# Municipal Stormwater Management Plan

**For the Borough of Penns Grove**
**Salem County, New Jersey**

## November 11, 2025

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## Table of Contents



## List of Tables



## List of Figures

# I. Introduction

The Municipal Stormwater Management Plan (MSWMP) is being created by Remington & Vernick Engineers for the Borough of Penns Grove in accordance with Stormwater Regulations.

The New Jersey Department of Environmental Protection (NJDEP) adopted amendments to certain stormwater management regulations contained in N.J.A.C. 7:8, effective July of 2023. The NJDEP indicated that municipalities need to update the SWMP and Stormwater Control Ordinances (SCO) to be consistent with the recent amendments to NJAC 7:8. Borough of Penns Grove updated its SCO on March 5, 2024, Ordinance 2024-2.

This MSWMP documents the strategy for Borough of Penns Grove, Salem County, New Jersey ("the Borough") to address stormwater-related impacts. The creation of this plan is required by N.J.A.C. 7:14A-25 Municipal Stormwater Regulations. This plan contains all of the required elements described in N.J.A.C. 7:8 Stormwater Management Rules. The plan addresses groundwater recharge, stormwater quantity, and stormwater quality impacts by incorporating stormwater design and performance standards for new major development, defined as projects that disturb one or more acres of land. These standards are intended to minimize the adverse impact of stormwater runoff on water quality and water quantity and the loss of groundwater recharge that provides baseflow in receiving water bodies. The plan describes long-term operation and maintenance measures for existing and future stormwater facilities.

The plan also addresses the review and update of existing ordinances, the Borough Master Plan, and other planning documents to allow for project designs that include low impact development techniques.

The final component of this plan is a mitigation strategy for when a variance or exemption of the design and performance standards is sought. As mitigation projects are identified, this Municipal Stormwater Management Plan will be amended to include

# II. Goals

The goals of this MSWMP are to:

- Reduce flood damage, including damage to life and property.
- Minimize, to the extent practical, any increase in stormwater runoff from any new development.
- Reduce soil erosion from any development or construction project.
- Assure the adequacy of existing and proposed culverts and bridges, and other instream structures.
- Maintain groundwater recharge.
- Preventing, to the greatest extent feasible, an increase in nonpoint pollution.
- Maintain the integrity of stream channels for their biological functions, as well as for drainage.
- Minimize pollutants in stormwater runoff from new and existing development.
- Restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the state, to protect public health, to safeguard fish and aquatic life

and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial, and other uses of water; and

- Protect public safety through the proper design and operation of stormwater basins.

To achieve these goals for the Borough of Penns Grove, it has identified the following stormwater management techniques:

- Implementation of one or more stormwater management Best Management Practices (BMPs) as necessary to achieve the performance standards for the stormwater runoff quantity and rate, groundwater recharge, erosion control and stormwater runoff quality per the NJ Stormwater Rule (NJAC 7:8) and established through the Borough ’s stormwater ordinance.
- Additionally, the plan proposes stormwater management controls to address impacts from existing development. Preventative and corrective maintenance strategies are included in the plan to ensure long-term effectiveness of stormwater management facilities. The plan also outlines safety standards for stormwater infrastructure to be implemented to protect public safety.
- Compliance with the stormwater runoff quantity and rate, groundwater recharge, erosion control, and stormwater runoff quality standards established through NJAC 7:8 et. seq and the Borough 's stormwater ordinance shall be accomplished to the maximum extent practicable through the use of nonstructural BMPs before relying on structural BMPs.
- Nonstructural BMPs are also known as Low Impact Development (LID) techniques. Nonstructural BMPs shall include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater.
- Source control plans shall be developed based upon physical site conditions and the origin, nature and the anticipated quantity or amount of potential pollutants.
- Structural BMPs where necessary shall be integrated with nonstructural stormwater management strategies and proper maintenance plans.
- When using structural BMPs, multiple stormwater management measures smaller in size and distributed spatially throughout the land development site shall be used wherever possible to achieve the performance standards for water quality quantity and groundwater recharge established through the Borough 's stormwater ordinance before relying on a single larger stormwater management measure to achieve these performance standards.

***All of these goals are ongoing.***

The General Reexamination of the Master Plan was completed in August of 2024. The MSWMP will be adopted as a stormwater element of the Master Plan. The following are recommended goals and objectives to be considered as part of the Master Plan:

1. Encourage regional solutions to flood and storm related impacts.
    a. Enhance resilience against flooding and other natural hazards through risk assessment and planning, public awareness and education, community engagement, integration of nature-based solutions, policy advocacy and governance, and continuous monitoring and evaluation. (Borough of Penns Grove Master Plan page 15, Overall Goals and Obj. Item e.)
    b. Incorporate climate resilience measures into land use planning to mitigate the impacts of extreme weather events , sea-level rise, and other climate related hazards. (Borough of Penns Grove Master Plan page 15, Land Use Plan Element Goals. Item f.)
2. Encourage Green Infrastructure Projects

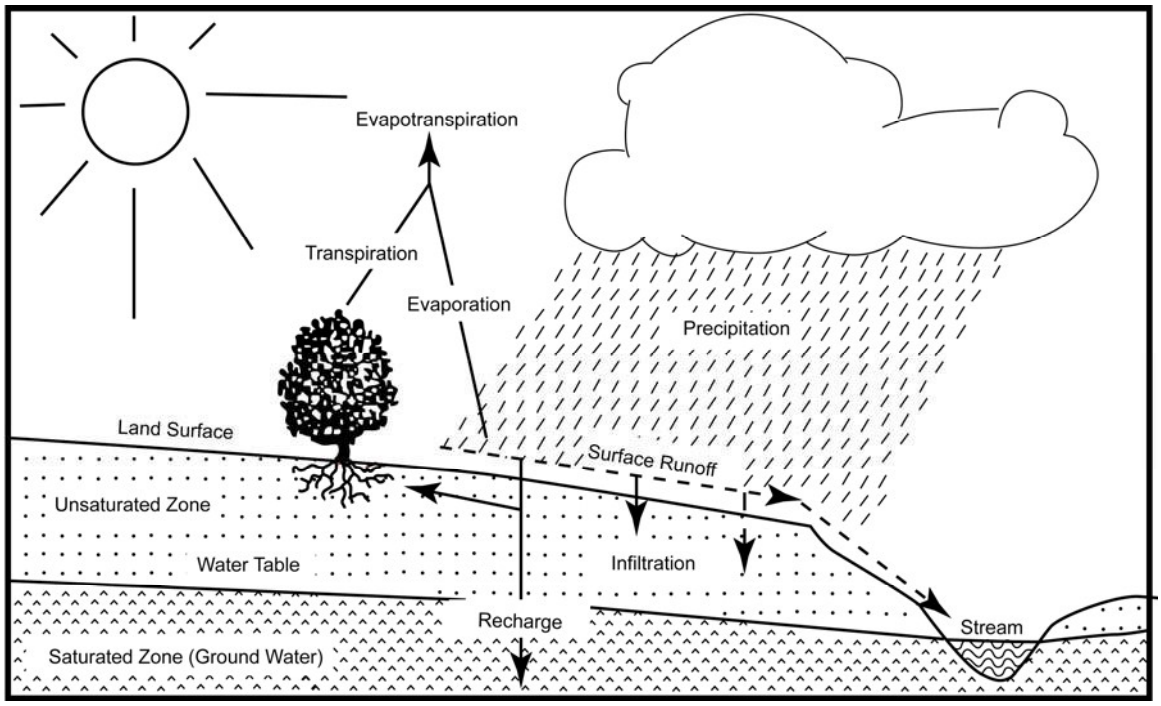
# III. Stormwater Discussion

Land development can dramatically alter the hydrologic cycle of a site and, ultimately, an entire watershed (See Figure C-1). Prior to development, native vegetation can either directly intercept precipitation or draw that portion that has infiltrated into the ground and return it to the atmosphere through evapotranspiration. Development can remove this beneficial vegetation and replace it with lawn or impervious cover, reducing the site's evapotranspiration and infiltration rates. Clearing and grading a site can remove depressions that store rainfall.

Construction activities may also compact the soil and diminish its infiltration ability, resulting in increased volumes and rates of stormwater runoff from the site. Impervious areas that are connected to each other through gutters, channels, and storm sewers can transport runoff more quickly than natural areas. This shortening of the transport or travel time quickens the rainfall-runoff response of the drainage area, causing flow in downstream waterways to peak faster and higher than natural conditions. These increases can create new and aggravate existing downstream flooding and erosion problems and increase the quantity of sediment in the channel.

Filtration of runoff and removal of pollutants by surface and channel vegetation are eliminated by storm sewers that discharge runoff directly into a stream. Increases in impervious areas can also decrease opportunities for infiltration, which, in turn, reduces stream base flow and groundwater recharge. Reduced base flows and increased peak flows produce greater fluctuations between normal and storm flow rates, which can increase channel erosion. Reduced base flows can also negatively impact the hydrology of adjacent wetlands and the health of biological communities that depend on base flows. Finally, erosion and sedimentation can destroy habitats from which some species cannot adapt.

Figure C-1: Groundwater Recharge in the Hydrologic Cycle




Source: New Jersey Geological Survey Report GSR-32.

Increases in runoff peaks, volumes, loss of groundwater recharge, and land development often results in the accumulation of pollutants on the land surface that runoff can mobilize and transport to streams.

New impervious surfaces and cleared areas created by development can accumulate a variety of pollutants from the atmosphere, fertilizers, animal waste, and leakage and wear from vehicles. Pollutants can include metals, suspended solids, hydrocarbons, pathogens, and nutrients.

Increased pollutant loading from land development can adversely affect water quality and stream biota in more subtle ways. For example, stormwater falling on impervious surfaces or stored in detention or retention basins can become heated and raise the temperature of the downstream waterway, adversely affecting cold water fish species such as trout. Development can remove trees along stream banks that normally provide shading, stabilization, and leaf litter that falls into streams and becomes food for the aquatic community.

# IV. Background

**Population:**

The Borough of Penns Grove encompasses a .89 square mile area in Salem County, New Jersey. The population of the Borough has decreased from 5147 from the 2010 census count to 4837 in 2020.

**Identification of Constraints on Developed and Undeveloped Land**

Since the Borough has been mostly developed for several decades (87% developed per the August 2024 Borough of Penns Grove Master Plan Document), there has not been a significant increase in impervious cover to the extent that local groundwater recharge is significantly decreasing. However, future major development will comply with the new NJDEP Stormwater design standards (NJAC 7:8), including average annual recharge.

**Identification of TMDL:**

In accordance with Section 305(b) and 303(d) of the Federal Clean Water Act, the State of New Jersey is required to assess the overall water quality of the State's waters and identify those water bodies with water quality impairment for which Total Maximum Daily Loads (TMDL) may be necessary. NJDEP fulfills its assessment obligation under the Clean Water Act through the Integrated Water Quality Monitoring and Assessment Report (Integrated Report), which includes the Integrated List of Water bodies, issued biennially. The Integrated Report can be found at:

https://dep.nj.gov/wms/bears/integrated-wq-assessment-report-2022

The New Jersey Integrated Water Quality Assessment Report (Integrated Report) is a compilation of information about the quality of New Jersey's surface waters. The New Jersey Department of Environmental Protection (NJDEP) prepares the Integrated Report as a biennial assessment of statewide water quality that identifies and prioritizes waters for protection, restoration, and additional monitoring or research. The Integrated Report thus serves as an effective tool for enhancing, maintaining, and restoring water quality in all surface waters of the State to support their use for aquatic life, recreation, water supply, fish consumption, and shellfish harvest for consumption.

Under this obligation, NJDEP has established an Ambient Biomonitoring Network (AMNET) to document the health of the state's waterways. The AMNET Program is a sampling program that supports the water quality inventory report and list of impaired waters. The AMNET site is found at:

https://www.nj.gov/dep/wms/bfbm/amnet.html

There are over 760 AMNET sites throughout the state of New Jersey. These sites are sampled for benthic macroinvertebrate by the NJDEP on a five-year cycle. Streams are classified as non-impaired, moderately impaired, or severely impaired based on the AMNET data. The data is used to generate a New Jersey Impairment Score (NJIS), which is based on several biometrics related to benthic macroinvertebrate community dynamics. Based on the Integrated Report, the NJDEP identifies waterbodies for which a TMDL may be necessary.

A TMDL is the amount of a pollutant that can be accepted by a waterbody without causing an. exceedance of water quality standards or interfering with the ability to use a waterbody for one or more of its designated uses. The allowable load is allocated to the various sources of the pollutant, such as stormwater and wastewater discharges, which require an New Jersey Pollutant Discharge Elimination System (NJPDES) permit to discharge, and nonpoint source, which includes stormwater runoff from agricultural areas and residential areas, along with a margin of safety. Provisions may also be made for future sources in the form of reserve capacity. An implementation plan is developed to identify how the various sources will be reduced to the designated allocations. Implementation strategies may include improved stormwater treatment plants, adoption of ordinances, reforestation of stream corridors, retrofitting stormwater, systems, and other BMPs.

The Borough of Penns Grove is bordered by the Delaware Bay and associated (Delaware River) tributaries that flow through the Borough. No additional freshwater rivers or major streams exist within the Borough, **and no AMNET biomonitoring sites are located in its jurisdiction**.

The AMNET data lists these impaired waterbodies with the following TMDL levels:

**Applicable Stream TMDL(s)**

**Total Maximum Daily Load (TMDL) Information**

**Municipality and County**
Borough of Penns Grove
Salem County

**Total Maximum Daily Load(TMDL) Information for Selected Municipality:**

**Applicable Stream TMDL(s)**
Total Maximum Daily Loads for Polychlorinated Biphenyls (PCBs) for Zones 2 - 5 of the Tidal Delaware River

Polychlorinated Biphenyls (PCBs) - 2003 : LDRV tribs (Lakeview Ave to Oldmans Ck) : View the TMDL Document

**Applicable Lake TMDL(s)**
None

**Applicable Shellfish TMDL(s)**
None

Sub list 5 of the Integrated List constitutes the list of waters impaired or threatened by pollutants, for which one or more TMDL's (Total Maximum Daily Load) are needed. It should be noted that as part of the Borough 's Municipal Separate Storm Sewer (MS4) regulations, existing inlets and outfalls will be inspected, and repairs/maintenance will be made. At that time, existing water quantity and erosion problems (if any) will be assessed and abated to the maximum extent practicable.

The Borough has identified the TMDL levels and has implemented the following strategies:

1. Annually ensure that any newly developed TMDL will be identified by looking up the NJDEP Look Up Tool annually. The TMDL lookup tool is available at:
    a. https://www.nj.gov/dep/dwq/msrp-tmdl-rh.html
    b. This is part of the annual update of the SP3 plan required for annual compliance reporting due each May 1st.
2. Implemented MS4 program requirements
3. Maintain and repair stormwater infrastructure to address specific pollutant sources if applicable.
4. Adding additional education programs
    a. Part of the Annual Education requirements of the 2023 Stormwater permit
5. Adopt and enforce Ordinances required in the MS4 permit
6. Adopt strict and more conservative post construction stormwater management standards

All future development in the Borough shall utilize the best available technology to minimize off-site stormwater runoff, increase onsite filtration, simulate natural drainage systems, encourage, where practicable, green infrastructure, minimize off-site discharge of pollutants to ground or surface water and encourage natural filtration functions. Aside from the efforts to reduce the daily pollutant loads, the Borough will continue to implement the adopted Stormwater Pollution Prevention Plan (SP3), Stormwater Control Ordinances and the Stormwater Management Plan.

# V. Design and Performance Standards

The Borough will adopt the design and performance standards for stormwater management measures as presented in N.J.A.C. 7:8-5 to minimize the adverse impact of stormwater runoff on water quality and water quantity and loss of groundwater recharge in receiving water bodies. The design and performance standards include the language for maintenance of stormwater management measures consistent with the stormwater management rules at N.J.A.C. 7:8-5.8 Maintenance Requirements, and language for safety standards consistent with N.J.A.C. 7:8-6 Safety Standards for Stormwater Management Basins.

The ordinances will be adopted by the Borough and submitted to the County for review and approval in accordance with statutory requirements.

**The new Stormwater Control Ordinance Number 2024-2 was adopted on March 5, 2024.**
Borough of Penns Grove will adopt Stormwater Control Ordinances consistent with the statewide stormwater requirements at N.J.A.C. 7:8 as required.

These Ordinances including flood control, groundwater recharge, and pollutant reduction shall be achieved through the use of stormwater management measures, including green infrastructure Best Management Practices (GI BMPs) and nonstructural stormwater management strategies. GI BMPs and low impact development (LID) should be utilized to meet the goal of maintaining natural hydrology to reduce stormwater runoff volume, reduce erosion, encourage infiltration and groundwater recharge, and reduce pollution. GI BMPs and LID should be developed based upon physical site conditions and the origin, nature and the anticipated quantity, or amount, of potential pollutants. Multiple stormwater management BMPs may be necessary to achieve the established performance standards for water quality, quantity, and groundwater recharge.

During the Review Process at the Land Use Board, the Applicant's Engineer is required to prepare a maintenance plan and/or report for its stormwater management facilities incorporated into the design of the major development. The maintenance plan and/or report shall have specific preventative and corrective maintenance tasks, schedules and cost estimates, as well as the responsible party for corrective and preventative maintenance. Adequate long-term operation, as well as preventative and corrective maintenance of the selected stormwater management measures, will be ensured by the Public Works Department through annual inspections. The Maintenance plans and reports will be kept at the Public Works Department.

During construction, Borough Inspectors / Engineers will observe the construction of the project to ensure that the stormwater management measures are constructed and function as designed.

Should stormwater management measures fall in disrepair or have noticeable failure, Code Enforcement / Department of Public Works may first issue written directive to correct the problem. If a problem is not corrected, the Borough Code Enforcement issues a Notice of Violation to the party responsible. Public Works may do the necessary repairs and charge the responsible entity.

Where the Borough assumes maintenance responsibility of a stormwater management facility, preventative maintenance shall be performed on a regular basis by Public Works. These maintenance measures shall be in accordance with N.J.A.C. 7:8-5 and may include: periodic inspections, vegetation management, sediment, debris and trash removal and mosquito control. Corrective maintenance shall be performed on an as needed basis for structure repairs or replacements, removal of outlet and pipe blockages, erosion restoration, snow and ice removal, etc. The Public Works Department keeps a detailed log of all preventative and corrective maintenance for the structural management measures incorporated into the design of the development, including a record of all inspections and work orders.

# VI. Plan Consistency

The MSWMP is consistent with their Stormwater Control Ordinances (SCO) Non pinelands Area, which has been updated per the NJDEP Model Ordinance required by NJDEP and MS4 requirements. The new NJDEP Stormwater Control Ordinance is located online and on the Borough website.

The MSWMP is consistent with the Residential Site Improvement Standards (RSIS) at N.J.A.C. 5:21. The Borough will utilize the most current update of the RSIS in the stormwater management review of residential areas. This MSWMP will be updated to be consistent with any future updates to the RSIS requirements.

The MSWMP is consistent with the County Soil Erosion and Sediment Control Standards. Borough Stormwater Management Ordinance will require all new development and redevelopment plans to comply with the County's Soil Erosion and Sediment Control Standards. During construction, Borough Inspectors will observe on-site soil erosion and sediment control measures and report any inconsistencies to the Soil Conservation District.

# VII. Non-Structural Stormwater Management Strategies

The Borough has revised the stormwater ordinances to incorporate guidelines for Major Development in accordance with the NJDEP BMP's Manual and Model Stormwater Control Ordinance for Municipalities as required by the NJDEP. Nonstructural stormwater management strategies such as Green Infrastructure (GI) BMPs and Low Impact Development (LID) should be developed based upon physical site conditions and the origin, nature and the anticipated quantity, or amount, of potential pollutants. These strategies are outlined in the updated Stormwater Control Ordinances (SCO).

# VIII. Land Use/Build-Out Analysis

A detailed land use analysis for the Borough was conducted utilizing information about the Borough based on HUC14 boundaries. A hydrologic unit code 14 (HUC14) is a specific drainage area defined by the U.S. Geological Survey. The total land area of the Borough of Penns Grove is contained within one (1) HUC14s and is illustrated on Figure 2. For every land use zone located within each HUC14, pollutant loads were calculated based on developable area in the zone and the allowable impervious cover in the zone excluding NJDEP mapped wetland areas. Figures 4,5 and 6 illustrate the NJDEP mapped wetlands within the Township, the existing land use in the Borough based on 1995/97 GIS information from NJDEP and the Township zoning map respectively. The build-out calculations for impervious cover are shown in Table 1. Table 2 presents the pollutant loading coefficients by land cover. The pollutant loads at full build-out are presented in Table 3.

The Borough of Penns Grove, located in Salem County, New Jersey, is part of the 02040206020010 hydrologic unit code (HUC), specifically the Cohansey-Maurice HUC 12 subbasin. This HUC code falls under the larger 020402 (Cohansey-Maurice) HUC8. The borough is also within the Delaware Water Region.

# IX. Mitigation Plans

This mitigation plan is provided for a proposed development that is granted a variance or exemption from the stormwater management design and performance standards.

Mitigation Project Criteria

1. The mitigation project must be implemented in the same drainage area as the

Proposed development. The project must provide additional groundwater recharge benefits, or protection from stormwater runoff quality and quantity from previously developed property that does not currently meet the design and performance standards outlined in the MSWMP. The developer must ensure the long-term maintenance of the project, including the maintenance requirements under Chapters 8 and 9 of the NJDEP Stormwater BMP Manual.

**All Mitigation Projects will be reviewed on a case-by-case basis. Reviews and recommendations will be given by the Borough Planner and Borough Engineer. The Recommendation will be brought to the Land Use Board for review on its consistency with the Master Plan.**

| TABLE 1: Build-Out Calculations for Borough of Penns Grove | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | HUC14s | | | |
| HUC14 and Zone | Total Area (Acres) | Existing Imervious (%) | Existing Impervious (acres) | Wetlands/Water Area (acres) | Developable Area (acres) | Allowable Build-Out (%) | Build-Out (acres) |
| 02040206020010 | | | | | | | |
| COS | 41.98 | 58.89% | 24.72 | 0.32 | 41.66 | 85 | 35.41 |
| H-C/I | 48.62 | 67.13% | 32.64 | 2.83 | 45.79 | 30 | 13.74 |
| MD-1 | 23.17 | 40.96% | 9.49 | 1.61 | 21.56 | 85 | 18.33 |
| MD-2 | 19.10 | 56.18% | 10.73 | 0.01 | 19.09 | 85 | 16.23 |
| R-1 | 138.03 | 42.85% | 59.15 | 3.84 | 134.19 | 30 | 40.26 |
| R-2 | 265.18 | 43.69% | 115.87 | 1.91 | 263.27 | 35 | 92.14 |
| R-3 | 35.24 | 50.91% | 17.94 | 1.04 | 34.20 | 30 | 10.26 |
| **TOTALS** | 571.32 | | 270.54 | 11.56 | 559.76 | 40% | 226.36 |

## TABLE 2: Pollutant Loads by Land Cover

| LAND COVER | Developable Area (acres) | TP (lbs/acre/year) | TP (lbs/year) | TN (lbs/acre/year) | TN (lbs/year) | TSS (lbs/acre/year) |
|---|---|---|---|---|---|---|
| 0204206020010 | | | | | | |
| COS (Commercial0 | 41.66 | 2.1 | 87.49 | 22 | 1924.69 | 200 |
| H-C/I (Commercial) | 45.79 | 2.1 | 96.16 | 22 | 2115.50 | 200 |
| MD-1 (Mixed Urban) | 21.56 | 1 | 21.56 | 10 | 215.60 | 120 |
| MD-2 (Mixed Urban) | 19.09 | 1 | 19.09 | 10 | 190.90 | 120 |
| R-1 (Low Density Residential) | 134.19 | 0.6 | 80.51 | 5 | 402.57 | 100 |
| R-2 (Medium Density Residential) | 263.27 | 1.4 | 368.58 | 15 | 5528.67 | 140 |
| R-3 (Low Density Residential) | 34.20 | 1.4 | 47.88 | 15 | 718.20 | 140 |
| | 559.76 | | 721.27 | | 11096.13 | |
| **Source: NJDEP Stormwater BMP Manual 2004** | | | | | | |

# TABLE 3: HUC14 Nonpoint Source Loads at Build-Out

| HUC14 and Zone | | Total Area (Acres) | TP (lbs/acre/yr) | TP(lbs/yr) | Existing Imervious (%) | TN (lbs/acre/yr) | TN (lbs/yr) | Existing Impervious (acres) | Wetlands/Water Area (acres) | Developable Area (acres) | TSS (lbs/acre/year) | TSS (lbs/yr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **02040206020010** | | | | | | | | | | | | |
| COS | Commerical | 41.98 | 2.1 | 87.49 | 58.89% | 22 | 1924.69 | 24.72 | 0.32 | 41.66 | 200 | 8396.00 |
| H-C/I | Commercial | 48.62 | 2.1 | 96.16 | 67.13% | 22 | 2115.50 | 32.64 | 2.83 | 45.79 | 200 | 9724.00 |
| MD-1 | Mixed Urban | 23.17 | 1 | 21.56 | 40.96% | 10 | 215.60 | 9.49 | 1.61 | 21.56 | 120 | 2780.40 |
| MD-2 | Mixed Urban | 19.10 | 1 | 19.09 | 56.18% | 10 | 190.90 | 10.73 | 0.01 | 19.09 | 120 | 2292.00 |
| R-1 | Low Density Residential | 138.03 | 0.6 | 80.51 | 42.85% | 5 | 402.57 | 59.15 | 3.84 | 134.19 | 100 | 13803.00 |
| R-2 | Medium Denisty Residential | 265.18 | 1.4 | 368.58 | 43.69% | 15 | 5528.67 | 115.87 | 1.91 | 263.27 | 140 | 37125.20 |
| R-3 | High Density Residential | 35.24 | 1.4 | 47.88 | 50.91% | 15 | 718.20 | 17.94 | 1.04 | 34.20 | 140 | 4933.60 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| **TOTALS** | | 571.32 | | 721.27 | | | 11096.13 | 270.54 | 11.56 | 559.76 | | 79054.20 |


**General Notes & Data Sources:**

This Geographic Information System (GIS) Map is for demonstration purposes only, any use of this product with respect to accuracy and precision shall be the sole responsibility of the end user.

Additional GIS resource data was provided by the New Jersey Geographic Information Network (NJGIN), the New Jersey Department of Transportation (NJDOT), the New Jersey Department of Environmental Protection (NJDEP), the New Jersey Office of Information Technology (NJOIT), and the New Jersey Office of GIS (NJOGIS). The data was obtained and provided by the various New Jersey Departments at the New Jersey Geographic Information Network (NJGIN) https://njogis-newjersey.opendata.arcgis.com. This secondary product has not been verified by (NJGIN/NJOIT/NJOGIS/ NJDOT/NJDEP) and is not state-authorized.

All positions are based on the following:

- NAD 83 (horizontal datum)
- New Jersey State Plane Coordinate System
- English units (US Survey feet)

The geodetic accuracy and precision of the Geographic Information System (GIS) data contained in this mapping has not been developed nor verified by a professional licensed land surveyor and shall not be nor is intended to be used in matters requiring delineation and location of true ground horizontal and/or vertical controls, unless otherwise noted.

Figure C-2

# Aerial Map

## Borough of Penns Grove

Salem County — New Jersey

08/14/2025 — Scale: 1" = 1,000'

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Printed on: August 25, 2025

Document Path: Z:\Shared\2_OldServers\HQ\RVE95G\Design\GIS Projects\NJ\Salem County\Penns Grove Boro\1708Txxx\03_Maps\SWMP\SWMP.aprx

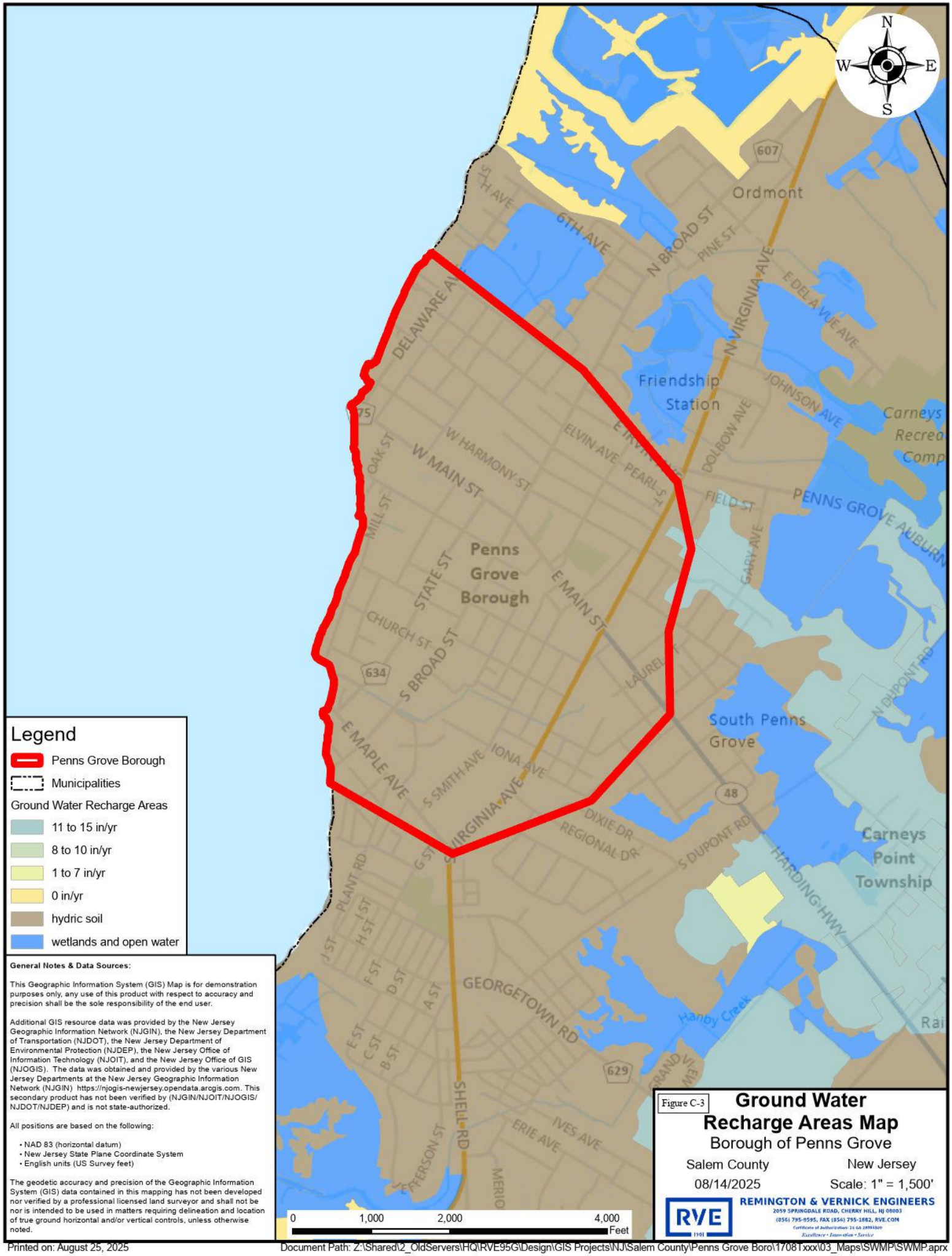


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Figure C-3

# Ground Water Recharge Areas Map

Borough of Penns Grove

Salem County — New Jersey

08/14/2025 — Scale: 1" = 1,500'

REMINGTON & VERNICK ENGINEERS
2059 SPRINGDALE ROAD, CHERRY HILL, NJ 08003
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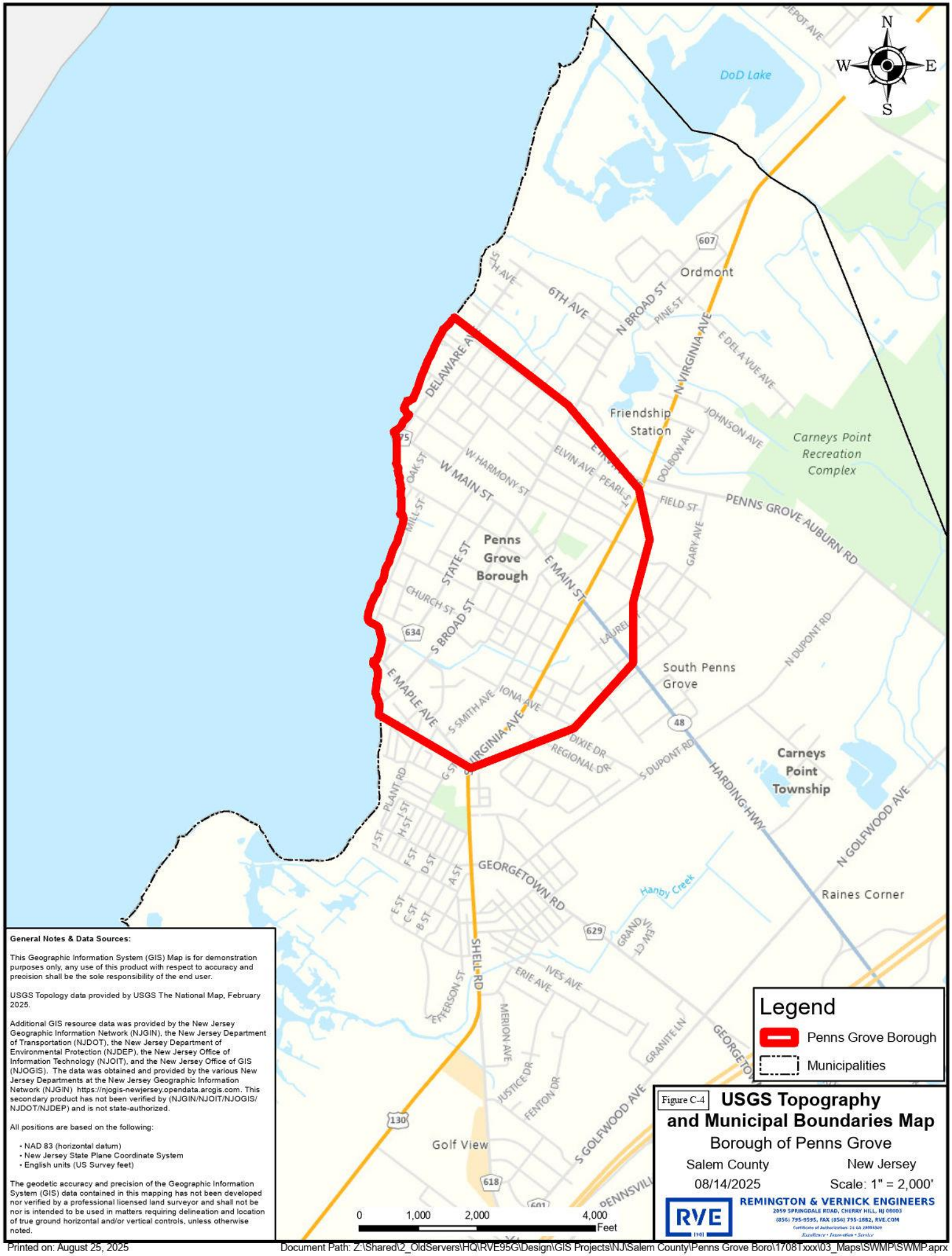


**General Notes & Data Sources:**

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USGS Topology data provided by USGS The National Map, February 2025.

Additional GIS resource data was provided by the New Jersey Geographic Information Network (NJGIN), the New Jersey Department of Transportation (NJDOT), the New Jersey Department of Environmental Protection (NJDEP), the New Jersey Office of Information Technology (NJOIT), and the New Jersey Office of GIS (NJOGIS). The data was obtained and provided by the various New Jersey Departments at the New Jersey Geographic Information Network (NJGIN) https://njogis-newjersey.opendata.arcgis.com. This secondary product has not been verified by (NJGIN/NJOIT/NJOGIS/ NJDOT/NJDEP) and is not state-authorized.

All positions are based on the following:

- NAD 83 (horizontal datum)
- New Jersey State Plane Coordinate System
- English units (US Survey feet)

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## Legend

- Penns Grove Borough
- Municipalities

Figure C-4

# USGS Topography and Municipal Boundaries Map

Borough of Penns Grove

Salem County — New Jersey

08/14/2025 — Scale: 1" = 2,000'


REMINGTON & VERNICK ENGINEERS
2059 SPRINGDALE ROAD, CHERRY HILL, NJ 08003
(856) 795-9595, FAX (856) 795-1882, RVE.COM


**General Notes & Data Sources:**

This Geographic Information System (GIS) Map is for demonstration purposes only, any use of this product with respect to accuracy and precision shall be the sole responsibility of the end user.

Additional GIS resource data was provided by the New Jersey Geographic Information Network (NJGIN), the New Jersey Department of Transportation (NJDOT), the New Jersey Department of Environmental Protection (NJDEP), the New Jersey Office of Information Technology (NJOIT), and the New Jersey Office of GIS (NJOGIS). The data was obtained and provided by the various New Jersey Departments at the New Jersey Geographic Information Network (NJGIN) https://njogis-newjersey.opendata.arcgis.com. This secondary product has not been verified by (NJGIN/NJOIT/NJOGIS/ NJDOT/NJDEP) and is not state-authorized.

All positions are based on the following:

- NAD 83 (horizontal datum)
- New Jersey State Plane Coordinate System
- English units (US Survey feet)

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Figure C-5

# Waterways Map

## Borough of Penns Grove

Salem County — New Jersey

08/14/2025 — Scale: 1" = 1,500'

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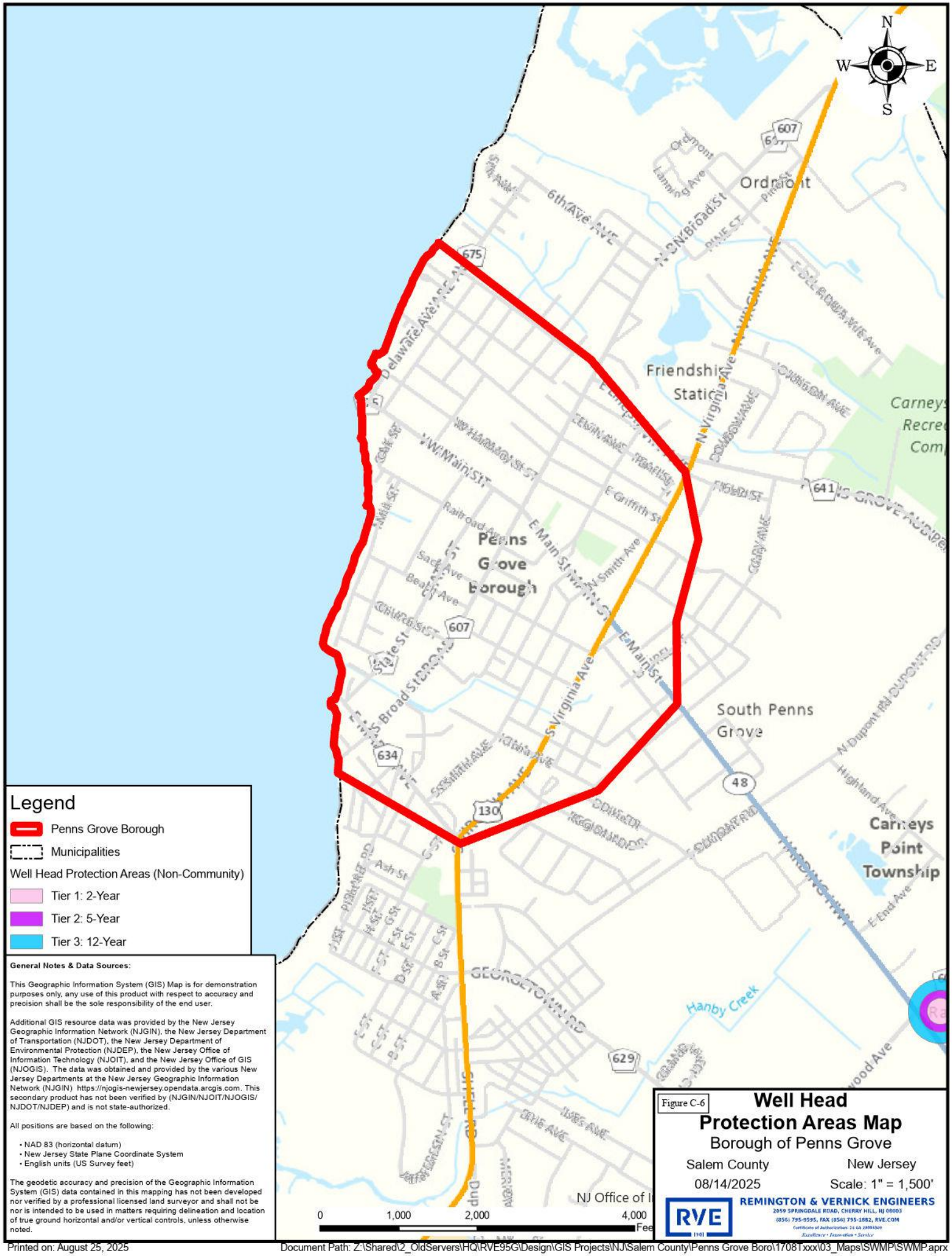


## Legend

- Penns Grove Borough
- Municipalities

Well Head Protection Areas (Non-Community)

- Tier 1: 2-Year
- Tier 2: 5-Year
- Tier 3: 12-Year

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Figure C-6

# Well Head Protection Areas Map

Borough of Penns Grove

Salem County, New Jersey

08/14/2025

Scale: 1" = 1,500'

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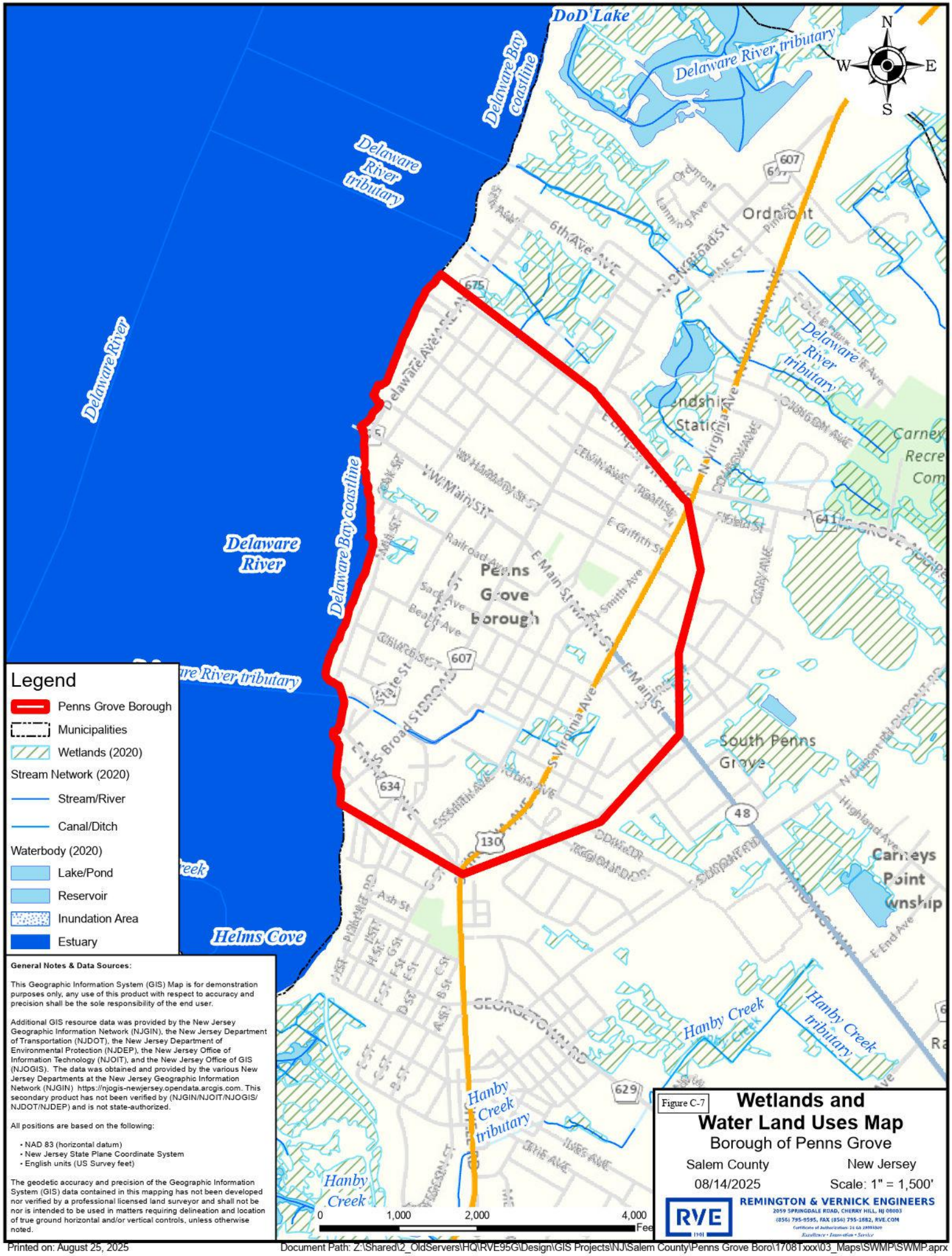


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Figure C-7

# Wetlands and Water Land Uses Map

## Borough of Penns Grove

Salem County — New Jersey

08/14/2025 — Scale: 1" = 1,500'

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