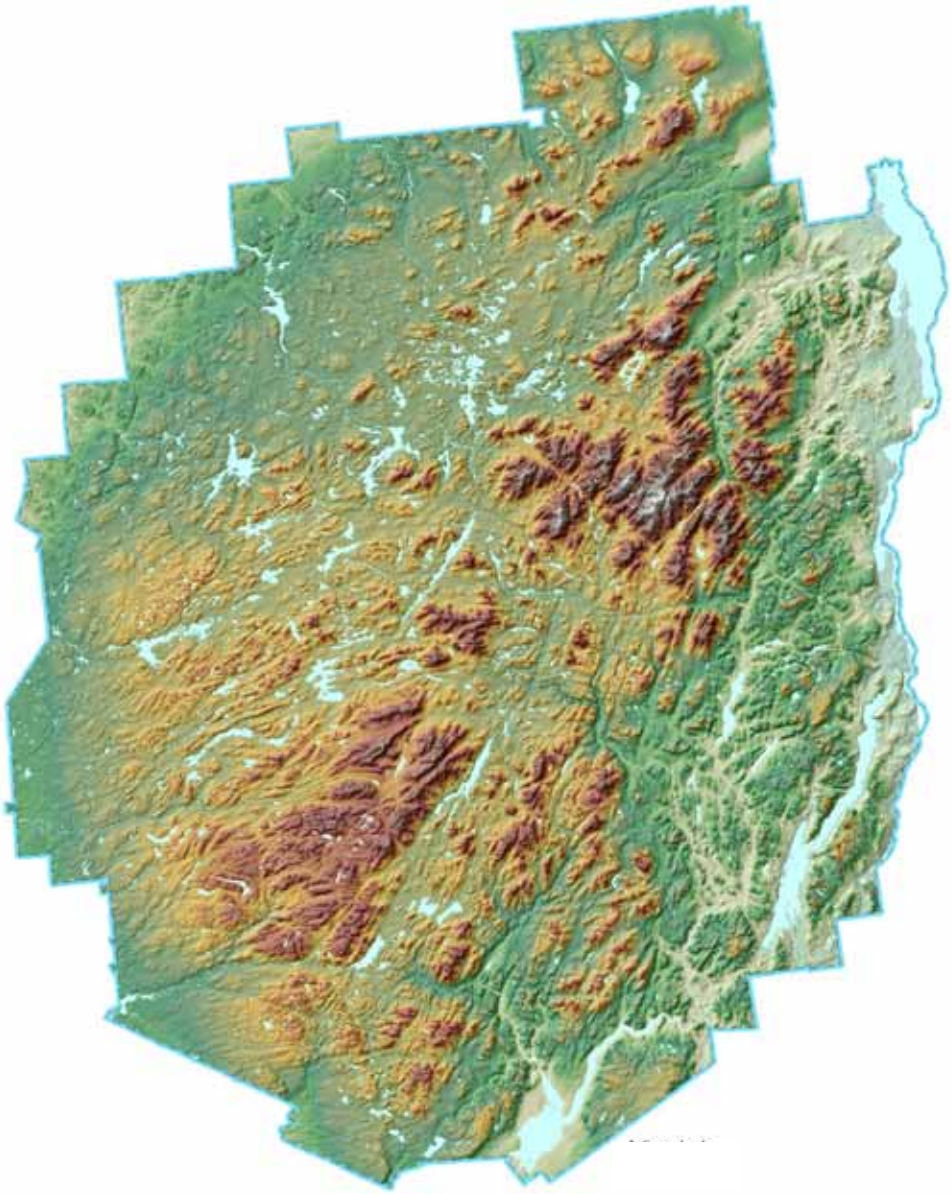
- Land Use Regulatory State Agency
- 70 Staff
- 10 staff doing part-time GIS (5% to 75%)
- 90% of Agency staff use GIS
- Approximately 100 municipalities in the 5.8 million acre park.

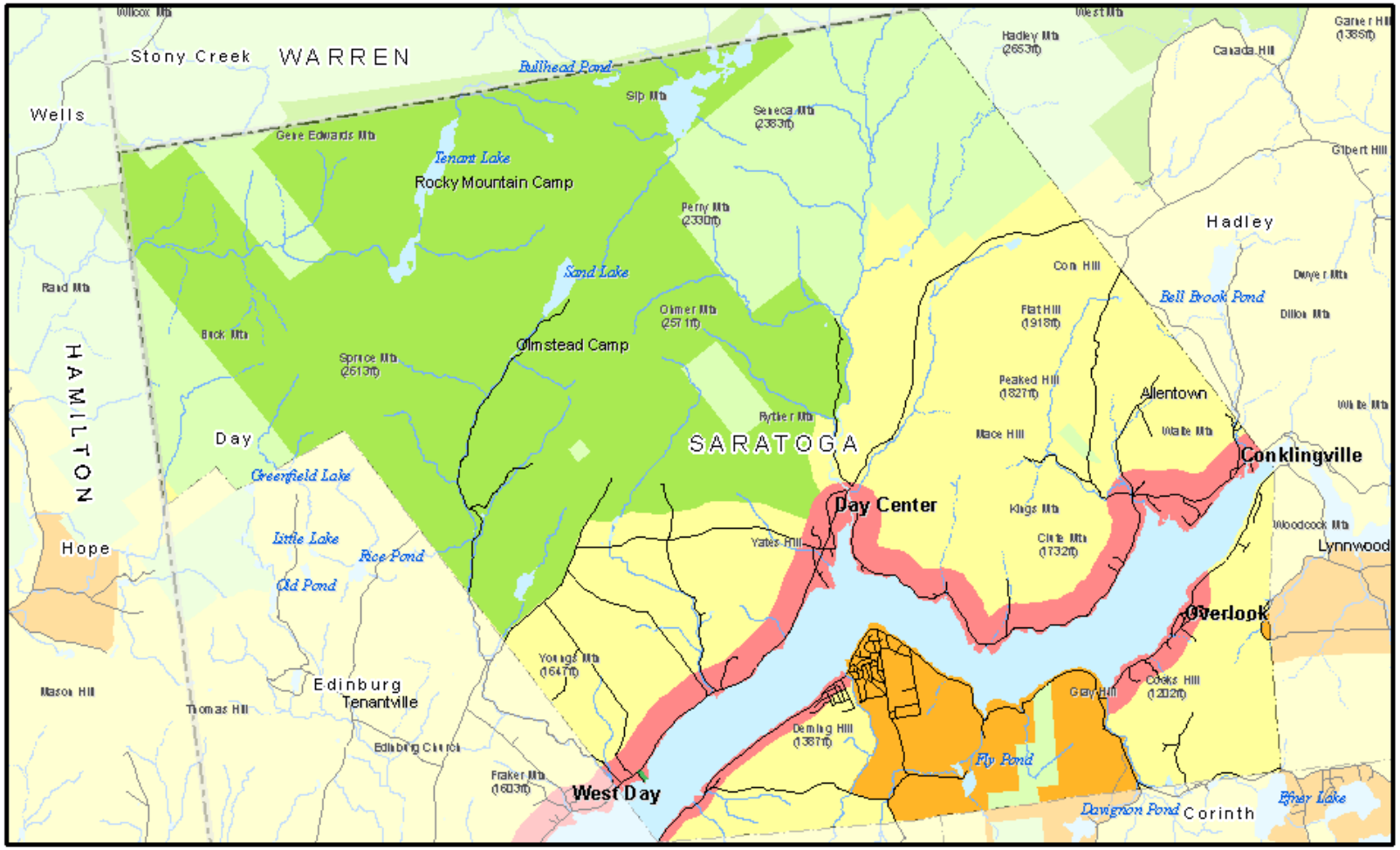
Local Government Support

- Town of Day in Saratoga County
- Area 42,000 acres
- 2000 population = 920
- Est. 2% pop. growth

Single-family new house construction building permits:

1996: 4 buildings, average cost: $50,000
1997: 5 buildings, average cost: $89,000
1998: 9 buildings, average cost: $28,300
1999: 3 buildings, average cost: $250,000
2000: 9 buildings, average cost: $74,400
2001: 7 buildings, average cost: $71,700
2002: 6 buildings, average cost: $53,500
2003: 10 buildings, average cost: $71,000
2004: 13 buildings, average cost: $121,800





Town of Day APA Land Classification

Park Blueline
State Boundary
County Boundary
Town Boundary
Village Boundary

Land Classification
Hamlet
Moderate Intensity
Low Intensity
Rural Use
Resource Mgmt.

Industrial Use
Wilderness
Canoe Area
Primitive
Wild Forest
Intensive Use

Historic
State Administrative
Pending Classification
Open Water
Stream

1 Mile

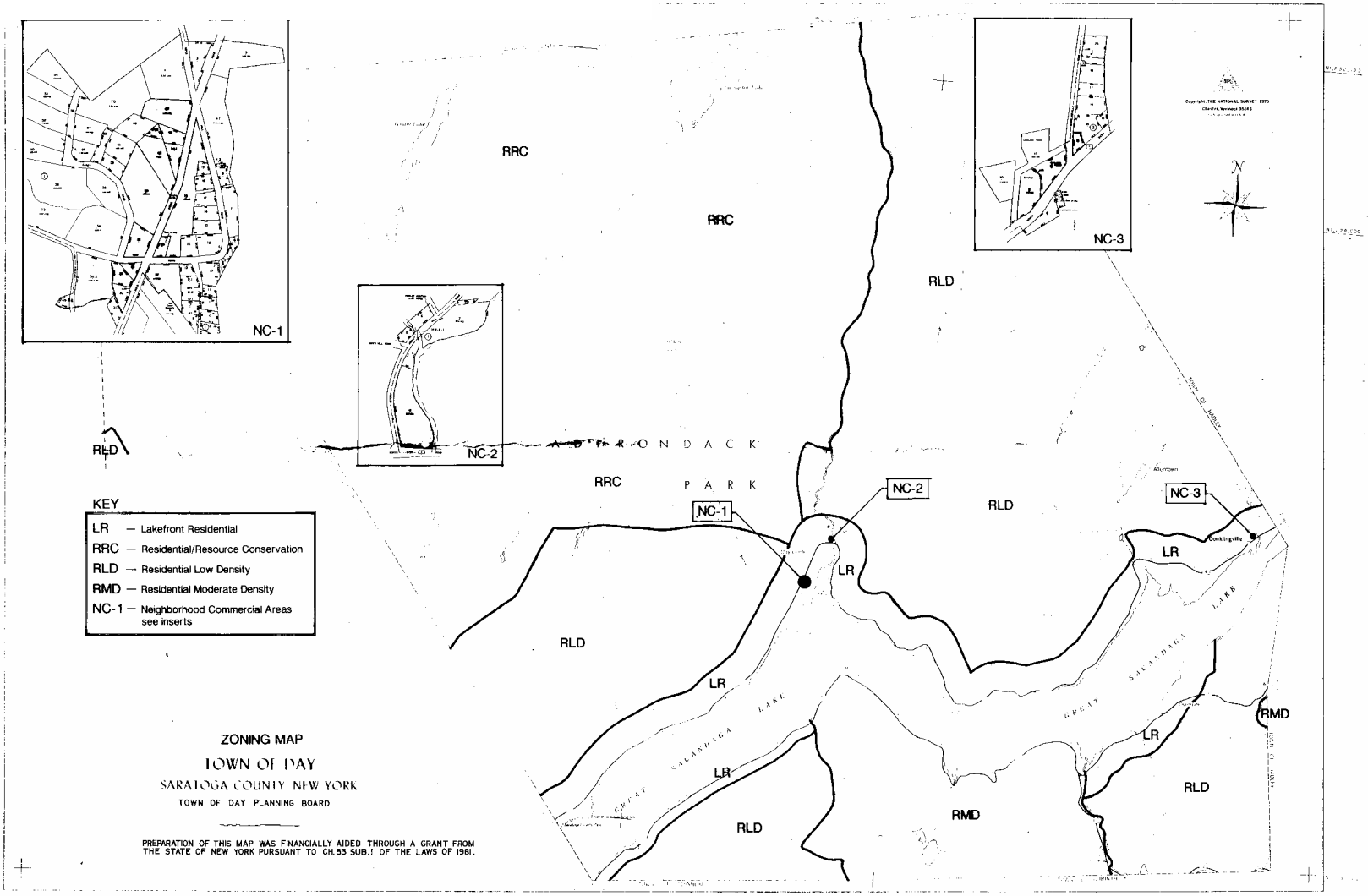
Adirondack Park Agency

February 2005

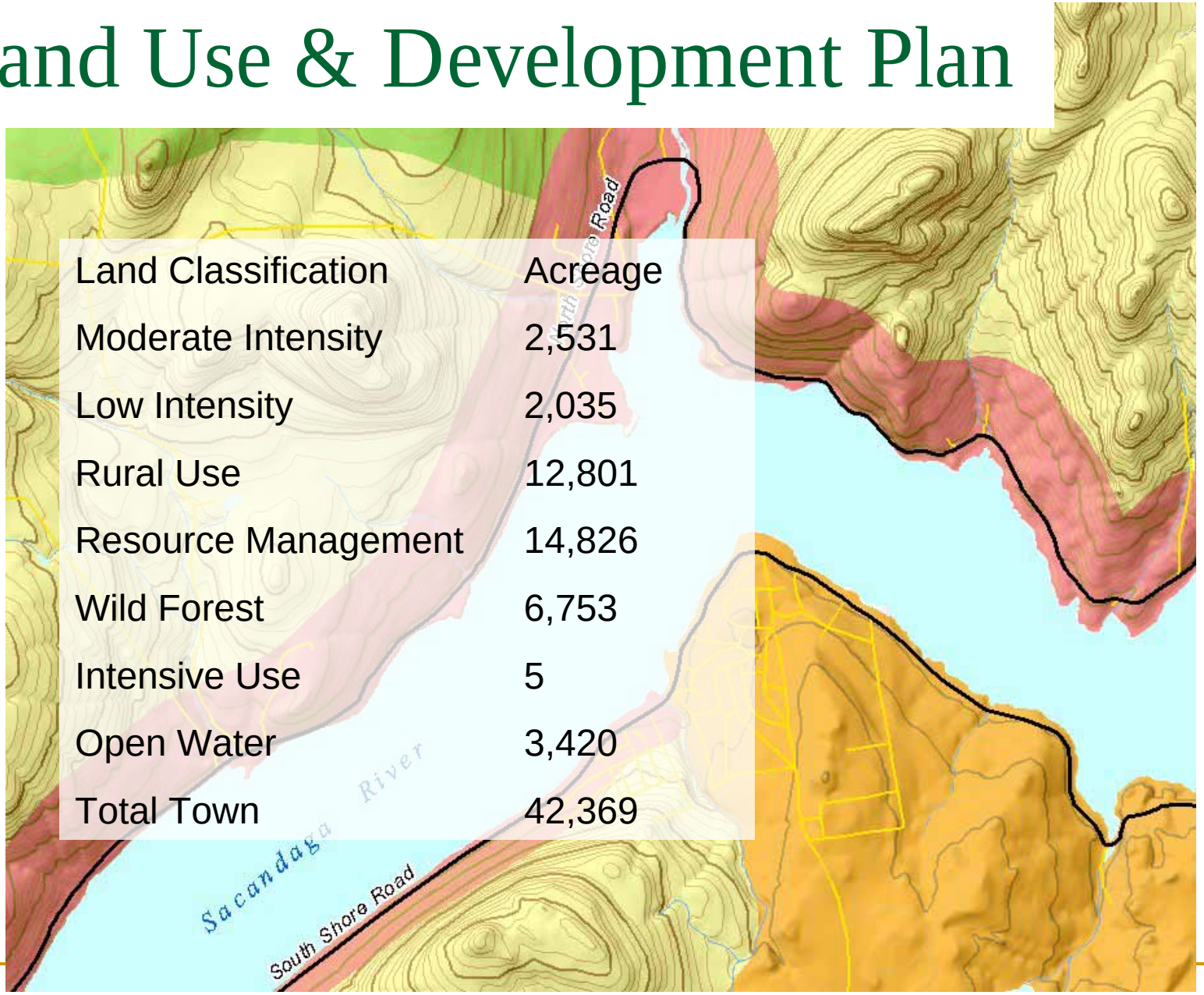
This map should not be used for legal jurisdictional determinations.

Locator

Local Zoning Map

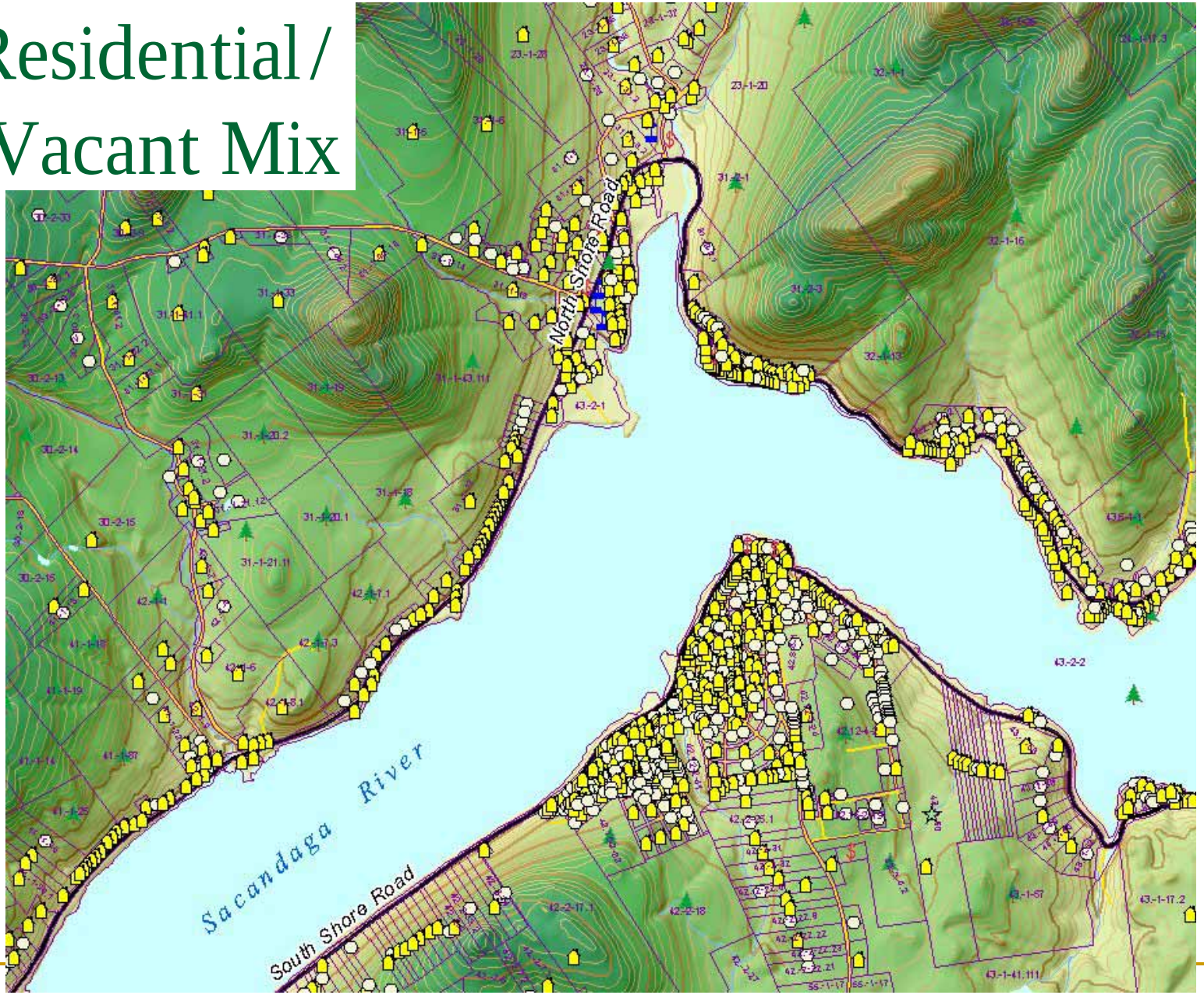


Land Use & Development Plan



Land Classification	Acreage
Moderate Intensity	2,531
Low Intensity	2,035
Rural Use	12,801
Resource Management	14,826
Wild Forest	6,753
Intensive Use	5
Open Water	3,420
Total Town	42,369

Residential / Vacant Mix



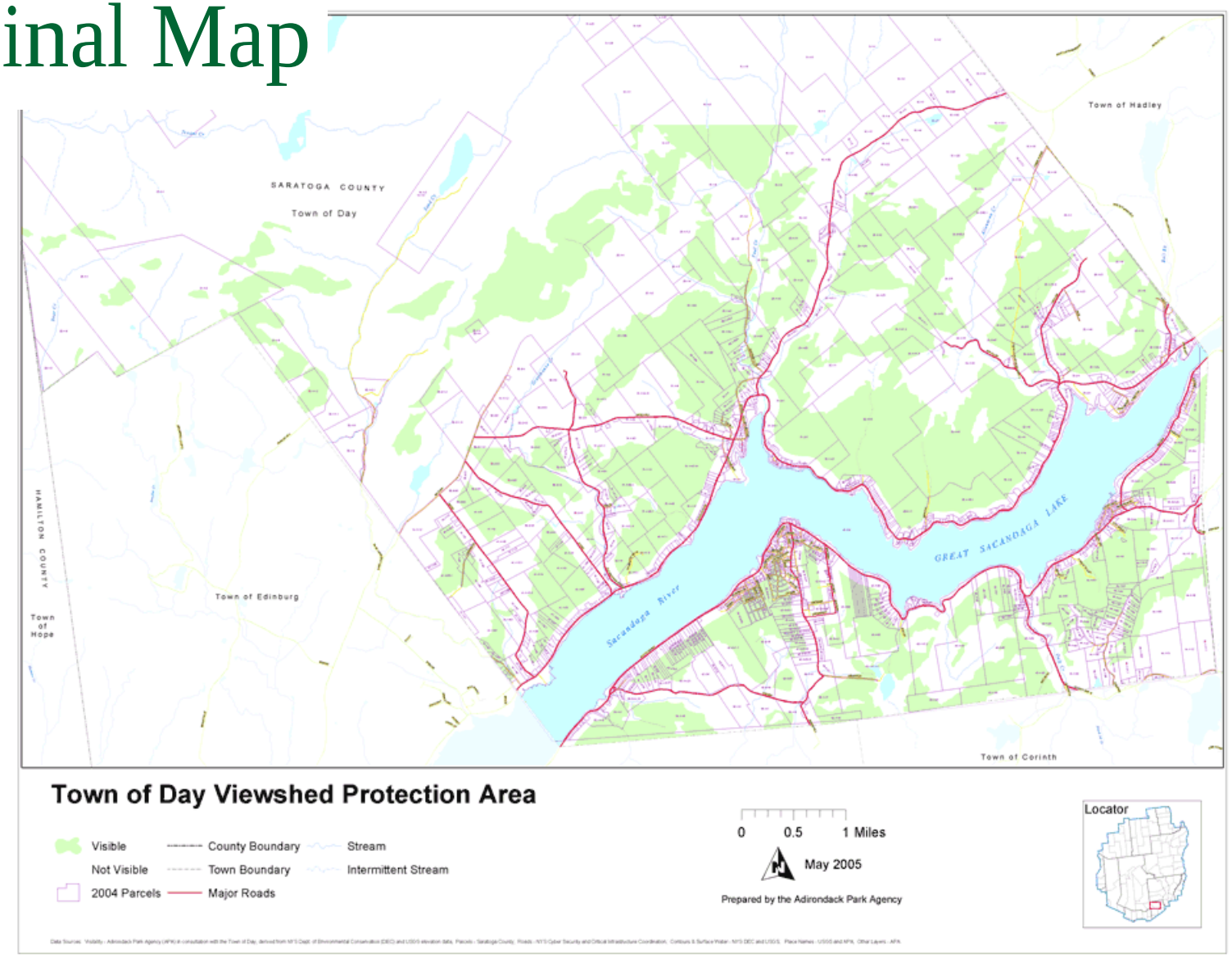
Town of Day Local Law Amending Town Land Use Laws – June 22, 2005

Section 4.8 Town of Day Viewshed Protection Area

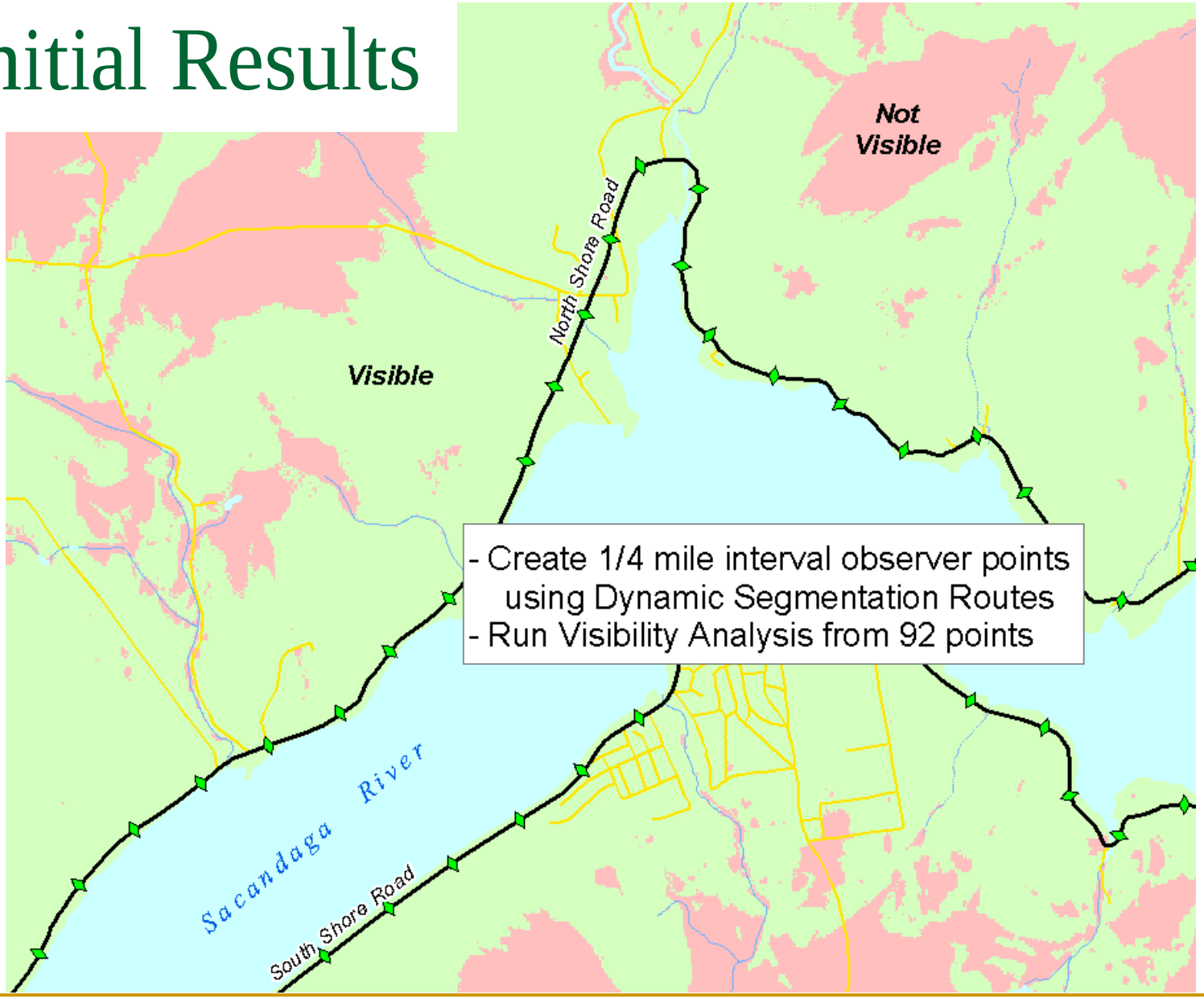
4.8.1 Area Established. A Town of Day Viewshed Protection Area is established. The Town of Day Viewshed Protection Area is the area designated on the Town of Day Viewshed Protection Area Map, a copy of which is hereby incorporated into this Zoning Law. The Town of Day Viewshed Protection Area is an overlay district; for areas included in the Town of Day Viewshed Protection Area, the provisions of this Section 4.8 apply as well as the provisions applicable to the district in question (Sections 4.1 through 4.7) and the other provisions of this Zoning Law.

4.8.2 Intent. The Town Board of the Town of Day finds that many landscape features, geological features and other resources of the Town of Day and the Adirondack Park have special aesthetic, scenic or historical value. Many of these resources are located in this Town of Day Viewshed Protection Area. Great Sacandaga Lake is a significant resource of the Town, and many of the resources located in the Town of Day Viewshed Protection Area are visible from Great Sacandaga Lake, or from public roads. In order to protect and preserve those resources and to prevent or diminish the loss of those irreplaceable resources, the Town Board hereby declares it to be the public policy of the Town of Day to protect, perpetuate and enhance those resources.

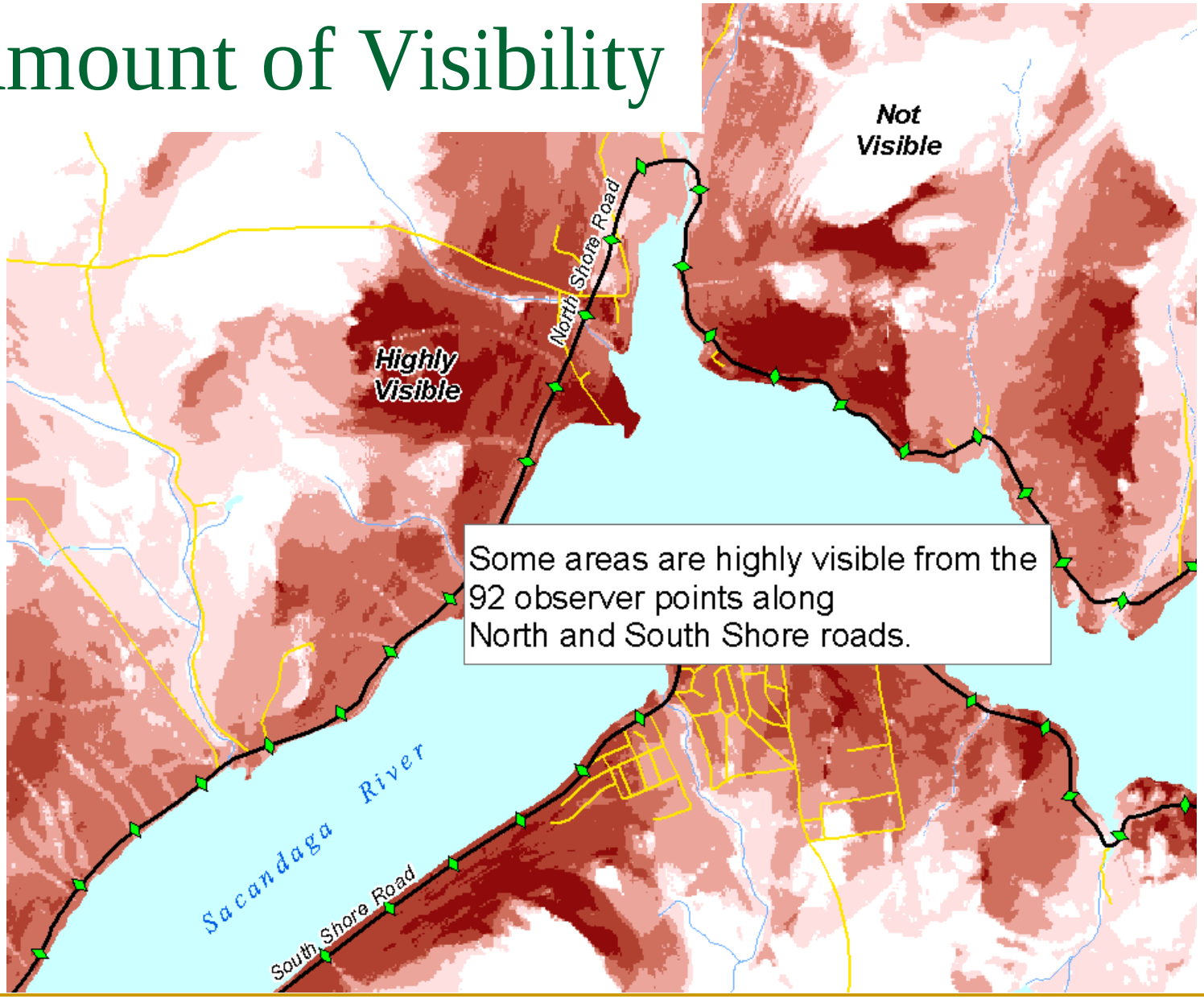
Final Map


SARATOGA COUNTY
Town of Day
Town of Hadley
HAMILTON COUNTY
Town of Edinburg
Town of Hope
Town of Corinth
GREAT SACANDAGA LAKE
Sacandaga River
Town of Day Viewshed Protection Area
Visible
Not Visible
2004 Parcels
County Boundary
Town Boundary
Major Roads
Stream
Intermittent Stream
0 0.5 1 Miles
May 2005
Prepared by the Adirondack Park Agency
Locator

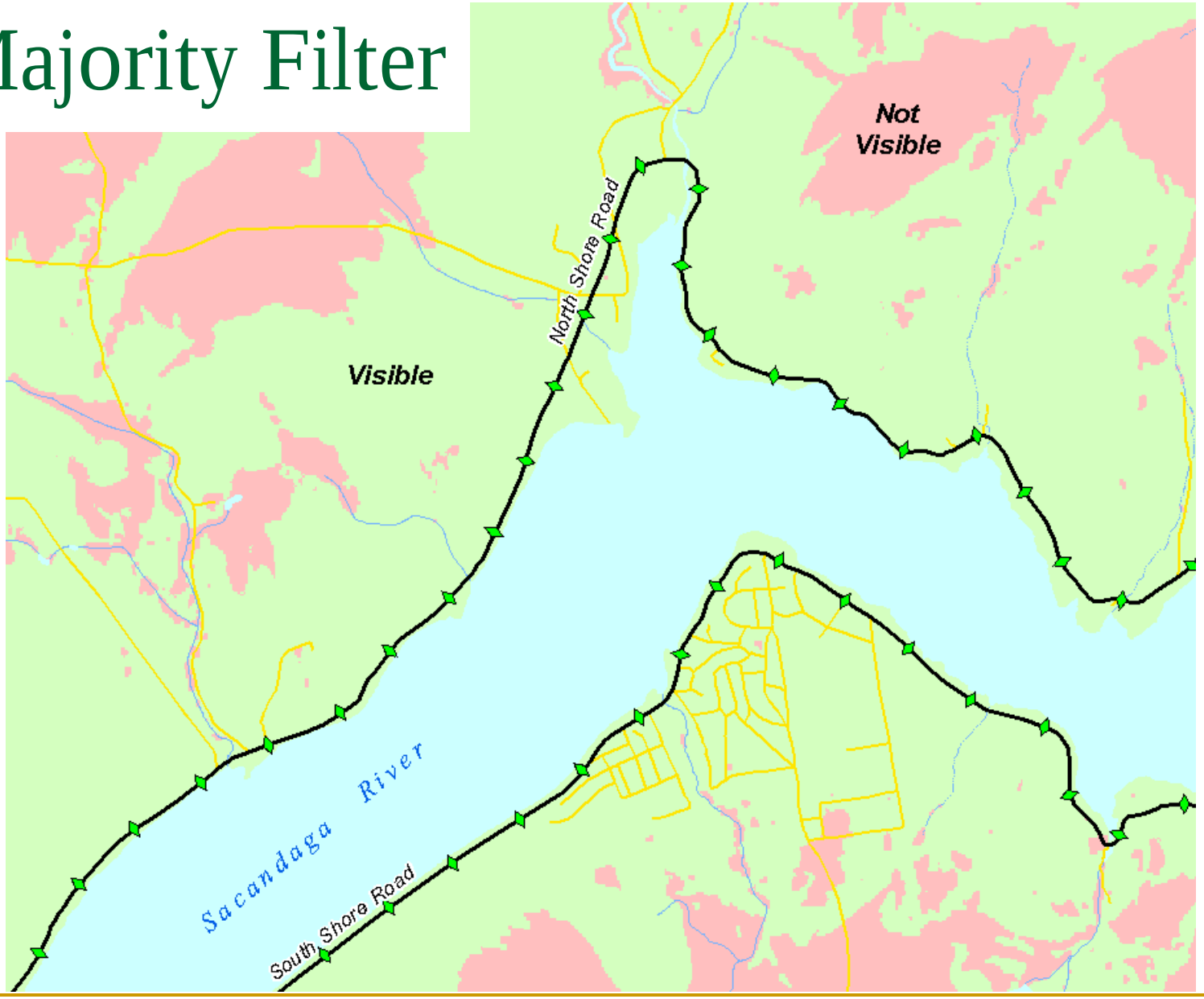
Initial Results



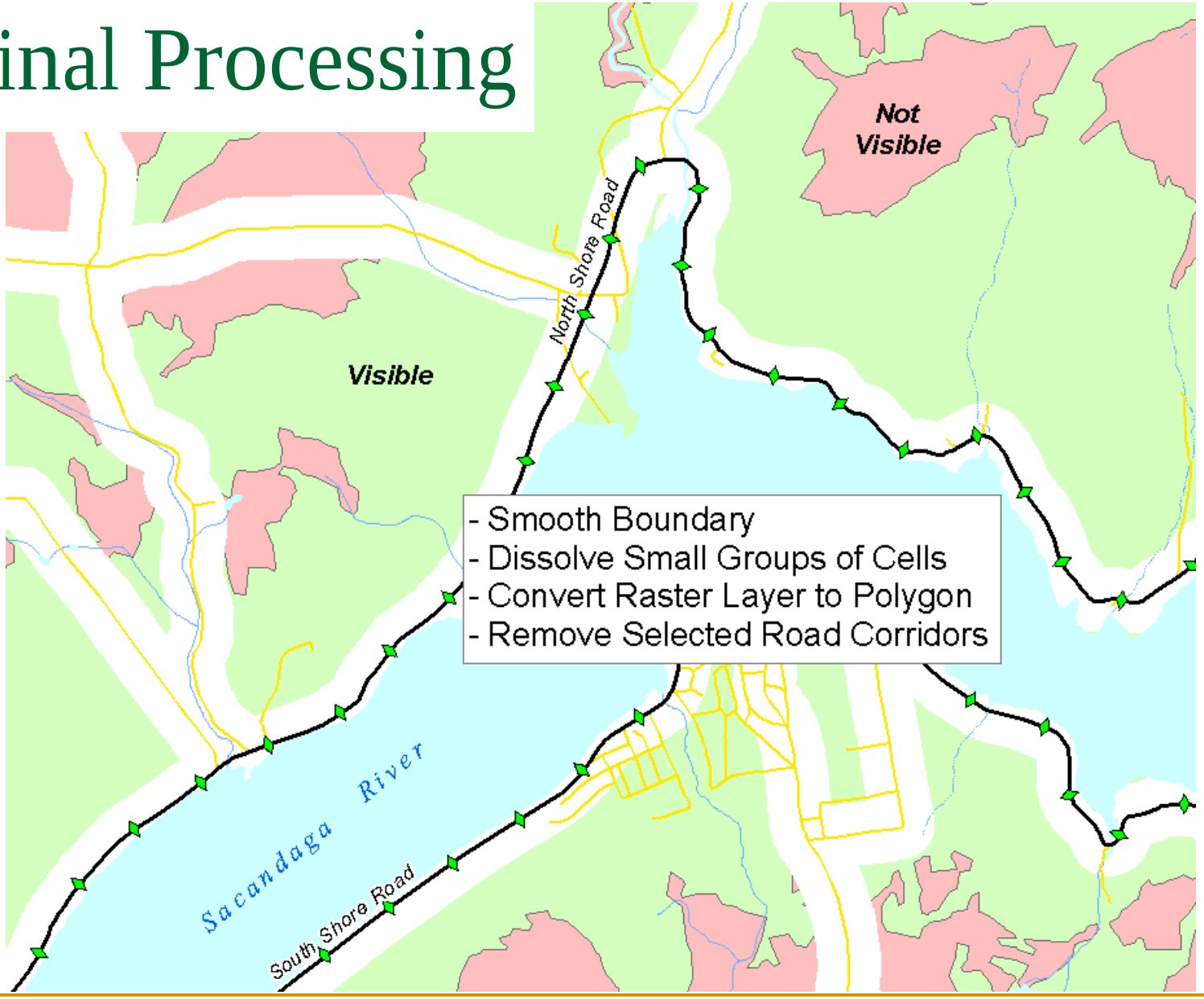
Amount of Visibility



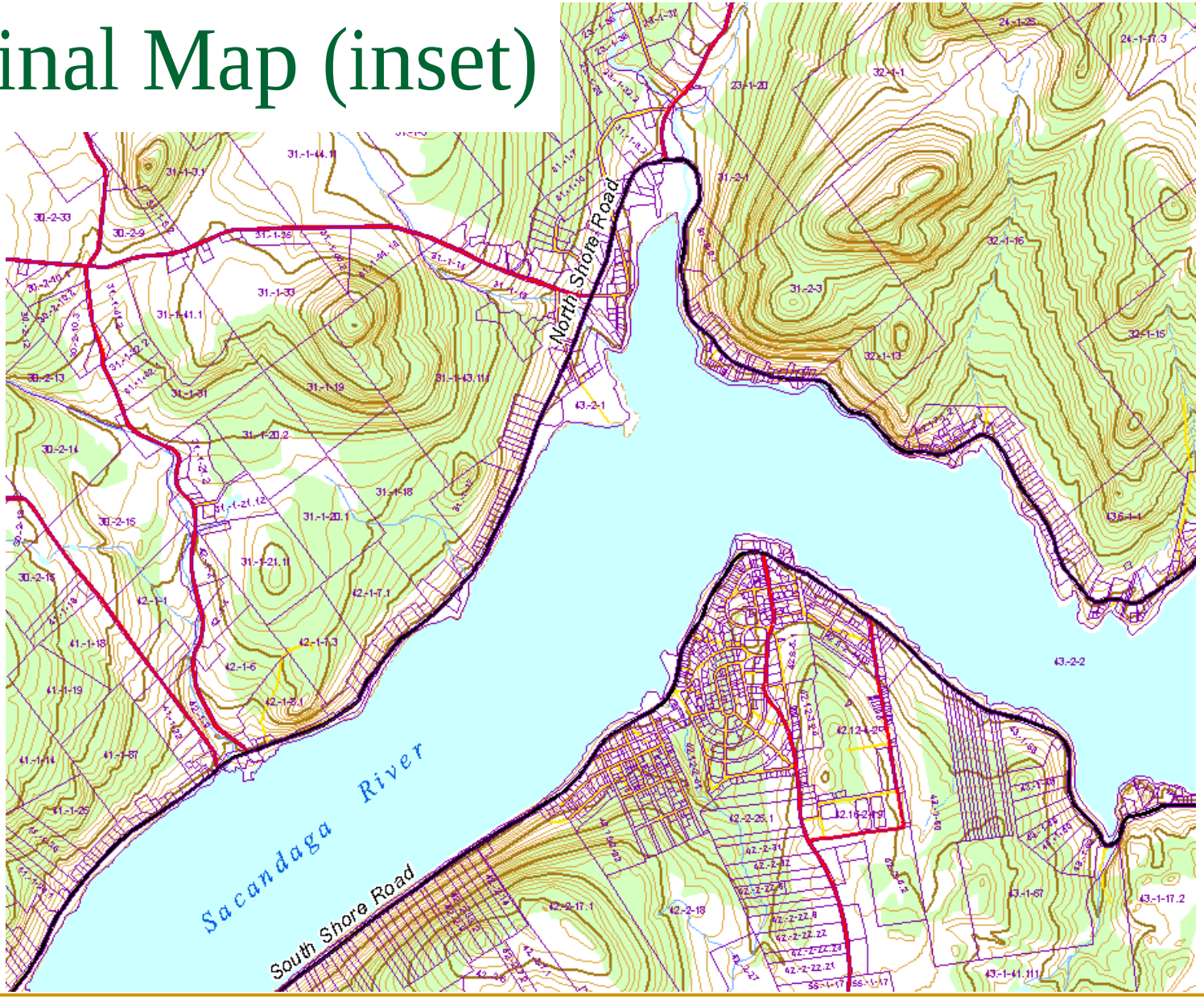
Majority Filter



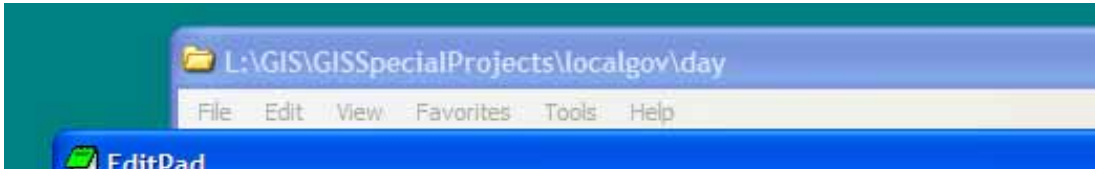
Final Processing



Final Map (inset)



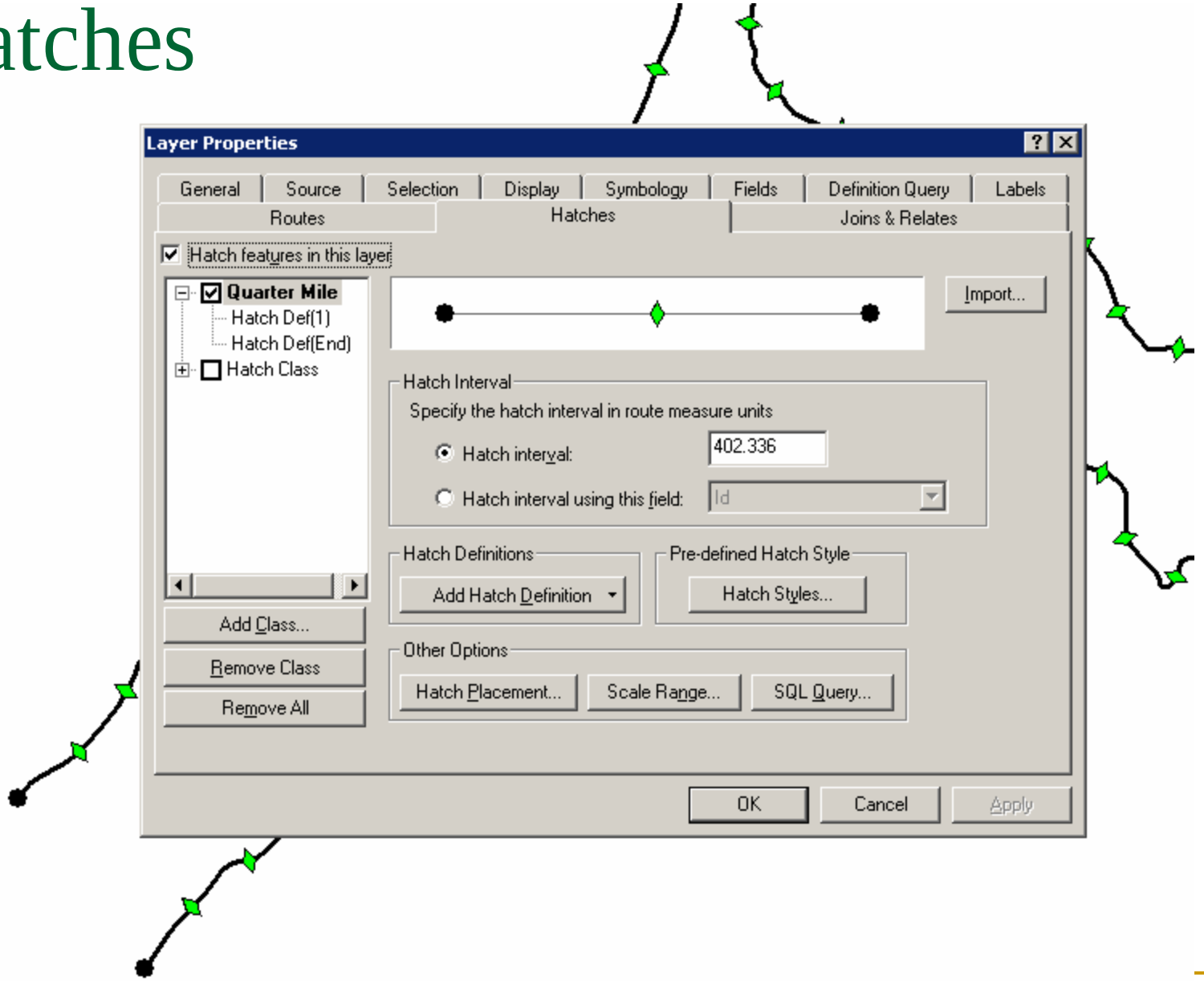
Take Notes!



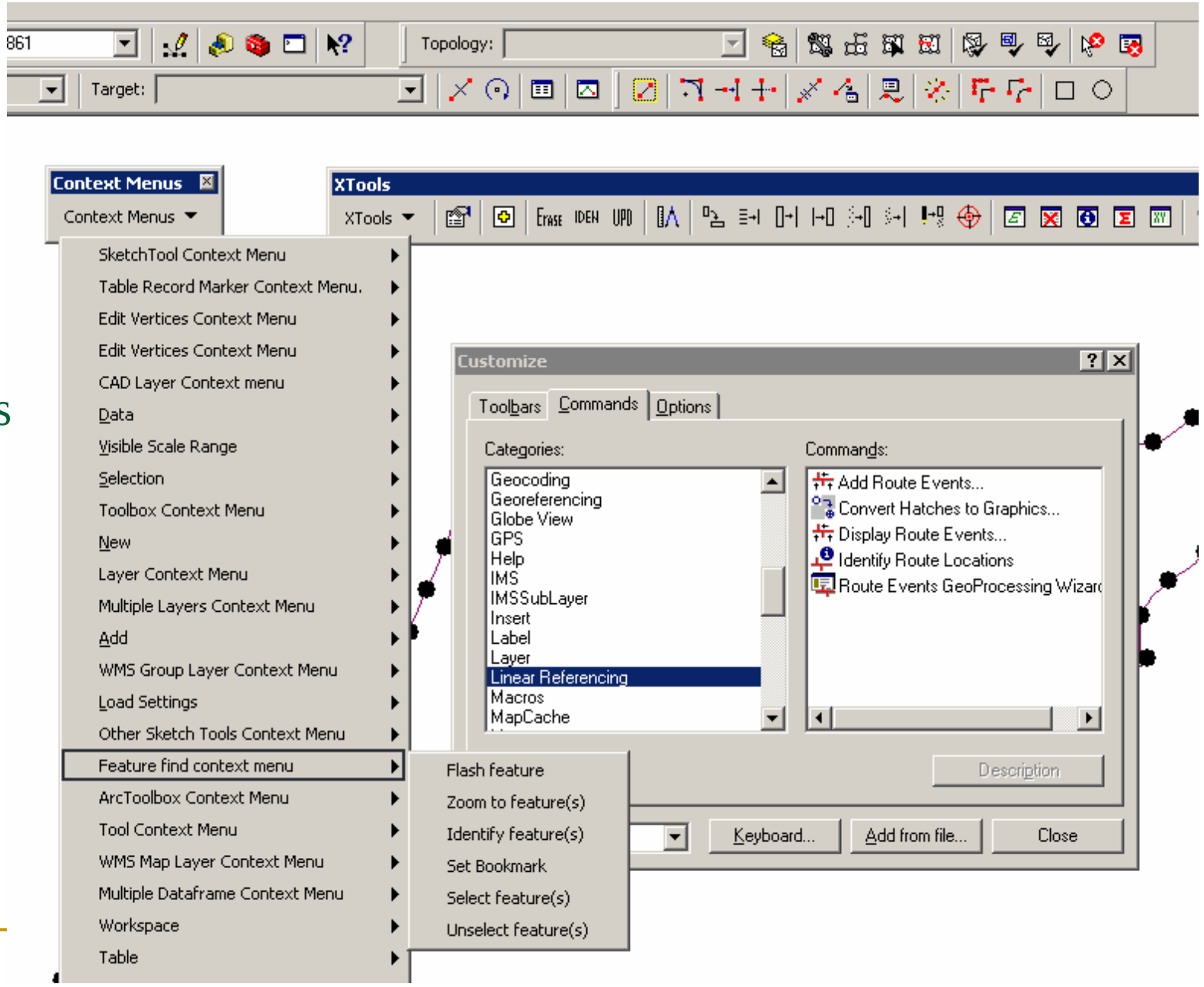

```
Run Visibility Analysis:
Run ArcToolbox>Spatial Analyst Tools>Surface>Viewshed
suntax: Viewshed daydem QrtrMileShorePts2 D:\GIS\GISSpecialProjects\localgov\day
\ShoreView2 1 FLAT_EARTH #

Reclass Visibility Results:
Run ArcToolbox>Spatial Analyst Tools>Reclass>Reclassify
syntax: Reclassify "Visibility from N & S Shore Rds" Value "0 0;0 51 1" D:\GIS
\GISSpecialProjects\localgov\day\Reclass_Vis DATA

Run Majority Filter:
Replaces cells of a raster based upon the majority value of contiguous
neighboring cells.
Run ArcToolbox>Spatial Analyst Tools>Generalization>Majority Filter
MajorityFilter reclass_vis D:\GIS\GISSpecialProjects\localgov\day\Maj_Vis FOUR
MAJORITY

Run Boundary Clean:
Smoothes the boundary between zones by expanding and shrinking the boundary.
Run ArcToolbox>Spatial Analyst Tools>Generalization>Boundary Clean
```

1) Right click in menu area to Customize Toolbars.
2) Click Context Menus check box
3) Select Customize>Commands tab and click Linear Referencin
4) Open Context Menus>Feature Layer Context Menu
5) Drag the "Convert Hatches to Graphics..." command to the

Hatches


Layer Properties
General
Source
Selection
Display
Symbology
Fields
Definition Query
Labels
Routes
Hatches
Joins & Relates
Hatch features in this layer
Quarter Mile
Hatch Def(1)
Hatch Def(End)
Hatch Class
Import...
Hatch Interval
Specify the hatch interval in route measure units
Hatch interval:
402.336
Hatch interval using this field:
Id
Hatch Definitions
Add Hatch Definition
Pre-defined Hatch Style
Hatch Styles...
Other Options
Hatch Placement...
Scale Range...
SQL Query...
Add Class...
Remove Class
Remove All
OK
Cancel
Apply

Convert Hatches to Graphics



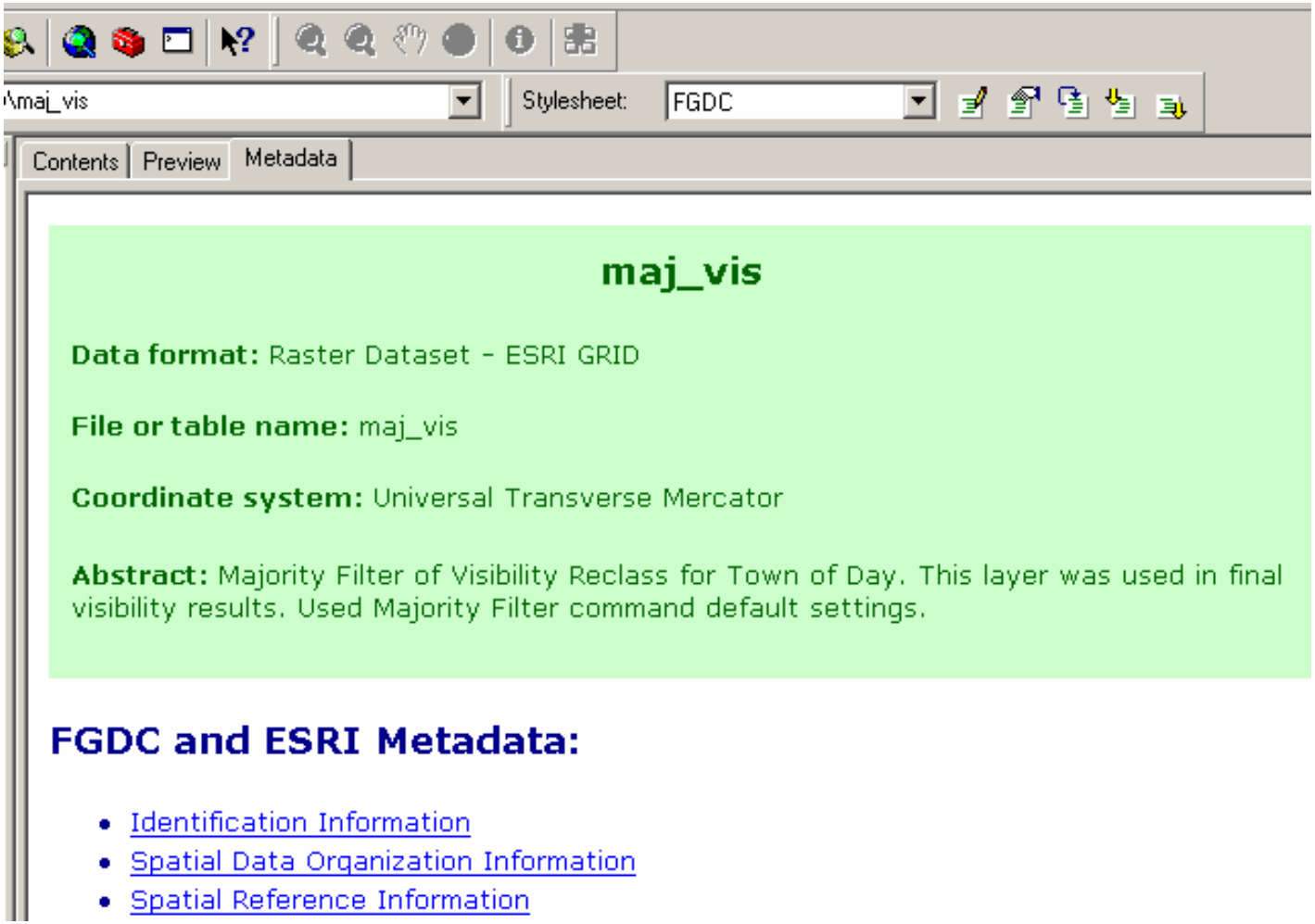
Spatial Analyst Tools Used

- ExtractByMask – creates a town DEM
- Viewshed – the visibility analysis using shore points
- Reclassify – “on/off” data
- Majority Filter – remove “salt and pepper”
- Boundary Clean
- Region Group, Extract by Attributes, Nibble

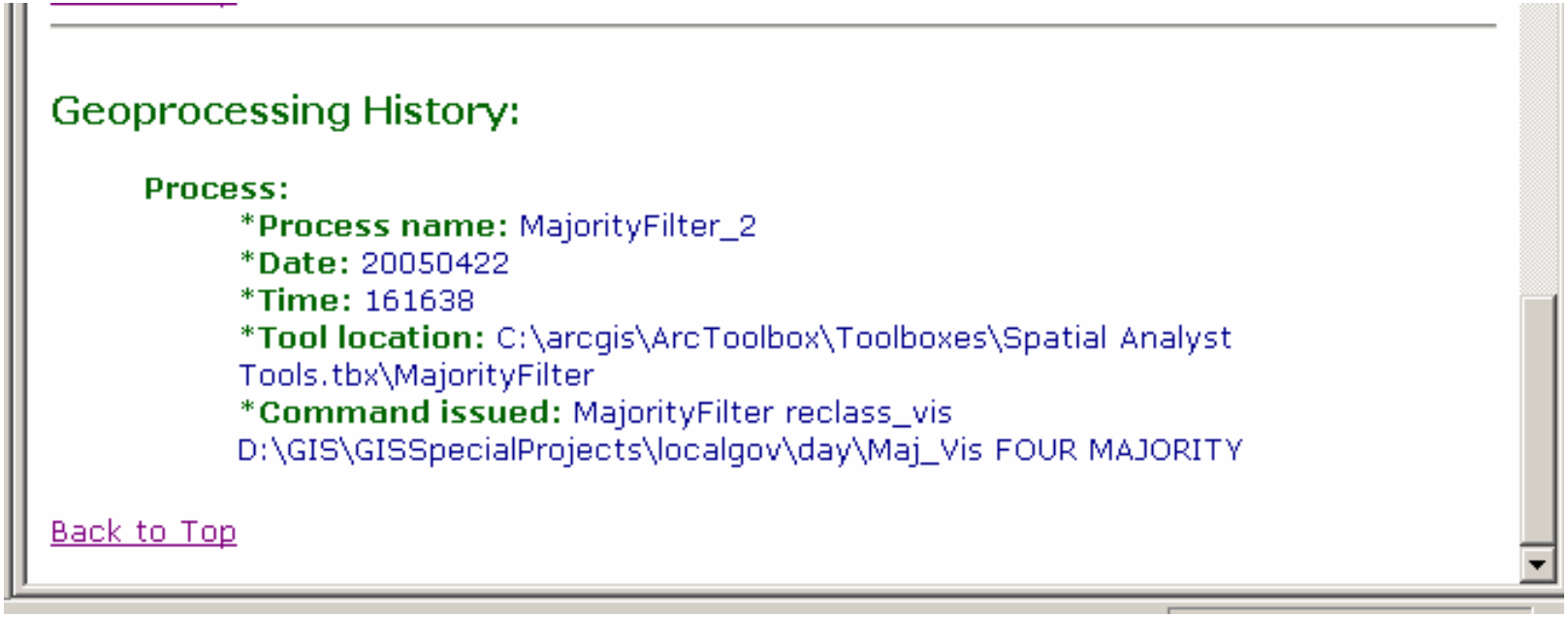
Vector Process

- Raster to Polygon
- Buffer – remove 1/10 mile setback from selected roads.
- Erase – remove northern, mostly Forest Preserve area of town.

Metadata


\maj_vis
Stylesheet:
FGDC
Contents
Preview
Metadata
maj_vis
Data format: Raster Dataset - ESRI GRID
File or table name: maj_vis
Coordinate system: Universal Transverse Mercator
Abstract: Majority Filter of Visibility Reclass for Town of Day. This layer was used in final visibility results. Used Majority Filter command default settings.
FGDC and ESRI Metadata:
Identification Information
Spatial Data Organization Information
Spatial Reference Information

Geoprocessing History



Welcome to
Town of Day
est. 1819

Thank You

www.apa.state.ny.us/gis/

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