



MEMORANDUM

July 15, 2009

TO: Montgomery County Planning Board

VIA: Mary Bradford, Director of Parks *M Bradford*
John Hench, Chief, Park Planning and Stewardship Division *J Hench*

FROM: Doug Redmond, Principal Natural Resources Specialist *D Redmond*
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PROJECT: ICCES-CM Projects
NW-160, NW-170 Stream Mitigation & Environmental Stewardship Project

REVIEW TYPE: Mandatory Referral No. 09901-MTA-1

APPLICANT: Maryland State Highway Administration

Recommendation

Approve construction of NW-160/170 Stream Mitigation & Stewardship Project located within Northwest Branch Stream Valley Unit 5, Northwest Branch Recreation Park, Layhill Park, and Northwest Branch Golf Course.

Background

This contract comprises 2 sites proposed for stream restoration and is the largest stream restoration effort on the ICC project. The approximate total length for these projects is 17,045 linear feet (3.22 mi) comprised of 8,899 linear feet in Northwest Branch Stream Valley Unit 5 (NW-160) and 8,146 linear feet in Northwest Branch Recreational Park, Layhill Park, and Northwest Branch Golf Course (NW-170). The following page displays an aerial map of the project limits (Figure. 1). Restoration activities feature the use of large wood structures in place of the typical stone and rock structures. Wood structures will either be placed along streambanks to prevent bank erosion or in the center of the stream channel to increase aggradation of the streambed and floodplain access during storm events. This innovative approach, used widely in other parts of the country, takes advantage of trees harvested from the ICC ROW, and will yield a more natural and aesthetically appealing project when complete.

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Figure 1. ICC Stream Restoration Project NW160/170



Design: The project design has been based on the following restoration objectives:

- Water quality improvement
- Aquatic habitat enhancement
- Reconnection of the channel with its floodplain in order to reduce shear stress during high flow events

Because the sites are located within forested parkland an additional goal is to meet restoration objectives by considering the natural setting of the stream. The use of wood to create stream stabilization and habitat improvement structures, while minimizing hardening techniques that limit the flexibility of the channel to adjust to changes in hydrology and sediment loading, will be employed.

Staff Recommendations: NW-160/170 is a State project and is therefore not subject to County laws and regulations. However, because the project is located on parkland and will be turned over to M-NCPPC after the monitoring period is complete, the project is subject to the Parks Department's Technical Review and Park Permit process. Therefore it is critical that any issues that staff have with the project are resolved prior to approval of the Final Plans. The State Highway Administration will continue to coordinate with M-NCPPC to resolve these issues before the plans are finalized. The following concerns still need to be resolved.

Access

Due to the large area that the project covers, along with the heavy equipment required for construction, it is critical that impacts to large trees throughout the stream valley be minimized as much as possible. While the access plan has improved significantly since the project's Semi-Final Plans, there still remain several concerns that need to be addressed.

1. The boundaries of the proposed access routes still need to be significantly reduced to avoid tree impacts. Standard access routes for the project were originally proposed as 12 foot wide; however the current plans display 26 foot wide routes. The designer has stated that these routes will be reduced to 16 feet on the Final Plans. Staff recommends that standard access routes be shown on the Final Plans as 12 feet wide, except where turning movements requires slightly wider areas (i.e. 15 feet). This would provide the construction contractor a range of 12-15 foot wide access routes to work within.
2. The designer has indicated that there would be a second, more restrictive, limit of disturbance (LOD) delineated within the LOD shown that limits the area of equipment use. This second LOD (and associated Tree Protection measures) must be shown on the plans or the proposed LOD significantly reduced. M-NCPPC has provided SHA with a set of marked plans that display the locations of where the LOD needs to be reduced.
3. There are concerns with the impacts that heavy equipment would have on the root systems of trees adjacent to the LOD. The designer has indicated that there is construction equipment capable of completing this work that would have a minimum ground pressure (no more than 7 PSI). The specifications in the Final Plans need to include requirements for the contractor to use tracked equipment that does not exceed a pressure level of 7 PSI. It is also critical that the contractor minimize the amount of passes that are made throughout the project with the heavy equipment as much as possible. Even with a low PSI, multiple trips along the same access routes could still have significant impacts on soil compaction.

4. The designers have proposed an access route that extends from the end of Scott Drive to the southern end of NW-160. The purpose of this route would be to transport smaller materials (rock, fill material, etc.) to the southern end of the project. Staff recommends that this access route be removed from the project due to the numerous tree impacts that would occur in the floodplain. Alternative access to the southern portion of the project should be pursued through the former Indian Springs Country Club, which would result in fewer impacts.
5. While the access routes reflected on the plans are still mostly consistent with recommendations made by M-NCPPC, any areas of disagreements on access routes should be laid out in the field and resolved prior to plan approval.
6. Coordination between M-NCPPC and SHA regarding access for NW-170 is still ongoing. Access for NW-170 needs to be coordinated with the facility operator of the Trolley Museum and the regional Park Manager. The construction contractor must either use access through Layhill Road or the trolley museum road for transporting trees to the northern areas of the project. Access routes must avoid the footprints of all soccer and baseball fields located within Layhill Park. There are also two areas in the northern section of NW-170 that M-NCPPC has proposed to drop. The impacts that access might have to the surrounding floodplain areas do not appear to be worth the benefits of the proposed restoration to these sections of the stream.

Monitoring & Maintenance Plan

SHA is currently working on a detailed monitoring and maintenance plan for the project. This plan will last for a period of 5 years, after which M-NCPPC will be responsible for any maintenance or monitoring that is required for the project.

1. The designers need to submit the proposed monitoring and maintenance plan for M-NCPPC to review and comment. The issue of monitoring and project repairs needs to be clarified to ensure that SHA is providing a stable design that will not require future adjustments/maintenance.
2. The maintenance plan must include an accurate estimate of the future operating budget for costs to repair/replace structures along with the costs for treating non-native vegetation in areas that have been cleared for access. It is critical that this information is included in the plans so that M-NCPPC can properly budget for any repairs or replacements that could occur once SHA's monitoring period has expired.
3. Due to the nature of the proposed design, staff recommends that there be an extended monitoring period for both in-stream structures and biological recovery. The traditional five consecutive years of monitoring does not allow enough time for the biological community to recover from the impacts of the proposed design, nor does it allow enough time to assess the long-term stability of the structures. Staff recommends that monitoring occur at years 1, 4, 8 and 12 following construction. Also, the decision to make any repairs or adjustments to the structures in the future should be subject to review and concurrence by the agencies that were involved in reviewing the initial project.

Restoration Structures

1. Several of the wood structures that have been proposed for the project require logs that can reach up to 70 feet in length. Alternative design details that use shorter tree members should be used in areas that are not accessible without impacting trees in the floodplain. In areas where longer members will cause additional access route impacts, the members should be cut for easier transport and fastened together during construction using larger stones and/or cross logs.

Northwest Branch Recreational Park Master Plan Impacts: The draft Master Plan for Northwest Branch Recreational Park was reviewed to identify any impacts that NW-160/170 would have on future plans for the Park. It was determined that there are no conflicting issues between the stream restoration project and the draft plan. All access and construction for the restoration project is located outside the area of where future development has been proposed for the Park.

Sensitive Natural Resources Impacts: It is important to consider the potential impacts that could occur to any sensitive natural resources that are located within the project area. Like any stream restoration project, NW-160/170 will have some temporary impacts to sensitive resources, particularly to the stream and trees located within or adjacent to the proposed LOD. It is critical that the SHA minimize these impacts as much as possible. The two Resource Atlas maps on the following pages display the locations of sensitive resources in the project areas (Figure 2 & 3).

Figure 2. NW-160 Resource Atlas Map

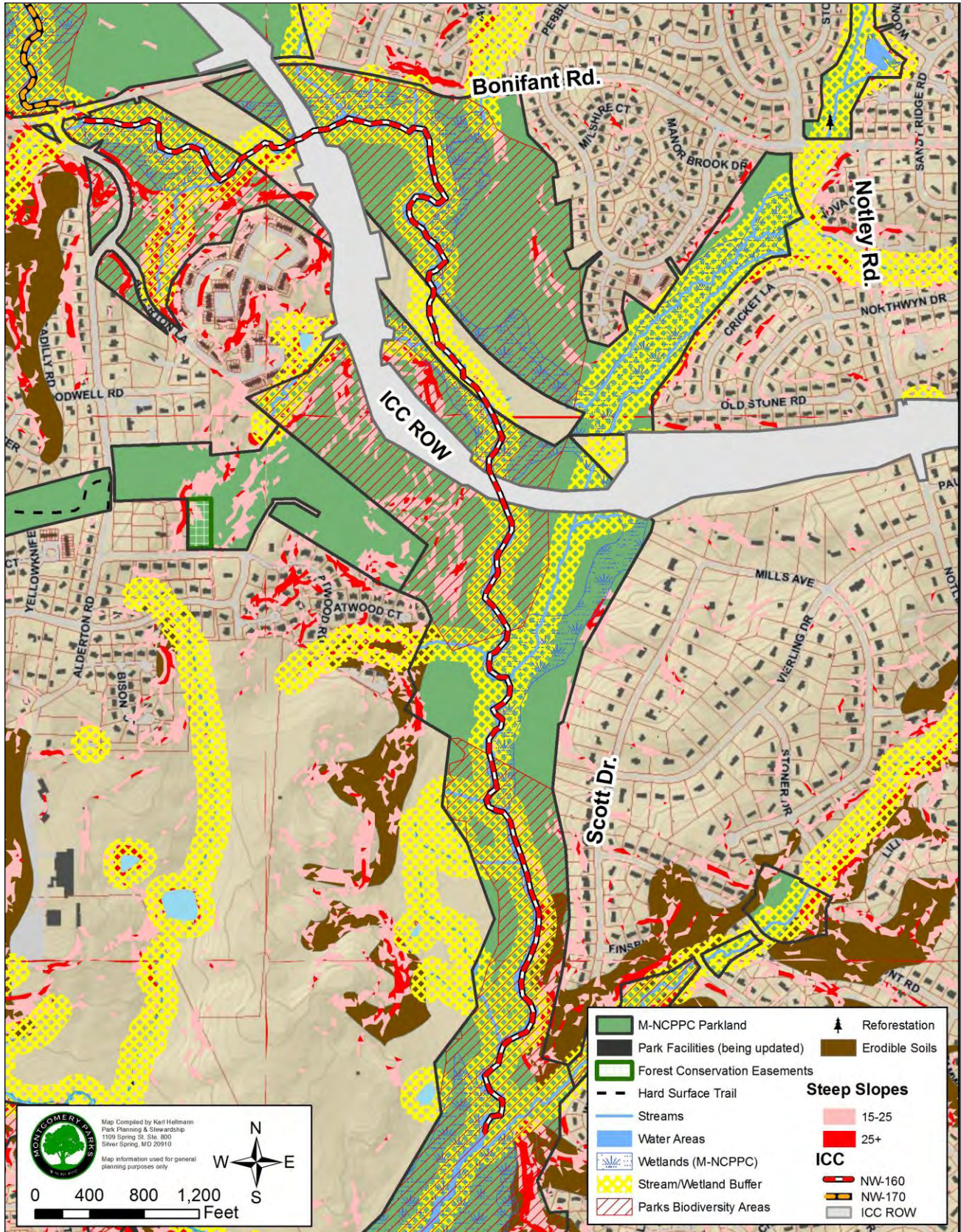
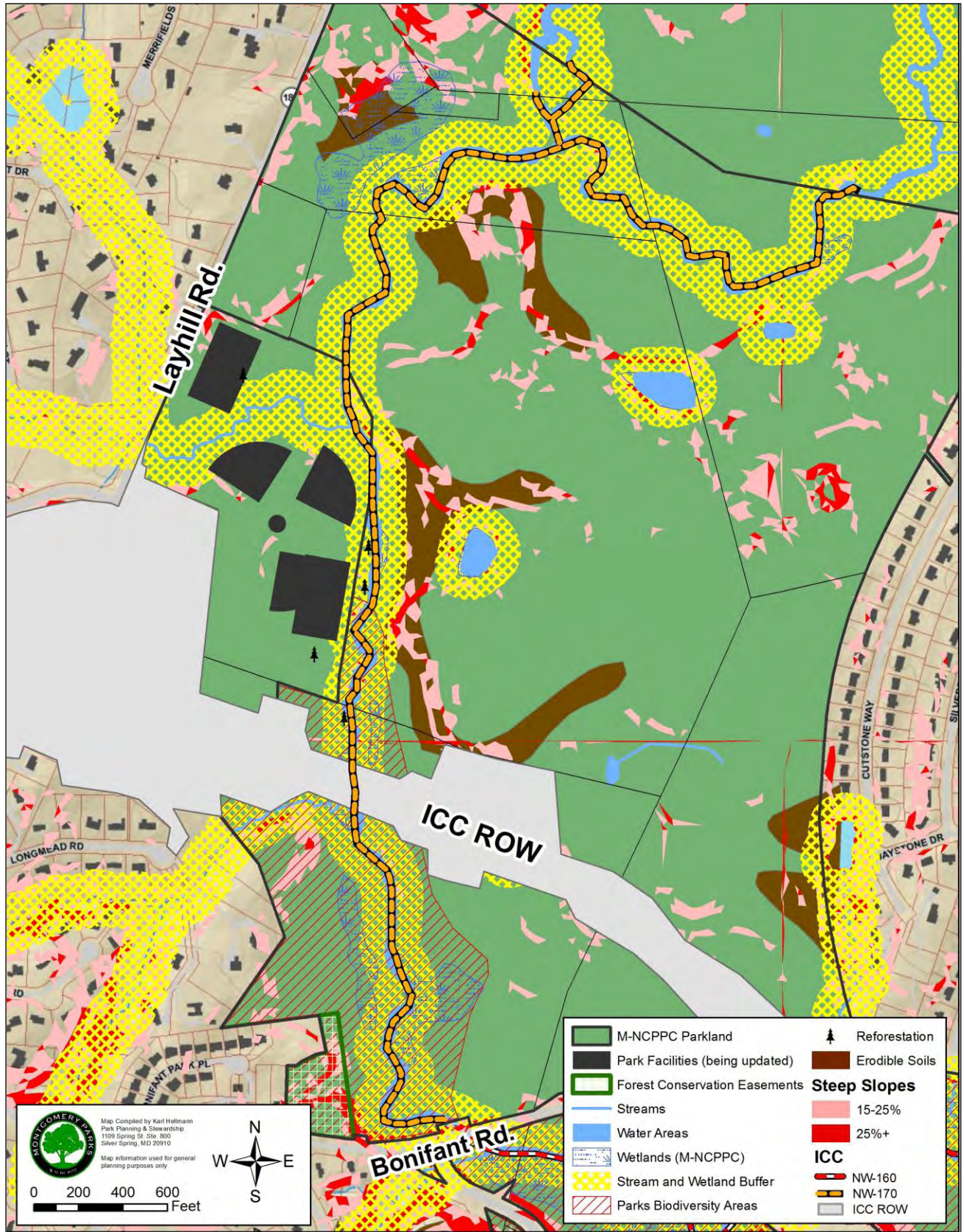


Figure 3. NW-170 Resource Atlas Map



It is also important to note that within the project limits there exist three biodiversity areas (two areas in NW-160 and one in NW-170). Biodiversity areas consist of contiguous, high quality forest, marsh, or swamp with relatively little evidence of past land-use disturbance and few or no exotic, invasive, plant species. These areas also generally represent the best examples of unique plant community types found in Montgomery County. Table 1 lists any rare, threatened, or endangered plant species that have been found within these biodiversity areas. It is critical that the proposed access routes and LOD are also reduced so that impacts to areas where these plant species have been found are minimized as much as possible.

Table 1. RTE Plant Species found within the Biodiversity Areas of the Project

Common Name	Species	Status	Parks	NW-160/170
Butternut	<i>Juglans cinera</i>	Rare	NW. Branch SVU. 5 & NW. Branch Rec. Park	NW-160/170
Carolina leaf-flower	<i>Phyllanthus caroliniensis</i>	Watchlist	NW. Branch Rec. Park	NW-170
Purple sneezeweed	<i>Helenium flexuosum</i>	Watchlist	NW. Branch Rec. Park	NW-170
Rough avens	<i>Geum laciniatum</i>	Watchlist	NW. Branch Rec. Park	NW-170
Shingle oak	<i>Quercus imbricaria</i>	Watchlist	NW. Branch SVU. 5 & NW. Branch Rec. Park	NW-160/170
Showy skullcap	<i>Scutellaria serrata</i>	Watchlist	NW. Branch SVU. 5	NW-160
Small's ragwort	<i>Senecio anonymus</i>	Watchlist	NW. Branch SVU. 5	NW-160
Tall boneset	<i>Eupatorium altissimum</i>	Watchlist	NW. Branch SVU. 5	NW-160
Virginia snakeroot	<i>Aristolochia serpentaria</i>	Watchlist	NW. Branch SVU. 5	NW-160

Wetland or Stream Impacts: Due to the need to provide construction access and movement of materials used as part of the restoration project, temporary impacts to jurisdictional waters including wetlands or their buffers occur. These activities are being coordinated as required with the Maryland Department of the Environment and the US Army Corps of Engineers. All areas affected temporarily during construction will be fully stabilized, revegetated and restored to pre-construction conditions.

Maryland Historical Trust: Cultural or Historic Architectural Resources: The completed ICC Cultural Resource Studies have not identified any historic properties within the general vicinity of the project. Coordination with MHT is ongoing.

Forest Conservation Plan (FCP): The Maryland Department of Natural Resources is responsible for the approval of the Forest Conservation Plan. Due to the need to provide construction access and movement of materials used as part of the restoration project, there will be impacts to forested areas. These activities are being coordinated with the Maryland Department of Natural Resources as required and mitigated in accordance with the Forest Conservation Act. Following project completion, extensive planting of trees and shrubs will occur. SHA will follow reforestation MOU guidelines that are discussed in the SHA Reforestation Proposal for Current and Future M-NCPPC Property (SHA 1/30/08).

Montgomery County Noise Ordinance: As proposed, the project is not expected to have any significant affect on traffic within the adjacent communities. Therefore, an environmental traffic noise analysis and assessment was not conducted. However, temporary noise impacts may occur from construction activity. Areas around the construction zone will experience varied periods and degrees of noise that differ from that of the surrounding ambient community noise levels. The noise produced can vary greatly based on the type of construction, the mix of equipment, and the construction procedures being employed. SHA will perform all construction activities in accordance with Montgomery County noise and traffic codes.

Traffic Control: SHA is coordinating with the appropriate staff of the Montgomery County Department of Transportation for construction access and materials transport.

Public Meetings: A public meeting was held April 29, 2009 to provide the community an opportunity to review and comment on plans for the project. The meeting was well attended and reactions were generally favorable.

Funding: The proposed compensatory mitigation and environmental stewardship projects are being funded by the Maryland State Highway Administration.

Implementation: Construction is expected to begin January 2010 following the award of the contract under the normal SHA bid process that is used for similar environmental contracts. In accordance with MDE requirements, there is a Time of Year restriction from March 1st until July 31st to protect aquatic life in the Northwest Branch watershed. Therefore, the construction period is anticipated to continue to mid-2011.

Maintenance: Following construction, the maintenance and monitoring of the site will be conducted by SHA up to five years, or until deemed successful by the regulatory agencies. Upon completion of the maintenance and monitoring period, the project will be turned over to M-NCPPC.