

C. Describe the types of persons, businesses and organizations likely to be impacted by this proposal.

See page 5 of the attachment.

D. Does the action requested in the petition concern a matter currently in litigation? If yes, please explain.

No.

To the extent they are available, the data requested in Section E below are included in the attachment, pages 6 through 12.

E. For stream redesignation petitions, the following information must be included for the petition to be considered complete. Attach supporting material as necessary.

1. A clear delineation of the watershed or stream segment to be redesignated, both in narrative form and on a map.
2. The current designated use(s) of the watershed or segment.
3. The requested designated use(s) of the watershed or segment.
4. Available technical data on instream conditions for the following: water chemistry, the aquatic community (benthic macroinvertebrates and/or fishes), or instream habitat. If such data are not included, provide a description of the data sources investigated.
5. A description of existing and proposed point and nonpoint source discharges and their impact on water quality and/or the aquatic community. The names, locations, and permit numbers of point source discharges and a description of the types and locations of nonpoint source discharges should be listed.
6. Information regarding any of the qualifiers for designation as high quality waters (HQ) or exceptional value waters (EV) in §93.4b (relating to qualifying as High Quality or Exceptional Value waters) used as a basis for the requested designation.
7. A general description of land use and development patterns in the watershed. Examples include the amount or percentage of public lands (including ownership) and the amount or percentage of various land use types (such as residential, commercial, industrial, agricultural and the like).
8. The names of all municipalities through which the watershed or segment flows, including an official contact name and address.
9. Locational information relevant to items 4-8 (except for contact names and addresses) displayed on a map or maps, if possible.

: **All petitions should be submitted to the** :
: **Secretary of the Department of Environmental Protection** :
: **P.O. Box 2063** :
: **Harrisburg, PA 17105-2063** :

Hosensack Creek Basin Redesignation Assessment Petition

B. Why is the petitioner requesting this action from the Board?

The Delaware Riverkeeper Network and our co-petitioners request the re-examination of the Hosensack Creek, including tributaries known locally as Indian Creek and Walters Creek as well as all unnamed tributaries, in Upper Milford and Lower Milford Township, Lehigh County, and Upper Hanover Township, Montgomery County. The co-petitioners are submitting this petition under a waiver of the two year wait time, which was granted by the Environmental Quality Board (EQB), for resubmitting an additional petition. This waiver was approved by the EQB on March 18, 2014, when it accepted the Pennsylvania Department of Environmental Protection (PADEP's) recommendation for no change in designated use for the Upper Perkiomen of which the Hosensack Creek was a part.

The co-petitioners maintain that the current designation of Cold Water Fishery, Migratory Fishery (CWF, MF) does not accurately depict the outstanding water quality and aquatic community of the Hosensack Creek basin and leaves the important natural resource of this region without the protection they deserve. The co-petitioners request the Hosensack Creek basin be re-examined for special protection and Exceptional Value (EV) status.

Exceptional Value Wetlands

Bog turtle (*Clemmys muhlenbergii*) habitat is present in the watershed and bog turtles have been documented along unnamed tributaries of the Hosensack Creek (Appendix A).¹ The bog turtle is endangered in Pennsylvania and threatened federally. In Pennsylvania law, a surface water of exceptional ecological significance meets the necessary condition for designation as an EV stream.² Pennsylvania defines surface water of exceptional ecological significance as “[a] surface water which is important, unique or sensitive ecologically, but whose water quality as measured by traditional parameters (for example, chemical, physical or biological) may not be particularly high, or whose character cannot be adequately described by these parameters.”³ These waters include wetlands which are exceptional value wetlands under § 105.17(1)⁴ because they serve as habitat for fauna or flora listed as threatened or endangered under the federal Endangered Species Act.⁵

Furthermore, in a communication to PADEP on 4 June 2014, the Pennsylvania Fish and Boat Commission (PFBC) notes that the Hosensack is on the Wild Trout List due to the presence of naturally reproducing brown trout. As such, all wetlands in an along the floodplains of the Hosensack Creek and its tributaries would be classified as EV⁶ which underscores the need for EV designation for the Hosensack Creek basin.

¹ Herpetological Associates, Inc., 2007. Results of Phase I and II Bog Turtle and Redbelly Turtle Surveys at the Geryville Materials Site in Lower Milford Township, Lehigh County, Pennsylvania.

² See 25 Pa. Code § 93.4b(b)(2).

³ 25 Pa. Code § 93.1 (see definition of surface water of exceptional ecological significance).

⁴ 25 Pa. Code § 93.1 (see definition of surface water of exceptional ecological significance).

⁵ 25 Pa. Code § 105.17(1)(i).

⁶ 25 Pa. Code § 105.17(1)(iii); see also 25 Pa. Code § 93.1 (definition of surface water of exceptional ecological significance).

Wild Trout

Extensive data is available to support the Hosensack's listing (*see pp 47, 48 and 66 in Appendix D, Pennsylvania Wild Trout Waters (Natural Reproduction) – Jan 2015*)⁷ as a Wild Trout Water. Anecdotal information from anglers and local residents about trout populations in the Hosensack spurred study in 2014 by the co-petitioners as well as the PFBC.

The co-petitioners commissioned Princeton Hydro, LLC, (PH) to survey fish populations in the Hosensack. The study (*see Appendix B*), conducted in May 2014 revealed that four of the five Hosensack stations surveyed cleared the first biological criteria hurdle to be identified as a wild trout stream:

- (i) Young of the year trout less than 150 mm occur at some time in the stream section.
- (ii) Two or more ages of wild trout occur at some time within the stream section.⁸

PH reported that:

[t]he results of the fishery survey are powerful and several simple facts ably demonstrate this:

- Wild Brown Trout were identified in all five of the surveyed reaches located within the Hosensack watershed
- Brown Trout recruitment is high and parr less than 55 mm were identified in four of the five Hosensack reaches
- Brook Trout are present in the system
- Water and habitat quality is sufficiently high to support a robust coldwater fishery dominated by trout biomass⁹

PH's results confirm the anecdotal reports from the Perkiomen Valley Chapter of Trout Unlimited which has long asserted that the Hosensack "has a wild brown trout population from the headwaters to the mouth at Route 29."¹⁰

Subsequently, PFBC undertook its own survey of the Hosensack. The report of this survey has not been released, however the co-petitioners understand that PFBC's data will corroborate PH's findings and show that several section of the Hosensack support biomass sufficient for classification as Class A wild trout stream. As such, all of the Hosensack Creek basin would be reclassified as Class A:

Tributaries to wild trout streams are classified as wild trout streams for their function as habitat for segments of wild trout populations, including nurseries and refuges, and in sustaining water quality necessary for wild trout.¹¹

Macroinvertebrate Data

Macroinvertebrate data collected by Normandeau Associates, Inc., (NA) in 2006 (Appendix C) supports the co-petitioners position that the current designation of CWF, MF does not accurately depict the outstanding water quality and aquatic community of the Hosensack Creek basin. NA first

⁷ Pennsylvania Fish and Boat Commission. 2015. Pennsylvania Wild Trout Waters (Natural Reproduction). Retrieved from http://fishandboat.com/trout_repro.pdf.

⁸ 57 Pa. Code § 57.11(b)(3).

⁹ Princeton Hydro, LLC. 2014. Lower Milford Township Fishery Survey.

¹⁰ Perkiomen Valley Chapter of Trout Unlimited, n.d. The Upper Perkiomen Creek Watershed retrieved from <http://www.pvtu.net/Watershed.html>.

¹¹ 57 Pa. Code § 57.11(b)(4).

confirmed with PADEP staff the macroinvertebrate community evaluation procedures used in PADEP's Antidegradation Program and then followed these procedures in its investigation of the Hosensack Creek.

Benthic macroinvertebrate samples were collected at three stations in Hosensack Creek and in two tributaries (Figure 1). A benthic macroinvertebrate sample also was collected at one station in a Department EV reference stream (Pine Creek) in Berks County, approximately 13 miles from the [proposed Geryville Materials quarry] site.¹²

NA also followed PADEP's Antidegradation Implementation Guidance procedures for analyzing the survey sample and computing the results. In NA's analysis, Station 4 scored very close to the HQ threshold.

It should be noted that the Hosensack Creek stations and tributary Station 4 support substantial and taxonomically diverse macroinvertebrate communities.¹³

The co-petitioners note that PADEP did not sample NA's Station 4 in its 2007 antidegradation assessment of streams in the Hosensack.

NA's report references prior sampling of the Hosensack by PADEP:

PA DEP sampled macroinvertebrates on 9 December 1992 at two locations in Hosensack Creek between Normandeau's Stations 2 and 3 as part of an assessment of impact of an endosulfan spill earlier that year. These stations are shown in Figure 1. PADEP's samples contained more taxa, including more EPT taxa, than those collected in Normandeau's investigation.¹⁴

The co-petitioners ask that DEP review the 1992 data to determine if it suggests the Hosensack previously supported an existing use deserving of greater protections than its current designation.

NA also reports the presence of brown trout at all of the stations sampled, providing additional support for long-overdue classification as a Class A wild trout stream.

Outstanding National, State, Regional or Local Resource Water

The Hosensack Creek watershed also qualifies as EV under the Outstanding National, State, Regional or Local Resource Water qualifier due to coordinated water quality protective measure undertaken by regional and local governments to protect this stream deserving of Class A wild trout stream classification.

In Upper Milford Township (Lehigh County), the landscape of the Hosensack Creek watershed, including its Indian Creek tributary, is zoned R-A – Rural Agricultural.¹⁵ Upper Milford Township has passed ordinances that serve as legally binding sound land use water quality protective measures including a stormwater management district to implement the provisions of the Perkiomen Creek

¹² Normandeau Associates, Inc. 2006 Hosensack Creek Macroinvertebrate Survey.

¹³ Normandeau Associates, Inc. 2006. Hosensack Creek Macroinvertebrate Survey.

¹⁴ Normandeau Associates, Inc. 2006. Hosensack Creek Macroinvertebrate Survey.

¹⁵ Upper Milford Township. 2010. Official Zoning Map. Retrieved from <http://www.uppermilford.net/wp-content/uploads/2014/02/ZONING-Adopted-Map.pdf>.

Headwaters Watershed Stormwater Management Plan.¹⁶ In addition, Upper Milford has acquired land along the Hosensack, 4191 Dillingersville Road, Zionsville, PA 18092.¹⁷

In Lower Milford Township (Lehigh County), zoning in the Hosensack Creek watershed is largely split between RC – Resource Conservation and AC – Agricultural Conservation with a small area zoned RR – Rural Residential.¹⁸ Lower Milford Township has passed ordinances that serve as legally binding sound land use water quality protective measures including a stormwater management district to implement the provisions of the Perkiomen Creek Headwaters Watershed Stormwater Management Plan.¹⁹ In addition, Lower Milford Township owns 18 acres of preserved land a portion of which is drained by the Hosensack Creek watershed (Koplin, personal communication).

In Upper Hanover Township (Montgomery County), the landscape of the Hosensack Creek watershed has been zoned R1 – Agricultural/Low Density Residential.²⁰ Upper Hanover Township has passed ordinances that serve as legally binding sound land use water quality protective measures including a riparian corridor conservation district overlay and a stormwater management district to implement the provisions of the Perkiomen Creek Headwaters Watershed Stormwater Management Plan.²¹

In addition, Upper Hanover Township has preserved the Mill Hill Preservation Area:

The 237 acre Mill Hill Preservation Area contains the highest point in Montgomery County and is located along the pristine Hosensack Creek corridor near Mill Hill Road and Zeigler Road. The area consists of heavily wooded, rugged terrain with significant elevation changes. Hunting is allowed during normal state-regulated hunting seasons. Parking lots are located along Mill Hill Road and Zeigler Road.²²

Lehigh County has also made a significant effort to preserve farmland through the purchase of agricultural conservation easements which has resulted in the protection of land from development. Over 21,000 acres have been preserved in the County.²³ The County's program has benefitted Hosensack Creek watershed with over 350 acres preserved in Upper Milford²⁴ and approximately 3,000 acres preserved in Lower Milford.²⁵ In addition, Lehigh County holds 61 acres—the Lehigh County Conservation Demonstration Park—in the headwaters of the Hosensack Creek watershed.

¹⁶ Upper Milford Township. 2010 Ordinance No. 129: An Ordinance of the Board of Supervisors of Upper Milford, Lehigh County, Pennsylvania, Adopting and Approving the Perkiomen Creek Headwaters Act 167 Stormwater Management Ordinance. Retrieved from <http://www.uppermilford.net/wp-content/uploads/2014/02/Stormwater2.pdf>.

¹⁷ Upper Milford Township. Upper Milford Township Park, Recreation, Open Space, and Environmental Plan. Retrieved from http://www.uppermilford.net/wp-content/uploads/2014/02/FINAL_REPORT_20040205_COMBINED.pdf.

¹⁸ Lower Milford Township. 2009. Official Zoning Map. Retrieved from http://www.lowermilford.net/wp-content/uploads/2013/04/zoning_map.pdf.

¹⁹ Lower Milford Township. 2010 Perkiomen Creek Headwaters Act 167 Stormwater Management Ordinance No. 119. Retrieved from http://www.lowermilford.net/wp-content/uploads/2013/04/Ord_119.pdf.

²⁰ Upper Hanover Township. 2011. Official Zoning Map. Retrieved from <http://www.upperhanovertownship.org/zoningmap.pdf>.

²¹ eCode360. 2014. Township of Upper Hanover, Montgomery County. Retrieved from <http://ecode360.com/UP2804>.

²² Upper Hanover Township. 2012. Parks and Recreation: Mill Hill. Retrieved from <http://www.upperhanovertownship.org/millhill.htm>.

²³ LEHIGH COUNTY CONSERVATION District. 2014. "Farmland Preservation News" in Fall 2014 Newsletter. Retrieved from <http://www.uppermilford.net/wp-content/uploads/2014/11/FALL-2014-NEWSLETTER-LC-Conservation.pdf>.

²⁴ Upper Milford Township. Upper Milford Township Park, Recreation, Open Space, and Environmental Plan. Retrieved from http://www.uppermilford.net/wp-content/uploads/2014/02/FINAL_REPORT_20040205_COMBINED.pdf.

²⁵ Lower Milford. n.d. Agriculture Security. Retrieved from <http://www.lowermilford.net/agriculture-security/>

The Delaware River Basin Commission has also passed stringent regulations for ground water withdrawals in the Southeastern Pennsylvania Ground Water Protected Area which includes Lower Milford (Lehigh) and Upper Hanover (Montgomery County).²⁶

It should also be noted that restoration efforts are being undertaken to improve water quality and habitat. Recent restoration work along the Hosensack Creek included installing fish habitat structures, removing dams, and seeding stream banks.²⁷ Volunteers supplied over \$11,000 in labor for the project.²⁸

Existing Use

The co-petitioners recognize that the antidegradation assessment process must be thorough and takes time, but PADEP can act to place a stream on the existing use list in advance of redesignation; the Hosensack Creek basin is deserving of interim EV protection.

C. Describe the types of persons, businesses and organizations likely to be impacted by this proposal.

Residents of the Hosensack Creek watershed will benefit from proper stream classification of outstanding water resources and increased chance of protection of these resources. The Perkiomen Chapter of Trout Unlimited and other anglers will benefit from greater protections that benefit the Hosensack's wild trout population. Recreational users of Mill Hill Preservation Area will benefit from greater protection of the waters that flow through this public open space. Municipal officials will gain justification for additional scrutiny of proposed development that otherwise may degrade these streams. Developers will be alerted to the quality of water resources that need to be maintained.

Small and large landowners will see an increase in their property values because they live in a healthy ecosystem. With EV designation, these landowners will also have better protection from hazardous waste sites and other threats to their watershed. The many farmers of the region will benefit from clean water to irrigate their crops and livestock. Many of the farmers in the watershed already have their farms in conservation easements or have implemented stream restoration projects on their property to help preserve the character of the area.

Lower Milford Elementary School uses the Hosensack Creek, which runs through the school property, for educational purposes and will benefit from clean waters for the children who study and wade in this stream during the school year.

Upper Milford, Lower Milford, and Upper Hanover are all regulated as small Municipal Separate Storm Sewer Systems. Pennsylvania Department of Transportation, Pennsylvania Power and Light Company, and Geryville Materials may be impacted.

²⁶ Delaware River Basin Commission. 2011. Southeastern Pennsylvania Ground Water Protected Area (GWPA). Retrieved from <http://www.state.nj.us/drbc/programs/project/southeast/>

²⁷ 69 News. 1 July 2014. New project will enhance water quality at Hosensack Creek. Retrieved from <http://www.wfmz.com/news/news-regional-lehighvalley/Local/new-project-will-enhance-water-quality-at-hosensack-creek/26744606>.

²⁸ Petty, P. "Volunteers help complete \$30K stream restoration project in Lower Milford Township" in the Express-Times. Retrieved from http://www.lehighvalleylive.com/lehigh-county/index.ssf/2014/09/volunteers_help_complete_30k_s.html

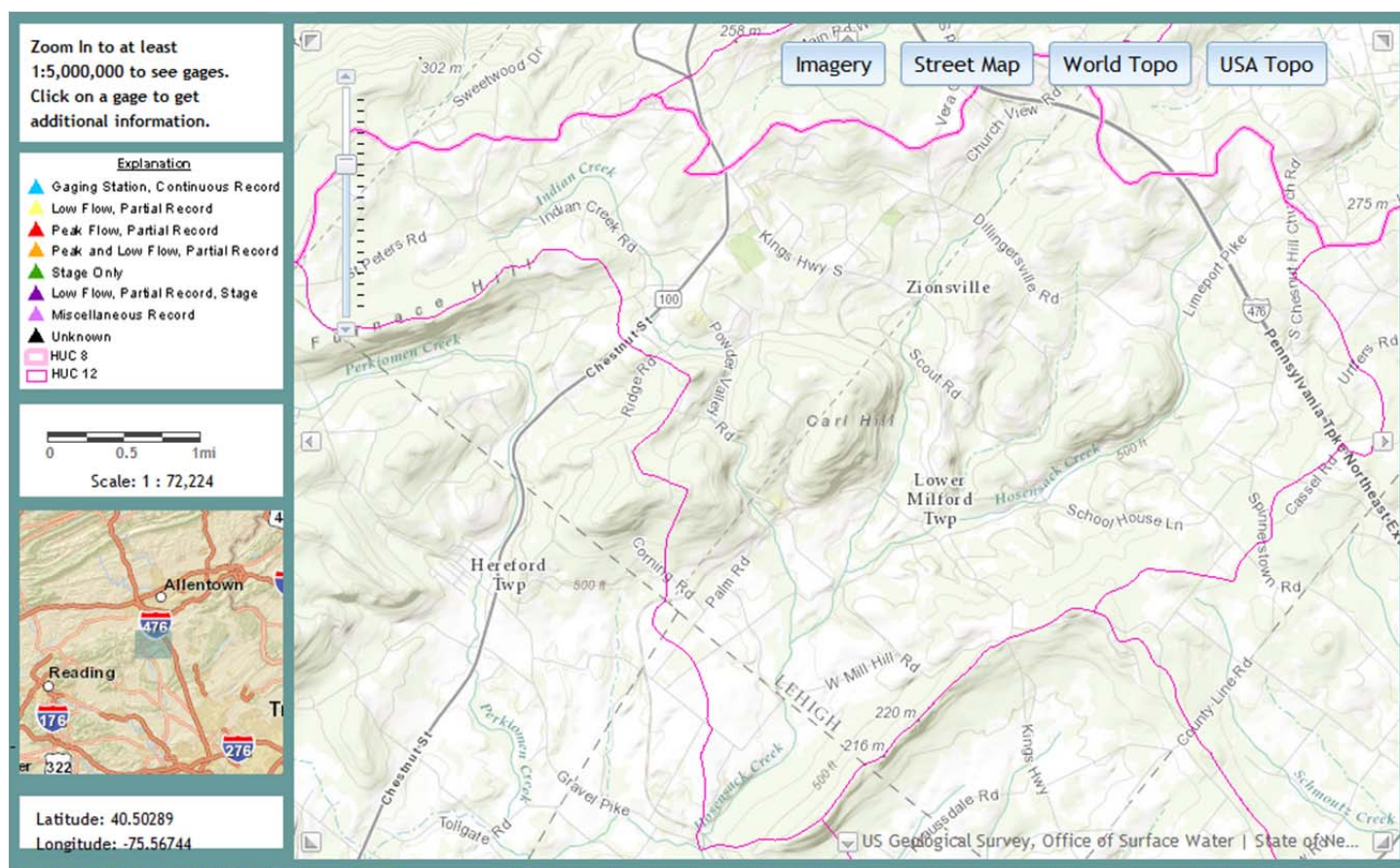
E. For Stream Redesignation Petitions, the following information must be included for the petition to be considered complete. Attach supporting material as necessary.

1. A clear delineation of the watershed or stream segment to be redesignated, both in narrative form and on a map.

Narrative:

The Hosensack Creek rises primarily in Lower Milford Township, Lehigh County but does include headwaters areas in Upper Milford Township and a named tributary, Indian Creek, that also rises in Upper Milford Township, Lehigh County. The Hosensack Creek passes through a short section of Upper Hanover Township in Montgomery County before it joins the Perkiomen Creek at the village of Palm.²⁹

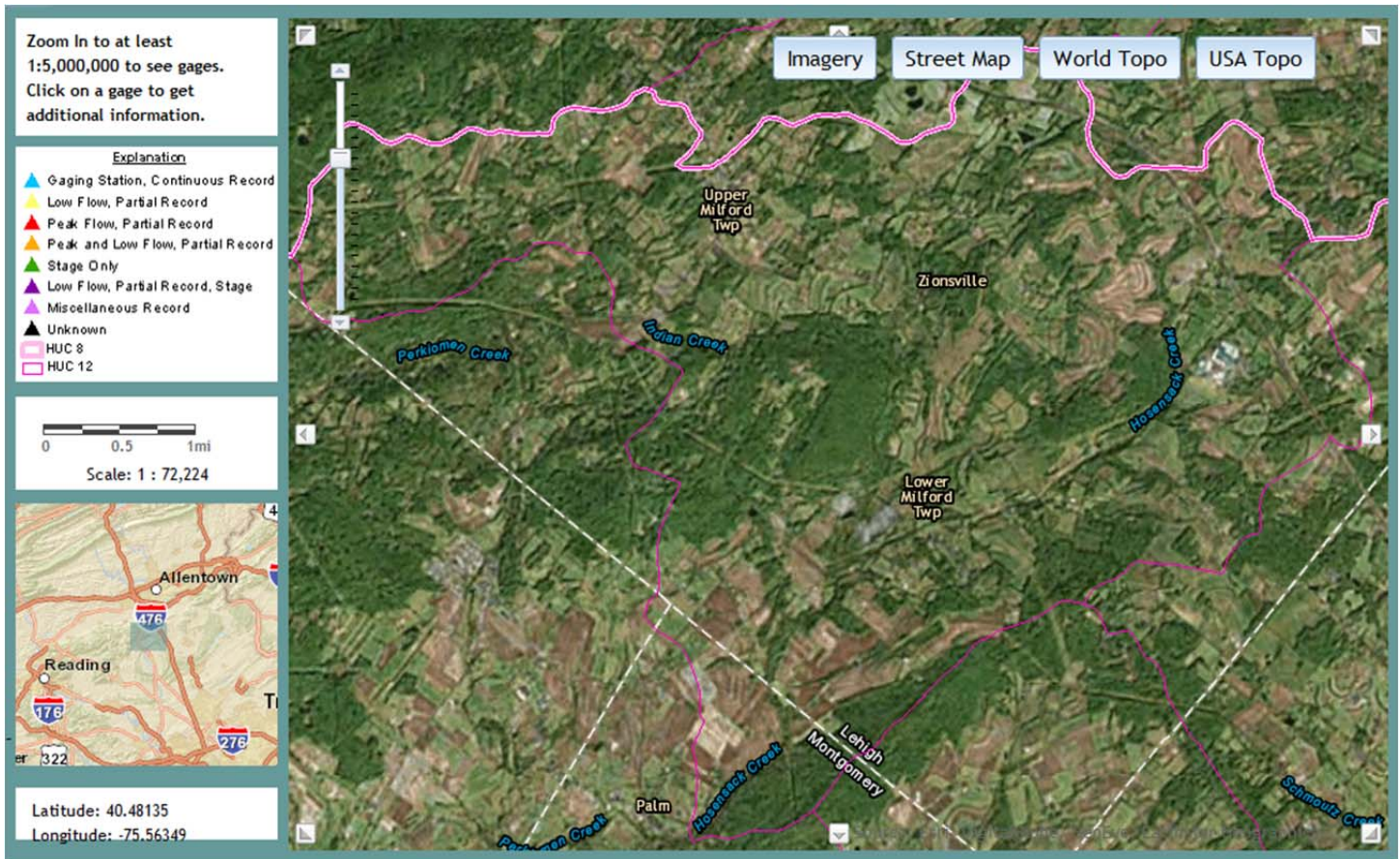
*Topographic Map:*³⁰



²⁹ Perkiomen Watershed Conservancy. 2009. Hosensack Creek Conservation Action Plan.

³⁰ U.S. Geological Survey. 2015. The StreamStats Program: Pennsylvania. Retrieved from <http://water.usgs.gov/osw/streamstats/pennsylvania.html>.

Land Cover Imagery:³¹



³¹ U.S. Geological Survey. 2015. The StreamStats Program: Pennsylvania. Retrieved from <http://water.usgs.gov/osw/streamstats/pennsylvania.html>.

2. The current designated use(s) of the watershed or segment.

The Montgomery County portion of the Hosensack Creek basin, listed on Drainage List F in 25 Pa. Code §93.9c, is designated as Cold Water Fishery, Migratory Fishery. The current CWF, MF designation would allow degradation of the existing exceptional quality.

3. The requested designated use(s) of the watershed or segment.

The requested designation for the Hosensack Creek basin, including tributaries known locally as Indian Creek and Walters Creek as well as all unnamed tributaries, is Exceptional Value (*see Appendix I: Suggested Regulatory Language*). This designation would protect the existing water quality which is important to both the economy and the ecology of the area (*see maps above in E.1*).

4. Available technical data on instream conditions for the following: water chemistry, the aquatic community (benthic macroinvertebrates and/or fishes), or instream habitat. If such data are not included, provide a description of the data sources investigated.

See the following appendices:

Appendix A: Herpetological Associates, Inc., 2007. Results of Phase I and II Bog Turtle and Redbelly Turtle Surveys at the Geryville Materials Site in Lower Milford Township, Lehigh County, Pennsylvania

Appendix B: Princeton Hydro, LLC. 2014. Lower Milford Township Fishery Survey

Appendix C: Normandeau Associates, Inc. 2006. Hosensack Creek Macroinvertebrate Survey

5. A description of existing and proposed point and nonpoint source discharges and their impact on water quality and/or the aquatic community. The names, locations, and permit numbers of point source discharges and a description of the types and locations of nonpoint source discharges should be listed.

In 2001, there were no point source discharges in the Hosensack Creek watershed. Currently, the EPA's Envirofacts website (*see* <http://www.epa.gov/enviro/html/pcs/index.html>) lists two small flow treatment systems and a small sewage treatment plant for the Lower Milford Elementary:

NPDES ID	Facility Name	Address	County Name	Latitude / Longitude	Permit Issued Date	Permit Expired Date
PAG042211	Dwayne and Beth Siever	6005 Woodlawn Dr Zionsville, PA 18092	Lehigh	40.46556, -75.52593	Mar-06- 2009	Feb-04- 2014
PAG042208	Glenn and Patricia Snyder	7667 School House La Zionsville, PA 18092-	Lehigh	40.46834, -75.48304	Mar-06- 2009	Feb-04- 2014
PA0062499	Lower Milford Elementary School	7350 Elementary Rd Coopersburg, PA 18036	Lehigh	40.480278, -75.468056	Nov-14- 2012	Nov-30- 2017

The discharge of untreated wastewater can degrade water quality through oxygen depletion and nutrient enrichment. Proper wastewater treatment processes eliminate waterborne diseases and reduce impacts on water quality and/or the aquatic community.

Small Flows Treatment Facilities (SFTFs) are domestic wastewater treatment facilities with flows not greater than 2,000 gallons per day. SFTFs are generally applied for upon the failure of an on-lot treatment system. PADEP considers position a SFTF to be a correction of a public health problem (i.e., a failing on-lot septic system). When a SFTF is proposed, PADEP conducts an analysis of the discharge to determine if it will result in measurable change in the receiving stream. The discharge is permitted after the agency's analysis determines that no measureable change will result.

The co-petitioners also note that the Lower Milford Elementary School permit, for a package sewage treatment plant which was constructed and began use in 1991, is used only during the school year. This flow is switched to an on-lot septic system during the summer months.

A search of the *Pennsylvania Bulletin*, <http://www.pabulletin.com>, found the following entries under General Permit For Discharges of Stormwater From Construction Activities:

Jervin, Inc. 1170 Hillview Road Allentown, PA 18103	PAR10Q007-R	Lehigh	Upper Milford Township	Hosensack Creek, CWF, MF
Little Lehigh Development Corp. Anthony Koneski 232 Main St. Emmaus, PA 18049	PAR10Q008-1R	Lehigh	Upper Milford Township	Hosensack Creek, CWF, MF
Little Lehigh Development Corp. F.A. Rohrbach 232 Main St. Emmaus, PA 18049	PAR10Q008-2	Lehigh	Upper Milford Township	Hosensack Creek, CWF, MF
F.A. Rohrbach Little Lehigh Development Corp. 130 S. 16th St. Emmaus, PA 18049	PAR10Q008-R-2	Lehigh	Upper Milford Township	Hosensack Creek, CWF, MF
Anthony Koneski 5202 Mill Rd. Emmaus, PA 18049	PAR10Q133	Lehigh	Upper Milford Township	Hosensack Creek, CWF, MF

In addition, a search of the *Pennsylvania Bulletin* found the following Individual Permit Applications for Discharges of Stormwater Associated with Construction Activities:

Facility Name & Address	NPDES ID	County	Municipality	Receiving Water/Use
PPL Electric Utilities 2 North Ninth Street, GENN-3 Allentown, PA 18101	PAI023912025	Lehigh	Lower Macungie Twp. Upper Macungie Twp. Lower Milford Twp. Upper Milford Twp.	Cedar Creek, HQ-CWF, MF; Little Lehigh Creek, HQ-CWF, MF; Swabia Creek, HQ-CWF, MF; Unnamed Tributary to Little Lehigh Creek, HQ-CWF, MF; Leibert Creek, HQ-CWF, MF; Hosensack Creek, CWF, MF

Jerry Davis Seedway, LLC 5901 Vera Cruz Rd. Emmaus, PA 18049	PAI023913003	Lehigh	Upper Milford Township	Leibert Creek, HQ-CWF, MF UNT to Hosensack Creek, CWF, MF
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Commencement, operation and restoration of a quarry operation and discharge of treated mine drainage has been proposed by Geryville Materials for a site in Lower Milford Township (Lehigh County). Geryville Materials is in the process of revising its Large Noncoal SMP Application submitted in 2014. At that time, proposed receiving streams included unnamed tributaries to the Hosensack and Macoby Creeks.

Stormwater runoff may carry to the Hosensack and its tributaries nonpoint source pollution from the following sources:

- roads and parking lots (e.g., hydrocarbons, heavy metals, sediment, road salt)
- lawns (fertilizers, pesticides, dog waste)
- cultivated fields (soil erosion/sedimentation)
- construction sites (soil erosion/sedimentation)
- livestock pastures (manure, soil erosion/sedimentation)
- stormwater management facilities
- on-lot septic systems

If not managed properly, the wastewater and stormwater generated by future developments within the Hosensack Creek watershed could affect the health of exceptional value wetlands and waterways in this watershed.

It should also be noted that restoration efforts are being undertaken to improve water quality and habitat. Recent restoration work along the Hosensack Creek included installing fish habitat structures, removing dams, and seeding stream banks.³² Volunteers supplied over \$11,000 in labor for the project.³³

6. Information regarding any of the qualifiers for designation as high quality waters (HQ) or exceptional value waters (EV) in §93.4b (relating to qualifying as High Quality or Exceptional Value waters) used as a basis for the requested designation.

See the following appendices:

Appendix A: Herpetological Associates, Inc., 2007. Results of Phase I and II Bog Turtle and Redbelly Turtle Surveys at the Geryville Materials Site in Lower Milford Township, Lehigh County, Pennsylvania

Appendix D: Pennsylvania Fish and Boat Commission. 2015. Pennsylvania Wild Trout Waters (Natural Reproduction).

Appendix E: Kepler, S.R., Pennsylvania Fish and Boat Commission. Letter to Michael Kutney, Department of Environmental Protection. 4 June 2014.

³² 69 News. 1 July 2014. New project will enhance water quality at Hosensack Creek. Retrieved from <http://www.wfmz.com/news/news-regional-lehighvalley/Local/new-project-will-enhance-water-quality-at-hosensack-creek/26744606>.

³³ Petty, P. "Volunteers help complete \$30K stream restoration project in Lower Milford Township" in the Express-Times. Retrieved from http://www.lehighvalleylive.com/lehigh-county/index.ssf/2014/09/volunteers_help_complete_30k_s.html

7. A general description of land use and development patterns in the watershed. Examples include the amount or percentage of public lands (including ownership) and the amount or percentage of various land use types (such as residential, commercial, industrial, agricultural and the like).

A general description of the Hosensack Creek watershed is provided in the *Hosensack Creek Conservation Action Plan*:

The Hosensack Creek is a tributary to the Perkiomen Creek, the largest sub-watershed within the Schuylkill River network. The Upper Perkiomen Creek includes communities in western Montgomery County, portions of western Lehigh County and southern Berks County. The region is largely rural but the historic villages tell the story of longstanding agrarian communities and a deep connection to the land. Well-maintained properties illustrate a strong stewardship ethic among the residents. The abundance of undeveloped natural areas is a reflection of this stewardship ethic, as well as the local geology and the general distances to larger economic centers.³⁴

A Basin Characteristics Report, created via the U.S. Geological Survey's StreamStats Program³⁵, is included here (*see Appendix F*). Also included here (*see Appendix G*) is a map, created via the U.S. Geological Survey's National Gap Analysis Program, that depicts land cover.³⁶ The strong stewardship ethic is demonstrated in the amount of land that has been protected from development. (*see Appendix H: Protected Areas*³⁷).

Land use data for the Hosensack Creek watershed can also be found in Stroud Water Research Center's (SWRC's) *Schuylkill River Project*. SWRC conducted monitoring at 146 locations in the Schuylkill River Basin from 1996 to 2007. Along with the results of their monitoring, they reported land use information for the landscape above each of their sampling locations.³⁸ SWRC sampled four sites in the Hosensack Creek watershed. Their land use data underscores the rural, undeveloped character of the watershed:

Land Use				
	Site #93 Hosensack Creek At Treichlers Rd.	Site #96 Indian Creek At Buhman Rd.	Site #97 West Hosensack Creek At Palm Rd.	Site #98 East Hosensack Creek Limeport Pk. and Shultz Bridge Rd.
Watershed Area (km ²)	43	10	10	16
% Developed	2.0	2.0	2.4	2.1
% in Agriculture	47.3	38.9	46.4	51.9

³⁴ Perkiomen Watershed Conservancy. 2009. Hosensack Creek Conservation Action Plan.

³⁵ U.S. Geological Survey. 2015. The StreamStats Program: Pennsylvania. Retrieved from <http://water.usgs.gov/osw/streamstats/pennsylvania.html>.

³⁶ U.S. Geological Survey. 2013. National Gap Analysis Program (GAP) -- Core Science Analytics and Synthesis. Retrieved from <http://gapanalysis.usgs.gov/>.

³⁷ U.S. Geological Survey. 2013. National Gap Analysis Program (GAP) -- Core Science Analytics and Synthesis. Retrieved from <http://gapanalysis.usgs.gov/>.

³⁸ Stroud Water Research Center. n.d. Perkiomen Creek Basin. Retrieved from <http://www.stroudcenter.org/research/projects/schuylkill/basins/perkiomen.shtm>.

% Forested	46	54	45	42
% Wetland/Water	1.6	1.7	2.0	0.4
% in Quarries/Mining	0.0	0.0	0.0	0.0

8. The names of all municipalities through which the watershed or segment flows, including an official contact name and address.

Lehigh County

George D. DeVault , Chair
Board of Supervisors
Upper Milford Township
5671 Chestnut Street,
PO Box 210
Old Zionsville, PA 18068
Phone: 610-966-3223
Email: info@uppermilford.net
Fax: 610- 966-5184

Donna Wright, Chair
Board of Supervisors
Lower Milford Township
7607 Chestnut Hill Church Road
Coopersburg, PA 18036
Phone: 610-967-4949
Fax: 610-967-1013
Email: <http://www.lowermilford.net/contact-us/>

Montgomery County

Eugene F. Fried, Chair
Board of Supervisors
Upper Hanover Township
1704 Pillsbury Road
PO Box 27
East Greenville, PA 18041
Phone: 215-679-4401
Fax: 215-679-3585
E-mail (Township Manager): sseitzinger@comcast.net

9. Locational information relevant to items 4-8 (except for contact names and addresses) displayed on a map or maps, if possible.