MCPB Item # 2

Date: February 23, 2012

MEMORANDUM

DATE: February 14, 2012

TO: Montgomery County Planning Board

VIA: Mary Bradford, Director of Parks
Michael F. Riley, Deputy Director, Administration
Dr. John E. Hench, Ph.D., Chief, Park Planning and Stewardship Division (PPSD)
Doug Redmond, Natural Resources Manager, Park Planning and Stewardship Division

FROM: Jai Cole, Principal Natural Resources Specialist, Park Planning and Stewardship Division

PROJECT: ICC Environmental Stewardship-Compensatory Mitigation (ES-CM) Projects
PB-109 and PB-119

REVIEW TYPE: Mandatory Referral No. 1012–SHA–1 ICC Environmental Stewardship

APPLICANT: Maryland State Highway Administration (SHA)

APPLYING FOR: Plan ApprovalMistle

Recommended:

Approve the construction of two stream restoration projects in the Upper Paint Branch Special Protection Area (SPA), located on Parkland, DOT Right-of-way and/or on Private Property.

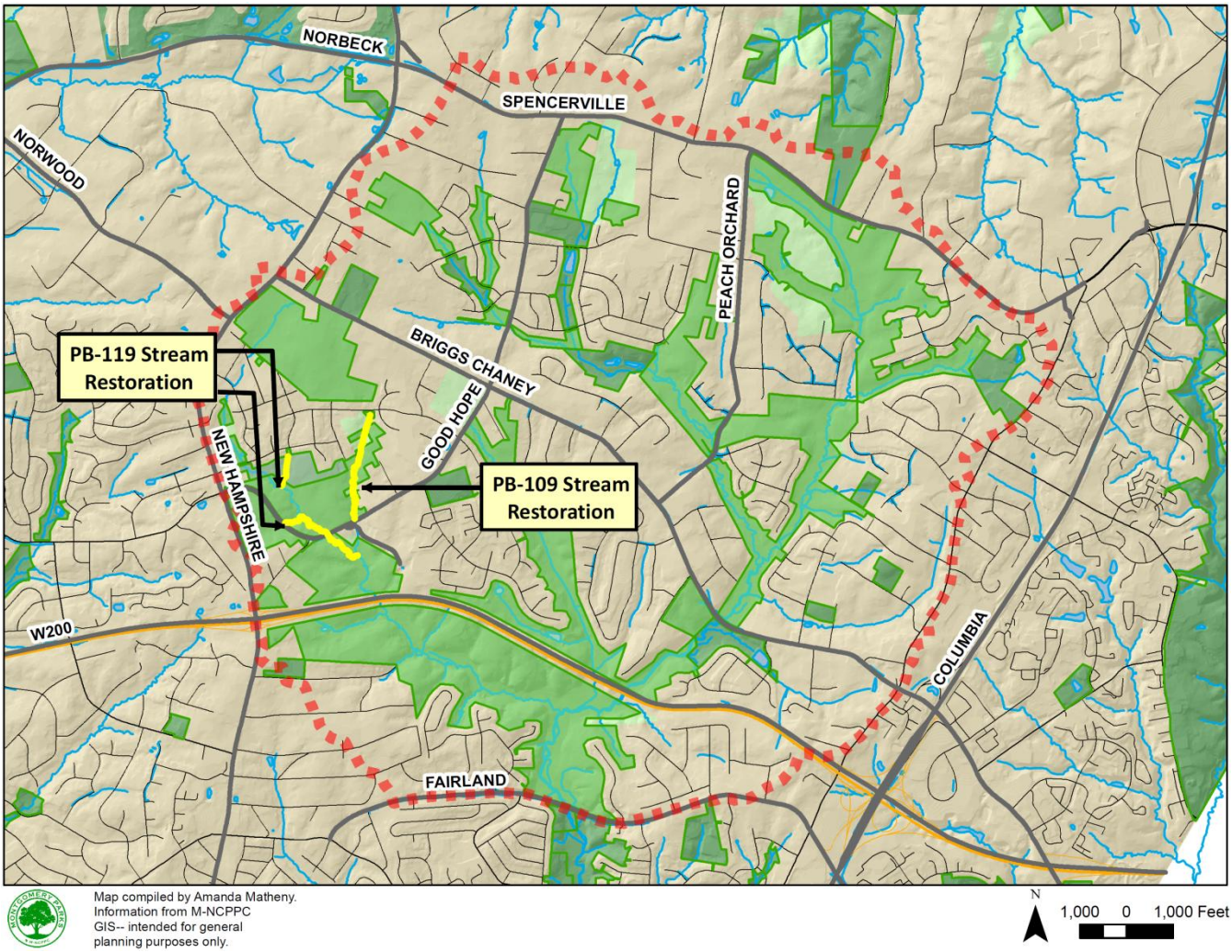
Background

As part of the ICC Environmental Stewardship and Compensatory Mitigation Program (ES/CM), the State Highway Administration (SHA) is completing a number of stream restoration, wetland creation, and stormwater management projects throughout Montgomery County. The stream restoration projects included in this memo are compensatory mitigation projects intended to offset the loss of stream habitat due to the construction of the ICC. The goal is to improve water quality and benefit stream ecology both within the project areas and downstream of each site in the Good Hope tributary to the Upper Paint Branch.

The Upper Paint Branch stream system is a unique, nationally recognized coldwater fishery that is the only suburban stream system in Montgomery County with a self-sustaining brown trout population. Of the four major tributaries in the Upper Paint Branch (Good Hope, Gum Springs, Right Fork and Left Fork), the Good Hope tributary accounts for 75% of the annual trout reproduction in the watershed due to an abundance of springs and seeps that provide a continuous steady supply of cold water – a required condition for spawning. The presence of these spawning grounds makes the Good Hope tributary one of the most environmentally sensitive areas inside the Paint Branch SPA. For this reason, both PB-109 and PB-119 have been designed and developed with great consideration of limiting the impacts to this sensitive habitat.

PB-109 is on the right branch of the Good Hope tributary on both private property and parkland (Figure 1). The tributary begins off Windmill Lane and continues south to Good Hope Road. PB-119 includes work to be done on the mainstem of Good Hope from north of Good Hope Rd. to the confluence with the Right Branch and 2 of its tributaries; the Peachwood Neighborhood Park tributary that begins at a stormdrain outfall in the Park and runs to its confluence with the Good Hope; and the Good Hope Road tributary that flows from under Good Hope Road east to the confluence with the Good Hope tributary.

Figure 1. PB-109 & PB-119 Vicinity Map



Design

Baseline studies were begun in 2005 in order to understand the stream systems, identify concerns, and ultimately set reachable restoration goals. These studies included watershed history characterization, hydrologic and hydraulic modeling, geomorphic assessment, and habitat and biological assessments. Concept designs for these sites were developed and reviewed by state and federal agencies as well as Montgomery County Department of Environmental Protection, Department of Transportation, and The M-NCPPC Department of Parks. Data collection and stakeholder input were considered to narrow the focus of the proposed restoration to highly degraded portions of the streams and areas that would provide water quality enhancement while balancing the protection of adjacent natural resources.

The restoration objectives identified for the stream restoration sites include:

- reconnecting the stream channel to its floodplain
- reducing bank erosion and in-stream sedimentation
- maintaining/enhancing the habitat for macroinvertebrates and fish communities
- establishing native riparian plantings and controlling invasive species
- achieving all above restoration objectives while minimizing disturbance to trees.

It is anticipated that this approach will create stable, self-sustaining channel geometries over the long-term that can adjust to changes in physical processes while still protecting sensitive brown trout habitat with minimal human intervention.

PB-109

The PB-109 drainage area has only two small stormwater management facilities, one at the upstream limit of the project adjacent to Windmill Lane, and the other at the end of Peachwood Dr. (Figure 1). Biotrenches are currently under construction (SPA BMP Project PB-115) along Harvest Lane and Windmill Lane to treat the 'first flush' of contaminants and slow the flow of stormwater. The PB-109 stream restoration project will complete the treatment train by stabilizing the stream and preventing future degradation while providing the necessary aquatic habitat to promote healthy benthic macroinvertebrate and fish communities.

PB-109 aims to provide localized stream bank stabilization, riparian buffer enhancement and nonnative species control. A failing driveway culvert on private property will be replaced and downstream headcuts (i.e., steep drops within the channel bed) and bank erosion caused by the culvert and the riprap of a WSSC crossing will be stabilized using a combination of rock grade control structures, log toe structures, and vegetated rock packs. Use of organic material for stream stabilization techniques will enhance the in-stream habitat. PB-109 also offers a significant opportunity for riparian forest enhancement and creation throughout its length. There is a large area of invasive plats located downstream of the driveway culvert. Areas lacking large trees and proposed to be disturbed as part of the stream stabilization offer excellent locations for invasive species management and subsequent riparian establishment. This wooded stream buffer will provide shading and help reduce thermal impacts related to development in addition to providing great habitat.

Failing Driveway Culvert

PB-119

The neighborhood surrounding PB-119 was built prior to the adoption of requirements for stormwater management controls and is the only portion of the Good Hope headwaters that is not served by a stormwater facility. This lack of treatment has allowed frequent stormwater discharges into the Good Hope Tributary which greatly contribute to stream channel erosion, increased sedimentation, reduction of both fish and benthic macroinvertebrate habitat, increase in water temperature and an overall reduction in water quality. To remedy this, a trio of ICC ES/CM projects have been planned in this subwatershed that include; Biotrenches that are currently under construction along Piping Rock Drive, Peachwood Dr., and Mistletoe Court (SPA BMP Project PB-114); A stormwater management pond currently under construction in Peachwood Neighborhood Park (Project PB-114A); and the PB-119 stream restoration project (Figure 2).

The proposed design treatment for the Peachwood Park Tributary and the Good Hope Road Tributary involves reconnection of the stream to its floodplain by giving storm flows access to a constructed floodplain terrace, as well as with the existing floodplain. This will be accomplished through raising the streambed to a higher elevation, constructing a bankfull terrace, and stabilizing the stream bed using rock structures. This design addresses the degraded stream channel while minimizing impacts to the adjacent natural resources (trees) in the project area. Additionally, raising the channel bed will have habitat and water quality enhancement benefits as it will raise groundwater levels closer to tree roots on the stream bank. This reconnection will allow for the trees to draw nutrients from the groundwater and baseflow, and it will provide healthy habitat for benthic macroinvertebrates. Additionally, the proposed Good Hope Road Tributary treatment will help address water quality concerns through the use of high infiltration backfill in the channel bed, which will allow limited infiltration of stormwater flows into the groundwater table.

Bankfull Terrace

Along the mainstem of the Upper Good Hope Tributary, the rehabilitation approach is focused on minimizing impacts to existing natural resources while constructing a stable geometry and providing habitat improvements. The design will improve floodplain connection by reducing channel size and constructing grade control structures. Riparian plantings will provide canopy and introduce in-stream rootmats that will provide aquatic habitat.

Access

Access to the stream restoration projects will require specialized access routes that are designed to protect forest resources while providing the minimum space required for constructing the proposed improvements. Access for these two projects has been closely coordinated with M-NCPPC staff to minimize forest impacts.

PB-109

Access to PB-109 will be from two locations (Figure 2). Access to the upper portions will be from Blanton Rd. and will require proper coordination with the private property owners to ensure that the planned culvert replacement will not pose an inconvenience and that access to their homes is maintained at all times. Access to the lower portion of the project will be from an asphalt driveway off of Good Hope Road directly onto parkland. Staging for the construction areas and culvert replacement are located in open areas within parkland to ensure driveways will not be blocked and deliveries of materials can be made safely with minimal impact to local traffic.

Construction entrances will be clearly marked according to the Maintenance of Traffic Plan for the safety of workers and the general public.

Figure 2. PB-109 & PB-119 Stream Restoration and Construction Access Locations

Map compiled by Amanda Matheny.
Information from M-NCPPC
GIS-- intended for general
planning purposes only.

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PB-119

Access to PB-119 will be from four locations (Figure 2). One access will be from Peachwood Neighborhood Park and two from Good Hope Road. During construction, a portion of the parking lot will be closed to the public, but access to park amenities and trails will remain open. Access to the stream channel will be along an already disturbed path used by Montgomery County for a previous restoration activity. Limited staging areas are proposed within the Peachwood Park along this pre-existing path. The construction area will be fenced to prevent community access to work areas. Access to the rest of the project will be from locations off of Good Hope Road. Limited staging areas will be located along the access routes so that deliveries can take place safely and with minimal impact to traffic along Good Hope Road. Construction entrances will be clearly marked according to the Maintenance of Traffic Plan for the safety of workers and the general public.

Traffic Control

SHA will coordinate with the appropriate staff of the Montgomery County Department of Transportation for construction. The project plans address maintenance of traffic and safety considerations for access from residential streets, parks, and county roads. In areas where communities are adjacent to work areas, blaze orange fencing and signage will be installed for safety purposes. As discussed above under *Access*, temporary signing for the projects has been proposed in areas that will allow deliveries to take place safely and with minimal impact to traffic.

Implementation

Construction is expected to begin February 2013 following the award of the contract under the normal SHA advertisement process.

Wetland and Stream Impacts

SHA and the Department of Parks have coordinated efforts to ensure that natural resources impacts are avoided or minimized to every extent possible while still meeting the goals of the restoration. Numerous field reviews have taken place to ensure that access, stream work, and landscaping do not unduly impact natural resources.

Temporary impacts will occur in the stream channels due to access and construction of the proposed stabilization structures. In-stream construction will cause temporary impacts to the streambed, which is expected to naturally re-stabilize over time. Disturbed stream banks will be regraded, stabilized, and planted. The approximate amount of temporary stream impacts is 712 linear feet (lf) of perennial stream for PB-109, and 392 lf of ephemeral stream and 1,675 lf of perennial stream for PB-119.

Temporary wetland impacts will occur in order to gain access to stream work areas. These impacts have been minimized to the greatest extent practicable during field reviews. All temporary access paths where construction equipment will traverse wetlands will require the placement of mulch paths and protective wood mats. These mats will distribute the weight of the equipment to protect the integrity of the wetland. When access through these areas is no longer needed, the wood mats will be removed and the area re-stabilized with vegetation as necessary. Large trees adjacent to wetlands were avoided whenever possible.

Wetland and stream impacts are being coordinated as required with the Maryland Department of Environment and the U. S. Army Corps of Engineers. Access areas will be protected with mulch and hardwood mats to minimize compaction of the forest floor.

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 projects. As such, no impacts to National Historic eligible properties or to cultural resources significant to Montgomery County are anticipated. Coordination with MHT is ongoing.

Natural Resource Inventory and Forest Stand Delineation (NRI/FSD)

Disturbance to the forest floor and the impact and subsequent removal of trees within the immediate riparian buffer and along the stream banks will be unavoidable due to the construction access and stream restoration work. An extensive reforestation/planting plan has been developed as part of this project and impacts are being coordinated with the Maryland Department of Natural Resources as required in accordance with the Forest Conservation Act.

SHA and the Department of Parks have coordinated efforts to ensure that natural resource impacts are avoided or minimized to every extent possible while still meeting the goals of the restorations. Strategies for protecting trees adjacent to and within some work areas will include root pruning, avoidance of critical root zones, and tree protection fencing. Numerous field reviews have taken place to ensure that access, stream work, and landscaping do not unduly impact natural resources. Wherever possible, access will be coordinated with access routes for municipal utilities. Disturbed and impacted areas will be stabilized and replanted once construction is complete. The approximate amount of forest impacts is 0.7 acre for PB-109 and 2.1 acres for PB-119.

Air and Noise

As proposed, the project is not expected to have any significant effect on traffic within the adjacent communities. Therefore, an environmental traffic noise analysis and assessment was not conducted. The construction phase of the project has the potential to temporarily affect the local ambient air quality by generating dust through activities such as vehicle traffic, excavation, and materials handling. SHA has addressed this possibility by establishing "*Standard Specifications for Construction and Materials*" that specifies procedures to be followed by contractors involved in site work.

SHA will abide by the Montgomery County Noise Ordinance. If it becomes necessary to deviate from that ordinance, SHA will notify the Department of Parks, Montgomery County, and the public of the new work schedule prior to making any changes.

Public Meetings

Representatives from Montgomery County Parks and SHA met with local residents of the watershed for public meetings. These were held on July 29, 2010 and September 21, 2010 for PB-109 and PB-119; and an additional meeting for PB-119 was held on November 10, 2010 to provide the communities an opportunity to review and comment on plans for the projects. In addition, SHA has been working with individual private property owners concerning portions of the projects that are on their property.

Funding

The proposed environmental stewardship projects are being funded by the Maryland State Highway Administration. Access to PB-119 will be through an existing driveway on newly acquired parkland and as part of their restoration work, SHA will conduct some infrastructure removal and floodplain restoration on that property on behalf of the Department of Parks. The work will be funded by the Department of parks via a separate memorandum of understanding.

Maintenance

Following construction, the maintenance and monitoring of all projects will be conducted by SHA for up to five years, or until deemed necessary by the permitting agencies. The PB-109 and PB-119 stream stabilization and restoration techniques proposed are designed to be self-sustaining, so long-term maintenance should be minimal. SHA will monitor reforestation areas for five years.

PC:

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