New Jersey Department of Environmental Protection
Division of Water Monitoring and Standards
Bureau of Environmental Analysis, Restoration and Standards

2012 New Jersey Integrated Report Appendix C: Final Justification for 2012 Delisted Waters

July 2014

Table of Contents

Justifications are provided below for all assessment unit/parameter combinations identified in the ADB-generated Report entitled: Assessment Unit-Cause Combinations Removed from 303(d) List" (Appendix C of the 2012 Integrated Report). All maps cited in this document appear in a separate document entitled: "Mapping Supplement to the Justification for Delisted Waters". Data sheets explaining biological assessment (AMNET) results cited in support of delistings of "Cause Unknown" are available on the Department's Web site at http://www.state.nj.us/dep/wms/bfbm/amnetRnd4.html. Water quality data supporting delistings of pollutants for good cause are available on the National Water Monitoring Council's Web site at http://www.waterqualitydata.us/, as well as the Department's Water Quality Data Exchange (WQDE) system at http://www.nj.gov/dep/wms/wqde, USEPA's STORET data warehouse, or the USGS National Water Information System (NWIS). Older or continuous water quality data not available via one of these data repositories will be provided by the Department upon request.

I. Applicable Water Quality Standards (WQS) Attained; Due To Restoration Activities

A. The following AUs were delisted because applicable WQS were attained due to restoration activities:

1) NJ02020007010040-01 Wallkill R(Hamburg SW Bdy to Frkln Pnd): **Cause Unknown** was listed in 2007 based on AMNET Station AN0299. New data at Station AN0299 show that

biology is not impaired. Restoration is attributed to 319(h) grant project RP03-005 Watershed Management Plan and Agricultural NPS measures, which is documented as a nonpoint source "success story" on USEPA's Web site at http://water.epa.gov/polwaste/nps/success319/nj_wallkill_ham.cfm. **Temperature** was also delisted (see Section VI.G.1). The Aquatic Life Use was changed to Fully Supporting. Dissolved Oxygen (DO) data are not available; therefore, the Trout Use was changed to Insufficient Information.

2) NJ02030103050060-01 Pequannock R (Macopin gage to Charl'brg) was listed for **Dissolved Oxygen (DO)** in 2004 based on two exceedances of the Trout Production criterion for DO at Station 01382500. This listing was also applied to NJ02030103050080-01 Pequannock R (below Macopin gage) in 2008 (see Figure 1). Older data (2000-2002) at Station 01382410 also showed two exceedances of the Trout Production criterion. New data at Stations 01382500 meet the Trout Production criterion – there were no exceedances at this station since 2005. Data at Station and PRTMDL-PE2 and diurnal data at Station PE2, both located in NJ02030103050080-01, also meet the applicable DO criterion. Restoration in both AUs is attributed to 319(h) grant project RP04-003: Pequannock River thermal mitigation and watershed restoration plan. Cause Unknown replaced DO as the pollutant cause of Aquatic Life Use non-support in NJ02030103050060-01 Pequannock R (Macopin gage to Charl'brg) based on impaired biology at Stations AN0263 and AN0264. Temperature was also delisted under the Pequannock River Temperature TMDL (see Section IV.C) but remains a cause of Trout Use non-support, along with Cause Unknown. The Aquatic Life Use was changed to Fully Supporting in NJ02030103050080-01 Pequannock R (below Macopin gage) based on good biology at Stations AN0265 and FIBI077.

3) NJ02030103180010-01 Coles Brook / Van Saun Mill Brook was listed for **Total Dissolved Solids (TDS)** in 2008 because three of 17 samples collected at Station 01378560 between 2000 and 2005 exceeded the TDS criterion. However, data collected since 2005 meet applicable WQS. Of the 27 samples collected between 2006 and 2010, two were values recorded on the same day (02/27/07) representing one excursion due to transient weather events on 02/13/07-02/14/07; 02/25/07-02/26/07, and six were estimated values. None of the remaining 20 samples exceeded the criterion. If the two estimated values recorded on 02/02/09 and 02/04/10 were valid, they would be considered excursions due to transient weather events on 01/27/009-01/28/09 and 02/03/09-02/04/09; and 02/02/10-02/03/10 and 02/09/10-02/10/10, respectively. Restoration is attributed to 319(h) grant project RP02-083: Van Saun Park stream bank stabilization project. The Agricultural Water Supply Use was changed to Fully Supporting. The Aquatic Life Use remains Not Supporting for TP.

4) NJ02030105070030-01 Raritan R NB (below Rt 28): **Total Phosphorus (TP) and Total Suspended Solids (TSS)** were listed in 2006 based on Station NBRR7 and TSS was listed in 2010 based on Station 01400000. New data meet applicable WQS for TP and TSS. Restoration attributed to 319(h) grant project RP01-114 Peapack Brook stream bank stabilization and other NPS measures. pH was added as the cause of Aquatic Life Use non-support. The Aquatic Life Use remains Not Supporting for pH.

5) NJ02030105100120-01 Bear Brook (above Trenton Road): **Cause Unknown** was delisted because Round 4 AMNET results show biology at Station AN0383 is good (CPMI). Restoration

is attributed to 319(h) grant project RP98-086: "NPS Pollution Control and Management for the Stony Brook Millstone Watershed" (Stony Brook Watershed Association stream bank restoration at Anker Park, East Windsor). The Aquatic Life Use was changed to Fully Supporting.

6) NJ02030105110040-01 Beden Brook (above Province Line Rd): **Cause Unknown** was delisted because AMNET results at Station AN0398 show biology is good (HGMI). Restoration is attributed to 319(h) grant projects RP98-086: "NPS Pollution Control and Management for the Stony Brook Millstone Watershed" (Beden Brook stream bank stabilization in two locations) and RP04-084: "Sourland Mountain RSMP" watershed restoration plan. The Aquatic Life Use was changed to Fully Supporting.

7) NJ02040105090060-01 Pequest R (below Furnace Brook) was listed in 2002 for **TP and TSS** based on Station 01445500. **pH** was listed in 2004 based on the same station. New data at Station 01446400 meet the applicable WQS for pH, TP, and TSS. Since 1999, eighty pH samples were collected at Stations 01445500, 01446400, and DRBCNJ0033 (see Figure 2), of which 22 were collected in the past five years with only one exceedance of the pH criteria. Sixty-four TP samples were collected at these stations, of which 21 were collected in the past five years with no exceedances. Sixty TSS samples were collected at these stations, of which 22 were collected in the past five years with one exceedance each at Stations 01446400 and 01445500. (The 02/19/08 exceedance at Station 01446400 was a transient event attributed to storm events on 02/12/08-02/13/08 and 02/22/08). Restoration is attributed to 319(h) grant projects RP01-062: riparian buffers (Mountain Brook and Pequest) and RP03-047: filters and stormwater management system. Data at these stations also meet applicable WQS for DO. AMNET results at Stations AN0043 and AN0048 show biology is excellent. Temperature was also delisted (see Section VIII). Aquatic Life and Trout Uses were changed to Fully Supporting.

8) NJ02040105140020-01 Pohatcong Ck (Brass Castle Ck to Rt 31) was listed for **DO** in 2008 based on exceedances at Station 01455138 (2001-2002); however, diurnal data (2005) at Station P meet applicable WQS for DO. In addition, data at Station 01455200 in downstream NJ02040105140030-01 also meet WQS. Restoration is attributed to 319(h) grant projects RP00-10 and RP01-062, which installed riparian buffers. TP and Temperature were also delisted (see Sections VI.I.3 and VIII). The Aquatic Life Use remains Not Supporting for Cause Unknown and TSS.

9) NJ02040105160070-01 Musconetcong R (below Warren Glen) was listed for **TSS** in 2010 based on exceedances at Station DRBCNJ0025 (2000-2004). There is no newer data at this station. However, all 20 samples collected (2006-2010) at co-located Station 01457400 meet the applicable WQS for TSS. Restoration is attributed to 319(h) grant projects RP00-101: riparian buffer, RP01-062: riparian buffer, and RP06-073: watershed plan. Temperature was also delisted (see Section VIII). Data at Stations 01457400 and DRBCNJ0025 also meet FW2-TM criterion for DO. AMNET results at Station AN0074 show biology is not impaired. Aquatic Life and Trout Uses were changed to Fully Supporting.

NJ02040202110040-01 Cooper River (Wallworth gage to Evesham Rd) and NJ02040202110050-01 Cooper River (Rt 130 to Wallworth gage) were originally listed for **TDS** in 2008 based on two exceedances out of 16 samples (2002-2005) at Station 01467150, which is

located on the downstream border with NJ02040202110050-01. All 26 samples collected at Station 01467150 (2006-2010) meet the applicable WQS for TDS, including three estimated values. In addition, all eight samples collected at Station Cooper River at Cuthbert in 2009 and all 16 samples collected at Cooper River near mouth (2006-2009) meet the FW2-NT criterion for TDS. Both stations are located further downstream in NJ02040202110050-01 (see Figure 3). Restoration is attributed to 319(h) grant projects RP01-087: Bio-filter wetland at Browing Rd and Park Dr. in Collingswood, which implements the Cooper River Watershed Plan. Turbidity (below) and Sulfates (Section III.B) were also delisted. The Agricultural Water Supply Use was changed to Fully Supporting in both AUs. **TSS** was not listed in NJ0204020211050-01 Cooper River (Rt 130 to Wallworth gage) based on BPJ (see Decisions to Not List Assessment Unit/Pollutant Combinations on the 2012 303(d) List of Water Quality Limited Waters, Section II.) Industrial Water Supply Use remains Fully Supporting. The Public Water Supply Use remains Not Supporting for several pollutants.

NJ0204020211040-01 Cooper River (Wallworth gage to Evesham Rd) and NJ0204020211050-01 Cooper River (Rt 130 to Wallworth gage) were also originally listed for **Turbidity** in 2006 based on three exceedances out of 36 samples (1999-2004) at Station 01467150, which is located on the downstream border with NJ02040202110050-01. There is no new Turbidity data at this station. However, all eight samples collected at Station Cooper River at Cuthbert in 2009 and all 20 samples collected at Cooper River near mouth (2006-2009) meet the FW2-NT criterion for Turbidity. Both stations are located further downstream in NJ02040202110050-01 (see Figure 3). Restoration is attributed to 319(h) grant project RP01-087: Bio-filter wetland at Browing Rd and Park Dr. in Collingswood, which implements the Cooper River Watershed Plan. The Aquatic Life Use remains Not Supporting in both AUs for TP, which was previously delisted under a TMDL; pH is also listed as a cause of Aquatic Life Use non-support in NJ02040202110050-01 (exceeds Aquatic Life criterion but not Industrial Water Supply).

B. The following AUs were previously delisted under **Fecal Coliform** TMDLs; however, new data (see table below) show that the applicable WQS were attained due to restoration activities, as described below. The Primary Contact Recreation Use was changed to Fully Supporting in these AUs.

AU Number	AU Name	Station	Geomean (ml) <126	
			2009	2010
NJ02040105030020-01	Swartswood Lake and tribs (meets E. coli)	01443466	10	42.5
NJ02040301080060-01	Toms R Lwr (Rt 166 to Oak Ridge Pkwy)	01408500	108.5	n/a
NJ02030103030040-01	Rockaway R (Stephens Bk to Longwood Lk)	01379660	32.8	n/a

1) NJ02040105030020-01 Swartswood Lake and tribs: New data at Station 01443466 show the geomean is below the FW2 criterion for **E. coli.** Restoration is attributed to activities conducted

under Section 319(h) grants: RP04-001 stormwater management, RP00-015 vegetated basins, and RP01-062 riparian buffer.

2) NJ02040301080060-01 Toms R Lwr (Rt 166 to Oak Ridge Pkwy): New data at Station 01408500 show the geomean is below the FW2 criterion for **E. coli.** Restoration is attributed to activities conducted under 319(h) grant RP03-036 for a stormwater basin and storm drain project.

3) NJ02030103030040-01 Rockaway R (Stephens Bk to Longwood Lk): New data at Station 01379660 shows the geomean is below the FW2 criterion for **E. coli**. Restoration is attributed to activities implemented to treat stormwater runoff under 319(h) grant RP04-113: Morris County stormwater treatment using wetlands.

II. Applicable WQS Attained; According To New Method

A. Metals Delisted Based on NY/NJ Harbor Toxics Modeling: Metals were delisted in the following AUs based on a new assessment method that was developed under the NY/NJ Harbor Estuary TMDL. The USEPA Region 2 Toxics TMDL model (USEPA Contract EP-C-08-003, January 2008) projected that concentrations of various metals in these AUs would not exceed the water quality criteria and that a TMDL would not be necessary. The modeling report is available on the Department's Web site at http://www.state.nj.us/dep/wms/bwqsa/support_docs.htm. Modeling work showing that these assessment units are not exceeding the water quality criteria is also available on the NY/NJ Harbor Estuary's Web site at http://www.harborestuary.org/pdf/HydroQual-DevelTMDLsHarbor_1995.pdf and http://www.harborestuary.org/reports/toxics/ NY-NJ-1994-Copper_etal-NY-NJ_Harbor.pdf.

Assessment Unit	AU Name	Cause
NJ02030103180030-01	Hackensack R (Ft Lee Rd to Oradell gage)	Copper
NJ02030103180080-01	Hackensack R (Rt 3 to Bellmans Ck)	Cadmium
NJ02030103180090-01	Hackensack R (Amtrak bridge to Rt 3)	Cadmium
NJ02030103180100-01	Hackensack R (below Amtrak bridge)	Cadmium
NJ02030105120170-01	Raritan R Lwr (Lawrence Bk to Mile Run)	Cadmium
NJ02030105120170-01	Raritan R Lwr (Lawrence Bk to Mile Run)	Zinc*
NJ02030105160100-01	Raritan R Lwr (below Lawrence Bk)	Cadmium

*The Public Water Supply Use also remains Not Supporting for other pollutants.

B. Metals Listings Carried Over from the 304(L) List: Metals were carried over to the following AUs from the original 304(L) list generated in the 1980's. Upper Passaic River AUs were listed based on USEPA Site-Specific Dilution Analysis for the following dischargers: Automatic Switch Co. (NJ0002003), Reheis Chemical Co. (NJ0002551), and Sandoz-Wander, Inc. (NJ0001155), which predicted that **Cyanide** would exceed the ambient criteria. Lower Passaic AUs were listed based on USEPA Site-Specific Dilution Analysis for Curtiss-Wright Corp. (NJ0002976), which predicted that Cyanide would exceed the ambient criteria. Cyanide was monitored at Stations 01389130, 01389500, 01389895, and 01379500 and all data were below

detectable levels. In addition, data from 2006 also met both acute and chronic aquatic life criteria.

- NJ02030103010070-01 Passaic R Upr (Dead R to Osborn Mills)
- NJ02030103010110-01 Passaic R Upr (Plainfield Rd to Dead R)
- NJ02030103010120-01 Passaic R Upr (Snyder to Plainfield Rd)
- NJ02030103010130-01 Passaic R Upr (40d 45m to Snyder Ave)
- NJ02030103010150-01 Passaic R Upr (Columbia Rd to 40d 45m)
- NJ02030103120070-01 Passaic R Lwr (Fair Lawn Ave to Goffle)
- NJ02030103120080-01 Passaic R Lwr (Dundee Dam to F.L. Ave)
- NJ02030103120090-01 Passaic R Lwr (Saddle R to Dundee Dam)
- NJ02030103120100-01 Passaic R Lwr (Goffle Bk to Pompton R)
- NJ02030103120110-01 Passaic R Lwr (Goeffle Bk to Pump stn)

C. Lead – Assessed Dissolved Criteria Using Total Recoverable Data: NJ02040202040010-01 Rancocas Ck NB (Pemberton br to NL dam) was originally listed in 2002 for **Lead** in Rancocas Creek N Br at Pemberton based on Stations 01467000 and 19-RA-3N. This listing was carried over to NJ02040202040010-01 in 2006. All three samples collected over a three-day period in 1998 at Station 19-RA-3N were recorded as both the dissolved fraction and total recoverable. All the dissolved fraction data met the aquatic life acute and chronic criteria. Two of the three samples collected during the three-day sampling event in 1998 exceeded the total recoverable human health criterion. Nineteen samples were collected between 1996 and 2010 at Station 01467000. All 19 samples met both the dissolved acute aquatic life criterion and the total recoverable human health criterion. With the exception of the 1998 sampling event, the chronic aquatic life criterion could not be assessed because it is based on a four-day average and none of the samples at this station were collected on consecutive days. All eight of the samples recorded as only total recoverable Lead were below the dissolved acute aquatic life criterion; therefore, both aquatic and human health criteria were met (see 2012 Methods Document, Section 4.1). pH was also delisted (see Section VI.F.9); however, the Aquatic Life Use remains Not Supporting for Copper and the Public Water Supply Use remains Not Supporting for Arsenic.

D. Natural Conditions – pH: The following AUs were delisted based on a determination that the pH levels reflect natural conditions.

1) NJ02040206130030-01 Indian Branch (Scotland Run) was originally listed for low **pH** in 2004 (as Indian Branch near Malaga) based on Station 01411466. The stream classification at this site is FW2-NT and it was assessed based on the South Jersey pH criterion of 4.5 to 7.5. This AU was listed because pH was less than 4. However, this AU is partially located within the Pinelands National Wildlife Reserve (see Figure 4). AMNET results at Station AN0724 indicate that the Pinelands Metric Index (PMI) is the appropriate biological index because of the low pH measured at the site (3.91). The PMI score indicated that this site is not impaired. There are no anthropogenic sources that would cause a lowering of ambient pH levels. Therefore, low pH in this AU reflects the desired natural condition. However, the Aquatic Life Use remains Not Supporting for DO.

2) NJ02040301140020-01 Mill Branch (below GS Parkway) was originally listed in 2006 based on low **pH** at Station 01409305; however, this AU is influenced by the nearby Pinelands National Wildlife Reserve. There are no anthropogenic sources that would cause lowering of ambient pH levels. Therefore, low pH is naturally-occurring in this AU. Data at Station 01409305 meet the PL criterion for pH. AMNET results show biology is good an AN0559 and excellent at AN0559A. The Aquatic Life Use was changed to Fully Supporting.

III. Applicable WQS Attained; Reason for Recovery Unspecified

A. Cause Unknown: The table below identifies delistings for **Cause Unknown** where new biological data shows that biology is no longer impaired and chemical data is unavailable or shows no exceedances of the applicable WQS. Supporting data are available on the Department's Web site at http://www.state.nj.us/dep/wms/bfbm/amnetRnd4.html.

Assessment Unit	AU Name	Station(s)	Use Status
NJ02030103050010-01	Pequannock R (above Stockholm/Vernon Rd)	AN0258	Aquatic Life Use changed to Fully Supporting. Trout Use remains Not Supporting for Temperature (delisted under a TMDL – see Section IV.C)
NJ02030104070080-01	Pine Brook / Hockhockson Brook	AN0475, AN0476	Aquatic Life Use changed to Fully Supporting. Trout Use remains Not Supporting for Temperature (previously delisted under a TMDL).
NJ02030105010020-01	Drakes Brook (below Eyland Ave)	AN0312	Aquatic Life and Trout Uses changed to Fully Supporting.
NJ02030105050040-01	Lamington R(Pottersville gage-FurnaceRd)	AN0358	Temperature also delisted (see Section VIII). Aquatic Life and Trout Uses changed to Fully Supporting.
NJ02040105210030-01	Swan Creek (Moore Ck to Alexauken Ck)	AN0099	Aquatic Life Use changed to Fully Supporting. Trout Use changed to Insufficient Information.
NJ02040301030030-01	Metedeconk R SB(BennettsPd to 74d19m15s)	AN0510A	Aquatic Life Use changed to Fully Supporting.
NJ02040301190030-01	Wading River WB (Rt 563 to Rt 532)	AN0596	Aquatic Life Use changed to Fully Supporting.
NJ02040301190040-01	Shoal Branch (below Pope Branch)	AN0597, AN0597A	Aquatic Life Use changed to Fully Supporting.
NJ02040301190060-01	Tulpehocken Creek	AN0600	Aquatic Life Use changed to Fully Supporting.

B. Pollutants: The table below identifies delistings for pollutants where new data meet applicable WQS but the reason for recovery is unknown. Supporting data are available on the National Water Monitoring Council's Web site at http://www.waterqualitydata.us/, as well as the Department's Water Quality Data Exchange (WQDE) system at http://www.nj.gov/dep/wms/wqde, USEPA's STORET data warehouse, or the USGS National Water Information System (NWIS).

Assessment Unit	AU Name	Cause	Station(s)
NJ02020007030030-01	Wallkill River(Owens gage to 41d13m30s)	pH	01368000
NJ02030103010020-01	Primrose Brook	E. coli	01378780
NJ02030103010020-01	Primrose Brook	TSS	PRB
NJ02030103010080-01	Dead River (above Harrisons Brook)	TSS	01379200
NJ02030103010100-01	Dead River (below Harrisons Brook)	TSS	01379200
NJ02030103030110-01	Beaver Brook (Morris County)	pH	01380100
NJ02030103030120-01	Den Brook	pH	01380125
NJ02030103050050-01	Pequannock R (Charlotteburg to OakRidge)	pH	01382310
NJ02030103110020-01	Pompton River	Total Chromium	01388500, 01388600
NJ02030103140030-01	Hohokus Bk(below Pennington Ave)	DO*	01391100, 01391000, 01390946, 01391050, HB001
NJ02030103140050-01	Saddle River (Rt 4 to HoHoKus)	TSS	01391500, 01391110
NJ02030103140060-01	Saddle River (Lodi gage to Rt 4)	Nitrates	01391500, 01391540, NJHDG-6
NJ02030103140060-01	Saddle River (Lodi gage to Rt 4)	TSS	01391500, NJHDG-6
NJ02030103140070-01	Saddle River (below Lodi gage)	Nitrates	01391500, 01391540, NJHDG-6
NJ02030103140070-01	Saddle River (below Lodi gage)	TSS	01391500, NJHDG-6
NJ02030103140080-01	Saddle River (Hohokus to Ridgewood gage)	DO*	SR001, 01390518, 01390510
NJ02030103140080-01	Saddle River (Hohokus to Ridgewood gage)	TSS	01390518, 01390510
NJ02030103170040-01	Tenakill Brook	pH	01378350, 01378352, 01378387, CB1, DB1
NJ02030104020020-01	Elizabeth R (Elizabeth CORP BDY to I-78)	DO	01393450

NJ02030104020030-01	Elizabeth R (below Elizabeth CORP BDY)	DO	NJHDG-20
NJ02030104050060-01	Rahway R(Robinsons Br to KenilworthBlvd)	TSS	01395000
NJ02030104080020-01	Parkers Creek / Oceanport Creek	DO	R59, R04, R58
NJ02030104080040-01	Shrewsbury River (above Navesink River)	DO	39, 44, 1100A, 1104B, 1111B, 1127A, 1132
NJ02030104080040-01	Shrewsbury River (above Navesink River)	pH	39, 44
NJ02030104100030-01	Manasquan R (West Farms Rd to Rt 9)	TSS	01408000, 15, 73
NJ02030104100050-01	Manasquan R (gage to West Farms Rd)	TSS	01408000
NJ02030104910010-01	Raritan Bay (west of Thorns Ck)	Enterococcus	CCMPMC0001, CCMPMC0002
NJ02030105040040-01	Raritan R SB(NB to Pleasant Run)	TSS	01398102
NJ02030105050070-01	Lamington R(HallsBrRd-HerzogBrk)	pH	01399780, 01399545
NJ02030105050070-01	Lamington R(HallsBrRd-HerzogBrk)	TSS	01399780, 01399545
NJ02030105110010-01	Heathcote Brook	pH	01401400
NJ02030105110010-01	Heathcote Brook	TSS	01401400
NJ02030105120130-01	Green Brook (below Bound Brook)	Sulfates	01403900
NJ02030105160100-01	Raritan R Lwr (below Lawrence Bk)	DO	Passaic-24, NJHDG-27
NJ02040104240010-01	Van Campens Brook	pH	01440100, 01440097
NJ02040104140040-01	Big Flat Brook (Confluence to Kittle Rd)	pH	01439830
NJ02040105090030-01	Pequest R (Furnace Bk to Cemetery Road)	TSS	01446400
NJ02040105150050-01	Lubbers Run (below Dallis Pond)	pH	01455780
NJ02040105150110-01	Musconetcong R(Waterloo area)	Temperature	MSA6
NJ02040105170020-01	Hakihokake Creek	TP	01458100
NJ02040105170040-01	Nishisakawick Creek (above 40d 33m)	pH	01458570
NJ02040105170050-01	Nishisakawick Creek (below 40d 33m)	pH	01458570
NJ02040105200030-01	Lockatong Ck (below Milltown) incl UDRV	pH	01460900

NJ02040105200030-01	Lockatong Ck (below Milltown) incl UDRV	Turbidity	01460900
NJ02040105240030-01	Miry Run (Assunpink Cr)	DO	01463850
NJ02040105240050-01	Little Shabakunk Creek	DO	01463700, 01464000, 01464020, 01463881, 01463882 (all located in NJ02040105240060-01)
NJ02040105240060-01	Assunpink Creek (below Shipetaukin Ck)	DO[1]	01463700, 01464000, 01464020, 01463881, 01463882
NJ02040201040060-01	North Run (above Wrightstown bypass)	TSS	01464380
NJ02040201040070-01	Crosswicks Ck(NewEgypt to/incl NorthRun)	TSS	01464380
NJ02040201050070-01	Crosswicks Ck(Doctors Ck-Ellisdale trib)	TSS	01464504
NJ02040201070020-01	Crosswicks Ck(below Doctors Creek)	Turbidity	0146452360
NJ02040201090020-01	Crafts Creek (below Rt 206)	DO	01464540
NJ02040202080030-01	Mill Creek (Willingboro)	TSS	01467021
NJ02040202110030-01	Cooper River (above Evesham Road)	Sulfates	01467150
NJ02040202110030-01	Cooper River (above Evesham Road)	TDS	01467150
NJ02040202110040-01	Cooper R (Wallworth gage to Evesham Rd)	Sulfates	01467150
NJ02040202110050-01	Cooper River (Rt 130 to Wallworth gage)	Sulfates	01467150
NJ02040202120090-01	Newton Creek (LDRV-Kaighn Ave to LT Ck)	Copper	01467312
NJ02040202120090-01	Newton Creek (LDRV-Kaighn Ave to LT Ck)	pH	01467312, Newton Creek at Route 130, Newton Creek near mouth
NJ02040202130050-01	Edwards Run	TSS	01475090
NJ02040202130050-01	Edwards Run	Turbidity	01475090
NJ02040206030010-01	Salem River (above Woodstown gage)	DO	01482455, S1, S2, S4
NJ02040206040010-01	Mannington Creek	pH	01482645, AN0697, AN0698

[1] The DO delisting in NJ02040105240060-01 does not appear in 2012 NJADB. This computer error was reported to USEPA Region 2.

NJ02040206060020-01	Alloway Ck (above Alloway-Woodstown Rd)	TP	01482880
NJ02040301020010-01	Metedeconk R NB(above I-195)	DO	NK
NJ02040301020020-01	Metedeconk R NB(Rt 9 to I-195)	DO	01408100, NF, NI, NG, NK
NJ02040301030010-01	Metedeconk R SB (above I-195 exit 21 rd)	DO	SL, SM, SN
NJ02040301060020-01	Toms River (74-22-30 rd to FrancisMills)	pH	01408260
NJ02040301080070-01	Jakes Branch (Lower Toms River)	DO	BT05, 01408702*
NJ02040301160100-01	Blue Anchor Brook	Temperature	0140940950
NJ02040301170010-01	Hammonton Creek (above 74d43m)	Zinc	01409414
NJ02040301170020-01	Hammonton Creek (Columbia Rd to 74d43m)	Zinc	01409414, 01409416, 01409418
NJ02040301170020-01	Hammonton Creek (Columbia Rd to 74d43m)	Mercury in Water Column	01409414
NJ02040301170100-01	Landing Creek (above Rt 563)	DO	01409571
NJ02040301170130-01	Mullica River(Turtle Ck to Lower BankRd)	TSS	R28
NJ02040302030040-01	GEHR (Broad Lane road to AC Expressway)	Copper	01410820
NJ02040302030060-01	GEHR (Piney Hollow Rd to Broad Lane rd)	Copper	01410820
NJ02040302050130-01	Great Egg Harbor R (GEH Bay to Miry Run)	DO	2821B
NJ02040302060030-01	Patcong Creek (Somers Ave to Zion Rd)	DO	R34, 2863B

*Includes diurnal data

C. Listings Carried Over from 1998: The AU/pollutant combinations in the table below were delisted based on data showing that the applicable water quality standards are attained.

Assessment Unit	AU Name	Cause	Station(s)
NJ02040301080060-01	Toms R Lwr (Rt 166 to Oak Ridge Pkwy)	Cadmium	13-Tom-1, 01408500
NJ02040301080060-01	Toms R Lwr (Rt 166 to Oak Ridge Pkwy)	Copper	13-Tom-1, 01408500
NJ02040301080060-01	Toms R Lwr (Rt 166 to Oak Ridge Pkwy)	Lead	13-Tom-1, 01408500
NJ02040301080060-01	Toms R Lwr (Rt 166 to Oak Ridge Pkwy)	Nickel	13-Tom-1, 01408500

NJ02040301080060-01	Toms R Lwr (Rt 166 to Oak Ridge Pkwy)	Total Chromium	13-Tom-1, 01408500

NJ02040301080060-01	Toms R Lwr (Rt 166 to Oak Ridge Pkwy)	Zinc	13-Tom-1, 01408500
NJ02040301080090-01	Toms R Lwr (below Rt 166)	Cadmium	13-Tom-1, 01408500
NJ02040301080090-01	Toms R Lwr (below Rt 166)	Copper	13-Tom-1, 01408500
NJ02040301080090-01	Toms R Lwr (below Rt 166)	Lead	13-Tom-1, 01408500
NJ02040301080090-01	Toms R Lwr (below Rt 166)	Nickel	13-Tom-1, 01408500
NJ02040301080090-01	Toms R Lwr (below Rt 166)	Total Chromium	13-Tom-1, 01408500
NJ02040301080090-01	Toms R Lwr (below Rt 166)	Zinc	13-Tom-1, 01408500
NJ02040302050060-01	GEHR (Miry Run to Lake Lenape)	Cadmium	01411110, 15-GEH-3
NJ02040302050060-01	GEHR (Miry Run to Lake Lenape)	Copper	01411110, 15-GEH-3
NJ02040302050060-01	GEHR (Miry Run to Lake Lenape)	Lead	01411110, 15-GEH-3
NJ02040302050060-01	GEHR (Miry Run to Lake Lenape)	Nickel	01411110, 15-GEH-3
NJ02040302050060-01	GEHR (Miry Run to Lake Lenape)	Chromium, hexavalent	01411110, 15-GEH-3
NJ02040302050060-01	GEHR (Miry Run to Lake Lenape)	Zinc	01411110, 15-GEH-3
NJ02040302050130-01	Great Egg Harbor R (GEH Bay to Miry Run)	Cadmium	01411110, 15-GEH-3
NJ02040302050130-01	Great Egg Harbor R (GEH Bay to Miry Run)	Copper	01411110, 15-GEH-3
NJ02040302050130-01	Great Egg Harbor R (GEH Bay to Miry Run)	Lead	01411110, 15-GEH-3
NJ02040302050130-01	Great Egg Harbor R (GEH Bay to Miry Run)	Nickel	01411110, 15-GEH-3
NJ02040302050130-01	Great Egg Harbor R (GEH Bay to Miry Run)	Total Chromium	01411110, 15-GEH-3
NJ02040302050130-01	Great Egg Harbor R (GEH Bay to Miry Run)	Zinc	01411110, 15-GEH-3
NJ02040302050140-01	Great Egg Harbor R (GEH Bay to Gibson Crk)	Cadmium	01411110, 15-GEH-3
NJ02040302050140-01	Great Egg Harbor R (GEH Bay to Gibson Crk)	Copper	01411110, 15-GEH-3
NJ02040302050140-01	Great Egg Harbor R (GEH Bay to Gibson Crk)	Lead	01411110, 15-GEH-3
NJ02040302050140-01	Great Egg Harbor R (GEH Bay to Gibson Crk)	Nickel	01411110, 15-GEH-3
NJ02040302050140-01	Great Egg Harbor R (GEH Bay to Gibson Crk)	Total Chromium	01411110, 15-GEH-3
NJ02040302050140-01	Great Egg Harbor R (GEH Bay to Gibson Crk)	Zinc	01411110, 15-GEH-3

1) Toms River was originally listed for the above-shown pollutants based on 304(L) documentation from 1986, which identified Tom River as potentially impacted by VOCs and Metals from Ciba Geigy. Subsequent water quality data from co-located Stations 13-TOM-1 and 01408500 show no exceedances of applicable WQS criteria for these pollutants. As a result, two AUs, Toms River Lower (RT 166 to Oak Ridge Parkway) and downstream Toms River Lower (below Route 166), were delisted for **Cadmium, Chromium, Copper, Lead, Nickel, and Zinc.** The delisting reason has been revised to "Applicable WQS attained; reason for recovery unspecified". The Aquatic Life Use in NJ02040301080060-01 remains Not Supporting for Cause Unknown, which was added to the 303(d) List, and the Public Water Supply Use remains Not Supporting for Arsenic. The Public Water Supply Use is not applicable to NJ02040301080090-01, which contains only SE waters. The Aquatic Life Use was changed to Insufficient Information because there is no biological data.

2) Great Egg Harbor River: The 1998 Identification and Setting of Priorities for Section 303(d) Water Quality Limited Waters in New Jersey identified Great Egg Harbor River on Sublist II: Candidate TMDL Waters Sublist, B. Suspected Water Quality Impairment (page A73). Sublist II-B waters lacked extensive data or the available information was not a strong indicator of water quality impairment but there was sufficient data or indicators to warrant further analysis. Reach 020403-011 was located in the freshwater section and Reach 02030301-010 was located in the estuary.

In 2006, the 2004 assessment units identified as Great Egg Harbor River at Sicklerville and Great Egg Harbor River at Folsom were combined and assigned to NJ020403020300100-01. In 2008, the original 1998 metals assessment associated with Reach - 02030301-010 was assigned to NJ02040302050060-01 GEHR (Miry Run to Lake Lenape) because this AU was located in the estuary. In 2010, Great Egg Harbor R (GEH Bay to Miry Run) 02040302050130 was split and a new HUC14 was created and labeled Great Egg Harbor River (GEH Bay to Gibson Crk) 02040302050140. All of the 303(d) listed pollutants assigned to Great Egg Harbor R (GEH Bay to Miry Run) 02040302050130 were also assigned to the other estuarine AUs (see Figure 6).

The Department has concluded that data from Stations 01410784, 01411000, 15-GEH-1, and 15-GEH-2 should be used to assess the freshwater HUC NJ02040302030010-01 and data from Stations 01411110 and 15-GEH-3 should be used to assess the estuarine portions of the Great Egg Harbor River in the five subwatersheds: NJ02040302050060-01, NJ02040302040080-01, NJ02040302040090-01, NJ02040302050130-01, and NJ02040302050140-01.

IV. Total Maximum Daily Load (TMDL) Approved Or Established By USEPA (4A)

A. Mercury in fish tissue: The following table shows AUs that were delisted for **Mercury in fish tissue** because they are covered by the USEPA-approved Statewide Mercury TMDL (EPA ID 40821). These AUs were placed on Category 4A of the Integrated List of Waters since Mercury in fish tissue remains a cause of Fish Consumption Use non-support.

Assessment Unit	AU Name
NJ02030103100060-01	Crystal Lake/Pond Brook
NJ02030104090040-01	Shark River (above Remsen Mill gage)
NJ02040105230020-01	Assunpink Ck (NewSharonBr to/incl Lake)
NJ02040105230030-01	New Sharon Branch (Assunpink Creek)
NJ02040105230040-01	Assunpink Ck (TrentonRd to NewSharonBr)
NJ02040201040070-01	Crosswicks Ck(NewEgypt to/incl NorthRun)
NJ02040201050030-01	Crosswicks Ck(Lahaway Ck to New Egypt)
NJ02040201050040-01	Crosswicks Ck(Walnford to Lahaway Ck)
NJ02040201050050-01	Crosswicks Ck (Ellisdale Trib to Walnford)
NJ02040201050060-01	Ellisdale trib (Crosswicks Creek)
NJ02040206180030-01	Menantico Creek (above Rt 552)
NJ02040301080060-01	Toms R Lwr (Rt 166 to Oak Ridge Pkwy)
NJ02040302050080-01	Stephen Creek (GEHR)

NJ02040105150060-01 Cranberry Lake / Jefferson Lake & tribs: Mercury in fish tissue was delisted in 2010 under the Statewide Mercury TMDL but was inadvertently returned to the draft 2012 303(d) List. Mercury in fish tissue was again moved to Category 4A of the Integrated List but does not count as a new delisting in 2012.

B. Pathogens: Data is now available to assess recreational use in the following AUs listed in 2010 as "insufficient information". The data indicates that the use is not supported. However, these AUs were delisted because they were covered by an EPA-approved pathogen TMDL. These AU/pollutant combinations were placed on Category 4A of the Integrated List of Waters since the pathogenic indicator identified below remains as a cause of Recreation Use non-support.

Assessment Unit	AU Name	Parameter	EPA TMDL ID
NJ02030104060050-01	Waackaack Creek	Enterococcus	31395
NJ02030104070100-01	Poricy Bk/Swimming R(below SwimmingR Rd)	Enterococcus	10996
NJ02030103100010-01	Ramapo R (above 74d 11m 00s)	Escherichia coli	9960
NJ02030103100070-01	Ramapo R (below Crystal Lake bridge)	Escherichia coli	9960
NJ02030104070060-01	Yellow Brook (below Bucks Mill)	Escherichia coli	10996
NJ02030104100090-01	Manasquan R (Rt 70 br to 74d07m30s)	Escherichia coli	31391
NJ02040201080020-01	Blacks Creek (Bacons Run to 40d06m10s)	Escherichia coli	10535
NJ02040206170030-01	Maurice River(Menantico Ck to UnionLake)	Escherichia coli	31391
NJ02040301060020-01	Toms River (74-22-30 rd to FrancisMills)	Escherichia coli	31400

NJ02040301070090-01	Union Branch (below Blacks Br 74d22m05s)	Escherichia coli	31400
NJ02040302040110-01	GEHR (Mare Run to Rt 322)	Escherichia coli	9897, 31408
NJ02040302050020-01	Babcock Creek (GEHR)	Escherichia coli	9897, 31408
NJ02040302050040-01	South River (below 39d26m15s)	Escherichia coli	9897, 31408
NJ02040206170030-01	Maurice River(Menantico Ck to UnionLake)	Total Coliform	31391
NJ02040302050020-01	Babcock Creek (GEHR)	Total Coliform	31408
NJ02040302050040-01	South River (below 39d26m15s)	Total Coliform	31408

C. Temperature: The following AUs were delisted for Temperature because they are covered by the USEPA-approved Pequannock Temperature TMDL (EPA ID 11105). These AUs were placed on Category 4A of the Integrated List of Waters since Temperature remains as a cause of Trout Use non-support.

Assessment Unit	AU Name
NJ02030103050010-01	Pequannock R (above Stockholm/Vernon Rd)
NJ02030103050030-01	Pequannock R (above OakRidge Res outlet
NJ02030103050050-01	Pequannock R (Charlotteburg to OakRidge)
NJ02030103050060-01	Pequannock R(Macopin gage to Charl'brg)

D. Total Phosphorus (TP): The following AUs were delisted for **TP** because they are covered by a USEPA-approved TMDL. These AUs were placed on Category 4A of the Integrated List of Waters, as described below.

1) NJ02030104100030-01 Manasquan R (West Farms Rd to Rt 9) was originally listed for **TP** in 2006 but should have been delisted at the same time since it was covered by the TP TMDL for Manasquan River at Squankum and Long Brook at Wyckoff Mills Stream Segments approved by USEPA on September 23, 2005 (EPA ID 12327). TP was delisted under this TMDL and moved to Category 4A of the Integrated List of Waters since it remains a pollutant cause of Aquatic Life Use non-support. Temperature and TSS were delisted because applicable WQS were attained (see Sections III.B and VIII). Cause Unknown remains as a non-pollutant cause of Aquatic Life Use non-support.

2) NJ02040206230070-01 Pond Creek / Cape May Canal West should have been originally listed for **TP** in 2002 based on a Clean Lakes Study of Lake Lily, Cape May County and then delisted under an EPA-approved TMDL (EPA ID 10581); however, both the 2002 303(d) List and portions of the TMDL mistakenly refer to Lily Lake in Atlantic County. There was never any data to support listing Lily Lake in Atlantic County for TP. Therefore, NJ02040206230070-01 was listed, delisted, and placed on Category 4A for TP and the Aquatic Life Use was changed to Not Supporting. TP was removed as a cause of Aquatic Life Use non-support in NJ02040302010010-01 Reeds Bay/Absecon Bay; however, the Aquatic Life Use in this AU remains Not Supporting for DO.

3) Two AUs covered by **TP** TMDLs were not on the 2010 303(d) List; however, data in these AUs showed exceedances of the TP criterion causing non-support of the Aquatic Life Use. TP in NJ02030103010180-01 Passaic R Upr (Pine Bk br to Rockaway) was listed in 2012 and delisted under the Passaic TMDL (EPA ID 35044). TP in NJ02030103180040-01 Overpeck Creek was listed in 2012 and delisted under the Overpeck Lake TMDL (EPA ID 10564).

V. TMDL Alternative (4B) – Reserved

VI. WQS Attained; Original Basis For Listing Was Incorrect

A. Ammonia (un-ionized): The following AUs were incorrectly listed for Ammonia in 2010 due to a computer programming error in the formulas used to calculate the ammonia criteria. The error was corrected and these AUs were reassessed. Data from the stations shown below meet the applicable WQS. The Aquatic Life Use remains Not Supporting for other parameters, except as noted.

Assessment Unit	AU Name	Station(s)
NJ02030103180090-01	Hackensack R (Amtrak bridge to Rt 3)	NJHDG-4
NJ02030103180100-01	Hackensack R (below Amtrak bridge)	NJHDG-11, NJHDG-10
NJ02030103150040-01	Passaic R Lwr (4th St br to Second R)	NJHDG-11, NJHDG-10
NJ02030103120080-01	Passaic R Lwr (Dundee Dam to F.L. Ave)	Passaic-9
NJ02030103120070-01	Passaic R Lwr (Fair Lawn Ave to Goffle)	NJHDG-3
NJ02030103120110-01	Passaic R Lwr (Goeffle Bk to Pump stn)	Passaic 10, Passaic 11, Passaic 12
NJ02030103120100-01	Passaic R Lwr (Goffle Bk to Pompton R)	Passaic 10, Passaic 11, Passaic 12, NJHDG-2
NJ02030103150050-01*	Passaic R Lwr (Nwk Bay to 4th St brdg)	13 Kearny
NJ02030103120090-01	Passaic R Lwr (Saddle R to Dundee Dam)	Passaic-8
NJ02030103150030-01	Passaic R Lwr (Second R to Saddle R)	NJHDG-7, NJHDG-8
NJ02030103140070-01	Saddle River (below Lodi gage)	01391500, 0139140, NJHDG-6
NJ02030103140060-01	Saddle River (Lodi gage to Rt 4)	01391500
NJ02030103150020-01	Second River	Passaic -5

*The Aquatic Life Use was changed to Insufficient Information because DO was also delisted (see Section IV.2) and there is no biological data.

B. Cause Unknown:

1) NJ02030105010050-01 Raritan R SB (LongValley br to 74d44m15s) was incorrectly listed for **Cause Unknown** in 2008 based on NJIS score at Station SBWA13. AMNET data at Stations AN0313, AN0314, and AN0315 show that biology is not impaired using HGMI. According to the Methods Document, HGMI trumps NJIS. 2010 AMNET results show biology is good at Stations SBWA12, SBWA13, and AN0315; and excellent at Stations AN0313 and AN0314. Biology was fair at Station SBWA02, but that station is located on a small tributary and is not representative of the AU. Temperature was also delisted (see Section VI.G.2). The Aquatic Life Use was changed to Fully Supporting.

2) NJ02030105100070-01 Cranbury Brook (above NJ Turnpike) was incorrectly listed for **Cause Unknown** in 2008 based on Stations AN0429 (HGMI) and FIBI015, which are located in a different AU. AMNET results at Station AN0385, located in this AU, show biology is good (CPMI). The Aquatic Life Use was changed to Fully Supporting.

3) NJ02040105070040-01 Pequest River (Trout Brook to Brighton): Pequest River UNK Trib at Brighton Rd in Green Twp was originally listed in 2002 for **Cause Unknown** based on AMNET data at Station AN0036. This listing as incorrectly carried over to NJ02040105070040-01 in 2006 (as "pollutant unknown") and carried over to subsequent lists; however, Station AN0036 is located on an unnamed tributary of the Pequest River along the downstream border of the AU (see Figures 8a and 8b) and is associated with NJ02040105070020-01 New Wawayanda Lake/Andover Pond trib. AMNET data at Station AN0037, which is located on the Pequest River and is more representative of this AU, shows that biology is note impaired (HGMI). There are significant differences in the land use patterns surrounding the two AMNET stations (which were sampled the same day), which supports the different assessment outcomes, as well as their association with different AUs. Therefore, the Aquatic Life Use was changed to Fully Supporting.

4) NJ02040206070070-01 Raccoon Ditch (Stow Creek) was incorrectly listed for **Cause Unknown** in 2008 based on AMNET results at Station AN0708; however, that station is located below an impoundment/lake and is not representative of the AU. The Aquatic Life Use remains Not Supporting for DO.

5) NJ02040206160040-01 Mill Creek (lower) was incorrectly listed for **Cause Unknown** in 2010. Cause Unknown was previously listed in NJ02040206160030-01 and incorrectly carried over to this AU when the new HUC was created in 2009. AMNET results at Station AN0753, located in this AU, show biology is good (CPMI). The Aquatic Life Use was changed to Fully Supporting.

C. Dissolved Oxygen (DO):

1) NJ02030103010190-01 Slough Brook was incorrectly listed for **DO** in 2010; however, there are no chemical sampling stations in this AU. Data from Station 01379525 in adjacent AU 02030103010140-01 Canoe Brook meet applicable WQS for DO. Cause Unknown was returned

to the 303(d) List as a pollutant cause of Aquatic Life Use non-support, based on AMNET data at Station AN0231C.

2) NJ02030103070080-01 Ringwood Creek was incorrectly listed for **DO** in 2010. DO was previously listed in NJ02030103070050 based on Station 01387000 and incorrectly carried over to this AU when the new HUC was created in 2010. Data at Station 01384495 meet the applicable WQS for DO. Temperature was also delisted (see Section VIII) but there are no biological data available for this AU. Aquatic Life and Trout Uses were changed to Insufficient Information.

3) NJ02030103010130-01 Passaic R Upr (40d 45m to Snyder Ave) and NJ02030103010150-01 Passaic R Upr (Columbia Rd to 40d 45m) were both incorrectly listed for **DO** in 2008 based on 2002 data showing exceedances at Station 01379500. However, more recent data (2005-2010) at Station 01379504, located slightly upstream of Station 01379500, show all 24 samples meet the applicable WQS for DO. In addition, the Total Maximum Daily Load for the Non-Tidal Passaic River Basin Addressing Phosphorus Impairments (Passaic TMDL) was approved by USEPA on July 31, 2008 and determined that DO levels at, and upstream of, Station PA4 represent natural conditions, including the low values at Station 01379500 (see Figure 8c). Cyanide was also delisted in both AUs (see Section II.B). TP in NJ02030103010130-01 was previously delisted under the Passaic TMDL (see USEPA's Web site at http://www.epa.gov/waters/tmdldocs/EPA20080731b-Approval_NTPassaic-Pompton.pdf and see the Department's Web site at http://www.nj.gov/dep/watershedmgt/DOCS/TMDL/passaic_tmdl.pdf). The Aquatic Life Use in both AUs remains Not Supporting for TSS (as well as TP in NJ02030103010130-01).

4) NJ02030103120090-01 Passaic R Lwr (Saddle R to Dundee Dam) was originally listed for **DO** in 2008 based on co-located Stations NJHDG-5 and Passaic-8. These stations are located in tidal (fresh) waters, which are not covered by the Passaic TMDL; however, DO was incorrectly delisted in 2010 when it was falsely attributed to the Passaic Nutrient TMDL. All samples at NJHDG-5 (2009 to 2010) meet the DO criteria as well as all of the data from Passaic-8 from 2005-2006. Two samples at Passaic-8 in July 2004 exceeded the DO criteria; however, more recent data (2006) at this station meet applicable WQS and given more weight than the older data (see Methods Document Section 3.1 "Data Age"). While the correct delisting reason is "Applicable WQS Attained; reason for recovery unspecified", this does not count as a new delisting in 2012 since it was already delisted in 2010[2]. (Additional data will not be collected at Station Passaic-8 since it was created for a TMDL study that has since been completed.) Ammonia (Section VI.A) and Cyanide (Section II.B) were also delisted. The Aquatic Life Use remains Not Supporting for pH and TP.

5) NJ02030105060040-01 Raritan R NB (Peapack Bk to McVickers Bk) was incorrectly listed for **DO and Temperature** in 2010. This AU is relatively undeveloped and significant portions are classified as Trout Production with the remainder in the lower portion being Trout

[2] This delisting does not appear as a new delisting in ADB or the ADB-generated report entitled "Assessment Unit-Cause Combinations Removed from the 303(d) List".

Maintenance. In its upper portion, a fish IBI site (FIBI093) on the mainstem NB Raritan River scored 46 ("Excellent") in 2009 and rated a habitat score of 178 "Optimal." Several young-of-the-year brown trout were collected, which verifies the Trout Production classification of the stream. 2008 data from Ravine Lake Stations NJW135 1 and NJW135 2 (classified FW2-NT) meet the DO and Temperature criteria for General Aquatic Life Uses. DO was incorrectly listed for Trout Use based on two samples below the criterion that were taken on the same day. A diurnal site, NBRR3, located just downstream of the Ravine Lake outlet, recorded temperatures above the Trout Maintenance criterion in 2004 and 2005; however, these values represent water warmed by the lake in August and thus are representative of natural conditions. A benthic macroinvertebrate site (AN0351) downstream in a neighboring AU shows biota reflecting "good" conditions. TSS was also removed (see Section IX.B.2) Therefore, both General and Trout Aquatic Life Uses were changed to Fully Supporting.

6) NJ02040104090030-01 Shimers Brook was incorrectly listed for **DO** in 2010; however, old data at Station 01438400 and new data at Station 01438399 meet the applicable WQS for DO. AMNET results show biology is good at Station AN0003 (HGMI). The Aquatic Life Use was changed to Fully Supporting. The Trout Use remains Not Supporting for Temperature.

7) NJ02040202110020-01 Cooper River NB (below Springdale Road) was incorrectly listed for **DO** based on Station 01467155. This station is located in the upper portion of the upstream AU, NJ02040202110010-01 Cooper River NB (above Springdale Road), and is not representative of overall water quality (see Figure 9). Old and new data at Station 01467181, which is located at the pore point of the AU, meets the applicable WQS for DO. Cooper River NB (above Springdale Road) remains listed for DO based on Station 01467155.

8) NJ02040206220030-01 Dennis Creek (Jakes Landing Rd to Rt 47) was incorrectly listed for **DO and pH** based on Station R38. There are no pH data for this site and DO records in this tidal marsh are not representative of the AU (see Figure 10). New data at Station 01411438 meet applicable WQS for DO and pH. Data at Station 01411427 also meets WQS for both parameters. No samples have been collected at Station 01411428 since 2004. AMNET Stations AN0767 and AN0768 were discontinued because they were located in tidal waters. Biological data are not available; therefore, the Aquatic Life Use was change to Insufficient Information.

9) NJ02040301160030-01 Mullica River (Rt 206 to Jackson Road) was incorrectly listed for **DO** in 2006 based on Station 01409383; however, there are no data to support this listing. Diurnal DO data at this station from 2003 meet the applicable WQS. Seven out of eight samples at Station 01409385 (2002-2004) and all 51 samples at Station 01409387 (1999-2010) meet the applicable WQS for DO. AMNET results at Stations AN0561 and AN0562 show biology is not impaired (PMI). Therefore, the Aquatic Life Use was changed to Fully Supporting.

D. Metals and Toxics:

1) NJ02030103110020-01 Pompton River was incorrectly listed for **Hexavalent Chromium** when total chromium was added to the 303(d) List in 2008; however, there was never any hexavalent chromium data to support this listing. Data at Station 01388500 meet applicable

WQS for Hexavalent Chromium. Data for Total Chromium also meet applicable WQS (see Section III.B). Ammonia, Cyanide and Thallium were also delisted.

2) NJ02030103120100-01 Passaic R Lwr (Goffle Bk to Pompton R) and NJ02030103120110-01 Passaic R Lwr (Goeffle Bk to Pump stn) were both originally listed for **Thallium** and **Total Chromium** in 1998 based on 304(l) and were incorrectly carried over to the 2002 303(d) List even though data at Stations 4-PAS-4, 4-Site-4 and 4-PAS-3, 4-Site-6 attained the applicable WQS. More recent data at these stations also meet applicable WQS. Ammonia (Section VI.A) and Cyanide (Section II.B) were also delisted in both AUs. The Aquatic Life Use remains Not Supporting for DO and the Public Water Supply Use remains Not Supporting for Arsenic in both AUs.

3) NJ02030103150050-01 Passaic R Lwr (Nwk Bay to 4th St brdg) was incorrectly listed based on **Arsenic** as a cause of Fish Consumption Use non-support based on exceedance of the human health criterion. The human health criterion for Arsenic is used to assess the Public Water Supply Use, which does not apply to this AU since it does not contain freshwater waterbodies. The Fish Consumption Use remains Not Supporting for numerous pollutants.

4) NJ02030104020020-01 Elizabeth R (Elizabeth CORP BDY to I-78) and NJ02030104020030-01 Elizabeth R (below r CORP BDY) were incorrectly listed for **Copper** based data collected under high flow conditions. All data collected under base flow conditions at Stations 01393300, 01393350, 01393440, and 01393450 meet the applicable WQS for Copper. DO was also delisted (see Section III.B). The Aquatic Life Use remains Not Supporting for Cause Unknown and TP.

5) NJ02030105020100-01 Raritan R SB(Three Bridges-Prescott Bk) was incorrectly listed for **Arsenic** based on samples taken at Stations 01397400 and 8-sb-4 between 1996 and 1999; however, all the data was below the detection limit (i.e., censored data). No Arsenic data has been collected in this AU since 1999. Data at Station 01397400 meet the applicable WQS for Nitrate and TDS. Data at Stations SBRR8 and SBRR9 also meet applicable WQS for TDS. Data at upstream Station 01397000 (located in NJ02030105020080-01) and at downstream Station 01398102 (located in NJ02030105040040-01) also meet applicable WQS for these Nitrate and TDS. Therefore, the Public Water Supply Use was changed to Fully Supporting.

6) NJ02030105120180-01 Middle Brook was originally listed for **Benzene** based on Station 01403300, which is located on the Raritan River in the downstream AU, NJ02030105120140-01 Raritan R Lwr (I-287 Piscataway-Millstone). There is no Benzene data available for this AU. When the HUC boundaries were revised in 2009, this AU was split and the benzene impairment was incorrectly assigned to both AUs in 2010. Station 01403300 in the downstream AU, NJ02030105120140-01 Raritan R Lwr (I-287 Piscataway-Millstone remains listed for Benzene (see Figure 7). The Public Water Supply Use in NJ02030105120180-01 Middle Brook remains Not Supporting for Arsenic.

7) NJ02040202100060-01 Pennsauken Ck (below NB/SB) was originally listed for **Cadmium, Copper, and Total Chromium** based on data collected at Station 01467082 prior to clean techniques for metals monitoring. All samples meet the acute aquatic life criteria; however, this

location remained listed for all three parameters pending collection of high flow data to determine if the chronic criteria were met. As described in the Methods Document, the chronic criteria cannot be assessed under high flow conditions as these events typically do not last four days. More recent data at Station 01467082 meet the acute aquatic life criteria for all three parameters. The Aquatic Life Use remains Not Supporting for DO. The Public Water Supply Use remains Not Supporting for Arsenic and Lead.

8) NJ02040202150040-01 Raccoon Ck (Russell Mill Rd to Rt 45) was incorrectly listed for **Silver** based on a miscalculation. Application of the correct mathematical formula for calculating the acute dissolved criterion and appropriate hardness value showed that the applicable WQS for Silver was met at Stations 01477110 and 01477120. The Aquatic Life Use remains Not Supporting for TP and Turbidity.

E. Pathogens:

1) NJ02030103150030-01 Passaic R Lwr (Second R to Saddle R) was incorrectly listed for **Enterococcus** in 2008 as the cause of Primary Contact Recreation; however, this AU is located below the head of tide. The Use Attainability Analysis of the New York Harbor Complex conducted in June 1985 determined that "the existing SE2 and SE3 classification should be retained for the tidal Passaic." Therefore, the Primary Contact Recreation Use was removed and the Secondary Contact Recreation Use was added. Data at Station NJHDG-7 show the geomean is below Fecal Coliform criterion for SE2 waters; therefore, the Secondary Contact Recreation Use is Fully Supporting.

2) NJ02040104090030-01 Shimers Brook was incorrectly listed for **E. coli** in 2008 based on Station 01438500, which is located on the Delaware River and is not within this AU. Data at Station DRBC/NPS47, located in this AU, show a geomean below the FW2 criterion for E. coli. The Primary Contact Recreation Use was changed to Fully Supporting.

3) NJ02040105200030-01 Lockatong Ck (below Milltown) incl UDRV was incorrectly listed for **E. coli** in 2008 based on upstream station. Data at Stations DRBCNJ0013 and L2, located in this AU, show geomeans below the FW2 criterion for E. Coli. The Primary Contact Recreation Use was changed to Fully Supporting.

F. pH:

1) NJ02030103020050-01 Whippany R (Malapardis to Lk Pocahontas) was incorrectly listed for **pH** in 2010 based on Eden Mill Lake. Data at Eden Mill Lake exceeded applicable WQS for TP but not pH. Data at Stations Eden Mill Lake, as well as Stations 01381500, 01381498, and 01381515, meet the applicable WQS for pH. Cause Unknown and TP remain as causes of Aquatic Life and Trout Use non-support. Cause Unknown was added as a non-pollutant cause based on biological impairment at Stations AN0234 and AN0235. TP was previously delisted under the Passaic Nutrient TMDL.

2) NJ02030103120020-01 Peckman River (below CG Res trib) was incorrectly listed for **pH** in 2004 based on Station PRTMDL-PK1. Two of 15 samples exceed the pH criterion; however, all

samples were taken as two-day events; therefore, these data actually represent one exceedance out of eight samples. A single sample collected at Station 01389600 also meets the applicable WQS for pH. The Aquatic Life Use remains Not Supporting for TP, which was previously delisted under the Passaic Nutrient TMDL.

3) NJ02030104070020-01 Willow Brook was incorrectly listed for **pH** based on Station 01407253. There were two samples that were above the applicable WQS for pH; however, the recorded values were within the margin of error for the measuring instrument. Data at Station 52 meet the applicable WQS for pH. The Aquatic Life Use remains Not Supporting for TSS and TP.

4) NJ02030104090050-01 Jumping Brook (Monmouth Co) was originally listed for **pH** in 2002 and delisted in 2006 based on Stations 01407720 and 01407760. pH was then returned to the 2008 303(d) List and incorrectly carried over to this AU in 2010 because this AU was mislabeled as Ocean County. Old and new data at Stations 01407760 and 01407720 meet the South Jersey criterion for pH. The Aquatic Life Use remains Not Supporting for Cause Unknown.

5) NJ02030105130060-01 Lawrence Bk (Milltown to Church Lane) was originally listed for **pH** in 2010 but there is no data to support this listing. New data at Station 01405003 and prior data at all other stations in this HUC meet the applicable WQS for pH. Cause Unknown was returned to the 303(d) List as a pollutant and the Aquatic Life Use remains Not Supporting.

6) NJ02040105150110-01 Musconetcong R(Waterloo area) was incorrectly listed for **pH** in 2010. Data at Station 01455700 meet applicable WQS for pH. Temperature was also delisted (see Section III.B). There are no biological data available in this AU; therefore, Aquatic Life and Trout Uses were changed to Insufficient Information.

7) NJ02040105200060-01 Wickecheoke Creek (below Locktown) was incorrectly listed for **pH** in 2010 based on Station 01461250, which is located in upstream NJ02040105200040-01. Data at Stations 01461282 and DBRCNJ0012, located within this AU, meet applicable WQS for pH. Aquatic Life and Trout Uses remain Not Supporting for TP. Temperature is also listed as a cause of Trout Use non-support.

8) NJ02040105240060-01 Assunpink Creek (below Shipetaukin Ck) was originally listed for **pH** in 2010 based on Station 01463500; however, this station is located on the Delaware River. Data at Station 01464020 meet the applicable WQS for pH. DO was also delisted (see III.B)[3]. The Aquatic Life Use remains Not Supporting for Cause Unknown and TP.

9) NJ02040202040010-01 Rancocas Ck NB (Pemberton br to NL dam) was incorrectly listed for **pH** based on Station RCW-NBRanc-1, which is located at the upstream border and is not representative of this AU (see Figure 11). New data at Station 01467000, which is located further downstream and is more representative of overall water quality, meets PL criterion for pH. Lead was also delisted (see Section II.C). AMNET results at Station AN0149 show biology is not impaired (PMI); however, the Aquatic Life Use remains Not Supporting for Copper.

[3] The DO delisting in NJ02040105240060-01 does not appear in 2012 NJADB. This computer error was reported to USEPA Region 2.

10) NJ02040202080030-01 Mill Creek (Willingboro) was incorrectly listed for **pH** in 2010 based on three samples collected at Station 01467021 in 2006 that were above the criterion but within the margin of error for the recording instrument. New data at Station 01467021 meet applicable WQS for pH. The Aquatic Life Use remains Not Supporting for TP.

11) NJ02040202110060-01 Cooper River (below Rt 130) was incorrectly listed for **pH** based on exceedances of the South Jersey criterion at Station 01467191; however, this station is located in tidal waters and where the pH is naturally higher since it is influenced by the Delaware River. pH values are within the 6.5 to 8.5 range for FW2 waters. Data at Cooper River near Mouth meet the applicable pH criterion. The Aquatic Life Use remains Not Supporting for TP, which was previously delisted under a TMDL

12) NJ02040206030020-01 Nichomus Run was incorrectly listed for **pH** in 2010 based on Station S10, which is not hydrologically connected to this AU. TP was also delisted (see Section VI.I.6). AMNET data at Station AN0692 show biology is good; therefore, the Aquatic Life Use was changed to Fully Supporting.

13) NJ02040301060030-01 Toms River (Bowman Rd to 74-22-30 road) was originally listed for **pH** in 2006 based on Station 01408260 using the PL criterion for pH; however, this station is not located in Pinelands waters (see Figure 12). New data at Station 01408260 show all samples meet the So. Jersey pH criterion. Temperature was also delisted (see Section VIII). AMNET results at Station AN0520 show biology is not impaired (CPMI). Aquatic Life and Trout Uses were changed to Fully Supporting.

G. Temperature

1) NJ02020007010040-01 Wallkill R(Hamburg SW Bdy to Frkln Pnd) was incorrectly listed for **Temperature** based on FW2-TM criterion; however, the only trout waters in this AU are in a small lake that has no data. Data at Stations 01367715 and Wallkill C meet the FW2-NT criterion for Temperature. Cause Unknown was also delisted (see Section I.A.1). DO data was not available; therefore, the Trout Use was changed to Insufficient Information.

2) NJ02030105010050-01 Raritan R SB (LongValley br to 74d44m15s) was originally listed for **Temperature** in 2006; however, there is no data to support this listing. All 20 samples (2006-2010) at Station 01396180 and all 21 samples (2004-2005) at SBR2 meet the FW2-NT criterion for Temperature. Single samples at Stations 01396190, 01396121, AN0314, and AN0315 meet the FW2-TP criterion for Temperature. Single samples at Stations NJW04459-158-O and AN0312, and three of four samples at Station NJW04459-158-1 also meet the FW2-NT criterion for Temperature. Cause Unknown was also delisted (see Section VI.B.1). The Aquatic Life Trout Use was changed to Fully Supporting.

H. Total Dissolved Solids (TDS), Total Suspended Solids (TSS) and Chloride:

1) NJ02020007010070-01 Wallkill R (Martins Rd to Hamburg SW Bdy) was incorrectly listed for **TDS** based on Station 01367735; however, data from this station never exceeded TDS

criteria. New data at Station 01367770 and older data from Stations 01367715 and 01367729 meet applicable WQS for TDS. The Public Water Supply Use remains Not Supporting for Arsenic. The Agricultural Water Supply use was changed to Fully Supporting.

2) NJ02030104050010-01 Rahway R WB was incorrectly listed for **Chloride** in 2010 based on Station 01393690, which is located in NJ02030104030010-01 Morses Creek/Piles Creek. All 16 samples collected at Station 01393960 (2000-2004), which is located in NJ02030104050010-01 Rahway R WB, meet the applicable WQS for Chloride, but exceed WQS for TDS. The Public Water Supply Use remains Not Supporting for TDS. Chloride in Morses Creek / Piles Creek was not added to the 303(d) List because excursions recorded at Station 01393690 were due to transient storm events (see "Decisions to Not List Assessment Unit/Pollutant Combinations on the 2012 303(d) List of Water Quality Limited Waters"). The Public Water Supply Use in remains Not Supporting for several pollutants.

3) NJ02030105020080-01 Raritan R SB(Prescott Bk to River Rd) and NJ02030105020100-01 Raritan R SB(Three Bridges-Prescott Bk) were incorrectly listed for **TSS** based on two exceedances each at Stations SBRR8 and SBRR9 on two days in 2004 (07/28/04 and 11/29/04); however, all other data collected at these stations (14 samples each between 2004 and 2005) meet the FW2-NT criterion. In addition, all eight samples collected between 2000 and 2005 at Station 01397400, which is co-located with Station SBRR9 on the downstream border of the AU, meet the FW2-NT; all ten samples collected between 2004 and 2010 at Station 01397000, which is co-located with Station SBRR8 on the upstream border of the AU, meet the more stringent FW2-TM criterion for TSS criterion; and all 41 samples collected between 1999 and 2010 at Station 01398102, which is located further downstream in NJ02030105040040-01, meet the FW2-NT criterion (see Figure 13a). The weight of evidence from the complete set of data shows that the applicable TSS criteria were met. pH was delisted in 2008. Therefore, the Industrial Water Supply Use was changed to Fully Supporting.

4) NJ02030105080030-01 Raritan R Lwr (Millstone to Rt 206) was incorrectly listed for **TSS** in 2010 based on old data (2000-2002) showing one exceedance out of five samples at Station 01400500. No other TSS data are available from stations in this AU. Data at Station 01398102 in upstream NJ02030105040040-01 and at Station 01400000 in upstream NJ02030105070030-01 meet applicable SWQS for TSS. Land uses are similar in all three AUs. The Aquatic Life and Industrial Water Supply Uses remain Not Supporting for pH.

I. Total Phosphorus (TP)

1) NJ02030105120180-01 Middle Brook was incorrectly listed for **TP and TSS** in 2010. Previous listings for these pollutants were incorrectly carried over from another AU when this HUC was created in 2010. Data at Stations 01403190 and 01403171 meet the applicable WQS for TP and TSS. The Aquatic Life Use remains Not Supporting for Cause Unknown.

2) NJ02040105030010-01 Swartswood trib(41-06-06 thru Lk Owassa) was incorrectly listed for **TP** in 2008. Data at Stations 01443462 and Mecca Lake meet the applicable WQS for TP. Aquatic Life and Trout Uses remain Not Supporting for pH.

3) NJ02040105140020-01 Pohatcong Ck (Brass Castle Ck to Rt 31) was originally listed for **TP** in 2002 based on Station 01455200, which is located in NJ02040105140030-01, downstream. However, data at Station 01455138, located within this AU, meet applicable WQS for TP. DO and Temperature were also delisted (see Sections I.A.8 and VIII). Aquatic Life and Trout Uses remain Not Supporting for Cause Unknown and TSS.

4) NJ02040105140060-01 Pohatcong Ck (Springtown to Merrill Ck) was incorrectly listed for **TP** in 2002 based on Station 01455200; however, this station is located in NJ02040105140030-01, upstream. Data at Station 01455240, which is located in this AU, meet the FW2 criteria for TP. AMNET results at Station AN0600 show biology is good. Aquatic Life and Trout Uses were changed to Fully Supporting.

5) NJ02040202160010-01 Oldmans Creek (above Commissioners Rd) was incorrectly listed for **TP** in 2010 based on Station 01477520, which is located in downstream NJ02040202160050-01. Data at Station 01477440, located in this AU, meets the applicable WQS. AMNET results at Station AN0686 show biology is excellent (CPMI). The Aquatic Life Use was changed to Fully Supporting.

6) NJ02040206030020-01 Nichomus Run was incorrectly listed for **TP** in 2010 based on Station S10, which is not hydrologically related to this HUC. pH was also delisted (see Section VI.F.12). AMNET data at Station AN0692 show biology is good; therefore, the Aquatic Life Use was changed to Fully Supporting.

J. Turbidity:

1) NJ02030105150010-01 Weamaconk Creek was incorrectly listed for **Turbidity** in 2010. Data from that reporting period show only one exceedance of the "at any time" criterion and no exceedances of the 30-day maximum; therefore, turbidity should not have been listed. New data at Station 01405185 meet the applicable WQS for Turbidity. The Aquatic Life Use remains Not Supporting for DO, TP, and TSS.

2) NJ02040105200020-01 Lockatong Ck (Milltown to Rt 12) was originally listed for **Turbidity** in 2008 based on Station 01460900, which is located in downstream NJ02040105200030-01. Data at Stations 01460860, L6a, and L4, located in this AU, meet applicable WQS for Turbidity. Aquatic Life and Trout Uses remain Not Supporting for pH, TP and Temperature.

K. Data of Uncertain Quality: The following AUs were incorrectly listed based on data collected under a Quality Assurance Program Plan (QAPP) that was not approved for the respective sampling program. Since the data did not comply with the quality requirements established under the Methods Document and is of uncertain quality, it should not have been used for listing purposes.

1) NJ02030103180040-01 Overpeck Creek was incorrectly listed for **Ammonia, Cadmium, Chloride, Lead, pH, and TDS** based on data at Station 12-OPC. Data at Station 01378583, which was collected under an approved QAPP, meet the applicable WQS for TDS. TP remains

the cause of Aquatic Life Use non-supported but was delisted and moved to Category 4A based on the Passaic Nutrient TMDL (see Section IV.D.3). Agricultural and Public Water Supply Uses were changed to Fully Supporting.

2) NJ02030103180050-01 Hackensack R (Bellmans Ck to Ft Lee Rd) was incorrectly listed for **Ammonia, DO, and Turbidity** based on data at Stations 01-HR and 02-HR. No other data are available; therefore, the Aquatic Life Use was changed to Insufficient Information.

3) NJ02030103180060-01 Berrys Creek (above Paterson Ave) and NJ02030103180070-01 Berrys Creek (below Paterson Ave) were incorrectly listed for **Ammonia, DO, and Turbidity** in 2008 based on data at Station 08-BC. No other data are available for these parameters. The Aquatic Life Use in NJ02030103180060-01 remains Not Supporting for Arsenic, Cadmium, Copper, and Lead. Cadmium was removed from NJ02030103180070-01 (see Section IX.B.1) The Aquatic Life Use in NJ02030103180070-01 remains Not Supporting for Arsenic, Total Chromium, Copper, and Lead.

4) NJ02030103180100-01 Hackensack R (below Amtrak bridge) was incorrectly listed for **pH and Turbidity** based on data at Station 06-PHC. Data at Stations NJHDG-15 and NJDGH-16, which was collected under an approved QAPP, meet applicable WQS for pH. No other Turbidity data were available. Cadmium (Section II.A) and Ammonia (Section VI.A) were also delisted. The Aquatic Life Use remains Not Supporting for DO.

L. *De Minimus* Impairment:

1) NJ02030103170040-01 Tenakill Brook was listed for **DO** in 2010 based on Station TB2. New data at Stations 01378387 and DB1 meet FW2-NT criterion for DO. Data from Stations CB1, TB1, TB3, TB4, TB6, 01378387 also meet applicable WQS for DO. Station TB2 had two exceedances in 2007; however, this station is located on a small tributary and is considered to be a *de minimus* portion of the AU (see Figure 14). The Aquatic Life Use remains Not Supporting for TP and TSS.

2) NJ02030104100100-01 Manasquan River (below Rt 70 bridge) was originally listed for **DO** based on Station 1308C; however, the Department reassessed this AU and determined that Station 1308C is located in the Bayhead-Manasquan Canal, which is a *de minimus* portion of AU (see Figure 15). Data at Stations 1306A, 1303, 1300A, and 1309A meet the SE1 criterion for DO. Biological data are not available (these are saline waters); therefore, the Aquatic Life Use was changed to Insufficient Information.

M. Frequency of Exceedance:

1) NJDELAWARE RIVER 15 Delaware River 2 was incorrectly listed in 2010 for **DO and Turbidity**. Based on DRBC's current assessment (see DRBC Draft 2012 305(b) Report), 98% of observations meet daily mean for DO; seasonal DO criterion is met 100% of the time. 97.8% of observations meet maximum criterion for turbidity; 97.9% of data meet 30-day average turbidity criterion. These records are based on continuous hourly recordings made by USGS. Frequency of

exceedance does not support listing for either parameter. Based on the DRBC assessment, the Aquatic Life Use was changed to Fully Supporting.

2) NJDELAWARE RIVER 18 Delaware River 5A, NJDELAWARE RIVER 19 Delaware River 5B, and NJDELAWARE RIVER 20 Delaware River 5C were incorrectly listed for DO in 2006 or 2008. Based on DRBC's current assessment (see DRBC Draft 2012 305(b) Report), Zone 5 data show that 96% of all samples meet applicable WQS for DO; therefore, the Aquatic Life use is fully supported based on the Frequency of Exceedance. Based on the DRBC assessment, the Aquatic Life Use was changed to Fully Supporting.

N. Transient Events: Episodic excursions of criteria can occur during storm events that are short term and not expected to impair the designated uses of the waterbody (and are not conducive to a TMDL), such as emergency road salting in preparation of winter storms. In the assessment process, when excursions were observed and considered atypical within the data set under review, the Department investigated weather data from the Office of the New Jersey State Climatologist Web site at http://climate.rutgers.edu/stateclim/ to see if the sampling dates coincided with local storm events. Elevated **Chloride and TDS** records that coincided with residual effects of winter road treatments are shown in the table below.

Assessment Unit Number	AU Name	Parameter	Station(s)	Sample date	Storm Date
NJ02030103170010-01	Pascack Brook (above Westwood gage)	TDS	01377358	02/16/06	02/11/06-02/12/06
NJ02030104030010-01	Morses Creek / Piles Creek	TDS	01393690	02/14/06	02/11/06-02/12/06.
NJ02030104050020-01	Rahway River EB	TDS	01394200	02/26/2003	02/16/2003-02/17/2003; 02/28/2003
NJ02030104050020-01	Rahway River EB	TDS	01394200	02/27/08	02/22/2008; 02/29/2008-03/01/2008
NJ02030104050040-01	Rahway R (Kenilworth Blvd to EB / WB)	TDS	01394200	02/26/2003	02/16/2003-02/17/2003; 02/28/2003
NJ02030104050040-01	Rahway R (Kenilworth Blvd to EB / WB)	TDS	01394200	02/27/08	02/22/2008; 02/29/2008-03/01/2008
NJ02030105120020-01	Green Bk (N Plainfield gage to Blue Bk)	Chloride	01403465	02/14/06	02/11/06-02/12/06
NJ02030105120020-01	Green Bk (N Plainfield gage to Blue Bk)	Chloride	01403465	02/5/2007	2/2/2007, 02/07/07

NJ02030105120050-01	Middle Brook EB	Chloride	01403465	02/14/06	02/11/06-02/12/06
NJ02030105120050-01	Middle Brook EB	Chloride	01403465	02/5/2007	02/2/2007, 02/07/07

VII. Data And/or Information Lacking To Determine Water Quality Status; Original Basis For Listing Was Incorrect (Category 3)

1) NJ02020007010020-01 Wallkill R (Ogdensburg to SpartaStation) was originally listed for **Cause Unknown** in 2007 based on AMNET Station AN0298, which is located in a downstream AU near a mining operation and is not representative of this AU, which is mostly forested. There are no biological monitoring stations in this AU. AMNET results show biology is good at Station AN0297, which is located in the upstream AU. Additional information is needed to confirm biological conditions within this AU and to assess the Aquatic Life Use.

2) NJ02030103150050-01 Passaic R Lwr (Nwk Bay to 4th St brdg) was originally listed for **DO** based on invalid data at Station 13-Kearney. Valid data at NJHDG-12 meet the applicable WQS for DO. There are no biological monitoring stations in this AU, which contains saline waters; therefore, insufficient information is available to assess the Aquatic Life Use.

3) NJ02030103180080-01 Hackensack R (Rt 3 to Bellmans Ck) was incorrectly listed for **Ammonia, DO, and Turbidity** based on data at Stations 03-HR, 09-MC, 10-CKC, and 11-CKC. No other data are available for these parameters. Cadmium was also delisted (see Section II.A) but there are no biological monitoring stations in this AU, which contains saline waters; therefore, the Aquatic Life Use was changed to Insufficient Information.

4) NJ02030104080050-01 Long Branch direct Atlantic drainage was incorrectly listed for **DO, DDT and its metabolites, Mercury in fish tissue, and PCB in fish tissue** in 2010. These pollutants were previously listed in NJ02030104080030-01 and incorrectly carried over to this AU when the HUC was divided into one that drains to Branchport Creek (NJ02030104080030) and one that drains to the ocean (NJ02030104080050). DO listing Stations 1135B, RO5, and 45 are located on Branchport Creek, which is not hydrologically connected to this AU. Chemical, macroinvertebrate, and fish tissue data are not available for this AU; therefore, the Aquatic Life and Fish Consumption Uses were changed to Insufficient Information.

5) NJ02030104090090-01 Atl Drainage (Shark R - Deal Lk) was incorrectly listed for **DO** in 2006 and **Chlordane in fish tissue, DDT and its metabolites, Mercury in fish tissue, and PCB in fish tissue (listed as PCBs)** in 2010. These pollutants were previously listed in NJ02030104090060 and incorrectly carried over to this AU when the HUC was divided into one that drains to Shark River (NJ02030104090060) and one that drains to the ocean (NJ02030104090090). DO listing Stations 1216A, 1205B, 1206D, 1217A are located in Shark River Bay, which is not hydrologically connected to this AU. Chemical, macroinvertebrate, and fish tissue data are not available for this AU; therefore, the Aquatic Life and Fish Consumption Uses were changed to Insufficient Information.

6) NJ02030104100090-01 Manasquan R (Rt 70 br to 74d07m30s) was originally listed for **Cause Unknown** in 2008 based on AMNET Station AN0498; however, that station has been discontinued because it was located in tidal waters and the Department has determined that our existing biological assessment metrics are not valid in tidal waters. There are no other biological monitoring stations in this AU; therefore, insufficient information is available to assess the Aquatic Life Use.

7) NJ02030104910010-01 Raritan Bay (west of Thorns Ck) was originally listed for **DO** in 2006 based on Station R63. New data at Station R63 meet applicable WQS for DO. Data at Stations NJHDG-28, RR1 and 26A also meet applicable WQS. There are no biological monitoring stations in this AU; therefore, insufficient information is available to assess the Aquatic Life Use.

8) NJ02030105100090-01 Cranbury Brook (below NJ Turnpike) was incorrectly listed for **Cause Unknown** in 2008 based on Station AN0386, which is located right below a lake and should be removed. Data at downstream Station AN0385 in NJ02030105100070-01 show biology is good but this location has different land use impacts and is not representative of the AU. There are no other AMNET stations in this AU; therefore, insufficient information is available to assess the Aquatic Life Use.

9) NJ02030105120030-01 Stony Brook (North Plainfield) was incorrectly listed for **TDS** in 2008 based on Station 01403575, which is not associated with this AU. Station 01403075 is located in this AU but has insufficient data to assess TDS. The Agricultural Water Supply Use changed to Insufficient Information. The Public Water Supply Use remains Not Supporting for Arsenic.

10) NJ02040105050020-01 Blair Creek and NJ02040105060010-01 Stony Brook (incl UDRV) were incorrectly listed for **Fecal Coliform** in 2006. Blair Creek was originally listed based on Station 01443500, which is located on Paulins Kill and should not have been used to assess Blair Creek. Stony Brook (incl UDRV) was originally listed based on Station 01443000, which is located on the Delaware River (see Figure 16a-16c). There are no pathogen monitoring stations in either AU; therefore, insufficient data is available to assess Primary Contact Recreation Use in either AU.

11) NJ02040105150070-01 Musconetcong R(above Waterloo) was incorrectly listed for **pH** in 2008. Data at Station 01455700 meet applicable WQS for pH. The only biological data available are from a FIBI Station in the uppermost headwaters (data at FIBI0057 show biology is excellent), which is not representative of HUC; therefore, insufficient information is available to assess Aquatic Life and Trout Uses.

12) NJ02040202150010-01 Raccoon Ck (above Clems Run) was incorrectly listed for **Cause Unknown** in 2006 based on Station AN0679; however, this station has since been discontinued because it was located directly below a lake and was not representative of the AU. There are no other biological monitoring stations in this AU; therefore, insufficient information is available to assess the Aquatic Life Use.

13) NJ02040202160020-01 Oldmans Creek (Rt45 to Commissioners Rd) was incorrectly listed for **Mercury in fish tissue** in 2008 based on fish tissue data from Harrisonville Lake, which is located in NJ02040301180070-01, and then incorrectly delisted under the Statewide Mercury TMDL. There are no fish tissue data for this AU; therefore, the Fish Consumption Use was changed to Insufficient Information.

14) NJ02040206030020-01 Nichomus Run was incorrectly listed for **Fecal Coliform** in 2010 based on Station S10, which is not hydrologically connected to this AU. There are no other pathogen data for this AU; therefore, the Primary Contact Recreation Use was changed to Insufficient Information.

15) NJ02040206110020-01 Fortesque Ck / Fishing Ck / Straight Ck was incorrectly listed for **DO** in 2010 based on Station R46; however, data at this station meet the applicable WQS for DO. There are no biological monitoring data for this AU; therefore, insufficient information is available to assess the Aquatic Life Use.

16) NJ02040206120040-01 Reed Branch (Still Run) was incorrectly listed for **Cause Unknown** in 2010 based on Station AN0731, which is located downstream of an impoundment/lake and is not representative of the AU. There are no other biological monitoring stations in this AU; therefore, insufficient information is available to assess the Aquatic Life Use.

17) NJ02040206140010-01 MauriceR(BlkwtrBr to/incl WillowGroveLk) was incorrectly listed for **Cause Unknown** in 2010 based on Station AN0733, which is located downstream of an impoundment/lake and is not representative of the AU. There are no other biological monitoring stations in this AU; therefore, insufficient information is available to assess the Aquatic Life Use.

18) NJ02040206150020-01 Muddy Run (incl Palatine Lk to Elmer Lk) was incorrectly listed for **Cause Unknown** in 2010 based on Stations AN0472 and AN0475, which are both located right below a lake and are not representative of this AU. There are no other biological monitoring stations in this AU; therefore, insufficient information is available to assess the Aquatic Life Use.

19) NJ02040206160040-01 Mill Creek (lower) was incorrectly listed for **Arsenic** in 2010. Arsenic was previously listed in NJ02040206160030-01 and was incorrectly carried over to NJ02040206160040-01 when the new HUC was created in 2009. There are no chemical stations/data in this AU; therefore, insufficient information is available to assess the Public Water Supply Use.

20) NJ02040301040030-01 Metedeconk R (below Beaverdam Creek) was incorrectly listed for **DO** in 2006 based on Station 1601B; however, data show all 47 samples collected since 1999 meet the applicable WQS for DO in SE1 waters. All 48 samples at Station 1600D also meet WQS. No other stations in this AU have DO data. There are no other biological monitoring stations in this AU; therefore, insufficient information is available to assess Aquatic Life Use.

21) NJ02040301050020-01 Kettle Creek (below Lake Riviera outlet) was originally listed in 2006 for **Cause Unknown** based on AMNET Station AN0516; however, this station is located in tidal waters. The Department has determined that our existing biological assessment metrics are

not valid in tidal waters. There are no other biological monitoring stations in this AU; therefore, insufficient information is available to assess Aquatic Life Use.

22) NJ02040301050040-01 Barnegat North tribs (Tide Ck to Rt 37) was incorrectly listed for **DDT and its metabolites; Mercury in fish tissue; and PCB in fish tissue** in 2010 based on Station Barnegat Bay at Toms River, which is associated with NJ02040301080090-01 Toms R Lwr (below Rt 166). NJ02040301080090-01 is already listed for all of these pollutants. There are no fish tissue data for NJ02040301050040-01; therefore, the Fish Consumption Use was changed to Insufficient Information.

23) NJ02040301050050-01 Barnegat Bay North (above Rt 37 bridge) was incorrectly listed for **DO** in 2006 based on exceedances at Stations 1627, 1605A, 1618A, and 1629B; however, only two of those samples actually exceeded the SE1 criterion for DO, one sample each collected in 1999 at Stations 1605A and 1629B. (Values between 4.3 and 4.9 were incorrectly assessed using the FW2 criterion for DO). The remaining 197 samples collected at these four stations between 1999 and 2010 all meet the SE1 criterion for DO. In addition, new data collected at Stations 1609B, 1617E, BB01, BB02, BB03 all meet the SE1 criterion for DO. In 2010, the Department confirmed the listing based on continuous data collected by Monmouth University. However, upon further review, we determined that this data did not meet data quality requirements. Biological data is not available; therefore, the Aquatic Life Use was changed to Insufficient Information.

24) NJ02040301080090-01 Toms R Lwr (below Rt 166) was incorrectly listed for **Arsenic** as a cause of Public Water Supply Use non-support, which does not apply to this AU since it contains only SE waters. The Public Water Supply Use was removed from this AU.

25) NJ02040301160170-01 Sleeper Branch was incorrectly listed for **pH** in 2010. Data at Station 0140940480 show all samples meet PL criterion for pH. There are no other biological monitoring stations in this AU; therefore, insufficient information is available to assess Aquatic Life Use.

26) NJ02040301170060-01 Mullica River (Rt 563 to Batsto River) and NJ02040301170080-01 Mullica River (Lower Bank Rd to Rt 563) were originally listed for high **pH** in 1998 based on USGS data at Mullica River at Green Bank that consisted of seven samples collected in 1977-78 that exceed the PL criterion for pH. This data is insufficient to support listing under current methods. In addition, this station is located below the head of tide and the tidal influence of the estuarine waters would naturally increase pH above Pinelands levels. (These data meet the South Jersey criterion for pH.) The only other pH data available in this AU is from Station 01409525, which meets PL criterion; however, this station is located on a small trib and is not representative of the HUC.

NJ02040301170060-01 Mullica River (Rt 563 to Batsto River) and NJ02040301170080-01 Mullica River (Lower Bank Rd to Rt 563) were also incorrectly listed for **TP** in 2006 and 2002, respectively. Both AUs were listed based on data at Station Mullica at Green Bank, which is co-located with Station R27 at the downstream boundary of the NJ02040301170060-01 and was carried over to both AUs in 2006. Station 28 is located at the downstream boundary of

NJ02040301170080-01. Salinity data at Stations R27 and R28 show that these stations are located in saline waters, to which the numeric TP criteria do not apply. TP data in freshwaters are not available in either AU.

NJ02040301170060-01 Mullica River (Rt 563 to Batsto River) was incorrectly listed for **Temperature** based on co-located Stations R27 and Mullica at Green Bank (see Figure 13). NJ02040301170080-01 Mullica River (Lower Bank Rd to Rt 563) was also incorrectly listed for Temperature based on Stations R27 and R28. Stations 27 and 28 are part of the Department's Marine Water Monitoring Network. There is no data available to support the temperature listings. All available temperature data (dating back to 2004) at Stations R27, R28, 01409525 and AN0589 meet the applicable WQS for Temperature.

Biological data are only available at Station AN0589 in NJ02040301170060-01. This station is co-located with Station 01409525 at the head of tide on a small tributary. Neither station is representative of either AU (see Figure 16d). New data at Station 01409525 show three of seven samples exceed the DO criterion; however, AMNET data at Station AN0589 show biology is excellent, indicating that DO conditions at this station are naturally-occurring or the data is inconclusive. DO was not listed in either AU based on BPJ (see "Decisions to Not List Assessment Unit/Pollutant Combinations on the 2012 303(d) List of Water Quality Limited Waters"). Since there is no representative chemical or biological data to assess either AU, the Aquatic Life Use was changed to Insufficient Information in both AUs.

27) NJ02040301200120-01 Nacote Creek (below/incl Mill Pond) was incorrectly listed for **DO** in 2006 based on Station R30; however, only one out of 32 samples collected at this station since 1999 exceeded the applicable WQS. All 30 samples collected at Station R31 since 1999 also meet applicable WQS for DO. There are no biological monitoring stations in this AU; therefore, insufficient information is available to assess Aquatic Life Use.

28) NJ02040301210010-01 Mullica River (below GSP bridge) was incorrectly listed for **DO** in 2002 based 1999 data at Station 2005; however, since 2000, all 26 samples at this station meet the applicable WQS for DO. Data at Stations 2002A, 2009A, and R29 also meet criteria. There are no biological monitoring stations in this AU; therefore, insufficient information is available to assess Aquatic Life Use.

29) NJ02040302040030-01 Hospitality Br (Piney HollowRd to Rt538) was incorrectly listed for **pH** in 2006 based on 2002-2003 data but there was only one exceedance of the applicable WQS. New data at Station HFJACKS show all samples meet PL criterion for pH. AMNET results at Station AN0629 show biology is fair but this station is located downstream of a lake and is not representative of this AU. There are no other biological monitoring stations in this AU; therefore, insufficient information is available to assess Aquatic Life Use.

30) NJ02040302050060-01 GEHR (Miry Run to Lake Lenape) was incorrectly listed for **Arsenic** as a cause of Aquatic Life Use non-support based on exceedance of the human health criterion; however, this criterion is used to assess the Public Water Supply Use, which does not apply to this AU since it contains only SE waters. Numerous metals were also delisted (see Sections III.C

and VII.29). There are no other biological monitoring stations in this AU; therefore, insufficient information is available to assess Aquatic Life Use.

31) NJ02040302050060-01 GEHR (Miry Run to Lake Lenape) and NJ02040302050140-01 Great Egg Harbor R (GEH Bay to Gibson Crk) were both incorrectly listed for **Mercury** based on Mercury in Water Column data. Mercury in Water Column data at Stations 01411110 and 15-GEH-3 meet the applicable WQS for Mercury in Water Column; however, Mercury in Water Column data is used to assess the Public Water Supply Use, which does not apply to either AU. Mercury in fish tissue data are not available to assess the Fish Consumption Use in either AU. Therefore, the Fish Consumption Use in both AUs was changed to Insufficient Information.

32) NJ02040302070110-01 Tuckahoe River (below Rt 49) and NJ02040302070120-01 Tuckahoe River (lower) were listed for **pH** in 2010 based on exceedances of the FW2 criterion at Station 01411300. This station is located in adjacent NJ02040302070040 near the HUC boundary on the Tuckahoe River, which is classified as PL waters (see Figure 17). Only one exceedance of the PL criterion was recorded at this station since 2005 (two other values were within the precision and accuracy of the recording instrument). New data at Stations TTU49HED and TWAAETNA show no exceedances of the PL criterion. There is no other pH data available in these AUs. **DO** was also incorrectly listed in NJ02040302070110-01 Tuckahoe River (below Rt 49) in 2008. There are no data to support this listing. Data going back to 2006 at Stations 01411300 and R37 meet the applicable criterion for DO. Biological data are not available for either AU; therefore, the Aquatic Life Use in both AUs was changed to Insufficient Information.

VIII. Applicable WQS Attained: Due to Change in WQS

The following AUs were delisted because data met revised **Temperature** criteria, which were approved by USEPA on June 1, 2010. The Department reviewed all temperature listings on the final 2010 303(d) listings and determined that the available data meet the new temperature criteria.

Assessment Unit	AU Name	Station(s)
NJ02020007010020-01	Wallkill R (Ogdensburg to SpartaStation)	Wallkill B
NJ02020007010080-01	Wallkill R(Franklin Pond to Ogdensburg)	Wallkill B
NJ02020007040010-01	Black Ck(above/incl G.Gorge Resort trib)	Wallkill F
NJ02020007040050-01	Wawayanda Creek & tribs	01368900, 01368820, 01368825
NJ02030103070080-01	Ringwood Creek	01384495
NJ02030103140040-01	Saddle River (above Ridgewood gage)	01390400, 01390445, 01390450
NJ02030104070010-01	Hop Brook	01407210
NJ02030104100030-01	Manasquan R (West Farms Rd to Rt 9)	01408000, 01407900
NJ02030104100050-01	Manasquan R (gage to West Farms Rd)	01408000, 01407900
NJ02030105010070-01	Raritan R SB(StoneMill gage to Califon)	01396535, 01396350
NJ02030105020030-01	Mulhockaway Creek	01396660
NJ02030105020060-01	Cakepoulin Creek	01396900, CC1*

NJ02030105050030-01	Lamington R (Furnace Rd to Hillside Rd)	01399320, 01399295*

NJ02030105050040-01	Lamington R(Pottersville gage-FurnaceRd)	01399320, 01399500
NJ02040104150010-01	Flat Brook (Tillman Brook to Confluence)	01440000
NJ02040104150020-01	Flat Brook (below Tillman Brook)	01440000
NJ02040105030010-01	Swartswood trib(41-06-06 thru Lk Owassa)	01443462, NJW059 1 (Mecca Lake)
NJ02040105030020-01	Swartswood Lake and tribs	01443464, 01443466, 01446468
NJ02040105090060-01	Pequest R (below Furnace Brook)	01446400, 01465500, DRBCNJ0033
NJ02040105140020-01	Pohatcong Ck (Brass Castle Ck to Rt 31)	01455138, 01455200, P1*, P2*
NJ02040105140030-01	Pohatcong Ck (Edison Rd-Brass Castle Ck)	01455200
NJ02040105140050-01	Pohatcong Ck (Merrill Ck to Edison Rd)	01455200
NJ02040105150050-01	Lubbers Run (below Dallis Pond)	01455780, MSA5
NJ02040105150070-01	Musconetcong R(above Waterloo)	01455700
NJ02040105160010-01	Musconetcong R (Hances Bk thru Trout Bk)	01456200
NJ02040105160020-01	Musconetcong R (Changewater to HancesBk)	01456200, 01456590
NJ02040105160030-01	Musconetcong R (Rt 31 to Changewater)	01457000, 01456590
NJ02040105160040-01	Musconetcong R (75d 00m to Rt 31)	01457000, 01456590
NJ02040105160050-01	Musconetcong R (I-78 to 75d 00m)	01456200, 01456590, 01457120
NJ02040105160060-01	Musconetcong R (Warren Glen to I-78)	01457000, 01457120
NJ02040105160070-01	Musconetcong R (below Warren Glen)	01457400, DRBCNJ0025
NJ02040206030010-01	Salem River (above Woodstown gage)	01482455, 01482500, S1-4, S8-9
NJ02040206030040-01	Salem R (CoursesLanding to CountyHomeRd)	01482500, 01482537, 01482519, 01482530, 01482520
NJ02040206030060-01	Salem R (39-40-14 dam-CoursesLndg)/Canal	01482500, 01482537
NJ02040206030080-01	Salem Canal	01482500, 01482580
NJ02040301020020-01	Metedeconk R NB(Rt 9 to I-195)	01408100, NF, NG, NI*
NJ02040301020050-01	Metedeconk R NB (confluence to Rt 9)	01408100, NF, NG, NI*
NJ02040301060020-01	Toms River (74-22-30 rd to FrancisMills)	01408260
NJ02040301060030-01	Toms River (Bowman Rd to 74-22-30 road)	01408260

***** includes continuous data

IX. Cause Removed But Not Delisted

A. Replaced with Another Pollutant: The following AUs were listed for Mercury in Water Column as a cause of Public Water Supply Use and/or Fish Consumption Use non-support. New or existing **Mercury in Water Column** data meet the applicable WQS for the Public Water Supply Use in the following AUs. The same data indicate that the water column target established through the Statewide Mercury TMDL was exceeded, thus causing non-support of the Fish Consumption Use. Since these AUs are not covered under the Statewide Mercury TMDL, they were not delisted for Mercury in Water Column but that parameter was replaced with Mercury in Fish Tissue.

Assessment Unit	AU Name	Station(s)
NJ02040201050070-01	Crosswicks Ck (Doctors Ck-Ellisdale trib)	20-CRO-2
NJ02040202020030-01	Rancocas Ck NB (incl Mirror Lk-GauntsBk)	01467000, 01465950
NJ02040202020040-01	Rancocas Ck NB (NL dam to Mirror Lk)	01465950, 19-RA-1N (upstream), 01467000, 19-RA-3N (downstream)
NJ02040202100060-01	Pennsauken Ck (below NB/ SB)	01467082
NJ02040301170010-01	Hammonton Creek (above 74d43m)	01409414

B. Removed but Not Replaced: The following pollutants were removed from the 303(d) List because the original listing was not valid. They are not being delisted because there is no data available to determine if the applicable WQS are attained; however, there was never any data to support the original listing.

1) NJ02030103180070-01 Berrys Creek (below Paterson Ave) was incorrectly listed for **Cadmium** based on data at Station 08-BC, which was collected under a Quality Assurance Program Plan (QAPP) that was not approved for this sampling program. Since this data does not comply with the quality requirements established under the Methods Document and is of uncertain quality, it should not have been used for listing purposes. Since there are no valid data to assess compliance with the applicable WQS, Cadmium in was removed from the 303(d) List rather than delisted.

2) NJ02030105060040-01 Raritan R NB(Peapack Bk to McVickers Bk) was incorrectly listed for TSS, DO, and Temperature in 2010. DO and Temperature were delisted (see Section VI.C.5). There is no **TSS** data to support this listing. Therefore, both General and Trout Aquatic Life Uses were changed to Fully Supporting.

3) NJ02040202020030-01 Rancocas Ck NB (incl Mirror Lk-GauntsBk) was originally listed in 2002 for **Lead** in Rancocas Creek N Br at Hanover Furnace based on Stations 01465950 and 19-RA-1N. This listing was carried over to NJ02040202020030-01 in 2006. All three samples collected in 1998 at Station 19-RA-1N were recorded as both dissolved fraction and total

recoverable. The dissolved fraction data met the acute aquatic life criterion but exceeded the chronic aquatic life criterion. All three samples also exceeded the total recoverable human health criterion. There is no other data available for this station. Five samples were collected between 2003 and 2010 at Station 01465950. All five samples exceeded the total recoverable human health criterion. While four of the five samples were recorded as total recoverable only, the values were all below the dissolved acute aquatic life criterion, in which case the Department assumes that the criterion is met (see 2012 Methods Document, Section 4.1). The chronic aquatic life criterion could not be assessed because it is based on a four-day average and none of the samples at this station were collected on consecutive days. Therefore, Lead was removed as a cause of Aquatic Life Use non-support but remains listed as a cause of Public Water Supply Use non-support. The Aquatic Life Use remains Not Supporting for Copper.

4) Toxics in Fish Tissue in Atlantic Ocean AUs: The U.S. Food and Drug Administration (USFDA) promulgates national guidelines for the consumption of fish and fishery products by issuing action limits. The primary purpose of these limits is to establish the point at or above which the administration will take legal action to remove products from the consumer market because they are unsafe for consumption. New Jersey's fish consumption advisories are developed using USEPA's human health risk assessment methodology. This methodology recommends frequency of consumption limits rather than setting a single "do not eat" level. Thus, consumption advisories are often more stringent than USFDA action limits.

The Department's fish consumption advisories were developed for fish that are targeted by anglers, based on tissue samples collected from fish present in the ocean waters off New Jersey's coastline. Due to the migratory nature of the target species, fish were collected up to 12 miles off shore. USEPA's 303(d) listing guidance indicate that a water segment is impaired by a pollutant and should be included on the State's 303(d) list if there is a fish consumption advisory in effect and the advisory is based on fish tissue data and collected from the specific segment in question. USEPA's listing guidance also indicate that, where tissue contamination triggers an advisory based on FDA action levels, the advisory is an indication that Section 101(a) "fishable" uses are not attained, and therefore, these segments should be included on the 303(d) list.

In 2006, the Department agreed to list the ocean waters (20 Assessment Units) because New Jersey had issued a statewide fish consumption advisory for marine waters based on fish tissue data from fish collected in the Atlantic Ocean. Many of the fish were collected in federal waters. Fish consumption advisories have been issued by the coastal states to advise recreational anglers of the risk of consuming fish, particularly those that are migratory and caught in the Atlantic Ocean. While the concentrations of **PCBs in fish tissue** exceed the threshold in the Methods Document, it is unclear where the fish became contaminated due to the migratory nature of these marine fishes. Furthermore, since the levels do not exceed the USFDA benchmarks, these advisories are advisory and do not indicate that the 101(a) "fishable" use is not attained.

In addition to the statewide marine advisories, New Jersey also issued waterbody- and species-specific consumption advisories for the summer flounder in the Atlantic Ocean from Sandy Hook to Sea Bright, and for weakfish in the Atlantic Ocean from Sea Isle City to Cape May. The fish tissue samples that formed the basis of these advisories were obtained from fish collected up to 12 miles off the coast (i.e., from federal waters). In reviewing the tissue data, it was

determined that the levels of **DDT and its metabolites (DDx)** and **Mercury** meet the tissue thresholds in the Assessment Methods Document. Therefore, DDx and mercury are being removed rather than delisted. That same data demonstrates that the levels of PCBs exceed the tissue thresholds. However, no information is available to indicate that the levels of PCBs in sediment in the near shore ocean waters or in the water column exceed applicable WQS. However, the Department did not propose to delist PCBs in fish tissue in the following AUs as part of the draft 2012 Integrated List. Therefore, to afford the public an opportunity to review and comment on this action, the Fish Consumption Use will remain Not Supporting and PCBs in fish tissue will remain on the 2012 303(d) List for these AUs. The Department will propose delisting PCBs in fish tissue in these AUs when the draft 2014 303(d) List is proposed. This action is consistent with the fish consumption use assessment procedures and outcomes for other states along the Atlantic seaboard.

- NJ02030104920010-01 Atl Coast(Sandy H to Navesink R)
- NJ02030104920020-01 AtlCoast(Navesink R to WhalePond)
- NJ02030104930010-01 Atl Coast(Whale Pond to Shark R)
- NJ02030104930020-01 Atl Coast (Shark R to Manasquan)
- NJ02040301910010-01 Atl Coast(Manasquan/Herring Is)
- NJ02040301910020-01 Atl Coast (Herring Is to Rt 37)
- NJ02040301910030-01 Atl Cst(Rt 37 to Barnegat Inlet)
- NJ02040301920010-01 Atl Coast(Barnegat to Surf City)
- NJ02040301920020-01 Atl Coast(Surf City to Haven Be)
- NJ02040301920030-01 Atl Coast(Haven Bch to Lit Egg)
- NJ02040302910010-01 Atl Coast(Ltl Egg to Absecon In)
- NJ02040302920010-01 Atl Coast(Absecon In to Ventnor)
- NJ02040302920020-01 Atl Coast(Ventnor to Great Egg)
- NJ02040302930010-01 Atl Coast(Great Egg to 34th St)
- NJ02040302940010-01 Atl Coast(34th St to Corson Inl)
- NJ02040302940020-01 At Coast(Corson to Townsends In)
- NJ02040302940030-01 Atl Cst(Townsends to Hereford In)
- NJ02040302940040-01 Atl Cst(Hereford to Cape May In)
- NJ02040302940050-01 Atl Cst(CM Inlet to Cape May Pt)
- NJ02040303060201-01 Atl Coast (off Cape May Pt)

New Jersey Department of Environmental Protection
Division of Water Monitoring and Standards
Bureau of Environmental Analysis, Restoration and Standards

New Jersey 2012 Integrated Report
Appendix C: Mapping Supplement to the 2012 Final Justification for Delisted Waters

July 2014

Figure 1

Pequannock River (Macopin gage)

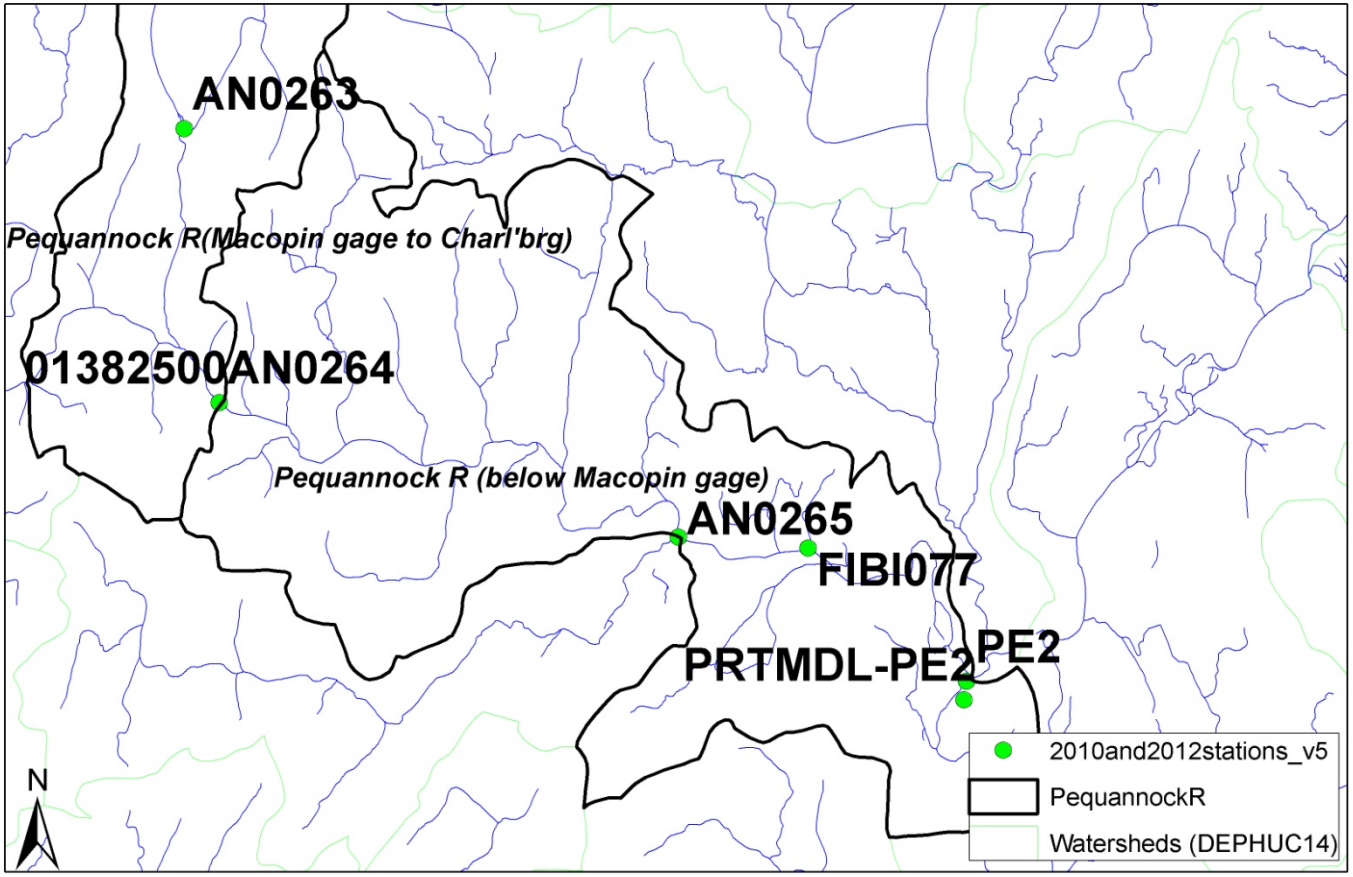

Figure 2
Pequest River (Below Furnace Brook)

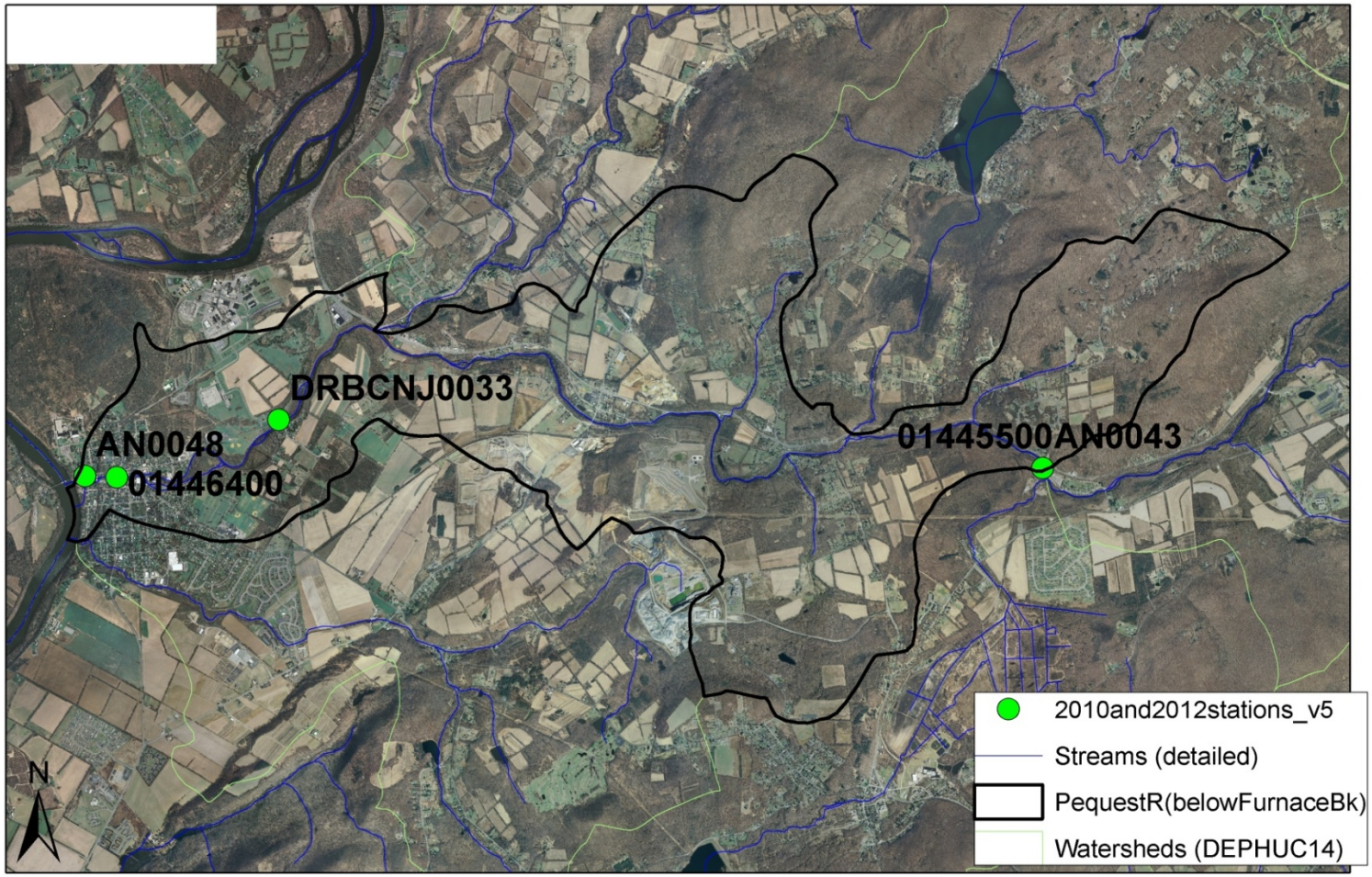

Figure 3
Cooper R (Wallworth gage to Evesham Rd)

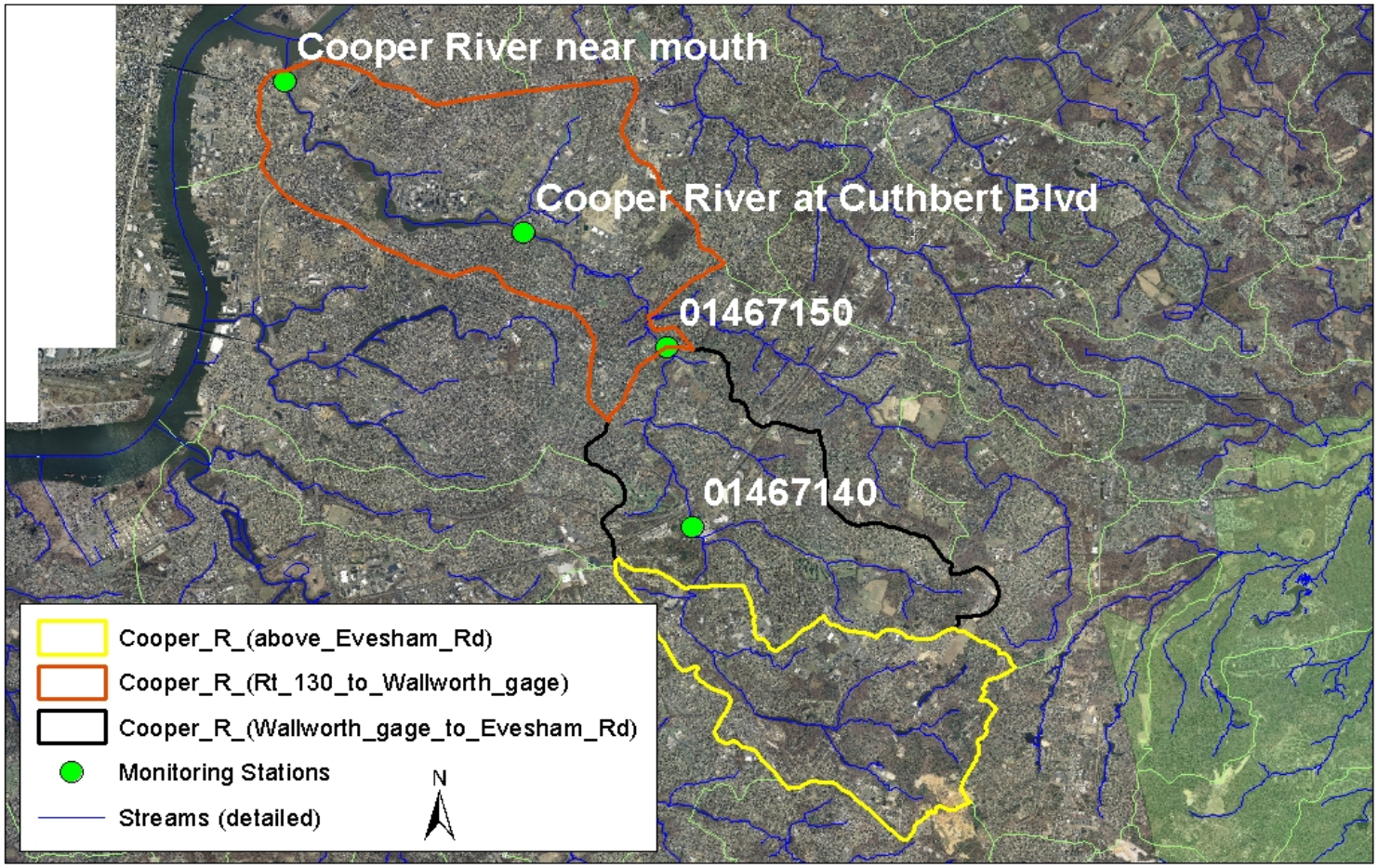

Figure 4

Indian Branch (Scotland Run)

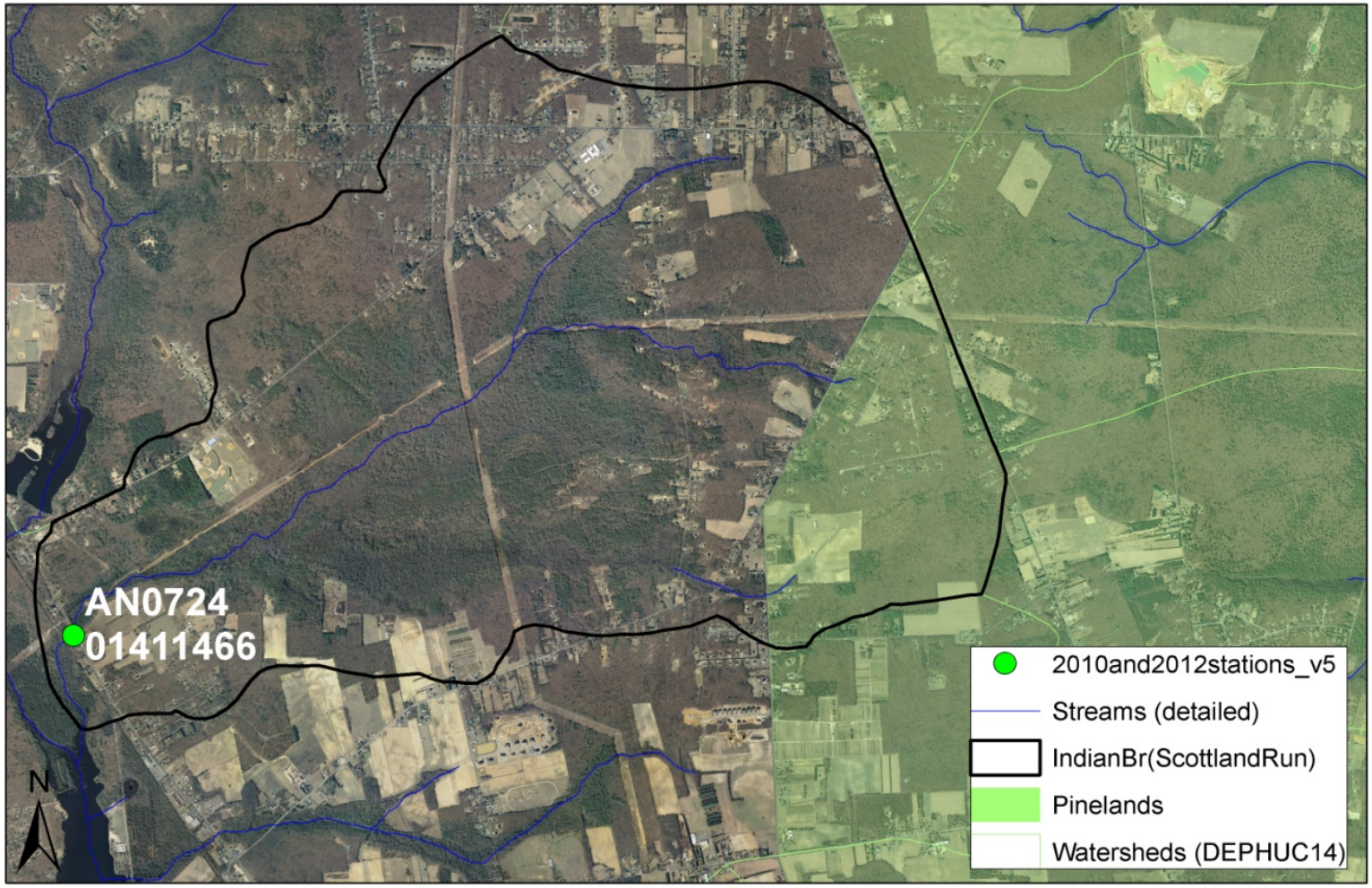

Figure 5 - RESERVED

Figure 6

Great Egg Harbor River

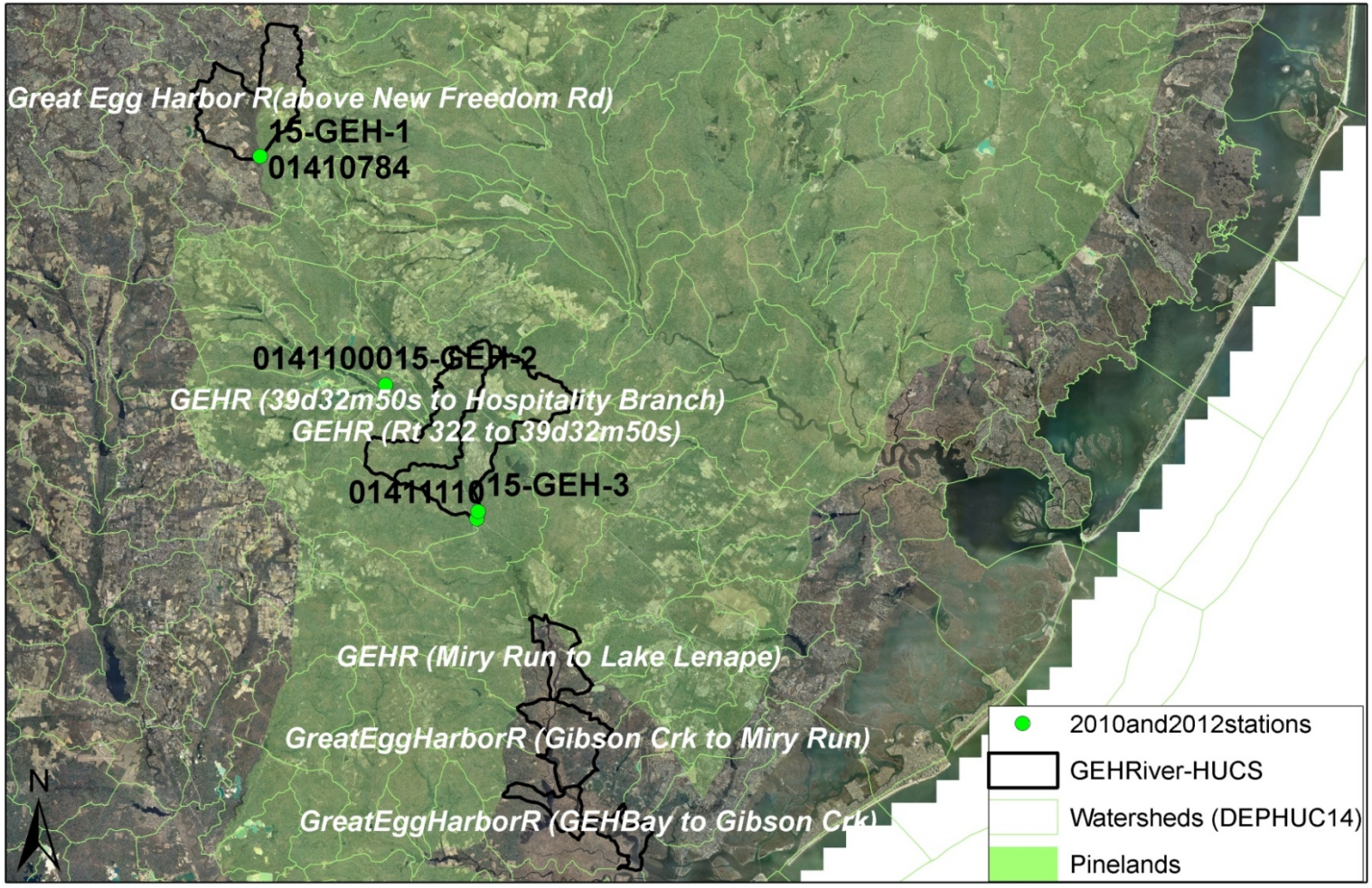

Figure 7

Middle Brook

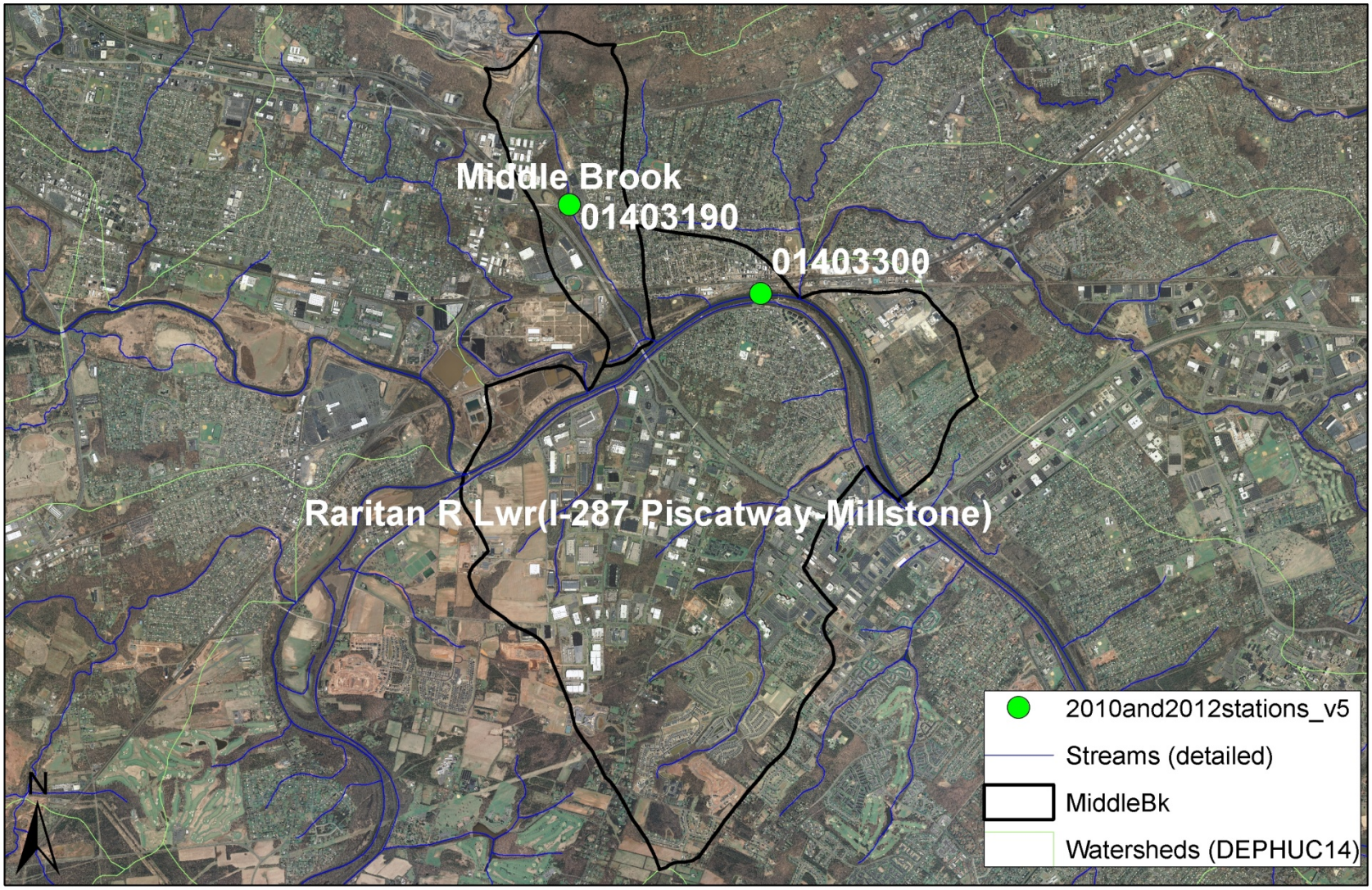

Figure 7b
Raritan River SB (LongValley Br to 74d44m15s)

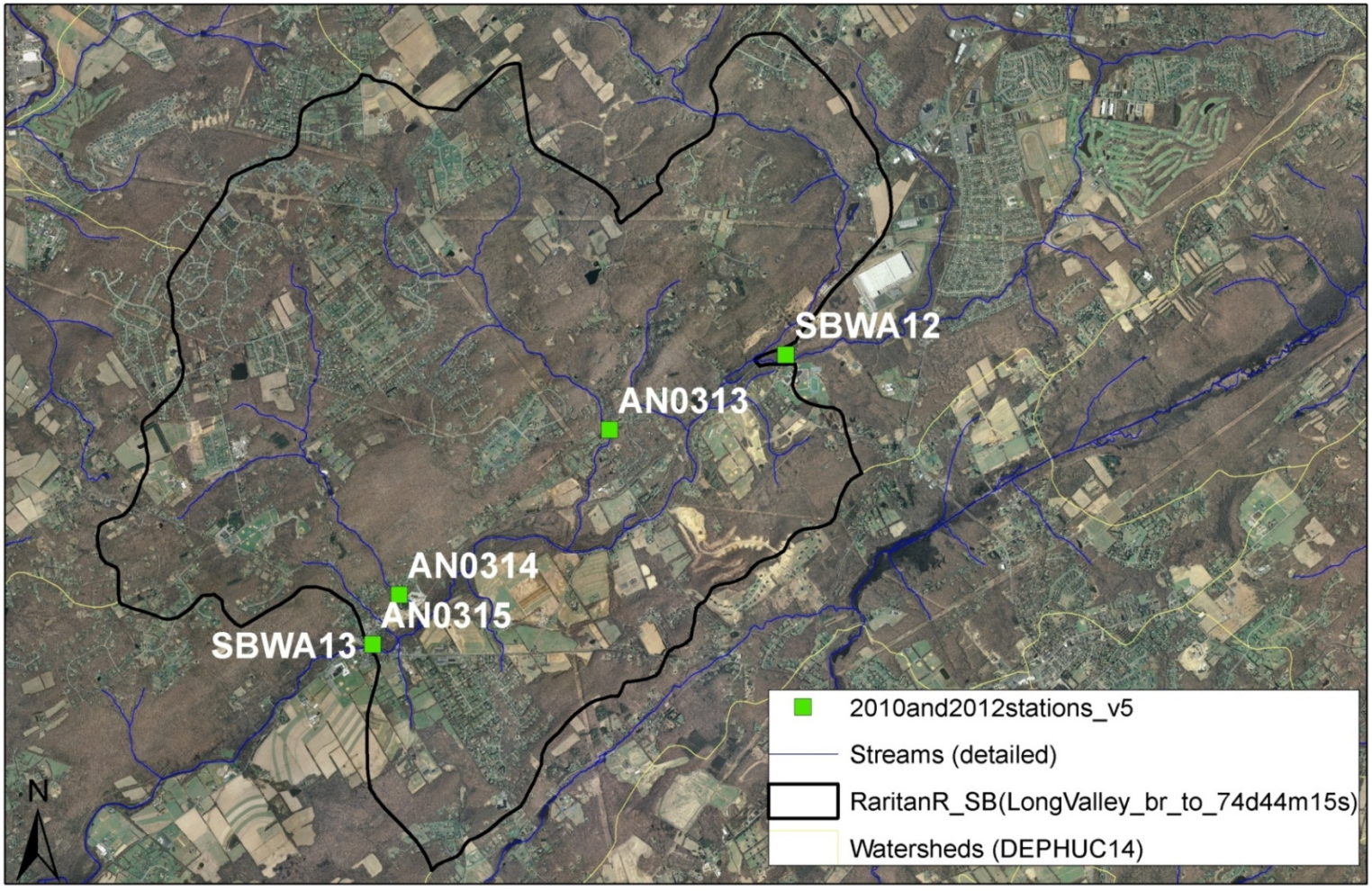

Figure 8a
Pequest River (Trout Brook to Bighton)

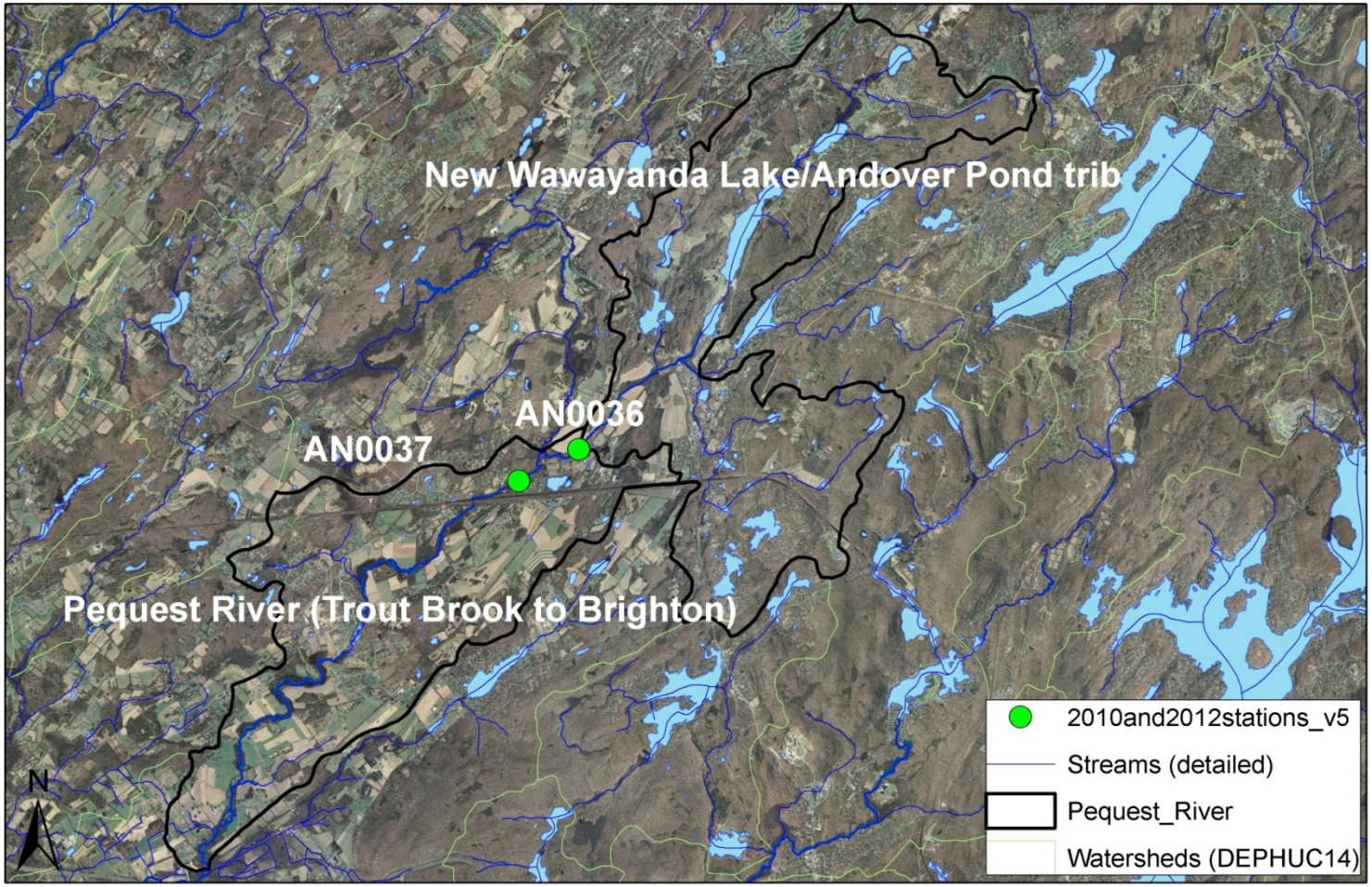

Figure 8b

Pequest River (Trout Brook to Bighton)

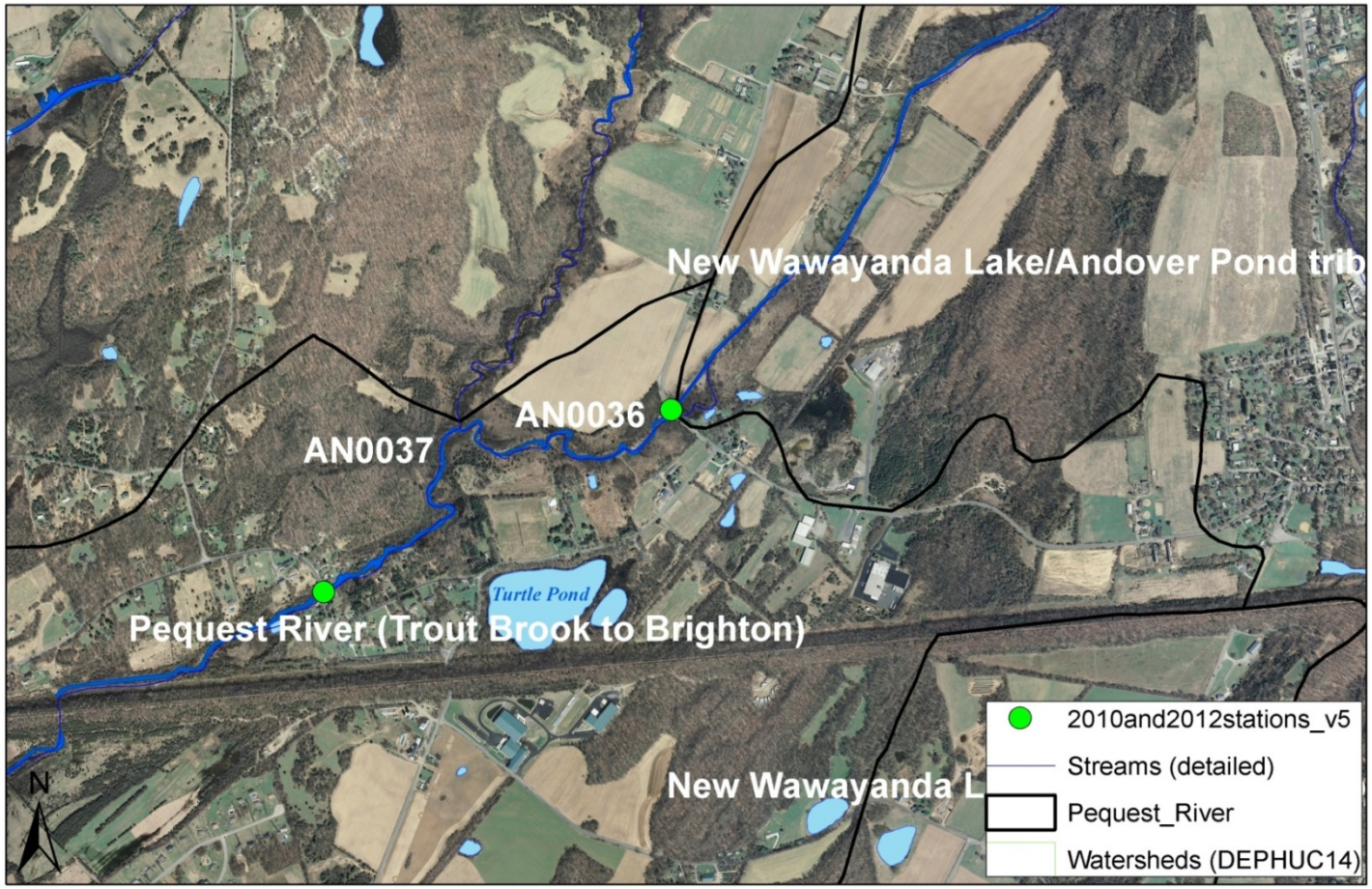

Figure 8c

Passaic River

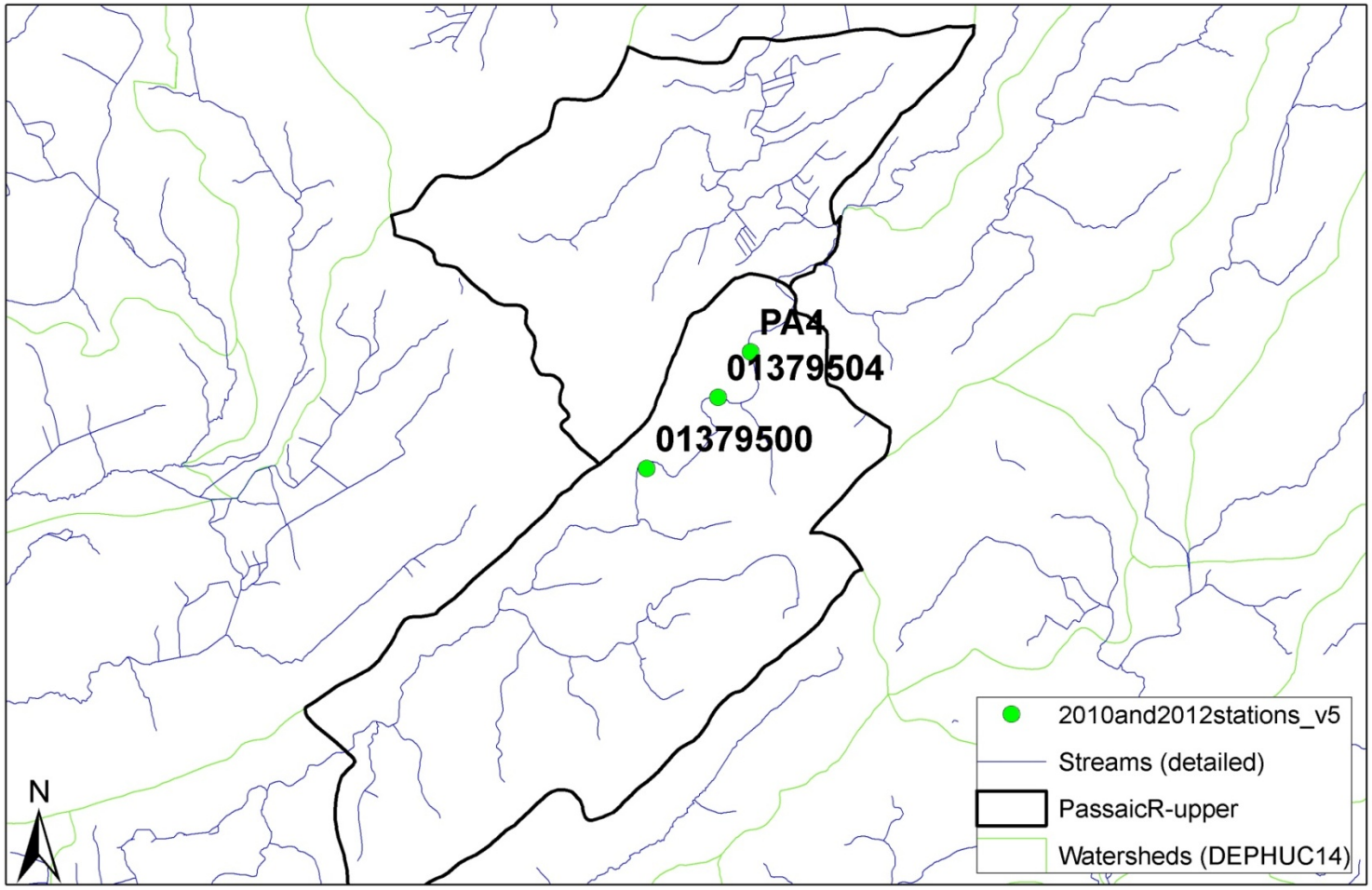

Figure 9

Cooper River

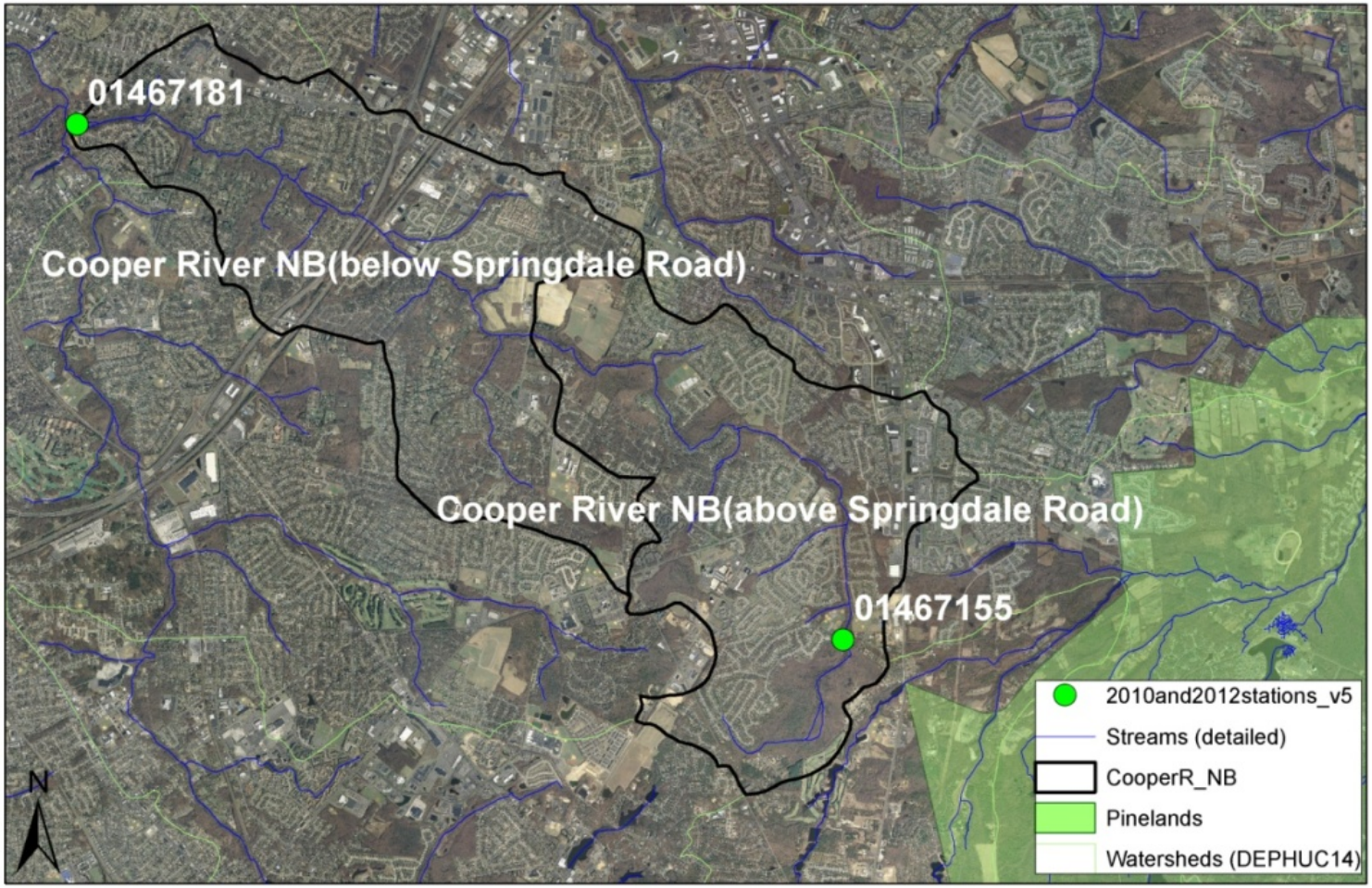

Figure 10

Dennis Creek (Jakes Landing Rd. to Rt 47)

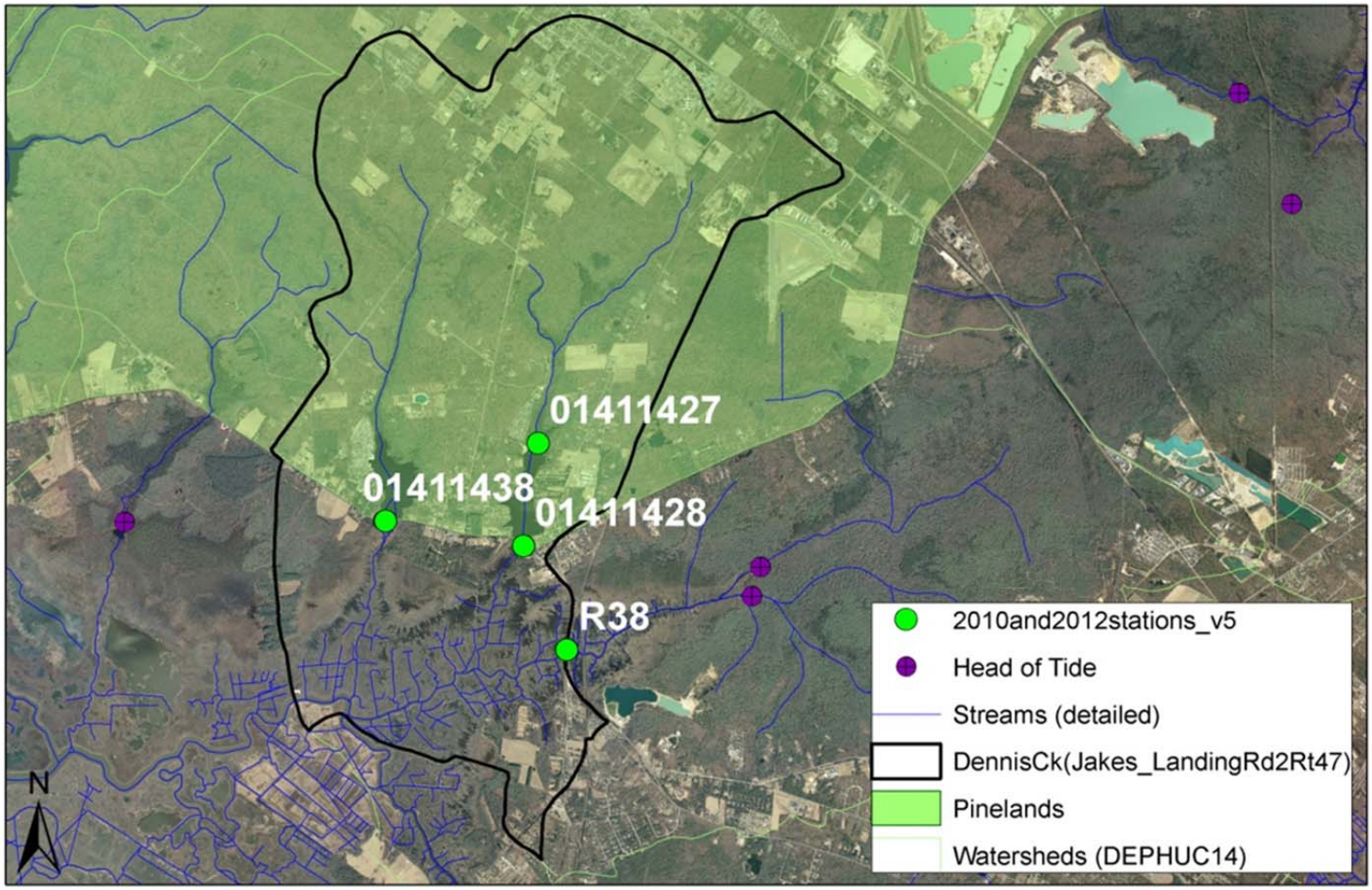

Figure 11

Rancocas Creek NB (Pemberton Br to NL Dam)

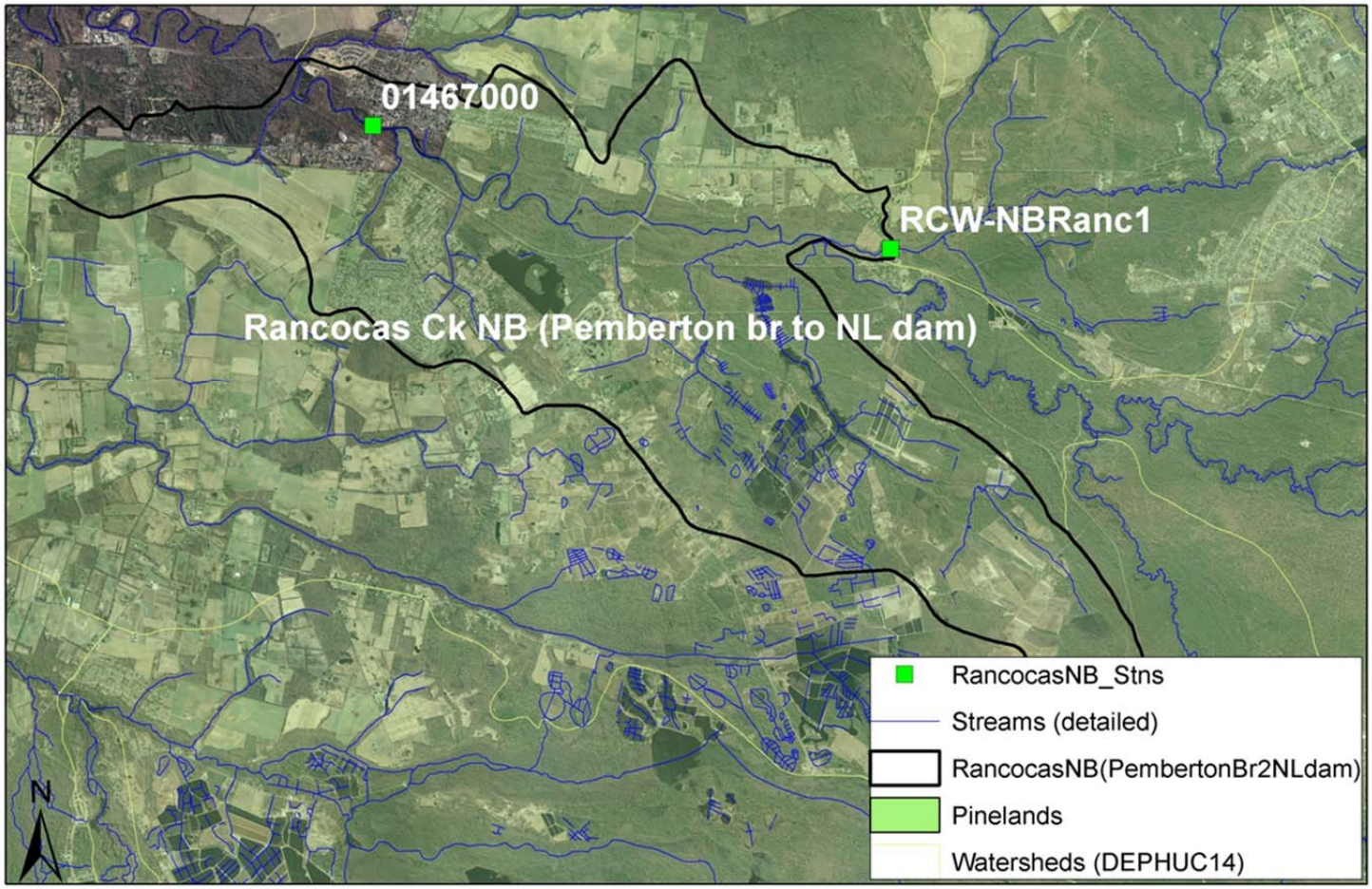

Figure 12

Toms River (Bowman Rd. to to 74-22-30 Rd.)

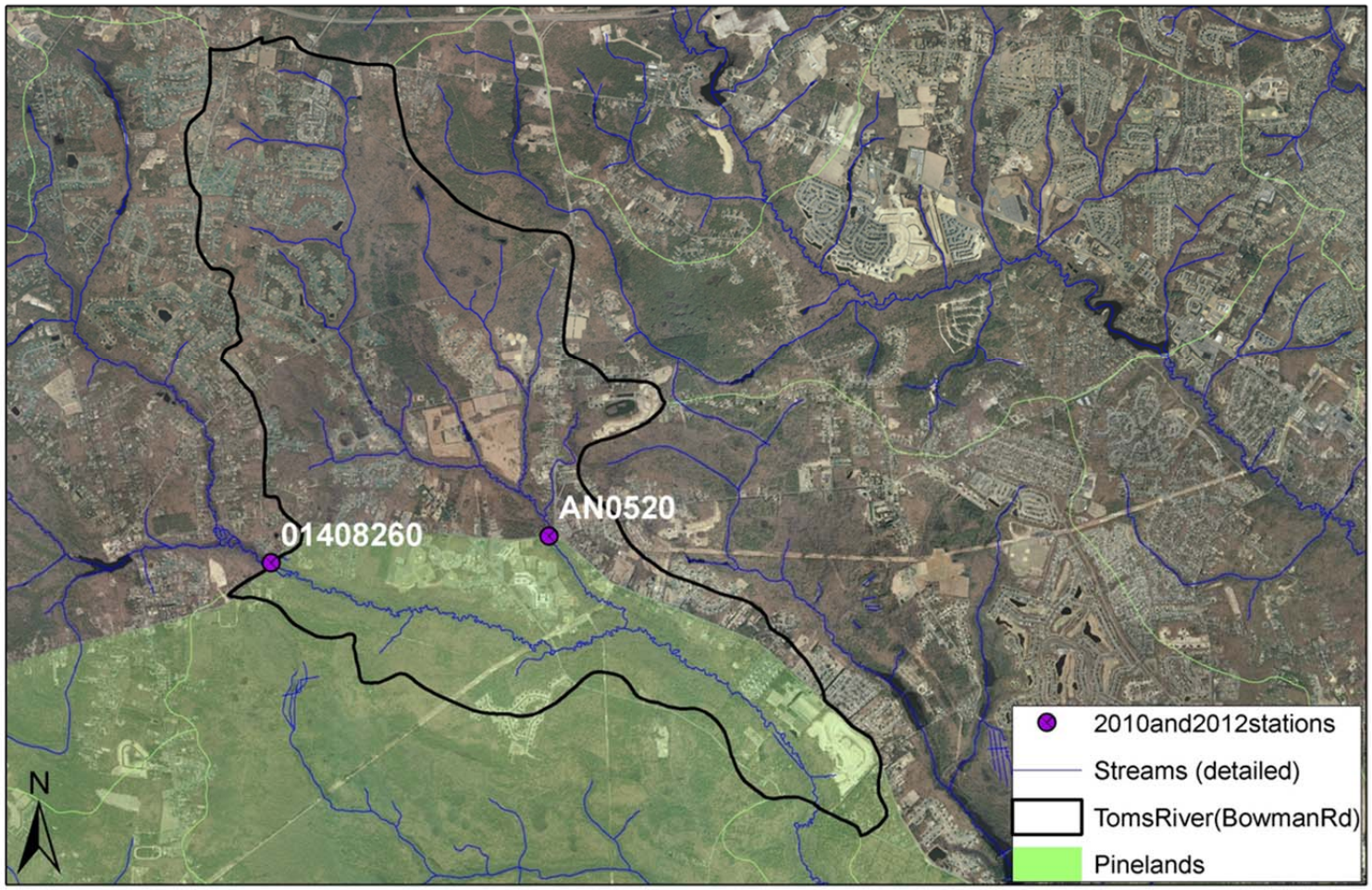

Figure 13

Mullica River

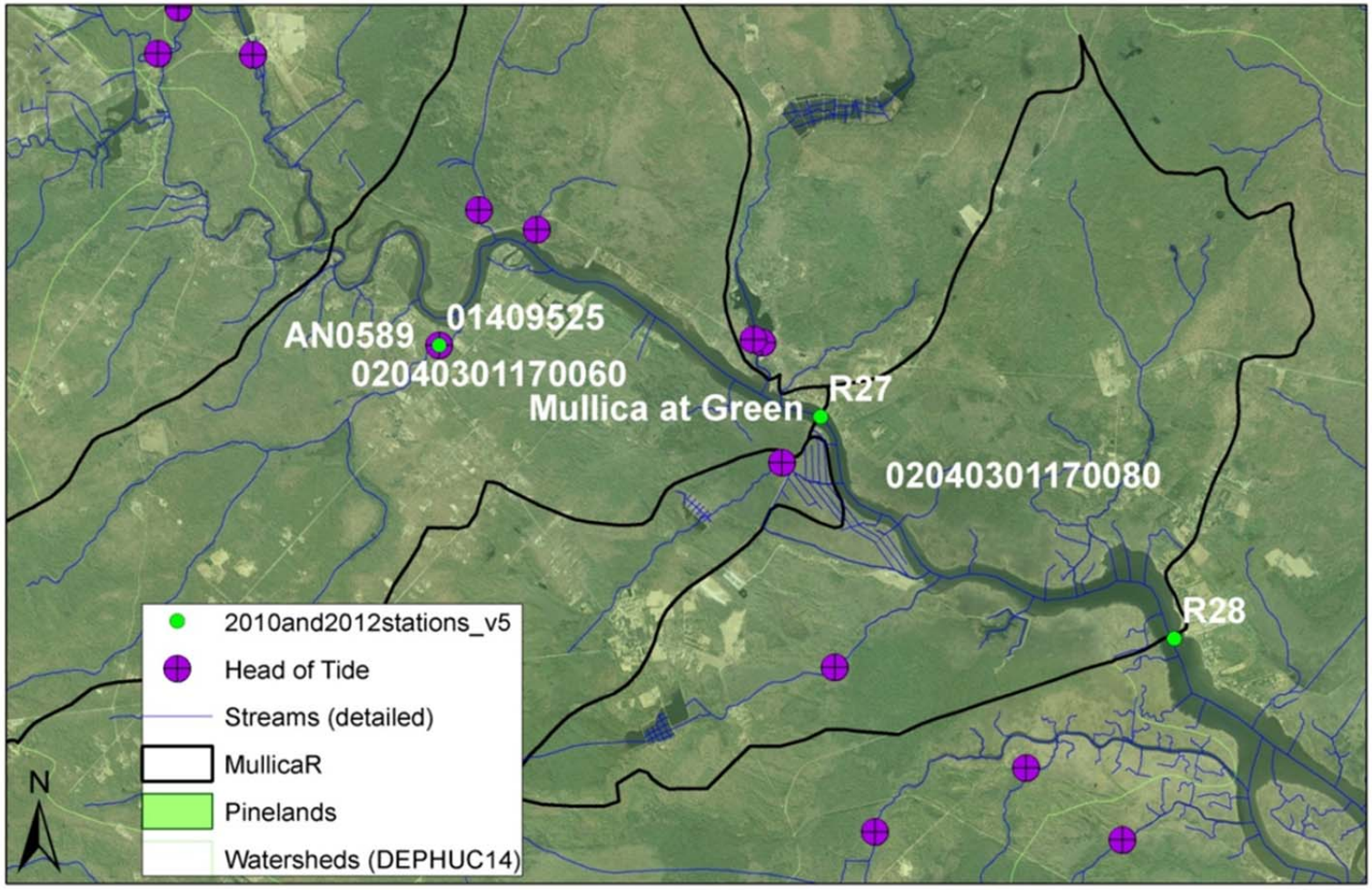

Figure 13a

South Branch Raritan River

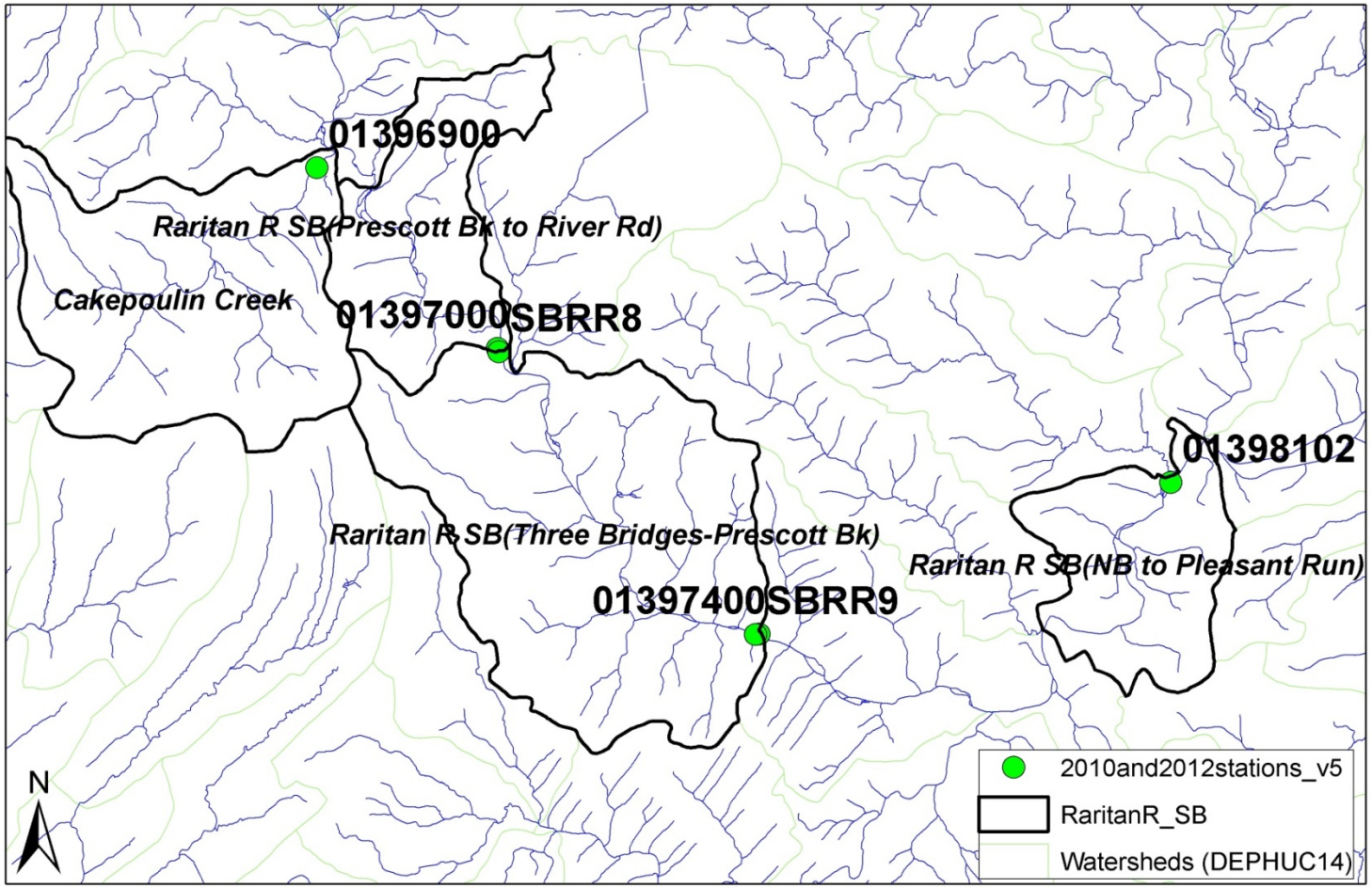

Figure 14

Tenakill Brook

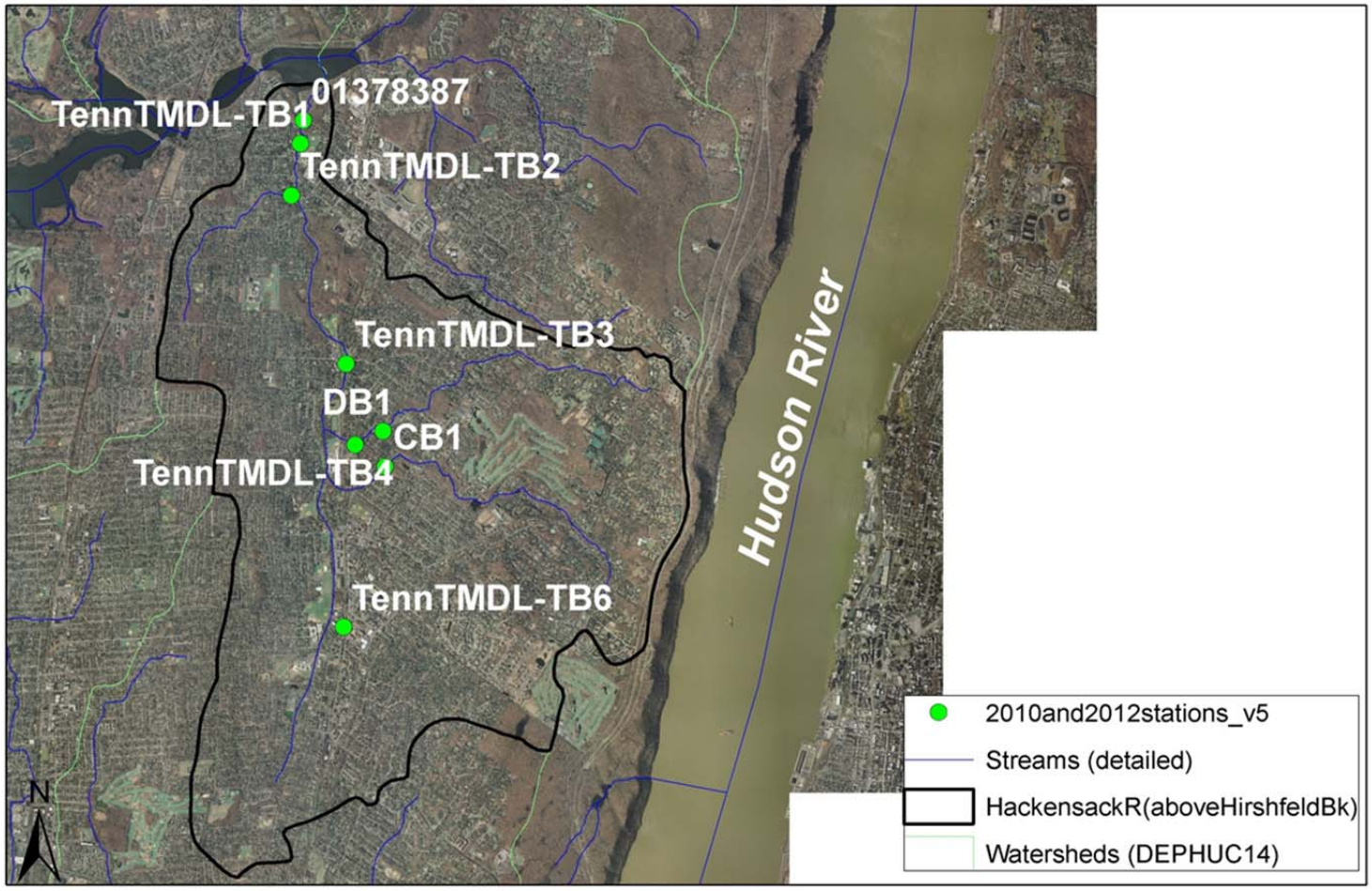

Figure 15

Manasquan River (below Rt 70 Bridge)

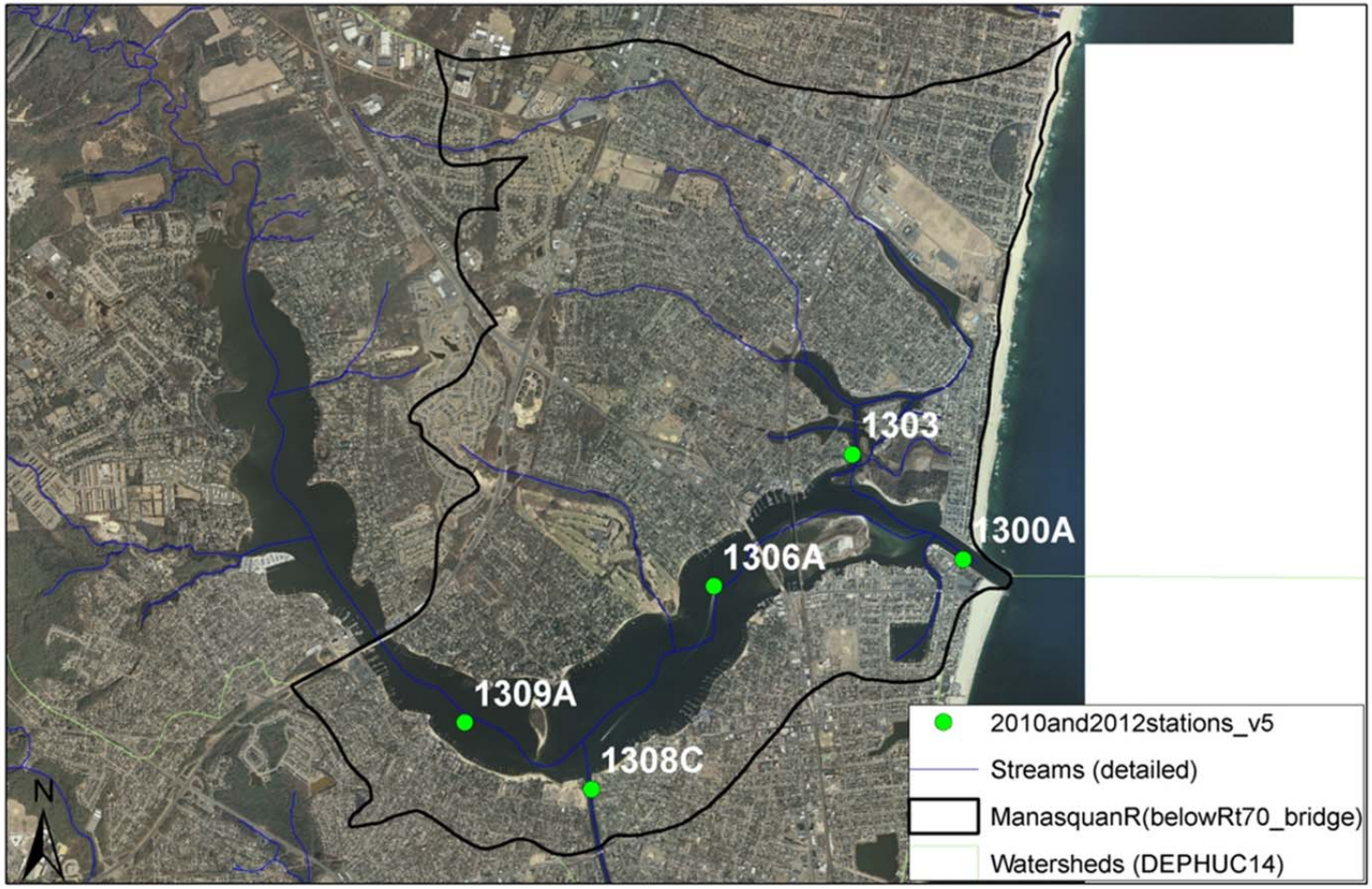

Figure 16a

Blair Creek

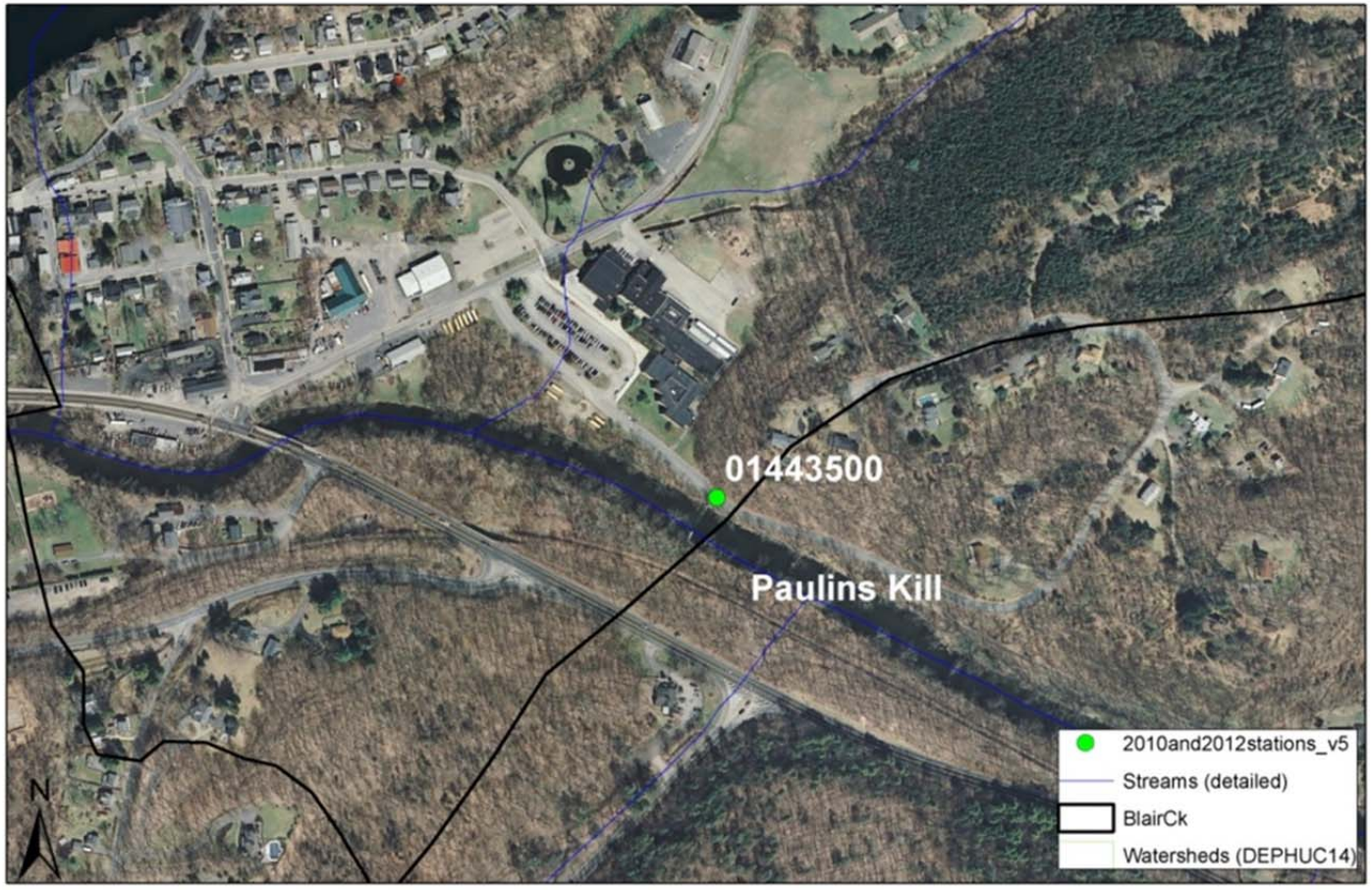

Figure 16b

Blair Creek & Stony Brook

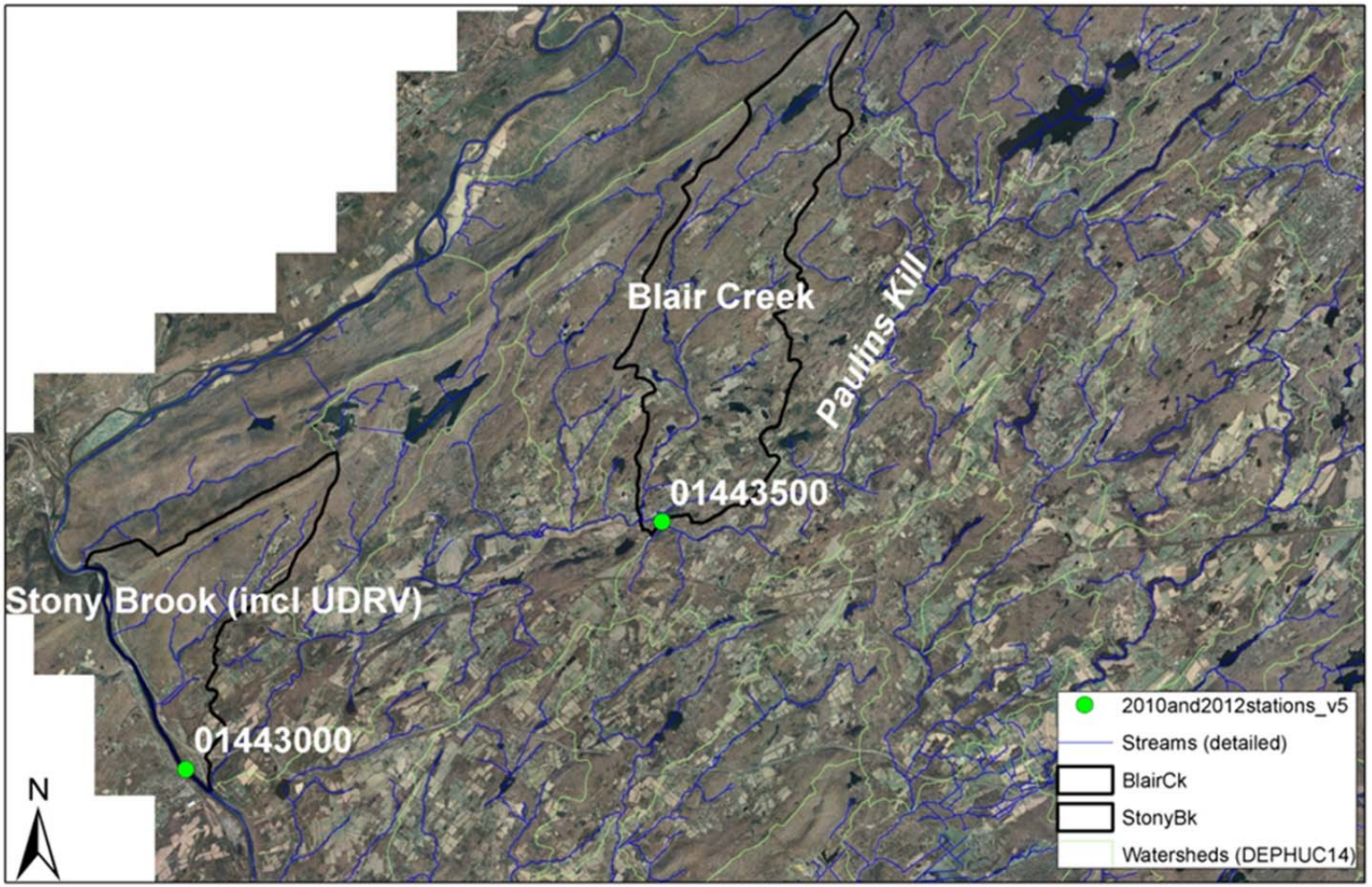

Figure 16c

Stony Brook

Figure 16d

Mullica River

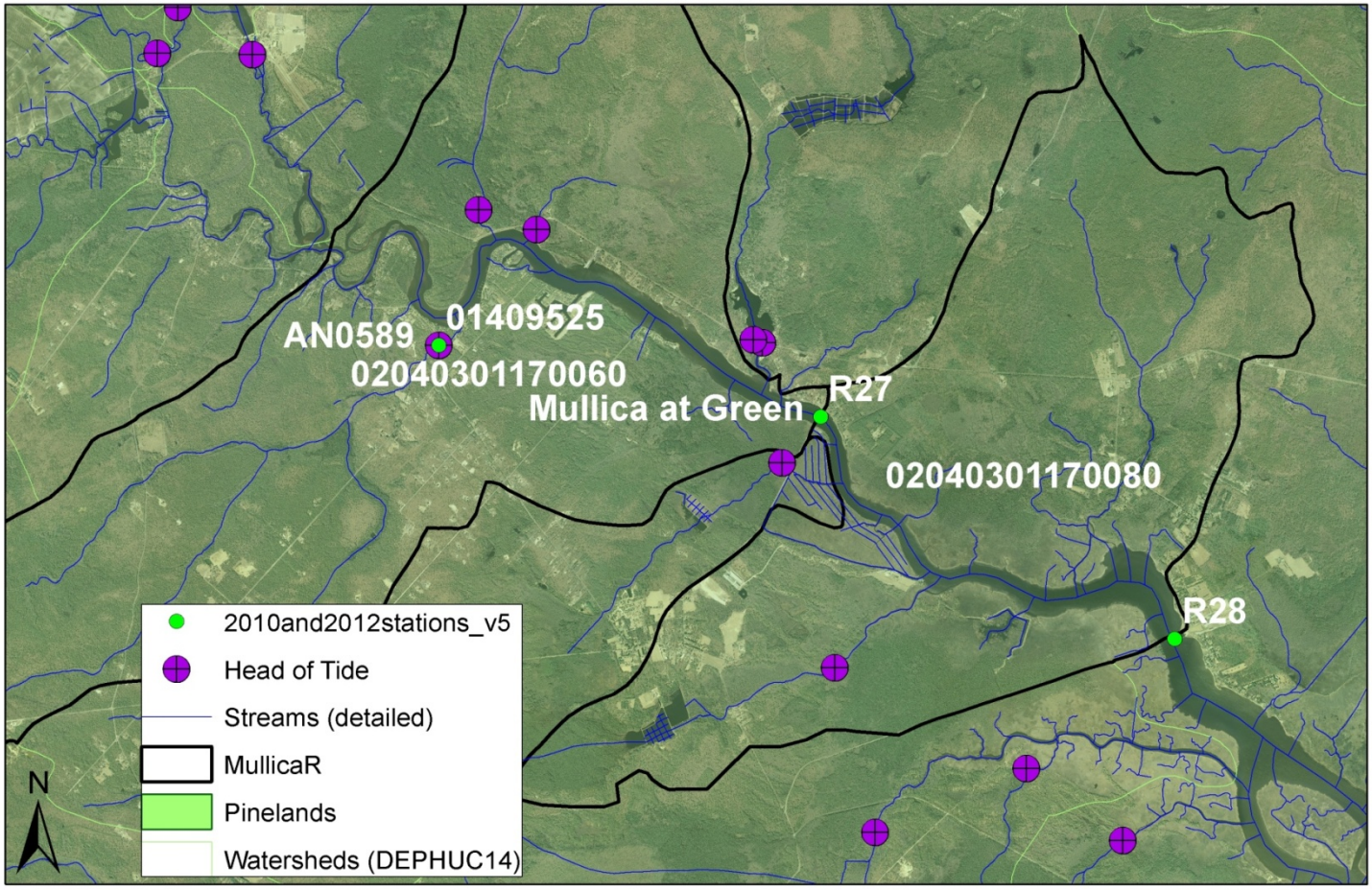

Figure 17

Tuckahoe River (below Rt 49)