



MEMORANDUM

October 28, 2010

TO: Montgomery County Planning Board

VIA: Mary Bradford, Director of Parks
 Mike Riley, Deputy Director of Parks *MR*
 John E. Hench, Ph.D., Chief, Park Planning and Stewardship Division *J. Hench*
 Doug Redmond, Natural Resources Manager, Park Planning and Stewardship Division *D. Redmond*

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

PROJECT: ICC Environmental Stewardship-Compensatory Mitigation Projects PB-37, PB-8, PB-108 and PB-118 Upper Paint Branch stream restoration projects. *Jai Cole*

REVIEW TYPE: Mandatory Referral No. 1004-SHA-1 ICC Environmental Stewardship

APPLICANT: Maryland State Highway Administration (SHA)

APPLYING FOR: Plan Approval

RECOMMENDATION: Approve the construction of four stream restoration projects in the Upper Paint Branch Special Protection Area (SPA) as part of the ICC Environmental Stewardship and Compensatory Mitigation Program.

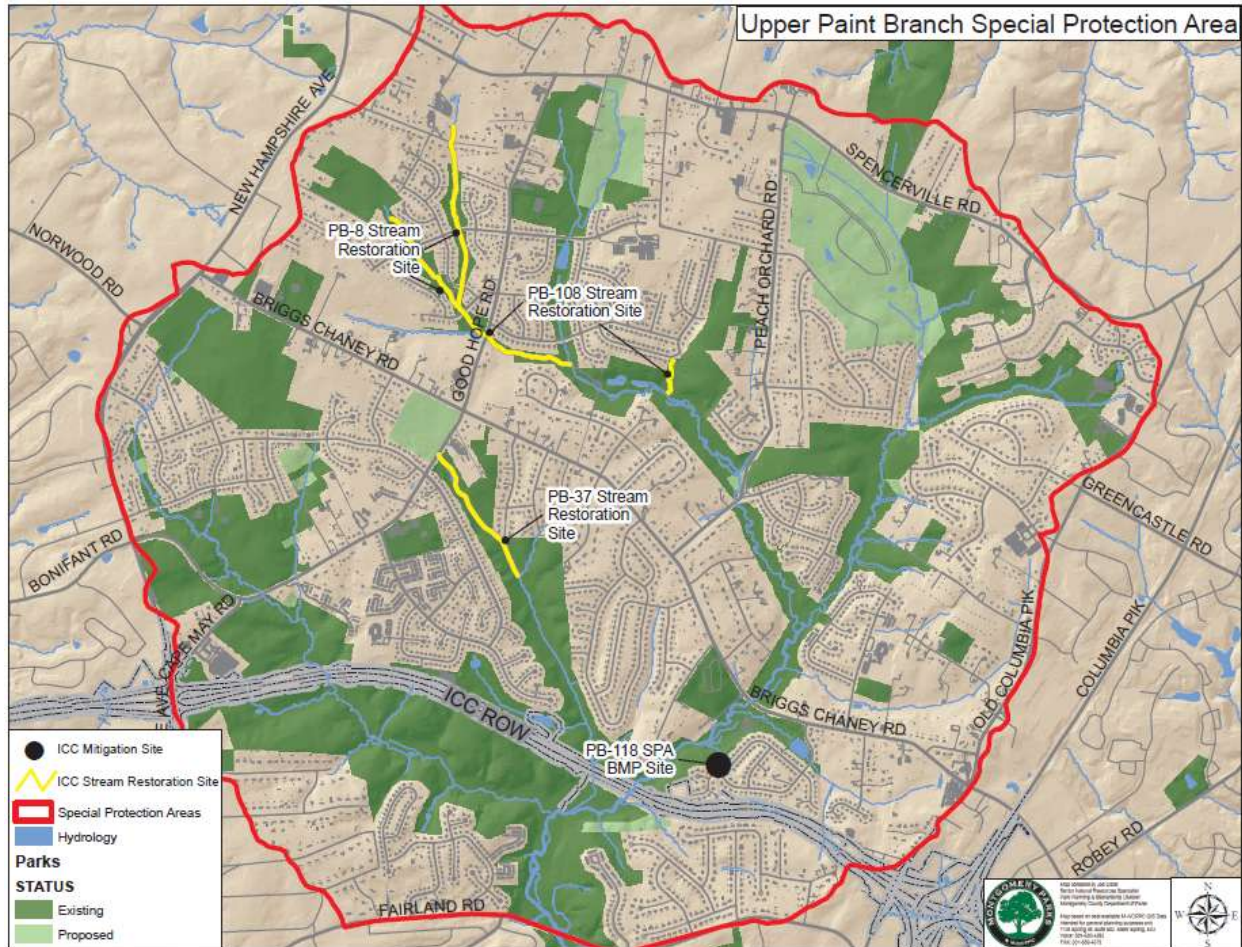
Background

As a part of the ICC Environmental Stewardship and Compensatory Mitigation Program, the State Highway Administration (SHA) is completing a number of stream restoration, wetland creation, and stormwater management projects throughout Montgomery County. Many of these projects focus on the Upper Paint Branch SPA to help restore this watershed’s high water quality and unique self-sustaining brown trout population. The PB-G Contract comprises four (4) stream restoration sites; PB-37, PB-8, PB-108, and PB-118 (Figure 1).

The PB-37 stream restoration site is on the Gum Springs tributary to the Upper Paint Branch and begins on the south side of Good Hope Rd. and extends southeast just west of Bart Dr (Figure 2). This project also includes restoration of the Harold Road tributary to Gum Springs and storm drain outfalls at Fireside Drive and Windmill Land. Projects PB-8 and PB-108 are stream restoration projects in the Left Fork subwatershed of the Upper Paint Branch. The PB-8 site begins on the north side of Good Hope Rd. and continues upstream where the stream splits into east and west segments just north of Colesberg Street (Figure 3). This project is contained entirely on parkland. The PB-108 project begins at Good Hope Rd. (at the downstream end of PB-8) and continues southeast to the confluence with the twin ponds tributary at Maydale Conservation park (Figure 4). The upper end of this project is located on private

property then transitions onto parkland through the end of the section. PB-108 also includes the Craddock tributary that begins at a storm drain outfall south of Craddock St and continues to the confluence with the Left Fork (see Figure 4). This section is entirely on parkland. The PB-118 project is located northwest of Countryside Drive near Countryside Court (Figure 5).

Figure 1: PB-G Contract Stream Restoration Sites



Design

Baseline studies were begun in 2005 in order to understand the stream systems, identify concerns, and ultimately set reachable restoration goals. These studies incorporated hydraulic modeling, watershed history, geomorphic assessment, and habitat and biological assessments. Based on initial studies, concept designs for these sites were developed and reviewed by state and federal agencies as well as Montgomery County Department of Environmental Protection and the Department of Parks. Data collection and stakeholder input were used to narrow the focus of the proposed restoration to highly degraded portions of the streams while balancing the protection of adjacent natural resources.

Figure 2: PB- 37 Stream Restoration Site and Construction Access Location

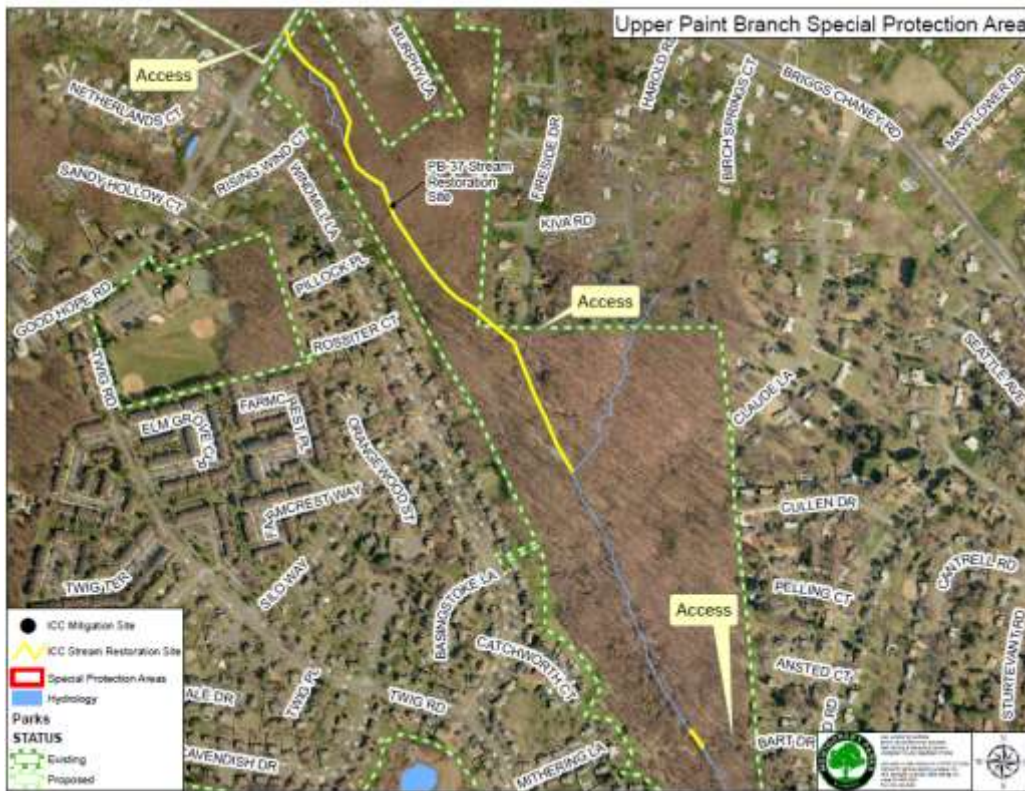


Figure 3: PB- 8 Stream Restoration Site and Construction Access Location



Figure 4: PB- 108 Stream Restoration Site and Construction Access Location



Figure 5: PB- 118 Stream Restoration Site and Construction Access Location



The restoration objectives identified for all four sites are: reconnecting the stream channel to its floodplain, reducing bank erosion and in-stream sedimentation, maintaining/enhancing the habitat for benthic and fish communities, fish blockage removal, and native riparian plantings and invasive species control.

PB-37

Several measures are proposed to improve and restore this section of Gum Springs. Head cuts into existing floodplain and forested wetlands would be filled and stabilized with clay and stone channel blocks to prevent further degradation and draining. Severely eroded near-vertical stream banks have been targeted for stabilization, and these areas would be stabilized with a combination of graded back banks where space is available and installation of protective measures within the stream channel. In areas where the stream channel has cut downward, step pool systems would be installed, specifically below the Windmill Lane drainage ditch and along Harold Drive Branch,



Example of a Step Pool

to raise the channel closer to the floodplain, provide streambank stabilization, and enhance aquatic habitat. Outfall channel stabilization is also proposed along an existing swale that drains Fireside Drive. A portion of an old farm pavilion located within 20 feet of a section severely eroded right bank of Gum Springs would be removed, in conjunction with adjacent channel restoration. Within the project reach below Bart Drive, this project will remove six (6) significant fish blockages and install riffle grade structures, or rock ramps, which would improve habitat and allow fish to pass upstream.

PB-8

The focus on this upper section of the Left Fork would be the removal of invasive species and installation of native trees, shrubs, and seed mixes to improve the riparian habitat. Besides the landscape component, several spot areas of in-stream work have been proposed. An old culvert and bridge upstream of Wembrough Street, which is contributing to bank erosion and acts a fish blockage, would be removed and the stream channel stabilized with riffle grade control structure(s) to promote fish passage. Riffle grade control structure(s) would be installed below the existing culvert at Colesburg Street to prevent further stream bed degradation. Finally, a small stretch of grading along an eroding bank below the park on Wembrough Street is proposed to reduce a significant source of sedimentation in this reach.



The old culvert and bridge

PB-108

This lower section of the Left Fork begins on the downstream end of the Good Hope Road crossing. The restoration of this reach would adjust the existing channel of the stream and also address bank stabilization of near-vertical stream banks that are susceptible to erosion due to both hydraulic forces and freeze-thaw cycles that occur throughout the years. Riffle grade control structures would be installed to prevent further stream channel degradation. This section of the Left Fork lacks sufficient riparian (stream-side) cover of trees and shrubs, so native landscaping and invasive species control efforts would be maximized. Also, the tributary from the drainage outfall below Craddock Road would be stabilized by using bank grading, grade controls, rock packs, stone toe protection and similar in-stream revetments. Stabilization along this tributary would include bank grading and revetments required to protect of an exposed sanitary manhole.



Near vertical eroded stream bank

PB-118

This small, unnamed tributary to the mainstem of Paint Branch is located northwest of Countryside Drive near Countryside Court. The goals for this site are to improve water quality by providing a biotrench to treat stormwater runoff and to stabilize a small section of eroded stream channel both upstream and downstream of the Park access trail. This stabilization will include many of the same revetments, including bank grading, grade controls, wetland enhancements, and sewer protection.



Section of eroded stream channel

ACCESS

Access for all four projects have been closely coordinated with MNCPPC staff to minimize forest impacts. When necessary, a temporary rerouting of park access paths will be necessary but orange construction fencing and adequate signage will guide park users around the construction during work hours.

PB-37

Access to the project area would be from Good Hope Road and from the ends of Fireside Drive, Harold Road, and Bart Drive (see Figure 2). A temporary staging area, located in an open field is proposed immediately off of Good Hope Road which would allow deliveries of construction materials to take place safely and with minimal impact to local traffic. Access from Fireside Drive is needed to stabilize a drainage outfall. Access routes are proposed adjacent to sewer line clearings, resulting in almost no permanent tree impacts.

PB-8

Several points of entry from residential streets would be needed, including Rainbow Drive, Wembrough Court, and Colesburg Street (see Figure 3). All of the proposed access points will be directly onto parkland. The scope of improvements within the PB-8 site are less than at PB-108 and PB-37, so access into areas would be short-term and deliveries of trees and landscaping materials can be made without disruption to local traffic. Minimal equipment access into the riparian corridor is necessary since most work includes landscaping and invasive species control.

PB-108

Access to the main portion of the PB-108 site will be from Good Hope Road and Hopefield Road (see Figure 4). Access within the project site would follow the MNCPPC park boundary that is relatively free of tree and shrub vegetation. The outfall stabilization proposed on the Craddock Road tributary will require access onto parkland from Craddock Road. A staging area is proposed off Craddock Road on parkland and DOT right of way which will be needed to store the significant quantity of rock required to complete the work. These areas would be fenced properly to prevent community access.

PB-118

Access to the project site is off Countryside Drive directly onto parkland (see Figure 5).

Wetland and Stream Impacts

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 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 would cause temporary impacts to the streambed, which is expected to naturally re-stabilize over time. Temporary wetland impacts will occur in order to gain access to the stream work areas. Wetland and stream impacts are being coordinated as required with the Maryland Department of the 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 project. As such, no impacts to National Historic eligible properties or to cultural resources significant to Montgomery County are anticipated.

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

Disturbance to the forest floor has been approximated at 200,000 square feet, although actual tree removal within the forest will be minimal and has been well coordinated with the Department of Parks. 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 restoration. Numerous field reviews have taken place to ensure that access, stream work, and landscaping do not unduly impact natural resources. Impact to some trees within the immediate riparian buffer and along the stream banks would be unavoidable due to the proposed stream stabilization and restoration. These trees may be lost in the future due to continuing bank erosion if the stream is not restored. Strategies for protecting trees adjacent to and within some work areas would include root pruning, avoidance of critical root zones, and tree protection fencing. Disturbed and impacted areas would be stabilized and replanted once construction in the stream is complete.

Air and Noise

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. 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.

Traffic Control

SHA will coordinate with the appropriate staff of the Montgomery County Department of Transportation for construction access. The project plans address maintenance of traffic and safety considerations for access from residential streets and county roads. Access to the stream restoration areas would require specialized access routes that are designed to protect forest resources whilewhile providing the minimum space required for constructing the proposed improvements. In areas where communities are adjacent to work areas, blaze orange fencing and signage will be installed for safety purposes.

Public Meetings

A Public meeting for all four sites was held on April 14, 2010 at Paint Branch High School. Another meeting was held for PB-118 on July 15, 2010 at Benjamin Banneker Middle School and for PB-108 on September 30, 2010 Briggs Chaney Middle School. Representatives from Montgomery County Parks and SHA met with local residents of the watershed. The meeting was well attended, residents were interested in stream restoration and its benefits, and reactions were generally favorable.

Funding

The proposed environmental projects are being funded by the Maryland State Highway Administration.

Implementation

Construction is expected to begin May 2011 following the award of the contract under the normal SHA advertisement process.

Maintenance

The stream stabilization and restoration techniques proposed are designed to be self-sustaining, so long-term maintenance should be minimal. Following construction, the maintenance and monitoring of the site would be conducted by SHA for up to five years, or until deemed necessary by the permitting agencies. Upon completion of a successful monitoring period, the project would be turned over to M-NCPPC. SHA will maintain reforestation areas for five years.

PC:

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Mark Pfefferle, Chief, Environmental Planning, Department of Planning

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Andy Frank, Environmental Engineering Section Leader, Park Development, Department of Parks