MCPB Item # 6

April 26, 2011

MEMORANDUM

April 13, 2012

TO: Montgomery County Planning Board

VIA: Mary Bradford, Director of Parks
Mike Riley, Deputy Director of Parks
John E. Hench, Ph.D., Chief, Park Planning and Stewardship Division
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-33, PB-145, and PB-140 – PB-143

REVIEW TYPE: Mandatory Referral No. 1013–SHA-1 ICC Environmental Stewardship

APPLICANT: Maryland State Highway Administration (SHA)

APPLYING FOR: Plan Approval

RECOMMENDATION: Approve the construction of Stormwater Management Pond retrofit and Storm Drain outfall project PB-33 and SPA BMP projects PB-145, and PB-140 – PB-143, in the Upper Paint Branch SPA as part of the ICC Environmental Stewardship and Compensatory Mitigation Program.

Background

As 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. The stormwater management projects included in this memo will help to improve water quality and benefit stream ecology both within the project areas and downstream of each site in the environmentally sensitive natural brown trout spawning areas of the Upper Paint Branch. Collectively, PB-33 and PB-145 will restore approximately 115 linear feet of stream channel and improve the water quality by treating storm drainage from approximately 34 acres in the Good Hope Tributary subwatershed. The biotrench facilities PB-140 – PB-143 will improve the water quality by treating storm drainage from approximately 6.5 acres in the Good Hope Tributary subwatershed and approximately 25 acres in the Gum Springs Tributary subwatershed (Figure 1).

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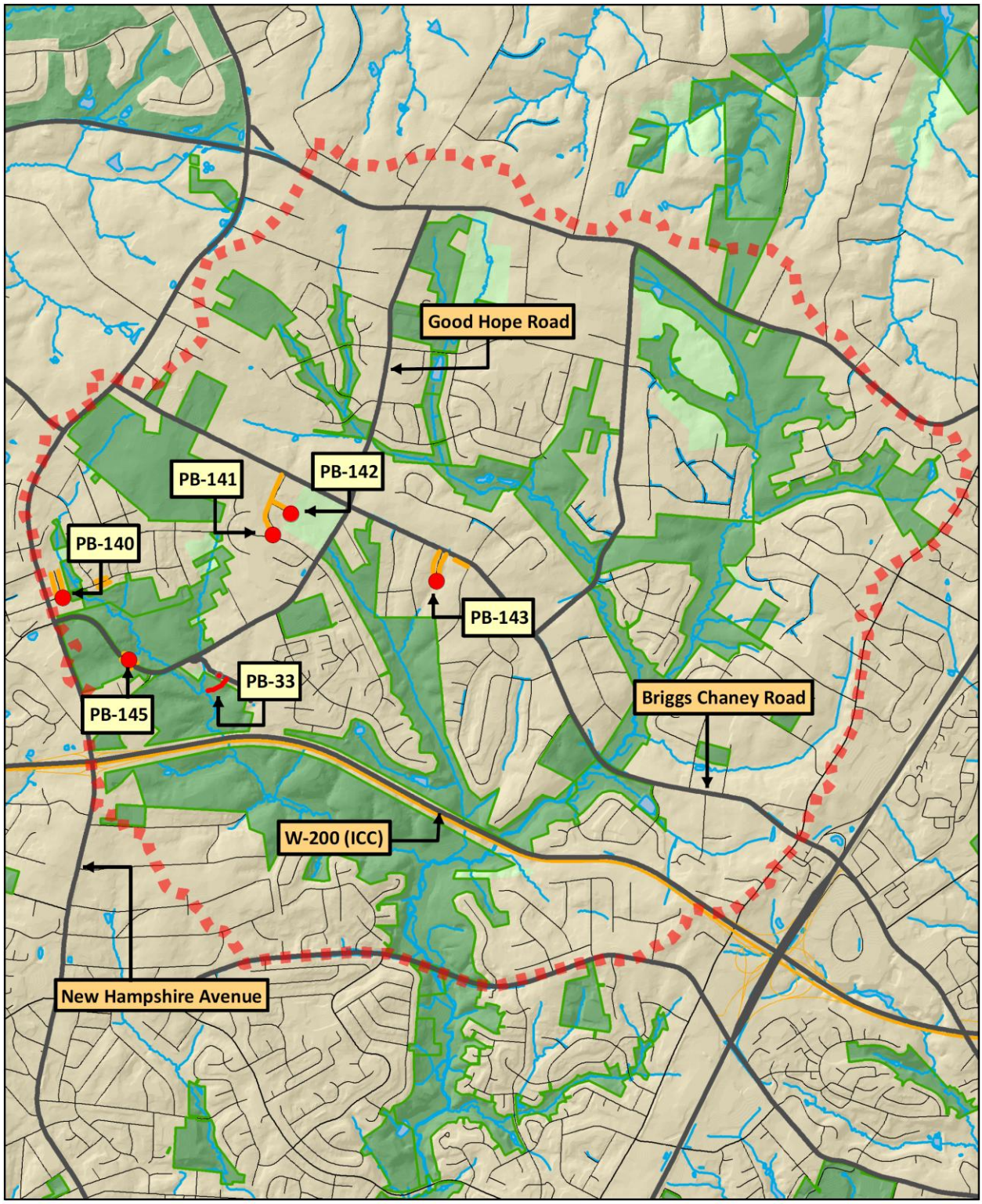
Figure 1: Biotrench Facilities



PB-33

The PB-33 project includes two stormwater management projects, a stormwater management pond retrofit project, and a stormdrain outfall stabilization project. The pond retrofit project is located on private property and within the Upper Paint Branch Park (Figure 2). The Pond project is located entirely within the Great Hope Homes Community property directly north of the Upper Paint Branch Park, on Good Hope Drive, off of Good Hope Road, east of New Hampshire Avenue (MD 650). The Storm Drain Outfall project is located farther east on Good Hope Drive. It will extend an existing storm drain system discharging from Great Home Homes Community property across parkland to the Good Hope Tributary in Upper Paint Branch Park through a new and more stable outfall. The Upper Paint Branch and its tributaries are classified as Use III Natural Trout Waters.

PB-145

The PB-145 project is located adjacent to Good Hope Road at the Good Hope Road Tributary (Figure 2). The project is located within Montgomery County DOT ROW and Upper Paint Branch Park. The Good Hope Road Tributary will be restored under a separate stream restoration project known as the PB-119 project, but all work will be done concurrently.

PB-140-143

These four (4) Best Management Practice (BMP) sites are biotrench facilites, located within DOT ROW within existing roadside ditches. The following describes the four (4) proposed biotrench projects locations:

PB-140: This project is located within DOT ROW along Old Barn Court. The proposed biotrenches will outfall via a storm drain to an unnamed tributary to the Good Hope Tributary to Paint Branch. Old Barn Court intersects with Piping Rock Drive off of New Hampshire Avenue.

PB-141: This project is located within the DOT ROW along Lear Lane, between Windmill Lane and Briggs Chaney Road. The proposed biotrenches will outfall via a storm drain to the Gum Springs Tributary to Paint Branch.

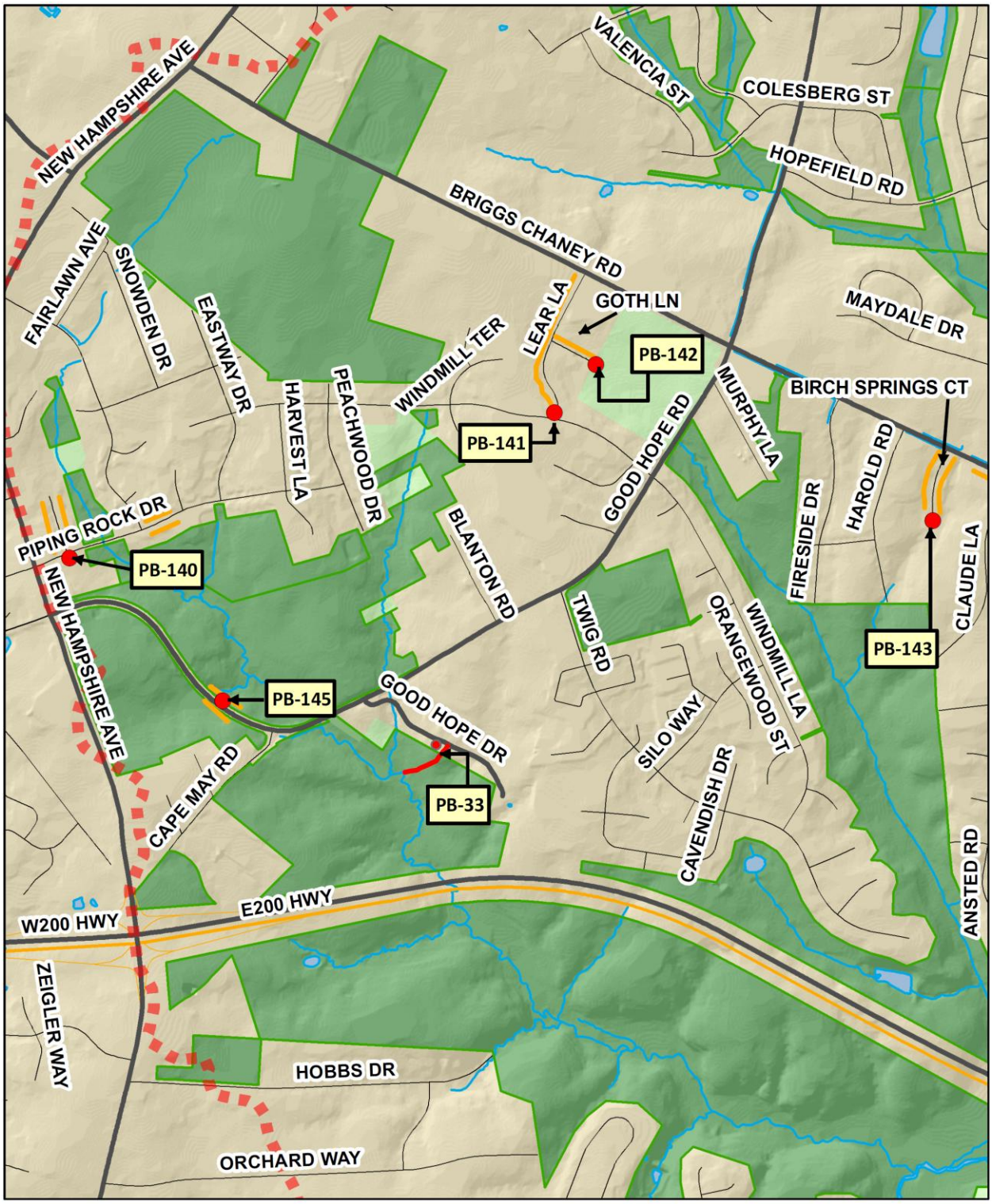
PB-142: This project is located within the DOT ROW along Goth Lane. The proposed biotrenches will outfall via a storm drain to the Gum Springs Tributary to Paint Branch. Goth Lane intersects with Lear Lane off of Briggs Chaney Road.

PB-143: This project is located within the DOT ROW along Birch Springs Court and on Briggs Chaney Road near the intersection with Claude Lane. The proposed biotrenches will outfall via a storm drain to the Gum Springs Tributary to Paint Branch.

Design

Baseline studies were begun in 2005 in order to understand the watershed characteristics, 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 Departments of Environmental Protection and 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

Figure 2: PB-145 – Good Hope Road Tributary



would provide water quality enhancement and stormwater management opportunities while balancing the protection of adjacent natural resources.

The restoration objectives identified for the stormwater management sites include:

- reducing bank erosion and in-stream sedimentation
- providing groundwater recharge
- reducing thermal impacts from stormwater runoff
- providing water quality treatment for currently untreated roadway runoff
- providing quantity treatment up to the channel protection volume for the area draining to the pond for the pond retrofit
- achieving all above restoration objectives while minimizing disturbance to trees.

It is anticipated that this approach will provide improved water quality to downstream trout spawning habitat.

PB-33

One of the two PB-33 projects involves retrofitting an existing SWM facility (Figure 3) to meet Maryland Department of the Environment's (MDE) current water quality standards. This project is proposing to increase the size of the SWM facility in order to provide full treatment of the Channel Protection Volume for the approximately six acres of drainage area to the pond. Other changes made would introduce a flow splitter upstream of the pond to bypass higher flow storms and take the pond offline, and provide maintenance access from the road surface. This pond is currently part of the Montgomery County Department of Environmental Protection (MCDEP) structural maintenance program, and MCDEP has reviewed and accepted the design.

Figure 3: PB-33 SWM Facility retrofit

The second PB-33 project will extend an existing storm drain to provide a more stable outfall. The purpose of the Storm Drain Outfall project is to prevent the excessive active erosion that occurs at the end of the existing pipe system. Currently, the pipe outlet is perched approximately five feet above the eroding channel bed (Figure 4). This project will remove the end of the existing pipe and install a new storm drain system that includes a series of drop manhole structures and sumps to dissipate energy. The proposed storm drain system will outfall to a plunge pool for additional energy dissipation and will connect to the Good Hope Tributary through a proposed channel stabilized with rock sills. The project additionally

Figure 4: Pipe outlet

includes two stormwater recharge chambers to provide for storm water infiltration. The result of this project will be less erosive storm flows with less sediment input discharging into Good Hope Tributary from the approximate 25-acre drainage area.

Parks and MCDEP have requested that the first manhole in the series be enhanced to trap additional sediments, oils, and debris in an area that is maintainable under MCDEP's structural maintenance program. In negotiations with the ICC on this project, Parks is agreeing to pay for the water quality enhancements in order to protect the recharge chambers and improve overall water quality of this tributary to Good Hope. The details of this water quality enhancement are being coordinated with SHA.

PB-145

The PB-145 project aims to treat run-off from the existing impervious area of Good Hope Road, eliminate erosion from roadside rutting and swale erosion (Figure 5), and infiltrate frequent storm event runoff. This project will not create any additional impervious area in the watershed. The measures proposed for the PB-145 site include biotrenches, a geocell road shoulder reinforcement, and providing protected discharge overflows that run down the side of the road embankment. This project will improve water quality of approximately three acres of drainage area.

Figure 5: Erosian from roadside rutting

PB-140 – PB-143

The proposed biotrench facilities are essentially in-line bioretention facilities consisting of an excavated trench approximately four to six feet in depth, filled with specific gradations of stone. The surface of the biotrench is covered with a specific soil mix and planted with turf grass/sod for final stabilization. When completed, the biotrenches will be similar in appearance to the existing grass swales.

The biotrench facilities aim to improve water quality by treating impervious road surfaces and enabling infiltration of frequent storm event runoff. This project will not create any additional impervious area in the watershed and will treat the existing impervious area.

Access

Access to the stormwater management areas 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 projects has been closely coordinated with M-NCPPC, Department of Parks staff to minimize forest impacts.

PB-33

Access to the PB-33 project area has been established through an access agreement between SHA and the private property owner and will be from three (3) locations off Good Hope Drive. Access through the parkland was closely coordinated with staff to minimize disturbance to natural resources and to ensure that it falls within the footprint of the proposed work as much as possible. Temporary staging

and stockpile areas will be located both on private property and along the alignment of the proposed storm drain extension. These will allow for contractor parking and deliveries of construction materials to take place safely and with minimal impact to the Great Hope Homes community. Construction entrances will be clearly marked with temporary signage according to the Maintenance of Traffic Plan for the safety of workers and the general public. Work areas will be fenced property to prevent community access to the construction areas.

PB-145

Access to the PB-145 project will be from the north and south sides of Good Hope Road. Because much of the work for the PB-145 project is adjacent to the road, care will be taken to adhere to the Maintenance of Traffic Plan to ensure public safety.

PB-140-143

PB-140-143 project locations are within the DOT ROW and access will be from the respective roads. Care will be taken to adhere to the Maintenance of Traffic Plan to ensure public safety.

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 of PB-33 and PB-145 is expected to begin February 2013 following the award of the contract under the normal SHA advertisement process.

Construction of PB-140 – PB-143 is expected to begin August 2012 following the award of the contract under the normal SHA advertisement process.

Wetland and Stream Impacts

SHA and the M-NCPC, 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 outfall 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 227 linear feet (lf) of ephemeral stream and 32 linear feet of perennial stream for PB-33. There are no temporary stream impacts associated with PB-145 and PB-140 – PB-143.

Temporary wetland impacts may occur in order to gain access to work areas. These impacts have been minimized to the greatest extent practicable during field reviews of the design plans. 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 Register of Historic Places 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 will take place with this project for construction access and stormwater management construction. 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 (MD-DNR) 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 improvements. Numerous field reviews have taken place to ensure that access, construction work, and landscaping do not unduly impact natural resources. Wherever possible, access will be coordinated with access routes for municipal utilities.

Impact to some trees within the immediate riparian buffer and along the stream banks and within the stormwater management pond will be unavoidable due to the proposed stream stabilization and pond retrofit work. These trees may be lost in the future due the continuing bank erosion if the outfalls are not stabilized or for maintenance activities at the pond. Strategies for protecting trees adjacent to and within some work areas will include root pruning, avoidance of critical root zones, and tree protection fencing. Disturbed and impacted areas will be stabilized and replanted once construction is complete. The approximate amount of forest impacts is 0.4 acre for PB-33 and 0.2 acre for PB-145.

No forest exists within the PB-140 – PB-143 project areas, therefore there will be no forest impacts. An exemption from the Forest Conservation Act will be coordinated with MD-DNR as required in accordance with the Forest Conservation Act. SHA applied for a roadside tree permit from MD-DNR. Strategies for protecting individual trees will be included in the design plans including root pruning, avoidance of critical root zones, and tree protection fencing.

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 M-NCPPC, Montgomery County Parks and SHA met with local residents of the watershed for public meetings. These were held on November 10, 2010 for PB-33 and October 19, 2011 for PB-145 and PB-140 – PB-143 to provide the communities with 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 entirely by the Maryland State Highway Administration. The enhancement of the first manhole for the PB-33 project 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. Following construction, the long-term maintenance and monitoring of the PB-33 stormwater management pond and storm drain outfall and PB-145 treatments will be assumed by the County. SHA will monitor reforestation areas for five years.

The maintenance and monitoring of the biotrench facilities is expected to be minimal. Under the agreement with the County, after the projects are accepted for maintenance, these duties will be assumed by MCDEP and DOT staff.

PC:

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