Delaware River Basin Commission

Southeastern Pennsylvania Ground Water Protected Area

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DRBC

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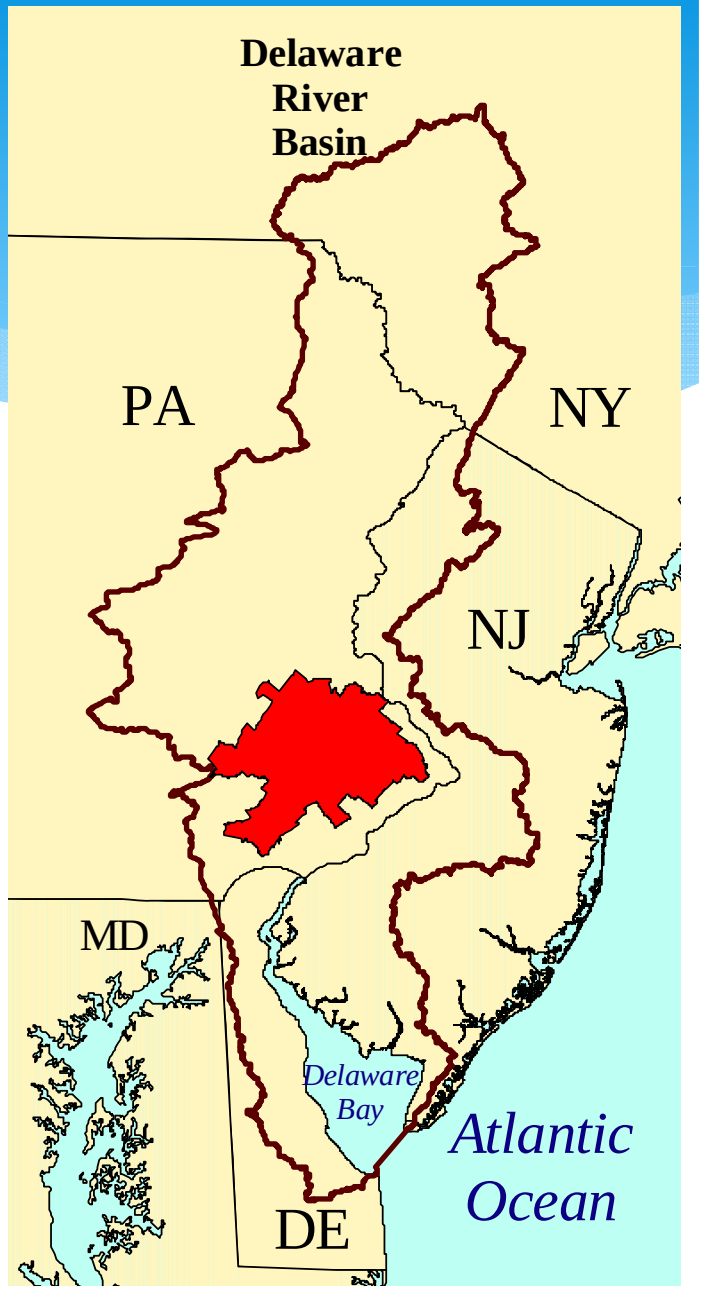
Southeastern Pennsylvania Groundwater Protected Area

GWPA established in 1980

Due to…

- Increasing population and demand of groundwater resources in southeastern Pennsylvania
- More frequent interference and conflicts among users of the same groundwater resource
- Lowering water levels in streams
- Low recharge rates of the bedrock geology



Key GWPA Dates and Resolutions

- October 8, 1980: Resolution No. 80-18

  Delineated and declared GWPA in SEPA pursuant to Article 10 of the Compact

- December 16, 1980: Resolution No. 80-27

  Included additional townships in Chester (East and West Bradford) & Lehigh (Lower Milford) Counties

- December 22, 1980: Cooperative Agreement with PA

  Commission primary responsibility of oversight of the GWPA

- January 1, 1981: GWPA Regulations Effective

- June 25, 1986: Resolution No. 86-13

  Required groundwater withdrawal metering, recording and reporting to PADEP

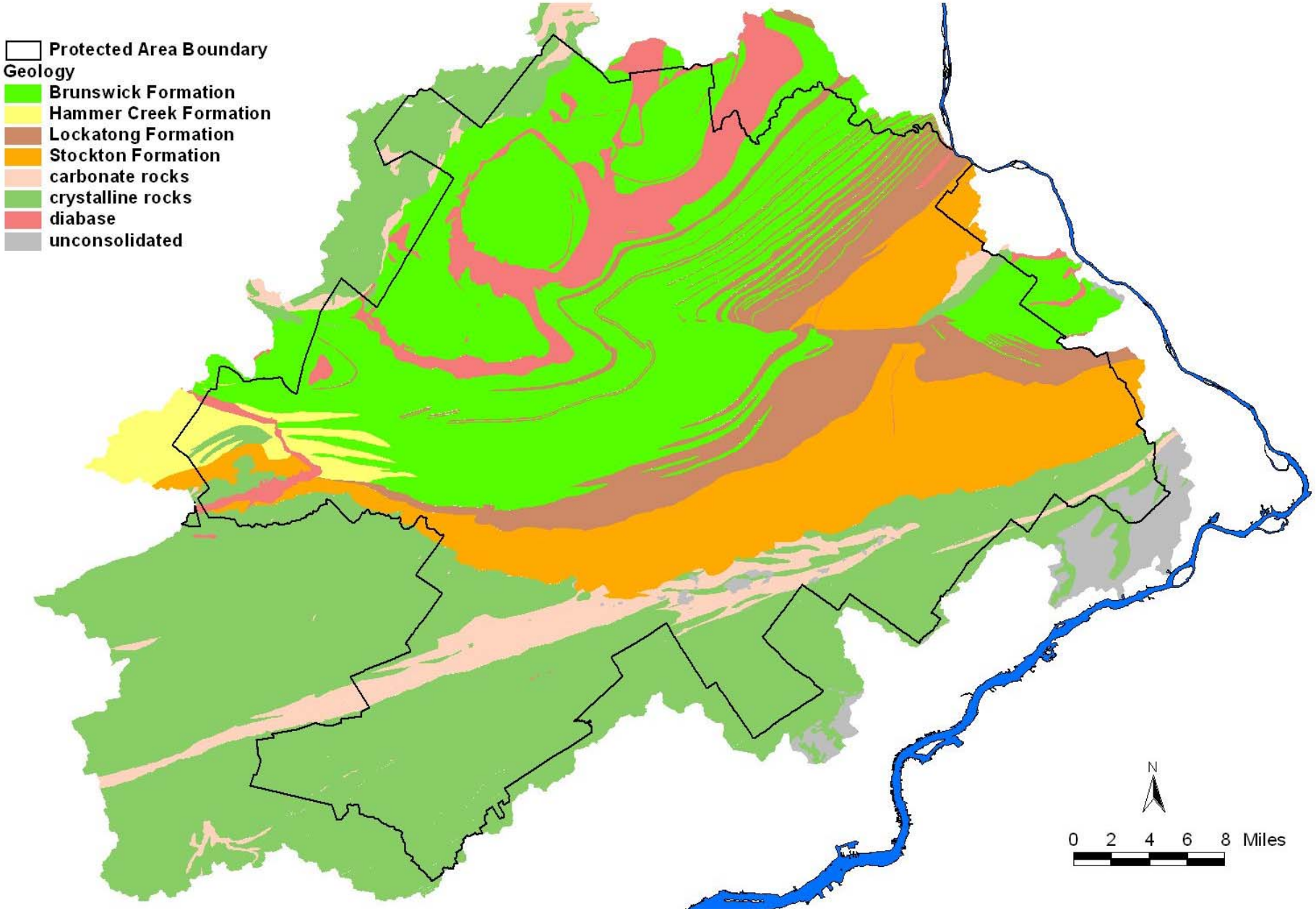
- January 28, 1998: Resolution No. 98-1

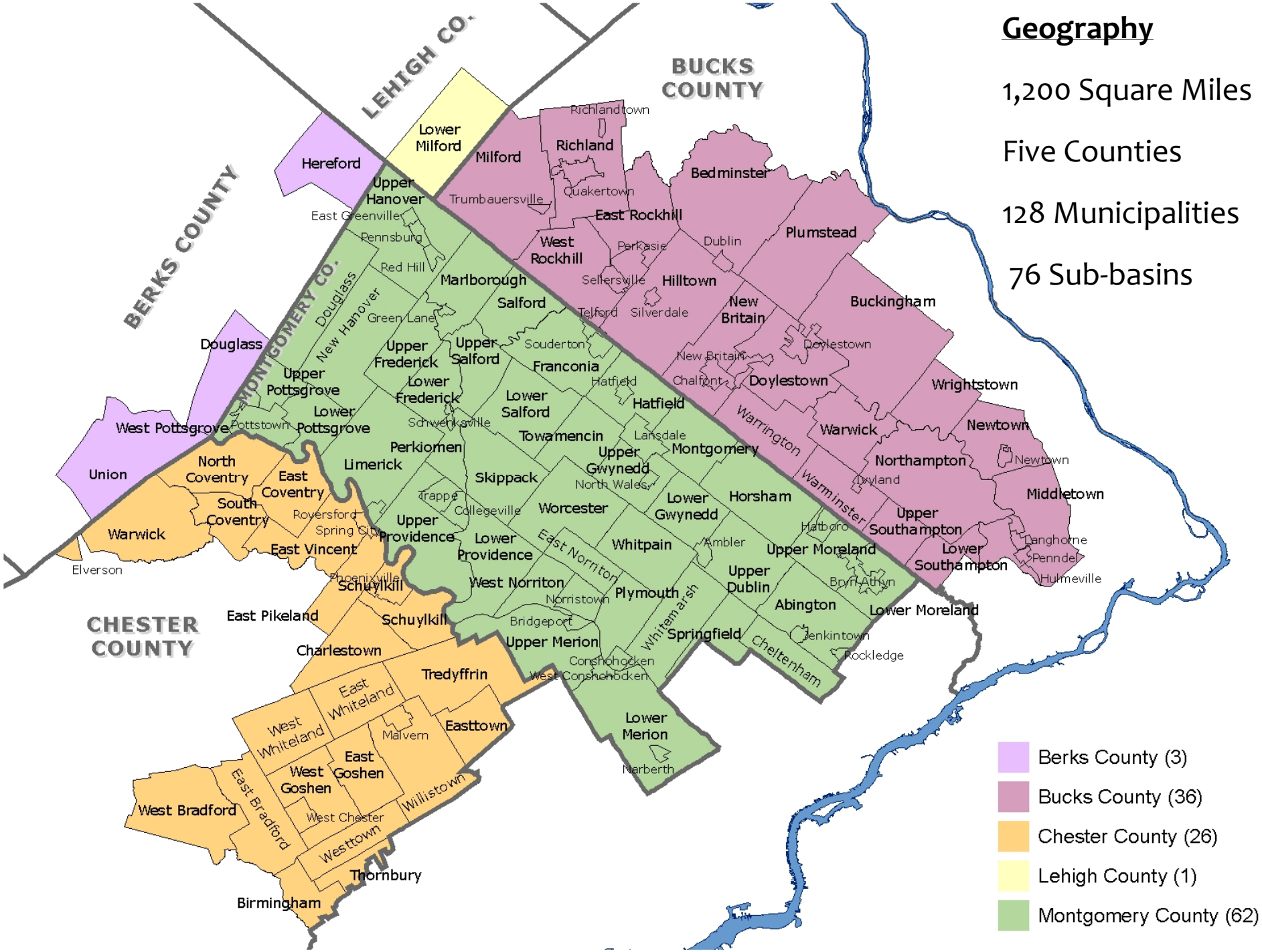
  Established numerical withdrawal limits for subbasins – 14 Neshaminy subbasins first

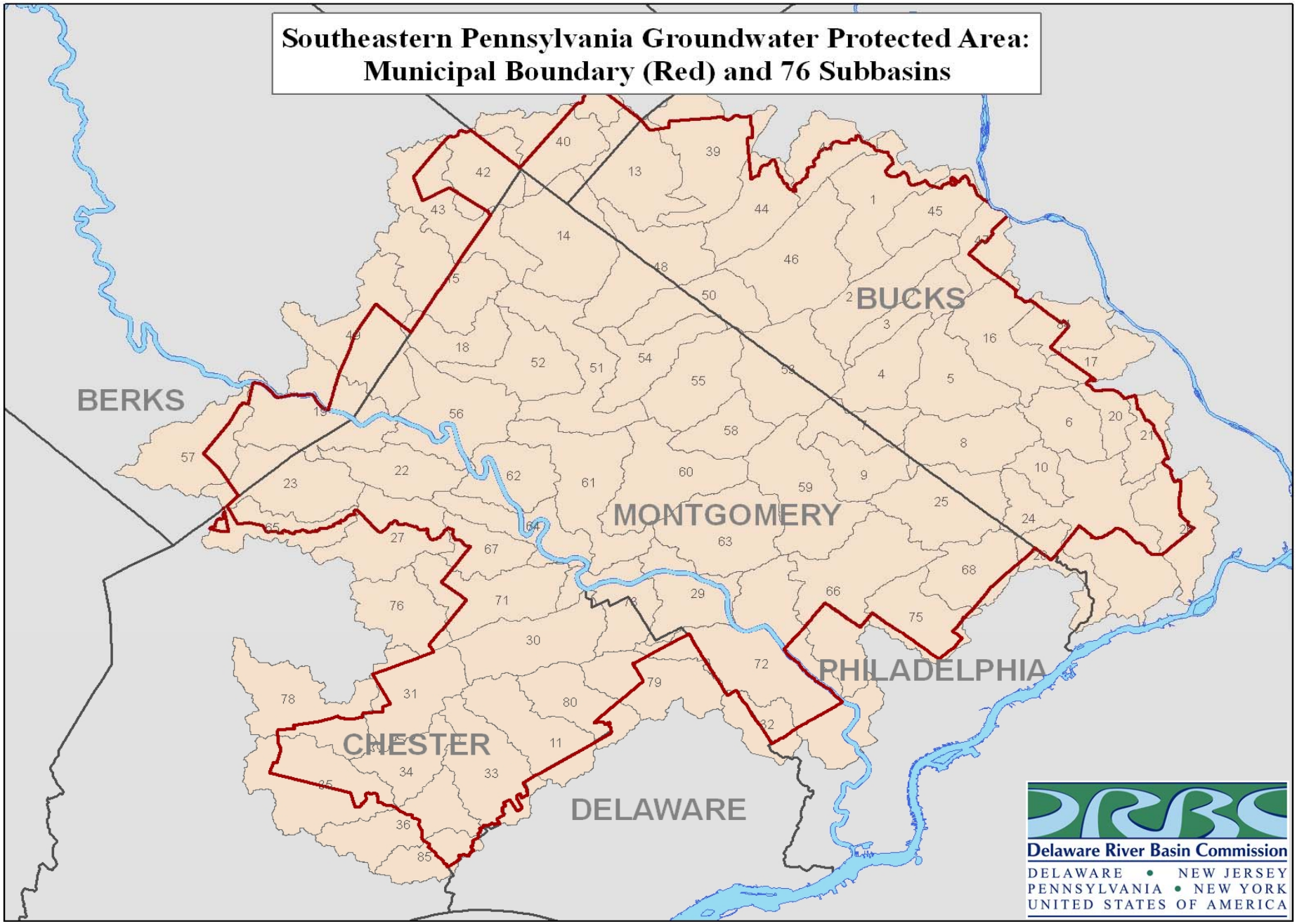
- June 23, 1999: Resolution No. 99-11

  Established numerical withdrawal limits for subbasins for the remaining 62 Subbasins

Geology of Southeastern Pennsylvania




Geography
1,200 Square Miles
Five Counties
128 Municipalities
76 Sub-basins
BUCKS COUNTY
LEHIGH CO.
BERKS COUNTY
MONTGOMERY CO.
CHESTER COUNTY
Hereford
Lower Milford
Milford
Richland
Richlandtown
Bedminster
Trumbauersville
Quakertown
East Rockhill
Plumstead
West Rockhill
Perkasie
Dublin
Sellersville
Hilltown
Buckingham
New Britain
Telford
Silverdale
Doylestown
Upper Hanover
East Greenville
Pennsburg
Red Hill
Marlborough
Salford
Douglass
New Hanover
Green Lane
Souderton
Upper Frederick
Upper Salford
Franconia
Upper Pottsgrove
Lower Frederick
Hatfield
Lower Salford
Lower Pottsgrove
Pottstown
Schwenksville
Wrightstown
Warwick
Newtown
Warrington
Towamencin
Lansdale
Perkiomen
Montgomery
Limerick
Upper Gwynedd
Northampton
Newtown
Union
North Coventry
East Coventry
Skippack
North Wales
Middletown
Trappe
Collegeville
Worcester
Lower Gwynedd
Horsham
Warminster
South Coventry
Royersford
Spring City
Upper Providence
Whitpain
Ambler
Upper Southampton
Warwick
Lower Providence
East Norriton
Upper Moreland
Langhorne
Penndel
East Vincent
Elverson
Phoenixville
Schuylkill
West Norriton
Plymouth
Upper Dublin
Bryn Athyn
Hulmeville
Lower Southampton
Abington
Lower Moreland
East Pikeland
Schuylkill
Norristown
Bridgeport
Springfield
Whitemarsh
Cheltenham
Jenkintown
Rockledge
Charlestown
Upper Merion
Conshohocken
West Conshohocken
Tredyffrin
East Whiteland
West Whiteland
Malvern
Easttown
Lower Merion
Narberth
East Goshen
West Goshen
East Bradford
West Bradford
West Chester
Willistown
Westtown
Thornbury
Birmingham
Berks County (3)
Bucks County (36)
Chester County (26)
Lehigh County (1)
Montgomery County (62)


Southeastern Pennsylvania Groundwater Protected Area:
Municipal Boundary (Red) and 76 Subbasins
BERKS
BUCKS
MONTGOMERY
CHESTER
PHILADELPHIA
DELAWARE
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Intent of SEPA GWPA Program

Protect groundwater resources by effectively managing water withdrawals to:

- Encourage water conservation,
- Protect the rights of present users of water,
- Acquire additional information to more accurately plan and manage water resources.

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Special Requirements

- Permits required for withdrawals in excess of 10,000 gpd for any 30-day period, Dockets required for withdrawals in excess of 100,000 gpd for any 30-day period
- Advance notice of exploratory drilling – 30 days
- Hydrogeological report - 48 hour pumping test and monitoring of wells and surface water bodies
- Well registration, metering, and reporting
- Conservation requirements
- Compliance with subbasin withdrawal limits

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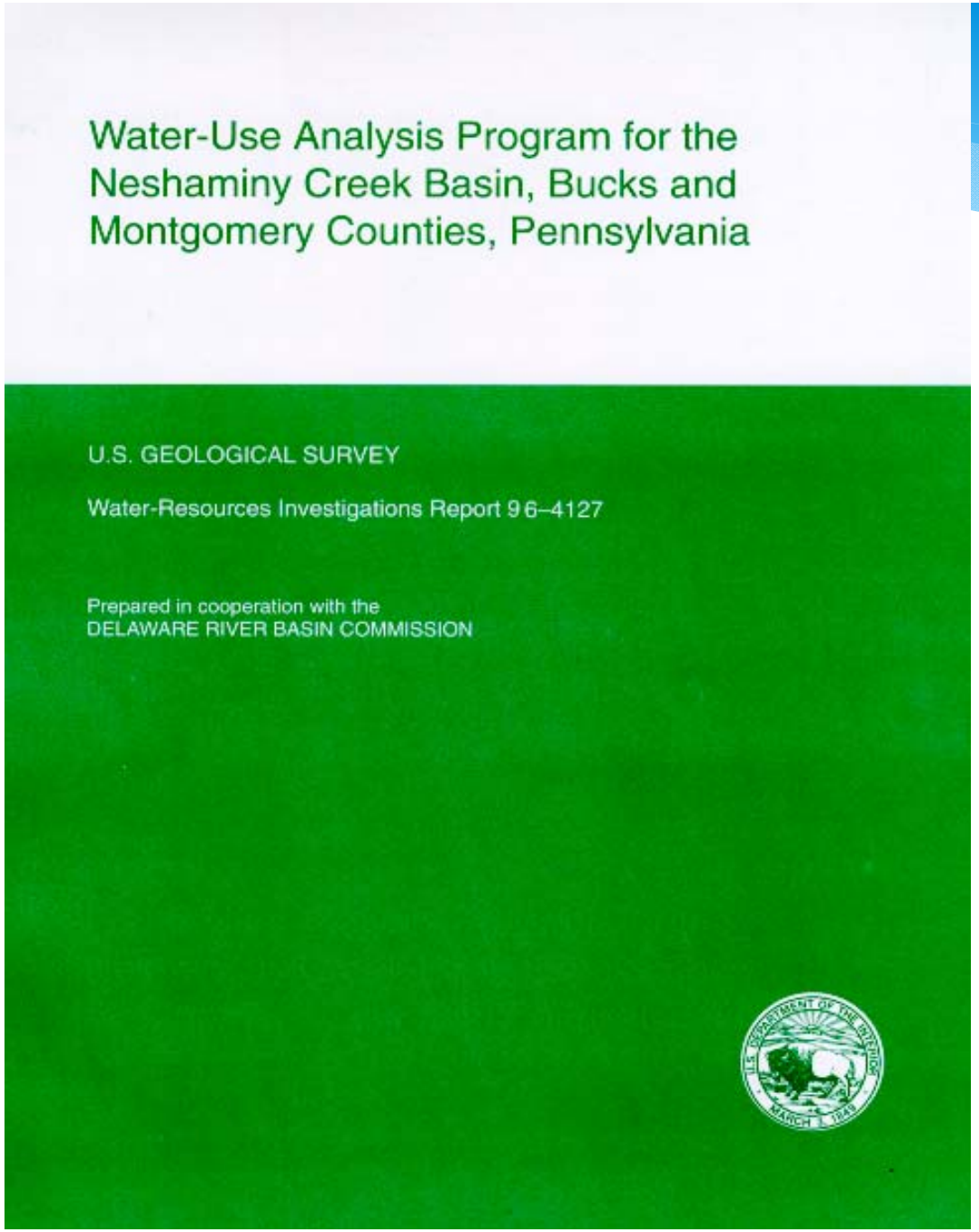

Neshaminy Study Report Prepared By U.S. Geological Survey Pennsylvania District

Annual stream baseflow rates based on rock type

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Resolutions Nos. 98-1 and 99-11

- Subbasin withdrawal limits were approved for the 76-subbasins based on the 1-in-25 year average annual baseflow rate (MGY)
  - Resolution No. 98-1 – 14 Neshaminy Subbasins
  - Resolution No. 99-11 – 62 Remaining Subbasins

- Each withdrawal limit was considered the target amount to ensure adequate streamflow in perennial streams and to minimize the overdraft of groundwater resources during times of drought

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Subbasin Limits

- Geological Studies Establish Numerical Withdrawal Limits
- 1-in-25 year Average Annual Baseflow Rate
- Two-tiered Approach
  - "Maximum Withdrawal Limit" = 100%
  - "Potentially Stressed" = 75%
- Stressed Subbasins Requirements

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Eligible programs in potentially stressed subbasins:

Applicant Must Implement One or More Programs

1. Conjunctive use – 15% average annual system use from surface water; or
2. Water Conservation Program (5% use reduction); or
3. Program to control groundwater infiltration to the receiving sewer system; or
4. Artificial recharge or spray irrigation (60% return to same basin & aquifer); or
5. Alternative mitigation program

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Program Metrics

- Each GWPA subbasin has a withdrawal limit defined in million gallons / year (mgy)
- Annual water use data is received from the Pennsylvania Department of Environmental Protection (PADEP)
- Commission maintains a current list of annual groundwater withdrawals for all subbasins
- Current determination based on actual use not allocation.

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Number of Dockets and GWPA Permits

- Current GWPA Permit and Docket Approvals:

  150 Total Approved Projects

  34 GWPA Permits

  116 Dockets

- A total of 645 Wells are Docketed or Permitted in GWPA
- Approximately 17.3 BG in groundwater withdrawals annually

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Subbasin Use

Based on Actual Groundwater Use Data (2012)

6 of 76 Subbasins exceed 50% of the Subbasin Limit

2 Subbasins exceed 75% of the Subbasin Limit

(Schuylkill- Crow Creek and Warminster Little Neshaminy Creek)

1 Subbasin exceeds 100% of the Subbasin Limit

(Schuylkill- Crow Creek)

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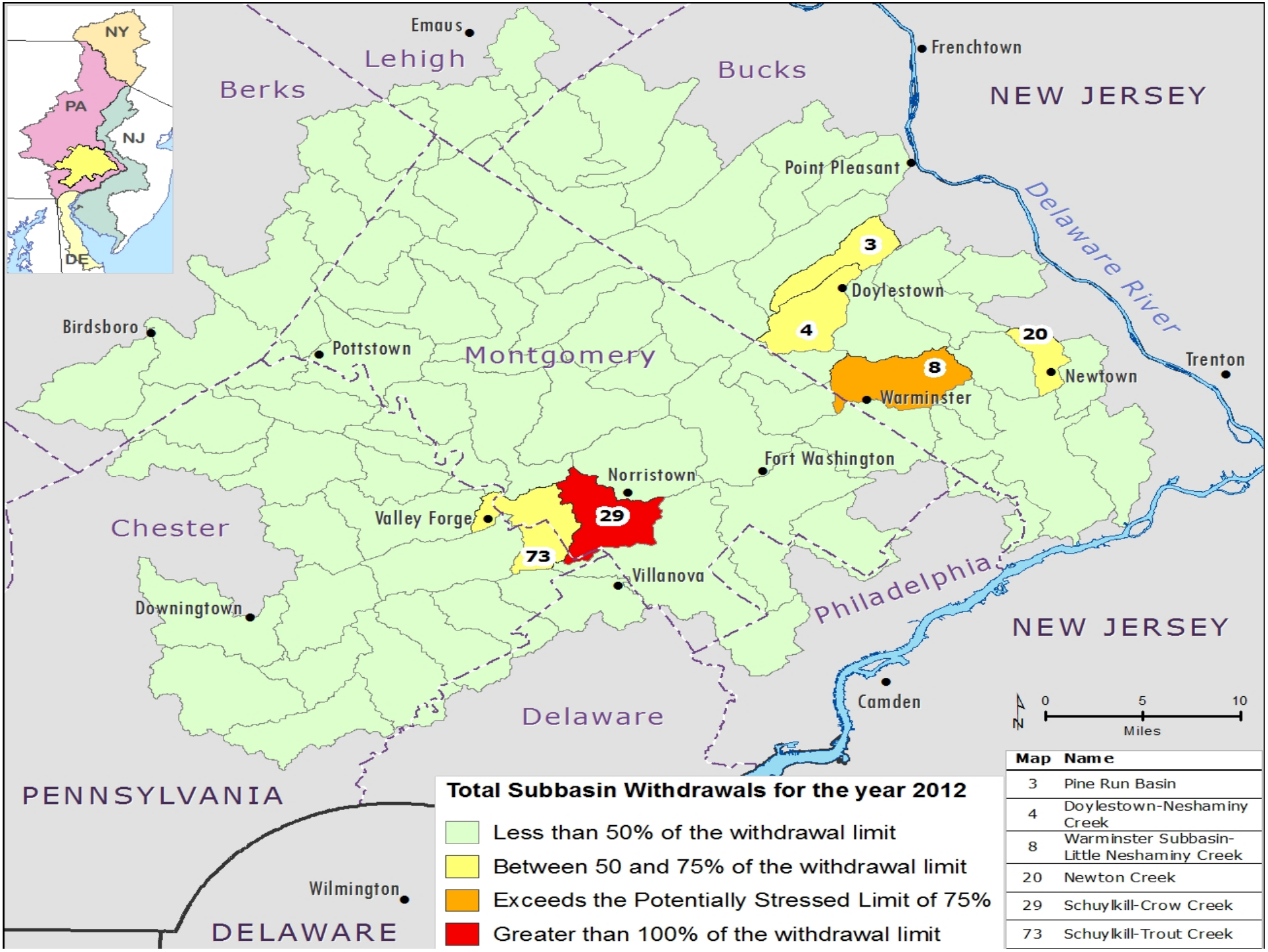
NY
PA
NJ
DE
Emaus
Lehigh
Berks
Bucks
Frenchtown
NEW JERSEY
Point Pleasant
Delaware River
3
Doylestown
4
20
8
Warminster
Newtown
Trenton
Birdsboro
Pottstown
Montgomery
Fort Washington
Norristown
29
Valley Forge
73
Chester
Villanova
Downingtown
Philadelphia
NEW JERSEY
Camden
Delaware
0
5
10
Miles
PENNSYLVANIA
Wilmington
DELAWARE
Total Subbasin Withdrawals for the year 2012
Less than 50% of the withdrawal limit
Between 50 and 75% of the withdrawal limit
Exceeds the Potentially Stressed Limit of 75%
Greater than 100% of the withdrawal limit
Map
Name
3
Pine Run Basin
4
Doylestown-Neshaminy Creek
8
Warminster Subbasin-Little Neshaminy Creek
20
Newton Creek
29
Schuylkill-Crow Creek
73
Schuylkill-Trout Creek

Conclusions

- The SEPA GWPA is closely managed with regard to groundwater withdrawals, well interferences and water supply planning
- Current methodology allows for the identification of subbasins which may exceed the potentially stressed or the maximum withdrawal limits
- Allows staff to steer applicants away from potentially stressed subbasins when possible
- Program successful!

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GWPA Next Steps

- Continue to closely evaluate allocations
- Consider SEPA GWPA ramifications and opportunities in the Ecological Flow workshops
- Compile pumping test data from historic hydrogeological reports

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Thank you.

Questions ?

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