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MEMORANDUM – DRAFT FOR DISCUSSION

Date: December 14, 2009

To: Meo Curtis, Montgomery County DEP

From: Biohabitats, Inc.
Horsley Witten Group, Inc.

Project: Montgomery Task Order #7 – Subtask 6

RE: Third Draft Review of Montgomery County Code

Executive Summary

Biohabitats and Horsley Witten Group conducted a review of selected Chapters of the Montgomery County Code, the Development Approval Process, and the pending Commercial-Residential Zoning Text Amendment with the goal of identifying potential impediment to Environmental Site Design (ESD). The results of this review are set forth in this memorandum and accompanying Microsoft Excel Workbook, "Full Code Review 121409.xls."

The Development Approval Process, the Commercial-Residential ZTA, and Chapter 50 (Zoning) contain multiple barriers and gaps related to implementation of ESD. However, multiple opportunities were also noted where language may be enhanced to encourage application of ESD practices. Limited barriers to select or multiple ESD practices were identified in several Code chapters, including:

- Chapter 8. Buildings
- Chapter 18A. Environmental Sustainability
- Chapter 22. Fire Safety Code
- Chapter 22A. Forest Conservation - Trees
- Chapter 26. Housing and Building Maintenance Standards
- Chapter 40. Real Property

- Chapter 41. Recreation and Recreation Facilities
- Chapter 49. Streets and Roads
- Chapter 50. Subdivision of Land
- Chapter 58. Weeds
- Trees, Approved Technical Manual (Maryland National Capital Park and Planning Commission)

The next step in this process is for the Clean Water Task Force (CWTF) members to review recommendations presented in this memorandum and detailed review. The CWTF members should focus their initial review on areas with significant barriers and gaps, including:

- Review comments and recommendations in this memorandum related to the Development Approval Process

- Review comments and recommendations in this memorandum related to the Commercial-Residential Zoning Text Amendment

- Review identified barriers, gaps and opportunities within Chapter 59, particularly focusing on allowing for the placement of ESD within required landscaped and green spaces areas and on surface parking requirements.

The CWTF members should then review the Chapters of the Code that have fewer but still important barriers to ESD, including Chapters 22, 26, 49 and 50. Finally, the CWTF members should review those Chapters that have very limited barriers to ESD, including Chapters 8, 22A, 40, 41, 58, and the Trees manual.

1.0 Introduction to the Code Review

This memorandum summarizes the third draft review of the Montgomery County Code performed by Biohabitats and Horsley Witten Group. The goals of this review were to familiarize our team with development-related chapters of the Code; to identify potential impediments to Environmental Site Design (ESD) within the Code; to identify potential impediments to ESD within the Development Approval Process; and to begin to develop preliminary recommendations for Code language changes.

Montgomery County's new MS4 permit, Section E.1(ii), states the following:

> *Within one year of State adoption of regulations required under the Act, review existing planning and zoning and public works ordinance and other local codes to identify impediments to, and opportunities for, promoting the implementation of environmental site design (ESD) to the MEP.*

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This review is viewed as the first step towards compliance with this permit requirement. The Code review is structured around an expanded list of ESD practices:

- Green Roofs
- Permeable Pavements
- Reinforced Turf
- Disconnection of Rooftop Runoff
- Disconnection of Non-Rooftop Runoff
- Sheetflow to Conservation Areas
- Rainwater Harvesting
- Submerged Gravel Wetlands
- Landscape Infiltration
- Infiltration Berms
- Dry Wells
- Micro-Bioretention
- Rain Gardens
- Swales
- Enhanced Filters
- Soil Compost Amendments
- Stormwater Planters
- Expanded Tree Pits
- Stormwater Curb Extensions
- Foundation Planters

Although noted as a possible Code review template by the Montgomery County Clean Water Task Force, the Code and Ordinance Worksheet (Center for Watershed Protection, 1998) was not used. The Code and Ordinance Worksheet, or COW, does not provide enough structure to determine if barriers exist that will impede the application of specific ESD practices. Instead, selected chapters of the Montgomery County Code (Table 1) were reviewed in the context of the ESD practice guidance provided in the new Chapter 5 of the Maryland Stormwater Design Manual. In addition, MDE's Model Stormwater Management Ordinance (June 2009) was reviewed to identify differences between the model ordinance and current County stormwater regulations.

As the Code chapters were reviewed, specific sections that may be viewed as barriers, deficiencies, or opportunities were identified. *Barriers* are impediments to ESD and are typically found when a specific planning or design requirement is counter to one or more ESD practice design requirements. *Gaps* are less obvious. Due to a lack of detail in the Code, these are subject to interpretation and may serve as impediments in certain situations. *Opportunities* are sections that promote or have the potential to promote ESD. In some of these cases, expanded language that references ESD is recommended.

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Table 1: Montgomery County Code Chapters and Other Documents Reviewed

Montgomery County Code Chapters:
Chapter 8. Buildings
Chapter 14. Development Districts
Chapter 18A. Environmental Sustainability
Chapter 21. Fire and Rescue Services
Chapter 22. Fire Safety Code
Chapter 22A. Forest Conservation - Trees
Chapter 24B. Homeowners' Associations
Chapter 26. Housing and Building Maintenance Standards
Chapter 27A. Individual Water Supply and Sewage Disposal Facilities
Chapter 36. Pond Safety
Chapter 40. Real Property
Chapter 41. Recreation and Recreation Facilities
Chapter 44. Schools and Camps
Chapter 45. Sewers, Sewage Disposal and Drainage
Chapter 49. Streets and Roads
Chapter 50. Subdivision of Land
Chapter 54A. Transit Facilities
Chapter 56. Urban Renewal and Community Development
Chapter 58. Weeds
Chapter 59. Zoning
Other Relevant Documents:
Guidelines for Environmental Management of Development in Montgomery County (Maryland National Capital Park and Planning Commission)
Trees, Approved Technical Manual (Maryland National Capital Park and Planning Commission)

2.0 General Findings

Review of the following Code chapters and relevant documents revealed no barriers or gaps to the implementation of ESD techniques:

- Chapter 14. Development Districts
- Chapter 18A. Environmental Sustainability
- Chapter 21. Fire and Rescue Services
- Chapter 24B. Homeowners' Associations
- Chapter 27A. Individual Water Supply and Sewage Disposal Facilities
- Chapter 36. Pond Safety
- Chapter 44. Schools and Camps
- Chapter 45. Sewers, Sewage Disposal and Drainage
- Chapter 54A. Transit Facilities

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- Chapter 56. Urban Renewal and Community Development
- Guidelines for Environmental Management of Development in Montgomery County (Maryland National Capital Park and Planning Commission)

Limited barriers to select or multiple ESD practices were identified in several Code chapters, including:

- Chapter 8. Buildings
- Chapter 22. Fire Safety Code
- Chapter 22A. Forest Conservation - Trees
- Chapter 26. Housing and Building Maintenance Standards
- Chapter 40. Real Property
- Chapter 41. Recreation and Recreation Facilities
- Chapter 49. Streets and Roads
- Chapter 50. Subdivision of Land
- Chapter 58. Weeds
- Trees, Approved Technical Manual (Maryland National Capital Park and Planning Commission)

It should be noted that Chapter 49 was reviewed in the context of the Road Code Stakeholder Work Group background reports. The recommendations identified in this code review are not in conflict with what was determined to be "practicable" during that process.

Chapter 59 (Zoning) contains multiple barriers and gaps, but multiple opportunities were also noted throughout the review where language may be enhanced to encourage application of ESD practices. A summary of the Chapter 59 review is provided below.

The accompanying Microsoft Excel workbook provides documentation of the initial review. The first worksheet ("General") identifies sections of the Code and documents reviewed that may serve as barriers, gaps, or opportunities to multiple ESD practices. The remaining worksheets identify sections of the Code and documents that may be barriers, gaps, or opportunities to specific ESD practices.

3.0 Review of Montgomery County Code Chapter 59 (Zoning)

There are eight articles in Chapter 59: Article 59-A. In General, Article 59-B. Exemption From Controls, Article 59-C. Zoning Districts; Regulations, Article 59-D. Zoning Districts-Approval Procedures, Article 59-E. Off-Street Parking and Loading, Article 59-F. Signs, Article 59-G. Special Exceptions, Variances, and Nonconforming Uses, and Article 59-H. Amendment Procedures.

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Many areas of Chapter 59 offer opportunities for inclusion of ESD practices while many also create potential barriers or are deficient in addressing ESD. Generally, ESD features could be represented where applicable within definition lists, in permit application plan submissions, as "Green Area", and as "Open Space". ESD should also be discussed as integral to any environmental development standards, as in Section 59-C-1.5 Cluster Development. These situations are repeated through many of the various articles.

Although ESD applications related to streets and roads are discussed in more detail in Chapter 49, there are many references to these within Zoning, especially related to smaller neighborhood roads, streetscapes, and parking lots. Stormwater runoff from all of these typically impervious surface areas should be treated using one of the appropriate ESD practices.

All zone widths and setback codes should be reconsidered if they could potentially discourage ESD designs such as rain gardens, bioretention, swales, expanded tree pits, or others.

As ESD areas could be considered "Green Area" and "Landscape", terms mentioned extensively in Article C as well as D and E, the minimum required area could be expanded to minimize impervious surfaces and allow for more ESD area.

Many sections of Articles A, B, and C discuss code relevant to green roofs. Sections related to air rights (A-1.73), building heights (A-5.42, C-1.327, C-4.311), and allowable rooftop items (B-1.1) could all be revised to allow for and encourage green roofs. Green roofs could also be incentivized through increasing allowable building height. In high density development, green roofs could be considered as "Green Area" for their value in stormwater management, habitat creation (for birds and insects), and for recreation if accessible as usable space.

There is opportunity to encourage the use of permeable pavement or reinforced turf where typical impervious surfaces, such as walkways and parking facilities are listed within the zoning code, especially within Article C. Permeable pavement could be used for any of these surfaces while reinforced turf would be more appropriate for less intensely used surfaces such as overflow parking. These same impervious surface areas could also be disconnected from centralized drainage infrastructure by directing runoff into various forms of ESD infiltration, bioretention, or storage areas.

Where applicable, development areas adjacent to conservation areas could be encouraged to direct drainage into conservation areas as long as there are protective measures to prevent degradation of the preserved area.

Rainwater harvesting, including above or below ground barrels or cisterns, could be encouraged through revisions to sections within Articles A, B, and C. There is an

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opportunity to install below ground cisterns in Right of Ways (A-1.73), above ground barrels or cisterns in conjunction with steps, terraces, and porches in yards (B-3.1, C-1.326), and within inner courts or storage structures within buildings (C-2.415, C-5.434). However, it is understood that plumbing codes are an impediment as they limit the use of harvested rainwater to landscape irrigation.

Landscape infiltration, micro bioretention, rain gardens, and swales could all be specifically encouraged through revisions to Articles C and E. Minimum sizes of planting islands and other landscaping areas should be large enough to allow for these ESD practices, accommodating the drainage from surrounding impervious surfaces. When these ESDs include trees as part of bioretention planting, soil areas should be allowed enough width to support tree health.

Articles C and E have a few points of opportunity and potential barrier for stormwater planters, expanded tree pits, and stormwater curb extension.

Article E presents potentially significant barriers to ESD. First, surface parking requirements are set as minimum requirements. To reduce impervious cover associated with surface parking, a shift to maximum or median requirements should be considered. Second, surface parking landscaping requirements do not specify that ESD practices are allowable within required landscaping areas.

Montgomery County recently initiated a Zoning Code Rewrite process. As this process proceeds, coordination will be necessary to ensure that future Zoning Code changes do not create new impediments to ESD implementation.

To date, an in-house diagnosis of the zoning code was created based on about eight months of staff analysis of the current code. The result of this diagnosis is the Zoning Discovery, a report that not only analyzes the strengths and weaknesses of the code, but proposes direction and goals for a new Code. The Discovery was published in January 2009. It includes input from stakeholders that were invited to a series of small group discussions to share their thoughts on the current code and ideas for a revised code.

The consultant team, Code Studio, began work in July 2009, and a project initiation visit was held in late September. The next step will be a draft project approach report and an annotated outline, due to be submitted in January 2010. These documents will be reviewed by staff, the Zoning Advisory Panel, Planning Board, other stakeholders and the public. Then, based on Council action, a final project approach will set the foundation for the course of the rewrite. It is expected that the consultants will begin drafting the Code in April 2010, with a public draft completed by the fall of 2011. In that time period there will be opportunities for sharing drafts with interested parties.

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4.0 Commercial-Residential (CR) Zones

A Zoning Text Amendment (ZTA) is currently pending that will establish Commerical/Residential zones with the goal of enabling walkable, mixed-use communities that incorporate green design and convenient services. As this ZTA is still in draft form, comments are not included in the accompanying Microsoft Excel workbook. Instead they are summarized below.

59-C-15.65. Parking.

The minimum landscape standards for surface parking allow for the placement of stormwater management recharge facilities within required landscape areas. Allowing for stormwater management within required surface parking landscaping is an *opportunity* that will promote ESD. However, use of the term "stormwater management recharge facility" is a *gap*. The term is not defined, and it is not consistent with language used in Chapter 5 of the Maryland Stormwater Manual. In addition, the ability to recharge stormwater runoff is highly dependent on site conditions and it may not be feasible to infiltrate runoff within locations designated for surface parking landscaping. However, other ESD practices may be feasible within these locations, such as micro-bioretention. Consider replacing the term "stormwater management recharge facility" with "ESD practice."

59-C-15.81. Incentive Density Provisions.

The Incentive Zoning Table includes Bio-retention and Stormwater Recharge, Rainwater Reuse, and Vegetated Roofs. This is a *gap*. Rainwater Reuse and Vegetated Roofs are both allowable ESD practices. Design variants of Bio-retention are also allowable ESD practices, including landscape infiltration, micro-bioretention, rain gardens, and enhanced filters. However, "bioretention" as defined in Chapter 3 of the Maryland Stormwater Manual is not an allowable ESD practice. To remain consistent with State and County stormwater regulations, consider expanding the table to include all ESD practices set forth in Chapter 5 of the Maryland Stormwater Manual.

59-C-15.86. Environmental Incentives

For Bio-Retention and Stormwater Recharge and Rainwater Reuse, the potential density increases are based on management of a percentage of runoff from the 10-year storm. This is a *gap* as it does not align with State requirements for management of the recharge, water quality and channel protection volumes. Consider defining the potential density increases based on the channel protection requirements set forth in Chapter 5 of the Maryland Stormwater Manual, with maximum credit received if the reduced runoff curve number for the drainage area reflects "woods in good condition."

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The lack of reference to specific design guidelines is a *gap*. Consider stating that ESD practices must meet state and local stormwater management design and construction standards and specifications as administered by DPS.

5.0 The Development Approval Process and ESD

The Development Approval Process (DAP) was also reviewed as part of this effort. This review is based on meetings and discussions with DEP and DPS staff; attendance at a Development Review Committee (DRC) meeting; attendance at an internal departmental meeting to discuss ideas for streamlining the overall development review process; review of a DAP workbook that outlines different types of subdivision review; review of the County's Manual of Development Review Procedures; review of various guidance documents, applications, and checklists on the DPS and MNCPPC websites; and review of recommendations set forth by the Clean Water Task Force.

During this review, the following major barriers or gaps to ESD were identified within the DAP:

- With the exception of development proposed within Special Protection Areas, stormwater management is not formally introduced into the DAP until many site elements have been laid out, such as roads and lot lines. However, applicants that have prior experience with the County's DAP typically initiate preliminary discussions with various review agencies on site requirements and considerations, including stormwater management.
- Site plans and details submitted to different agencies for review do not always show the proposed locations of stormwater BMPs. As such, competing concerns and priorities associated with other site design elements, such as roads and fire safety, may not take into account areas required for stormwater management.
- Rezoning applications are often required to provide a detailed concept plan early in the DAP, which precedes review and thorough consideration of stormwater management by DPS.
- The NRI/FSD does not identify areas on a development site that may be appropriate locations for stormwater management (e.g., soils with high infiltration capabilities).

Preliminary recommendations for enhancing or modifying the DAP to promote implementation of ESD include:

- Require applicants to attend a formal pre-application meeting with County agencies to review and discuss preliminary plans and applicable requirements for development at the site. This may be conducted by the Development Review Committee. DPS involvement is critical to ensure that stormwater management, and ESD in particular, is discussed and considered early in the process.

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- Require ESD practice locations as a base layer on all site plans reviewed by various agencies during the DAP.
- Develop and adopt standard checklists and narrative requirements that are used by applicants to demonstrate application of ESD to the MEP at a site.

It should be noted that the Planning Department has convened a working group to review the DAP with the goals of reducing the number of required meetings; improving the resolution process for conflicts between County agencies on development review issues; and better defining the role of lead agencies in the DAP.

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