

**General Development Plan**  
**STORMWATER MANAGEMENT REPORT**

**For**

**Northpoint Development**

**Proposed Planned Industrial Development**

**Block 45, Lots 1 & 7**  
**NJSH Route 40 and Pointers-Auburn Road**  
**Township of Pilesgrove, Salem County, NJ**

**Prepared by:**



**1904 Main Street**  
**Lake Como, NJ 07719**  
**(732) 974-0198**

  
\_\_\_\_\_  
**Joshua M. Sewald, PE, PP**  
**NJ Professional Engineer License #52908**

**October 2021**  
**DEC# 3561-99-005**

## TABLE OF CONTENTS

	<u>Page No.</u>
Executive Summary .....	2
A. Introduction .....	3
B. Existing Site Conditions .....	3
C. Proposed Site Conditions .....	4
D. Design Methodology .....	5
E. Conclusion.....	6

## APPENDIX

- NRCS Web Soil Survey – Hydrologic Soil Group Survey
- Regional Drainage Area Maps
- CN Calculations
- Hydraflow Calculations
- Groundwater Recharge Calculations
- Soil Test Logs & Laboratory Results prepared by Dynamic Earth, LLC, dated 10/26/2021
- Soils Testing Summary
- Test Pit Location Map – Existing Conditions

## ***EXECUTIVE SUMMARY***

### **SITE DESCRIPTION**

The project area is comprised of Lots 1 & 7, Block 45 in the Township of Pilesgrove, Salem County, New Jersey. The total lot area of the project site is +/- 442.277 acres. The property is currently operated as a commercial sod farm with existing access to Pointers-Auburn Road, and is located at the southern corner of the intersection of Pointers-Auburn Road and U.S Route 40. The property is bound to the northeast by U.S. Route 40 with farmland and open space beyond, to the northwest by Pointers-Auburn Road with farmland, wooded areas and open space beyond, to the southwest by the Salem River with farmland, wooded areas and open space beyond, and to the southeast by farmland, wooded areas, open space and commercial development beyond. As mentioned, the site is presently utilized as a sod farm with an associated office and shop buildings, storage structures and a farmhouse. According to the Official Zoning Map for the Township of Pilesgrove, the property is located within the PLI (Planned Light Industrial) Zone. The majority of the stormwater runoff from the existing sod farm currently drains via overland flow to the Salem River.

### **PROJECT DESCRIPTION**

The proposed general development plan consists of five (5) industrial warehouse buildings and one (1) waste water treatment facility being constructed within existing lots 1 & 7. The proposed uses include wholesale uses, distribution centers and warehouse as part of an overall planned industrial development. The buildings as laid out may vary in shape, size and number, but collectively, the warehouses will have a total footprint of approximately 5,000,000 SF. The proposed project will also include all associated site improvements including parking areas, landscaping, lighting, stormwater management facilities, and utilities. The project shall include new stormwater management facilities to address applicable aspects of NJAC 7:8 and the Township of Pilesgrove PLI District: Planned Industrial General Development Plans Ordinance.

## ***A. INTRODUCTION***

This report has been prepared to define and analyze the stormwater drainage conditions at a general development plan level that would occur as a result of the development of Lots 1 & 7, Block 45, in the Township of Pilesgrove in Salem County, New Jersey. The proposed development is anticipated to consist of approximately five (5) industrial warehouse buildings totaling approximately 5,000,000 SF of area and one (1) waste water treatment facility.

This Stormwater Management Report identifies and describes the manner by which the design and performance measures set forth by NJAC 7:8 are to be achieved to minimize the adverse impact of stormwater runoff quantity and quality in receiving water bodies and groundwater recharge into subsurface soils.

Based upon the scope of the project, the development is classified as a major development as it disturbs more than one (1) acre of land and increases the amount of impervious coverage onsite by more than ¼ acre; therefore, the project will be required to meet the green infrastructure, groundwater recharge, stormwater runoff quantity and quality standards set forth under NJAC 7:8. Accordingly, the following items will be addressed within the stormwater design:

- Green Infrastructure Standards (7:8-5.3)
- Groundwater recharge standards (7:8-5.4)
- Stormwater runoff quality standards (7:8-5.5)
- Stormwater runoff quantity standards (7:8-5.6)

These standards will be addressed through the use of Stormwater Management Best Management Practices (BMPs) and will be designed in accordance with the BMP manual.

## ***B. EXISTING SITE CONDITIONS***

The site is presently utilized as a sod farm with associated office and shop buildings, storage structures and a farmhouse. The existing conditions of the tract have been verified by the survey entitled “Boundary and Topographic Survey” as prepared by Dynamic Survey, LLC, and dated 1/27/21, last revised 9/27/21. This information as well as site visits conducted by our office have been utilized to establish Existing Drainage Conditions. The tract has been evaluated with the following existing drainage sub-watershed areas:

Study Area Southeast: This portion of the tract located on Block 45, Lot 1, drains to the south and east to a tributary of the Salem River along the south eastern portion of the property.

Study Area Salem River: This portion of the tract located on Block 45, Lots 1 & 7, drains to south and west directly into the Salem River.

Based on Salem County soils survey information, the soil types native to the site include:

<b>SALEM COUNTY SOIL SURVEY INFORMATION</b>		
<b>SOIL TYPE (SYMBOL)</b>	<b>SOIL TYPE (NAME)</b>	<b>HYDROLOGIC SOIL GROUP</b>
DopB	Downer-Galestown complex, 0 to 5 percent slopes	A
HbmB	Hammonton loamy sand, 0 to 5 percent slopes	B
OTMA	Othello, Fallsington, and Trussum soils, 0 to 2 percent slopes	C/D*
PEEAR	Pedricktown, Askecksy, and Mullica soils, 0 to 2 percent slopes, rarely flooded	A/D*

\*These soils have been identified as dual hydrologic soil groups per the NRCS Web Soil Survey. Please note that per the soils investigation and associated permeability tests, these soils are considered undrained and have been modeled as HSG D for the stormwater management calculations.

***C. PROPOSED SITE CONDITIONS***

As noted previously the project is anticipated to include five (5) warehouse buildings totaling approximately 5,000,000 SF of building area and one proposed waste water treatment facility. In addition, a portion of the site has been designated as open space and will be maintained as “preserved farmland” to meet municipal and state General Development Requirements.

The site has been divided into four (4) drainage areas covering the warehouse building areas. It is anticipated that the waste water treatment facility will consist of a subsurface disposal system which will not require additional stormwater management measures. The four drainage areas will utilize a quantity control basin consistent with Table 5-2 of the NJAC 7:8 for quantity control and green infrastructure basins consistent with Table 5-1 of the NJAC 7:8 for quality control and groundwater recharge. For the purposes of this hydrologic analysis the overall quantity control basins have been analyzed. The following drainage sub-watershed areas have been established as depicted on the accompanying General Development Stormwater Management Plan.

Study Area Basin A:

This portion of the tract includes an area along Pointers-Auburn Road with mostly parking areas and some ancillary buildings and a proposed regional basin which will be designed in accordance a BMP from Table 5-2 of NJAC 7:8 likely in the form of a wet pond or constructed wetland.

Study Area Basin B:

This portion of the tract includes a centrally located portion of the site northeast of the Salem River with one warehouse building, driveways, trailer parking area and a proposed regional basin which will be designed in accordance a BMP from Table 5-2 of NJAC 7:8 likely in the form of a wet pond or constructed wetland.

Study Area Basin C:

This portion of the tract includes an area along Pointers-Auburn Road with two warehouse buildings and associated parking, truck courts and with a proposed regional basin which will be designed in accordance a BMP from Table 5-2 of NJAC 7:8 likely in the form of a wet pond or constructed wetland.

Study Area Basin D:

This portion of the tract includes an area along State Route 40 with two warehouse buildings and associated parking, truck courts and with a proposed regional basin which will be designed in accordance a BMP from Table 5-2 of NJAC 7:8 likely in the form of a wet pond or constructed wetland.

***D. DESIGN METHODOLOGY***

In order to prepare the stormwater management, water quality and groundwater recharge design system for the subject project, extensive up-front investigation of the property and topography was performed. On-site review of the tract was initially performed by Dynamic Engineering Consultants, PC to verify existing site conditions and land cover characteristics. Dynamic Survey, LLC was contracted to prepare an overall location and topographical survey for the existing site and surrounding watershed areas.

Based on our review of the existing site conditions and topographic survey, the drainage areas for the existing site conditions as defined within this report were established. The proposed stormwater management system is to be designed to ensure that runoff from the proposed development can be directed to stormwater management facilities in order to address the applicable sections of NJAC 7:8.

The overall stormwater management design for the subject tract, including the proposed warehouses and associated site improvements have been evaluated by Dynamic Engineering Consultants, PC to ensure that the overall development satisfies the standards set forth in NJAC 7:8. Below is an outline of how the development will comply with the stormwater runoff quantity, quality and groundwater recharge requirements. Future applications will provided detailed design analysis for Site Plan Application.

- Runoff Quantity Control

In order to meet the stormwater runoff quantity requirements for the developed site, the site design incorporates four (4) regional basins to store stormwater runoff in order to reduce the peak flows in accordance with NJAC 7:8 reduction requirements. These basins will be consistent with Table 5-2 and the BMP manual, and will likely take the form of Wet Ponds or Constructed Wetlands.

- Water Quality

In order to meet the water quality for the site small scale green infrastructure consistent with Table 5-1 will be utilized. Options will vary based on specific local conditions but will likely include options for infiltration in the form of infiltration basins and porous pavement where permeability is available and bioretention basins/porous pavement with underdrain where permeability is low or non-existent. Green Infrastructure Manufactured Treatment Devices may also be utilized where seasonal high water table limits the ability to use surface features. These water quality features will be designed in accordance with the standards set forth by the NJ Stormwater Best Management Practices Manual thereby providing a TSS Removal Rate of 80% for infiltration and satisfying the water quality aspect of NJAC 7:8.

- Groundwater Recharge

In order to meet the groundwater recharge requirements for the site, small scale green infrastructure consistent with Table 5-1 will be utilized. Small scale infiltration basins and porous pavement will likely be utilized where feasible. This project has been designed to satisfy the Groundwater Recharge requirements set forth in NJAC 7:8 and The New Jersey Best Management Practices Manual, the New Jersey Groundwater Recharge Spreadsheet (NJGRS) – Version 2 will be utilized to verify satisfaction of the recharge requirement.

## ***E. CONCLUSION***

The proposed planned industrial development is to be designed with provisions for the safe and efficient control of stormwater runoff in a manner that will not adversely impact the existing drainage patterns, adjacent roadways, or adjacent parcels.

The proposed stormwater management design is to incorporate numerous green infrastructure elements including aboveground small-scale infiltration basins, pervious pavement systems, and MTDs capable of 80%

total suspended solid (TSS) removal as stated within the New Jersey Stormwater Best Management Practices Manual thereby satisfying NJAC 7:8 Water Quality Standards.

In addition, the small scale basins will be used to infiltrate where feasible the post development recharge deficit in accordance with the groundwater recharge requirements of NJAC 7:8.

Furthermore, the regional stormwater basins will reduce peak flow rates for the proposed development area and meet the minimum peak flow reduction for the 2, 10 and 100-year storm frequencies as dictated by NJAC 7:8. The proposed planned industrial development will not have a negative impact on the existing stormwater management system, water quality or groundwater recharge on site or within the vicinity of the subject parcel.