



June 6, 2023

Planning Board  
Township of Verona  
Verona Town Hall  
600 Bloomfield Avenue  
Verona, New Jersey 07044

Attention: Marcie Maccarelli, Acting Planning Board Secretary

Re: **Stormwater Management Review**  
Verona Sunset Urban Renewal, LLC  
One Sunset Avenue  
Block 303, Lot 4 (Verona)  
Block 301, Lots 5 and Block 401, Lot 1 (Montclair)  
Township of Verona  
Our File No. VAES-104

Dear Members of the Board:

Boswell Engineering supplements our letter dated June 5, 2023 providing our engineering review of the above referenced project with additional comments on the Stormwater Management and Traffic Report review.

### **Stormwater Management Comments**

We have reviewed the following documents from the above referenced project:

- a) Stormwater Management Report entitled "Stormwater Management Report, Verona Sunset Urban Renewal, LLC, Block 303, Lot 4, Township of Verona, Block 301, Lot 5 and Block 401, Lot 1, Township of Montclair, Essex County, New Jersey," prepared by Matrix New World Engineering, and dated December 10, 2021, last revised May 5, 2023.
- b) Stormwater Maintenance Manual entitled "Stormwater Facilities Operations and Maintenance Manual, Verona Sunset Urban Renewal, LLC, Block 303, Lot 4, Township of Verona, Block 301, Lot 5 and Block 401, Lot 1, Township of Montclair, Essex County, New Jersey," prepared by Matrix New World Engineering, and dated December 10, 2021, last revised May 5, 2023.
- c) Site Plans (16 sheets) entitled "Preliminary and Final Major Site Plan, Verona Sunset Urban Renewal, LLC, Block 303, Lot 4, Township of Verona, Essex County, New Jersey, Block 301

Lot 5 and Block 401 Lot 1, Situated in Township of Montclair, Essex County, New Jersey, 1 Sunset Avenue, Verona, NJ”, prepared by Matrix New World Engineering dated December 10, 2021, last revised May 5, 2023.

Based on our review, we have the following comments on drainage and stormwater management elements of the project:

1. While Basin C is referred to as a Bioretention Basin within the plans and reports, it does not appear to be designed as a bioretention basin, as defined under Chapter 9.7 within the NJDEP BMP Manual. Within the HydroCAD calculations, the basin was input as a detention basin. However, since the outfall discharge is located above ground, without the knowledge of the percolation rates through the basin’s layers, it is not possible to know if the detained stormwater will remain in the basin or discharge through the overflow and, thus, not work as intended.
2. In Appendix B of the stormwater management report, the attached geotechnical report had soil borings performed on September 16 and 17, 2019 and May 7, 2021, as well as Test Pits performed between October 5 through 7, 2022. In accordance with Chapter 12 (page 10) of the NJDEP BMP Manual, the seasonal high-water table (SHWT) is measured via direct observation during the months of January through April. If testing is performed outside of this period, the SHWT is located at the highest elevation mottling is observed. The attached test pit summary table was provided within Appendix B of the stormwater management report:

Test Pit	Excavation Depth (feet bgs)	Groundwater Depth (feet bgs)*	Mottling Starting Depth (feet bgs)	Test Depth (feet bgs)	Permeability Rate, K (in/hr) *
TP-1	6	NE	3	6	N/A
TP-2	4	NE	3.5	4	N/A
TP-3	6	NE	2	6	N/A
TP-4	8.5	NE	3	8.5	N/A
TP-5	5	NE	5	5	N/A
TP-6	12	6	2	12	N/A
TP-7	6	2	2	6	N/A
TP-8	4.75	3.5	2.5	4.75	0.625
TP-9	7	6	3	7	N/A
TP-10	4.5	4.5	2	4.5	N/A

\*NE = Not Encountered  
\* N/A = Test was terminated and a permeability rate was not calculated

Using the mottling depths listed, and the information presented within the site plan set, the following table was developed:

Test Pit	Surface Elevation (ft)	Mottling depth (feet below ground surface, fbgs)	Elevation of SHWT (ft)	Corresponding Basin	Basin Bottom (ft)
TP-1	547	3	544	Basin A	524.5
TP-2	543.5	3.5	540	Basin A	524.5

Test Pit	Surface Elevation (ft)	Mottling depth (feet below ground surface, fbgs)	Elevation of SHWT (ft)	Corresponding Basin	Basin Bottom (ft)
TP-3	556.2	2	554.2		
TP-4	560.2	3	557.2	Basin C	557.99
TP-5	521.7	5	516.7		
TP-6	520.5	2	518.5		
TP-7	523.1	2	521.1	Basin B	512.9
TP-8	519.3	2.5	516.8	Basin B	512.9
TP-9	534.4	3	531.4		
TP-10	526.1	2	524.1		

Based on these results, it does not appear that the required groundwater separation of one (1) foot between the bottom of the proposed basins and the SHWT is present, as required by the NJDEP BMP Manual, Chapter 11.2 (page 8).

- Based on N.J.A.C. 7:8-5.6(c) (“the stormwater runoff quantity standards shall be applied at the site’s boundary to each abutting lot, roadway, watercourse, or receiving storm sewer system”) and N.J.A.C. 7:8-5.2(l) (“If there is more than one drainage area, the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at N.J.A.C. 7:8-5.4, 5.5, and 5.6 shall be met in each drainage area, unless the runoff from the drainage areas converge onsite and no adverse environmental impact would occur as a result of compliance with any one or more of the individual standards being determined utilizing a weighted average of the results achieved for that individual standard across the affected drainage areas”), the HydroCAD results of each of the identified drainage areas were evaluated in the table below:

Site Runoff — Existing Conditions					
Storm Event	Drainage Area (cfs)				
	DA 1	DA 2	DA 3	DA 4	Site Total
2-year	1.52	8.38	1.93	0.53	10.28
10-year	3.52	13.86	4.16	1.22	18.58
100-year	7.98	25.01	9.05	2.77	36.22

Site Runoff — Proposed Conditions					
Storm Event	Drainage Area (cfs)				
	DA 1	DA 2	DA 3	DA 4	Site Total
2-year	0.88	3.79	1.71	0.44	6.62
10-year	1.99	9.25	3.95	1.06	14.93
100-year	4.52	15.27	8.9	2.43	28.04

Existing vs. Proposed Peak Flow Percentage Reduction Comparison					
Storm Event	Drainage Area (percent)				
	DA 1	DA 2	DA 3	DA 4	Site Total
2-year	42%	55%	11%	17%	36%
10-year	43%	33%	5%	13%	20%
100-year	43%	39%	2%	12%	23%

While drainage area two (DA-2) meets the quantity reduction standard listed under N.J.A.C. 7:8-5.6(b)3, the other drainage areas do not. Therefore, the applicant shall describe in the report how the stormwater runoff quantity standards are met in each of the drainage areas.

4. After reviewing the Stormwater Reports dated January 11 and May 5, 2023, it could be noticed that Tables 5, 7, and 8 display the exact Total Post-Development Flow Rates despite the peak flow increase reported in the Pre-Development conditions. The Applicant shall explain these results.

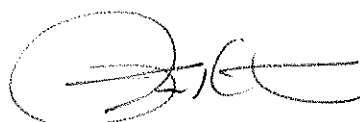
**Traffic Impact Review Comments:**

1. A review of the latest version (May 3, 2023) of the traffic impact report by Stonefield Engineering was reviewed. Previous comments were addressed and there are no outstanding issues.
2. The latest response letter (May 8, 2023) from the Applicant's engineer was reviewed and all outstanding traffic comments made to the plan set have been addressed and there are not outstanding issues.

Should you have any questions or comments, please feel free to contact me.

Very truly yours,

BOSWELL ENGINEERING



Peter C. Ten Kate, P.E.

PCTK:jm