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MEMORANDUM

To: *Chairman and Members of the
West Orange Zoning Board*

From: *John J. Hess, PE, PP, CME
Zoning Board Engineer*

Date: *July 24, 2024*

Re: *Application No. ZB-24-06
Public Service Electric & Gas Company
Preliminary & Final Site Plan with 'C' and 'D'
Variances and Tree Removal Permit - Review #1
325 Mount Pleasant Avenue
Block 155, Lot 26.01
Our File: 115.WRZ0155.V04*

CC: *Geniece Gary-Adams – Zoning Official
Zayibeth Carballo, PE, PLS, PP – Municipal Engineer
George Wheatle Williams, PP – Zoning Board Planner
Steven K. Warner, Esq. – Zoning Board Attorney
Public Service Electric & Gas Company – Applicant
Jennifer M. Porter, Esq. – Applicant's Attorney
Michael J. Blake, PE – Applicant's Engineer
Jonathan M. Copa, PE – Applicant's Engineer
Noreen Merainer, PP, PMP – Applicant's Planner
Michael D. Ragsdale, PLS – Applicant's Surveyor
John R. Futey II, LLA – Applicant's Landscape Architect
Michael R. Conaway, PE – Applicant's Acoustical Engineer*

Our office has received for review the following documents which were submitted in support of the above referenced application for Preliminary and Final Major Site Plan approval with 'C' and 'D' Variances:

- A set of Site Plan drawings (3 sheets) prepared by Michael J. Blake, PE with Burns McDonnell of Kansas City, Missouri and Michael D. Ragsdale, PLS with PSEG Services Corporation of Newark, New Jersey dated May 2, 2024.
- A set of Tree Removal Plans (3 sheets) prepared by John R. Futey II, LLA with Paulus, Sokolowski and Sartor, LLC of Warren, New Jersey dated December 22, 2022.
- A set of Landscape Plans (2 sheets) prepared by John R. Futey II, LLA dated December 22, 2022.
- A set of unsigned West Orange Switching Station plans (16 sheets) prepared by Jonathan M. Copa, PE and Michael J. Blake, PE with Burns McDonnell dated March 20, 2023.



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- A set of Boundary and Topographic Survey plans (3 sheets) prepared by Michael D. Ragsdale, PLS dated May 2, 2024.
- A report entitled "Requirements for Variances and Reasons for Relief Statement" prepared by Noreen Merainer, PP, PMP with Public Service Electric and Gas Company dated May 10, 2024.
- A report entitled "Stormwater Management Plan" prepared by Michael J. Blake, PE dated May 9, 2024.
- A report entitled "Stormwater Management Measures Maintenance Plan and Field Manuals" prepared by Michael J. Blake, PE and dated April 30, 2024. Included in the report are the following documents:
 - A Supplemental Test Pits and Permeability Testing Report prepared by Christopher McLaughlin, PE with GZA GeoEnvironmental, Inc. of South Bound Brook, New Jersey and dated January 17, 2023
 - A Subsurface Investigation Report prepared by Christopher McLaughlin, PE dated August 8, 2022.
 - A Thermal Analysis of Native Soil Samples prepared by Nimesh Patel with Geotherm USA of Cypress, Texas dated June 16, 2022.
 - A Stormwater Management Report prepared by Barry J. Sutherland, PW with TRC Engineers, Inc. of Millburn, New Jersey dated March 2012.
 - A Subsurface Investigation Report prepared by Mark R. Denno, PE and Todd E. Horowitz, PE with Mellick-Tully and Associates, PC of South Bound Brook, New Jersey dated May 17, 2011.
 - A Custom Soil Resource Report for the PSE&G West Orange Switching Station from the United States Department of Agriculture Natural Resources Conservation Service dated December 8, 2022.
- A May 15, 2024 letter from Noreen Merainer, PP, PMP to the West Orange Zoning Board of Adjustment which provides details of the project scope, sets forth the requested variances and lists the required outside agency approvals.
- A completed Application Form dated May 10, 2024.
- A completed Application for Tree Removal and Replacement Permit dated May 15, 2024.
- A completed Ownership Disclosure dated May 10, 2024.
- A completed Affidavit of Ownership dated May 10, 2024.



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- A completed Site Plan/Subdivision Checklist.
- A completed Sustainability Checklist Form.
- A Discussion of Submission and Design Waivers.
- A Buffer Report which lists the owners of properties within 200 feet of Block 155, Lot 26.01 from the Office of the West Orange Assessor dated November 29, 2023.
- A statement from the Township of West Orange which shows that the property taxes on Block 155, Lot 26.01 are paid through the 2nd quarter of 2024.
- A copy of an Indenture dated May 31, 1928 which conveyed the property in question from The Holland Company to Public Service Electric and Gas Company. This Indenture was recorded in the Register's Office of the County of Essex, NJ on June 5, 1928 in Book M-78 on pages 157-170.
- Copies of the following prior Zoning Board of Adjustment Resolutions of Approval for the property in question:
 - Zoning Board Case No. ZB-06-40 dated January 22, 2007.
 - Zoning Board Case No. ZB-16-15 dated March 16, 2017.
- A completed State of New Jersey Non-Residential Development Fee Certification/Exemption dated May 10, 2024 which states that Public Service Electric and Gas is exempt.
- A set of photosimulations prepared by Burns McDonnell consisting of 6 sheets. The photosimulations show the existing and proposed conditions at various locations along Mt. Pleasant Avenue and Prospect Avenue.
- A brochure of the proposed Impasse II high security steel palisade fencing from Ameristar Fence Products.

We have reviewed the information submitted in support of this application and offer the following comments:

A. PROJECT DESCRIPTION

The property in question is an irregularly shaped tract located on the northwest corner of the intersection of Mount Pleasant Avenue and Prospect Avenue. It is located in the O-R Office Research Zone and has an area of approximately 23.36 acres. The site is currently occupied by an electrical switching station.



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The Applicant is seeking Preliminary & Final Site Plan approval with 'C' and 'D' Variances and Tree Removal Permit to upgrade the existing electric substation. The proposed improvement include the following:

- The installation of 2-story 26kV switchgear and associated electrical equipment.
- The installation of six (6) 70-ft tall lightning masts.
- The installation of new underground electrical ducts and electrical manholes.
- The installation of a new 8 ft high security fence along Mt. Pleasant Avenue and Prospect Avenue and along a portion of the westerly Mt. Pleasant Avenue access driveway.
- The installation of a new gate at the easterly entrance to the site from Mt. Pleasant Avenue.
- Reconfiguration of the existing driveway entering the site.
- The construction of new drive paths for access to the new equipment.
- The installation of new bioretention basins to collect new runoff and treat it for water quantity and quality.
- The installation of up to six (6) temporary construction trailers and possibly a guard shack for the duration of the project which is expected to take 3 years to complete.
- The removal of 167 dead or dying trees at the site and the installation of 170 replacement trees including 131 major trees and 78 minor trees (equivalent to 39 major trees).

B. DESIGN COMMENTS

1. Based on our review, we find that the following items from the Township's Site Plan/Subdivision Checklist must be addressed:
 - a) Item #8 – *Signature blocks for Chairman, Secretary, and Municipal Engineer*
 - b) Item #20 – *Copy and/or delineation of any existing or proposed deed restrictions or covenants.*
 - c) Item #23 – *List of required regulatory approvals or permits*
 - d) Item #48 – *Sight triangles.*
2. The Applicant has requested the following waivers:
 - a) Item #31 – *Contours to extend at least 200' beyond subject property.*
 - b) Item #46 – *Solid Waste Management Plan.*



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- c) Item #49 – *Vehicular and pedestrian circulation patterns.*
 - d) Item #50 – *Parking plan showing spaces, size and type, aisle width, curb cuts, drives, driveways, and all ingress and egress areas and dimensions.*
2. As stipulated in §25-13 of the Ordinance, an environmental impact statement must be submitted to the Board.
 3. It shows on sheet 792788 of the West Orange Switching Station plans that the existing sidewalk along the Prospect Avenue and Mt. Pleasant Avenue site frontages is to be removed. However, it shows on sheet 3 of the Site Plan drawings that the existing sidewalk is to be removed/replaced if necessary. This discrepancy must be resolved. Please note that our office is opposed to removal of the existing sidewalk along the site frontages.
 4. Sheet 792796 includes a Standard Concrete Driveway and Concrete Apron detail. Therefore, the plans must be revised to show where a concrete driveway and concrete apron are proposed.
 5. Sheet 792797 includes a Typical Bollard Detail. Therefore, the plans must be revised to show the locations where bollards are proposed.
 6. Based on our review, we find that the following utility conflicts exist on the West Orange Switching Station plans:
 - a) Existing electric line and proposed manhole MH-01
 - b) Existing gas line and proposed manholes MH-03 and MH-04 and storm pipe SD-05
 - c) Existing electric line and proposed manhole MH-04
 - d) Existing gas line and proposed manhole MH-06
 - e) Existing duct bank and proposed storm pipe SD-10
 7. Based on our review, it appears that utility conflicts may exist at the following locations:
 - a) Existing electric line and proposed storm pipe SD-04
 - b) Existing duct bank and proposed storm pipe SD-21
 - c) Existing duct bank and proposed storm pipe SD-22
 - d) Existing gas and electric lines and proposed storm pipe SD-10
 8. It shows on the plans that Basins BR-04 and BR-05 will be located very close to the adjoining drive paths. The Applicant should address the Board regarding the need to install guide rails to prevent vehicles from driving into the basins.



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C. DRAINAGE COMMENTS

1. The proposed development will result in the disturbance of more than one acre. As a result, it is classified as a Major Development which requires that the project be designed to meet the stormwater runoff quality, quantity and groundwater recharge standards using green infrastructure.
2. We note that trench drains are proposed adjacent to each bioretention basin to prevent off-site drainage from entering the bioretention basins. The flows from the trench drains will connect to a separate stormwater conveyance system which will discharge to the existing stormwater system in Mt. Pleasant Avenue. The areas that will discharge to the trench drains are not proposed for development and will remain in their existing condition.
2. The Bioretention and Control Structure Elevations and Control Orifices table on sheet 792798 should be revised to label the Top of Basin Wall Elevation as E to match the Typical Concrete Lined Small-Scale Bioretention with Underdrain Detail on the same sheet.
3. The Bioretention Media Notes on sheet 792798 should be revised to include a note which states *"The soil bed material must be placed in lifts not to exceed 6 inches"*.
4. The plans should be revised to provide maintenance access to each proposed basin.
5. It shows on the Bioretention and Control Structure Elevations and Control Orifices table that each basin will have a freeboard of only 0.1 feet between the top of wall and the top of overflow grate. It is our recommendation that a minimum freeboard of 1.0 ft be provided.
6. It shows on the Conduit Table in the Stormwater Report that the following pipe runs do not have adequate capacity to accommodate the design flow:
 - a) SD-01
 - b) SD-02
 - c) SD-04
 - d) SD-12
 - e) SD-21
 - f) SD-22
 - g) SD-23
 - h) SD-24
 - i) SD-25
7. The Small Scale Bioretention Outlet Structure detail on sheet 792798 shows a 2.5" water quality control orifice with a trash rack at Elevation G. It is our understanding that the 4" perforated underdrain pipe will connect to the outlet structure at this location. Therefore, the trash rack is not required at this location and should be deleted.



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8. A detail showing how the 2.5" water quality control orifice will be installed must be added to the plans.
9. The Small Scale Bioretention Outlet Structure detail on sheet 792798 shows that a trash rack is proposed on the top of the structure. Therefore, a detail of this trash rack must be added to the plans.
10. Revise plans and maintenance plans to include inspection ports for the basins' underdrains. In addition, provide a detail of these inspection ports.
11. The List of Stormwater Management Measures in Stormwater Management Measures Maintenance Plan and Field Manuals must be revised to include the state plane coordinates for each basin.
12. The source of the Infiltration Testing listed on the table on page 8 of the Stormwater Management Measures Maintenance Plan and Field Manuals must be shown.
13. The Stormwater Management Measures Maintenance Plan and Field Manuals should be revised to include the name, address, and telephone number of the person or persons responsible for maintenance of the system.
14. The Stormwater Management Measures Maintenance Plan and Field Manuals for Stormwater Management Facilities and any future revisions to the plan must be recorded upon the deed of record for each property on which the maintenance described in the plan must be undertaken. Prior to recording, the form of the deed must be approved by the Zoning Board Attorney and our office.
15. Revise the Stormwater Management Measures Maintenance Plan and Field Manuals to include the preventive maintenance actions and the corrective maintenance actions for the existing AquaShield.

D. LANDSCAPING COMMENTS

1. On Sheet L-02 of the Landscaping Plans, the Bioretention Seed Mix mentions a linear park and a meadow mix. These should be removed since they appear not to be part of this project.
2. The proposed bioretention seed mix includes a variety of native grass species; however, a native pollinator friendly seed mix is recommended along with additional plant materials.
3. Provide a note on the plans that a tree removal permit shall be secured prior to site disturbance in accordance with §25-27.4a of the Ordinance.
4. The Applicant has proposed to remove many of the trees along Prospect Avenue. However, it does not appear these removals are all necessary as proposed grading and improvements do not impact on this area of the site. This should be reviewed and revised to comply with §25-27.



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5. It does not appear that the number of replacement trees complies with the recently adopted Tree Protection, Removal and Replacement Ordinance (Ordinance 2846-24 which was adopted on June 10, 2024). The Applicant should contact the Township Forrester to confirm the number of replacement trees that are required.
6. Provide a note on the plans that tree protection fencing is to be installed prior to site disturbance and remain until completion of construction activities. Also, revise the 'Sequence of Construction', sheet 792793 A, to indicate the timing of tree protection fence installation and removal, to prevent confusion during construction.
7. Provide full canopy street tree species along Prospect Avenue as overhead wires are on the opposite side of the street. Currently, the Applicant has proposed non-native ornamental trees as street trees.
8. Staff recommends providing an alternative for proposed PM (Douglas Fir) due to its susceptibility to Rhabdocline needle cast.'
9. Based on our discussions with the Township Forrester, the proposed PV (Canada Red Chokecherry) is unacceptable and should be replaced.
10. The Applicant has proposed QG (Gambel Oak) which is a western oak species and not commercially available here. Proposed QC (Scarlet Oak) is also not recommended due to the prevalence of Bacterial Leaf Scorch (BLS), a fatal disease that has no cure. Our office recommends Swamp White Oak, Bur Oak, Sycamore, Dawn Redwood, etc.
11. Consider providing shrubs to fill in open gaps in the buffer planting, such as Bottlebrush Buckeye, Bayberry, Holly, Witch Hazel, etc.
12. Revise the 'Single-Stem Tree Planting Detail', sheet L-02, to provide rigid plastic, open mesh trunk guards to protect from the irreparable damage from buck rub. Provide a detail of same.

E. LIGHTING COMMENTS

1. Revise the plans to clarify the proposed timers and hours of operation for all light fixtures. Currently, proposed 'down lights' are indicated to be on "at night" or when activated.
2. The Applicant should provide testimony regarding the necessity of uplighting. In accordance with Section 25-14.2, lighting is to be directed downwards, as up lights are not dark sky compliant.
3. Provide manufacturer's catalog cuts for all proposed light fixtures, for further review. Also, include proposed color and finish.



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The Applicant is hereby advised that any revised plans or other documents submitted to the Board should be accompanied by a cover letter which addresses each of the comments in this review letter and also details any other changes that have been made to the plans as these may not be readily apparent.