



MONTGOMERY COUNTY DEPARTMENT OF PARKS

THE MARYLAND - NATIONAL CAPITAL PARK AND PLANNING COMMISSION

MCPB Item # 2

February 3, 2011

MEMORANDUM

January 26, 2011

TO: Montgomery County Planning Board

VIA: Mary Bradford, Director of Parks *M Bradford*
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PROJECT: ICC Environmental Stewardship-Compensatory Mitigation (ES-CM) Projects NB-1, NB-3 and RC-2 *E Tush*

REVIEW TYPE: Mandatory Referral No. 1008-SHA-1 ICC Environmental Stewardship

APPLICANT: Maryland State Highway Administration (SHA)

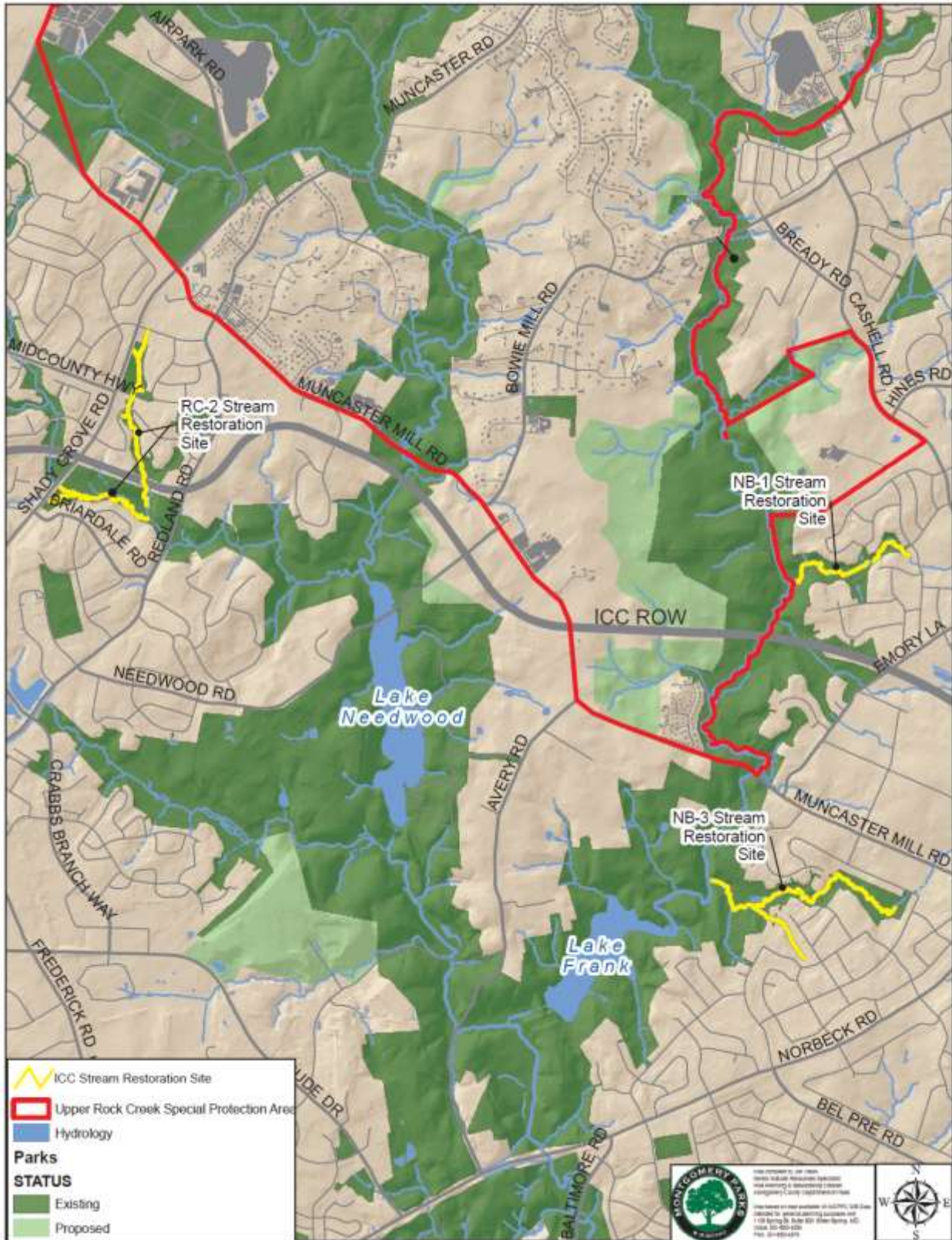
APPLYING FOR: Plan Approval

RECOMMENDATION: Approve the construction of three stream restoration projects in North Branch Stream Valley Park and Rock Creek Regional Park 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. The stream restoration 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. Collectively, these three projects are proposed to restore approximately 13,800 linear feet (2.6 miles) of stream channel. See Figure 1 for the locations of these projects.

Figure 1 – NB-1, NB-3 and RC-2 Stream Restoration Sites



NB-1

The NB-1 stream restoration site is on the Cherrywood Manor Tributary to the North Branch of Rock Creek, just outside of the Upper Rock Creek Special Protection Area (SPA). It is located in Norbeck Meadows Park and North Branch Stream Valley Park (See Figure 2). The stream reach to be restored flows east to west from approximately 300 feet downstream of where it crosses under George Washington Drive to its confluence with the North Branch of Rock Creek. The North Branch of Rock Creek and all tributaries upstream of Muncaster Mill Road, which includes the project area for NB-1, are classified as Use III Natural Trout Waters.

Figure 2: NB-1 Stream Restoration Site and Construction Access Locations



NB-3

The NB-3 project is comprised of two reaches. One reach is the mainstem of Manor Run that flows through Flower Valley Neighborhood Park and Rock Creek Regional Park (See Figure 3). The other reach is a tributary on private property within the Flower Valley Community. The mainstem Manor Run portion of NB-3 flows east to west from south of Hornbeam Drive to the confluence with the North Branch of Rock Creek. The tributary flows southeast to northwest from Jasmine Drive to the mainstem of Manor Run. This project takes place in Use IV Recreational Trout Waters.

Figure 3: NB-3 Restoration Site and Construction Access Locations



RC-2

RC-2 includes a headwaters tributary to Mill Creek flowing north to south. The project area starts at Mill Run Drive, continues under Founders Mill Drive, and under the Intercounty Connector to the confluence with Mill Creek (See Figure 4). Portions of Mill Creek between Shady Grove Road and Redland Road are also part of the RC-2 project. The tributaries to Rock Creek included in this project area are classified as Use IV Recreational Trout Waters.

Figure 4: RC-2 Restoration Site and Construction Access Locations



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. 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 considered to narrow the focus of the proposed restoration to highly degraded portions of the streams while balancing the protection of adjacent natural resources.

The restoration objectives identified for these three sites include:

- reconnecting the stream channel to its floodplain
- reducing bank erosion and in-stream sedimentation
- maintaining/enhancing the habitat for macroinvertebrate 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 with minimal human intervention.

NB-1

Most of the work proposed at this site aims to maximize the stream and floodplain connection and to minimize future bank erosion. In the upper reach, the proposed design focuses on spot treatments that will stabilize the stream banks without causing flooding that could potentially affect surrounding properties.



An incised channel

In the middle and downstream ends of the reach, the stream is currently incised (the stream bed elevation is low and the banks are steep). Restoration will be achieved through the construction of multiple in-channel rock structures (i.e. cobble weirs) that raise the baseflow water surface elevation while functioning as riffle features in the stream. The resulting backwater conditions upstream of these structures serve to create pool habitat. Over time, streambed material will settle in these areas and raise the elevation of the stream bed. As the existing floodplain is relatively wide and heavily vegetated, this restoration technique will ultimately allow natural vegetative and soil processes to treat over-bank flows.

NB-3

The restoration proposed at NB-3 aims to reconnect the stream to its floodplain while decreasing bank erosion. In the middle section of this reach, there is significant streambank erosion on outside bends. Several stability structures are proposed to stabilize this erosion using both rock and wood. Also within this portion of the reach the channel flow splits, putting too much pressure on the stream banks and causing erosion. To better control flow through this area, the design proposes the use of rock structures to allow base flow through both



A split channel

channels but direct high velocity storm flows through the larger portion of the channel.

RC-2

The northern floodplain of Mill Creek contains copious vernal pool and wetland habitat. However, due to stream bed erosion from high storm flows, the channel bed continues to become incised, thus decreasing the connection with this floodplain. This situation often causes head cuts (i.e. steep drops within the channel bed) to migrate up adjacent wetland swales which can dry up wetland and vernal pool habitat. The restoration design proposes log plugs where these wetland swales meet the stream channel to preserve the hydrology in these areas. In the main channel of Mill Creek, restoration work will concentrate on raising the streambed height with cobble weirs. Additionally, bank protection structures made of wood and rock will be installed to protect the banks from further erosion.



A head cut

ACCESS

Access to the stream restoration 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 three projects has been closely coordinated with M-NCPPC staff to minimize forest impacts.

NB-1

Access to the project area is proposed from two locations (Figure 2). Access to the eastern portion of the project is from the asphalt trail extending from the t-intersection of Continental Drive and George Washington Drive. During construction, this trail will be closed to the public. Access to the western portion of the project is directly onto parkland along the existing park trail off of Valley Forge Drive. A temporary staging area is proposed in an open area along this access. This will allow for deliveries of construction materials to take place safely and with minimal impact to local traffic. It will be fenced properly to prevent community access to construction areas. Although temporary disruptions of trails may occur, all recreation facilities at Norbeck Meadows Park are expected to remain open to the public during construction. At the end of each day, the contractor will leave the site accessible to park users.

NB-3

Access for this project will take place from the existing parking lot for Flower Valley Neighborhood Park off of Hornbeam Drive. A temporary staging area will be set up in an open field on parkland. During construction, the contractor will use up to four parking spaces in the Flower Valley Neighborhood Park lot, but all other spaces will remain open for public use. The remaining access areas are from residential streets in the following locations: the dead end of Sycamore (just beyond its intersection with

Hornbeam Drive), both sides of the Bitterroot Way cul-de-sac, and the end of Jasmine Drive (Figure 3). Temporary staging areas, one in an open area off of the Flower Valley Neighborhood Park parking lot and another at the dead end of Sycamore Lane, are proposed to allow deliveries to take place safely and with minimal impact to traffic. These areas will be fenced properly to prevent community access to the construction site.

RC-2

Access to the portion of the RC-2 project on the upstream end of the tributary to Mill Creek will be from Mill Creek Towne Local Park off of Shady Grove Road (south of Mill Run Drive). A temporary staging area will be present on this park site. Other access points to this project are where the stream crosses Founders Mill Drive and off Baederwood Lane across from Bethayres Court, and staging areas for these access points are on open areas of parkland nearby (Figure 4). All staging areas located near the site access points will allow for deliveries to take place safely and with minimal impact to traffic. These areas will be fenced properly to prevent community access to the construction site. Access through the site and an additional stockpile area will be along an existing farm road within parkland.

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. 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 staging areas for these three projects have been proposed in areas that will allow deliveries to take place safely and with minimal impact to local traffic.

Implementation

Construction is expected to begin April 2011 for RC-2 and June 2011 for NB-1 and NB-3 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 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 will cause temporary impacts to the streambed, which is expected to naturally re-stabilize over time. Disturbed stream banks will be regraded and stabilized. The preliminary estimate for the extent of temporary stream impacts is 3,415 linear feet (lf) for RC-2, 3,535 lf for NB-1, and 6,685 lf for NB-3.

Temporary wetland impacts will occur in order to gain access to the stream 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 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 restabilized with vegetation as necessary. Canopy trees adjacent to wetlands were avoided whenever possible.

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 will take place with this project for construction access and stream 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 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. 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 will 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 will include root pruning, avoidance of critical root zones, and tree protection fencing. Disturbed and impacted areas will 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 impact 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.

Public Meetings

Representatives from Montgomery County Parks and SHA met with local residents of the watershed for public meetings. These were held on March 11, 2010 for RC-2 and on May 6, 2010 for NB-1 and NB-3 in order to provide the community an opportunity to review and comment on plans for the projects. In

addition, SHA is working with the owners of non park. 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 projects are being funded by the Maryland State Highway Administration.

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 will 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 will be turned over to M-NCPPC. SHA will maintain reforestation areas for five years.

PC:

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