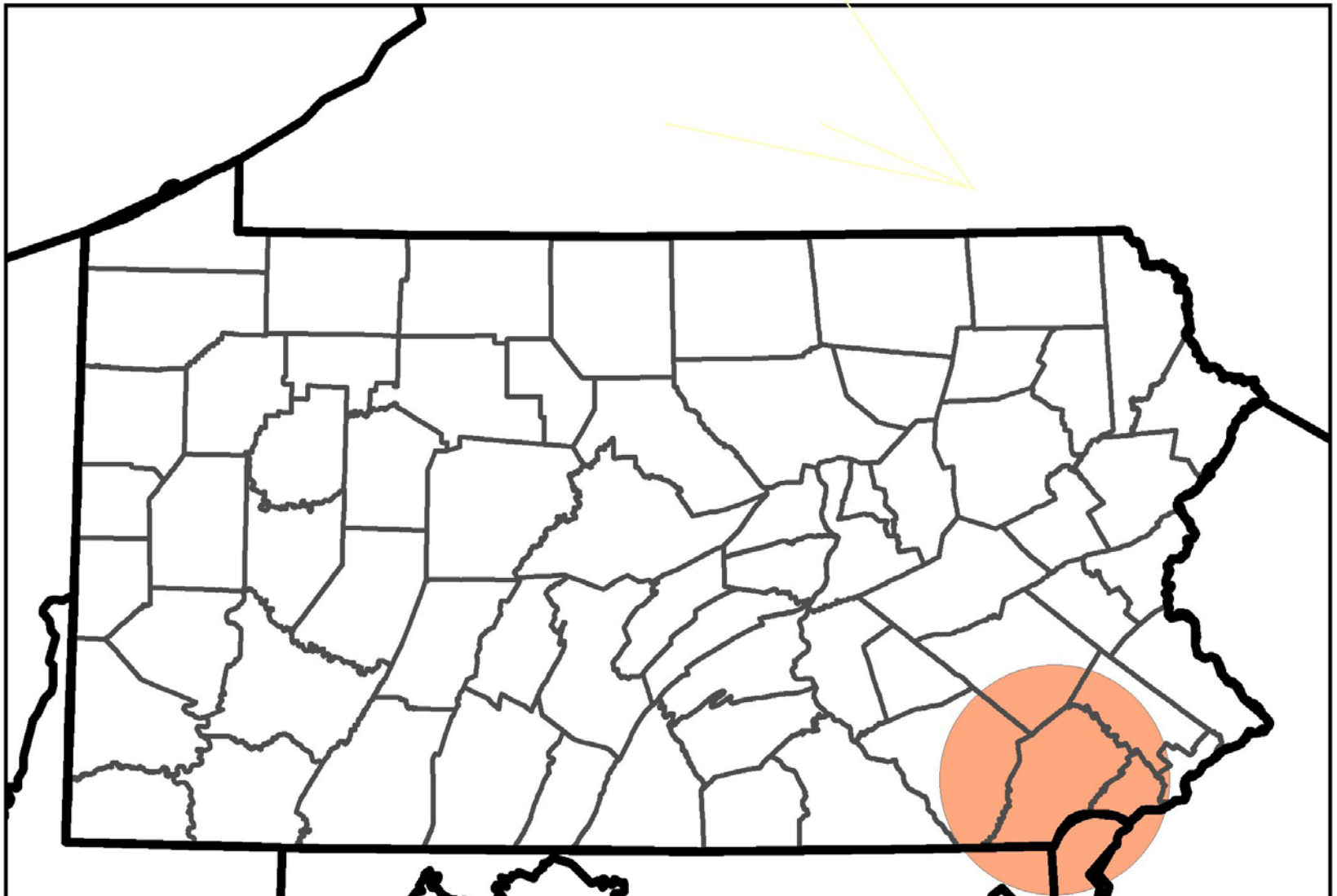
BRANDYWINE CONSERVANCY HONEY BROOK MODEL

JOHN GOODALL
WESTERN AREA MANAGER

Farmland Preservation Program

BRANDYWINE CONSERVANCY

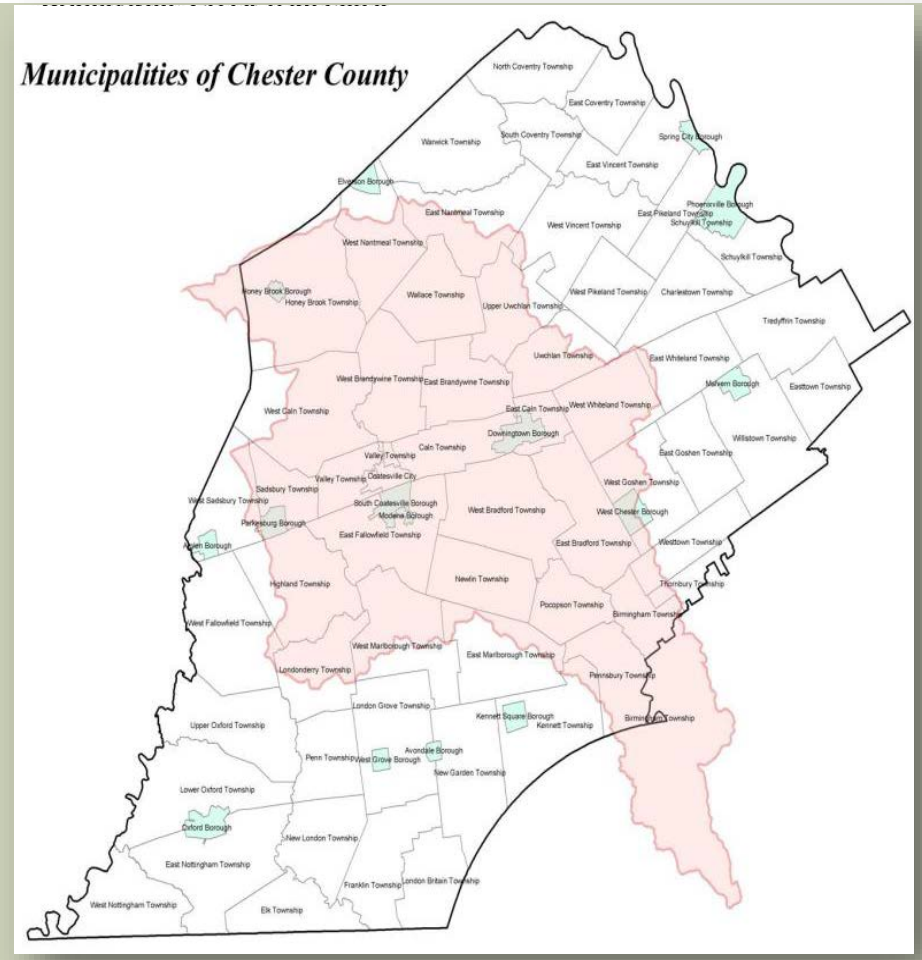


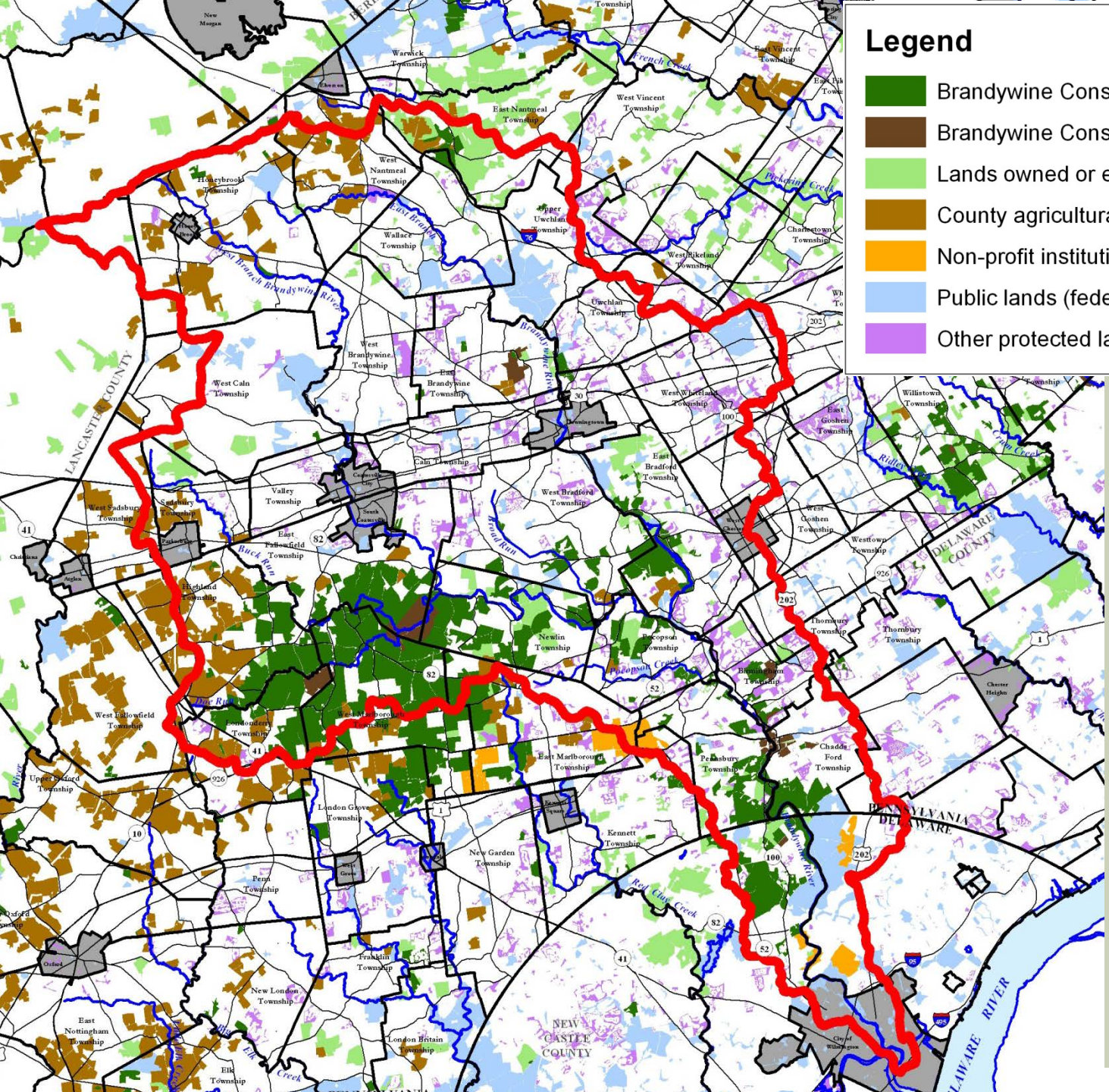
Brandywine Conservancy

A watershed conservation organization for Pennsylvania and Delaware.

Land trust that also provides municipal planning, zoning, and other assistance.

Mission is to protect the water resources of the Brandywine and other areas of special interest.

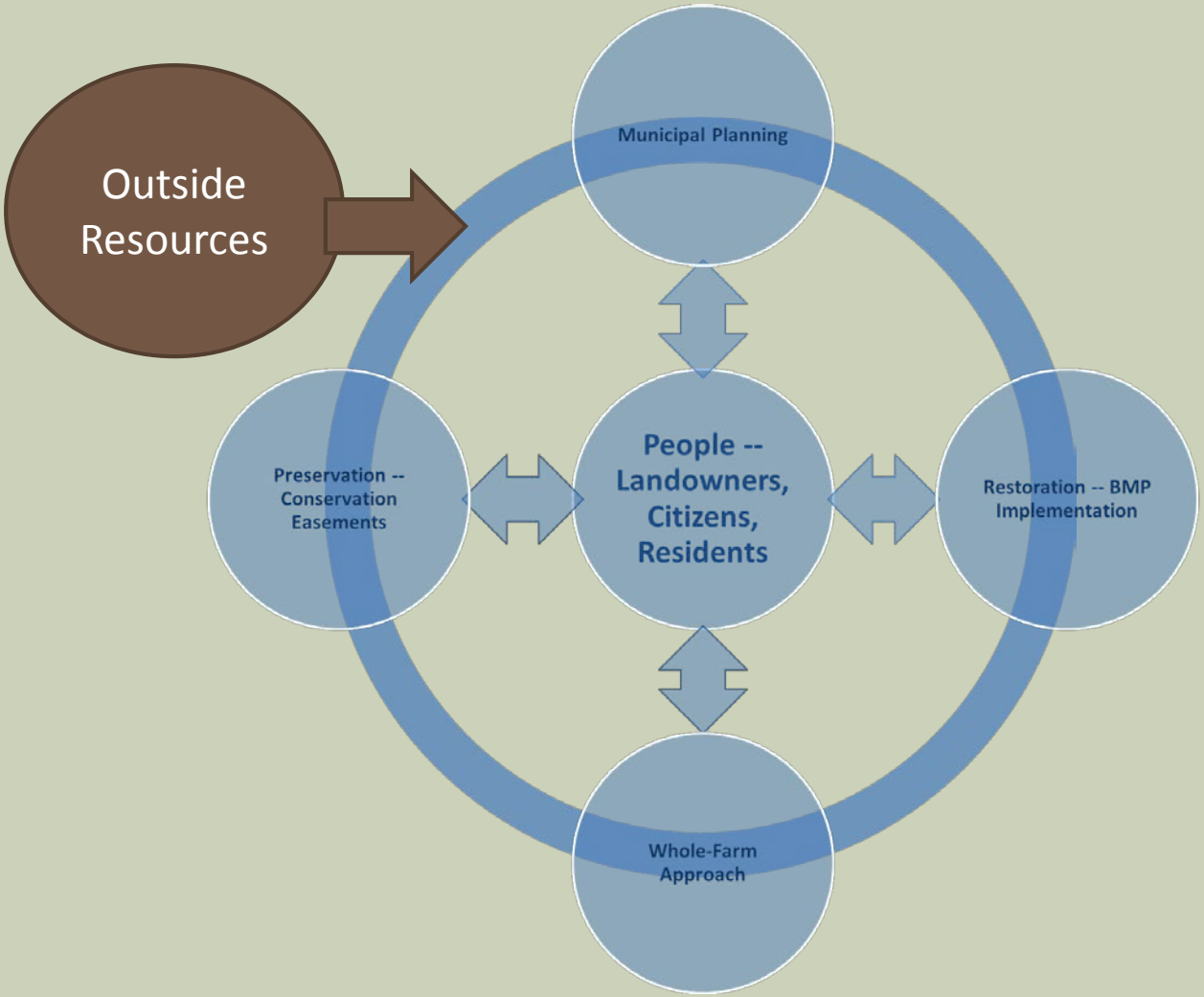




Over 36,000 acres protected

463 separate conservation easements

BRANDYWINE CONSERVANCY
INTEGRATED APPROACH TO WATER QUALITY AND FARMLAND PRESERVATION



UP IS DOWN AND DOWN IS UP

- Municipal vision of preservation is promoted to the constituents through outreach and education
- Constituent vision is promoted at the municipal level through innovative regulatory tools
- Identifying key local players to facilitate opportunity
- Take Documents and use them at the local level
- Use threat/opportunity to incite change
- Use defining land use to incite cooperation

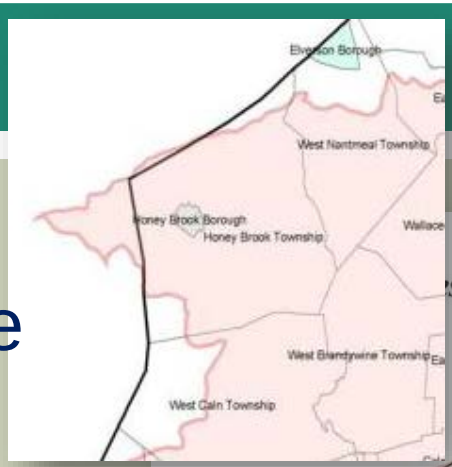
HONEY BROOK MODEL

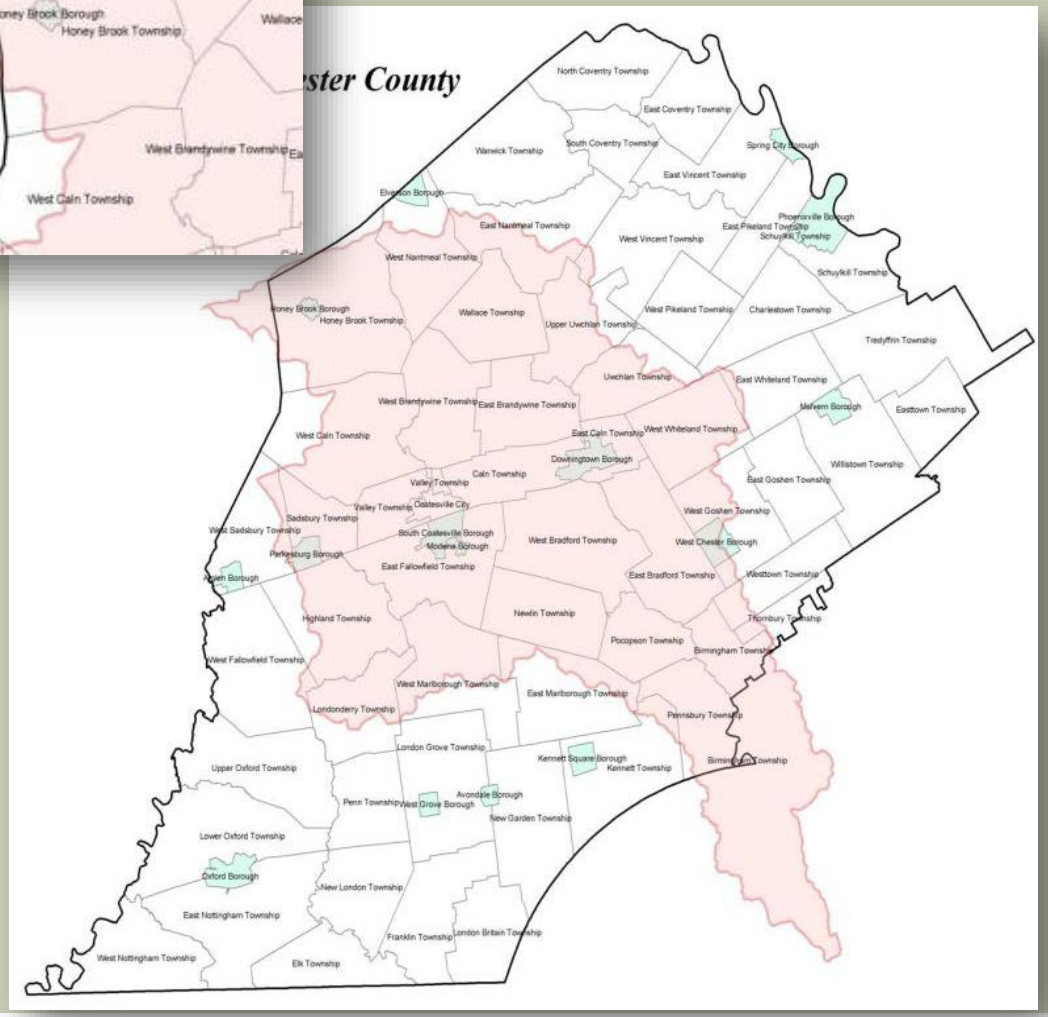
Farmland Preservation Program

HONEY BROOK

Special Focus on the Headwater Areas of the Brandywine.

Both the East and West Branches of the Brandywine Form in Honey Brook Township, PA





Township: 25 square miles
16,000 acres
6,200 people

Roughly 70% of the Township is in agricultural use.
Roughly 80% of Township farmland owned/operated by Plain Sect community

Photo courtesy Brandywine Conservancy

Honey Brook

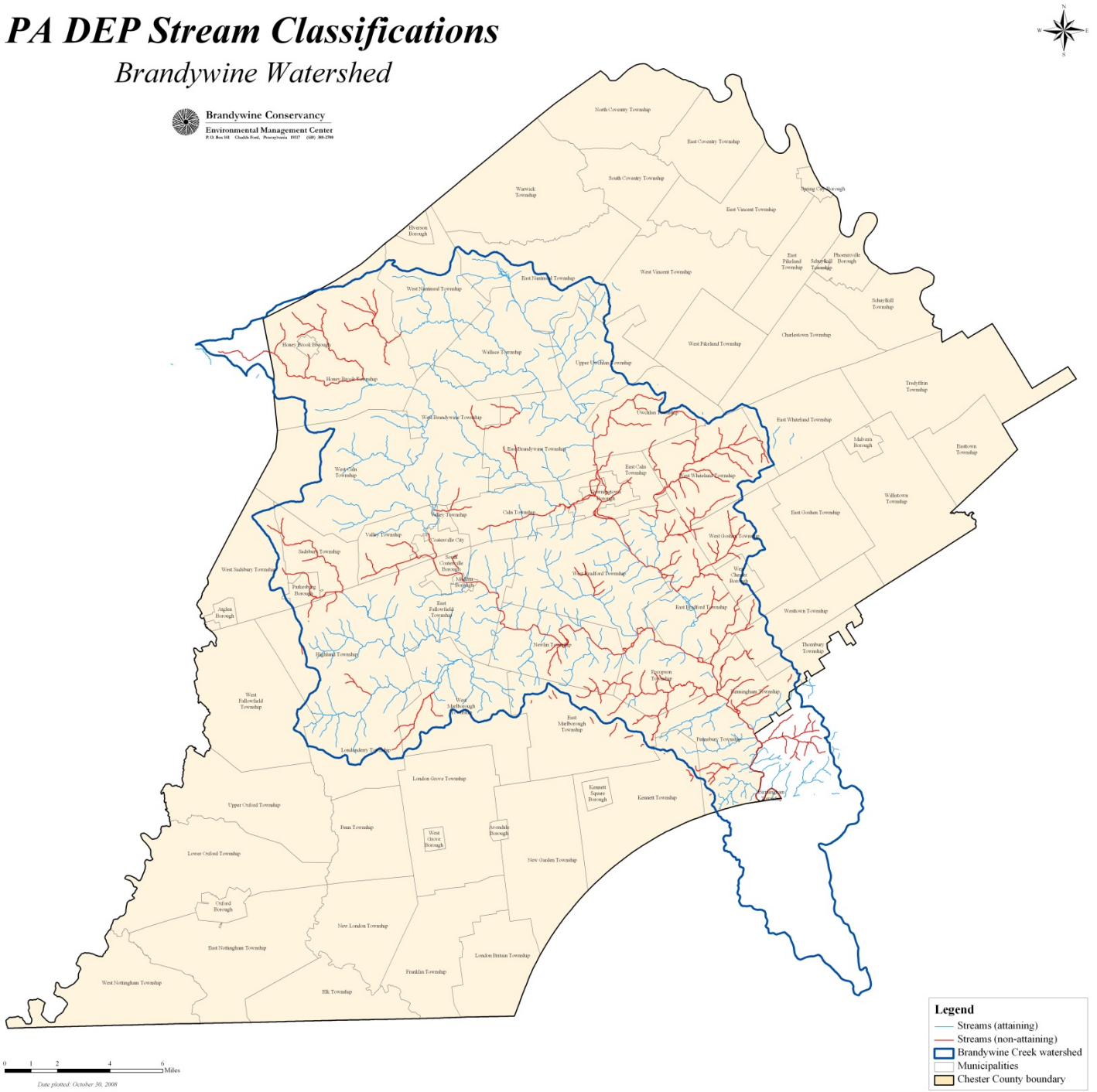
Economic Activity

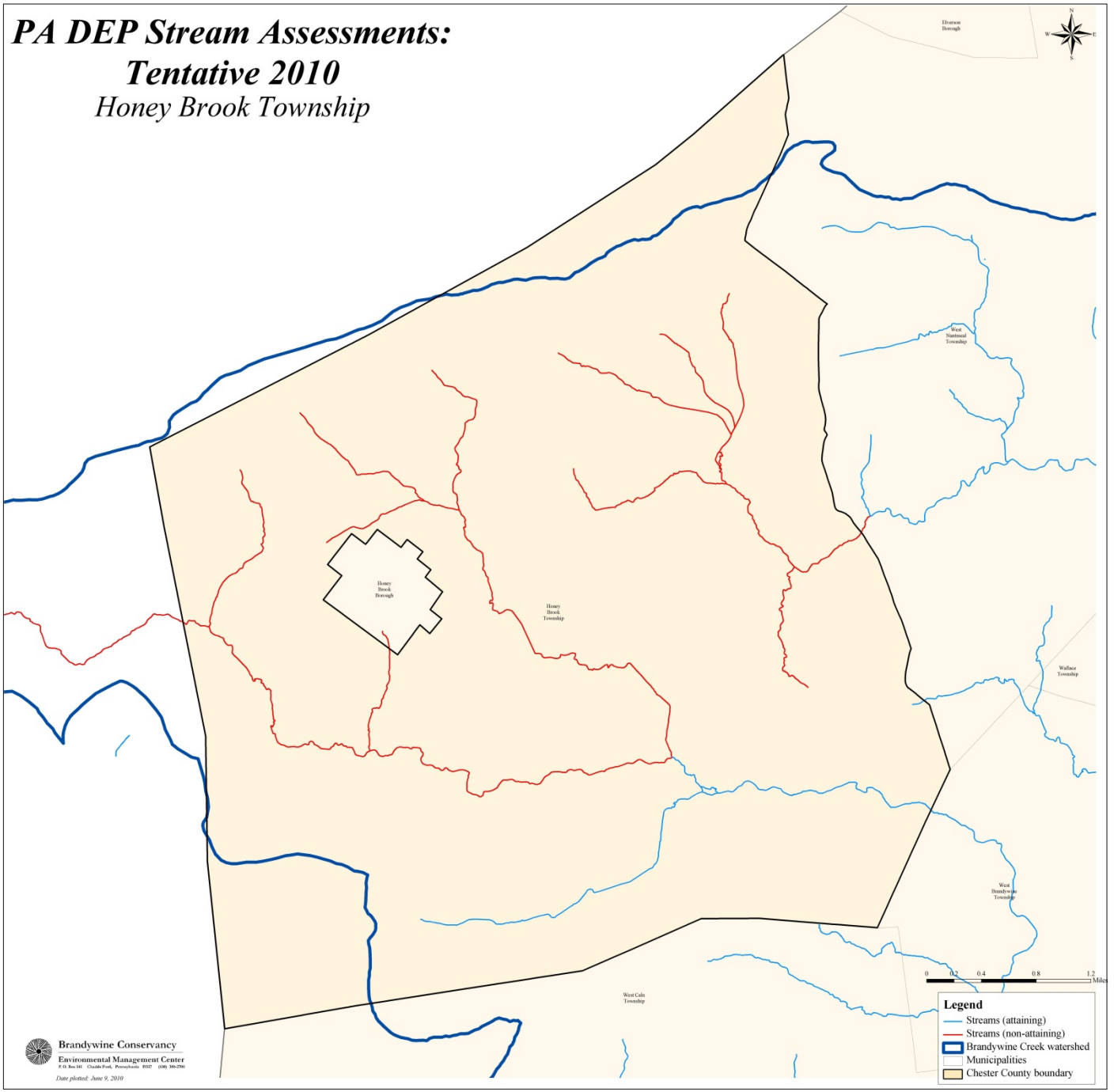
- Generates $29.5 million annually

- Clustered land preservation stimulates growth for local businesses that support these lands

PA DEP Stream Classifications

Brandywine Watershed




PA DEP Stream Assessments:
Tentative 2010
Honey Brook Township
Elverson Borough
West Nantmeal Township
Honey Brook Borough
Honey Brook Township
Wallace Township
West Brandywine Township
West Caln Township
0 0.2 0.4 0.8 1.2 Miles
Legend
Streams (attaining)
Streams (non-attaining)
Brandywine Creek watershed
Municipalities
Chester County boundary
Brandywine Conservancy
Environmental Management Center
Date plotted: June 9, 2010

CATALYSTS

- 2004 Comprehensive Plan
- Open Space Referendum
- Ben E. Stoltzfus and the Golden Rule
- City of Wilmington Source Water Protection Plan
- Brandywine Headwaters Preservation Program
- Farm Conservation Planning and Assisting with the Implementation of the Best Management Practices.

THE BOARD OF SUPERVISORS' MISSION AND VISION:

"Maintain a Community that Supports a Tranquil and Rural Way of Life"

"Establishment of a Land Preservation Program"

Residents' Vision, 2005 Community Values Survey

Rural Lifestyle: Why You Stay or Moved Here

Natural Resource Protection is Important

Overdevelopment/Traffic are Vital Issues in the Future

Municipal Tools to Permanently Protect Land

- ☑ Agricultural preservation zoning
- ☑ Resident education
- ☑ Transfer of development rights
- ? Funding to buy development rights

OPEN SPACE REFERENDUM

Open space referendum

Allows the Township to Negotiate the Purchase of Development Rights with Willing Farmers and Other Landowners

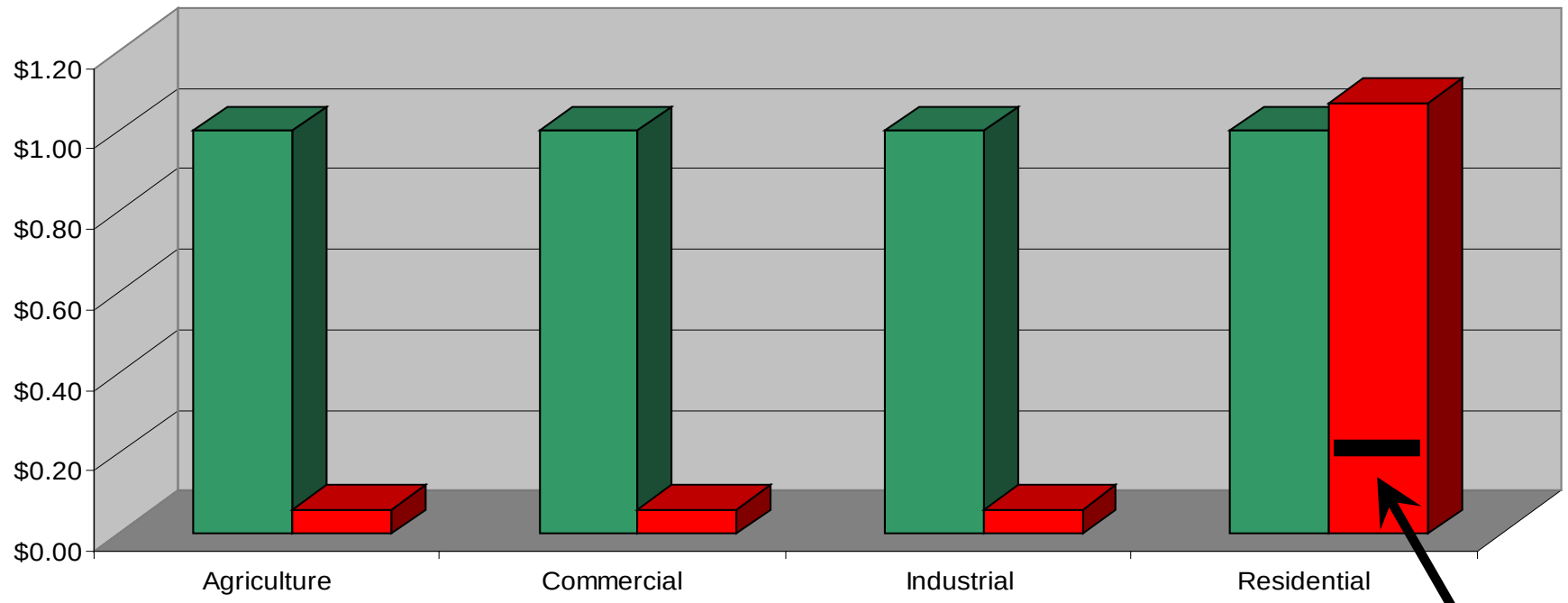
Cost of Community Services Study

Comparison of Revenues and Costs of Land Uses:

- **Residential**
- **Agricultural**
- **Industrial**
- **Commercial**

Shows the True Costs and Benefits of These Land Uses in Honey Brook

Cost and Revenue Comparison

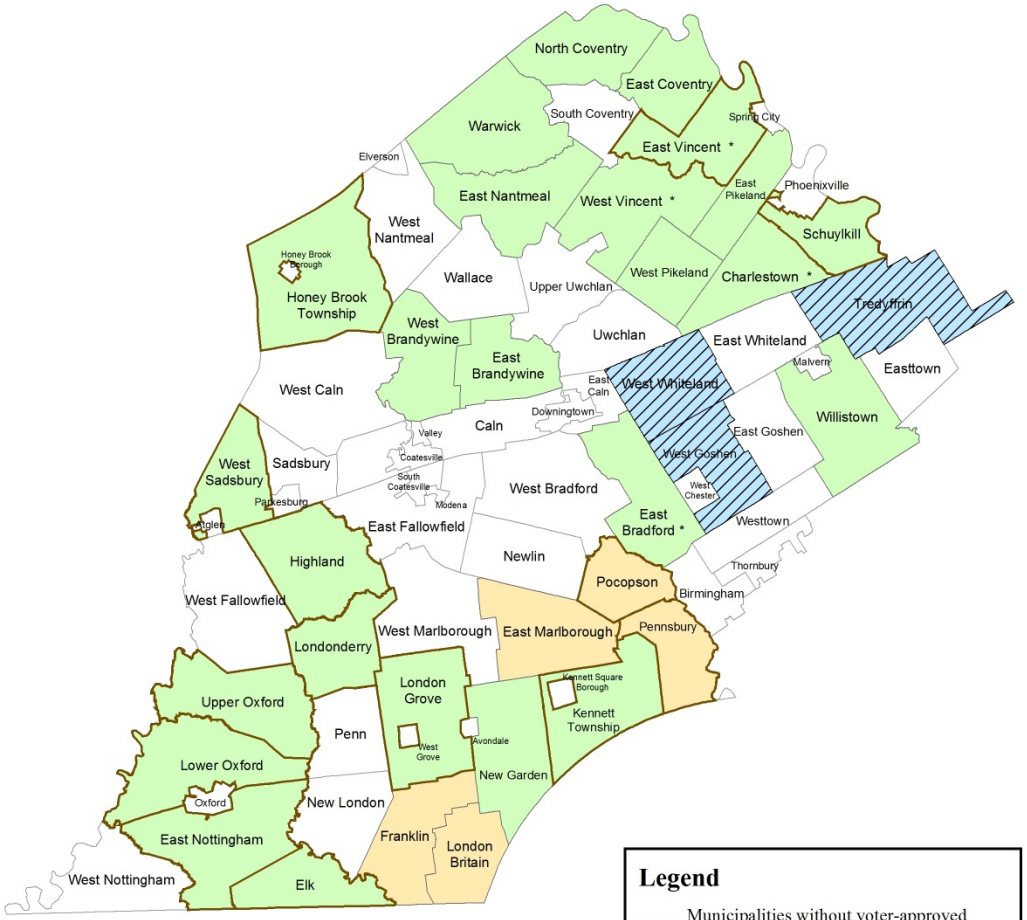


$0.13 Municipal

$0.94 School

$1.07 Total cost

Chester County: Locally-funded Open Space Preservation Programs (as of 11/2010)



Legend

- Municipalities without voter-approved open space referendum (3)
- Brandywine Conservancy assistance with open space referendum

Funding source (voter-approved: 30 townships)

- Bond
- Earned income tax
- Property tax

Note: Those municipalities marked with a * have more than one voter-approved open space referendum.

OUTSIDE RESOURCES

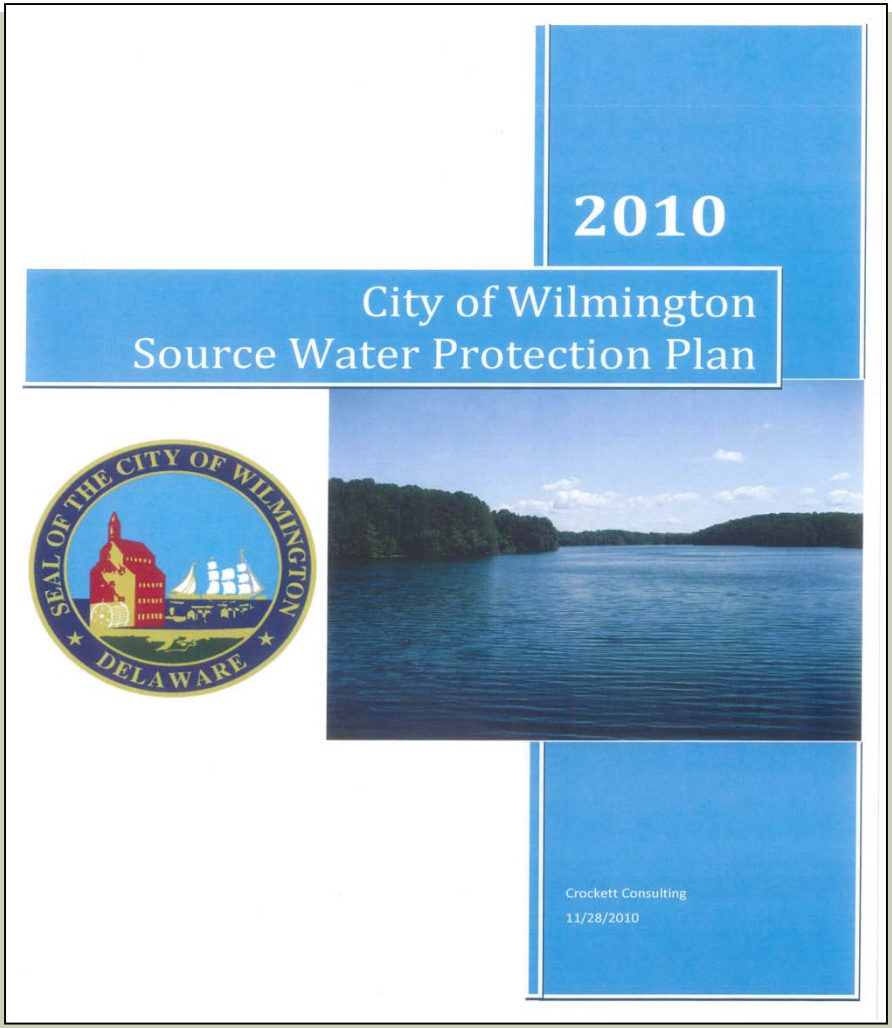
2010 City of Wilmington Source Water Protection Plan

Chester County Brandywine Headwaters Preservation Program

William Penn Foundation Watershed Protection Program

THE CITY OF WILMINGTON DEVELOPED THE SOURCE WATER PROTECTION PLAN IN ORDER TO:

1. **Better protect the water supply for future generations,**
2. **Reduce long term operating costs while avoiding future treatment improvement costs through proactive watershed planning,**
3. **Improve early warning and emergency communications,**
4. ***Leverage upstream investments to protect the water supply through agricultural mitigation and farmland preservation***



AGRICULTURAL MITIGATION

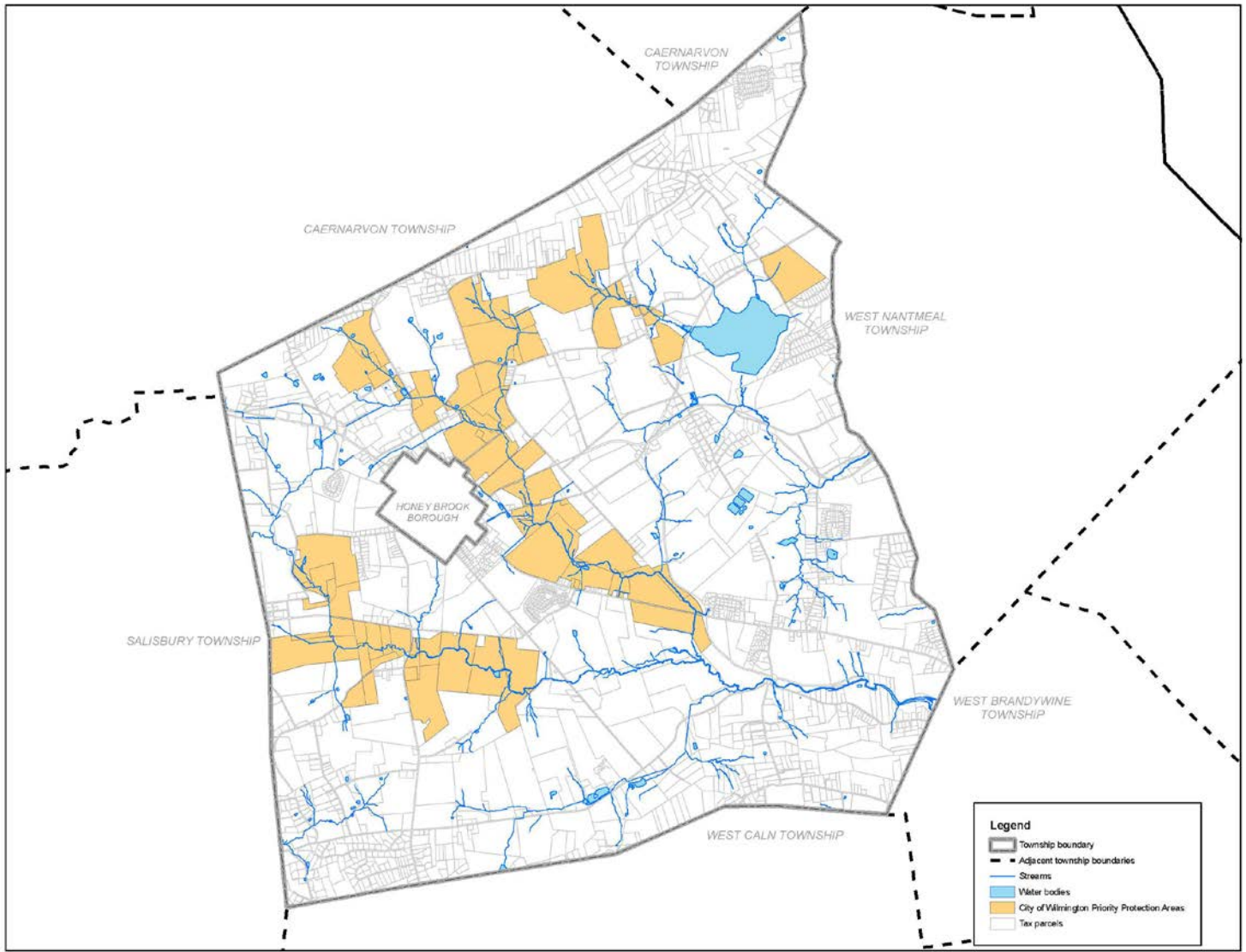
- Mitigating agricultural impacts provides benefits to the water supply. It prevents and reduces pathogens such as *Cryptosporidium*, sediment, livestock pharmaceuticals, ammonia, nitrate, and phosphorus. A study by AWWA and the Trust for Public Lands of water supplies suggested that for every 4 percent increase in raw water turbidity, treatment costs increase 1 percent. (Trust for Public Lands, 2004)

- ***Agricultural Mitigation is a low cost / high return mitigation activity. Honey Brook is the top priority area for this work.***

AGRICULTURAL PRESERVATION

- Agricultural preservation provides benefits to the water supply because properly managed and preserved farmland can support significant riparian buffers and prevents the addition of urban/suburban storm water challenges due to development.
- The 2,700 acres of farmland along first order streams in the Honey Brook area on the West Branch represents prime agricultural parcels should be the primary preservation target area of the initial 5 to 10 year period.

CITY OF WILMINGTON'S PRIORITY PROTECTION AREAS



BRANDYWINE HEADWATERS PRESERVATION PROGRAM

- The Brandywine Headwaters Preservation Program is an effort to improve water quality and ensure water quantity by targeting land preservation efforts in the headwaters of the Brandywine Watershed.

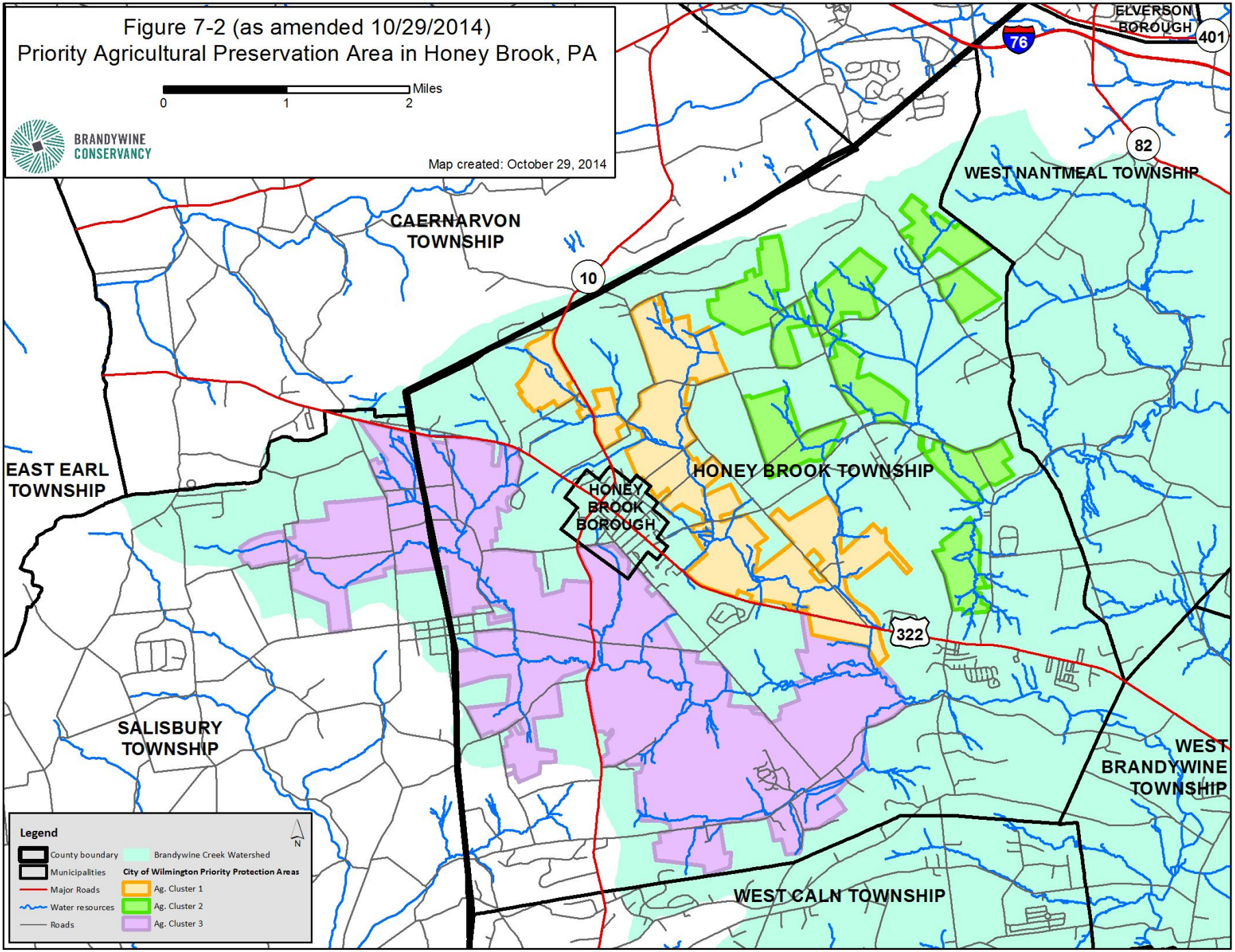
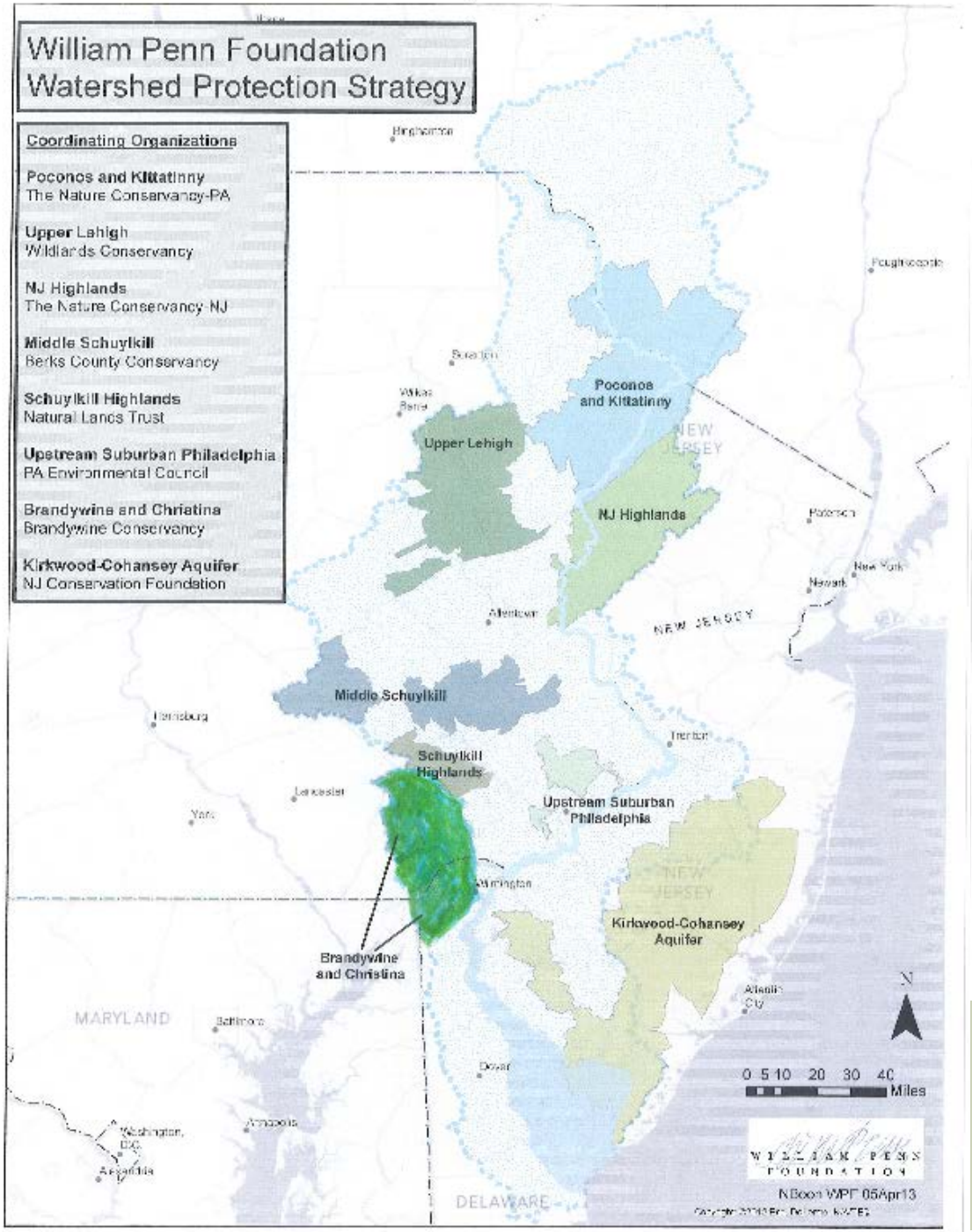
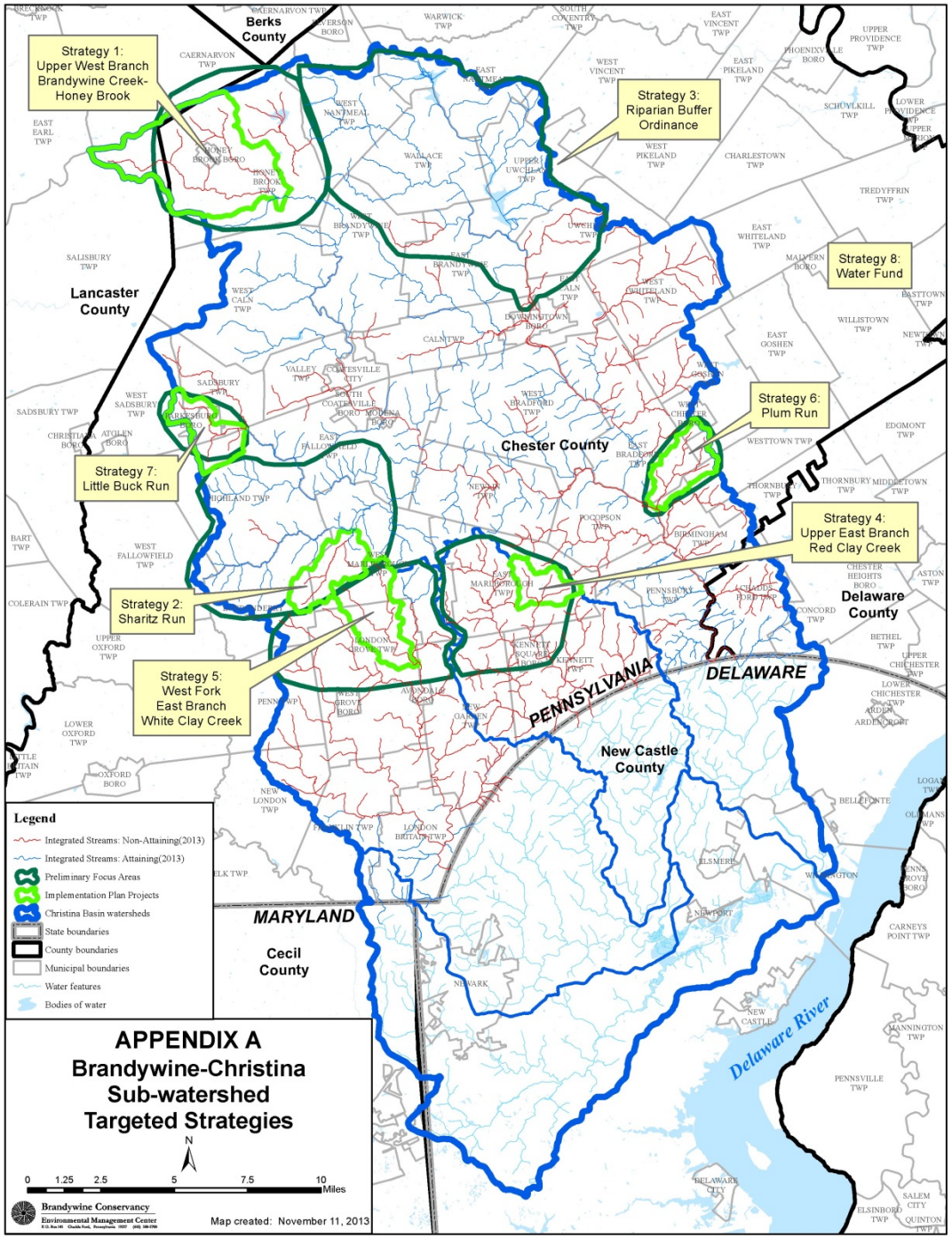


Figure 7-2 (as amended 10/29/2014)
Priority Agricultural Preservation Area in Honey Brook, PA
Miles
0
1
2
BRANDYWINE CONSERVANCY
Map created: October 29, 2014
ELVERSON BOROUGH
401
76
82
WEST NANTMEAL TOWNSHIP
CAERNARVON TOWNSHIP
10
EAST EARL TOWNSHIP
HONEY BROOK BOROUGH
HONEY BROOK TOWNSHIP
322
SALISBURY TOWNSHIP
WEST BRANDYWINE TOWNSHIP
WEST CALN TOWNSHIP
Legend
County boundary
Municipalities
Major Roads
Water resources
Roads
Brandywine Creek Watershed
City of Wilmington Priority Protection Areas
Ag. Cluster 1
Ag. Cluster 2
Ag. Cluster 3
N

WILLIAM PENN FOUNDATION WATERSHED PROTECTION PROGRAM

- Protect & Restore the Delaware River Basin
- WPF selected 8 Cluster Sites within the Basin.
- Involving 8 cluster teams and a total of 47 non-profits conservation organizations.
- The Brandywine–Christina Watershed was a selected site.


William Penn Foundation
Watershed Protection Strategy
Coordinating Organizations
Poconos and Kittatinny
The Nature Conservancy-PA
Upper Lehigh
Wildlands Conservancy
NJ Highlands
The Nature Conservancy-NJ
Middle Schuylkill
Berks County Conservancy
Schuylkill Highlands
Natural Lands Trust
Upstream Suburban Philadelphia
PA Environmental Council
Brandywine and Christina
Brandywine Conservancy
Kirkwood-Cohansey Aquifer
NJ Conservation Foundation
Poconos and Kittatinny
Upper Lehigh
NJ Highlands
Middle Schuylkill
Schuylkill Highlands
Upstream Suburban Philadelphia
Kirkwood-Cohansey Aquifer
Brandywine and Christina
NEW JERSEY
MARYLAND
DELAWARE
N
0 5 10 20 30 40
Miles
WILLIAM PENN FOUNDATION
NBoon WPF 05Apr13


Strategy 1: Upper West Branch Brandywine Creek-Honey Brook
Strategy 2: Sharitz Run
Strategy 3: Riparian Buffer Ordinance
Strategy 4: Upper East Branch Red Clay Creek
Strategy 5: West Fork East Branch White Clay Creek
Strategy 6: Plum Run
Strategy 7: Little Buck Run
Strategy 8: Water Fund
Berks County
Lancaster County
Chester County
Delaware County
New Castle County
Cecil County
PENNSYLVANIA
DELAWARE
MARYLAND
Delaware River
Legend
Integrated Streams: Non-Attaining(2013)
Integrated Streams: Attaining(2013)
Preliminary Focus Areas
Implementation Plan Projects
Christina Basin watersheds
State boundaries
County boundaries
Municipal boundaries
Water features
Bodies of water
APPENDIX A
Brandywine-Christina
Sub-watershed
Targeted Strategies
N
0 1.25 2.5 5 7.5 10 Miles
Brandywine Conservancy
Environmental Management Center
Map created: November 11, 2013

The Brandywine–Christina Watershed Cluster Team

Led by the Brandywine Conservancy and included:
Stroud Water Research Center,
Natural Lands Trust,
Brandywine Valley Association,
The Nature Conservancy of DE, and
University of Delaware's Water Resources Agency.

9 Pilot Projects proposed, 8 were selected.

Source Water Protection in Honey Brook Township was the largest of the 8 selected Pilot Projects. Stroud Water Research Center and Brandywine Valley Association will participate in the project.

FARM BY FARM PRESERVATION

Ben E. Stoltzfus and the Golden Rule

Farm Conservation Planning and Assisting with the Implementation of the Best Management Practices.

THE GOLDEN RULE

Do unto others as you would have them do unto you.

Matthew 7:42

WHY SHOULD FARMERS CARE ABOUT WATER QUALITY?

Gordon and Nelson (2007) found a link between farm productivity and drinking water quality for livestock. Benefits from livestock ingesting greater quantities of cleaner water include reduced incidences of diseases, and increased milk and meat production.

Gordon, I. J. and Nelson, B. (2007) Reef Safe Beef: Environmentally Sensitive Livestock Management for the Grazing Lands of the Great Barrier Reef Catchments.

WHY WORK WITH FARMERS IN THE HEADWATERS?

Reid (2001) estimated that every USD $1 invested in watershed protection saved anywhere from USD $7.50 to $200 in cost for new water treatment facilities across several US cities.

Reid, W.V. 2001. Capturing the value of ecosystem services to protect biodiversity. In G. Chichilenisky, G.C. Daily, P. Ehrlich, G. Heal & J.S. Miller (Eds.) Managing human-dominated ecosystems, pp. 197–225. Monographs in Systematic Botany Vol. 84. St Louis, USA, Missouri Botanical Garden Press

WHOLE-FARM APPROACH
PRESERVATION & CONSERVATION

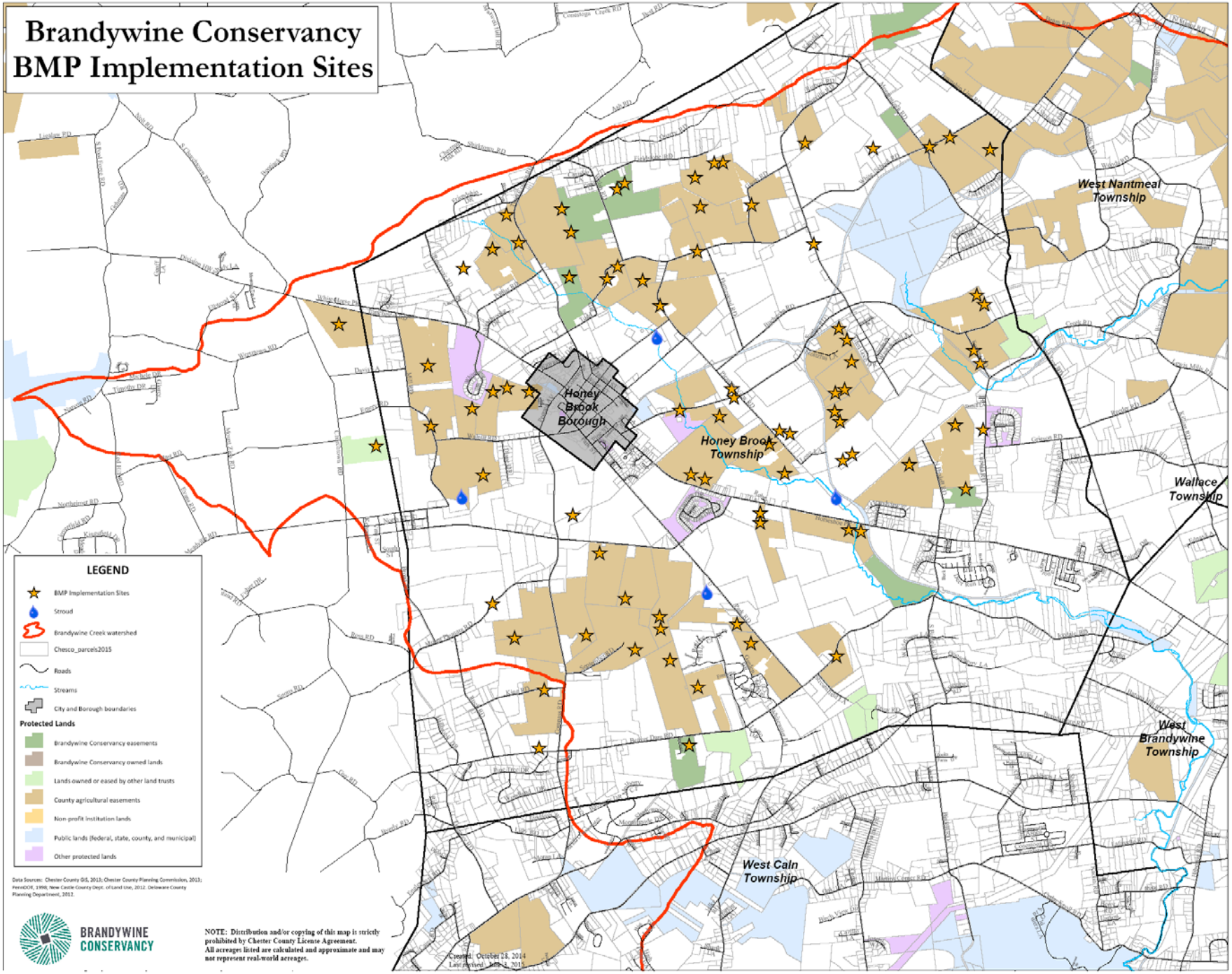
The Path to Farmland Preservation is through:

- **Conservation Plans, USDA Natural Resources Conservation Service (NRCS)-level**
- **Nutrient Management Plans**
- **Grazing Plans**

And Implementing the Planning Best Management Practices:

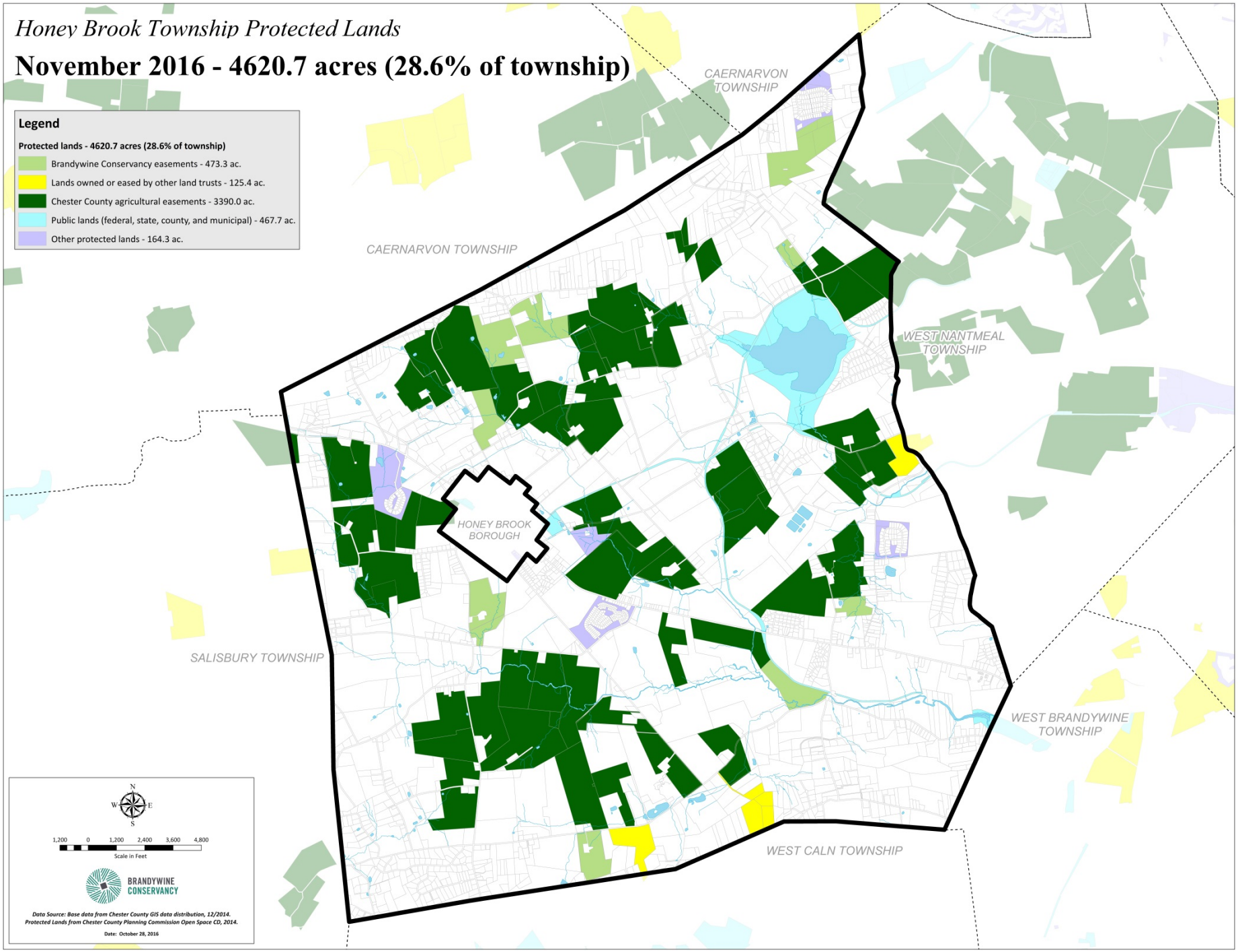
Storm water control structures, contour farming, no-till farming, fencing to facilitate riparian corridor protection and rotational grazing systems

Brandywine Conservancy BMP Implementation Sites



Honey Brook Township Protected Lands

November 2016 - 4620.7 acres (28.6% of township)



Mt. Cuba Center
Gardening on a higher level

The Nature Conservancy
Protecting nature. Preserving life.

PENNVEST
Pennsylvania Infrastructure Investment Authority

National Fish and Wildlife Foundation
NFWF

Seal of the City of Wilmington Delaware

USDA NRCS
Natural Resources Conservation Service

pennsylvania
Department of Agriculture

Seal of Honey Brook Township Chester County PA
Est. 1789

Stroud Water Research Center

William Penn Foundation

Conserving Natural Resources for Our Future

Chester County Water Resources Authority
Chester County ~ Pennsylvania

Seal of Chester County, Pennsylvania

County of Lancaster ~ Pennsylvania
Founded May 10, 1729

pennsylvania
Department of Environmental Protection

Brandywine Conservancy & Museum of Art

Brandywine Red Clay Alliance
Watershed Conservation | Environmental Education

Chester County Solid Waste Authority

University of Delaware
1743

Open Space Institute

The Academy of Natural Sciences of Drexel University

PRETTY COOL!