PETITION TO UPGRADE ZONES 3 AND 4 OF THE DELAWARE RIVER TO INCLUDE RESIDENT AND MIGRATORY FISH PROPAGATION

I. PETITIONER INFORMATION

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II. PETITION INFORMATION

A. The petitioner requests the Environmental Quality Board to amend a regulation (citation 25 Pa. Code § 93.9e).

The Delaware Riverkeeper Network (DRN) requests that the Environmental Quality Board (EQB) and the Department of Environmental Protection (Department) upgrade the existing and designated uses of Zones 3 and 4 of the Delaware River, River Miles 78.8-108.4, to include fish propagation for the warm water fishes (WWF) use and fish maintenance and propagation for the migratory fishes (MF) use. DRN's suggested regulatory language is to amend 25 Pa. Code § 93.9e as follows:

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
1—Delaware Estuary	Tidal Portions of Basin, RM 108.4 to Big Timber Creek (NJ)	Philadelphia	WWF ~~(Maintenance Only)~~; MF ~~(Passage Only)~~; ***Delete*** WC	See DRBC regulations—Water Quality Zone 3

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1—Delaware Estuary	Tidal Portions of Basin, Big Timber Creek (NJ) to Philadelphia- Delaware County Border	Philadelphia-Delaware	WWF ~~(Maintenance Only)~~; MF ~~(Passage Only)~~; N Delete WC, PWS, LWS and IRS	See DRBC regulations—Water Quality Zone 4

For clarification, the only proposed amendments to 25 Pa. Code § 93.9e are to strike "(Maintenance Only)" from the WWF use and "(Passage Only)" from the MF use in the Water Use Protected column. Currently, the water uses that are identified for Zones 3 and 4 do not protect resident fish propagation or migratory fish maintenance and propagation.[1]

DRN also requests that the Department update its Existing Use List[2] to reflect that the existing uses of Zones 3 and 4 of Delaware River include the full WWF (maintenance and propagation) use and the full MF (passage, maintenance and propagation) use.

B. Why is the petitioner requesting this action from the Board? (Describe problems encountered under current regulations and the changes being recommended to address the problems. State factual and legal contentions and include supporting documentation that establishes a clear justification for the requested action.)

DRN submits this petition to upgrade the existing and designated uses of Zones 3 and 4, River Mile 78.8-108.4, of the Delaware River to include resident fish propagation and migratory fish maintenance and propagation. Currently, Zones 3 and 4 of the Delaware River have the designated use of WWF maintenance only and MF passage only.[3] However, data clearly demonstrate that resident and migratory fish propagation is occurring in Zones 3 and 4, necessitating the EQB's and the Department's recognition that the existing and designated use for these zones is **WWF maintenance and propagation** and **MF passage, maintenance and propagation**. Findings by the Delaware River Basin Commission's (DRBC) staff, the Environmental Protection Agency (EPA) Regions 2 and 3, and the Department itself support upgrading these existing and designated uses.

[1] See 25 Pa. Code § 93.9e.
[2] Per the Department's website "The department maintains a publicly accessible list of surface water segments where data has been evaluated that indicates an existing use classification of a waterbody that is more protective than the designated use (including those segments which are HQ or EV). The list is maintained and updated by the Bureau of Clean Water and will be used by DEP and county conservation district staff with responsibility to protect surface water quality in reviewing requests for permits and approvals. Only an existing use that is more stringent than the designated use in 93.9a - 93.9z for a particular waterbody is placed on the existing use list." (http://www.dep.pa.gov/Business/Water/CleanWater/WaterQuality/Pages/ExistingUse.aspx)
[3] 25 Pa. Code § 93.9e. (Drainage List E).

Importantly, the Department's regulatory scheme also mandates that these upgrades be made as it requires time-to-time upgrade of existing and designated uses.[4] Specifically, the regulations require that:

> Existing use protection shall be provided when the Department's evaluation of information (including data gathered at the Department's own initiative, data contained in a petition to change a designated use submitted to the EQB under §93.4d(a) (relating to processing of petitions, evaluations and assessments to change a designated use), or data considered in the context of a Department permit or approval action) indicates that a surface water attains or has attained an existing use.[5]

By definition, existing water uses are those actually attained by the waterbody whether or not they are listed in the regulations.[6] All of the water uses listed in 25 Pa. Code § 93.3 are protected as existing uses. These water uses include warm water fishes, migratory fishes, trout stocking (TSF), cold water fishes (CWF), as well as others designed to protect water supply, recreation, and special protection waterways.[7] Existing water uses are protected on a waterbody segment when the Department makes a decision to issue or deny a permit or approval request for an activity that may impact the use.[8] Specifically, existing uses are protected during the Department's antidegradation review of a permit or approval request whereby the Department is required to ensure that the "[e]xisting instream water uses and the level of water quality necessary to protect the existing uses" are protected and maintained. [9] For example, when a facility applies for a discharge permit from the Department, the Department must review the pollutants in the facility's discharge to ensure that the existing uses of the receiving waterbody (like WWF, MF, CWF and/or potable water supply) are not degraded.

Designated uses, conversely, are water uses for each water body identified in 25 Pa. Code § 93.9a-93.9z, whether or not they are being attained. Designated uses may be thought of as water quality goals and expectations for how each water body is to be used. Department regulations mandate that "designated surface water uses shall be protected" in addition to existing uses.[10] If the designated use becomes impaired, in that the use is no longer being met, the Department then must begin the process of implementing a total maximum daily load, which requires assignment of wasteload allocations to point source discharges and load allocations to nonpoint sources so that designated use can be recovered.[11] In some circumstances, while a designated use may be made less stringent or protective through rulemaking, it may not be lowered to a use that is less stringent than the existing use for the water.[12]

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[4] See 25 Pa. Code § 93.4c.(a).
[5] 25 Pa. Code § 93.4c(a)(1)(i).
[6] 25 Pa. Code § 93.1.
[7] 25 Pa. Code § 93.3.
[8] 25 Pa. Code § 93.4c(a)(1)(i).
[9] 25 Pa. Code § 93.4a(b); 40 C.F.R. 131.12(a)(1).
[10] 25 Pa. Code § 96.3(a).
[11] See 25 Pa. Code § 96.1 - 4.
[12] See PA DEP's Water Quality Antidegradation Implementation Guidance (Nov. 28, 2003, Doc. No. 391-0300-002), p. 6.

Furthermore, this proposed upgrade of Zones 3 and 4 of the Delaware River is supported by Article I, Section 27 of the Constitution, which provides:

> The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.[13]

As identified below, the data demonstrate that both resident and migratory fish are propagating in Zones 3 and 4 of the Delaware River. Thus, the Department must recognize this propagation by upgrading the existing and designated uses of those reaches to conserve and maintain the Commonwealth's natural resources as required under Article I, Section 27 of the Commonwealth's Constitution, the federal Clean Water Act and the Pennsylvania Clean Streams Law.

The Data Clearly Demonstrate that Resident and Migratory Fish Propagation is Occurring in Zones 3 and 4 of the Delaware River

In 2013, DRN[14] submitted a petition to the DRBC requesting it to upgrade the designated uses of Delaware River Estuary Zones 3, 4, and River Miles 78.8 to 70.0 of Zone 5 to include, among other things, propagation of fish. As outlined in DRN's Upgrade Petition, data gathered by the Public Service Enterprise Group (PSEG) as well as other research on anadromous fish species demonstrate that resident fish and other aquatic life populations are propagating in these zones. See DRN Upgrade Petition at p. 5-9, enclosed as Attachment 1.

As a result of the DRN's upgrade petition, DRBC staff evaluated whether propagation was occurring in these zones and summarized its findings in its September 30, 2015 report entitled "Existing Use Evaluation for Zones 3, 4, & 5 of the Delaware Estuary Based on Spawning and Rearing of Resident and Anadromous Fishes" (DRBC Existing Use Report), enclosed as Attachment 2.[15] DRBC's Existing Use Report relied on data from PSEG Nuclear Generating Station's robust 2002-2004 ichthyoplankton surveys, New Jersey Div. of Fish and Wildlife's Delaware Estuary beach seine surveys, and Delaware Div. of Fish and Wildlife's juvenile Atlantic sturgeon sampling.[16] Additionally, to complete their review of the data, DRBC staff coordinated with fishery biologists at the Delaware River Basin Fish and Wildlife Cooperative technical committee and with fishery biologists from Delaware, New Jersey and Pennsylvania.[17] The DRBC Existing Use Report's key findings are that:

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[13] Pa. Const. Art. I, § 27.
[14] The Delaware River Shad Fishermen's Association and the Lehigh River Stocking Association we co-petitioners on the Upgrade Petition.
[15] The DRBC Existing Use Report evaluated White Perch, a resident fish species, and Atlantic Sturgeon, Striped Bass, American Shad, Blueback Herring, Alewife, Atlantic Menhaden, Bay Anchovy and Atlantic Silverside, all migratory or marine/estuarine species (note: White Perch is sometimes characterized as semi-migratory).
[16] DRBC Existing Use Report, pp. 6-8.
[17] DRBC Existing Use Report, p. 11.

- "Successful 'propagation' in Zones 3, 4, and upper Zone 5 of the Delaware Estuary is clearly supported by the three primary data sources evaluated in this report."[18]

- "The 'Existing Use' for Zones 3, 4, and upper Zone 5 . . . substantially exceeds the 'designated use' of only 'maintenance.'"[19]

- "DRBC staff recommends that partial restoration of the 'propagation' use be recognized as the existing use for Zones 3, 4, and upper Zone 5 of the Delaware Estuary."[20]

DRBC's recommendation of a partial propagation standard is based on the premise that propagation could be stronger for a few of the species reviewed. Nonetheless, DRBC recognizes that "[f]or all species evaluated, successful reproduction was clearly demonstrated in one or more of the compromised estuary zones . . ." and that "moderate to strong reproduction was demonstrated for multiple species in each zone indicating substantial recovery in the 'propagation' use for Zones 3, 4, and upper Zone 5."[21] Thus, DRBC's findings clearly demonstrate that fish propagation is now occurring and that the existing use of Zones 3 and 4 of the Delaware River is **WWF maintenance and propagation** as well as **MF passage, maintenance, and propagation**.

EPA Regions 2 and 3 confirm that the existing use in Zones 3 and 4 must be upgraded to include propagation. In their comments on the DRBC Existing Use Report, EPA stated:

> With respect to maintenance and propagation of aquatic life, the [DRBC] report indicates that the full Clean Water Act Section 101(a)(2) use exists in Zones 3, 4, and upper Zone 5 of the Delaware estuary. The report states that, for all nine fish species evaluated, successful reproduction was clearly demonstrated. Demonstration of propagation, even if "weak and inconsistent" and spatially limited, is nonetheless demonstration of this existing use.[22]

EPA further advised,"[i]n conducting a use evaluation, it is important to address the most sensitive aquatic life species to which the maintenance and propagation use applies in order to ensure subsequent promulgation of Water Quality Criteria is truly protective of the designated use."[23] Thus, protecting the most sensitive aquatic life species requires the Department to recognize that propagation is occurring and is an existing use in these zones of the river.

Lastly, PADEP's own staff recognizes that propagation is occurring in these zones. During PADEP's March 24, 2016 presentation to its Water Resources Advisory Committee

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[18] DRBC Existing Use Report, p. 30.
[19] DRBC Existing Use Report, p. 32.
[20] DRBC Existing Use Report, p. 1.
[21] DRBC Existing Use Report, p. 1.
[22] EPA Regions 2 and 3 Comments on DRBC Existing Use Report, January 15, 2016 email from Angela McFadden, on behalf of Evelyn MacKinght, Associate Director, Office of Standards, Assessment, and TMDLs, Water Protection Division, EPA Region 3, to Tom Fikslin of DRBC. Enclosed as Attachment 3.
[23] Id.

(WRAC), PADEP staff provided a summary of its proposed rulemaking regarding its triennial review of water quality standards, stating "[t]here is new evidence that strongly indicates fish propagation has improved for several key species in portions of the Delaware Estuary, and that the warm water use (WWF) should be restored."[24]

There is demonstrated and uniform agreement among DRBC staff, EPA Regions 2 and 3 and the Department's staff that propagation is occurring in Zones 3 and 4 of the Delaware River. This position is the result of significant and verified scientific findings. As such, during the EQB's review it must determine that propagation is the existing and/ or designated use of these zones. A failure to do so would violate the Pennsylvania Clean Streams Law, the federal Clean Water Act and the Pennsylvania Constitution.

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

Most persons, businesses, and organizations in and around Zones 3 and 4 of the Delaware River will benefit from this upgrade. Some of the benefits include increased fish landings, improved fishing, hunting, and bird/wildlife viewings, and increased property values.

A recognition that fish propagation is occurring in these zones will safeguard and increase fish populations as the Department will be required to ensure that propagation is maintained and protected when the Department issues a permit or takes an approval action.[25] The annual value of fish landings in the tidal Delaware River and Bay has been calculated as $25.4 million in year 2000 dollars or $34.1 million in 2010 dollars.[26] Striped Bass alone, a species identified as having regular evidence of successful reproduction in Zones 3 and 4,[27] has a value of $2.3 million per year.[28] As fish populations grow, fish landings will increase as well.

With increased fish populations and landings, improved fishing, hunting, and bird/wildlife viewings can reasonably be expected. According to Kauffman's report on the Socioeconomic Value of the Delaware River Basin:

> In Delaware, New Jersey, New York, and Pennsylvania, the U. S. Fish and Wildlife Service (2008) estimated the annual economic value of fishing, hunting, birding and wild-life/bird watching recreation was $9.2 billion in $2006. Trip-related expenditures include food and lodging, transportation, and hunting, fishing, and wildlife watching equipment. Most fishing, hunting, and birding/wildlife recreation occurs on farm, forest, wetlands, and open water ecosystems such as the Prime Hook and Bombay Hook National Wildlife Refuges

[24] The Department's summary of its 2016 Triennial Review of Water Quality Standards recommendations (a.k.a. TR17 Proposed Rulemaking) presented to the Department's Water Resources Advisory Committee on March 24, 2016, p. 2. Enclosed as Attachment 4.
[25] See 25 Pa. Code §§ 93.4a and 93.4c.
[26] Kauffman, G. (October 11, 2011). Socioeconomic Value of the Delaware River Basin in Delaware, New Jersey, New York, and Pennsylvania, p. 44 ("Kauffman Report"). Enclosed as Attachment 5.
[27] DRBC Existing Use Report (Attachment 2), see p. 17-18
[28] See Kauffman Report (Attachment 5), p. 44.

> in Delaware, the Cape May National Wildlife Refuge and Pine Barrens National Reserve in New Jersey, the Catskill Mountain Preserve in New York, the Delaware Water Gap National Recreation Area in Pennsylvania, and on the Delaware River and Bay and tributaries as well.[29]

In particular, recreational opportunities and wildlife viewing may be enhanced at the John Heinz National Wildlife Refuge. The refuge is a tremendous natural area that is home to many migratory birds and native fish. It is America's First Urban Refuge and was established in 1972 for the purpose of preserving, restoring, and developing the natural area known as Tinicum Marsh, to promote environmental education, and to afford visitors an opportunity to study wildlife in its natural habitat. This national refuge, one of 548 throughout the entire nation, protects the largest remaining freshwater tidal marsh in PA. This marsh is a vital feeding and resting place for birds migrating along the Atlantic Flyway. The refuge also provides diverse habitats for a wide range of wildlife, from deer to butterflies and fish to eagles. The refuge provides a welcome break from the busy urban setting of the metropolitan Philadelphia area and environmental education opportunities to thousands of area students. A canoe trail also flows through the Darby Creek and wetlands complex of the refuge that provides additional recreational opportunities.[30]

Additional recreational opportunities and wildlife viewing may occur along the Tidal Delaware Water Trail, a 56 mile trail with public access to the Delaware River, stretches from Trenton, New Jersey to Marcus Hook, Pennsylvania. One of 25 designated Pennsylvania Water Trails, the Tidal Delaware is a hub of environmental features, historic resources, and recreational activities for Pennsylvania and New Jersey.

Increased property values are also expected by upgrading Zones 3 and 4 to include fish propagation. By protecting fish propagation, improved water quality will follow with the Department's enforcement of its antidegradation regulations to maintain and protect propagation. Improved water quality can increase the property values of nearby communities. Per Kauffman:

> Several studies along rivers, estuaries, and coasts throughout the United States indicate that improved water quality can increase shoreline property values by 6% to 25% (Table 17). The EPA (1973) estimated that improved water quality can raise property values by up to 18% next to the water, 8% at 1000 feet from the water, 4% at 2000 feet from the water, and 1.5% at 3000 feet from the water. Leggett, et al. (2000) estimated that improved bacteria levels to meet state water quality standards along the western shore of the Chesapeake Bay in Maryland raised shoreline property values by 6%. The Brookings Institution (2007) projected that investments of $26 billion to restore the Great Lakes would increase shoreline property values by up to 10%. For this analysis, shoreline property values within 2000 feet of the waterways are estimated to increase by an average of 8% due to improved water quality in the Delaware Estuary.[31]

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[29] Kauffman Report, p. 50.
[30] See generally https://www.fws.gov/refuge/John_Heinz/about.html.
[31] Kauffman Report, p. 35.

Finally, as the federal Clean Water Act and the Pennsylvania Clean Streams Law require that those uses actually attained in a waterbody (an "existing use") be protected and maintained,[32] any adverse impact to NPDES dischargers potentially affected by this upgrade has already been contemplated by the U.S. Congress and the PA legislature when they passed the laws that call for iterative improvement in the quality of the Commonwealth's surface waters.

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

No, to our knowledge, the action requested in the petition does not concern a matter currently in litigation.

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.

DRN requests that the existing and designated uses of Zones 3 and Zones 4 of the Delaware River, River Mile 78.8 to 108.4, be upgraded to WWF maintenance and propagation and MF passage, maintenance, and propagation.

A map of the Delaware River Basin Commission's Delaware River Main Stem Interstate Zones has been provided to identify the location of Zones 3 and 4 of the Delaware River. The map is enclosed as Attachment 6.

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

The current designated uses of the Zone 3, RM 95.0 to 108.4, of the Delaware River is Warm Water Fishes (Maintenance Only); Migratory Fishes (Passage Only); with a notation to delete Water Contact Sports. See 25 Pa. Code § 93.9e (Drainage List E).

The current designated uses of the Zone 4, RM 78.8 to 95.0, of the Delaware River is Warm Water Fishes (Maintenance Only); Migratory Fishes (Passage Only); and Navigation; with a notation to delete Water Contact Sports, Potable Water Supply, Livestock Water Supply and Irrigation. See 25 Pa. Code § 93.9e (Drainage List E).

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

DRN requests that the existing and designated uses of Zones 3 and Zones 4 of the Delaware River, River Mile 78.8 to 108.4, be upgraded to WWF maintenance and propagation and MF passage, maintenance and propagation.

[32] 25 Pa. Code § 93.4a; 40 C.F.R. 131.12(a)(1).

DRN also requests that the Department update its Existing Use List to reflect that the existing uses of Zones 3 and 4 of Delaware River include WWF maintenance and propagation and MF passage, maintenance and propagation.

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.

The data sources investigated, some of which are identified and referenced in section II.B. above, include:

- PSEG's 2002-2004 ichthyoplankton surveys submitted as part of the Biological Monitoring Program at its Salem Nuclear Generating Station facility. The ichthyoplankton surveys are included in this petition.[33]

- PSEG's 2000-2009 dissolved oxygen measurements which were included in its Baywide Finfish Monitoring surveys, which were also submitted as part of the Biological Monitoring Program at its Salem Nuclear Generating Station facility.[34]

- Delaware Department of Natural Resources and Environmental Control's (DNREC) data regarding the presence of Atlantic sturgeon[35] and researchers' publications on sturgeon spawning habitat[36] and juvenile tracking[37].

- DRBC Staff's summary of Dissolved Oxygen Data from 2000 to 2014 from USGS Sensors at the Ben Franklin Bridge (01467200) and Chester, PA (01477050).[38]

[33] See DRN's Upgrade Petition, Appendix A (Attachment 1). See also DRBC's Existing Use Report, Appendix D (Attachment 2).
[34] See DRN's Upgrade Petition, Appendix B (Attachment 1).
[35] See DRN's Upgrade Petition, p. 8 (Attachment 1).
[36] See DRN's Upgrade Petition, p. 8 (Attachment 1). The specific citation is Philip C. Simpson & Dewayne A. Fox, Del. State Univ., Completion Report: Award NA05NMF4051093, Atlantic sturgeon in the Delaware River: Contemporary Population Status and Identification of Spawning Areas (2006).
[37] See DRN's Upgrade Petition, p. 8 (Attachment 1). The specific citation is Matthew Fisher, Delaware DNREC, Atlantic Sturgeon Final Report: State Wildlife Grant, Project T-4-1 10 (2011), note 10, at 15-16 (noting usage of Marcus Hook by late stage juveniles); Dewayne A. Fox & Matthew W. Breece, Del. State Univ., NOAA Award NA08NMF4050611, Atlantic sturgeon (Acipenser oxyrinchus oxyrinchus) in the New York Bight DPS: Identification of Critical Habitat and Rates of Interbasin Exchange 13 (2010), note 10, at 25, 29-30 (suggesting spawning in the vicinity of Marcus Hook may have been overlooked); Delaware DNREC, Award No. NAI0NMF4720030, Semi-annual Progress Report 3 (Jan. 2012) (noting capture of 48 young-of- year at Marcus Hook).
[38] See DRBC Existing Use Report, Appendix B (Attachment 2).

- The New Jersey Division of Fish and Wildlife, Bureau of Marine Fisheries, Beach Seine Surveys from 1980 to 2013.[39]

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.

Zones 3 and 4 of the Delaware River have approximately 49 active or inactive point source discharge facilities holding NPDES permits. The types of discharges include industrial waste, municipal sewage, municipal separate storm sewer system (MS4), and industrial stormwater. The information presented below was collected using the Department's list of NPDES dischargers.[40]

NPDES Permit Number	Facility Name	County
Industrial Waste NPDES Permits		
PA0012882	PHILA GAS WORKS	Philadelphia
PA0013021	PQ CORP	Delaware
PA0013081	KIMBERLY CLARK OF PA LLC	Delaware
PA0013714	EXELON GENERATION CO LLC	Delaware
PA0036447	NAVAL SURFACE WARFARE CTR	Philadelphia
PA0057479	RHOADS IND INC	Philadelphia
PA0057690	AKER PHILA SHIPYARD	Philadelphia
PA0244449	FPL ENERGY MARCUS HOOK LP	Delaware
PA0011096	SUNOCO PARTNERS MKT & TERM LP	Delaware
PA0011533	Philadelphia Energy Solutions (PES), Girard Point refinery	Philadelphia
PA0012629	Philadelphia Energy Solutions (PES), Point Breeze refinery	Philadelphia
PA0012637	Monroe Energy, Trainer Refinery	Delaware
PA0051713	Evonik Degussa Corporation	Delaware
Municipal Sewage NPDES Permits		
PA0026662	PHILA WATER DEPT	Philadelphia
PA0026671	PHILA WATER DEPT	Philadelphia
PA0026689	PHILA WATER DEPT	Philadelphia

[39] See DRBC Existing Use Report, pp. 7-8 and 45-60 (Attachment 2).
[40] Available here: http://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx

PA0027103	DELCORA	Delaware
PA0028380	TINICUM TWP DELAWARE CNTY	Delaware

MS4 Municipal SW NPDES Permit

PA0054712	Philadelphia Water Dept.	Philadelphia

PAG-03 General NPDES Permits for Storm Water Associated with Industrial Activities

PAG030018	NAVAL FOUNDRY & PROPELLER CTR	Philadelphia
PAR200005	FISHER TANK CO	Delaware
PAR230043	DICKLER CHEMICAL LABORATORIES	Philadelphia
PAR230044	ASHLAND CHEMICAL CO	Philadelphia
PAR230089	UNITED COLOR MFG INC	Philadelphia
PAR230097	MAJESTIC PROD LLC	Delaware
PAR600030	ORTHODOX AUTO CO INC	Philadelphia
PAR600114	ANGEL MARTINEZ DBA CLEARFIELD RECYCLING	Philadelphia
PAR600115	KUUSAKOSKI PHILADELPHIA LLC	Philadelphia
PAR800067	WASTE MGMT OF PA INC	Philadelphia
PAR800088	CSX INTERMODAL-GREENWICH YARD	Philadelphia
PAR800099	AIRCRAFT SVC INTL GROUP	Delaware
PAR800146	REPUBLIC SVC INC	Philadelphia
PAR800154	CSX INTERMODAL INC	Philadelphia
PAR800158	GREENWICH TERM LLC	Philadelphia
PAR800170	WESTWAY TERMINAL CO LLC	Philadelphia
PAR120002	DIETZ & WATSON INC	Philadelphia
PAR140016	KIMBERLY-CLARK CORP	Delaware
PAR150006	LAWRENCE-MCFADDEN CO	Philadelphia
PAR600028	CIMCO TERMINALS INC-CAMDEN IRO	Philadelphia
PAR600034	JIMMIES AUTO PARTS	Philadelphia
PAR600039	MORRIS IRON & STEEL CO INC	Philadelphia
PAR600042	PHILADELPHIA CITY POLICE DEPT	Philadelphia
PAR800019	CROWLEY AMERICAN TRANSPORTATIO	Philadelphia
PAR800030	ABF FREIGHT SYSTEM INC	Delaware
PAR800055	CONSOLIDATED FREIGHTWAYS	Philadelphia

	INC	
PAR900002	DELAWARE CO REGIONAL WATER QUA	Delaware
PAR900015	SOIL REMEDIATION SYSTEMS INC	Delaware

PAG-10 General NPDES Permits for Discharges from Hydrostatic Testing of Tanks and Pipelines

PAG100036	WESTWAY TERMINAL CO LLC	Philadelphia

PAG-13 General NPDES Permits for MS4 Municipal Stormwater

PAG130071	MARCUS HOOK BORO DELAWARE CNTY	Delaware

The nonpoint source discharges in Zone 3 and 4 of the Delaware River include roads and parking lots (discharging hydrocarbons, heavy metals and road salt), lawns (discharging fertilizers, pesticides, pet waste), and other stormwater management facilities.

Discharges from point and nonpoint sources can adversely impact water quality and the aquatic community. For example, nutrients, like nitrogen and phosphorus, in "concentrations above natural background levels can lead to shifts in the algal community that can affect aquatic life and promote growth of excessive amounts of algae. Excessive algae growth (algal blooms) causes streams to be esthetically unpleasant as well as causing large biomass accumulations that lead to nocturnal oxygen depletion that can negatively affect fish and macroinvertebrates."[41]

Heated stormwater runoff from pavement and hard surfaces can wash in contaminants and cause thermal impacts to the River. Improper erosion and sedimentation controls on the land or exacerbated flooding due to impervious conditions causing bank downcutting and entrenchment and bank erosion during storms can lead to sediment pollution/TSS/turbidity and runoff that can further impact temperature in the water column and create possible adverse impacts to aquatic life. Maintenance dredging is also a source of sediment disturbance and potential disruption of contaminants present in the river bottom. Sedimentation has serious consequences for the benthic invertebrates and fish species whose vitality is crucial for healthy aquatic ecosystems. There have been documented reductions in benthic invertebrate densities, changes to the structure of aquatic communities, changes in fish foraging behavior, reductions in the availability of food, and increases in fish egg mortality rates.[42]

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**.

[41] USGS (2009). Nutrient Enrichment Study from the Upper, Middle, and Lower Sections of the Non-tidal Delaware River, p. 1 (available here: https://pubs.usgs.gov/ds/ds555/ds555.pdf).
[42] James Norman, et al., *Utility Stream Crossing Policy*, ETOWAH AQUATIC HABITAT CONSERVATION PLAN, July 13, 2008, at 9-10.

This section is not applicable to DRN's petition because DRN is not petitioning to upgrade Zones 3 and 4 of the Delaware River main stem to High Quality or Exceptional Value.

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).**

The city of Philadelphia is heavily developed. Approximately 50% of the city's land area is zoned for single-use residential buildings, 24% of the city's land area is zoned is industrial, 7.4% of the city's land area is zoned for mix-use commercial, and parks and open space cover about 13.5% of the city's zoned land area.[43]

The land use in the municipalities in Delaware County that border the Delaware River (Tinicum Township, Ridley Township, Eddystone Borough, Chester City, Trainer Borough, and Marcus Hook Borough) is largely industrial, commercial and/or residential. There are, however, a number of public lands, like Henry Johnson Park (Trainer Borough), Crozer Park (Chester City), and John Heinz National Wildlife Refuge (Tinicum Township) which provide great recreational opportunities for those citizens in the area.

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

Philadelphia County (1)
City of Philadelphia
James Kenney, Mayor
City Hall, Office 215
Philadelphia, PA, 19107

Delaware County (6)
Tinicum Township
David D Scheiber, Township Manager
629 N Governor Printz Blvd.
Tinicum Township, PA 19029

Ridley Township
Ed Pisani, Township Manager
100 MacDade Boulevard
Folsom, PA 19033

Eddystone Borough
Allen Reeves, Jr., Mayor
1300 East 12th Street
Eddystone, PA 19022

City of Chester
Thaddeus Kirkland, Mayor
1 E. 4th St.,
Chester, PA 19013

[43] See http://planphilly.com/articles/2015/09/11/what-percentage-of-philly-s-land-area-do-the-different-zoning-categories-cover. Further information on Philadelphia's land use can be found here: http://phila2035.org/wp-content/uploads/2011/06/summaryVision.pdf, see p. 9.

Trainer Borough
Fran Zalewski, Mayor
824 Main Street
Trainer, PA 19061

Marcus Hook Borough
Gene Taylor, Mayor
Municipal Building
10th and Green St.
Marcus Hook, PA 19061