US Army Corps of Engineers

Philadelphia District

Public Notice

Public Notice No. CENAP-PL-E-15-04

Date: November 20, 2015

Comment Period Closes: December 21, 2015

TOOKANY CREEK FLOOD RISK MANAGEMENT PROJECT
CHELTENHAM TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

In accordance with Section 102 of the National Environmental Policy Act of 1969 and pursuant to Section 404 of the Clean Water Act of 1977, NOTICE IS HEREBY GIVEN that the Philadelphia District, U.S. Army Corps of Engineers (Corps) has evaluated flood risk management options for the community of Cheltenham Township in Montgomery County, Pennsylvania. This evaluation provided a screening of structural and nonstructural measures that can be used to manage risks from riverine flooding. The public and all agencies are invited to comment on this study (see final page for instructions).

The study area focuses on flood prone areas throughout Cheltenham Township, Montgomery County, PA (Figure 1). Cheltenham is part of the suburban development immediately outside of the City of Philadelphia and is largely at maximum development capacity. Tookany Creek itself is an urbanized tributary of Tacony Creek in the Tacony-Frankford Creek watershed and ultimately part of the Delaware River drainage system. In Cheltenham Township, Tookany Creek is 98% open channel flowing through residential and parklands for more than 95% of its length. Tookany Creek runs through the township and is part of the Tookany/Tacony-Frankford Watershed (Figure 2).

Tookany Creek drains the majority of Cheltenham Township (a small portion of western Cheltenham Township drains to the Wissahickon Creek watershed). Since Cheltenham Township is the non-Federal sponsor, the project team focused its analysis on maximizing flood risk management activities within the Cheltenham Township boundary. Therefore, the area of interest for this study was delimited above the Cheltenham Township/Philadelphia County boundary near Adams Avenue. The drainage area of Tookany Creek at Adams Avenue is approximately 15.6 square miles.

The authority for this project is Section 205 of the 1948 Flood Control Act (33 U.S.C. 701r), as amended. The purpose of the Section 205 authority is to provide authority to the Corps to plan and construct small flood risk management projects that have not already been specifically authorized by Congress. A project is accepted for construction only after detailed investigation clearly shows it is technically feasible, environmentally acceptable, and economically justifiable.

Figure 1. The study area (shaded in blue) in Cheltenham Township located outside of Philadelphia, PA.

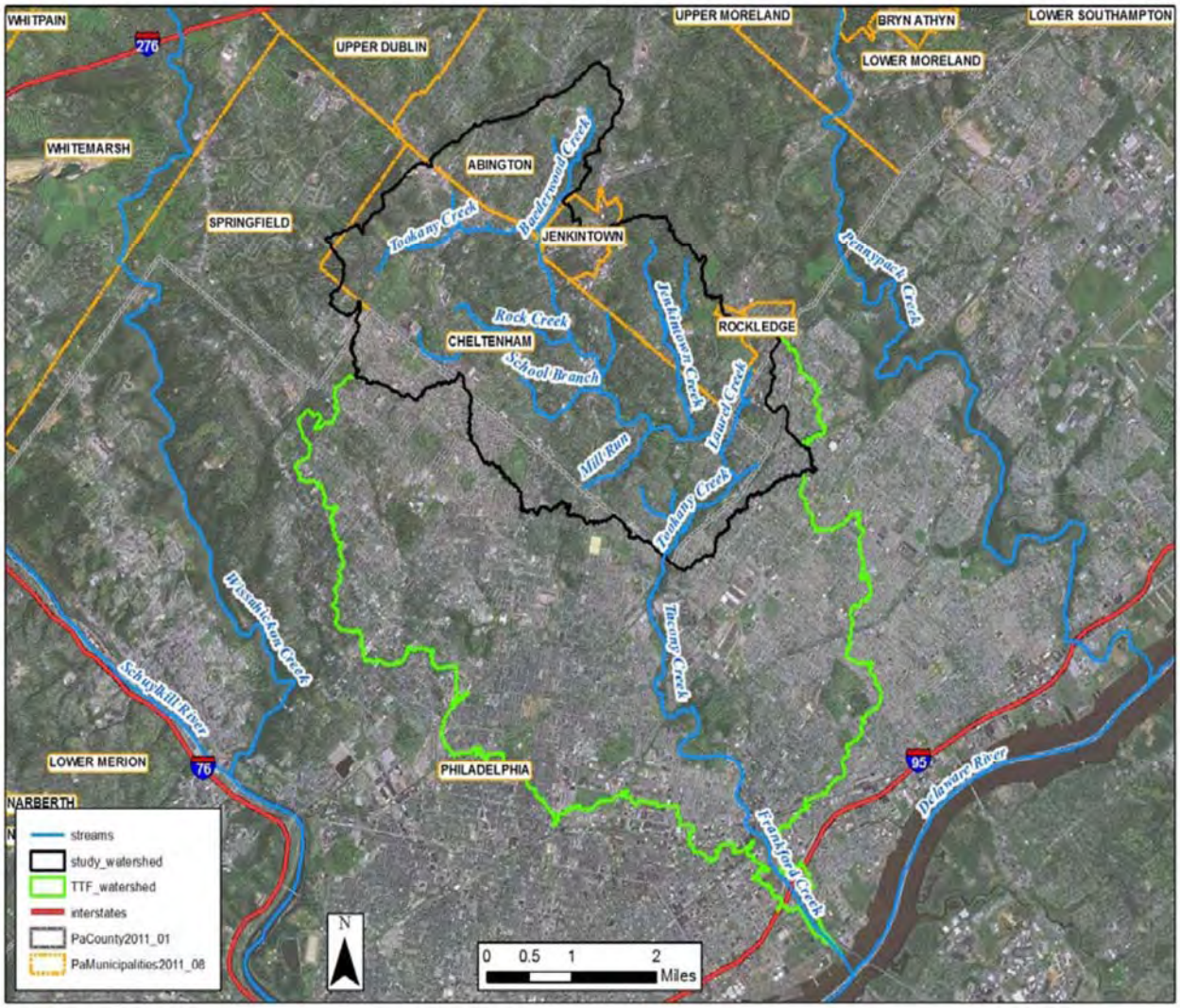

Figure 2: The Tookany/Tacony-Frankford Watershed (highlighted in green).

Purpose and Need for Action

As a result of serious flooding in 1955 and in 1967, the Township of Cheltenham undertook a large number of actions within the stream corridor along Tookany Creek and its tributaries to improve flooding problems. These actions included:

- Stream alignment on Tookany Creek upstream of Church Road and Springhouse Lane
- Construction of concrete, stone, masonry, and concrete block channel sections on Tookany Creek upstream of Church Road and Ashmead Road
- Levee construction along Tookany Creek from Rices Mill Road to Brookdale Avenue
- Dredging of Tookany Creek

Despite these earlier actions, flooding and flood-related damages continue to create problems in the study area. Heavy short duration rainfall events, particularly summer thunderstorms, cause most of the flooding problems by inundating low lying areas. This type of flash flooding is characterized by floodwaters that rise and fall very quickly and usually have high flow velocities.

Although the Township had various periods of settlement from early colonial times to the present, the major development and growth occurred after World War II. With this development came a major change in the hydrological cycle and function, and an increase in impervious surfaces. The impact of this imbalance is

apparent in most reaches of the watershed in the form of flooding, severe erosion and sedimentation, slumping banks and poor water quality. In addition, the aging municipal infrastructure and related facilities have compounded the problems. After numerous recent flood events, the Township approached the Corps for assistance in addressing these issues for the public.

Coordination

The project was developed in partnership with the Corps and Cheltenham Township. The draft Environmental Assessment (EA) for the project was forwarded to the U.S. Environmental Protection Agency, Region III, the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service, Pennsylvania Department of Environmental Protection (PADEP), Pennsylvania State Historic Preservation Officer (SHPO), Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, and all other known interested parties.

In addition, a public notice discussing this project was emailed to members of the public who have signed up to receive copies of Philadelphia District public notices. Currently, there are approximately 350 parties registered on our public notice review email list. Furthermore, public meetings were conducted in January 2013, February 2014, and May 2015 to provide public outreach regarding the study progress and plan development. Public sentiment is generally in support of the recommended plan; however, some folks are concerned about the footprint(s) of the proposed detention basins.

Alternative Plans Considered

The objective of the plan formulation for this study was to define a technically feasible, economically justified and environmentally acceptable solution to the flooding problems in the Tookany Creek watershed in Cheltenham Township. The formulation process involved establishing plan formulation rationale, identification and screening of alternatives, and assessment and evaluation of plans responsive to identified problems and needs. The primary planning objective was to reduce flood hazards, including risks to life safety and damages to private and public infrastructure related to Tookany Creek in Cheltenham Township, PA.

The study had the following constraints:
• Avoid inducing flood damages.
• Avoid and minimize adverse impacts to in-stream or adjacent riparian habitat.
• Avoid degradation to water quality.

The study had the following considerations:
• There is no known Hazardous, Toxic, or Radioactive Waste (HTRW) in the proposed project area; however, HTRW testing will be conducted during the project design phase.
• Impacts to cultural resources and historic structures, sites and features will be minimized
• Upstream impacts and actions from neighboring communities will be incorporated into the planning process.
• Extensive changes to local land use designations and zoning will be limited.

There was an evaluation of measures and alternative plans considered against technical, economic, and environmental criteria. Measures are defined as features or activities that can be implemented to address one or more planning objective. Measures can either be structural or nonstructural. Features are “structural” measures that require construction or assembly on-site, while activities are defined as “nonstructural” actions. Measures are the building blocks of which alternative plans are made. After an initial screening, the measures carried forward for more detailed analysis were structural measures: bridge modifications, channel modifications, and aboveground storage areas. For non-structural measures the following was carried forward: no action and flood proofing (floodplain evacuation/acquisition and elevation).

After a secondary screening process, the Corps continued to formulate alternative plans with different combinations of dry detention basin measures. Based on the measure combinations, four different action

alternatives and one no-action alternative were compared and evaluated to determine the recommended plan. The following alternatives were considered for the project:

- Alternative 1: No Action Plan
- Alternative 2: The Upper Tookany Creek Plan
- Alternative 3: The Baederwood Creek Plan
- Alternative 4: The Comprehensive Plan
- Alternative 5: The Rock Creek Plan

For each of the action alternatives, the proposed dry detention basin locations are low-lying, open-space areas that would require minimal excavation and construction costs to store water. Reduced excavation will not only improve the project economics, but also help to minimize environmental and cultural impacts. Instead of large-scale excavation, an embankment will be constructed on the downstream end of the dry detention basin to capture and control flows. Such a structure will include interlocked gabion baskets and earthen material that allow flows up to a non-damaging level to pass unimpeded. As the inflow rate increases, flow through the gabion basket conduit structure will be "choked" and a pool will start to form behind the embankment. If inflows are really high, the structure can be safely overtopped without failing by "keying" it into a foundation, such as solid rock. Once the downstream flows have returned to a low level and inflows have dropped, the stored water will be slowly released through the conduit and the area will return to pre-storm conditions. An overview of all nine areas being considered for dry detention basins can be seen in Figure 3.

- Alternative 1: No-action

The "no action" alternative would not address the continuing flood risk management problems in Cheltenham Township and; therefore the Corps does not consider this as a viable alternative. As per National Environmental Policy Act guidelines, the Corps will keep the "no action" alternative as part of the plan formulation process.

- Alternative 2: The Upper Tookany Creek Plan

Five potential storage basins were evaluated at different scales/combinations: Doe Lane, West Waverly Road, Church Road (Arcadia University), Limekiln Pike and Grove Park. One combination which included all five basins functioning as a system had a positive benefit /cost ratio and positive net benefits.

- Alternative 3: The Baederwood Creek Plan

Three potential storage basins were evaluated at different scales/combinations: Highland West, Highland East and Baeder Road. Each storage area in this group is entirely located within Abington Township. The first combination included all three basins functioning as a system. The different combinations yielded a positive benefit / cost ratio and positive net benefits.

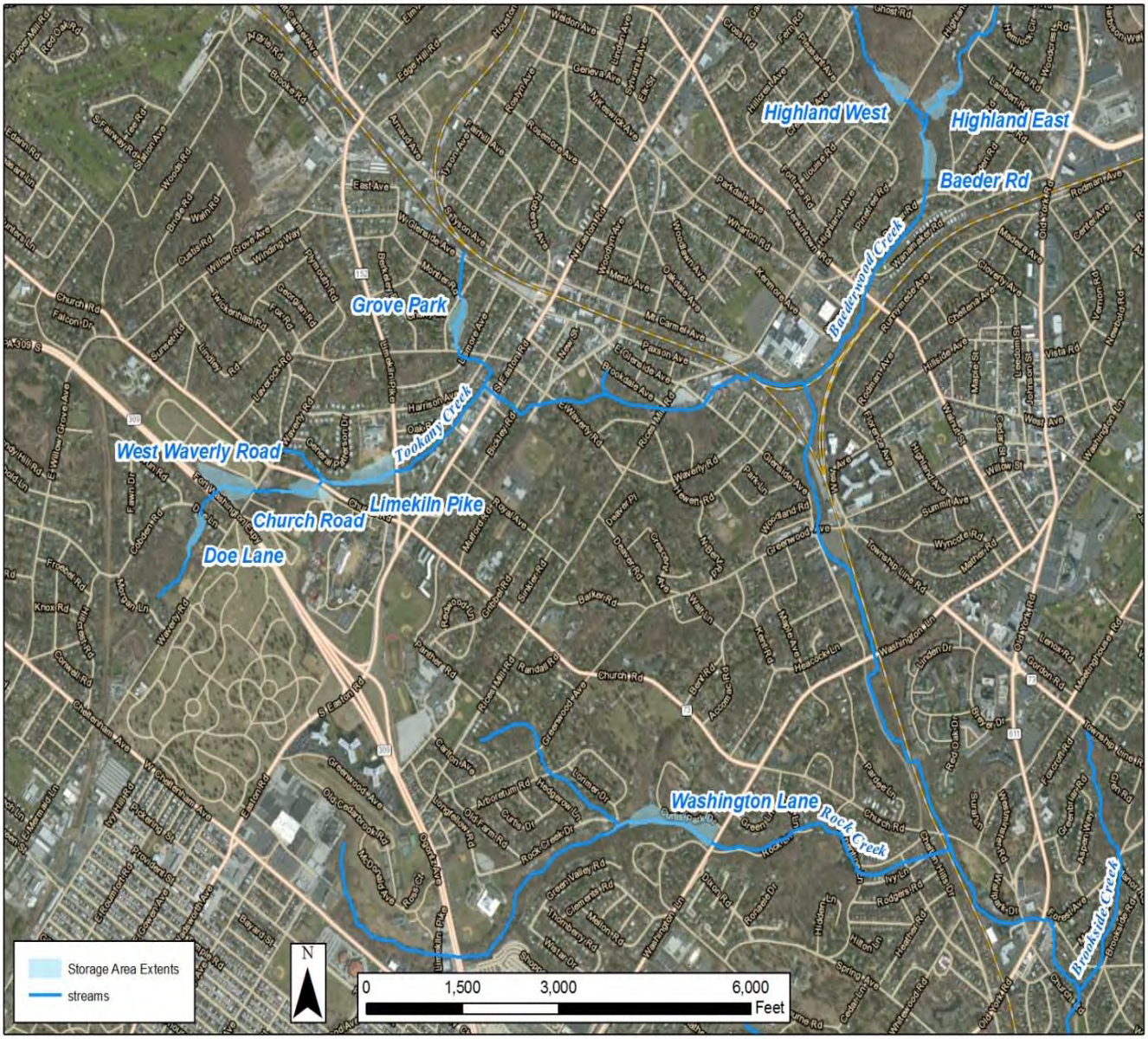

Figure 3. Overview of all nine areas being considered for dry detention basins.

- Alternative 4: The Comprehensive Plan

Nine potential storage areas were evaluated at different scales/combinations: Doe Lane, West Waverly Road, Church Road (Arcadia University), Limekiln Pike, Grove Park, Highland West, Highland East, Baeder Road and Washington Lane. This combination includes all nine basins functioning as a system. It had a positive benefit / cost ratio and positive net benefits.

- Alternative 5: The Rock Creek Plan

Alternative 5 consists of one dry detention basin along Rock Creek (a tributary to Tookany Creek): Washington Lane. This plan did yield a positive benefit / cost ratio and positive net benefits; however, Alternative 4 had higher net benefits.

In addition, if federal and non-federal funds are available, the proposed dry detention basins may also include rain gardens within their footprint to provide ancillary ecosystem restoration benefits in addition to their flood risk management (FRM) function. A rain garden is an excavated shallow surface depression planted with

specially selected native vegetation to treat and capture runoff. Rain gardens can improve FRM through water quantity reduction (via evapotranspiration and/or ground infiltration), while providing ancillary water quality benefits. Rain gardens also provide ecosystem restoration benefits by mimicking native ecosystems through species diversity, density and distribution of vegetation, and the use of native species, resulting in a system that is resistant to insects, disease, pollution and climatic stresses. It is important to note that rain gardens are not to be confused with constructed wetlands or wet ponds which permanently pond water. Rain gardens are best suited for areas with at least moderate infiltration rates (more than 0.1 inches per hour).

Tentatively Selected Plan

Alternative #4 (the Comprehensive Plan) is the Tentatively Selected Plan (TSP). This alternative was selected for various reasons, including economics, real estate, and environmental. Specifically, this alternative provides the greatest net benefits for the community and has very minor environmental impacts. See below for more details:

Preliminary Design Assumptions

1.) Dry detention basins will be constructed using gabion baskets (backside – downstream facing) and earthen embankments (front side – upstream facing). Figure 4 is a conceptual designs for the Waverly Road basin. Conceptual designs for all nine proposed basins can be found in the draft Environmental Assessment.

2.) All excavated material will stay onsite and be used in construction of the embankments.

3.) An Environmental Data Resources (EDR) data search identified no known sources of HTRW for the proposed basin locations. Future testing will be conducted during the geotechnical subsurface investigation during the design phase.

4.) Additional clean material will be needed to be brought in for specific basins.

5.) Embankments will be planted with native grasses and shrubs for wildlife habitat and aesthetics. Some examples of native plants that will be considered for the embankment will be grasses {big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), *and* Indiangrass *(Sorghastrum nutans);* and shrubs {Black chokeberry (*Photinia melanocarpa*), *New Jersey tea* (*Ceanothus americanus*), and Southern arrowwood *(Viburnum dentatum*)}.

6.) Dry detention basins will hold water for approximately 24 hrs (1% storm or 100 year storm) before draining and the basin area returning to the normal creek width.

7.) Dry detention basins may also include rain gardens planted with native species within their footprint to provide ancillary ecosystem restoration benefits, as well as to improve the aesthetics of the basins to the local community. This additional work will be dependent on Federal and non-federal funding availability for the project.

8.) Box culverts used for each basin structure will be set at a low enough elevation that they will not impede fish and other aquatic species movement within the creek. In addition, “bottomless or natural bottom” culverts may considered for use within the detention structures. The applicability of “bottomless” culverts to the project will be determined in the next phase of the project design (Preconstruction Engineering and Design).

9.) All basins will have an appropriately sized low flow channel that mimics the natural stream channel as much as possible.

10.) As necessary, real estate easements will be acquired for all basins.

11.) The size of the basin will be site specific and each basin will be different in size.

Economic Feasibility
For the TSP the project benefits outweigh the projected cost of the project. The benefit-to-cost ratio is estimated to be 3.02 with annual net benefits estimated at $725,000. This proposed solution will provide reduced storm damages for the local community for multiple percent annual chance exceedance storm events.

Figure 4. Conceptual design for the proposed West Waverly basin.

In accordance with the National Environmental Policy Act, a draft EA has been developed for this project. The EA concludes that the proposed action would not have a significant adverse impact on the environment. Therefore, a draft Finding of No Significant Impact has been prepared for this project.

The project meets the requirements of Nationwide Permit #43 (Stormwater Management Facilities) which comes with an automatically issued section 401 Water Quality Certificate from PADEP. In addition, the project will comply with Title 25 Pa. Code Chapter 102, Erosion and Sediment Control and Stormwater Management. Based on the information gathered during the preparation of the draft Environmental Assessment, the project is not located in the area defined under the Coastal Zone Management Act of 1972. Therefore, the project will not need a federal consistency determination in regard to the Coastal Zone Management Program of Pennsylvania.

A Pennsylvania Natural Diversity Inventory search run on the Pennsylvania Natural Heritage Program website indicated that no Federally-listed species are found in the project area and, hence no impacts to Federally listed or proposed species would be anticipated from the proposed project. The search did identify a State Special Concern plant, the field dodder, as possibly being in the project area. Additional coordination and field site visits will be conducted to determine if this species is found in the project area. In addition, Section 7 consultation with the USFWS, pursuant to the Endangered Species Act of 1973 as amended by P.L. 96-159, will be completed on this project prior to construction.

In accordance with Section 404 of the Clean Water Act, a Section 404(b) (1) analysis was prepared for the proposed action. There are wetlands found in the project area and the TSP will have an impact on those areas. There will be minor impacts to wetlands as a result of this proposed project. Approximately 0.25 acres of wetlands will be impacted by construction of the proposed West Waverly basin. Mitigation in the form of wetland restoration of approximately 1.0 acre of the West Waverly property will be completed to compensate for this loss.

Based on the results of the Phase IA investigation, additional subsurface archaeological investigations may be required at eight of the nine proposed dry detention basins to properly assess their potential to contain undocumented prehistoric or historic archaeological sites. The Corps, in consultation with the SHPO, the Tribes, and other consulting parties will review the results of all investigations and determine any effects to historic properties eligible for or listed on the National Register of Historic Places, and work to avoid, minimize, or mitigate those effects.

Additional architectural assessments may also be required in order to assess the proposed impacts that the recommended plan may have on above ground historic properties. A formal determination of the Area of Potential Effects for historic structures will be coordinated with the SHPO, the Tribes and other consulting parties as part of the Section 106 process.

The decision whether to accomplish the work proposed in this public notice will be based on an evaluation of the probable impact of the proposed work on the public interest. The decision will reflect the national concern for the protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonable foreseeable detriments. All factors, which may be relevant to the proposal, will be considered. Among those are fish and wildlife resources, general environmental concerns, economics, historic values, recreation, safety, water quality, aesthetics, and in general, the needs and welfare of the people.

The public and all agencies are invited to comment on this proposal. Copies of the draft Tookany Creek Flood Risk Management Project Environmental Assessment are available upon request by calling Mr. Steve Rochette of the Public Affairs Office at (215) 656-6432. This public notice and EA are also available for review on the Philadelphia District web page at http://www.nap.usace.army.mil/Missions/CivilWorks/PublicNoticesReports.aspx

Any person may request, in writing, to the District Engineer, within the comment period specified in this notice **(November 20, 2015 through December 21, 2015)** that a public hearing / meeting be held to consider this proposal. Requests for a public hearing shall state, in detail, the reasons for holding a public hearing.

All comments on the work described in this public notice should be directed to Mr. Peter R. Blum, ATTN: Planning Division - Environmental Resources Branch, U.S. Army Corps of Engineers, Wanamaker Building, 100 Penn Square East, Philadelphia, Pennsylvania 19107-3390 or sent via email to PDPA-NAP@USACE.ARMY.MIL by **December 21, 2015**.

for C. MacIntosh

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