

OVID HAZEN WELLS PARK IMPROVEMENTS

12001 Skylark Road

Clarksburg, Maryland 20871

STORMWATER MANAGEMENT CONCEPT ENGINEERING REPORT

Prepared: July 2015

Revised August 2015

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Approved by: Jason Azar, P.E.

Project No.: 87360.02



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND

LICENSE NO.: 12548 EXPIRATION DATE: 7/29/17



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I. STORMWATER MANAGEMENT CONCEPT NARRATIVE



Stormwater Management Concept Narrative

Ovid Hazen Wells Park Improvements

Date: August 14, 2015

I. Site Introduction

Maryland-National Capital Park and Planning Commission (M-NCPPC) is proposing extensive improvements to the existing Ovid Hazen Wells Park which is located at 12001 Skylark Drive in Clarksburg, Maryland. The park is bound by residential communities on all sides.

II. Existing Conditions

a. Park Overview

The existing park consists of 290 acres of passive and active park area. The proposed improvements are within the active area of the park, which is adjacent to Skylark Drive. This area of the park currently consists of one baseball field, two softballs fields and two rectangular fields, a playground, small picnic pavilions, associated trails and parking.

b. Stormwater Management

The existing park includes a network of stormwater management facilities including bioretention areas, infiltrations trenches and two very large sand filters. The existing stormwater facilities were designed prior to Environmental Site Design requirements implementation. The facilities were also designed for an ultimate build out of construction including an aqua center which did not come to fruition. Therefore, the existing facilities, primarily the two large surface sand filters, are significantly oversized. The drainage area and impervious areas that they were designed for are significantly larger than the drainage areas that are actually draining to them in the present condition. The modifications to these facilities will be discussed further in the Stormwater Management section of this report.

c. Environmental Features

There is a stream that runs through the park property and along the northeastern boundary of the proposed project limits. The existing stream buffers and wetland limits have been shown on the enclosed plan. There are also areas of forest in conservation easement which are not proposed to be disturbed.

III. Proposed Conditions

The proposed improvements to the existing Ovid Hazen Wells Park include the relocation of a carousel from Wheaton Regional Park to Ovid Hazen Wells Park. An enclosure building will house the carousel and will also include gathering space and restroom facilities. The additional park improvements include: a splash pad, a skate park, a dog park area, running track facility, open lawn area, additional parking areas, amended trails, a maintenance building, a new playground and new picnic pavilion areas. New utility connections will be provided to serve the proposed amenities. The existing ballfields are not proposed to be disturbed.

The park was subject to an evaluation for ADA compliance. The deficiencies found as a result of the investigation will also be addressed as part of this project.

IV. Stormwater Management

a. Existing Stormwater Management

As previously discussed, the two existing sand filters were designed for a future phase which was not constructed. This phase included an aquatic center and an extensive amount of additional parking and other impervious areas.

Table 1: Existing Sand Filter Drainage Area Summary

Sand Filter	Design		Actual	
	Drainage Area (ac)	Impervious Area (ac)	Drainage Area (ac)	Impervious Area (ac)
Sand Filter #1	5.12	2.62	3.43	1.30
Sand Filter #2	7.87	2.29	3.81	0.27

b. Environmental Site Design

The project area within the limits of disturbance was designed using Environmental Site Design criteria per the Maryland Stormwater Design Manual and Montgomery County Stormwater Regulations and in compliance with the Stormwater Management Act of 2007 to the Maximum Extent Practicable (MEP). The stormwater management design strategy for this project was to seek to replicate the natural hydrology of the site by utilizing small-scale stormwater management practices to minimize the impact of land development on downstream water resources.

Per current Montgomery County DSP standards, the Pe required for treatment was calculated using the total property area to each study point. There are two study points: discharge points at Skylark Drive, Persimmon Ridge Road and discharge to the existing stream. The majority of the disturbance is within the stream drainage area. The forest conservation easement areas were included in the developable area as requested by DPS.

Table 2: ESDv Requirements Summary

Study Point	Property Area (sf)	Proposed Impervious Area (sf)	% Impervious	Soil Type	Target Pe (in)	Limits of Disturbed Area (sf)*	LOD Rv	ESDv Required (cf)	ESDv Provided (cf)
Stream (A)	12,416,707	483,834	3.9%	C	1.0	1,078,859	0.329	29,562	32,189
Persimmon Ridge Road (B)	307,048	61,125	19.9%	C	1.0	126,690	0.310	3,270	5,275

The ESDv will be provided with 22 micro-bioretenion facilities. The drainage areas and treatment volumes of each facility are listed in Table 3.

Table 3: Drainage Area Summary

Proposed Facility	Drainage Area (sf)*	Impervious Area (sf)	Treatment Volume Provided (cf)
Micro-Bioretenion Area "A"	19,763	8,404	1,853
Micro-Bioretenion Area "B"	10,721	5,601	1,208
Micro-Bioretenion Area "C"	12,257	10,674	2,214

Micro-Bioretention Area "D"	17,722	4,523	1,074
Micro-Bioretention Area "E"	8,568	4,584	987
Micro-Bioretention Area "F"	10,544	5,273	1,025
Micro-Bioretention Area "G"	7,090	3,218	704
Micro-Bioretention Area "H"	11,729	8,215	1,729
Micro-Bioretention Area "I"	18,358	13,846	2,436
Micro-Bioretention Area "J"	13,878	10,601	991
Micro-Bioretention Area "K"	19,736	5,232	1,234
Micro-Bioretention Area "L"	13,878	10,601	1,688
Micro-Bioretention Area "M"	19,736	16,561	2,766
Micro-Bioretention Area "N"	19,718	14,204	2,983
Micro-Bioretention Area "O"	14,758	5,637	1,259
Micro-Bioretention Area "P"	16,940	7,479	1,642
Micro-Bioretention Area "Q"	19,461	9,843	2,130
Micro-Bioretention Area "R"	18,442	10,765	1,467
Micro-Bioretention Area "S"	14,861	10,708	2,249
Micro-Bioretention Area "T"	19,426	12,953	2,736
Micro-Bioretention Area "U"	16,590	11,843	1,812
Micro-Bioretention Area "V"	12,795	5,831	1,276

*Drainage area does not include the area of the facility as permitted by DPS.

The full ESDv is provided for the limits of disturbance, therefore no CPv will be required.

c. Existing Stormwater Management Facility

As previously mentioned, there are two existing sand filter facilities onsite whose drainage areas are within the limits of disturbance. Also as previously mentioned, the full ESDv for the site has been met via the 22 micro-bioretenion areas.

Both of the existing sand filters were sized for an ultimate build out condition of the park that included a large amount of impervious area that was not built. Much of the current proposed impervious area is to be treated with ESD making the sand filters vastly oversized. Part of this development will be to reduce the sand filter sizes to an appropriate size based on what is actually draining to them. While ESD has been met for the entire site for the Pe of 1", the carousel building and amphitheater area next to it have no treatment provided. The proposed location of the carousel building is on a slope. The only downhill location from the structure is in a stream buffer that cannot be built in. Therefore, ESD cannot feasibly be provided for the carousel building and surrounding area. As an additional treatment measure, those areas will be directed to the existing sand filter adjacent to them. This treatment will be above and beyond the required ESD. In addition to resizing the facilities, the surface material will also be enhanced with planting soil to allow planting in the sand beds and not be an eye sore in the park. Gravel windows will be added to allow water into the sand and stone treatment below.

The proposed reduction in size of the sand filters will be designed to meet Pond-378 code, including the required freeboard and volume based on the proposed drainage areas. All necessary computations will be provided at the final design stage. The proposed planting soil mix to be used is SHA BSM.

Table 3: Existing Sand Filter #1 Drainage Area Summary

Design Drainage Area		Proposed Drainage Area		Decrease in Drainage Area from Design (ac)	Decrease in Impervious Area from Design (ac)
Total Area (ac)	Impervious Area (ac)	Total Area (ac)*	Impervious Area (ac)*		
5.12	2.62	3.53	1.74	1.59	0.88

*Includes 0.70 ac (30,343 sf) of impervious drainage area that is not proposed to be altered

V. Stormwater Quantity

a. Methodology

A stormwater quantity analysis was conducted for each outfall point, at the stream, at Persimmon Ridge Road and at Skylark Road. The storage of the proposed micro-bioretenion areas was conservatively taken into account with the storage above the media and 1' of the storage within the media included in the analysis.

b. Stream Outfall

The majority of the limits of disturbance outfalls to the stream at the east side of the site. This stream feeds into Little Seneca Creek which eventually discharges into Little Seneca Lake.

c. Persimmon Ridge Road Outfall

Only proposed micro-bioretenion areas A, B, and C outfall to the Persimmon Ridge Road drainage system. Micro-bioretenion area A will outfall to a grass swale which will lead to a curb inlet along Skylark Road at the intersection of Persimmon Ridge Road. Micro-bioretenion areas B and C will outfall to grate inlets that discharge to an existing 21" pipe at Skylark Road and Persimmon Ridge Road. The analysis shows that this pipe has sufficient capacity for the proposed discharge and the HGL of the inlet is well below grade. Additional analysis indicates that the downstream storm drain system is also sufficient for the proposed improvements.

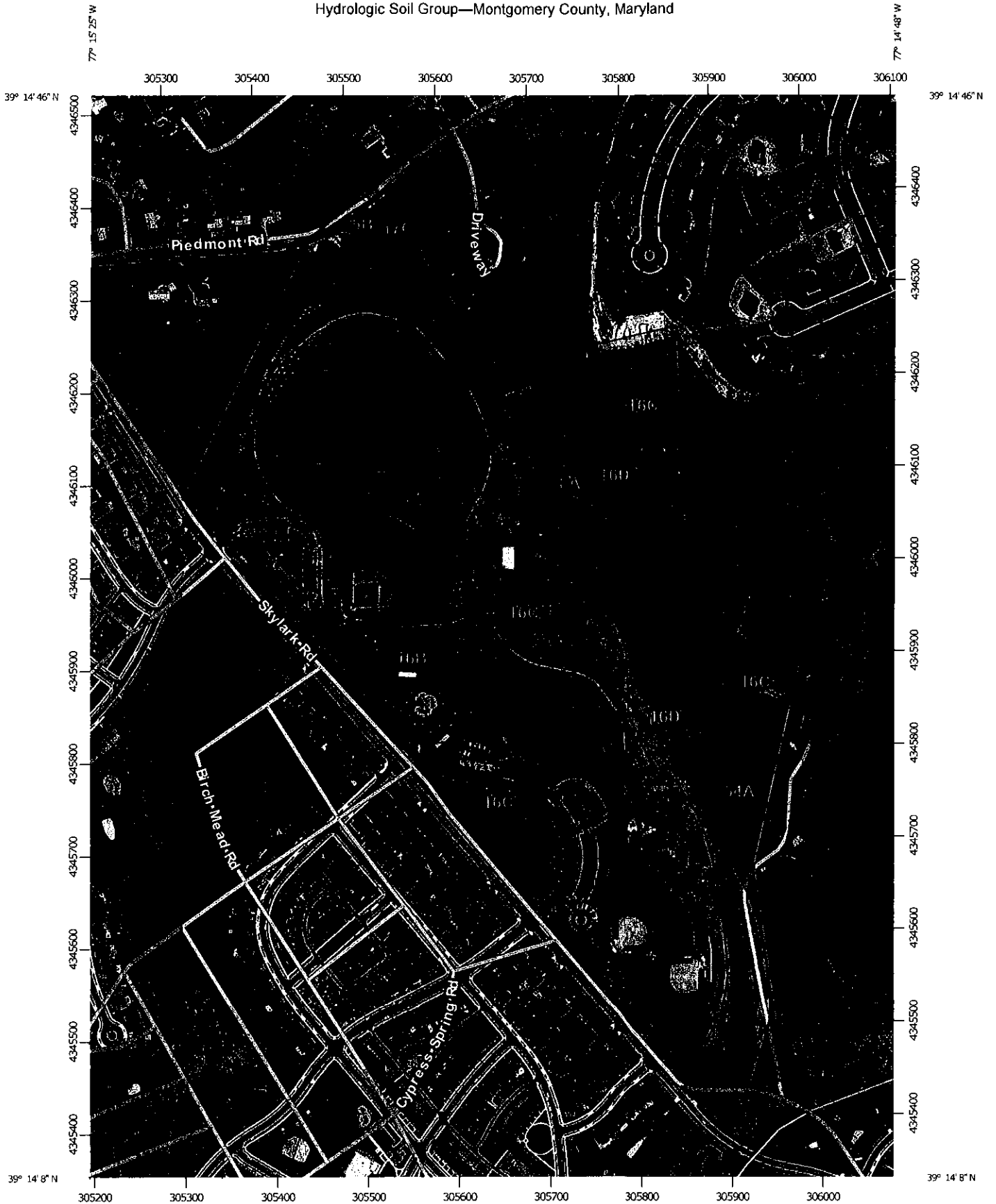
VI. Conclusions

Full ESD requirements are being met for the proposed improvements, and as a result of the proposed improvements, water quality is being increased for the park. The existing sand filters are being retrofitted to appropriate sizes and providing additional treatment beyond the required ESD. Existing drainage patterns are being maintained to the greatest extent allowable. The outfall drainage systems are sufficient for the proposed developments per the quantity analysis.

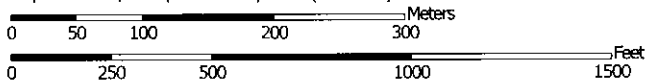
III. SOILS INFORMATION



Hydrologic Soil Group—Montgomery County, Maryland



Map Scale: 1:5,690 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Montgomery County, Maryland (MD031)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
5B	Glenville silt loam, 3 to 8 percent slopes	C	0.5	0.7%
6A	Baile silt loam, 0 to 3 percent slopes	C/D	6.2	7.7%
16B	Brinklow-Blocktown channery silt loams, 3 to 8 percent slopes	C	27.2	34.1%
16C	Brinklow-Blocktown channery silt loams, 8 to 15 percent slopes	C	29.7	37.3%
16D	Brinklow-Blocktown channery silt loams, 15 to 25 percent slopes	C	12.7	15.9%
17C	Occoquan loam, 8 to 15 percent slopes	B	0.3	0.4%
54A	Hatboro silt loam, 0 to 3 percent slopes, frequently flooded	B/D	3.2	4.0%
Totals for Area of Interest			79.8	100.0%

IV. APPROVED FOREST CONSERVATION PLAN



V. ADJACENT DOWNSTREAM
PROPERTY OWNER NOTIFICATION
LETTER AND LIST OF RECIPIENTS





July 6th, 2015

Re: Stormwater Management Concept Plan

To Whom It May Concern:

In accordance with Montgomery County Executive Regulation 702AM, this letter is to notify you of an application to the Montgomery County Department of Permitting Services (DPS) for the attached project. This application is for approval of a stormwater management concept plan. A copy of the proposed stormwater management concept plan is enclosed.

The stormwater management concept plan will be acted upon by DPS prior to Mandatory Referral, or prior to the review of detailed development plans. You, as an adjacent/downstream landowner, may provide in writing to DPS any information which is pertinent to the proposed stormwater management concept plan, and which you think should influence action taken by DPS. Written comments must be addressed to:

Mark Etheridge, Manager
Montgomery County Department of Permitting Services
Water Resources Section
255 Rockville Pike, 2nd floor
Rockville, MD 20850-4166

Comments must be delivered within three weeks of receipt of this notice which has been sent by Certified Mail. Comments received from landowners will be considered in the review of the stormwater management concept plan.

Sincerely,

Sean Lindaman, P.E.
Project Engineer

Enclosures – SWM Plan

MNCPPC
9500 Brunett Avenue
Silver Spring, MD 20901

Christopher and Allison Smith
12200 Skylark Road
Clarksburg, MD 20871

Arora Hills Homeowners Association Inc.
1425 Clarkview Road
Baltimore, MD 21209

Thai Nguyen
23224 Ridge Road
Germantown, MD 20876

Jafar Omidvar
7720 Tremayne Place
McLean, VA 22102

Vincent Lufsey
21944 Greenbrook Drive
Boys, MD 20841

David and Gail Fredrick
23406 Ridge Road
Germantown, MD 20876

E C Richard Enterprises Inc
26719 Ridge Road
Damascus, MD 20872

Grace Farm Estates
1355 Beverly Road, Ste. 240
McLean, VA 22101

Grace Farm Homeowners Assoc.
c/o Vanguard Management Company
19536 Amaranth Drive
Germantown, MD 20874

Stuart & Megan Fishbein
11402 Piedmont Court
Clarksburg, MD 20871

Karie Ellen Foley
11404 Piedmont Ct
Clarksburg, MD 20871

Victor Chukwudi Anohu
11801 Kigger Jack Lane
Clarksburg, MD 20871

Park Ridge Homeowners Assoc.
c/o Vangurd Management Company
19536 Amaranth Drive
Germantown, MD 20874

Park Ridge Homeowners Assoc. Inc
1355 Beverly Road, Ste. 240
McLean, VA 22101

Craig & Dawn Walton
12200 Piedmont Court
Clarksburg, MD 20871

Pamela Johnson
12316 Piedmont Court
Clarksburg, MD 20871

APPENDIX A: GEOTECHNICAL REPORT

