MCPB
Item No. 5
Date: 3/13/14

Alternative Study for the WSSC Potomac Mid-River Submerged Channel Intake: Mandatory Referral

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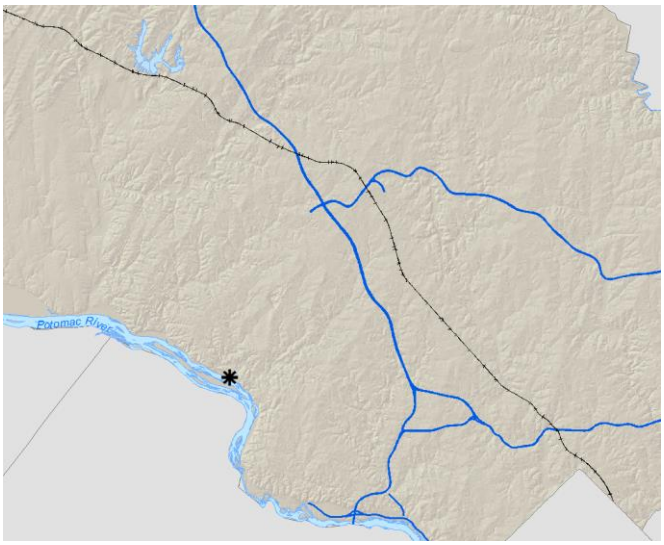
Completed: 3/06/14

Description

Alternative Study for the WSSC Potomac Mid-River Submerged Channel Intake: Mandatory Referral
New offshore submerged channel intake in the Potomac River to improve water supply, security (access), and reliability, located at the WSSC Water Treatment Facility near the intersection of Potomac Lake Drive and River Road, 71.5 acres for the total facility, RE-2 Zone, Potomac Subregion Master Plan.

***Staff Recommendations**: Approval to transmit comments to WSSC*



Summary

WSSC will brief the Planning Board on the Potomac Submerged Channel Intake Facility Feasibility Study. The project is located on both WSSC and National Parkland. This Mandatory Referral provides the opportunity for the Planning Board and the community to comment on the WSSC alternatives.

The alternatives include:
1. No build alternative
2. Tunnel to shaft west of intake
3. Trench to shaft west of intake
4. Tunnel to shaft east of Intake.

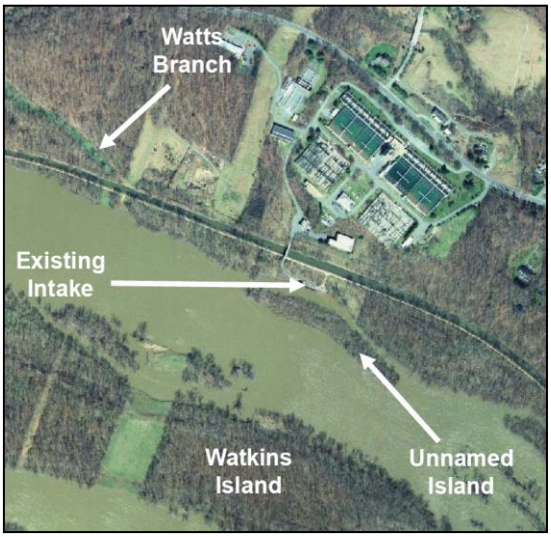
STAFF RECOMMENDATIONS

Approval to transmit the following comments to WSSC

1. Submit a Mandatory Referral for the design phase.
2. Minimize all permanent impacts to the Potomac River shoreline, especially those that will be clearly visible from the Tow path and the River channel.
3. Minimize the size and duration of all temporary construction impacts.
4. Minimize land removed from the Chesapeake & Ohio (C&O) Canal National Historical Park and Trail

BACKGROUND

WSSC's Potomac Water Filtration Plant is the primary source of potable water for Montgomery and Prince George's County. The current intake structure is adversely impacted by its location along the Potomac River shoreline. During storm events, sediments and debris, particularly from Watts Branch, cause the source water quality to change dramatically, and affect the plant operations. These fluctuations have increased as the water quality in Watts Branch has declined. This decline has corresponded with high intensity development in the City of Rockville and North Potomac, located in the Watts Branch Headwaters. Surveys over the past 15 years have confirmed that the water quality (pH, alkalinity, and turbidity), particularly during storm events, is significantly better, and remains much more stable in the middle of the Potomac River than at the intake along the shoreline.



DISCUSSION

WSSC and their consultants will brief the Planning Board on the study being conducted to determine the feasibility of constructing a submerged channel intake for the Potomac River Water Filtration Plant. The study will identify which locations in the river channel are feasible, develop alternatives, including construction methods and cost for construction, and identify environmental impacts and develop recommendations for addressing the impacts. The study will serve as a decision making document by definition of the issues and analysis of the alternatives. The study will reflect interactions with the public.

Elements of the Feasibility Study include the following:

- Intake location on the river side of Unnamed Island
- Type of intake structure and in-river footprints
- Connection alternatives to existing facilities
- Temporary and permanent access to the new facility
- Existing and new environmental and community impacts to National Park Service Land

Staff brings this study to the Planning Board at this stage to provide an opportunity for the Board and the community to comment on the development of the alternatives. Attachment 1 contains the project descriptions of the alternatives.

Land Use issues that have surfaced during this stage of the process are the following:

1. Permanent surface impact to the Potomac River shoreline such as
    a. parking lot and boat launch to be used for maintaining the new intake facility (common to all alternatives)
    b. access road to the canal towpath for maintenance of the shaft (alternative 4)
    c. junctional vault access shaft (common to all alternatives but with different locations)
2. Large limits of disturbance area associated with alternative 4.
3. Potential impacts to National Park Service ownership of certain land areas.

NEXT STEPS

WSSC plans to complete the Feasibility Study, Environmental Assessment and public review period within the next year or so. This project will come to the Planning Board again in the design phase of development if a build alternative is chosen.

Attachment

1. Alternatives Descriptions

Alternatives Descriptions

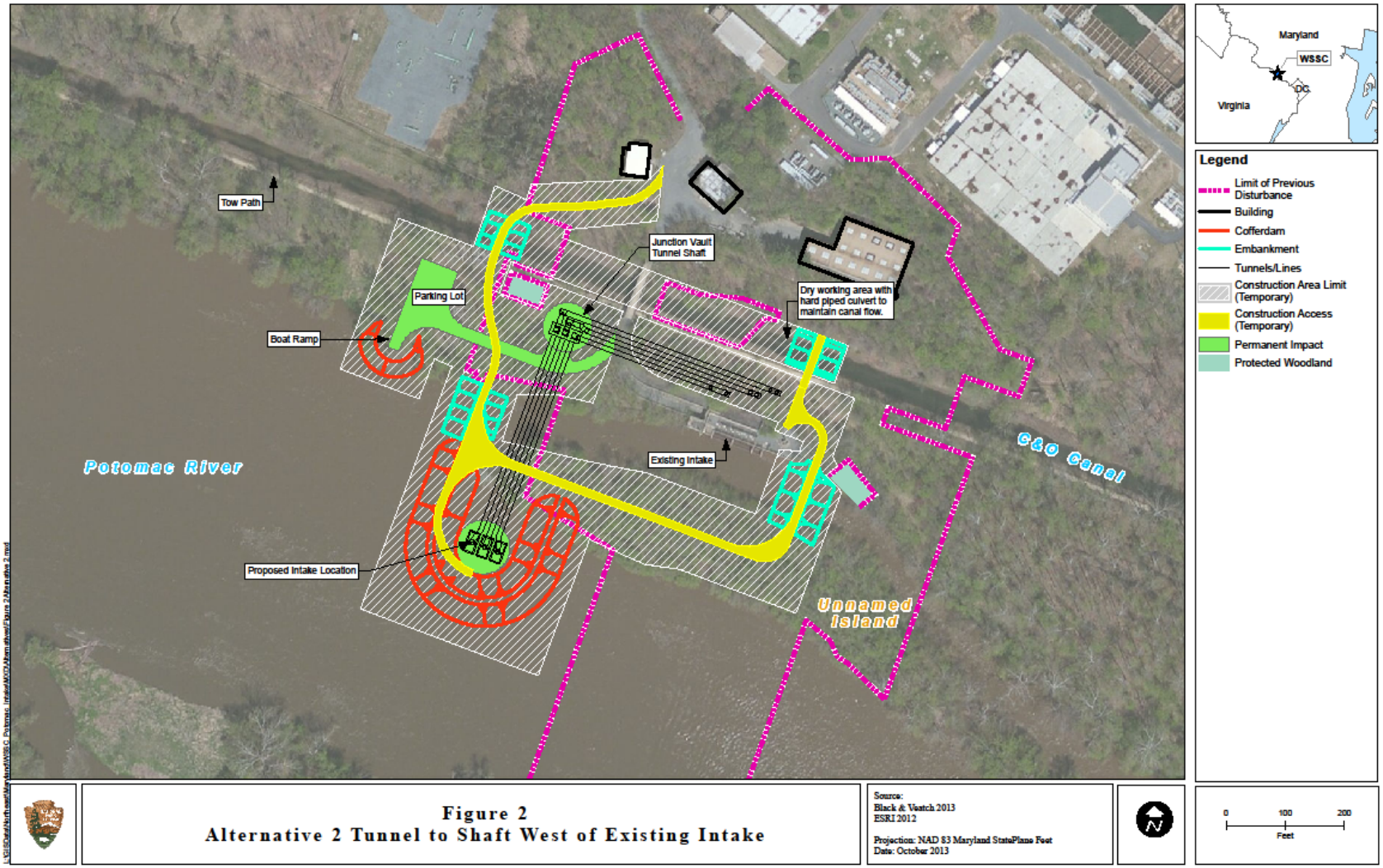
ATTACHMENT 1

- Alternative 1 is the “No Action Alternative”
- Features common to Alternatives 2, 3 and 4 :
  - Intake Location – adjacent to Unnamed Island
  - Intake Type – Horizontal Intake
  - Intake Conduits – 96” diameter steel pipe
  - Connect to existing 72” dia. raw water conduits between existing onshore intake and C&O Canal
  - Temporary Access across and dewatering of C&O Canal
- Features that differ for Alternatives 2, 3 and 4:
  - Junction Vault Location – East or West of onshore Intake facility
  - Construction Method – Tunneling or Trenching
  - Extent of temporary cofferdams needed for construction

Alternative 2 Description:

- Three (3) 10-ft diameter tunnels from onshore shaft west of existing intake to proposed river intake south of Unnamed Island
- Three (3) 10-ft diameter tunnels from the onshore shaft to an open cut area to connect to six (6) existing 72” dia. raw water pipes
- Installation of 96” dia. steel pipe lining within tunnels
- Permanent junction vault structure at the onshore shaft, with gates to direct flow to the raw water pumping stations
- Permanent access road and boat ramp/parking area for maintenance access to facilities
- Temporary cofferdam in the river for construction of the river intake

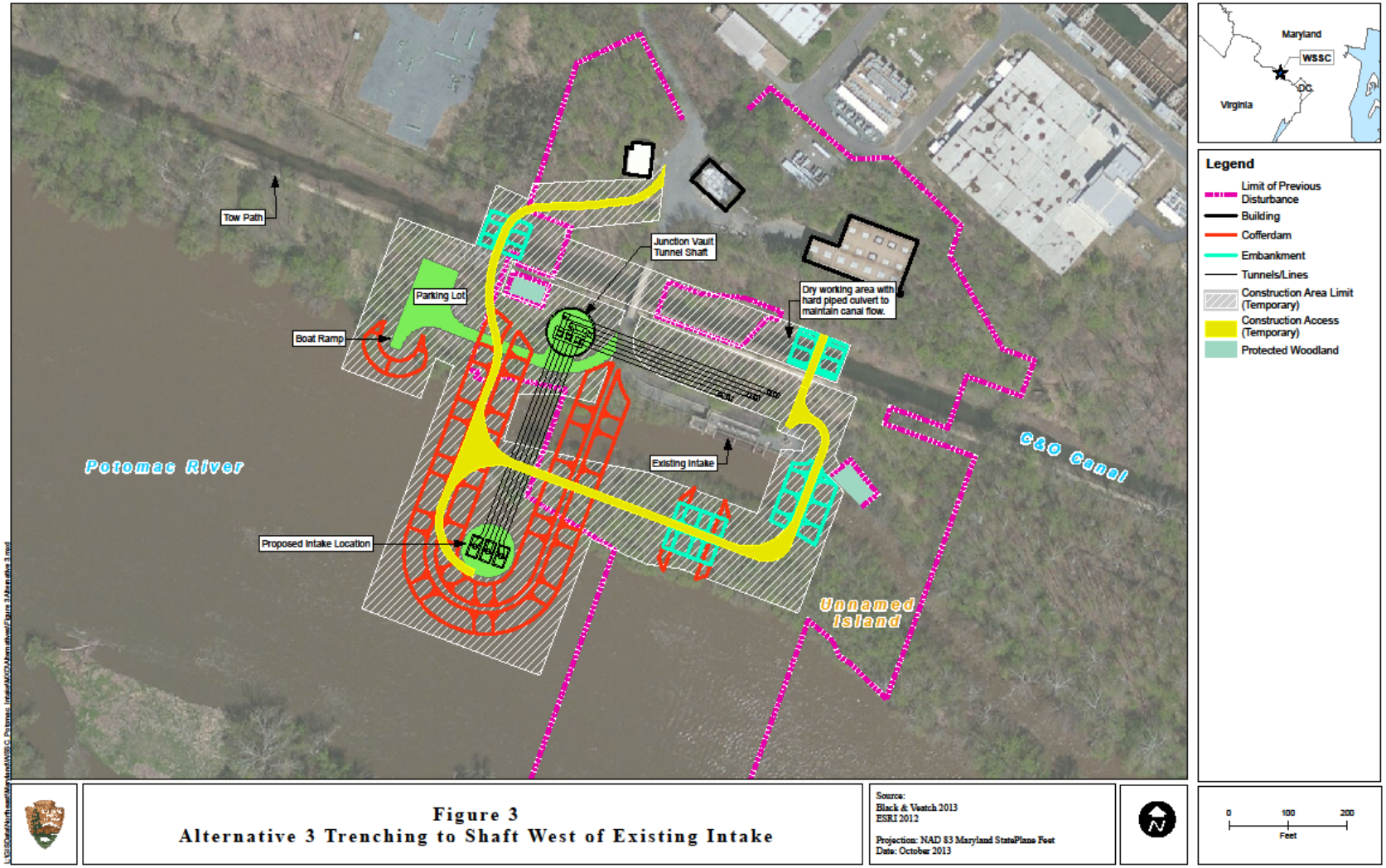
Alt 2 – Tunnel to shaft west of intake



Alternative 3 Description:

- Alt. 3 has the same conduit alignment ,permanent features and locations as Alt. 2
- Installation of new piping using open-trench construction between the onshore shaft west of the existing intake and the proposed river intake.
- Three (3) 10-ft dia. tunnels from onshore shaft to open cut area to connect to six (6) existing 72” raw water pipes
- Temporary cofferdam (longer than Alt. 2) for the length of the new conduits in the river
- Temporary supply channel through Unnamed Island to maintain river flows to the existing intake during construction

Alt 3 – Trench to shaft west of Intake



Alternative 4 Description:

- Alt. 4 is similar to Alt. 2 in that it involves construction of three (3) tunnels with steel piping installed inside each tunnel
- In Alt. 4, the onshore shaft would be located east of the existing intake, instead of west
- A small permanent access road would be constructed off of the existing road to the canal towpath for maintenance of the shaft.

Alt 4 – Tunnel to shaft east of Intake