FINDING OF NO SIGNIFICANT IMPACT
FAIRMOUNT DAM FISH LADDER PROJECT
SECTION 1135, IMPROVEMENTS TO THE ENVIRONMENT
PHILADELPHIA COUNTY, PENNSYLVANIA

OVERVIEW

The United States Army Corps of Engineers has evaluated the reconstruction of the Fairmount Fish Ladder on the Schuylkill River in Philadelphia, Pennsylvania.

PURPOSE AND SPECIFICATIONS

The goal of the Fairmount Dam Fish Ladder Project is to significantly increase the ladder's efficiency through a redesigning and reconstruction of the structure to allow for passage of American shad, as well as other anadromous, catadromous and resident finfish species. This project is one of many fish passage projects that are to provide access to spawning and rearing habitat for migratory fish on the Schuylkill River. The Fairmount Dam fish ladder, as the most downstream passageway, is especially critical to the overall success of restoring fish passage on the Schuylkill River and its tributaries. All upstream work will be affected by the success or failure of the Fairmount Dam fish ladder at passing migratory species during spawning runs. The improvement to the ladder will be accomplished through renovations, the construction of additions to the existing ladder as well as modification of the design to allow American shad to proceed unimpeded through the ladder to the greatest extent possible so as to reach historic spawning and foraging areas upstream.

Many anadromous and catadromous fish spawning runs located throughout the Mid-Atlantic States have been lost through the construction of dams that are impassable to migratory fish. One such dam is the Fairmount Dam, which prevented passage of migratory species from 1818 until 1979. Starting in 1977 and continuing into 1978 a fish ladder was constructed on the western side of the Fairmount Dam. The original Fairmount fish ladder was completed and operational in 1979.

Great improvements in fishway technologies have been realized in the past 20 years since the Fairmount ladder was constructed. Better understanding of species needs for effective passage and structural modifications to increase efficiency are far more advanced than when the Fairmount ladder was originally constructed. Presently the ladder is operating at far less than optimal efficiency and could be more effective through the improvements, repairs and modifications that have been proposed.

It has been estimated by the U.S. Fish and Wildlife Service, that upon making recommended improvements to that ladder, 200,000 to 250,000 American shad (*Alosa sapidissima*) per year may utilize this structure during upstream migrations. In addition, it has been estimated that the Schuylkill River has enough habitat to support 700,000 to 800,000 shad. The target species for this project is American shad however, other species such as blueback herring (*Alosa aestivalis*), striped bass (*Morone saxatilis*), and American eel (*Anguilla rostrata*) could also benefit from this project. Resident fish species will benefit from the enhanced potential to reach suitable spawning and nursery habitats, as well as from a larger forage base provided by juvenile anadromous species. Improving the efficiency of the Fairmount fish ladder will provide access to approximately eight miles of river to American shad as well as these other migratory fish species.

Improving fish passage at the Fairmount fish ladder will benefit the entire freshwater ecology and economy of the Schuylkill River watershed. The Fairmount Fish Ladder is the first fish ladder on Schuylkill River; hence the most important for fish passage, especially since the Pennsylvania Fish and Boat Commission are currently constructing a fish ladder at the next upstream dam to further open passage for migratory fish. Resident fish species will benefit from the enhanced potential to reach suitable spawning and nursery habitat, and from a larger forage base provided by juvenile anadromous

species. Some secondary benefits that are expected as a result of this project are an increase in educational potential of this facility through increased public access and an increased public education focus.

COORDINATION

The project was developed by cooperating agencies including: the U.S. Army Corps of Engineers, the Philadelphia Water Department, Pennsylvania Fish and Boat Commission, Fairmount Park Commission, and the U.S. Fish and Wildlife Service.

The Environmental Assessment (EA) for the project was forwarded to the U.S. Environmental Protection Agency Region III, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the Pennsylvania Fish and Boat Commission, the Pennsylvania Department of Environmental Protection, and all other known interested parties.

ENDANGERED SPECIES IMPACT

The Environmental Assessment has determined that the selected plan, if implemented, would not jeopardize the continued existence of any species or the critical habitat of any fish, wildlife or plant, which is designated as endangered or threatened pursuant to the Endangered Species Act of 1973 as amended by P.L. 96-159.

WATER QUALITY COMPLIANCE

Pursuant to Section 401 of the Clean Water Act, a conditional 401 Water Quality Certificate has been obtained for this project through the Pennsylvania Department of Environmental Protection (PADEP) and their General Permit Program. A final 401 Water Quality Certificate will be obtained from PADEP after their review of the 90% project designs.

COASTAL ZONE

Based on the information gathered during the preparation of the Environmental Assessment, and the application of appropriate measures to minimize project impacts, it was determined in accordance with Section 307(C) of the Coastal Zone Management Act of 1972 that the plan complies with and can be conducted in a manner that is consistent with the approved Coastal Zone Management Program of Pennsylvania. A consistency determination from the Pennsylvania Department of Environmental Protection has been received for this project.

CULTURAL IMPACTS

The project site borders the historic Fairmount Dam and associated Fairmount Water Works, which are listed on the State and National Registers of Historic Places. The Pennsylvania Historical & Museum Commission has reviewed the conceptual design for the project under Section 106 of the National Historic Preservation Act and has concluded that the project will have no adverse effect upon cultural resources in the area, specifically the Fairmount Park Historic District.

RECOMMENDATION

Because the Environmental Assessment concludes that the work described is not a major Federal action significantly affecting the human environment, I have determined that an Environmental Impact Statement is not required.

4 Feb 04
Date

Thomas C. Chapman, P.E.
Lieutenant Colonel, Corps of Engineers
District Engineer

ENVIRONMENTAL ASSESSMENT

FAIRMOUNT DAM FISH LADDER PROJECT
SECTION 1135, IMPROVEMENTS TO THE ENVIRONMENT
PHILADELPHIA, PENNSYLVANIA

PREPARED BY:
PHILADELPHIA DISTRICT
U.S. ARMY CORPS OF ENGINEERS
PHILADELPHIA, PENNSYLVANIA 19107

JANUARY 2004

ENVIRONMENTAL ASSESSMENT
FAIRMOUNT DAM FISH LADDER PROJECT
SECTION 1135, IMPROVEMENTS TO THE ENVIRONMENT
PHILADELPHIA, PENNSYLVANIA

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1.0 Project Location

The Schuylkill River is a tributary of the Delaware River located in Southeastern Pennsylvania and traverses through Philadelphia, Delaware, Montgomery, and Chester counties (Figure 1). The Schuylkill River is approximately 123 miles in length from its confluence with the Delaware River in Philadelphia to its headwaters in Pottsville. The Fairmount Dam Fish Ladder (Figure 2) is located in Philadelphia within the Fairmount Park property, Philadelphia County, Pennsylvania. Fairmount Dam is located 8.49 miles upstream from the Schuylkill's confluence with the Delaware River and is the uppermost reach of the Schuylkill that is influenced by tidal fluctuations. The Fairmount fish ladder is located on the west shore of the Fairmount Dam on the Schuylkill River across from the historic Waterworks and Philadelphia Museum of Art.

2.0 Study Authority

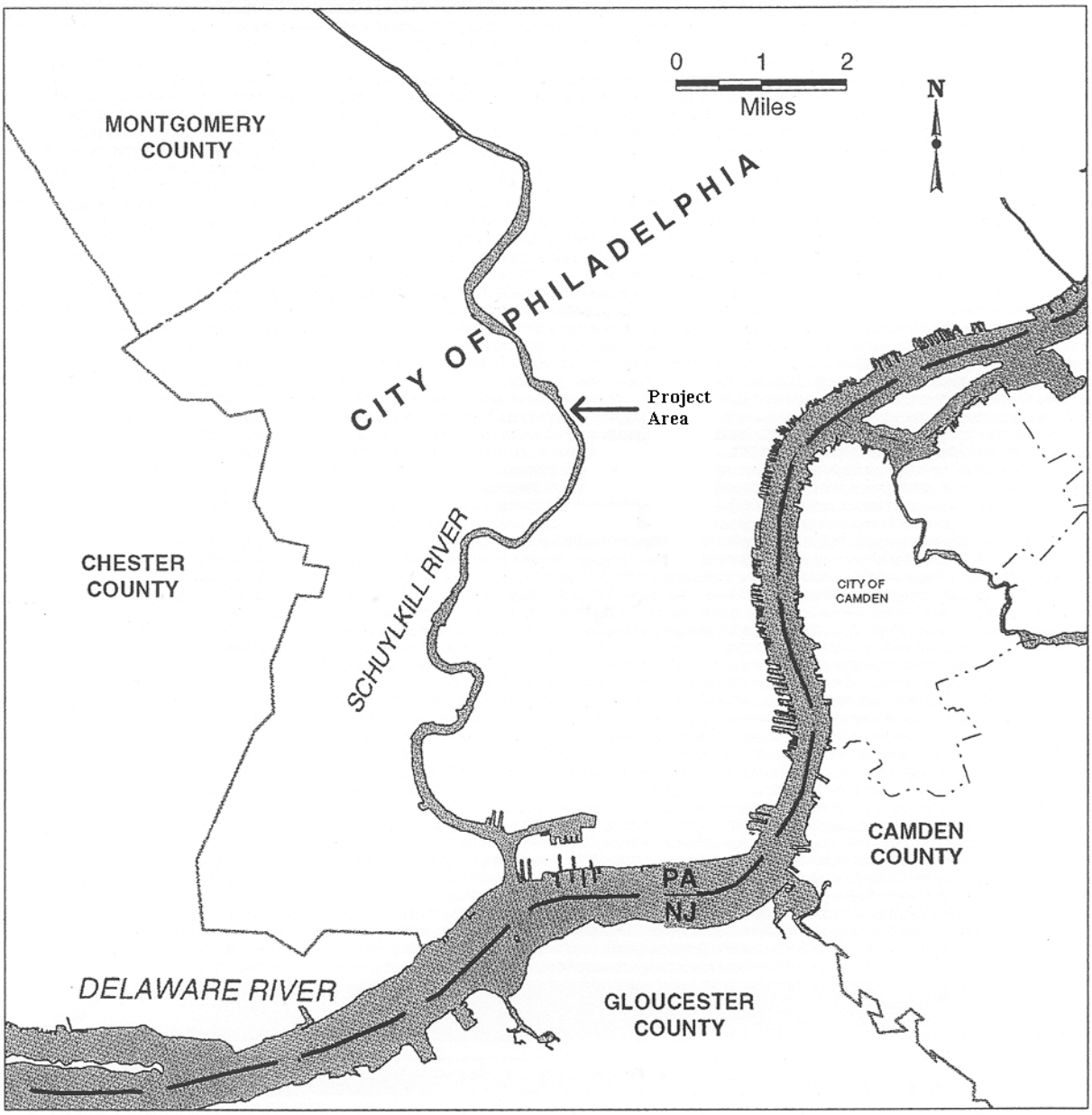
The U.S. Army Corps of Engineers' (Corps) authority for the Fairmount Dam Fish Ladder Project is Section 1135 of the Water Resources Development Act of 1986, as amended, which is used for improvements to the environment in the public interest. The purpose of the project under Section 1135 is to maximize spawning habitat available to migratory fish and reduce the impact of navigation channels on Schuylkill River fish populations.

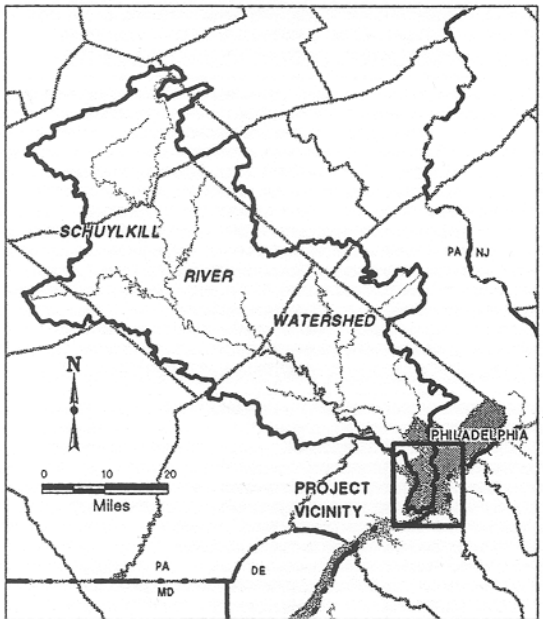
3.0 Purpose and Need for Action

Many anadromous and catadromous fish spawning runs located throughout the Mid-Atlantic States have been lost through the construction of dams that are impassable to migratory fish. One such dam is the Fairmount Dam, which prevented passage of migratory species from 1818 until 1979. Starting in 1977 and continuing into 1978 a fish ladder was constructed on the western side of the Fairmount Dam. The Fairmount fish ladder was completed and operational in 1979.

Structural problems limit the ladder's efficiency at passing migratory fish. Improper design of the upstream exit of the ladder allows trash and debris to accumulate at such a rapid rate that, on average, cleaning the debris screen is necessary every other day during spring migrations. The upstream gate, used in shutting off water flow through the ladder, has been damaged rendering the gate inoperable without the use of specialized tools powered by portable generators.

The goal of the Fairmount Dam Fish Ladder Project is to significantly increase the ladder's efficiency through a redesigning and reconstruction of the structure to allow for passage of American shad, as well as other anadromous, catadromous and resident finfish species. This project is one of many fish passage projects that are to provide access to spawning and rearing habitat for migratory fish on the Schuylkill River. The Fairmount Dam fish ladder, as the most downstream passageway, is especially critical to the overall success of restoring fish passage on the Schuylkill River and its tributaries. All upstream work will be affected by the success or failure of the Fairmount Dam fish ladder at passing migratory species during spawning runs. The improvement to the ladder will be accomplished through renovations, the construction of additions to the existing ladder as well as modification of the design to allow American shad to proceed unimpeded through the ladder to the greatest extent possible so as to reach historic spawning and foraging areas upstream.





FAIRMOUNT DAM
FIGURE 1
PROJECT AREA

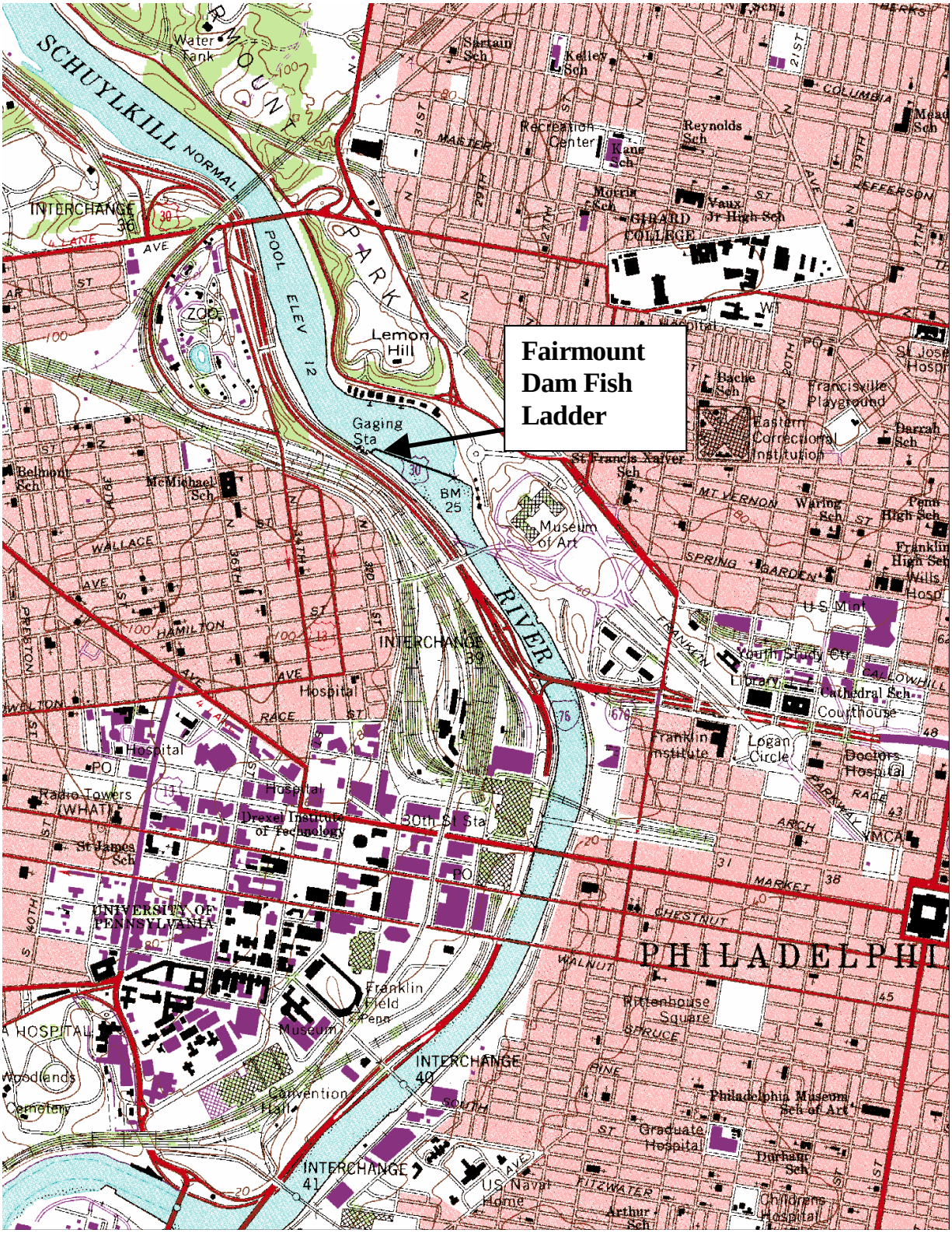


Figure 2. Fairmount Dam Fish Ladder Project Vicinity.

Great improvements in fishway technologies have been realized in the past 20 years since the Fairmount ladder was constructed. Based on estimates by the U.S. Fish and Wildlife Service, upon completion of the proposed improvements, the Fairmount Dam fish ladder is expected to pass 200,000 to 250,000 American shad (*Alosa sapidissima*) yearly. The Schuylkill, it has been estimated, has habitat to support 700,000 to 800,000 shad. The target species for this project is American shad however, other species such as blueback herring (*Alosa aestivalis*), striped bass (*Morone saxatilis*), and American eel (*Anguilla rostrata*) could also benefit from this project. Resident fish species will benefit from the enhanced potential to reach suitable spawning and nursery habitats, as well as from a larger forage base provided by juvenile anadromous species. Improving the efficiency of the Fairmount Dam fish ladder will provide access to approximately 12.2 miles of river to American shad as well as these other migratory fish species.

Multiple project designs for the ladder were evaluated in terms of ease of construction, dam safety, historical considerations, and fish passage success. Some secondary benefits that are expected as a result of this project are an increase in educational potential of this facility through increased public access and an increased public education focus. Through the above mentioned project goals, a more aesthetically pleasing area will also be created for both visitors to the ladder as well as general park users within the vicinity of the fish ladder. An increase in educational programs conducted by the Philadelphia Water Department (PWD) about the Schuylkill River, fisheries, and the fish ladder is expected after completion of this project. The PWD and other agencies and organizations have plans to further increase the educational potential through educational programs that they plan to conduct on site for school groups and members of the public. As part of the PWD educational programs, video of fish passing through the ladder from a real-time video camera at the ladder will be shown to the public. Video images will be sent directly to the Fairmount Park Interpretive Center that the PWD is involved with instituting at the Fairmount Water Works on the East Bank of the Schuylkill River. The benefits of this project are biological in terms of the increased aquatic habitat values, and societal in terms of the benefits to the region.

4.0 Alternatives

Due to the nature of this project, a limited number of alternatives are available to achieve the goals of fish passage and be sensitive to engineering, environmental, and historical criteria. The alternatives include no-action, reconstruction of the existing structure (preferred fishway design), replacement of the existing structure, and dam removal.

4.1 No-action

The no action alternative would leave the current fish ladder in its current degraded state and no increased fish access would be established. The migratory fish populations in the Schuylkill River would suffer setbacks. Over time, this lack of an efficient fish ladder at Fairmount Dam could stifle the growth of American shad and river herring populations in the Schuylkill River. In addition, recreational fishing opportunities and benefits to other wildlife would not be realized.

4.2 Preferred Fish Ladder Design (reconstruction of the existing structure).

There are other various ways to reconstruct the existing fish ladder. Based on recommendations from Mr. Dick Quinn, Fish Ladder Design Expert for the U.S. Fish and Wildlife Service and other resource agencies (i.e., The Pennsylvania Fish and Boat Commission), our preferred design alternative is the most efficient at passing migratory fish, most cost effective, and least visually impacting choice to achieve the project goals. In addition, a physical hydraulic model of the Fairmount Fish Ladder has been constructed by Alden Research Laboratory and will be used to develop the best fish ladder design

possible for the project. The proposed improvements to the Fairmount Dam fish ladder include (see Figure 3, conceptual design drawings):

- increasing attraction flow from the present ~ 20 cubic feet per second (cfs) to ~ 100 cfs, through piping additional water to the entrance of the ladder by repairing the non functional additional flow pump on site;
- replacing the old additional flow pump's butterfly valve and it's 24 inch pipe with a new butterfly valve and 30 inch pipe to transport water downstream to the fish ladder entrance (this will allow for optimal attraction flow at the fish ladder entrance);
- increasing the width of slots between each cell from the present 12 inches to 18 inches in width to allow for optimal passage of shad;
- changing pool to pool (cell to cell) elevation drop from the present 12 inches down to 9 inches;
- reconstructing the exit channel to allow for a perpendicular to flow exit from the ladder; this reconstruction will alleviate one of the primary problems being experienced by the ladder, and that is accumulation of trash and debris at the upstream, exit of the ladder;
- installing a new gate at the exit of the ladder;
- replacing the current intake screen with one that has vertical bars at least 12 inches apart and has no horizontal bars - which the current one does;
- installing articulated weir gates to control water surface elevation in the entrance channel;
- installing an approximately 20 X 3 ft non-overflow section on the crest of the dam adjacent to the fish ladder to prevent water from the spillway from competing with water from the fish ladder entrance;
- reconstructing the entrance to the ladder;
- replacing the damaged viewing window screening found inside the last cell of the ladder;
- rewiring the viewing window room to restore electric power;
- installation of a real-time camera to allow viewing of fish passing through the ladder to individuals in the interpretive center across the river from the ladder as well as via the internet;
- installing wrought iron fencing for site security;
- installing grating over cells of the ladder; and constructing restorative landscaping at the site.

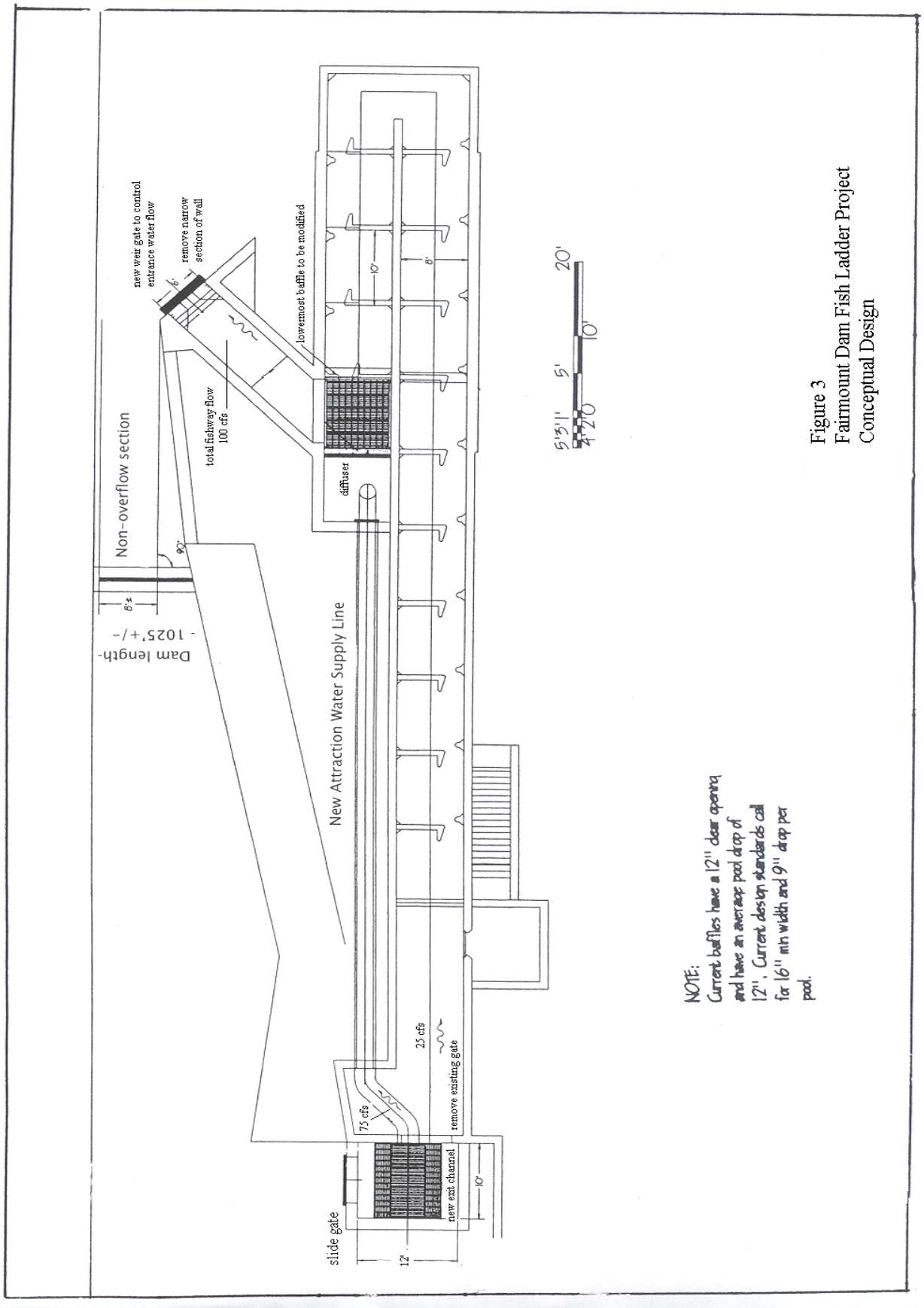


Figure 3. Fairmount Dam Preferred Fish Ladder Design (conceptual).

Additional design drawings (30% level) on the preferred fish ladder design can be found in Appendix C.

4.3 Other Structural and Non-structural Alternatives

Several other alternatives were considered, but discounted due to engineering, maintenance, cost, or historical resources constraints. These alternatives included dam removal and an alternative fish ladder design.

- Dam removal would involve elimination of the existing dam originally built almost 200 years ago. This alternative would permit unimpeded access of American shad and river herring up the Schuylkill River. However, this option would remove an historic structure on the National Register and substantially alter the historic character of the Fairmount Water Works. Fairmount Dam is an integral part of the Philadelphia's historical and cultural community; and it is likely that there would be considerable public opposition to this option. In addition, the cost to remove the dam is estimated to be very high (see Section 4.4). Hence, dam removal was not considered a feasible alternative.

- Replacement of the existing structure with a new fish ladder. This alternative would be much more costly than our preferred plan because the existing structure would have to be demolished, debris removed, and a completely new fish ladder built in the same location. This alternative would potentially have additional historic (visual impacts) and environmental (disposal of debris, a longer duration of in-water work, etc.) issues associated with it. In addition, the cost estimate for this alternative is extremely high (see Section 4.4).

4.4 Alternative Comparison

TABLE 1. COMPARISON OF ALTERNATIVES FOR THE FAIRMOUNT FISH LADDER PROJECT.

Alternative	**Potential Issues / Support**	**Cost**	**Benefits**	**Conclusion**
No Action	Does not solve the problem.	$0	None	Not recommended.
Reconstruction of Existing Structure	- Historic / environmental issues are resolved. - Supported by resource agencies.	$1.2 million (estimate)	- Improved efficiency of fish ladder at passing migratory fish - Increased fishery populations in the Schuylkill River	Recommended.
Replacement of Existing Structure	- Historic / potential visual impacts of the new structure on the surrounding community. - Disposal of	$2.5 million (estimate)	- Improved efficiency of fish ladder at passing migratory fish - Increased fishery populations in the Schuylkill River	Not recommended.

	concrete debris.			
Dam Removal	- National Landmark - Sponsor does not want removed.	$3.0 million (estimate)	- Increased fishery populations in the Schuylkill River.	Not recommended.

Our preferred design alternative (reconstructing the existing fish ladder) is the most efficient at passing migratory fish, most cost effective, least impacting on environmental and cultural resources, and supported by federal and state resource agencies.

5.0 Environmental Analysis

The Fairmount Dam Fish Ladder Project is a component of a larger Schuylkill River watershed fish passage plan attempting to restore fish passage from the confluence with the Delaware River to Kernsville Dam in Berne, Pennsylvania (a distance of approximately 100 miles). The Pennsylvania Department of Environmental Protection, in cooperation with the Pennsylvania Fish and Boat Commission, is currently pursuing other fish passage projects on the remaining impediments located along the Schuylkill River. Improving fish passage at the Fairmount fish ladder will benefit the entire freshwater ecology and economy of the Schuylkill River watershed. Resident fish species will benefit from the enhanced potential to reach suitable spawning and nursery habitat, and from a larger forage base provided by juvenile anadromous species.

5.1 Wetlands

There are no wetlands in the project area. The project site is an existing fish ladder structure located on the Schuylkill River in an urban area of Philadelphia, Pennsylvania.

5.2 Fishery Resources

By 1976, the Pennsylvania Fish and Boat Commission (PFBC) had completed a 4-½ year study of the feasibility of restoring American shad to the Schuylkill River. PFBC documented fish species below Fairmount Dam using gill nets and electrofishing. From 1974 to 1976, the presence of adult American shad was documented below Fairmount Dam on 18 of the 26 days sampled (69% of the time) for a total of 47 American shad. Most of the shad collected or observed were in close proximity to the base of the dam. Ichthyological Associates observed 150 American shad on May 19, 1975. A total of 45 species of fish were recorded below Fairmount Dam and many of these fish could be expected to travel above the dam if adequate fish passage was available. Based on the feasibility study and the documentation of American shad and river herring blow Fairmount Dam, the plans for a fish passage facility began.

The Fairmount Fishway opened on April 2, 1979 and observations at the viewing window were recorded by PFBC from 1979 to 1984. During that period, a total of 30,904 fish representing 33 species were observed ascending the fishway. More importantly, 552 river herring, 50 American shad, and 2 striped bass were observed ascending the fishway. Despite the low number of striped bass observed in the fishway, a striped bass fishery developed at the base of Flatrock Dam by 1984, suggesting that substantial numbers of striped bass actually utilized the fishway. During this period, PFBC electrofishing operations consistently showed the presence of American shad, alewives, blueback herring, and white perch immediately downstream of Fairmount Dam. There seemed to be many more

fish observed or collected below the dam than fish observed ascending the fishway.

In 2000, Philadelphia Water Department (PWD) conducted maintenance activities at the Fairmount Fishway that included collection and identification of fish. Collections made on May 26 and July 28 produced a total of 127 fish in the fish passage facility. Notably, three striped bass, one alewife and one white perch were recorded. The following year, PWD conducted three clean-ups at Fairmount Fishway and recorded 109 fish. Striped bass and white perch, which are migratory species, were collected in the fishway in 2001.

During 2002, PWD performed an electrofishing survey of the Schuylkill River from Flatrock Dam downstream to the confluence with the Delaware River to relate the utilization of the fishway by migratory fish species with their presence in the river. A total of 4,028 fish representing 37 species were collected or observed during the electrofishing surveys completed on April 23, April 30, May 7, May 29, May 30, June 3, June 4, June 12, June 20, September 13, September 18, September 23, September 24, and September 25. The count included 67 American shad, 140 river herring (alewife and blueback herring are collectively known as river herring), 184 striped bass and 137 white perch. American shad, river herring, striped bass and white perch were present on all electrofishing dates prior to June.

River herring were abundant in April and May, and white perch and striped bass were abundant in May and June. The most significant discovery was one American shad and one river herring near the base of Flatrock Dam. According to PFBC, this is the first documented adult American shad above Fairmount Dam since it was built. The abundance of white perch collected and observed spawning near Flatrock Dam suggests they are utilizing the Fairmount Dam fish ladder.

In 2002, PWD conducted maintenance activities at the Fairmount Dam fish ladder that included collection and identification of fish. Collections made on March 3, April 20, May 18 and July 24 produced a total of 629 fish in the fish passage facility. Notably, one adult American shad, two alewives, one blueback herring, five striped bass, and 28 white perch were recorded.

Consultation with the National Marine Fisheries Service concluded no essential fish habitat under the Magnuson-Stevens Fishery Conservation and Management Act in the project area (see Appendix A). In addition, a restriction on construction of the project will be followed from April 1 to June 30th to prevent impacts to migratory fish during the spawning season.

5.3 Wildlife Resources

Due to the extensive development in the Schuylkill River watershed, there are limited wildlife resources in the project vicinity. In addition, the absence of a well-defined riparian buffer at the project location further limits wildlife populations in the project area.

Some examples of indigenous waterfowl which may frequent the project area include: Canada goose (*Branta canadensis*) and mallard (*Anas platyrhynchos*). Other bird species likely to inhabit the area include: kingfisher (*Megaceryle alcyon*), red-winged blackbird (*Agelius phoeniceus*), American crow (*Corvus brachynrynchos*), robin (*Turdus migratorius*), northern cardinal (*Richmondena cardinalis*), blue jay (*Cyanocitta cristata*), catbird (*Dumetella carolinensis*), and various species of sparrows. Additional bird species observed along the Schuylkill River include: great blue heron (*Ardea herodias*) and double-crested cormorant *(Phalacrocorax auritus*).

Although reptiles and amphibians were not actually surveyed within the project area, the following species are typically found inhabiting riverine zones: snapping turtle (*Chelydra serpintina*), water snake (*Natrix sipedon*), and American bullfrog (*Rana catesbeiana*). The eastern newt

(*Notophthalmus viridescens*) and American toad (*Bufo americanus*) are additional representative species likely to reside in this area.

Mammals which are indicative of riparian zones and may occur in and around the Schuylkill River project area are: muskrat (*Ondatra zibethicus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), woodchuck (*Marmota monax*), chipmunk (*Tamias striata*), gray squirrel (*Scirus carolinensis*), eastern cottontail (*Sylvilagus floridanus*), and little brown bat (*Myotis lucifugus*).

5.4 Air and Water Quality

The air quality within the project area would be reflective of an urban area. Philadelphia County is designated as a nonattainment area for Ozone as of May 2002 (Environmental Protection Agency, Web Site 2003, www.epa.gov). Construction of the proposed fishway would cause temporary reduction of local ambient air quality due to fugitive dust and emissions generated by construction equipment. These temporary reductions in air quality would not have a significant impact on the air quality of the surrounding area.

Implementation of this project is not expected to alter water quality. All necessary soil erosion and sediment controls will be used during construction of the fishway to minimize project impacts to the Schuylkill River. In addition, the contractor will be required to complete a plan that describes measures to prevent hazardous construction materials (e.g., oils) from entering the river and possibly traveling downstream. Furthermore, all construction debris will be disposed of in an appropriate manner. The proposed project will not have any long-term adverse impacts on water quality in the Schuylkill River.

5.5 Threatened and Endangered Species

According to the U.S. Fish and Wildlife Service, Pennsylvania Field Office, the proposed project will have no effect on federally listed species (see Project Correspondence - Appendix A). In addition, the National Marine Fisheries Service has reviewed the project (Appendix A) and concluded that there are no endangered or threatened species under their jurisdiction in the project area. However, they did request a seasonal restriction on in-water work between April 1 – June 30th for migratory fish. In addition, no State-listed species have been identified in the project area (Appendix A).

5.6 Socioeconomics

The Fairmount Dam and associated Water Works are a historical and tourist destination visited by many visitors annually. Also, since the location of the fish ladder is close to the Philadelphia Art Museum, the opportunity exists for considerable environmental educations and public use of the project site. Fairmount Dam and Water Works are listed on the National Register of Historic Places.

The proposed project has received strong support from a variety of organizations including the Pennsylvania Fish and Boat Commission, Philadelphia Water Department, and Friends of the Fairmount Fish Ladder.

5.7 Historic and Cultural Resources

The Corps has consulted with the Pennsylvania Historical & Museum Commission (PAH&MC) and other interested parties in order to identify, evaluate, and assess project impacts on historic properties pursuant to the cultural resources responsibilities under the National Historic Preservation Act of 1966 (NHPA), as amended, and its implementing regulations, 36 CFR 800. Section 106 of the NHPA, as amended, requires the Corps to consider the effect of its undertakings on cultural and historic resources

(including prehistoric and historic sites, buildings, districts, or objects) which are listed or eligible for listing on the National Register of Historic Places.

5.7.1 History of Fairmount Dam

The following information was obtained from the WHYY-TV website (http://www.whyy.org/tv12/secrets/water.html).

The earliest Water Works building was constructed in 1812 to feed the water needs of a growing Philadelphia. Built in the years that preceded the industrial revolution, it was seen as an engineering marvel, drawing visitors from all parts of the world. The earliest building housed two steam engines, which pumped water up to reservoirs on the "Fair Mount" behind it. The location was chosen because it was the highest point in the area, hence the name Fair Mount, and would provide a good launch-point for the gravity-fed water systems that the city depended on in those days. The Philadelphia Museum of Art now sits on Fair Mount where the Water Works reservoirs lived for more than a century.

The dam, which is actually a spillway since it allows water to flow over it, was constructed to direct water around the back of the pump house and through the building, turning giant water wheels and driving the pumps. Previously, the pumps were steam driven, requiring enormous, expensive loads of fuel, and creating a dangerous environment for those who worked in the immediate area. The conversion to waterpower was a lucrative move for the city.

The reservoir had a capacity of 3 million gallons. The first steam driven pumps could fill the reservoir in one day. Each of the original steam engines consumed more than 3,000 cords of wood per year in order to pump 2 million gallons of water in a 24 hour period. Because of the enormous expense of operating the steam engines, the city was forced to search for a cheaper means of pumping the water to the reservoir. Water power proved much less costly, and on October 24, 1822, the steam engines were shut down forever. They were sold for scrap a few years later. In order to generate sufficient water flow through the mill house, the Schuylkill River had to be dammed. Cribs were built from hickory logs, floated to the appropriate spot in the river, and filled with stone until they sank. The cribs were then fastened to each other and to the bottom of the river. The dam was created at an angle to allow ice to break up in the winter.

After the last crib was sunk, the upstream water deepened and began spilling over the structure on July 23, 1821. The steam pumps would work for another year while the rest of the water powered system was constructed. A canal and lock system was constructed on the west shore so river traffic would not be hampered by the dam.

The following information was provided by Samantha Corrato, Philadelphia Water Department Archives in an email dated November 15, 2002: In 1819, the City of Philadelphia purchased water power rights from the Schuylkill Navigation Company and the dam was completed in 1822. It was originally built as a straight-drop, cribbed dam, which was constructed with wooden crates that were filled with rocks to slow water. The dam served the double purpose of forming a pool for slack navigation in conjunction with river locks, as well as providing water for the city. The dam was slightly modified in 1822 and in February of 1904 it was badly damaged by flooding and melting ice, creating the need for major repairs. In 1926, the crib dam was stabilized by the addition of a concrete mound dam built on the downriver side, which is the waterfall-like structure we see still being used today.

During the 1990's the Philadelphia Water Department completed a project, which raised the dam along the lower fish pier area. As part of that project, all the historic drawings on the dam were gathered (Grusheski, personal communication, 2002).

5.7.2 Historic Fish Laws

In 1623 the first fishery law in the Colonies (known as the Plymouth Colony Fish Law) was passed for the protection of alewives (Belding 1921). Between 1682 and 1727 a series of laws were enacted for the construction and maintenance of fish passage facilities, and for the prevention of all obstructions to the passage of fish in rivers, except mill dams. In 1741, an act was passed that stated a sufficient fish passageway be made through or around each dam from the first day of April to the last day of May annually. The owners of the dams were required to give a sufficient water flow for the young to pass down and that the cost of installing fishways in dams erected before 1709 be borne by the towns and the future maintenance by the owner of the dam. In 1745, however, mill owners through political pressure secured a provision eliminating fishways if the fish did not pass upstream in adequate numbers to be of greater benefit than the loss due to the diminished water power. In addition, no dam owner had to keep open any passageway if there were no longer runs of alewives, shad, or salmon (Belding 1921).

5.7.3 Impacts on Historic and Cultural Resources

The project site borders the historic Fairmount Dam and associated Fairmount Water Works, which are listed on the State and National Registers of Historic Places and are considered National Landmarks. The PAH&MC has reviewed the conceptual design for the project under Section 106 of the NHPA and in a letter dated December 31, 2002, have concluded that the project will have no adverse effect upon cultural resources in the area, specifically the Fairmount Park Historic District (Appendix B). Additional coordination with PAH&MC occurred with the transmittal of the 30% project design (November 14, 2003), which included details of the proposed non-overflow structure. A final concurrence letter was received by the PAH&MC on January 13, 2004, which concluded no effect on cultural resources in the project area (Appendix A). The final project design, to the extent possible, will incorporate provisions to blend the new components of the Fairmount Fish Ladder in with the existing architecture of the Fairmount Park Historic District.

5.8 Environmental Justice

All of the alternatives, including the selected plan, identified in this study are expected to comply with Executive Order 12989-Environmental Justice in Minority Populations and Low-Income Populations, dated February 11, 1994. The selected plan is not located in close proximity to a minority or low-income community, and no impacts are expected to occur to any minority or low-income communities in the area.

6.0 Relationship of Selected Plan to Environmental Requirements, Protection Statutes, and Other Requirements

In accordance with Section 401 of the Clean Water Act, a Water Quality Certification will be obtained from Pennsylvania Department of Environmental Protection (PADEP) prior to construction of the project. In a letter dated June 25, 2003 (Appendix B), PADEP has issued us a conditional Water Quality Certification, contingent upon their final review of the completed plans and specifications for the project. To date, they have reviewed and commented on the 30% level project design. Based on the information gathered during the preparation of the Environmental Assessment, and the application of appropriate measures to minimize project impacts, it was determined in accordance with Section 307(C) of the Coastal Zone Management Act of 1972 that the plan complies with and can be conducted in a manner that is consistent with the approved Coastal Zone Management Program of Pennsylvania. Discussions with staff from the Pennsylvania Coastal Zone Management Program (see PADEP letter in Appendix B) have determined that the project will be consistent with the State Coastal Zone Plan upon

issuance of the State Water Quality Certificate. In addition, no cumulative impacts are anticipated to the environment as a result of this project.

TABLE 2. COMPLIANCE WITH APPROPRIATE ENVIRONMENTAL QUALITY PROTECTION STATUTES AND OTHER ENVIRONMENTAL REVIEW REQUIREMENTS.

STATUTE	COMPLIANCE STATUS
Clean Water Act	Full
Coastal Zone Management Act	Full
Endangered Species Act	Full
Fish and Wildlife Coordination Act	Full
National Historic Preservation Act	Full
National Environmental Policy Act	Full
Clean Air Act	Full

NOTE:
Full Compliance: Having met all requirements of the statute, E.O., or other environmental requirements for the current stage of planning.
Partial Compliance: Some requirements of the statute, E.O., or other policy and related regulations remain to be met.
*All applicable laws and regulations will be fully complied with upon completion of the environmental review, obtaining State water quality certification, coastal zone consistency determination, and concurrence with our determination on cultural resources.
Noncompliance: None of the requirements of the statute, E.O., or other policy and related regulations remain to be met.

7.0 Coordination

During preparation of the Draft Environmental Assessment, several agencies were contacted and provided information. This draft Environmental Assessment is being circulated to various state and federal agencies for comments. Coordination, discussions, and project site visits have been conducted with the U.S. Fish and Wildlife Service, Pennsylvania Fish and Boat Commission, Philadelphia Water Department, Friends of the Fairmount Fish Ladder, Fairmount Park Commission, as well as other agencies and individuals with interests in the project. See Appendix A for more detailed information on the coordination for this project.

8.0 References

Belding, D. L. 1921. A report upon the alewife fisheries of Massachusetts. Department of Conservation, Division of Fisheries and Game. Boston, Massachusetts.

Environmental Protection Agency. 2003. AirData: Nonattainment Areas Map. Web Site: www.epa.gov.

Philadelphia Water Department. 2002. Personal communication with Samantha Corrato, Archives Section, via an email dated November 15, 2002.

Philadelphia Water Department. 2002. Personal communication with Ed Grusheski via an email dated November 6, 2002.

WHYY-TV. Secrets beneath the streets. Web Site: http://www.whyy.org/tv12/secrets/water.html

9.0 Section 404(b)(1) Analysis

A review of the impacts associated with discharges to waters of the United States for the Fairmount Dam Fish Ladder Project, Philadelphia County, Pennsylvania is required by Section 404(b)(1) of the Clean Water Act, as amended (Public Law 92-500).

I. Project Description

A. Location. The project area is located on the Schuylkill River, Philadelphia, PA (Figure 1).

B. General Description. The Schuylkill River is a tributary of the Delaware River located in Southeastern Pennsylvania and traversing through Philadelphia, Delaware, Montgomery, and Chester counties (Figure 1). The Schuylkill River is approximately 123 miles in length from its confluence with the Delaware River in Philadelphia to its headwaters in Pottsville. The Fairmount Dam fish ladder (Figure 2) is located within the Philadelphia City limits within the Fairmount Park property, Philadelphia County, Pennsylvania. Fairmount Dam is located 8.49 miles upstream from the Schuylkill's confluence with the Delaware River and is the uppermost reach of the Schuylkill that is influenced by tidal fluctuations.

C. Purpose. The goal of the Fairmount Dam Fish Ladder Project is to increase the ladder's efficiency through redesigning and reconstructing the structure to allow for passage of American shad, as well as other anadromous, catadromous and resident finfish species. This project is one of many fish passage projects that are to provide access to spawning and rearing habitat for migratory fish on the Schuylkill River. The Fairmount Dam fish ladder, as the most downstream passageway, is especially critical to the overall success of restoring fish passage on the Schuylkill River and its tributaries.

D. General Description of Dredged or Fill Material.

1. General Characteristics of Material: concrete (for new pool)

2. Quantity of Discharge (estimated): 1200 cu. ft

3. Source of Material: local contractor

E. Description of Discharge Site.

Location: The location of the discharge site will be the furthest upstream area of the existing fish ladder.

2. Size (acres):
Cofferdammed area: approximately 45 x 65 feet.

3. Type of Site: silt/clay/gravel river bottom

4. Type of Habitat: riverine

5. Timing and Duration of Discharge: approximately 8 weeks working in the stream for pool construction, 9 months for total project construction.

F. Description of Discharge Method. Pouring of a new concrete pool structure for the fish ladder.

II. FACTUAL DETERMINATIONS

A. Physical Substrate Determinations.

1. Substrate Elevation and Slope: 6.0 NAVD 88 / flat river bottom

2. Sediment Type: silt/clay/gravel

3. Fill Material Movement:
Not significant.

4. Physical Effects on Benthos:
Temporary, during cofferdam installation and project construction of the new pool.

5. Actions taken to Minimize Impacts:
Installation of cofferdams to minimize sediment movement downstream of the dam. All in-stream work will be completed as quickly as possible to minimize impacts.

B. Water Circulation, Fluctuation and Salinity Determinations.

1. Water:

a. Salinity - No effect.

b. Water Chemistry – No significant effect.

c. Clarity - Short-term increase in suspended particles.

d. Color - Short-term increase in suspended particles.

e. Odor – No effect.

f. Taste - No effect.

g. Dissolved Gas Levels – No effect.

h. Nutrients – Short-term increase in nutrients available in the water column.

I. Eutrophication - No effect.

j. Temperature- No effect.

2. Current Patterns and Circulation:

a. Current Patterns and Flow – Temporary, minor effect on flow and patterns when the cofferdams are installed. Stream should recover quickly after cofferdams are removed.

b. Velocity - Temporary, minor effect on flow and patterns when the cofferdams are installed. Stream should recover quickly after cofferdams are removed.

c. Stratification - No effect.

3. Normal Water Level Fluctuations – Temporary, minor effect on flow and patterns when the cofferdams are installed. Stream should recover quickly after cofferdams are removed.

4. Salinity Gradients - No significant effect.

5. Actions That Will Be Taken To Minimize Impacts: Cofferdams will be used for the minimum time necessary for the placement of a new concrete pool for the fish ladder.

C. Suspended Particulate/Turbidity Determinations.

1. Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Fill Site: Minor effect. There is the potential for an increase in suspended particles/turbidity levels due to the installation of a cofferdam. Cofferdams will be used to limit sediment movement downstream of the project area.

2. Effects on Chemical and Physical Properties of the Water Column:

a. Light Penetration: Minor effect.

b. Dissolved Oxygen: Minor effect.

c. Toxic Metals and Organics: No effect.

d. Pathogens: No effect.

e. Aesthetics: Minor adverse and temporary effects limited to the construction period.

f. Temperature: No effect.

3. Effects on Biota:

a. Primary Production, Photosynthesis: Minor, short-term effects related to increases in turbidity during cofferdam activity. Minor loss of habitat due to the placement of a new pool for the fish ladder.

b. Suspension/Filter Feeders: Minor, short-term effects related to increases in turbidity during cofferdam activity. Minor loss of habitat due to the placement of a new pool for the fish ladder.

c. Sight feeders: No effect.

4. Actions Taken to Minimize Impacts: Cofferdams will be used to limit sediment

movement and turbidity in the Schuylkill River during construction. The type and height of the cofferdam are unknown at this point in time. These specifications will be left to the contractor's preference and will be reviewed and approved by the Corps prior to construction. Cofferdam information will be coordinated with PADEP to insure compliance with State regulations. In addition a time of year restriction (4/1 – 6/30) on construction will prevent impacts on fish during their spawning season.

D. Contaminant Determinations.

N/A

E. Aquatic Ecosystem and Organism Determinations.

1. Effects on Plankton: No effect.

2. Effects on Benthos: Major effect on benthos in cofferdammed section. Effect will be temporary, approximately 8 weeks.

3. Effects on Nekton: No effect

4. Effects on Aquatic Food Web: Temporary, minor effect.

5. Effects on Special Aquatic Sites:

(a) Sanctuaries and Refuges: None.

(b) Wetlands: None.

(c) Tidal flats: None.

(d) Vegetated Shallows: None.

6. Threatened and Endangered Species: No effect.

7. Other Wildlife: Temporary, minor effect.

8. Actions to Minimize Impacts: All effort will be made to relocate fauna from the cofferdammed area (dry area) to appropriate habitat near the project site. In addition a time of year restriction (4/1 – 6/30) on construction will prevent impacts on fish during their spawning season.

F. Proposed Disposal Site Determinations.

1. Mixing Zone Determinations: N/A

a. Depth of water:
b. Current velocity:
c. Degree of turbulence:
d. Stratification:
e. Discharge vessel speed and direction:
f. Rate of discharge:
g. Dredged material characteristics:

2. Determination of Compliance with Applicable Water Quality Standards:
A section 401 Water Quality Certificate will be attained from the Pennsylvania Department of Environmental Protection prior to construction.

3. Potential Effects on Human Use Characteristics:

a. Municipal and Private Water Supply: No effect.

b. Recreational and Commercial Fisheries: Temporary, minor effect during construction.

c. Water Related Recreation: Temporary, minor effect.

d. Aesthetics: Temporary, minor effect.

e. Parks, National and Historical Monuments, National Seashore, Wilderness Areas, Research Sites, and Similar Preserves: Minor effect resulting from the attachment of a non-overflow section on the crest of the Fairmount Dam.

G. Determination of Cumulative Effects on the Aquatic Ecosystem.
No significant adverse effects are anticipated.

H. Determination of Secondary Effects on the Aquatic Ecosystem.
No significant secondary effects are anticipated.

III. FINDINGS OF COMPLIANCE OR NON-COMPLIANCE WITH THE RESTRICTIONS ON DISCHARGE

A. Adaptation of the Section 404(b)(1) Guidelines to this evaluation - No significant adaptation of the guidelines were made relative to this evaluation.

B. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impact on the Aquatic Ecosystem - The selected plan was determined from a detailed evaluation of alternatives to have the least amount of environmental impacts.

C. Compliance With Applicable State Water Quality Standards - The selected plan is not expected to violate any applicable state water quality standards in Pennsylvania.

D. Compliance With Applicable Toxic Effluent Standards or Prohibition Under Section 307 of the Clean Water Act - The proposed discharge is not anticipated to violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

E. Compliance With Endangered Species Act of 1973 -The selected plan will comply with the Endangered Species Act of 1973. Informal Section 7 consultation has been successfully completed with the U.S. Fish and Wildlife Service for this the project.

F. Compliance With Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972 - No Marine Sanctuaries, as designated in the Marine Protection, Research, and Sanctuaries Act of 1972, are

located within the project area.

G. Evaluation of Extent of Degradation of Waters of the United States - The proposed project will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish and shellfish, wildlife, and special aquatic sites. The life stages of aquatic life and wildlife will not be adversely affected. Significant adverse impacts on aquatic ecosystem diversity, productivity and stability, and recreation, aesthetics and economic values will not occur as a result of the project.

H. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem - Appropriate steps (as described above) will be taken to minimize potential adverse impacts of discharging material in the aquatic ecosystem.

10.0 CLEAN AIR ACT STATEMENT OF CONFORMITY

CLEAN AIR ACT STATEMENT OF CONFORMITY
FAIRMOUNT DAM FISH LADDER PROJECT
PHILADELPHA COUNTY, PENNSYLVANIA

I have determined that the selected plan conforms to the applicable State Implementation Plan (SIP). The Environmental Protection Agency had no adverse comments under their Clean Air Act authority. No comments from the air quality management district were received during coordination of the draft feasibility report and environmental assessment. The selected plan would comply with Section 176 (c)(1) of the Clean Air Act Amendments of 1990.

4 Feb 04
Date

Thomas C. Chapman, P.E.
Lieutenant Colonel, Corps of Engineers
District Engineer

Appendix A

Relevant Project Correspondence

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
WANAMAKER BUILDING, 100 PENN SQUARE EAST
PHILADELPHIA, PENNSYLVANIA 19107-3391

REPLY TO ATTENTION OF

Environmental Resources Branch

NOV 10 2003

Mr. Vincent Humenay
PA Department of Environmental Protection
Bureau of Waterways Engineering
P.O. Box 8460
Harrisburg, Pennsylvania 17105-8460

Dear Mr. Humenay:

As per the request from your agency's letter dated June 25, 2003, we are enclosing copies of the 30% design for the Fairmount Fish Ladder Project for your review and comment. We also acknowledge that your letter provided us with a conditional approval for a State Water Quality Certification under Section 401 of the Federal Water Pollution Control Act, upon your final review of the project plans and specifications. The entire specifications for the project design are not completed at the 30% design level, but these will be included in the 90% designs that will be transmitted to your agency in early 2004.

Please review the enclosed 30% project designs and provide any comments within 30 days of receiving this letter. If you should have any further questions or require any additional information, please contact Mr. Mark Eberle of my staff directly at (215) 656-6562. Your cooperation in this matter is appreciated.

Sincerely,

Robert E. Nelson
for Minas M. Arabatzis
Chief, Planning Division

Enclosures

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
WANAMAKER BUILDING, 100 PENN SQUARE EAST
PHILADELPHIA, PENNSYLVANIA 19107-3391

REPLY TO
ATTENTION OF

Environmental Resources Branch

NOV 14 2003

Ms. Ann Safley
Pennsylvania Historical and Museum Commission
Bureau for Historical Preservation
Commonwealth Keystone Building
Second Floor
400 North Street
Harrisburg, Pennsylvania 17120-0093

Dear Ms. Safley:

This letter is in regard to our continuing consultation under Section 106 of the National Historic Preservation Act (NHPA) regarding the proposed Fairmount Dam Fish Ladder Restoration Project, Philadelphia, Pennsylvania. The Philadelphia District, U.S. Army Corps of Engineers has completed the 30% designs for the project. As per telephone conversations in June 2003, you requested a more detailed review of our 30% design of the project specifically in regard to the non-overflow structure of the project. Please review the enclosed 30% design of the proposed fish ladder including the section drawings of the non-overflow structure. We also acknowledge that your April 17, 2003 letter to the Philadelphia District provided us concurrence for the project under Section 106 of the NHPA. We also realize the conceptual information that we provided to you at the time of that April 2003 letter has since changed and that you would need to reexamine the project area of concern (i.e. the non-overflow structure). The main change is that in the previously submitted conceptual design, we described the non-overflow structure extending approximately 8 feet from the existing fish ladder wall; however, in the 30% design, the non-overflow structure extends 20 feet from the existing fish ladder wall (see enclosed design).

Based on the enclosed 30% design and available information concerning the Fairmount Dam, we initially believed that the non-overflow structure and new exit chamber proposed for this project might visually impact important historic qualities of the Fairmount Dam, which is associated with Fairmount Waterworks, a property listed on the National Register of Historic Places. However, we believe there will be only a minor visual impact associated with our proposed non-overflow structure due to the current alignment of the existing fish ladder and the distance from the Fairmount Waterworks. In addition, we still feel that measures can be taken to minimize the minor visual impacts so that the project will have no adverse effect on the Fairmount Dam and the associated Fairmount Waterworks. These measures would include constructing the non-overflow structure to be compatible with the existing architecture of the

area. We are also enclosing photos (Photos 1-4) of the proposed non-overflow structure location taken from various viewpoints in the area around the fish ladder.

The two new features will be compatible with the existing architecture of the Fairmount Dam and will be visually unobtrusive to the Fairmount Waterworks located on the opposite side of the Schuylkill River. Pursuant to 36 CFR 800.5(b) of the Advisory Council on Historic Preservation's regulations, please review the enclosed documentation and provide this office with your opinion regarding our "no adverse effect" finding within thirty days of receipt of this correspondence.

If you have any questions, please contact Mark Eberle at 215-656-6562 or Robert Dunn at (215) 656-6556. Thanks for your cooperation.

Sincerely,

Robert C Johnson

for Minas M. Arabatzis
Chief, Planning Division

Enclosures

Copy Furnished:
Fairmount Parks Commission, Theresa Stuhlman
Philadelphia Historical Commission, Richard Tyler
Philadelphia Water Department, Chad Pindar
CENAP-PL-E, Eberle
CENAP-PL-E, Dunn
CENAP-PL-PS, Chasten

Photo 1. Proposed location of non-overflow structure (view from existing fish ladder).

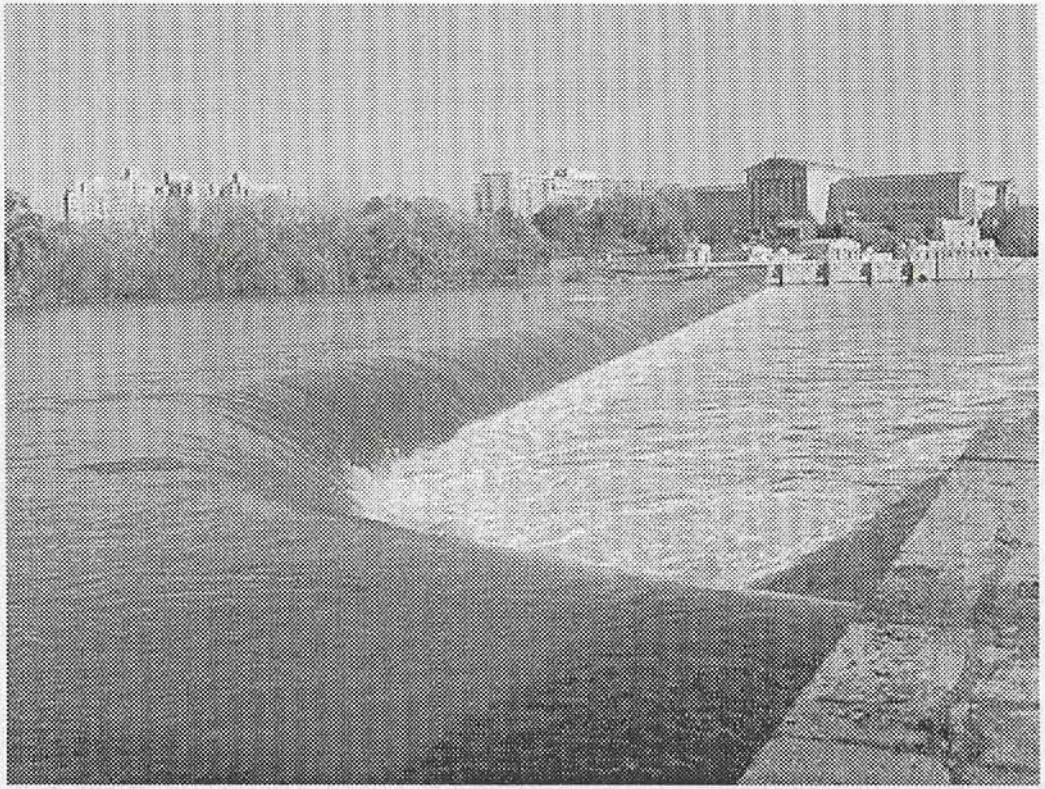


Photo 2. Proposed location of non-overflow structure (view from jogging path on West River Road). View of the structure is partially blocked by the existing fish ladder.

Photo 3. Proposed location of non-overflow structure (view from West River Road overlook above the existing fish ladder). View of the proposed structure location is partially blocked by the existing fish ladder wall.

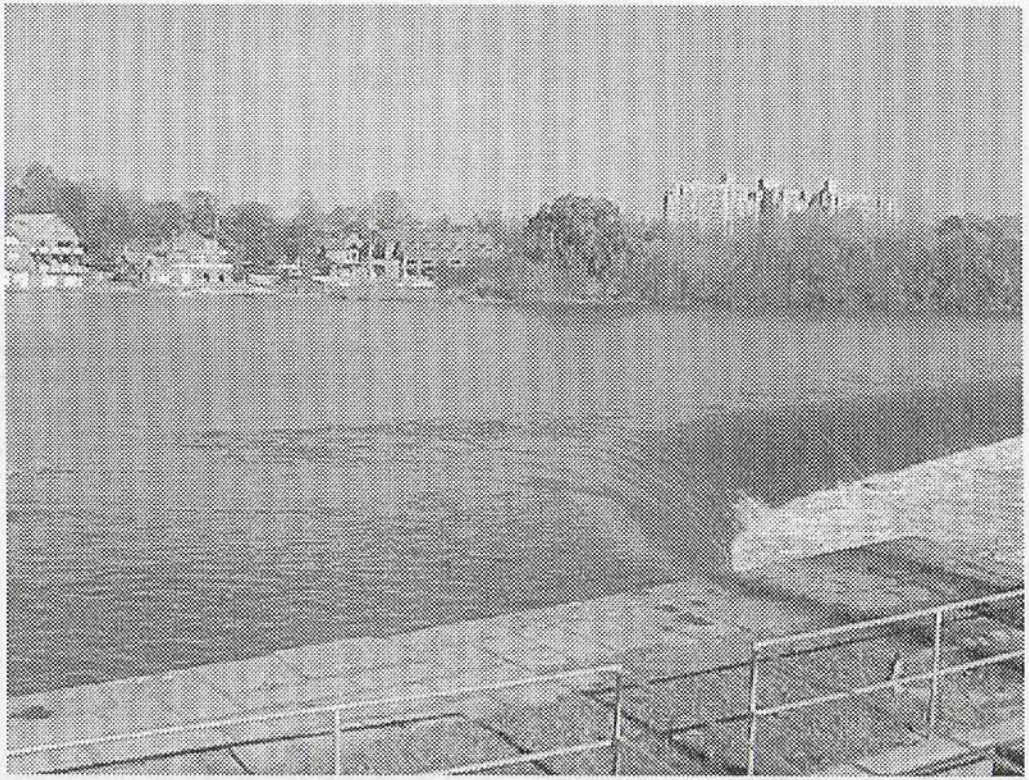
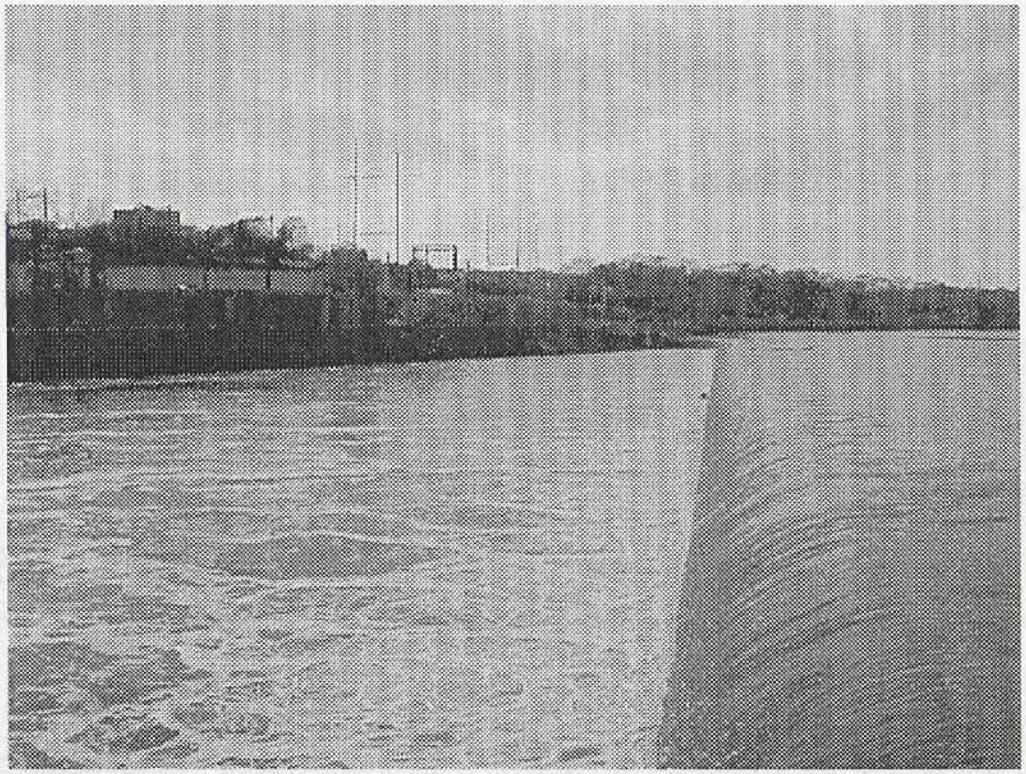


Photo 4. Proposed location of non-overflow structure (view from existing Fairmount Waterworks Riverwalk). View of the proposed structure location will not be visible from the Waterworks due to the distance across the Schuylkill River.



Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

January 13, 2004

Mark Eberle
U.S. Army Corps of Engineers
Philadelphia District
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3391

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

Re: ER 81-0607-101-I
COE: Fairmount Dam Fish Ladder Restoration Project, Revisions to Non-overflow Structure, Philadelphia

Dear Mr. Eberle:

The Bureau for Historic Preservation (the State Historic Preservation Office) has reviewed the above named project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980 and 1992, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation as revised in 1999. These requirements include consideration of the project's potential effect upon both historic and archaeological resources.

The Fairmount Park, listed in the National Register of Historic Places, is located near the project area. In our opinion, the activity described in your proposal will have no effect on such resources. Should the applicant become aware, from any source, that unidentified historic or archaeological properties are located at the project site, or that the project activities will have an effect on these properties, the Bureau for Historic Preservation should be contacted immediately.

If you need further information please consult Ann Safley at (717) 787-9121.

Sincerely,

Kurt W. Carr, Chief
Division of Archaeology & Protection

KWC/ras

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801-4850

January 17, 2003

Minas M. Arabatzis
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

Dear Ms. Arabatzis:

This responds to your letter of November 14, 2002, requesting information about federally listed and proposed endangered and threatened species within the area affected by the proposed fish ladder restoration project (Fairmount Dam) located in Philadelphia County, Pennsylvania. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species.

Except for occasional transient species, no federally listed or proposed threatened or endangered species under our jurisdiction are known to occur within the project impact area. Therefore, no biological assessment nor further consultation under the Endangered Species Act are required with the Fish and Wildlife Service. This determination is valid for two years from the date of this letter. If the proposed project has not been fully implemented prior to this, an additional review by this office will be necessary. Also, should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered. A compilation of certain federal status species in Pennsylvania is enclosed for your information.

This response relates only to endangered or threatened species under our jurisdiction based on an office review of the proposed project location. No field inspection of the project area has been conducted by this office. Consequently, this letter is not to be construed as addressing potential Service concerns under the Fish and Wildlife Coordination Act or other authorities.

Requests for information regarding State-listed endangered or threatened species should be directed to the Pennsylvania Game Commission (birds and mammals), the Pennsylvania Fish and Boat Commission (fish, reptiles, amphibians and aquatic invertebrates), and the Pennsylvania Department of Conservation and Natural Resources (plants).

Please contact Bonnie Dershem of my staff at 814-234-4090 if you have any questions or require further assistance.

Sincerely,

David Densmore
Supervisor

Enclosure

FEDERALLY LISTED, PROPOSED AND CANDIDATE SPECIES
(in Pennsylvania)

Common Name	Scientific Name	Status[1]	Distribution (by County and/or Watershed)
FISHES			
Shortnose sturgeon[2]	*Acipenser brevirostrum*	E	Delaware River & other Atlantic coastal waters
REPTILES			
Bog turtle	*Clemmys muhlenbergii*	T	Current - Adams, Berks, Bucks, Chester, Cumberland, Delaware, Franklin, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill, York. Historic - Crawford, Mercer, Philadelphia Co.
Eastern massasauga rattlesnake	*Sistrurus catenatus catenatus*	C	Current - Butler, Crawford, Mercer and Venango Co. Historic - Allegheny and Lawrence Co.
BIRDS			
Bald eagle	*Haliaeetus leucocephalus*	T	Suitable habitats across the state. Recent nesting in Butler, Cameron, Centre, Chester, Crawford, Dauphin, Erie, Forest, Huntingdon, Lancaster, Lebanon, Mercer, Northumberland, Pike, Tioga, Venango, Warren, Wayne and York Co. Wintering concentrations occur near ice-free sections of rivers, lakes and reservoirs, including the Delaware River.
Piping plover	*Charadrius melodus*	E	Migratory. No nesting in Pennsylvania since 1950s. Designated critical habitat on Presque Isle, Erie Co.
MAMMALS			
Indiana bat	*Myotis sodalis*	E	Winter hibernacula: Armstrong, Blair, Lawrence, Luzerne, Mifflin and Somerset Co.
MOLLUSKS			
Dwarf wedgemussel	*Alasmidonta heterodon*	E	Current - Delaware River (Wayne Co.). Historic - Delaware River watershed (Bucks, Carbon, Chester and Philadelphia Co.); Susquehanna River watershed (Lancaster Co.)
Clubshell mussel	*Pleurobema clava*	E	French Creek and Allegheny River watersheds (Clarion, Crawford, Erie, Forest, Mercer, Venango and Warren Co.)
Northern riffleshell	*Epioblasma torulosa rangiana*	E	French Creek and Allegheny River watersheds (Clarion, Crawford, Erie, Forest, Mercer, Venango and Warren Co.)
PLANTS			
Northeastern bulrush	*Scirpus ancistrochaetus*	E	Current - Adams, Bedford, Blair, Carbon, Centre, Clinton, Cumberland, Dauphin, Franklin, Huntingdon, Lackawanna, Lehigh, Lycoming, Mifflin, Monroe, Perry, Snyder and Union Co. Historic - Northampton Co.
Small-whorled pogonia	*Isotria medeoloides*	T	Current - Centre, Chester and Venango Co. Historic - Berks, Greene, Monroe, Montgomery and Philadelphia Co.

[1] *E = Endangered, T = Threatened, PE = Proposed Endangered, PT = Proposed Threatened, C = Candidate* *Revised 12/16/02*

[2] *Shortnose sturgeon is under the jurisdiction of the National Marine Fisheries Service*

U.S. FISH AND WILDLIFE SERVICE
315 SOUTH ALLEN ST., SUITE 322, STATE COLLEGE, PA 16801

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Habitat Conservation Division Field Office
James J. Howard Marine Sciences Laboratory
74 Magruder Road
Highlands, New Jersey 07732

TO: Mr. Mark Eberle
USACE
Philadelphia District

DATE: February 20, 2003

Anita Riportella
(Reviewing Biologist)

SUBJECT: Schuylkill River
Fairmount Fish Ladder

We have reviewed the information provided to us regarding the above subject project. We offer the following preliminary comments pursuant to the Endangered Species Act, the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act:

Endangered and Threatened Species

__X__ There are no endangered or threatened species in the project area.

____ The following endangered or threatened species may be present in the project area:

____ shortnose sturgeon (*Acipenser brevirostrum*)

Sea turtles: ____ Loggerhead (*Caretta caretta*) ____ Kemp's ridley (*Lepidochelys kempii*)
____ green (*Chelonia mydas*) ____ leatherback (*Dermochelys coriacea*)

DEPENDING UPON PROJECT DETAILS, POSSIBLE RECOMMENDATIONS MAY INCLUDE:

Anadromous Fishes

__X__ The following may be present in the project area:

____ blueback herring (*Alosa aestivalis*) ____ alewife (*Alosa pseudoharengus*)
____ striped bass (*Morone saxatilis*) __x__ American shad (*Alosa sapidissima*)

DEPENDING UPON THE PROJECT DETAILS POSSIBLE RECOMMENDATIONS INCLUDE:
April 1 - June 30

Essential Fish Habitat

____ The project area has been designated as Essential Fish Habitat (EFH) for one or more species. When detail of the project are made available and permit applications have been made, conservation recommendations may be given. For a listing of EFH and further information, please go to our website at:

http://www.nero.nmfs.gov/ro/doc/webintro.html.
-If you wish to discuss this further, please call 732-872-3116-

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA GAME COMMISSION
2001 ELMERTON AVENUE, HARRISBURG, PA 17110-9797

August 1, 2003

Mr. Minas M. Arabatizis
US Army Corps of Engineers
Philadelphia District
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

In re: Fairmount Dam fish Ladder Project
Schuylkill River in Philadelphia
Philadelphia County, PA

Dear Mr. Arabatizis:

This is in response to your letter of June 19, 2003, requesting information concerning endangered and threatened species of birds and mammals as related to this project.

Our office review has determined that no state listed endangered or threatened species are known to occur within the proposed project. Also, no State Game Lands are expected to be impacted by the proposed project. Should project plans extend beyond the present study area, or if additional information becomes available on endangered or threatened species of birds or mammals or State Game Lands, this review may be reconsidered.

This reply relates only to endangered and threatened species of birds or mammals recognized by the Pennsylvania Game Commission. If you have any questions, please contact me at (717) 783-5957.

Very truly yours,

James R. Leigey

James R. Leigey
Wildlife Impact Review Coordinator
Division of Environmental
Planning and Habitat Protection
Bureau of Land Management

JRL/pfb

Cc: File

Commonwealth of Pennsylvania
Pennsylvania Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane
Bellefonte, PA 16823
814-359-5147
July 16, 2003

IN REPLY REFER TO
SIR# 12537

Department of the Army
Philadelphia District, Corps of Engineers
Minas M. Arabatzis
Wanamaker Bldg, 100 Penn Square E.
Philadelphia, PA 19107-3390

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
Fairmount Dam Fish Ladder Improvement Project
Philadelphia, Pennsylvania

Dear Mr. Arabatzis:

I have examined the map and the draft environmental assessment accompanying your recent correspondence, which shows the location for the proposed above-referenced project.

Presently, none of the fishes, amphibians, reptiles or aquatic invertebrates that we list as endangered or threatened is known to occur at or in the immediate vicinity of this study area. Therefore, I do not foresee the proposed project resulting in adverse impacts to any rare or protected species under Pennsylvania Fish and Boat Commission jurisdiction.

Please contact Kathy Derge of my staff at (814) 359-5186 if you have any additional concerns regarding this response. Thank you for your cooperation and attention to this matter of threatened and endangered species conservation.

Sincerely,

John Arway, Chief
Division of Environmental Services

KLD/

Appendix B

Public and Agency Comments to the Draft Environmental Assessment and Corps Responses

1

2

RESPONSE

1 Based on information received from Dick Quinn, Hydraulic Engineer for the US Fish and Wildlife Service, this does not appear to be an issue. In the exit of the fishway where the water actually enters the 30" diameter pipe, all flows must first pass through a 8' wide x 10' long (80 square feet) floor grating with an anti-vortex plate immediately below that. In model tests, the maximum flows that were able to pass through the 30" pipe and grating system were about 75 cfs. Hence, the actual average velocity as it passes through the screen/grating is actually a little less than 1 foot per second. Right at the exit from the fishway at the right bank of the Schuylkill – where the water comes in, the average velocity will be just a bit higher than 1.5 foot per second. The floor grating is specifically designed to prevent entrainment of juvenile life stages of fish (1" wide floor grating and a relatively low approach velocity).

2 Concur, information added to the EA (see Section 5.3).

3) The project includes construction of a "no-overflow" section of the dam adjacent to the ladder to increase attractiveness of the ladder entrance. Is there an opportunity to use the construction around the edge of the dam to reduce safety hazards of the dam? The hydraulic at the base of the dam is a significant hazard (which has killed several people, though none recently to my knowledge) because of its size and regular structure. Additional modifications at the edge of the dam could reduce the hydraulic along the edge of the dam. These might include installation of an apron at the base of the dam (as at the Flat Rock Dam), installation of a small, partial flow obstruction which would break up the regularity of the hydraulic, or creation of an increased outflow chute. **3**

4) The document notes that frequent cleaning of the fish ladder has been necessary and has been done by the Philadelphia Water Department. Community volunteers have also been active in cleanups, demonstrating the local interest in the fish ladder. **4**

Sincerely yours,

Richard J. Horwitz

RESPONSE

3 The issue of the safety of Fairmount Dam is outside the scope of this project. The project's scope is limited to restoring fish passage and not to improve the hydraulic / safety conditions at other portions of the dam not directly involved with the fish passage project. We suggest contacting the dam owner, the City of Philadelphia, to discuss this issue further.

4 Concur, volunteers added to EA (see section 5.2).

Daniel Auerbach
4742 Hazel Avenue, Apt. 3
Philadelphia, PA 19143

June 4, 2003

U.S. Army Corps of Engineers
Philadelphia District
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390
Attn: CENAP-PL-E

Re: Fairmount Dam Fish Ladder Project
Section 1135, Improvements To The Environment
Philadelphia County, Pennsylvania

To Whom It May Concern:

I am writing in response to Public Notice No. CENAP-PL-E-03-01 to offer my support of the proposed improvements, in their entirety, to the Fairmount Dam Fish Ladder located on the Schuylkill River in Philadelphia County, Pennsylvania. As a citizen of Pennsylvania and resident of Philadelphia, I support those projects which increase the number and variety of fish in the rivers of the Commonwealth of Pennsylvania. Please send additional correspondence regarding this project to the address located it the top right-hand corner of the page. **1**

Thank you for consideration of my opinion in this public matter.

Sincerely,

Daniel R. Auerbach

RESPONSE

1 Comment acknowledged, no response necessary.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Mr. Minas M. Arabatzis
Chief, Planning Division
Department of the Army
Philadelphia District, Corps of Engineers
Wanamaker Building, 100 Penn Square East
Philadelphia, PA 19107

March 31, 2003

Re: Environmental Assessment for the Fairmont Dam Fish Ladder Project, Section 1135 Ecosystem Restoration, Philadelphia, PA

Dear Mr. Arabatzis:

In accordance with the National Environmental Policy Act (NEPA) of 1969 and Section 309 of the Clean Air Act, EPA has reviewed the subject Environmental Assessment (EA) and offers the following comments for your consideration.

The last bullet on page 5 indicates that there will be restorative landscaping at the site. Native vegetation should be used. In addition, this project should comply with Executive Order 13112, regarding invasive species. **1**

Page 10 discusses threatened and endangered species. Appropriate state agencies should be contacted regarding state listed species and this information should be provided in the EA. **2**

Page 16 states that toxic metals and organics would have no effect on environmental receptors. Further rational should be provided for this determination. It appears that since sediment may be released, there may be a chance for an effect. If any chemical analyses were conducted, the EA should include this information. **3**

Thank you for the opportunity to offer these comments. If you have any questions, please contact me at (215)814-3330.

Sincerely,

Barbara Okorn

Barbara Okorn
Environmental Scientist

RESPONSE

1 Native vegetation will be used for the restorative landscaping. In addition, this project is compliant with Executive Order 13112, regarding invasive species.

2 Appropriate coordination with state agencies has been completed. Information on state-listed species has been added to the EA.

3 The proposed new section of the fish ladder will be constructed in the dry using a cofferdam. This should greatly limit the amount of sediment released downstream during construction. Due to the nature of this project, no chemical analysis was conducted on the sediment in the project area.

FAIRMOUNT
P · A · R · K
COMMISSION

West Park, Memorial Hall
4231 N. Concourse Drive
Philadelphia, PA 19131

April 14, 2003

Mr. Minas M. Arabatzis
ATTN: Environmental Resources Branch
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

Re: Fairmount Dam Fish Ladder Project

Dear Mr. Arabatzis:

As the Historic Preservation Officer for the Fairmount Park Commission, I have reviewed the above-referenced project to determine the project's potential effect on both the historic and archaeological resources at this Schuylkill River location. It is our understanding that all potential excavation work associated with laying a larger water supply line will occur within the footprint of the existing fish ladder structure and therefore there will be no adverse archaeological impact.

The Fairmount Park Commission believes that the only potential visually obtrusive aspect of the project is associated with the installation of approximately a 5' non-overflow section on the crest of the dam. Our understanding is that the non-overflow section will be constructed with two concrete pillars with a wooden stop log in between. The pillars will extend approximately 3' above the water surface on the western edge of the dam. We would prefer that the design of this structure be made as unobtrusive as possible and that its height be kept to a minimum. Again, all other proposed improvements will occur within the existing footprint of the current structure. In short, however, we agree with the State Historic Preservation Office that there will be no adverse effect upon the National Register resources in the district and that the proposed project conforms to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. **1** **2**

As the project site owner with jurisdiction we do ask that coordination with our agency continue as the design for the reconstruction of the Fairmount Fish Ladder moves forward and that the Fairmount Park Commission be acknowledged as a **3**

RESPONSE

1 Concur, we will attempt to make the non-over flow section as unobtrusive as possible and keep the height to a minimum (see Section 5.7.3 of the EA).

2 Comment acknowledged, no response necessary

3 Concur, coordination will continue as we progress through the final design of the project and Fairmount Park Commission was added as a cooperating agency in the EA.

cooperating agency both in the Environmental Assessment under Section 7 entitled "Coordination" and the "Overview" attachment.

Very truly yours,

Theresa R. Stuhlman
Historic Preservation Officer

Cc: Stephanie Craighead, FPC

RESPONSE

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801-4850

April 8, 2003

Mr. Minas M. Arbatzis
Philadelphia District
U.S. Army Corps of Engineers
Wanamaker Building, 100 Penn Square East
Philadelphia, PA 19107-3390

Dear Mr. Arbatzis:

This responds to your March 14, 2003, letter requesting our review and comments on the Environmental Assessment for the Fairmount Dam Fish Ladder Project, Section 1135 Ecosystem Restoration in Philadelphia, Pennsylvania. This response provides technical assistance only, and do not represent the final review comments of the Department of the Interior on the environmental assessment.

The Fish and Wildlife Service concurs with the Preferred Alternative to reconstruct the existing fish ladder. We agree with conclusions in the assessment that the proposed construction will have minimal short-term adverse effects on the fish and wildlife resources within the project area. In addition, our January 17, 2003, letter on the proposed project indicated that there are no threatened or endangered species known to occur with the project area. **1**

If you have any questions regarding these comments, please contact Richard McCoy of my staff at 814-234-4090.

Sincerely,

David Densmore
Supervisor

RESPONSE

1 Comment acknowledged, no response necessary.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Habitat Conservation Division
James J. Howard
Marine Sciences Laboratory
74 Magruder Rd.
Highlands, NJ 07732

March 25, 2003

Minas M. Arabatzis, Chief Planning Division
Department of the Army
Philadelphia District, Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

Dear Mr. Arabatizis:

We have reviewed the Environmental Assessment and the public notice, CENAP-PL-E-03-01 dated March 14, 2003 for the Philadelphia District, U.S. Army Corps of Engineers' proposal for the restoration of the Fairmount Dam fish ladder on the Schuylkill River, located two miles from Center City in Philadelphia. Philadelphia County, PA. The proposed improvements would include a new exit channel, a new attraction water supply with non-overflow section, new fishway pools and a reconfigured fishway entrance. We offer the following comments pursuant the Endangered Species Act and the Fish and Wildlife Coordination Act.

Endangered Species Act Comments

With the exception of occasional transients, no endangered or threatened marine species under the jurisdiction of the National Marine Fisheries Service (NMFS) are present in the project vicinity. Further consultation with NMFS under Section 7 of the Endangered Species Act will not be necessary. However, should project plans change or should new information become available that modifies the basis for this determination, then consultation should be reinitiated. **1**

Fish and Wildlife Coordination Act Comments

The Schulkill River provides spawning habitat for the anadromous American shad (Alosa sapidissima), blueback herring (Alosa aestivalis), alewife (Alosa pseudoharengus), and striped bass (Morone saxatilis). These anadromous fishes would benefit from the fishladder improvements by the enhanced potential to reach suitable spawning and nursery habitats; and we have no objection to the project. However, we recommend that a construction restriction from April 1 to June 30 be followed to minimize impacts to these anadromous fish during the spawning season. **2**

RESPONSE

1 Comment acknowledged, no response necessary.

2 Comment acknowledged, seasonal construction restriction is in EA document (see Section 9.0).

Thank you for the opportunity to comment on this project. If you wish to discuss this matter further, please contact Anita Riportella of my staff at (732) 872-3116.

Sincerely,

Stanley W. Gorski
Field Offices Supervisor

ar/Fairmount Dam Fishladder
cf: EPA, Region II
USFWS, Pleasantville
NJDEP, Land Use Regulation
NJDEP, Fish and Wildlife

RESPONSE

Pennsylvania Department of Environmental Protection

Rachel Carson State Office Building
P.O. Box 2063
Harrisburg, PA 17105-2063
April 25, 2003

COPY

Office for River Basin Cooperation 717-772-5622

Minas M. Arabatzis
Chief, Planning Division
Environmental Resources Branch
Department of the Army
Philadelphia District, Corps of Engineers
Wanamaker Building, 100 Penn Square East
Philadelphia, PA. 19107-3390
Erie PA 16501-1720

Re: CZM File No. CZ7: FDP

Dear Mr. Arabatzis:

The Pennsylvania Coastal Zone Management (CZM) Program has reviewed information received in this office on March 20, 2003, concerning the proposed restoration of the Fairmount Dam Fish Ladder, located on the Schuylkill River in the City and County of Philadelphia, Pennsylvania. This project will increase the ladder's efficiency through a redesigning and reconstruction of the existing ladder structure to allow for passage of anadromous, catadromous and resident finfish.

Since restoration of this project will be undertaken by the U.S. Army, Corps of Engineers, it is subject to our federal consistency review under 15 CFR Part 930 Subpart C – Consistency for Federal Agency Activities.

We concur with your determination that this aforementioned project is consistent with the Pennsylvania CZM Program <u>under the following condition</u>:

That the U.S. Army, Corps of Engineers will not commence construction of the aforementioned project, until this Department's Office of Water Management, Bureau of Waterways Engineering in Harrisburg issues the necessary Water Quality Certification which is required under section 401(a) of the 1972 amendments to the Federal Water Pollution Control Act (33 U.S.C.A. Section 1341(a)). This condition is necessary in order to ensure that this federal activity will not violate applicable state water quality standards, and will be undertaken in a manner consistent with CZM's enforceable policy 9.2: Intergovernmental Coordination / Water Quality. This policy adopts by reference the requirements of the Federal Water Pollution Control Act, and incorporates these requirements into the Pennsylvania CZM Program.

1

RESPONSE

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1 Concur, a conditional 401 Water Quality Certificate has been obtained from PADEP for this project (see Section 6.0 and Appendix A).

In conclusion, if this condition is not met, than both the U.S. Army, Corps of Engineers and the Pennsylvania CZM Program will treat this conditional concurrence as an objection pursuant to 15 CFR Part 930 Subpart C. Furthermore, if you believe that this condition cannot be met, the U.S. Army has the opportunity to appeal CZM Program's objection to the Secretary of Commerce, **within 30 days after receipt of this concurrence / objection letter** **2**

It is my understanding through conversations with John Kraeuter of this Department's Office of Water Management, Bureau of Waterways Engineering in Harrisburg, that an application for a 401 Water Quality Certification has been received, and is being processed for publication in the *Pennsylvania Bulletin*. Once the 401 Water Quality Certification has been issued, the U.S. Army, Corps of Engineers will have complied with CZM's consistency condition. **3**

In conclusion, please note that this determination pertains only to CZM federal consistency review requirements, and does not constitute a waiver from further DEP's review or other DEP permits. **4**

If you have any questions concerning this conditional consistency determination, or require information on the federal CZM appeals process, please contact me at 717-772-5622.

Sincerely,

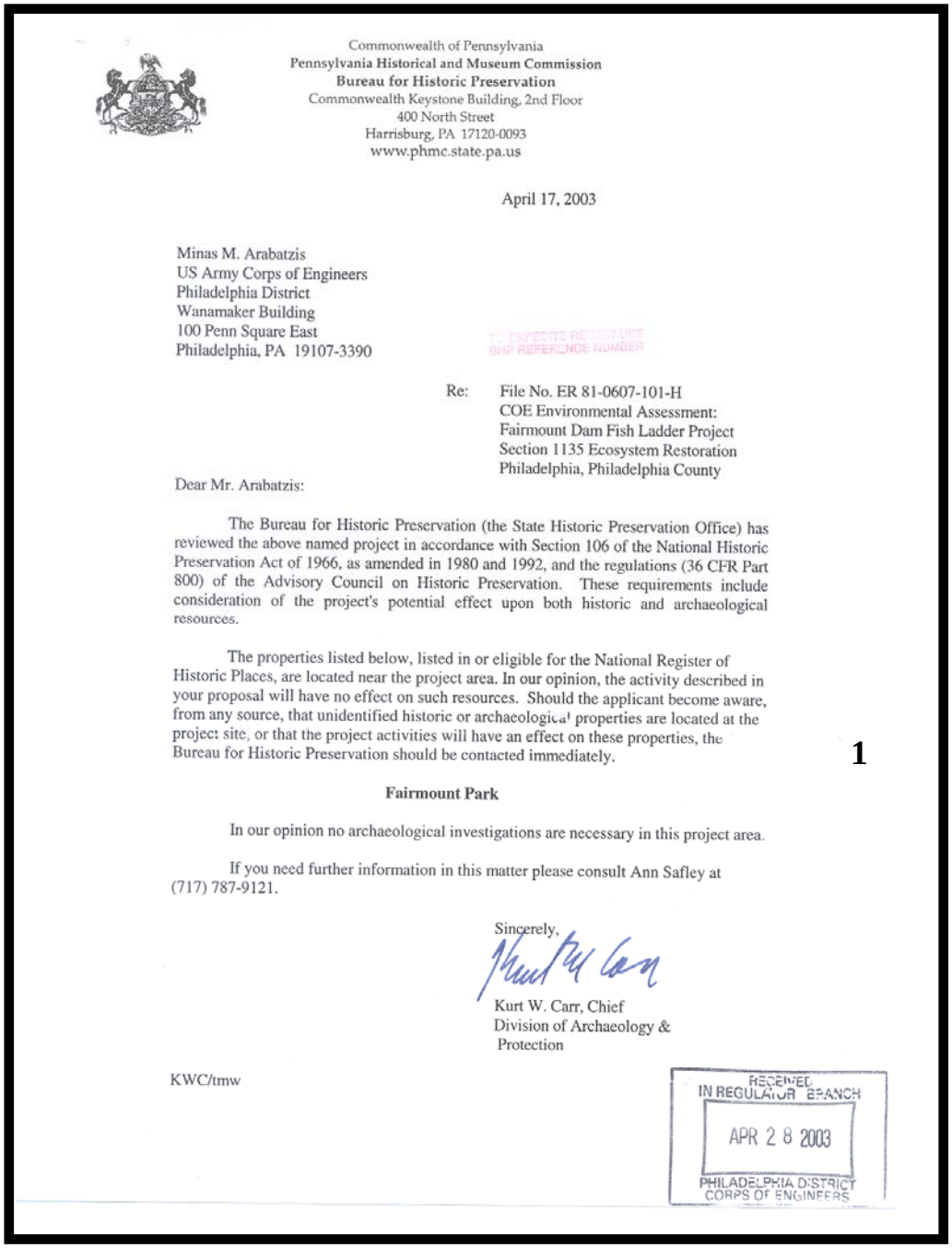
Lawrence J. Toth
Environmental Planner
Coastal Zone Management Program

RESPONSE

2 Comment acknowledged, no response necessary.

3 Comment acknowledged, a conditional Water Quality Certificate has been received from PADEP for this project (see Section 6.0 and Appendix A).

4 Comment acknowledged, no response necessary.



Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

April 17, 2003

Minas M. Arabatzis
US Army Corps of Engineers
Philadelphia District
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

TO EXPEDITE REVIEW USE BHP REFERENCE NUMBER

Re: File No. ER 81-0607-101-H
COE Environmental Assessment:
Fairmount Dam Fish Ladder Project
Section 1135 Ecosystem Restoration
Philadelphia, Philadelphia County

Dear Mr. Arabatzis:

The Bureau for Historic Preservation (the State Historic Preservation Office) has reviewed the above named project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980 and 1992, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation. These requirements include consideration of the project's potential effect upon both historic and archaeological resources.

The properties listed below, listed in or eligible for the National Register of Historic Places, are located near the project area. In our opinion, the activity described in your proposal will have no effect on such resources. Should the applicant become aware, from any source, that unidentified historic or archaeological properties are located at the project site, or that the project activities will have an effect on these properties, the Bureau for Historic Preservation should be contacted immediately.

1

Fairmount Park

In our opinion no archaeological investigations are necessary in this project area.

If you need further information in this matter please consult Ann Safley at (717) 787-9121.

Sincerely,

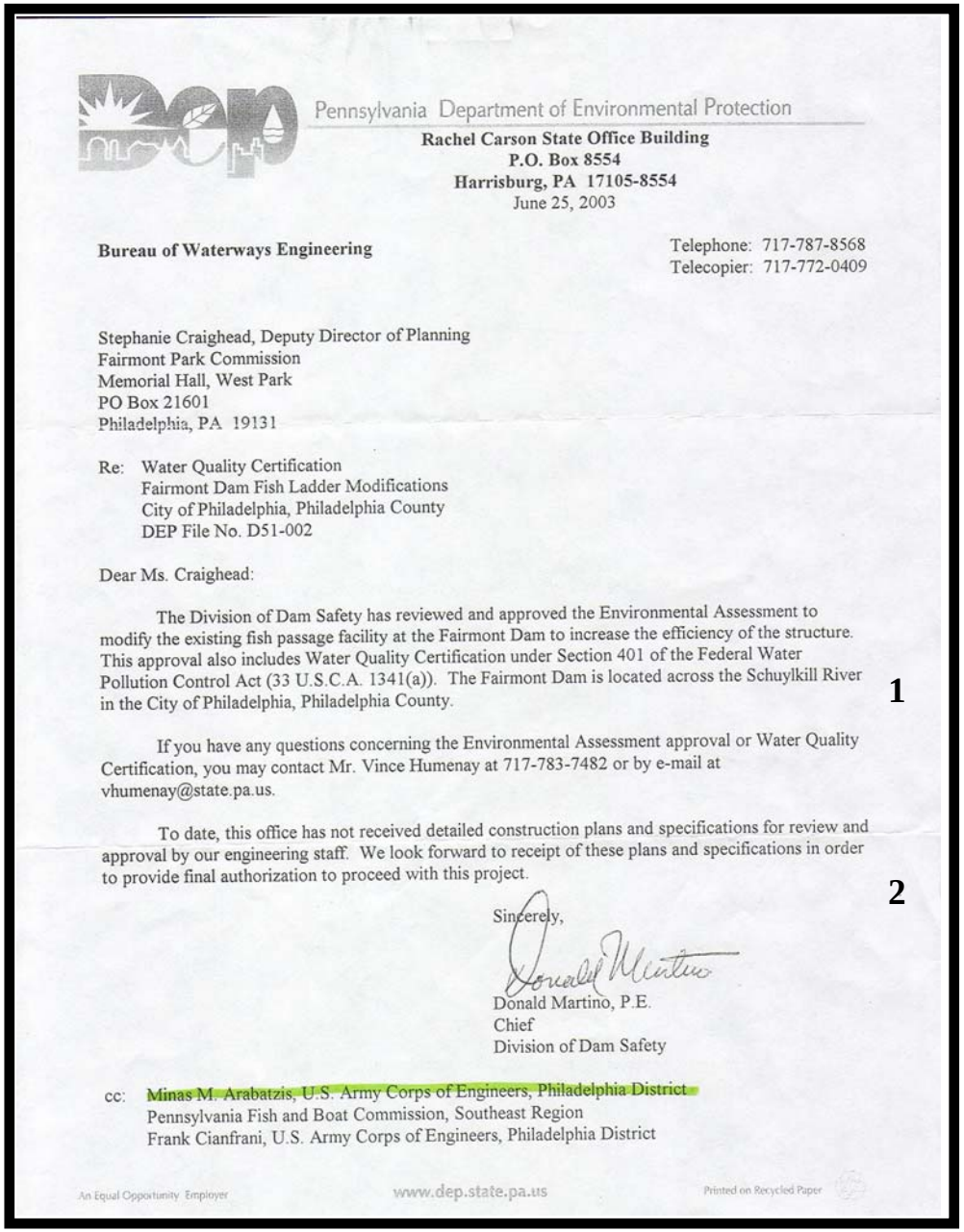
Kurt W. Carr, Chief
Division of Archaeology & Protection

KWC/tmw

RECEIVED
IN REGULATOR BRANCH
APR 28 2003
PHILADELPHIA DISTRICT
CORPS OF ENGINEERS

RESPONSE

1 Comment acknowledged, no response necessary (see Section 5.7.3 Impacts on Historic and Cultural Resources).



Pennsylvania Department of Environmental Protection

Rachel Carson State Office Building
P.O. Box 8554
Harrisburg, PA 17105-8554
June 25, 2003

Bureau of Waterways Engineering

Telephone: 717-787-8568
Telecopier: 717-772-0409

Stephanie Craighead, Deputy Director of Planning
Fairmont Park Commission
Memorial Hall, West Park
PO Box 21601
Philadelphia, PA 19131

Re: Water Quality Certification
Fairmont Dam Fish Ladder Modifications
City of Philadelphia, Philadelphia County
DEP File No. D51-002

Dear Ms. Craighead:

The Division of Dam Safety has reviewed and approved the Environmental Assessment to modify the existing fish passage facility at the Fairmont Dam to increase the efficiency of the structure. This approval also includes Water Quality Certification under Section 401 of the Federal Water Pollution Control Act (33 U.S.C.A. 1341(a)). The Fairmont Dam is located across the Schuylkill River in the City of Philadelphia, Philadelphia County.

If you have any questions concerning the Environmental Assessment approval or Water Quality Certification, you may contact Mr. Vince Humenay at 717-783-7482 or by e-mail at vhumenay@state.pa.us.

To date, this office has not received detailed construction plans and specifications for review and approval by our engineering staff. We look forward to receipt of these plans and specifications in order to provide final authorization to proceed with this project.

Sincerely,

Donald Martino, P.E.
Chief
Division of Dam Safety

cc: Minas M. Arabatzis, U.S. Army Corps of Engineers, Philadelphia District
Pennsylvania Fish and Boat Commission, Southeast Region
Frank Cianfrani, U.S. Army Corps of Engineers, Philadelphia District

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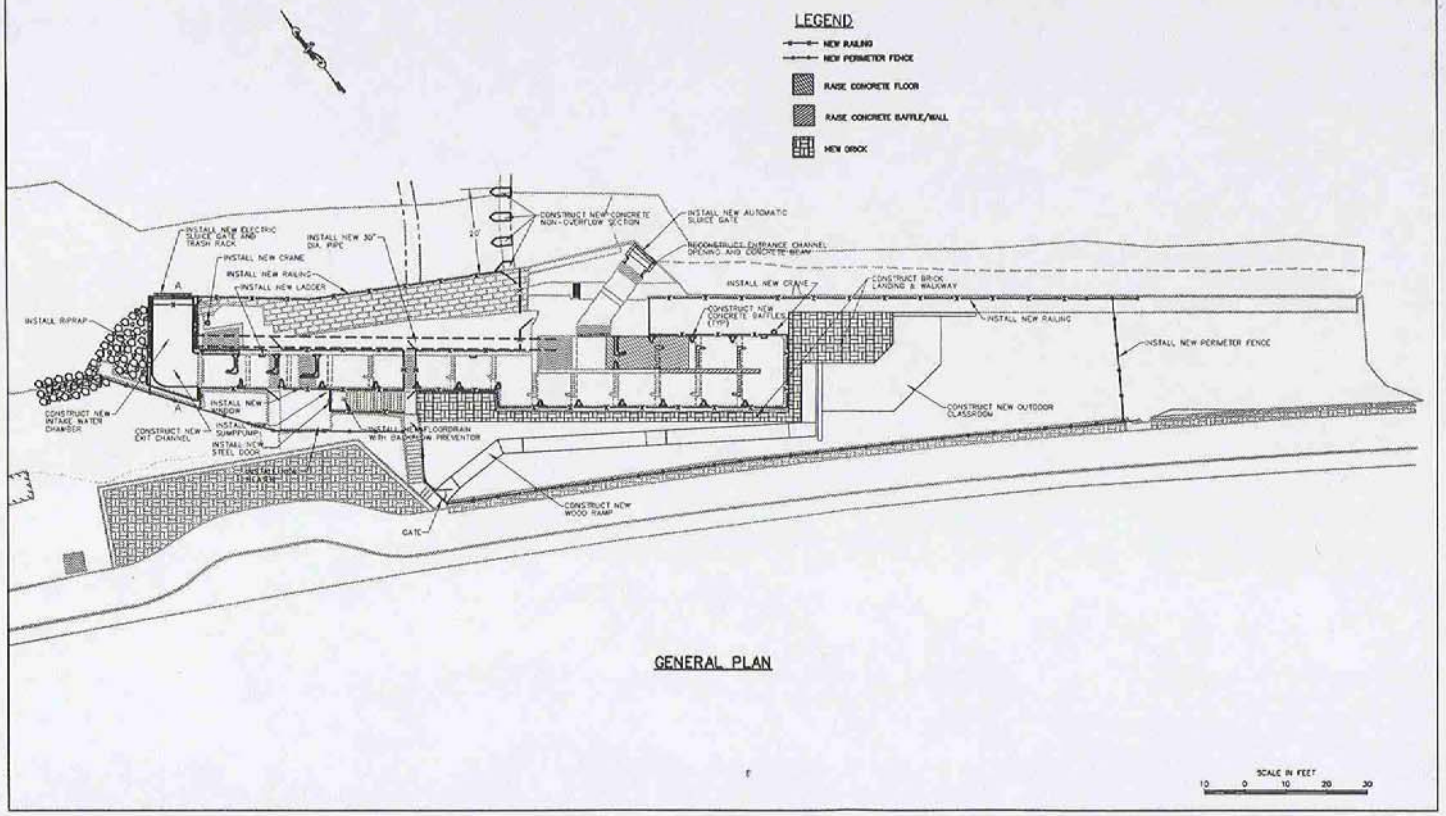
RESPONSE

1 Comment acknowledged, no response necessary.

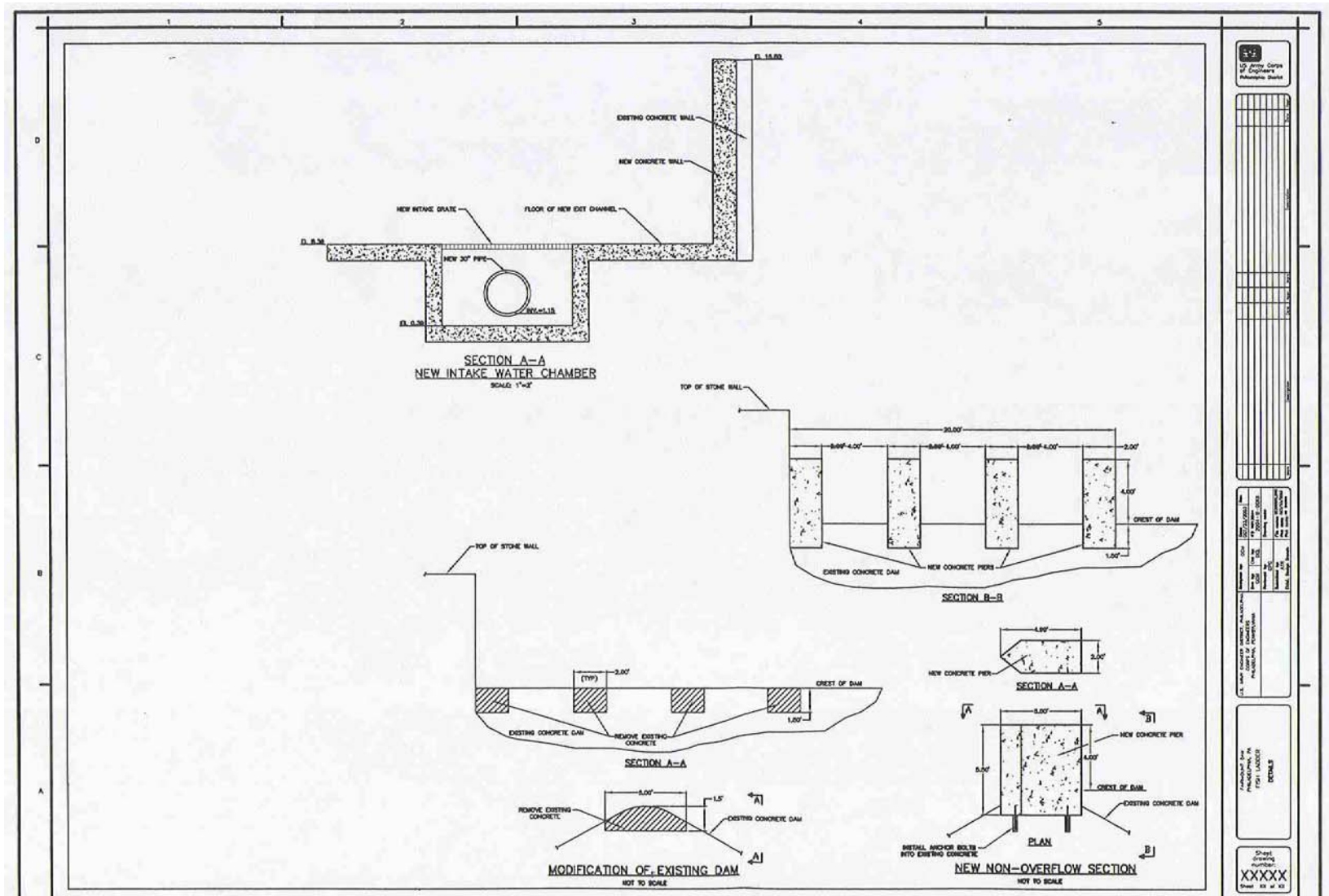
2 Draft project designs (30% level) have been sent to PADEP. When completed, the 90% designs will also be sent to PADEP for their review and comment.

Appendix C

Project Design (30% level)



GENERAL PLAN


EXISTING CONCRETE WALL
NEW CONCRETE WALL
NEW INTAKE GRATE
FLOOR OF NEW EXIT CHANNEL
NEW 30" PIPE
SECTION A-A
NEW INTAKE WATER CHAMBER
TOP OF STONE WALL
20.00'
2.00'
4.00'
CREST OF DAM
1.00'
NEW CONCRETE PIERS
EXISTING CONCRETE DAM
SECTION B-B
TOP OF STONE WALL
2.00'
CREST OF DAM
EXISTING CONCRETE DAM
REMOVE EXISTING CONCRETE
1.00'
SECTION A-A
NEW CONCRETE PIER
SECTION A-A
REMOVE EXISTING CONCRETE
EXISTING CONCRETE DAM
MODIFICATION OF EXISTING DAM
NOT TO SCALE
NEW CONCRETE PIER
CREST OF DAM
EXISTING CONCRETE DAM
INSTALL ANCHOR BOLTS INTO EXISTING CONCRETE
PLAN
NEW NON-OVERFLOW SECTION
NOT TO SCALE
DETAILS
XXXXX