NEW YORK
STATE OF
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Department of
Environmental
Conservation

Landscape linkages: engaging communities in planning for habitat connectivity

Northeast Transportation and Wildlife Conference
September 14, 2016, Lake Placid, NY

Cornell University

Presentation Outline

- Introduction and Background
- Local Connectivity Planning
- Communities and Culverts
- Dam Removal

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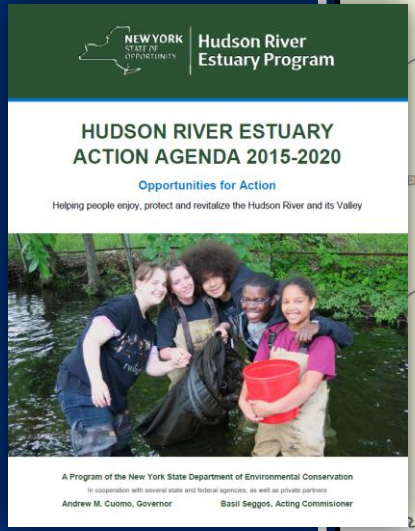
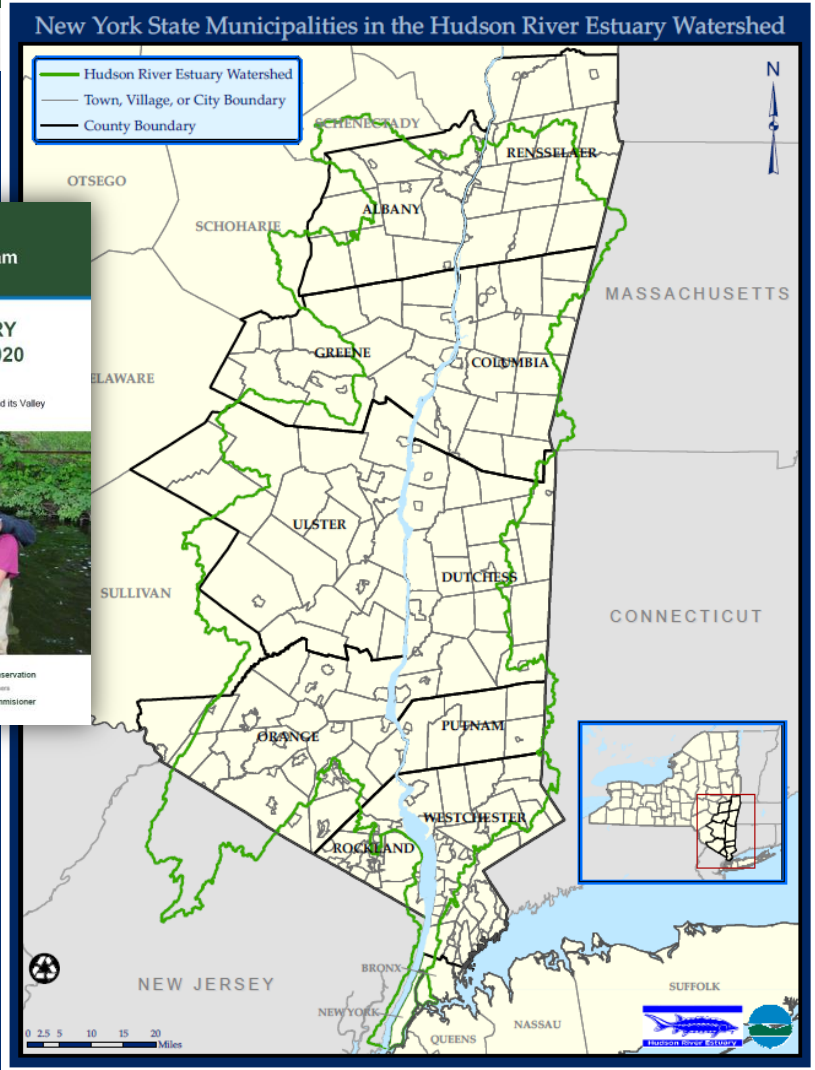
Hudson River Estuary Program

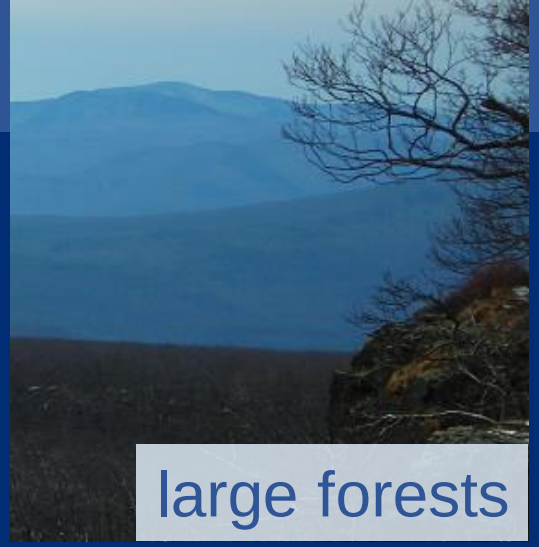
Working to achieve six key benefits:

- vital estuary ecosystem
- clean water
- resilient communities
- conservation of fish, wildlife, and habitats
- preservation of the river's natural scenery
- enhanced opportunities for education, river access, recreation, and inspiration





estuary shoreline



large forests

CONNECTIVITY

wetlands

stream corridors

Photos by L. Heady

NYS Wildlife Action Plan (2015)

Maintaining or restoring connectivity is important for Species of Greatest Conservation Need (SGCN) in:

- forests
- streams and rivers
- wetlands
- unique habitats

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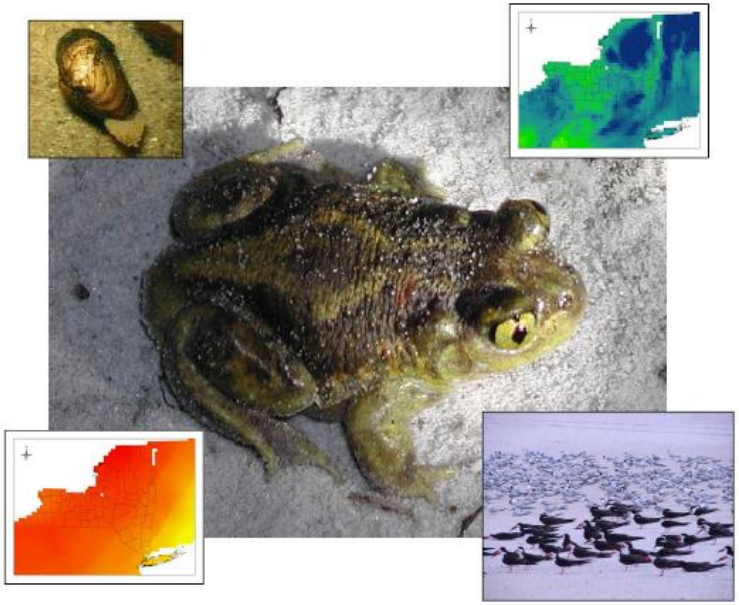
NEW YORK STATE WILDLIFE ACTION PLAN

September 2015

www.dec.ny.gov

Vulnerability of At-risk Species to Climate Change in New York (2011)

"aquatic and terrestrial habitat connectivity must be maintained and restored"



Vulnerability of At-risk Species to Climate Change in New York

Matthew D. Schlesinger, Jeffrey D. Corser, Kelly A. Perkins, and Erin L. White

New York Natural Heritage Program

A Partnership between The Nature Conservancy and the NYS Department of Environmental Conservation

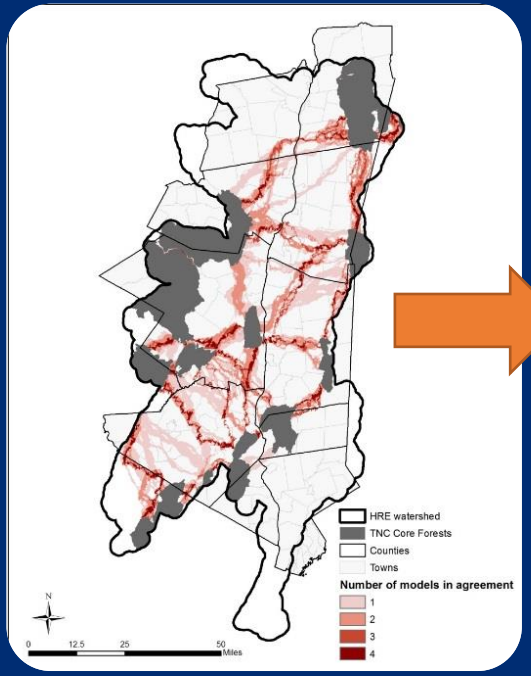
625 Broadway, 5th Floor Albany, NY 12233-4757 (518) 402-8935 Fax (518) 402-8925 www.nynhp.org

Local Connectivity Planning

Photo by L. Heady

Cornell Regional Connectivity Modeling Project

modeled coarse-scale connectivity of matrix forest blocks



How can communities incorporate connectivity into *local* land-use planning?

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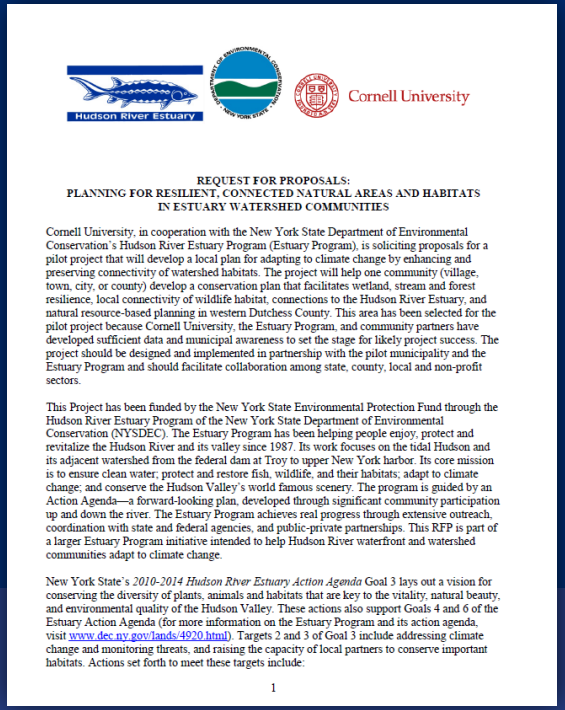
PILOT PROJECT:

Planning for Resilient, Connected Natural Areas and Habitats in Estuary Watershed Communities



Hudson River Estuary

Cornell University

REQUEST FOR PROPOSALS:
PLANNING FOR RESILIENT, CONNECTED NATURAL AREAS AND HABITATS IN ESTUARY WATERSHED COMMUNITIES

Cornell University, in cooperation with the New York State Department of Environmental Conservation's Hudson River Estuary Program (Estuary Program), is soliciting proposals for a pilot project that will develop a local plan for adapting to climate change by enhancing and preserving connectivity of watershed habitats. The project will help one community (village, town, city, or county) develop a conservation plan that facilitates wetland, stream and forest resilience, local connectivity of wildlife habitat, connections to the Hudson River Estuary, and natural resource-based planning in western Dutchess County. This area has been selected for the pilot project because Cornell University, the Estuary Program, and community partners have developed sufficient data and municipal awareness to set the stage for likely project success. The project should be designed and implemented in partnership with the pilot municipality and the Estuary Program and should facilitate collaboration among state, county, local and non-profit sectors.

This Project has been funded by the New York State Environmental Protection Fund through the Hudson River Estuary Program of the New York State Department of Environmental Conservation (NYSDEC). The Estuary Program has been helping people enjoy, protect and revitalize the Hudson River and its valley since 1987. Its work focuses on the tidal Hudson and its adjacent watershed from the federal dam at Troy to upper New York harbor. Its core mission is to ensure clean water; protect and restore fish, wildlife, and their habitats; adapt to climate change; and conserve the Hudson Valley's world famous scenery. The program is guided by an Action Agenda—a forward-looking plan, developed through significant community participation up and down the river. The Estuary Program achieves real progress through extensive outreach, coordination with state and federal agencies, and public-private partnerships. This RFP is part of a larger Estuary Program initiative intended to help Hudson River waterfront and watershed communities adapt to climate change.

New York State's *2010-2014 Hudson River Estuary Action Agenda* Goal 3 lays out a vision for conserving the diversity of plants, animals and habitats that are key to the vitality, natural beauty, and environmental quality of the Hudson Valley. These actions also support Goals 4 and 6 of the Estuary Action Agenda (for more information on the Estuary Program and its action agenda, visit www.dec.ny.gov/lands/4920.html). Targets 2 and 3 of Goal 3 include addressing climate change and monitoring threats, and raising the capacity of local partners to conserve important habitats. Actions set forth to meet these targets include:

1

- RFP (Spring 2014)
- Focused on western Dutchess County (12 munis)
- Required collaborative team
- Project timeline August 1 - December 15, 2014

PILOT PROJECT: *Town of Red Hook, Village of Red Hook, Village of Tivoli*

Dutchess County, NY

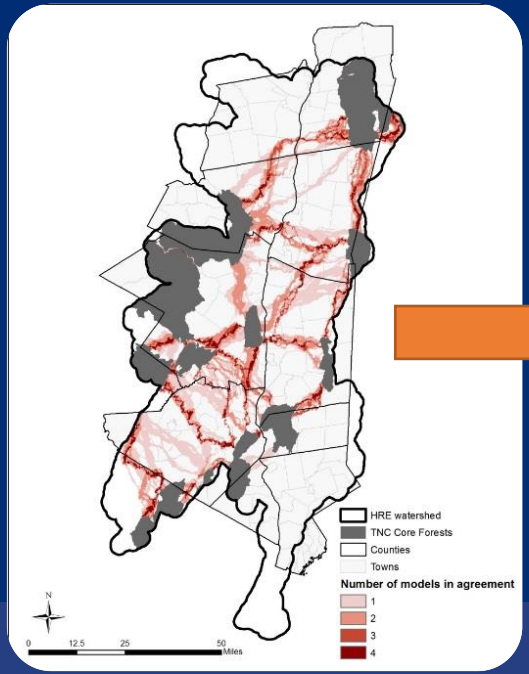
Process

- Create fine-scale connectivity model
- Engage stakeholders to incorporate community priorities
- Review existing planning documents
- Develop framework of conservation opportunities
- Implement recommendations

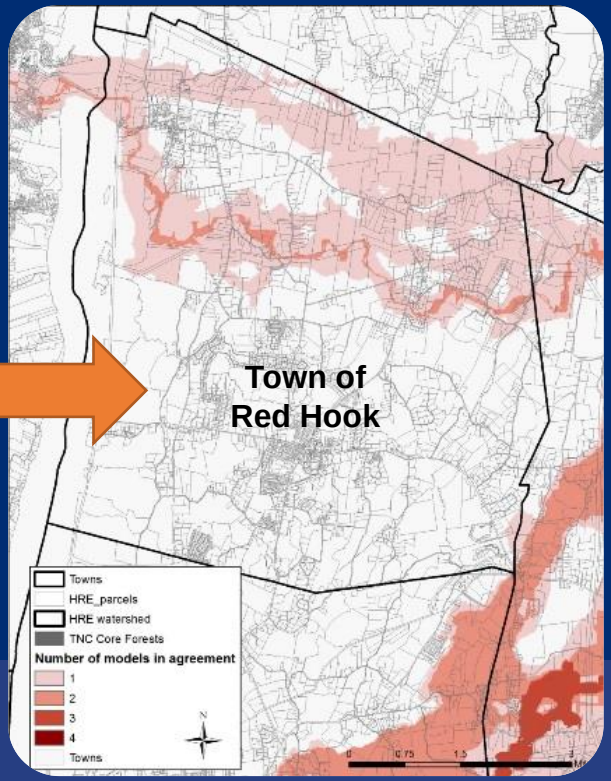
Photos by L. Heady

Cornell Regional Connectivity Modeling Project

modeled coarse-scale connectivity of matrix forest blocks

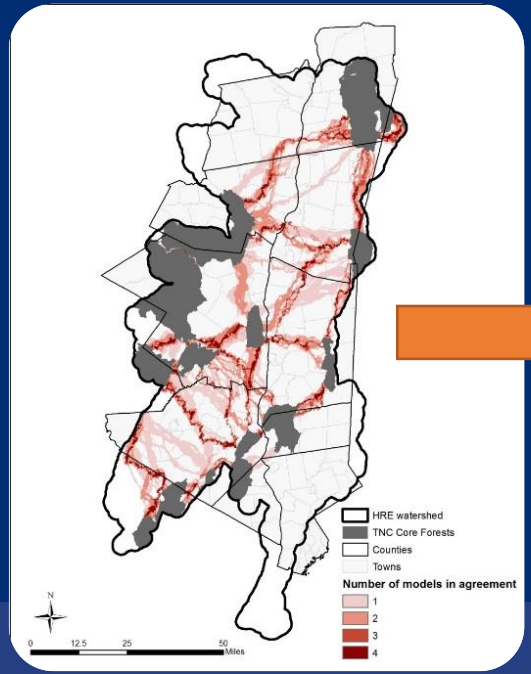


Martin et al. 2014

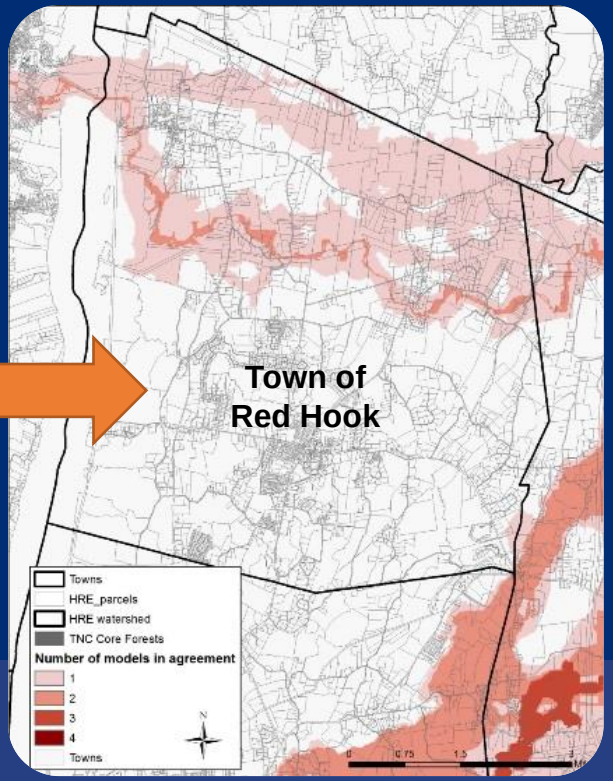


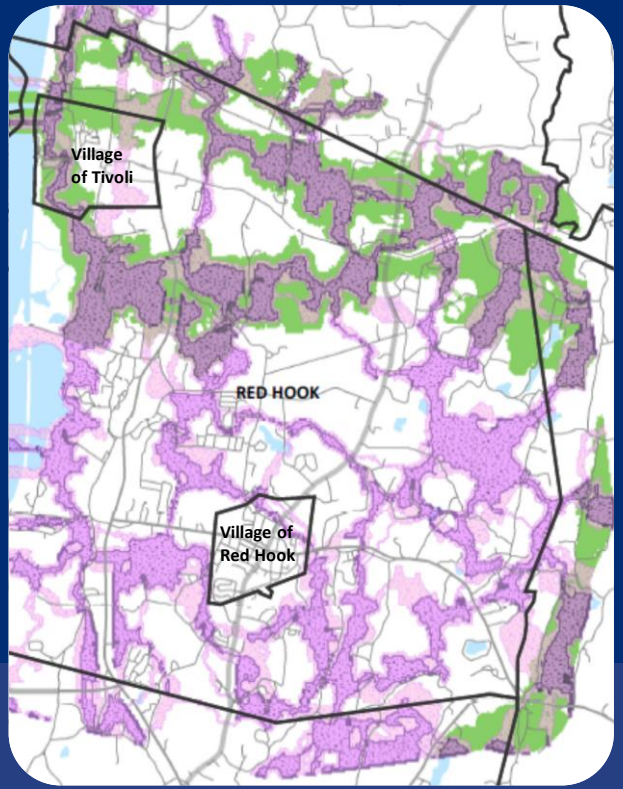
Not appropriate to "zoom in" to local scale on regional model.

Cornell Regional Connectivity Modeling Project

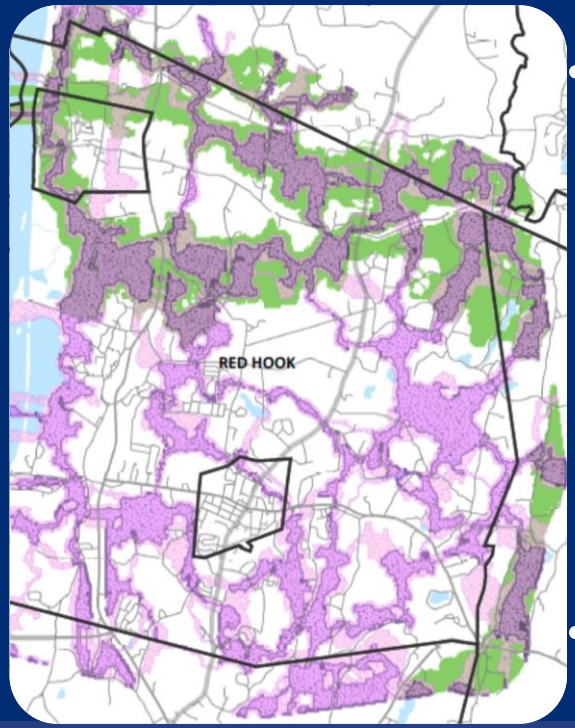


Martin et al. 2014





Cornell Local Connectivity Modeling Pilot



- Followed methods in *Washington Connected Landscapes Project* (2010) to create ecological integrity index for Red Hook; used finer-scale data
  - National Land Cover Data 2011, NWI, NHD
  - forest* edges/interior, forested riparian edges/interior
  - ESRI Detailed Streets Data, Arterial Classification Codes, NYSDOT RRs
  - 30’ margins of agricultural land adjacent to forests
- Model identified linkages between forest patches >200 acres

Martin et al. 2014

PILOT PROJECT: *Town of Red Hook, Village of Red Hook, Village of Tivoli*

Process

- ✓ Create fine-scale connectivity model
- Engage stakeholders to incorporate community priorities
- Review existing planning documents
- Develop framework of conservation opportunities
- Implement recommendations

Photos by L. Heady

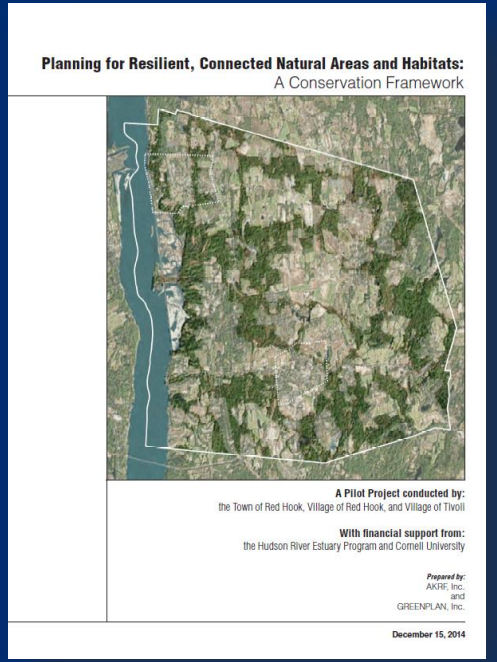
Stakeholder Recommended Actions

Short-Term

- Map areas of concern and designate as CEAs

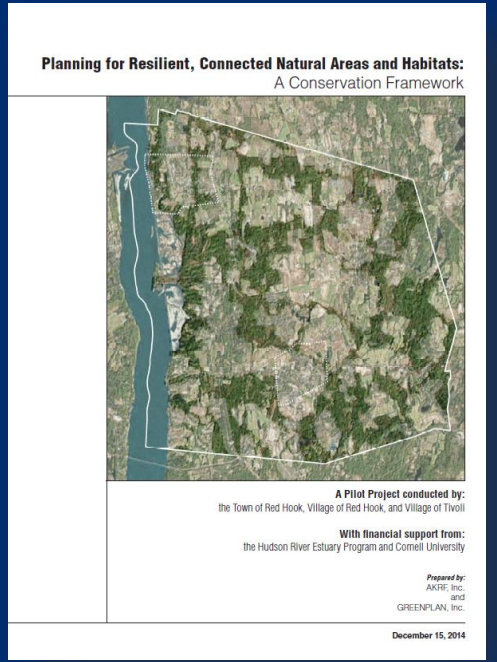
Mid-Term

- Amend zoning law (review requirements for Development Near Bodies of Water; Stream Corridors; Conservation Subdivisions; AB District siting standards)
- Amend subdivision regulations (review Resource Analysis Map; Supplemental Plat requirements for residential development)
- Review 2011 Community Preservation Program Plan (State law requires update every five years)



Long-Term and Ongoing Actions

- Work with Bard and Hudsonia on habitat studies
- Adopt a Biodiversity Overlay District
- Maintain a database of habitat assessments, wetland delineations
- Increase public/agency awareness of ecological connectivity
- Adopt a Forestry Management Plan, amend Timber Harvesting provisions, avoid fragmentation of three large forest areas in Open Space Plan
- Use mapping to prioritize “pinch points” for restoration and areas where mitigation strategies should be used for new roads, highway improvements



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PILOT PROJECT: *Town of Red Hook, Village of Red Hook, Village of Tivoli*

Process

- ✓ Create fine-scale connectivity model
- ✓ Engage stakeholders to incorporate community priorities
- ✓ Review existing planning documents
- ✓ Develop framework of conservation opportunities
- • Implement recommendations

Photos by L. Heady

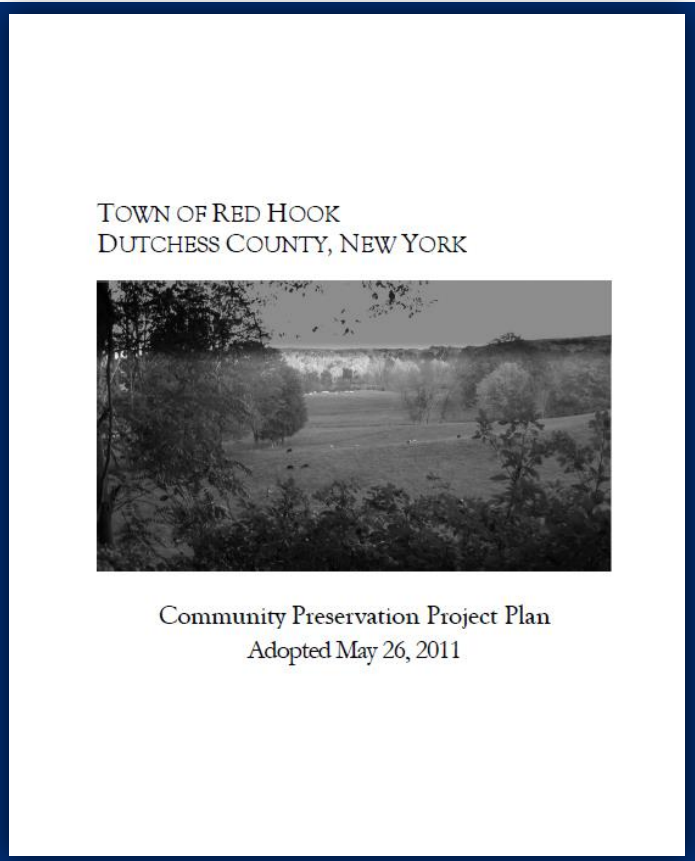
Mid-term Action: “Review 2011 Community Preservation Program Plan”

<u>Community Preservation Fund (CPF):</u>

- Article 4, Section 64-h of NYS Town Law
- Authorizes town board to establish CPF via local referendum
- CPF is supported by 2% real estate transfer tax on purchases above median home price

<u>Red Hook Conservation Success to Date</u>

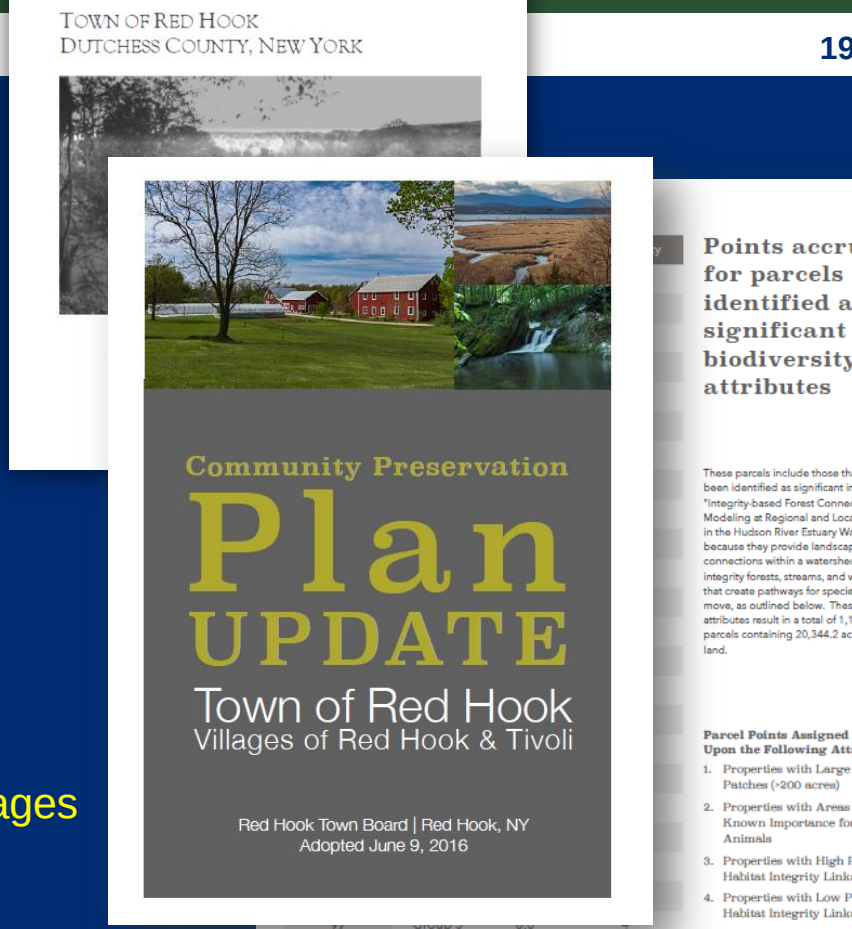
- >2,700 acres preserved by the town through PDR
- Leveraged County, State, and Federal funds and partnered with local land trusts
- Emphasis on farmland



✓ Review 2011 Community Preservation Program Plan

Seven Target Areas in 2016 Update:

- ag lands and water protection areas
- ecologically sensitive areas
- scenic features, trails, and gateways
- historic values
- unique village or village-enhancing areas
- ➢ **significant biodiversity areas:** include linkages
- Hudson riverfront lands



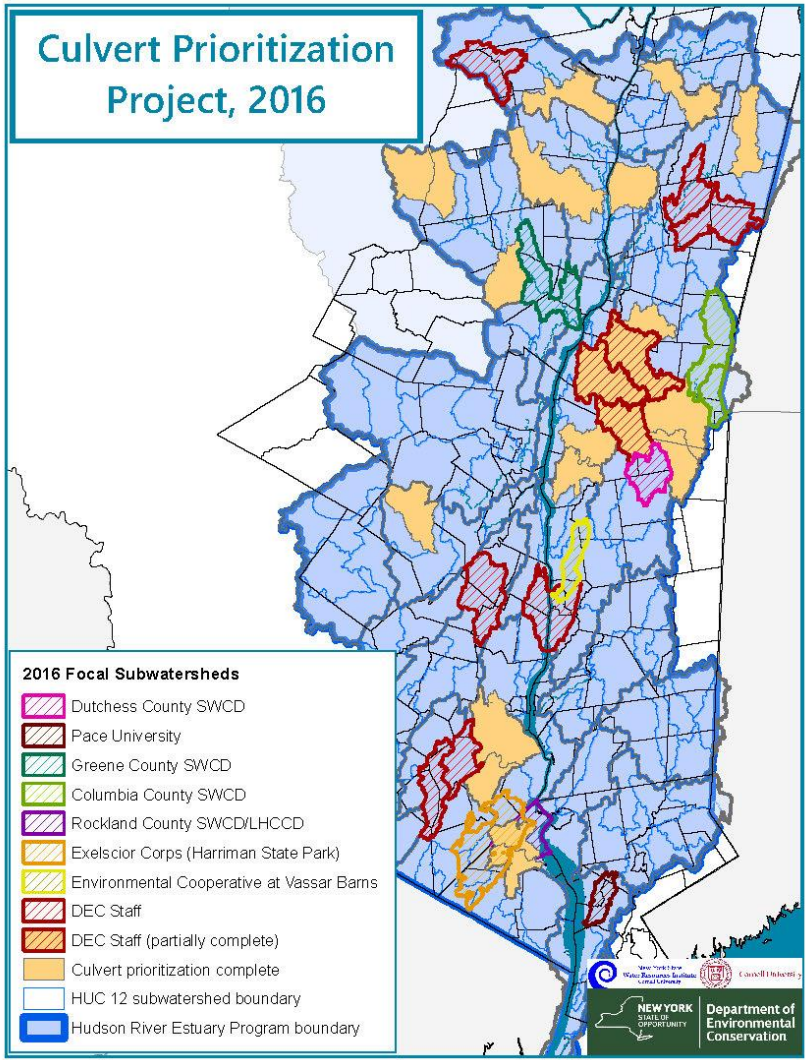
National Forest System Legacy Roads and Trails program 2013

Aquatic barriers "…sit unneeded, unused, undermaintained—a growing ecological and fiscal liability"

USFS Legacy Roads and Trails program 2013

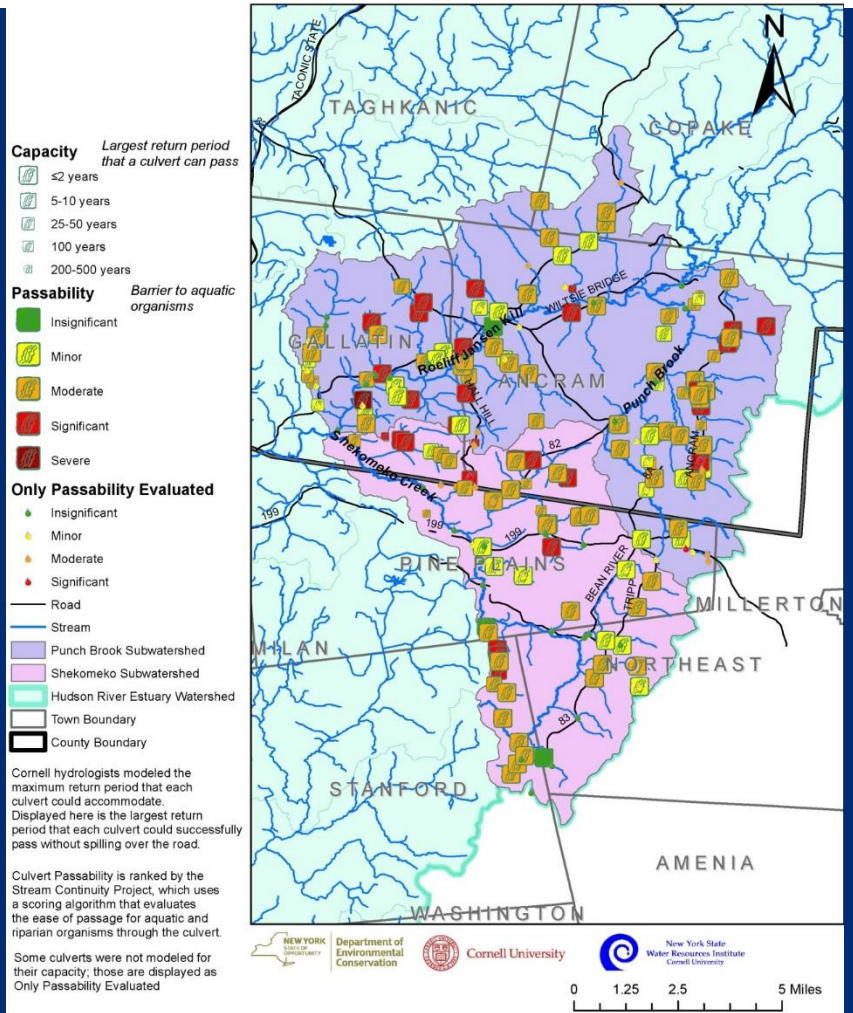
Culvert Prioritization

- Field work identifies culverts
- NAACC for passability
- Model current and future culvert capacity
- Prioritize culverts
- Work with municipalities to fund replacement of top priorities



Culverts Prioritized for Capacity and Passability

Shekomeko and Punch Brook Subwatersheds, Dutchess and Columbia counties, NY



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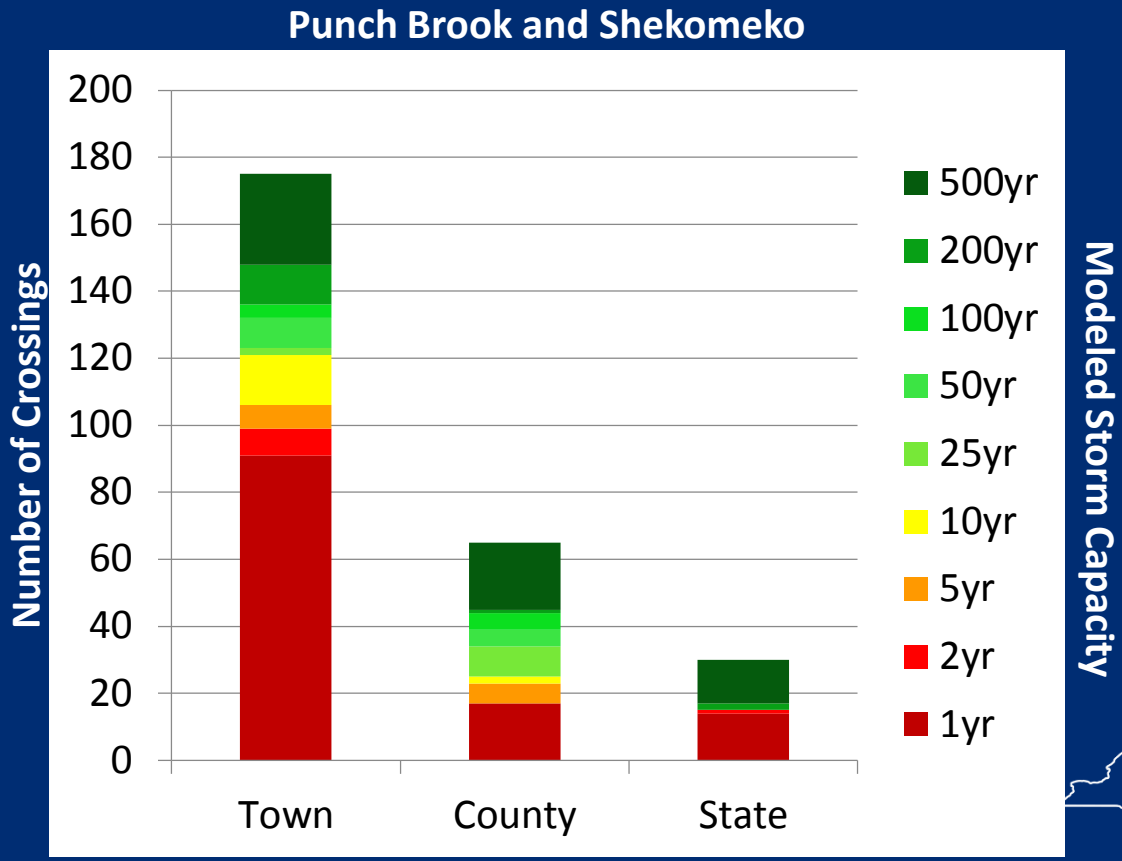
Many culverts are undersized and on town roads



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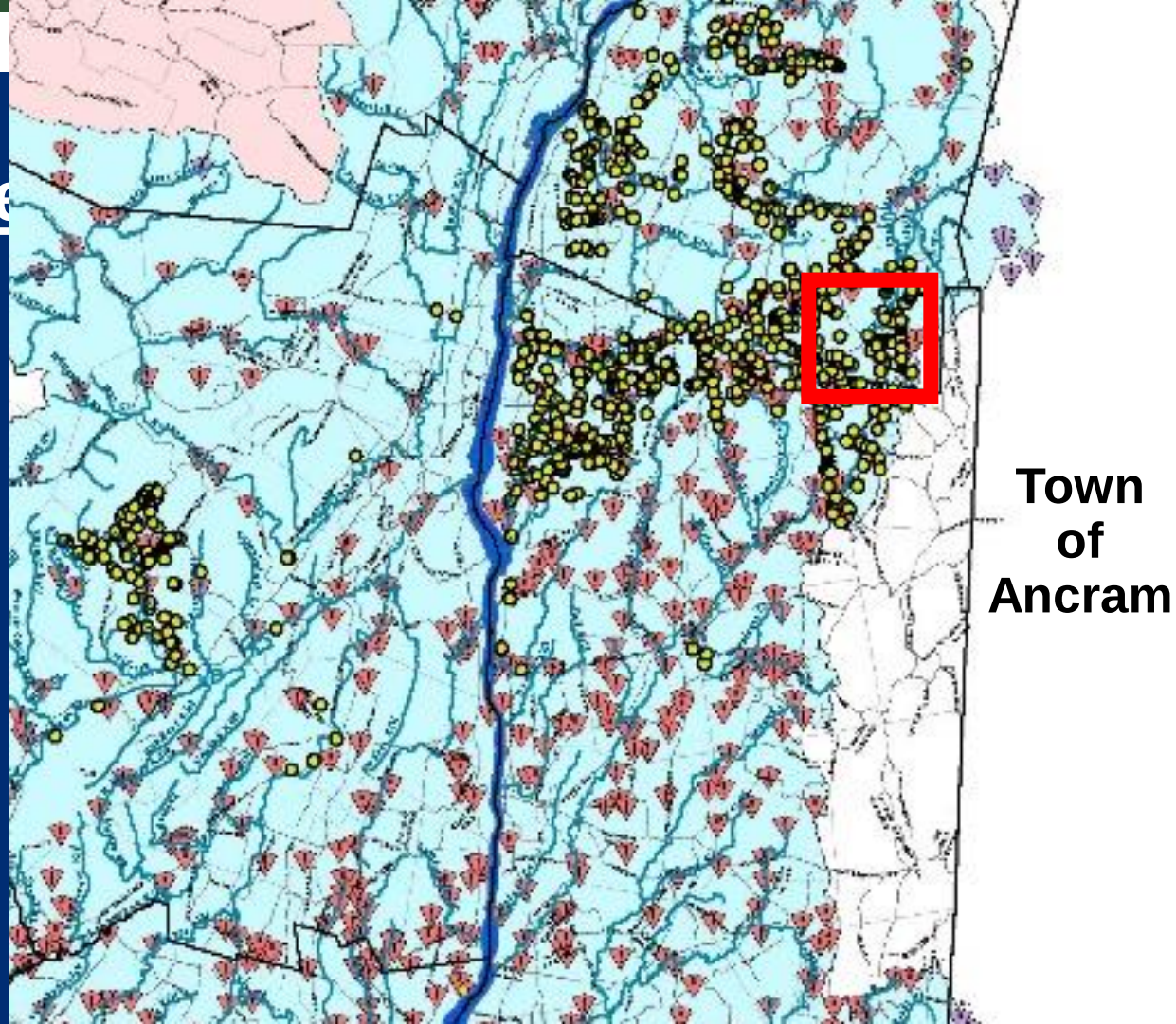
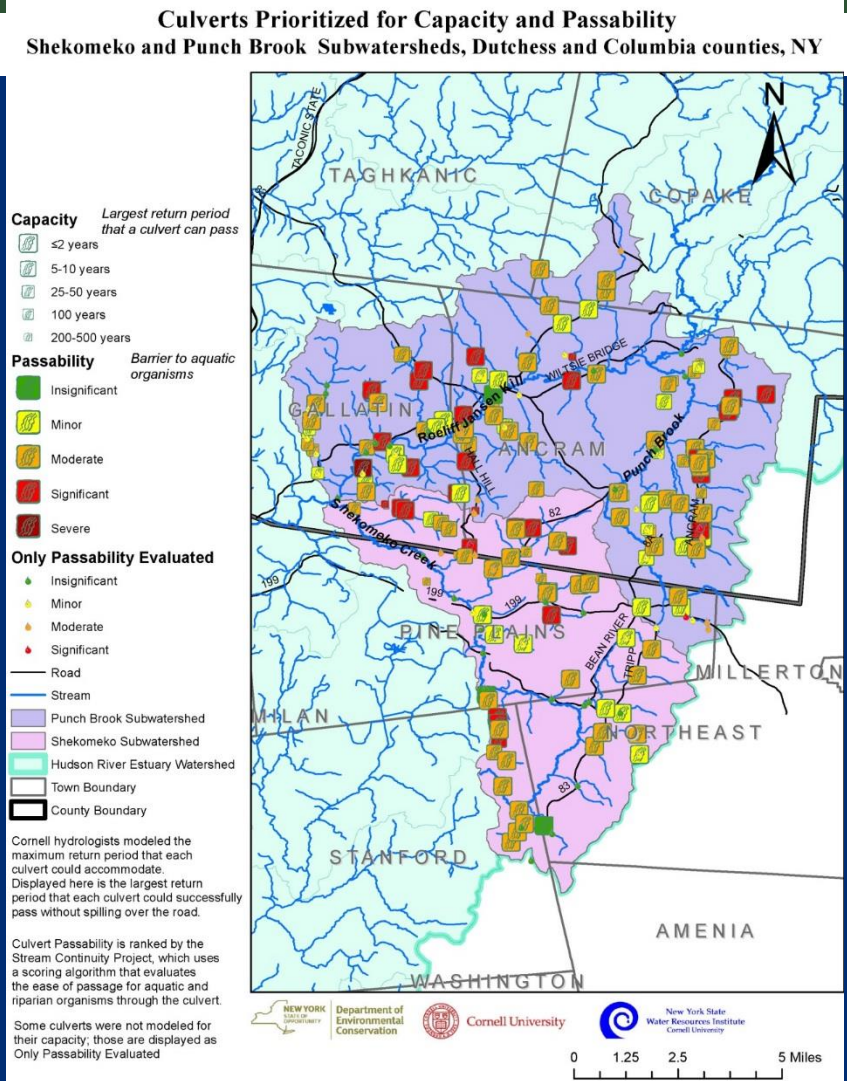


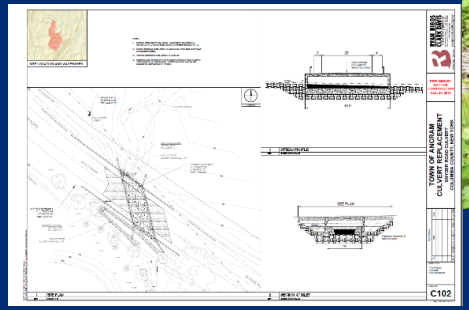
Town of Ancram

- 285 culverts
- 121 undersized culverts (124 in 2050)
- 165 impassable culverts
- 50,000 acres assessed
- 80% of Ancram assessed



Town of Ancram

- Wrote their own grant
- $220,000 for tributary restoration in 2015
- 3 culvert replacement designs, replace 2



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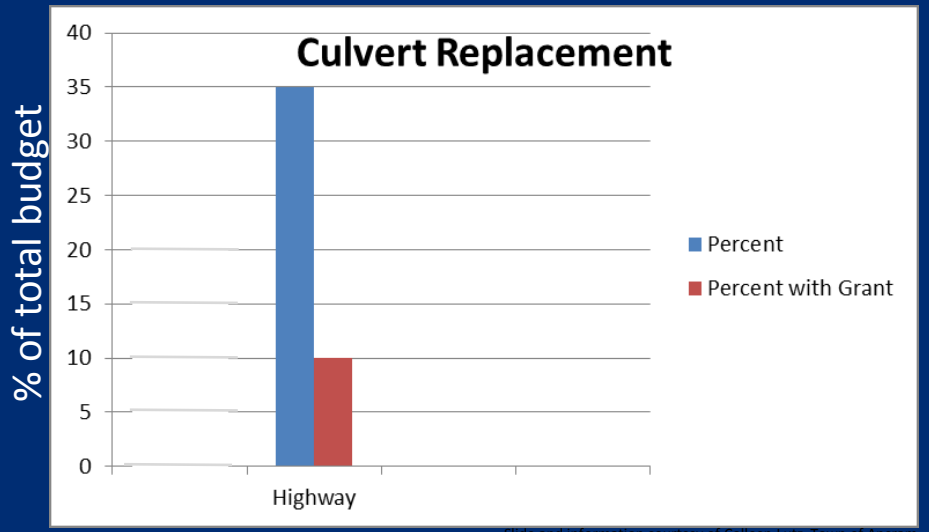
Town of Ancram

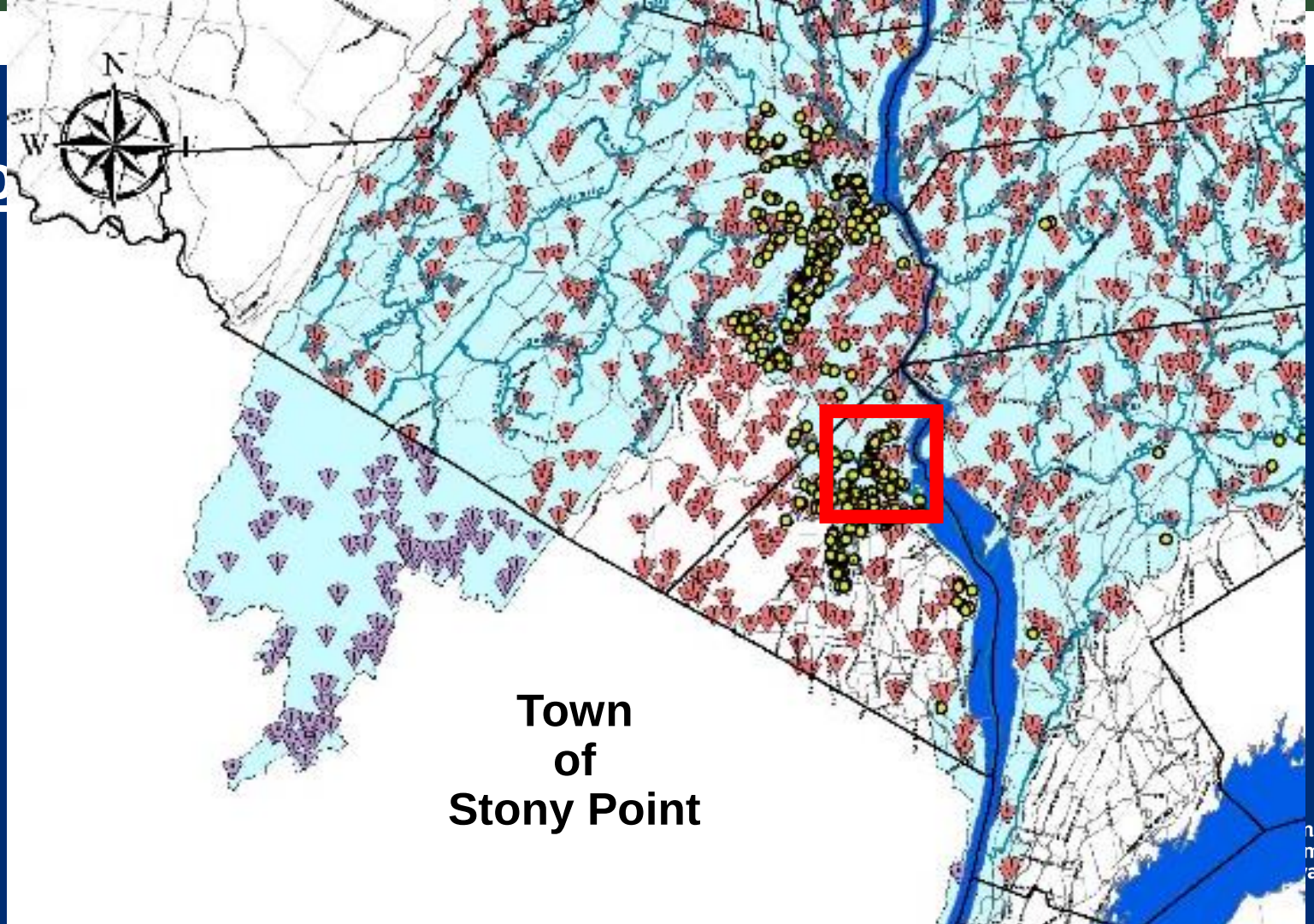
- Was 35% of annual highway budget
- With grant became 10% of budget

- “3 for less than the price of 1!”



Slide and information courtesy of Colleen Lutz, Town of Ancram

Disco



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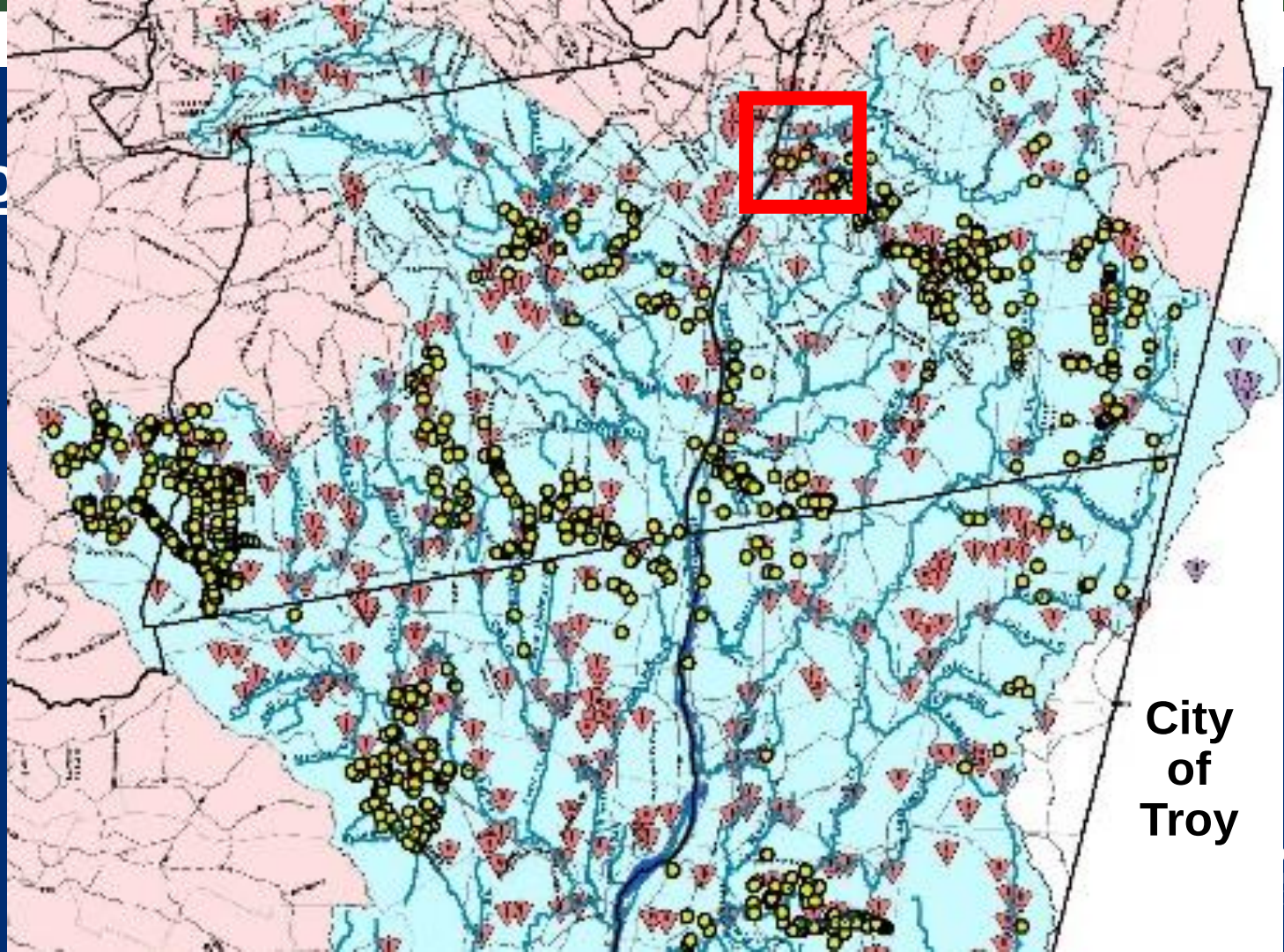
Town of Stony Point

- Organized by the Soil and Water Conservation District
- Municipal culvert management plan
- Adding in:
  - surveys of privately owned culverts
  - condition of the crossing
  - risk to town from flooding and failure

Disco



For more information:

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Photo by Andrew Meyer

Photo by Laura Heady

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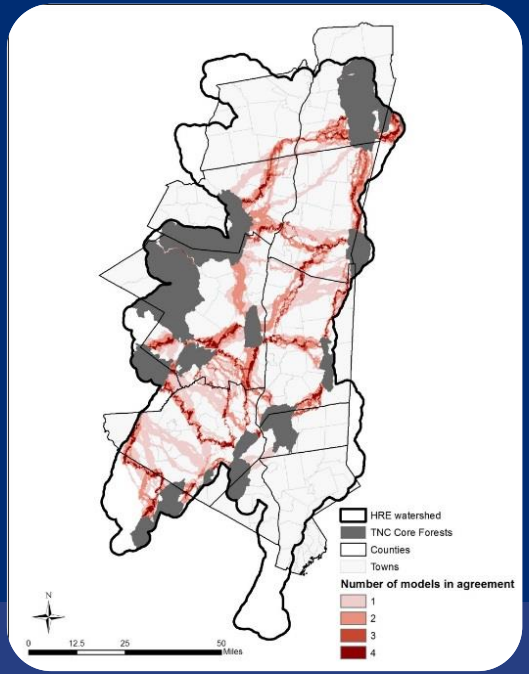
Cornell Regional Connectivity Modeling Project

modeled coarse-scale connectivity of matrix forest blocks



- Followed methods in Washington Connected Landscapes Project (2010) to create ecological integrity index for watershed
  - National Land Cover Data 2011
  - TIGER/Line Shapefiles 2014 Roads, NYSDOT RRs
- Converted ecological integrity model into resistance surface models
- Modelled least-cost corridors between Matrix Forest Patches (TNC, New England NHPs)
- Combined results to identify areas of model agreement

Martin et al. 2014