

# ATTACHMENT 1

## PUBLIC RESPONSE AND PARTICIPATION SUMMARY

### COMMENTS AND RESPONSES

#### Perkiomen Creek BERKS, MONTGOMERY AND LEHIGH COUNTIES WATER QUALITY STANDARDS REVIEW STREAM REDESIGNATION EVALUATION REPORT

#### INTRODUCTION

The Department conducted an evaluation of the Perkiomen Creek basin from its source to and including the Macoby Creek basin and the West Branch Perkiomen Creek and Hosensack Creek basins in response to a petition from the Delaware Riverkeeper Network that was accepted for study by the Environmental Quality Board (EQB) on February 20, 2007. Co-petitioners include the Perkiomen Valley Trout Unlimited, Perkiomen Watershed Conservancy, and the Lehigh and Montgomery County Conservation Districts. The petition requested that:

- Perkiomen Creek basin including the West Branch Perkiomen Creek and Hosensack Creek basins be redesignated to Exceptional Value Waters (EV) and that
- Macoby Creek basin be redesignated to High Quality Waters (HQ).

The Perkiomen Creek basin is currently designated under several different use categories: Exceptional Value (EV), High Quality-Cold Water Fishes (HQ-CWF), Cold Water Fishes (CWF), Trout Stocking (TSF), and Migratory Fishes (MF).

Upon EQB's acceptance of the Perkiomen petition, Division of Water Quality Standards (DWQS) staff collected and analyzed field data; conducted file reviews; and reviewed the documents, materials and data submitted by the petitioners in context to the HQ and EV qualifying criteria found at 25 Pa. Code § 93.4b (Qualifying as High Quality or Exceptional Value Waters). Ultimately, based on all information known to DWQS staff and application of the HQ and EV qualifying criteria, a stream redesignation evaluation report was drafted by DWQS with the following recommendation:

*“Based on applicable regulatory definitions and requirements of § 93.4b, the Department recommends that the Perkiomen Creek basin (from its source to and including the Macoby Creek basin, the West Branch Perkiomen Creek basin and the Hosensack Creek basin) maintain their current designated uses . . . These recommendations do not reflect the special protection designations sought in the petition.”*

The Perkiomen stream redesignation evaluation report was made available on September 18, 2013 with an initial public comment period ending October 18, 2013. This comment period was subsequently extended to November 18, 2013.

At least 81 local stakeholders offered comments during the original October 18, 2013 comment period. A compiled summary of these comments are:

- 1) Please lengthen the comment period to 12 months,
- 2) The petitioned redesignation upgrade request is strongly supported by over 120 local citizens, businesses, landowners, and townships,
- 3) The Upper Perkiomen:
  - a) Provides good quality drinking water to local and regional communities,
  - b) Provides unique natural areas for recreational activities and supports Natural Areas Inventory priority sites,
  - c) Provides critical habitat for wild trout fisheries, eagles, otter and mink
  - d) Attracts tourists to the area,
  - e) Provides forested areas and riparian buffers

Once the local stakeholders were aware of the November 18, 2013 extension, DWQS staff received additional comments and information to review and consider. In addition to the comments summarized above, two additional and detailed sets of comments were received from Princeton Hydro, LLC and the Co-petitioners (Delaware Riverkeeper network; Perkiomen Valley Trout Unlimited, Chapter #22; Lehigh County Conservation District; and Perkiomen Watershed Conservancy) during the November 18, 2013 extension.

**Background.** Because much of the Co-petitioners' comments were dominated by reference stream selection issues, a summary of DWQS' reference station selection process is provided as follows:

A fundamental issue regarding stream petition surveys is determining if the streams first meet HQ qualifying criteria; a pre-requisite for applying most of the EV criteria. The primary HQ assessment tool is the application of DEP's integrated benthic macroinvertebrate scoring test described at 25 Pa. Code § 93.4b(a)(2)(i)(A), which requires the selection of reference sites. The reference sites must be waters with a current existing or designated use EV status that was based upon macroinvertebrate biological indices. Care is taken in selecting reference sites that have similar natural conditions as the candidate sites. The candidate and reference site must have similar **gradient, alkalinity, and habitat** conditions and be of **equal or similar stream orders or drainage areas**. DEP has found that 1<sup>st</sup> through 3<sup>rd</sup> order freestone streams can be grouped. Ecoregion differences are insignificant as a reference station selection factor. Specific taxa may differ between ecoregions but the more holistic community measures (biological indices) do not differ between ecoregions for similar types of streams. It is most important to group streams by types such as freestone, pool/glide, limestone, etc. than by ecoregions. All attempts are made to apply these reference station selection conditions to EV streams that are in closest proximity as possible to the candidate streams.

An important consideration in the use of reference-to-candidate comparisons is the dilution of the reference condition. Streams that barely pass the EV macroinvertebrate test are not used in subsequent reference-to-candidate comparisons. If they were, streams with lower and lower scores would dilute the population of EV streams used as reference. The low scoring sites are identified and eliminated as potential reference sites by doing a distribution analysis of all EV biological scores. Sites falling in the lower quartile of the distribution are eliminated as discussed in the Department's "*Water Quality Antidegradation Implementation Guidance*".

# Comments and Responses

Unless indicated otherwise, the comments below on this issue were submitted by the Co-petitioners (Delaware Riverkeeper network; Perkiomen Valley Trout Unlimited, Chapter #22; Lehigh County Conservation District; and Perkiomen Watershed Conservancy)

## Reference Stream Selection

**Comment 1:** “The Co-petitioners question the use of Muncy Creek as a reference stream for the Upper Perkiomen Creek...DEP should make every effort to match the natural conditions of the candidate stream with a reference. The two streams should possess the same, or very similar, characteristics when in a natural condition because taxonomic composition of stream communities will differ depending on ecoregion, stream order and stream elevation.”

**Response:** The Department agrees and does make every effort to match reference sites with candidate sites per DWQS’ reference station selection process summary above. A reference station closer than Muncy Creek would have been preferred; however, Muncy Creek was the closest proximate station that best met criteria for reference EV stations/streams for the “larger” candidate stations found in the Upper Perkiomen basin.

There were “larger” streams within the Piedmont Province with an EV designated use (i.e. French Creek in Chester Co.) based on the candidate/reference biological method that were considered. However, reference candidate stations in these larger Piedmont Province EV streams fell in the lower quartile of all ranked EV stations. As discussed previously, the use of these lower quartile EV stations is avoided.

**Comment 2:** “Stations 3PC, 2HC, 4PC, 2WB, 3WB, 4WB, and 2MC were compared to the Muncy Creek reference station. The co-petitioners assert that these are not comparable drainage areas. Although the locations drain areas of comparable size, the volume of flow and flow variability for Muncy Creek and the Upper Perkiomen demonstrate considerable differences...”

**Response:** A number of factors must be taken into account when selecting a reference site from the pool of existing EV streams. Drainage area is one such factor. There will never be a perfect match between candidate and reference sites so reference sites with the best fit are selected. In this case, a larger drainage reference site was needed to best match the larger Perkiomen candidate streams. Experience and analyses have shown that the reference and candidate drainage areas are within an acceptable size range.

**Comment 3:** “At DEP’s Muncy Creek reference sampling location, elevations are around 1,200 feet....Peaks in...the Upper Perkiomen may reach over 1,000 feet, but most elevations are in the 400 to 600 foot range.”

**Response:** The elevation differences are not significant enough to affect the reference-to-candidate comparison of biological indices. The important factor is that the comparison was made between two riffle/run freestone type streams.

**Comment 4:** “The co-petitioners question why that portion of the West Branch Perkiomen Creek that is already designated an EV stream....was not used as a reference...”

**Response:** The West Branch Perkiomen Creek station score fell in the lower quartile of EV reference stations and as such, is not considered to be an acceptable reference station.

**Comment 5:** “In addition to Berks County’s Pine Creek, we recommend consideration of one of the many other EV streams found in Berks and Chester Counties. These Include:

1. Sacony Creek, Basin....(Berks)
2. Peters Creek, Basin (Berks)
3. Northkill Creek, Basin...(Berks)
4. Hay Creek, Basin...River Mile 8.1 (Berks)
5. Hay Creek, Basin, Beaver Run to Birdsboro...(Berks)
6. Oysterville Creek, Basin...(Berks)
7. Trout Run, Basin (Berks)
8. French Creek, Basin Source to and including Beaver Run (Chester)
9. French Creek, Main Stem, Beaver Run to Birch Run (Chester)
10. Birch Run, Basin (Chester)
11. French Creek, Main Stem, Birch Run to T522.....”

**Response:** The Department has reviewed EV reference samples that would have been available in February 2008:

1. **Sacony Creek, Basin....(Berks)** – This site has never been used as a reference EV station because samples collected during past water quality assessments scored in the lower quartile of ranked EV stations.
2. **Peters Creek, Basin (Berks)** – This is a limestone/limestone influenced water and, therefore, not appropriate to compare to riffle/run freestone streams.
3. **Northkill Creek, Basin... (Berks)** – Samples collected from this site in 2007 fell in the unacceptable lower quartile.
4. **Hay Creek, Basin...River Mile 8.1 (Berks)** –The upper portion of Hay Creek is not considered for reference purposes because a road parallels much of the riparian zone upstream of this river mile location.
5. **Hay Creek, (Basin, Beaver Run to Birdsboro and 6. Oysterville Creek, Basin ...Berks)** – These sites have never been used as reference EV stations because samples collected during past water quality assessments scored in the lower quartile of ranked EV stations.
7. **Trout Run, Basin (Berks)** – This site has never been sampled as an EV reference due in part to the presence of the reservoir in the basin.
8. **French Creek (Basin, Source to and including Beaver Run and 9. Main Stem, Beaver Run to Birch Run . . . .Chester)** – These sites have been sampled as EV references in the past, but are now considered unacceptable because some results fell into the lower quartile.
10. **Birch Run, Basin (Chester)** – This site has never been sampled as a reference EV station because samples collected during past water quality assessments scored in the lower quartile of ranked EV stations.

11. **French Creek, Main Stem, Birch Run to T522.....**” – This site has never been sampled as a reference EV station because samples collected during past water quality assessments scored in the lower quartile of ranked EV stations.

**Comment 6:** “. . . the differences in topography raise questions as to the suitability of Muncy Creek as a reference stream . . . Stream gradient can be correlated with factors that affect assemblages of macroinvertebrates such as stream flow velocity, substrate material.....When considered in combination with canopy cover, stream gradient has been found to affect food sources which can then affect functional feeding-group composition and density...”

**Response:** Muncy Creek, Pine Creek, and the Upper Perkiomen candidate stations are all considered to be of similar gradient with similar gradient habitat characteristics. The gradient differences are not that significant in that they would appreciably alter the biological indices used in the evaluation.

**Comment 7 (Princeton Hydro):** “. . . the site identified as 1UNTHC, would likely have seen improved habitat quality results and as a result better macroinvertebrate communities had the stations been moved upstream”.

**Response:** The Department understands that stream habitat conditions can be somewhat variable over short distances. However, when siting stations for stream redesignation assessments, the Department chooses locations in an attempt to properly characterize as much of the upstream land use conditions per station as practical. The sampled location of 1UNTHC was properly located to reflect most of this small watershed’s upstream land use conditions. The Biologist doing the sampling selects the best riffle/run habitat in that section of stream.

### **Timing of Samping**

**Comment 8:** “Significant variation in weather conditions during sampling may have affected biological conditions scores and negatively affected the comparisons of candidates to reference streams.”

**Response:** The Department understands that seasonality and varying weather conditions affect biological lifecycles and population conditions. The seasonal transition period of late March that the Co-petitioners reference is characteristic of natural weather variability. However, these biological impacts are less evident during this time of the year as opposed to later in the spring. While biological effects vary between different aquatic organisms, taxon lists from both candidate and reference samples includes representative spring taxa. Further, it is important to note that the biological communities from candidate stations were dominated by more tolerant taxa than reference stations, which can be mostly attributable to land use differences between the candidate and reference stations.

**Comment 9:** “...DEP allowed 43 days to pass between sampling the Upper Perkiomen sites and sampling of the Pine Creek reference stream. For this reason, the co-petitioners question the use of the Pine Creek data...”

**Response:** The Department agrees that the time between candidate sample collection and Pine Creek reference sample collection was greater than preferred. The

Department originally sampled Northkill Creek and Rock Run as “small” EV reference stations to be compared to Upper Perkiomen basin candidate stations. Northkill Creek and Rock Run were sampled within two weeks of the Upper Perkiomen candidate stations. Once these samples were processed and analyzed, it was determined that both of these stations fell in the lower quartile of ranked EV reference stations and therefore, were not acceptable to use as reference stations. This was the reason for a 43 day lag occurred before the new Pine Creek reference station were sampled.

In response to this Co-petitioner comment, an additional evaluation was completed to verify the candidate/reference comparisons. This evaluation confirmed that the Northkill and Rock Run sites did not exceed the lower EV references station quartile cutoff. The Perkiomen sites still did not qualify for EV even when compared to unacceptable low scoring EV reference sites.

### **Analysis of DEP’s Benthic Macroinvertebrate Data**

**Comment 10:** The Co-petitioners provided an analysis of benthic macroinvertebrate data collected from the upper Perkiomen watershed by DEP, Stroud Water Research Center (SWRC), and the Upper Perkiomen High School (UPHS) environmental science program. The Co-petitioners concluded that the SWRC and UPHS Perkiomen data reflects benthic conditions that support their Exceptional Value redesignation request.

**Response:** While the data collected by SWRC and UPHS may indicate good quality stream conditions, it is in context relative to their data collections methods, specimen identification rigor, and water quality scale of the Southeastern streams they sampled. Their results are not applicable to DEP’s HQ qualifying criterion (the integrated benthic macroinvertebrate scoring test described at 25 Pa. Code § 93.4b(a)(2)(i)(A)) because of different data collection methods, identification rigor, and different dataset scale.

### ***Qualifying as High Quality Waters:***

### **Additional Biological Qualifiers**

**Comment 11: (Princeton Hydro expressed similar comments):** “Under 25 Pa. Code §§ 93.4b(a)(2)(ii) [Class A trout qualifier] and 93.4b(b)(1)(vi) [Wilderness Stream qualifier] of the Pennsylvania Code, a stream may qualify for High Quality (HQ) designation or EV designation based on the designation of the stream by Pennsylvania Fish and Boat Commission (PFBC).” . . . “DEP is charged with protecting [“existing”] uses actually attained in the water body on or after Nov. 28, 1975, whether or not they are included in the water quality standards. When data is available demonstrating that a waterbody supports uses in addition to the designated uses, DEP must protect those uses as well. Therefore, the co-petitioners support the protection of streams deserving HQ or EV protection based on trout qualifiers when it can be shown that data collected justify the designation even if the designation had not yet been made by the PFBC following public notice and comment.”

**Response:** The HQ Class A wild trout water and the EV Wilderness trout stream criteria in Chapter 93 incorporates PFBC’s public notice and comment process for these trout stream types in order to qualify for DEP review. If and when Class A or

Wilderness Trout stream classifications are made by PFBC, then DEP will conduct its analysis of the HQ or EV qualifiers.

**Comment 12 :** “The co-petitioners request that DEP consider using the presence of the Pennsylvania endangered and federally threatened bog turtle (*Glyptemys muhlenbergii*) and the Pennsylvania threatened redbelly turtle (*Pseudemys rubriventris*) to designate the Upper Perkiomen, at a minimum, HQ, preferably EV.”

**Response:** 25 Pa. Code Section 93.4c(a)(2) requires implementation of antidegradation in a manner that protects endangered or threatened Federal or Pennsylvania species in or on a surface water, regardless of the surface water classification. Under the regulation, the Department is required to ensure protection of the species and critical habitat. Therefore, endangered or threatened species classification is not a qualifier in Chapter 93 for HQ or EV designation.

**Comment 13:** “DEP may consider not only biological but also chemical data for an antidegradation assessment . . . . Given the water quality data submitted with the Petition, DEP could have chosen to collect water chemistry data for the Upper Perkiomen for comparison against the Muncy Creek reference site . . . The co-petitioners recommend that DEP consider collecting at least one year of water chemistry data for the candidate streams in the Petition before making any recommendations.”

**Response:** The Department agrees that long-term water quality data can qualify streams for HQ redesignation and that the limited data the Co-petitioners presented, albeit short of a ‘long-term’ dataset, reflects good water quality. It is a time and resource-intensive effort to meet this ‘long-term’ based water chemistry criterion (25 Pa. Code Section 93.4b.(a)(1)(i) “. . . based on at least 1 year of data which [is] . . . better than the water quality criteria . . . at least 99% of the time for the following parameters: dissolved oxygen, temperature, pH, ammonia, and” several selected metals). The Department does not routinely conduct a long-term water chemistry survey on most stream redesignation candidate streams because of staffing limitations and analytical costs.

***Qualifying as Exceptional Value Waters.*** (With the exception of the Exceptional Ecological Significance EV criterion, the candidate stream must be or qualify as HQ waters as a prerequisite for all the other EV criteria)

### **National Significance**

**Comment 14:** Co-petitioners believe that federal government has demonstrated an interest in real estate and implementation of sound land use practices that meets the requirements of 25 Pa. Code section 93.4b(b)(iii) based on federal funding spent under the federal Highlands Conservation Act of 2004.

**Response:** Under the Highlands Conservation Act, a “land conservation partnership project” requires that a non-Federal entity acquire land or an interest in land to permanently protect the land through a partnership with the Federal Government. Although Pennsylvania’s Department of Conservation and Natural Resources may hold a real estate interest in a project located within the Highlands region, the project is not situated in manner that offers water quality protective measures to any significant reach of Perkiomen Creek.

## **State Significance**

**Comment 15:** The presence of DCNR-owned lands provides the foundation for a Conservation Landscape Initiative. In addition to the DCNR-owned lands such as French Creek in the western part of the Schuylkill Highlands, DCNR holds an easement on land that is partially in the West Branch Perkiomen (the easement is held by DCNR, but administered by the Berks County Conservancy).

**Response:** There are no DCNR-owned lands that are oriented in a manner to offer water quality protective measures to the Upper Perkiomen watershed.

## **Regional Significance and Exceptional Ecological Significance**

**Comment 16:** In references to the Schuylkill Highlands Partnership, the two 2001 Schuylkill Watershed and Upper Perkiomen Creek Watershed Conservation Plans, and the Pennsylvania Natural Areas Inventory, the Co-petitioners affirm the local and regional interest in “Conserving, protecting, and stewarding lands, watersheds, greenways and habitats through conservation of . . . the region’s most critical habitat and watershed headwaters and stewardship of the key natural resources.” They note that much of the Upper Perkiomen has high habitat value and preservation interest. Further, the Co-petitioners assert that the surface waters of the Upper Perkiomen streams, riparian areas, and associated wetlands have Regional and Exceptional Ecological Significance because they are intricately linked to lands on the Pennsylvania Natural Areas Inventory and support the survival of a number of species of concern.

**Response:** First, except for the EV classification as “exceptional ecological significance,” all of the other EV criteria have the prerequisite of being or qualifying as High Quality waters in order to be considered. As noted in the petition report, those non-HQ portions of the Upper Perkiomen watershed do not qualify as HQ to date. Second, to qualify as an EV outstanding regional resource water, Chapter 93 requires regional or local governments to have adopted coordinated water quality protective measures along a watershed corridor. “Coordinated water quality protective measures” are defined as sound land use water quality protected measures “coupled with” an interest in real estate. Real estate interests were examined and there were no real estate interests held by a regional government. With regard to whether any of the plans or inventories demonstrate exceptional ecological significance, the Department agrees that portions of the Upper Perkiomen watershed and Natural Areas have good land habitat qualities as referenced above, but it was further determined that none of these cited areas have unique ecological conditions that precludes the use of traditional water quality parameters (for example chemical, physical or biological) from adequately characterizing the protective water quality uses of the Upper Perkiomen. Based on the information provided, the exceptional ecological significance qualifier has not been met.



## **Local Significance**

**Comment 17:** DEP looked only at municipally-owned land, but the use of the word “government owned” to qualify riparian parks or natural areas suggests that preserved interests in land that protect the watershed need not be government owned.

**Response** First, except for the EV classification as “exceptional ecological significance”, all of the other EV criteria have the prerequisite of being or qualifying as High Quality waters in order to be considered. As noted in the petition report, those non-HQ portions of the Upper Perkiomen watershed do not qualify as HQ to date. Second, any easements associated with the Wildlands Conservancy or the Berks Conservancy in the Upper Perkiomen watershed are mostly privately held. Easements which identify the holder or the successive holder as a local government are not located within the Perkiomen watershed. To qualify as an outstanding local resource water, Chapter 93 requires regional or local governments to have adopted coordinated water quality protective measures along a watershed corridor. “Coordinated water quality protective measures” are defined as sound land use water quality protected measures “coupled with” an interest in real estate.

**Comment 18:** Appendix E documents the Upper Perkiomen Valley Park and Recreation Amenities which provides a map with general information about public open space, private recreational lands and trails—all lands with the potential to enhance water quality in the Upper Perkiomen. Also, there are eighteen acres of preserved land owned by Lower Milford Township in the Upper Perkiomen.

**Response:** See responses #16 and #17. The above mentioned petitioned lands did not meet the same HQ qualifying prerequisite and outstanding local resource water requirements referenced in these responses #16 and 17

**Comment 19:** There are two State Game Lands parcels located within the Upper Perkiomen

**Response:** The State Game Lands referred to in the petition are not oriented in a way to provide water quality protection to Perkiomen Creek.

**Comment 20:** The majority of municipalities in the Upper Perkiomen have adopted subdivision and land development ordinances and storm water management and land disturbance ordinances to protect lands within their jurisdictions. In 2012, Longswamp Township adopted a well protection ordinance with provisions for water conservation and to protect water quality.

**Response:** Although the protective measures provided by these townships will enhance water quality protection, the regulations require that such measures be “coupled with” an interest in real estate, as described at 25 Pa. Code section 93.1. Definitions—“Coordinated water quality protective measures.”