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**DRAFT CONSISTENCY REVIEW
AND RECOMMENDATIONS REPORT**

**PETITION FOR PLAN CONFORMANCE:
MENDHAM TOWNSHIP, MORRIS**

Prepared by the State of New Jersey Highlands Water Protection and
Planning Council in Support of the Highlands Regional Master Plan

3/26/2025

DRAFT

**NEW JERSEY HIGHLANDS WATER PROTECTION AND PLANNING COUNCIL
Petition for Plan Conformance – Draft Consistency Review and Recommendations Report**

PETITION SUMMARY

Municipality:	<u>Township of Mendham</u>
Date of Petition Submission:	<u>November 26, 2024</u>
Conformance Area:	<u>Planning Area</u>
Staff Recommendation:	<u>Approve Petition with Conditions</u>

Summary of Petition Submittal

1. Township of Mendham, NJ - Resolution 2024-177, For a Notice of Intent of Plan Conformance, within the Planning Area and in Accordance with the Highlands Regional Master Plan.
2. Highlands Initial Assessment Report- Township of Mendham; prepared by H2M Associates dated September 25, 2024

The Township of Mendham, located in southern Morris County, is a suburban/rural community containing 11,527 acres, located entirely in the Highlands Planning Area. The Township has completed an Initial Assessment Report and adopted a resolution to of “A Notice of Intent of Plan Conformance” to bring all lands within the Township into conformance with the Highlands Regional Master Plan (RMP).

While primarily characterized as a residential and rural community, Mendham Township is also home to Lewis Morris Park along the eastern border with Harding and Morris Townships which represents the largest contiguous area of open space in the Township. The Township also contains part of Schiff Preserve in the southwest, as well as over 3,659 acres of open space, parkland, and preserved farmland.

The Land Use Capability Zone (LUCZ) Map divides Mendham Township based on community characteristics and Highlands resources. Approximately seventy percent (73%) of the Township is located in the Protection Zone (PZ), with 3% in the Conservation Zone and 17% in the Existing Community Zone. The Protection Zones contain much of the preserved lands in Mendham, including Lewis Morris Park, Buttermilk Falls, Meadowood Park, India Brook Natural Area, the Dismal Harmony Natural Area, and the Schiff Preserve. The second largest LUCZ in Mendham is the Existing Community Zone (ECZ), equaling 17% of Township lands. Properties in the ECZ are located in the eastern portion of the Township and are primarily single family residential consistent with the extension of development patterns in Mendham Borough. Finally, 3% of the Township is located in the Conservation Zone (CZ), comprised of farmland in the southern portion of the

While conformance with the Highlands Regional Master Plan is voluntary for the Planning Area, adopting Highlands Act standards can impact development potential, particularly for large-scale

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development projects. Conformance with the RMP in the Planning Area would not significantly impact the development of single-family residential units due to pre-existing zoning, current lot sizes, and the applicability standards of the Highlands land use ordinances.

The Initial Assessment Report notes the Township completed a Nitrate Dilution Model (NDM) and Current Planning Capacity Model in 2019 to help inform future land use policies and decisions. The NDM was used to estimate the Township's sustainable development capacity based on the target Nitrate Dilution of 2.0 mg/l. After adjusting for environmental constraints and zoning standards, the Township estimates approximately 262 new homes can be sustained. However, any future development must also consider impacts to water quality and other environmental constraints, such as steep slopes, which may result in a significantly lower yield than the 262 units noted in the Report.

Additionally, the Initial Assessment Report identifies fourteen (14) historic districts and places within the Township. These cultural and historic sites are valuable resources preserving the heritage of both the local community and Highlands Region. The Report also notes four significant scenic resources encompassing 943.8 acres, much of which is contained in the Lewis Morris County Park (911.6 acres). The remainder is located in Morristown National Historic Park, Patriot's Path, and Mount Paul Memorial Park. A more thorough review of resources present in the Township can be found in the Township's Initial Assessment Report (Appendix A).

Finally, Mendham Township contains only three distinct small areas in the Sewer Service Area, much of which is attributed to the Mendham Golf and Tennis Club, while one remaining area is an extension of development from Mendham Borough and the other is a small development in the southwestern portion of the municipality. A majority of properties receive water from private wells. There are no plans noted for the Township to expand the Sewer Service Area beyond what has been already approved and/or constructed.

Recently, the Highlands Council updated the Land Use Capability Zone (LUCZ) mapping. The updated LUCZ map update resulted in minimal changes to the Township's previous mapping with one small area in the northeast transitioning from Existing Community Zone to Protection Zone and another from Protection Zone to Conservation Zone. These changes were based on updated datasets and are unlikely to impact future development within the Township.

It is recommended that the Township adopt the Highlands Conformance Ordinance and supporting Master Plan Element and Re-examination Report. In addition to the planning documents required to effectuate the Highlands Conformance Ordinance approach to Plan Conformance, the Township seeks to complete an updated Conservation Plan Element, Environmental Resource Inventory (ERI), Stormwater Management Plan Element, Historic Preservation Element, and Sustainability Element within the Master Plan.

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Staff Recommendation

Based on the components of the Initial Assessment, outlined above, Highlands Council Staff recommends that the Petition for Plan Conformance for the Township of Mendham be approved with conditions and tasks as outlined below. Other conformance tasks may arise in future years, such as specific resource management ordinances and planning documents. The required conditions will bring the Township into conformance with the Highlands Plan Conformance Procedures, the Highlands Regional Master Plan (RMP), and the Highlands Act. The Highlands Council is available to provide technical assistance and guidance through the adoption of any of the below listed plans. The Highlands Council is committed to providing financial support for all Plan Conformance activities.

- 1. Adoption of Approved Master Plan Highlands Element and Re-examination Report.** The municipality shall prepare the Highlands Master Plan Re-examination Report and the Conformance Ordinance version of the Master Plan Highlands Element and submit it to the Highlands Council for final approval. Upon receipt of final Highlands Council approval, the municipal Planning Board shall arrange for the required process of scheduling, notice, public hearing, consideration, and formal adoption of the documents by the municipal Planning Board. At the conclusion of the process, certified copies of the adopted documents shall be provided to the Highlands Council.
- 2. Adoption of Highlands Conformance Ordinance.** The municipality shall adopt the Highlands Conformance Ordinance, implementing the Land Use Capability Zones of the Highlands Regional Master Plan along with other Highlands Resource protections. Adoption of the Conformance Ordinance also meets the requirement for the adoption of a Planning Area Petition Ordinance as required under Section 15 of the Highlands Act. The Highlands Resource Maps are attached as a component of the Initial Assessment/Petition for Plan Conformance (Appendix A).
- 3. Approval of Highlands ERI.** The Township shall review the Highlands Interactive Environmental Resource Inventory (ERI) as it relates to municipal resources and notify the Council of any necessary updates. Upon conclusion that the ERI is accurate, the municipal Environmental Commission shall provide for and complete the required process of formal approval of the ERI. At the conclusion of the process, a copy of the minutes of the meeting(s) or resolution shall be provided to the Highlands Council.
- 4. Stormwater Management Plan –** Revise and adopt a municipal Stormwater Management Plan that includes: a) Highlands-specific amendments; b) revisions required by the Stormwater Management Rules at N.J.A.C. 7:8; and c) Stormwater Mitigation Plan. Additional work under the Program will include requirements of the current Municipal Separate Storm Sewer System (MS4) permit. This may include: ordinance(s) revision and adoption; stormwater facilities mapping; new/updated storage and maintenance plans; training activities; and development of a Watershed Improvement Plan.

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5. **Housing Element and Fair Share Plan**—Prepare an updated Housing Element and Fair Share Plan consistent with the Highlands Council’s affordable housing guidance and Regional Master Plan.
6. **Sustainable Economic Development Plan**—Prepare an updated Sustainable Economic Development Plan consistent with the Region-wide Economic Sustainability Plan adopted by the Highlands Council.
7. **Historic Preservation Element** – Prepare an updated Historic Preservation Plan Element based on feedback currently prepared, and revise inventory accordingly.
8. **Grant Approval for FY2025** – The approval of the petition shall include approval of grant funding in the total amount of \$50,000 for FY2025 for the completion of items 1 and 2 above. Item four was funded by the Council in FY2024 in the amount of \$145,000. Remaining tasks will be completed in future fiscal years as Highlands Council funding permits. Further details can be found in Appendix C, Implementation Plan and Schedule.

APPENDIX A

PETITION FOR PLAN CONFORMANCE
Township of Mendham, Morris County

Highlands Initial Assessment Report Township of Mendham

September 25, 2024



Prepared by:



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The original of this report was signed and sealed in accordance with N.J.S.A. 45:14A-12

Sanyogita Chavan, AICP, PP #33LI00593300

Prepared for:
The Township of Mendham

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I. Introduction

Mendham Township was awarded a grant by the New Jersey Highlands Water Protection and Planning Council (Highlands Council or Council) to perform a preliminary municipal plan conformance assessment for lands within its jurisdiction. The Township is located within the New Jersey Highlands Region (Highlands Region) which is comprised of 88 municipalities. These municipalities are located in seven counties namely, Bergen, Hunterdon, Morris, Passaic, Somerset, Sussex, and Warren. The Highlands Region is known for its scenic views and natural beauty, but it is also an important resource for the state and a source of drinking water for over half of New Jersey residents. The Highlands Water and Protection and Planning Act (Highlands Act) has designated two specific boundaries within the Highlands Region—the Planning Area and the Preservation Area. The main distinction between the Planning Area and the Preservation Area is that municipal and county conformance with the Highlands Regional Master Plan is mandatory in the Preservation Area but not in the Planning Area, where plan conformance is voluntary. This report constitutes the Township's Initial Assessment, which begins the process of Plan Conformance with the Highlands Regional Master Plan (RMP).

Mendham Township, in Morris County, is a low-density residential community with significant sensitive land, rural and historic characteristics, and a limited infrastructure base. The Township occupies approximately 18 square miles. The Township is home to over 3,659 acres of open space, parkland, and preserved farmland. This includes the 650-acre Lewis Morris Park, located along the eastern border with the townships of Harding and Morris. This is the largest contiguous area of open space in the Township. Another 380 acres of the Township's open space is part of the Schiff Preserve, which is located in the southwestern part of the Township.

Additionally, there are one hundred and forty-one (141) farmland properties including active farms and farmland assessed properties, as well as eight (8) properties participating in the State's Farmland Preservation Program. In total, about 1,733 acres, representing about 15.5% of all land in the Township is used as farmland.

The Township is located in the Planning Area 5 – Environmentally Sensitive (PA-5) as per the 2001 New Jersey State Development and Redevelopment Plan (SDRP), where the State's intent is to protect environmentally sensitive areas from the adverse impacts of development by means of preserving low density (or center-based) land use patterns, promoting open space preservation, and protecting natural resources. The numerous streams found in the Township are the headwaters of the Clyde Potts Reservoir (an important potable water source for the region) and to three important river systems (Raritan, Passaic, and Whippany). Together these are important sources of potable water supply for the region. The Passaic River flows directly into the Great Swamp National Wildlife refuge.

The 2022 Census Bureau's American Community Survey 5-Year Estimates lists the approximate population of Mendham Township as 6,005 in 2022. This is a slight decrease of -0.18% since the 2020 Decennial Census. However, this decline is an abnormality in the presiding trend of steady population growth from 1940 when the population was only 1,079. From 2010 to 2020, the Township increased in population by 3.28% which can be compared to an increase of 3.46% at the County level and an increase of 5.65% at the State level. Despite the trend of population growth, Mendham Township has a very low population density (338 people/sq. mile) as compared to both County and State at 1,105 people/sq. mile and 1,263 people/sq. mile, respectively.

Table 1

Population Growth in Township of Mendham			
Year	Population	Change	Percent
1940	1,079	--	--
1950	1,380	301	27.90%
1960	2,256	876	63.48%
1970	3,697	1,441	63.87%
1980	4,488	791	21.40%
1990	4,537	49	1.09%
2000	5,400	863	19.02%
2010	5,825	425	7.87%
2020	6,016	191	3.28%
2022	6,005	-11	-0.18%

II. Highlands Regional Master Plan Review

The Highlands Act requires the RMP to include a resources assessment to provide determination of human development and activity that can be accommodated without compromising the “essential character and function of the Highlands Region.” The RMP includes two separate areas within the Region: The Planning Area and the Preservation Area. As mentioned earlier, the Highlands Act requires all municipalities within the Preservation Area to conform to the RMP and permits those municipalities within the Planning Area to voluntarily conform to the RMP. The entirety of Mendham Township, containing approximately 11,534 acres, is located within the Highlands Planning Area.

A. Land Use Capability Zones

Within the Highlands Planning Area there are three distinct land use capability zones: Protection Zone, Conservation Zone, and Existing Community Zone. These zones also have subzones, which includes the Wildlife Management Subzone (within the Protection Zone), the Conservation Zone-Environmentally Constrained Subzone (within the Conservation Zone), the Existing Community Zone-Environmentally Constrained Subzone, and the Lake Community Subzone (within the Existing Community Zone). These zones break down the land within Highlands Region based on various factors, including geography, natural resources, and the overall carrying capacity of such land for development. Land use capability zones are intended to act like overlay zones, built on the underlying municipal zoning designation and designed to add additional standards to address specific issues that may not be considered in a standard municipal zone, such as watershed management areas, historic preservation, and open space preservation.

Table 2 identifies the land use capability zones for Mendham Township as per the RMP and illustrated in Figure 1. Appendix A depicts the Township’s zoning districts overlain by the land use capability zones.

Table 2

Highlands Land Use Capability Zones in Mendham Township		
Land Use Capability Zone and Subzones	Acreage	Percentage of Township Land Area
Protection Zone	8,510.1	73.8%
Wildlife Management Subzone	0	0%
Conservation Zone	329.4	2.9%
Conservation-Environmentally Constrained Subzone	173.8	1.5%
Existing Community Zone	1,878.3	16.3%
Existing Community Environmentally Constrained Subzone	189.3	1.6%
Lake Community Subzone	5.7	<1%
Road Right of Way	447.4	3.9%
Total	11,534	100%

Protection Zone (PZ)

The Protection Zone (PZ) consists of the highest quality natural resource value lands that are essential to maintaining water quality, water quantity, and sensitive ecological resources and processes. Land acquisition is a high priority for lands in the PZ and development activities will be extremely limited. Any development will be subject to stringent limitations on consumptive and depletive water use, degradation of water quality, and impacts on environmentally sensitive lands and natural resources. Mendham Township contains 8,510.1 acres of land within the PZ.

The Highlands Council identifies milestones that are measurable actions intended to monitor and reflect progress moving towards long-term goals of the RMP. Milestones within the PZ include minimal increase in development, minimal or no net decrease in agriculture, minimal to no net increase in Sewer Service Area (SSA), and Public Water Service Area (PWSA), and no net job loss. At 73.8%, the PZ encompasses the majority of the land use capability of Mendham Township, which includes the Schiff Natural Preserve, Buttermilk Falls, Lewis Morris Park, Meadowood Park, India Brook Natural Area, and the Dismal Harmony Natural Area.

The Wildlife Management Subzone (WM) consists of all National Wildlife Refuges managed by the United States Fish and Wildlife Service and Wildlife Management Areas administered by the NJDEP Division of Fish & Wildlife's Bureau of Land Management, within the Highlands Region. These areas are part of a network of lands and waters for conservation, management, and where appropriate, restoration of fish, wildlife, and plant resources and their habitats and permit compatible wildlife-dependent recreational uses, such as hunting, fishing, wildlife observation and photography, and environmental education and interpretation. Zero percent of Mendham Township is in the Wildlife Management Subzone.

Conservation Zone (CZ)

The Conservation Zone (CZ) consists of areas with a high concentration of agricultural lands and associated woodlands and environmental features. In this zone, development potential may be constrained by limited available infrastructure to support development (e.g., water availability, the existence of concentrated environmental resources that are easily impaired by development, or the protection of important agricultural resources). Mendham Township contains 329.4 acres of land within the CZ. Milestones within this category include an increase in forested land in the Preservation Area and minimal to no net decrease in the Planning Area of the CZ and increase in jobs.

The Conservation-Environmentally Constrained Subzone (CECSZ) consists of significant environmental features within the Conservation Zone that should be preserved and protected from nonagricultural development. Development activities will be constrained through restrictions on the extension or creation of water supply and wastewater services. Around 173 acres in Mendham Township are located within the CECSZ Subzone.

Existing Community Zone (ECZ)

The Existing Community Zone (ECZ) consists of areas of concentrated development representing existing communities. These areas tend to have limited environmental constraints due to previous development patterns and may have existing infrastructure that can support additional development and/or redevelopment. Where served by adequate supporting infrastructure, lands within the ECZ are suited to higher densities and intensities of development than other zones. The ECZ also has the greatest potential to accommodate mixed-use development projects and center-based planning initiatives. Mendham Township contains 1,878.3 acres of land within the ECZ. These are located along the eastern portion of the Township along Route 24, Brookside area, and along Route 24 in the western portion of the Township.

Milestones for this category include minimal or no net decrease in agriculture within the ECZ, minimal to no net decrease in forested land in the ECZ, increases in SSA and PWSA, primarily in the Planning Area of the ECZ, and an increase in jobs.

The Existing Community Zone—Environmentally Constrained Subzone (ECECSZ) consists of significant contiguous critical habitat, steep slopes, and forested lands within the ECZ that should be protected from further fragmentation. They serve as regional habitat “steppingstones” to larger contiguous critical habitat and forested areas. As such, they are not appropriate for significant development, and are best served by land preservation and protection. Development is subject to stringent limitations on consumptive and depletive water use, degradation of water quality, and impacts to environmentally sensitive lands. As seen in Table 2, only 1.6% of the Township is located in this subzone. These areas are located to the eastern and northern portion of the Township with a small portion to the west proximate to Mendham Borough.

The Lake Community Subzone (LCZ) consists of patterns of community development around lakes that are within the Existing Community Zone and within 1,000 feet of lakes. The Highlands Council envisions creating a management area, encompassing the full lake watershed, for protection of the lake water quality. This subzone has unique policies to prevent degradation of water quality and watershed pollution, harm to lake ecosystems, and promote natural aesthetic values within the ECZ. Less than one percent of the area in Mendham is in this subzone.

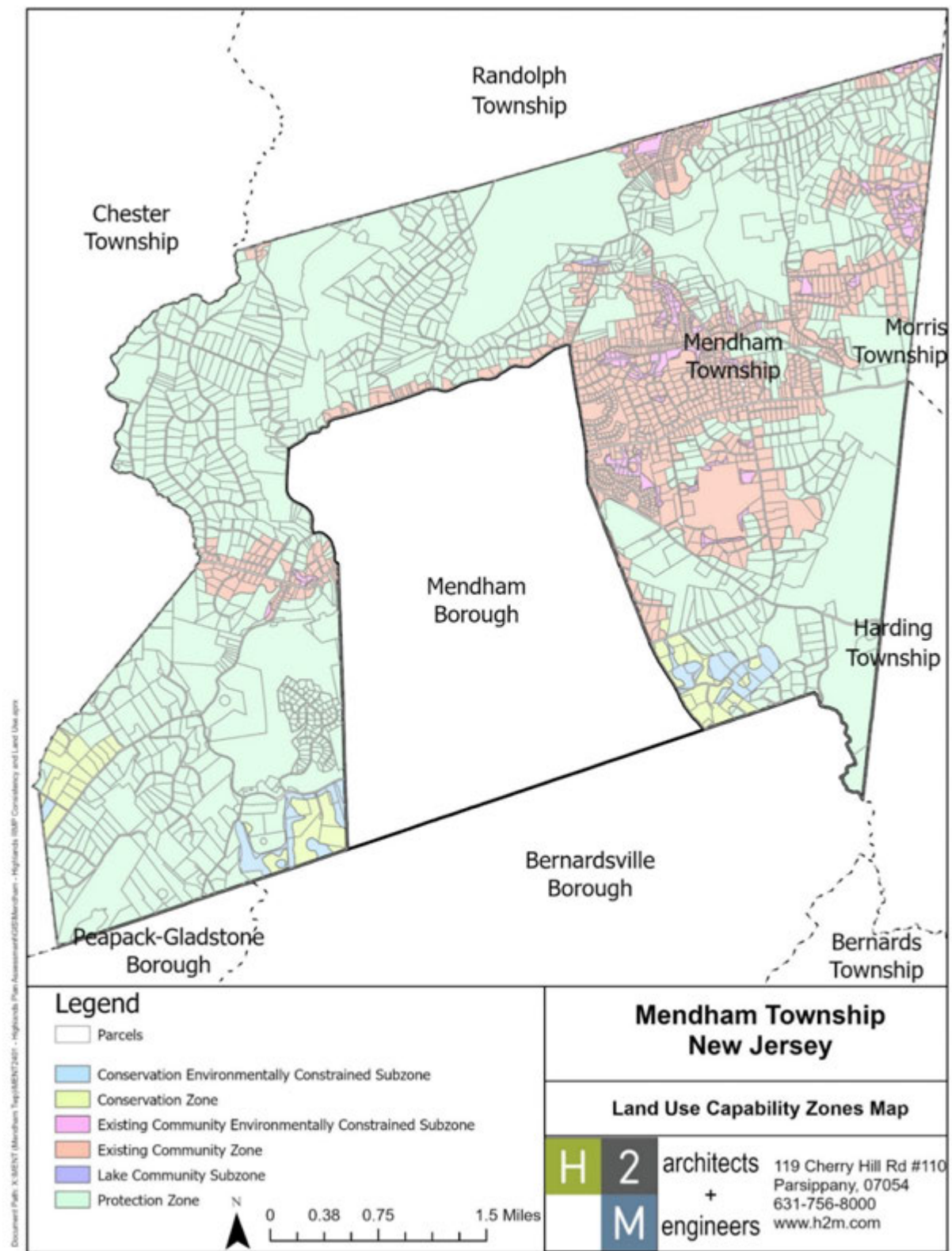


Figure 1

III. Existing Mendham Planning Documents and Regulations Review

The following section represents a broad-based assessment of the existing municipal planning programs and regulations to determine consistencies and/or inconsistencies between local planning/regulations and the RMP.

A. Mendham Township Master Plan and Ordinances

The Township of Mendham has adopted the following documents:

- 2002 Master Plan includes the following:
 - Land Use Plan (Adopted 2000, amended 2002)
 - Historic Preservation Plan (Adopted 2001, amended 2001))
 - Circulation Plan (Adopted 2001)
 - Conservation Plan (Adopted 2002)
 - Community Facilities Plan (Adopted 2002)
 - Open Space Plan (Adopted 2002)
 - Recreation Plan (Adopted 2002)
 - Lands Recommended to be reserved for public purposes (2002)
- Amendment to the 2002 Master Plan includes the following:
 - Stormwater Management Plan (Adopted 2006)
 - Recycling Plan (Adopted 2008)
 - Amendment to the Land Use Plan (2018)
- Housing Plan Element and Fair Share Plan
 - Second Round (Adopted 1997, updated 2000)
 - Third Round (Adopted 2005)
- Master Plan Re-examination Reports (2008 and 2018)
- Most Current Master Plan Elements Include
 - Land Use Element (Adopted 2021)
 - Housing Plan Element (adopted 2021)
- Land Use Ordinance (adopted 2010)
 - Change in Zoning for Block 147, Lots 42.01-42.16 from R-10 to R-5 (adopted 2021)
 - Adding M-1 Municipal Use Zone to include the Municipal Building, Police Station, the proposed new Police Station, and the Emergency Services Building located at the corner of Cherry Lane and West Main Street (adopted 2021)
- Stormwater Ordinance (Adopted January 2021, Amended 2024)
- Land Disturbance and Lot Grading Permit Ordinance (adopted 2013)
- Environmental Resource Inventory (2013)

The Township's adoption of the above-mentioned documents establishes a cohesive overview of the Township's goals and needs. These objectives formulate a thorough exploration of how the Township's ongoing initiatives support or might fall short of Highlands Conformance requirements.

B. Highlands Master Plan Element

The Highlands Council provides a model Master Plan Element (model master plan), whose adoption is necessary for Plan Conformance purposes. The model master plan provides the basis for appropriate economic growth throughout the Highlands, while ensuring the sustainability of the resources in the Region. It also seeks to evaluate how best to protect the natural and cultural resources, while striving to accommodate a sustainable economy. Within this model master plan, the Highlands Council outlines the Region's local community character as well as visually displaying the resources and utilities which formulate the area's distinct nature. The Highlands Council offers a vast series of model programs, templates, and suggestions for conforming Highlands Region municipalities to implement. The following goals for Planning-designated areas are specifically listed in both the RMP and the model master plan, and reiterate the importance of sustainable development and preservation within both the natural and built environment:

1. Protect, restore, and enhance the quality and quantity of surface and ground waters.
2. Preserve farmland and historic sites and other historic resources.
3. Preserve outdoor recreation opportunities, including hunting and fishing, on publicly owned land.
4. Promote conservation of water resources.
5. Promote brownfield remediation and redevelopment.
6. Preserve to the maximum extent possible any environmentally sensitive lands and other lands needed for recreation and conservation purposes.
7. Protect and maintain the essential character of the Highlands environment.
8. Promote the continuation and expansion of agricultural, horticultural, recreational, and cultural uses and opportunities.
9. Encourage, consistent with the State Development and Redevelopment Plan and smart growth strategies and principles, appropriate patterns of compatible residential, commercial, and industrial development, redevelopment, and economic growth, in or adjacent to areas already utilized for such purposes; discourage piecemeal, scattered, and inappropriate development, in order to accommodate local and regional growth and economic development in an orderly way while protecting the Highlands environment from the individual and cumulative adverse impacts thereof.
10. Promote a sound, balanced transportation system that is consistent with smart growth strategies and principles and which preserves mobility in the Highlands Region.

C. Recommendations Regarding Mendham's Master Plan Documents

Land Use Plan Element:

The Township updated their Land Use Plan Element in June 2021. Although the Land Use Plan covers most of the topics mentioned in the Highlands Model Master Plan, it does not address the various highlands zones and sub zones. The Land Use Plan Element does not compare the municipal zones and Highlands zones and subzones to assess compatibility and to determine whether zoning amendments (pertinent to non-exempt development) are necessary to achieve consistency. The Township should consider updating the Land Use Plan Element to include this section.

Housing Plan:

The Township updated the Housing Plan Element in 2021, which is in compliance with the Highlands model Housing Plan.

Conservation Plan:

The Township's Conservation Plan was last adopted in April 2002. The Township also adopted an Environmental Resource Inventory in 2013. The Township is in the process of preparing an Open Space and Recreation Plan Element. Thus, the existing documents and proposed plan are in compliance with the Highlands RMP.

Circulation Plan:

The last iteration of the Township's Circulation Plan was adopted in November of 2001. The Township has not undertaken major road improvements since then. The 2021 Land Use Plan Element references the prior master plan, which noted that a number of major roadways such as "County Route 510 and local collector roads including Roxiticus Road, Tempe Wick Road and Woodland Avenue are nearing the limit of their peak-hour capacity. However, further study is needed to verify these claims in 2020." Therefore, the Township may consider adopting an updated Circulation Plan at a later date.

Land Preservation and Land Stewardship Plan:

The Township has not adopted a Land Preservation and Land Stewardship Plan. As mentioned earlier, the Township is in the process of preparing an Open Space and Recreation Plan Element. Therefore, the Township is in compliance with the Highlands RMP.

Sustainable Economic Development Plan:

The Township may want to consider adopting this plan at a later date, should the need arise.

Historic Preservation Plan:

The Township last adopted a Historic Preservation Plan in 2001. The Township may want to consider updating this plan in conformance with the Highlands model Historic Preservation Plan at a later date.

Relationship of Master Plan to State/Regional/Local Masterplan:

The section "Relationship of Master Plan to Other Plans" was included in the 2000 Master Plan. The 2021 Land Use Plan Element describes regional responsibilities that would affect future development as it relates to headwater protection, regional historic resources, great swamp, and affordable housing but does not go in detail with respect to the master plans of the neighboring municipalities. The model master plan in this section recognizes that "land uses, the permitted densities and intensities of development, and the locations and extent of anticipated growth in neighboring Highlands communities that are also pursuing conformance with the RMP are all subject to change. Until information is available concerning such decision-making, a comparison between these master plans will not be meaningful. Further discussion of these aspects will therefore be provided in the next amendment to the Master Plan." The model master plan then states, "to the extent that information concerning adjoining municipal and county, or overlying county jurisdictions are not in flux due to Highlands Conformance Planning, supplement this section with the appropriate description and discussion concerning the relationship between the municipal Master Plan (inclusive of the Highlands Element) and those of the other applicable jurisdictions." This section will require an update at a later date to be consistent with the neighboring Chester Township, Randolph Township, Mendham Borough, Peapack-Gladstone Borough, Bernardsville Borough, Morris Township, and Harding Township.

D. Natural Resources

As per the Highlands GIS data, Mendham Township has the following environmental resources:

- Lake Management Areas
- Scenic Resources
- Forest Resource Area
- Agricultural Priority Area
- Open Water Protection Areas
- Wetlands
- C1 Waterways
- Vernal Pools
- Riparian Zones
- Critical Wildlife Habitats
- Steep Slopes
- Well Head Protection Areas
- Highlands Subwatersheds
- Groundwater Recharge Areas
- Prime Groundwater Recharge Areas
- Carbonate Rock Areas

The following Highlands resources are not located within the Township:

- Significant Natural Areas

Section IV provides an explanation of the environmental resources and the extent of the same in Mendham Township.

E. Highlands Area Model Land Use Ordinance

The Highlands Council provides a model Land Use Ordinance for participating municipalities to amend and adopt as part of their overall zoning and land use regulations. The model ordinance adopts the Land Use Capability Zones as overlay zones to the existing municipal zoning and is intended to effectuate the policies,

goals, and objectives of all Township Master Plan documents, but in particular, those of the Highlands Master Plan Element. The Highland's model ordinance can be catered to the specifics of each municipality, the detail and depth of the various categories will be dependent on the Master Plan documents and any existing, new, or amended ordinances. Examples of sections of the ordinance include wellhead protection, conservation restrictions designed to protect Highlands Resources, groundwater recharge areas, water conservation and deficit mitigation, critical habitats, steep slopes, highlands open waters and riparian resources, scenic resources, and more. The following section evaluates Mendham's ordinances and provides and provides recommendations regarding the ordinances to be in conformance with Highlands Model Ordinance.

F. Mendham's Land Use Ordinances

The Township's zoning regulations are found in Chapter 21. As seen in Figure 1, Zoning Map, the developed land in Mendham Township is predominantly low-density single family residential. While most of the structures in Mendham Township are single-family residential, they have varying levels of density. Nine of the Township's 13 zoning districts regulate single-family residential development. The highest density zone (R Zone) requires a minimum lot size of 20,000 square feet (approximately half an acre) to the lowest density residential zone (R-10 Zone) which requires a minimum lot size of 10 acres. Most single-family homes are on relatively large lots in excess of one acre and many are on very large lots of three acre or more. Much of the of the Township to the east is zoned for higher density single-family residential compared to the west, which has much lower density development. The Township has two Combination Residential zoning districts, CR-1 and CR-2, which are zoned for single dwelling residential development in combination with low-income housing. The CR-1 Zone (developed as Brookrace) has an average minimum lot area of 40,000 square feet and allows 0.214 dwelling units per acre. The CR-2 Zone allows for slightly greater density allowing for 1.30 dwelling units per acre and is developed as Drakewick and Mountain View. A small area in Brookside, centered along Main Street, Cherry Lane and Woodland Road is the only area of primarily nonresidential land use. This area is made up of public uses (mainly municipal) and two commercial lots. This area is regulated by the B Neighborhood Business District standards, which permits commercial uses as well as residential uses at the same density as the R Zone. The G Zone is used to regulate the Mendham Golf and Tennis Club. The REB Zone is an overlay district that is used to incentivize the reuse of the Sisters of St. John the Baptist property. The property contains multiple buildings that total approximately 125,000 square feet of floor area. The overlay district allows for low intensity uses such as senior housing, townhomes, religious uses, and schools. The Township amended the ordinance in 2021 to rezone a portion of the Township from R-10 (10-acre lot) to R-5 (5-acre lot) and added a new M-1 Municipal Zone use classification. Chapter 21 of the Township ordinance located under Part IV: Land Use Legislation, was adopted in 2010 with amendments through 2024.

Stormwater Management Ordinance

Highland's model ordinance sets forth stormwater management standards which are applicable to any development application. Chapter 297 of the Township's ordinance, located under Part II General Legislation, was adopted in 2010. Chapter 297 has been further amended on May 13, 2024, pursuant to the March 2, 2020, amended stormwater management rules at N.J.A.C. 7:8-2, et. seq., which required municipalities to revise their stormwater control ordinances and the July 2023 Inland Flood Protection Rule (IFP), which required municipalities to revise their stormwater control ordinances as per the IFP rule.

Flood Hazard Regulations

Flood Hazard regulations are incorporated within Chapter 18 of Mendham's ordinance. It sets forth the purposes of the ordinance which are to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas through the designed provisions. It sets forth requirements for development permits, provisions for flood hazard reduction, etc.

Highlands Resource Regulations

Forested Areas:

Mendham's ordinance sets forth procedures for tree protection in Chapter 23 of the Land Use Ordinance. Chapter 20 (Ordinance 9-2013) provides restrictions to protect both individual trees and forested areas. The Township's ordinance is very comprehensive in terms of restricting clearing and protecting trees. Furthermore, the ordinance sets forth regulations on land disturbances for major development in the Township.

Highlands Open Waters & Riparian Resources:

Mendham's ordinance sets forth standards for open water protection in Chapter 11 of the Land Use Ordinance and riparian resources in Chapter 20 of the Township's Land Use Ordinance.

Steep slopes:

Mendham's ordinance sets forth standards for steep slope disturbances in Chapter 16 of the Land Use Ordinance. Thus, there is existing language protecting these areas.

Carbonate Rock:

Mendham's ordinance does not have specific language protecting carbonate rock and potential ground water contamination as per the Highlands model ordinance. However, as noted in Section IV, only 6.7% of the Township is underlain by carbonate rock areas. A new ordinance is not required. Should a potential development trigger Council review, then Highlands' ordinance will govern such site or subdivision plans.

Lake Management Area:

Mendham's ordinance sets standards for lake protection in Chapter 19 and other sections of the Land Use Ordinance.

Water Conservation & Deficit Mitigation:

Mendham's ordinance sets standards for water conservation and deficit mitigation in both the Master Plan and in Chapter 11 of the Land Use Ordinance.

Prime Ground Water Recharge Areas:

Mendham's ordinance sets standards for prime ground water recharge areas in Chapter 11 and in multiple ordinances.

Wellhead Protection:

Mendham's ordinance has minimal language addressing wellhead protection. If necessary, the Township may consider augmenting at a later date.

Agricultural Resources:

Mendham's Master Plan offers recommendations addressing agriculture protection and development.

Historic, Cultural & Archaeological Resources:

Chapter 17 and 18 of Mendham's Land Use Ordinance and the Master Plan offer thorough recommendations for protecting significant historic resources. The Township may choose to develop a new or updated Historic Protection Element and any potential updates in accordance with the Master Plan recommendations.

G. Highlands Center Designation

It is the opinion of this Report that a Center Designation is not appropriate for Mendham Township. Pursuant to Figure 6.1 of the Highlands RMP, there is currently no Center Designation within the Township's boundaries. Moreover, the Township's traditional rural development pattern and environmental resources do not lend themselves to a Center Designation.

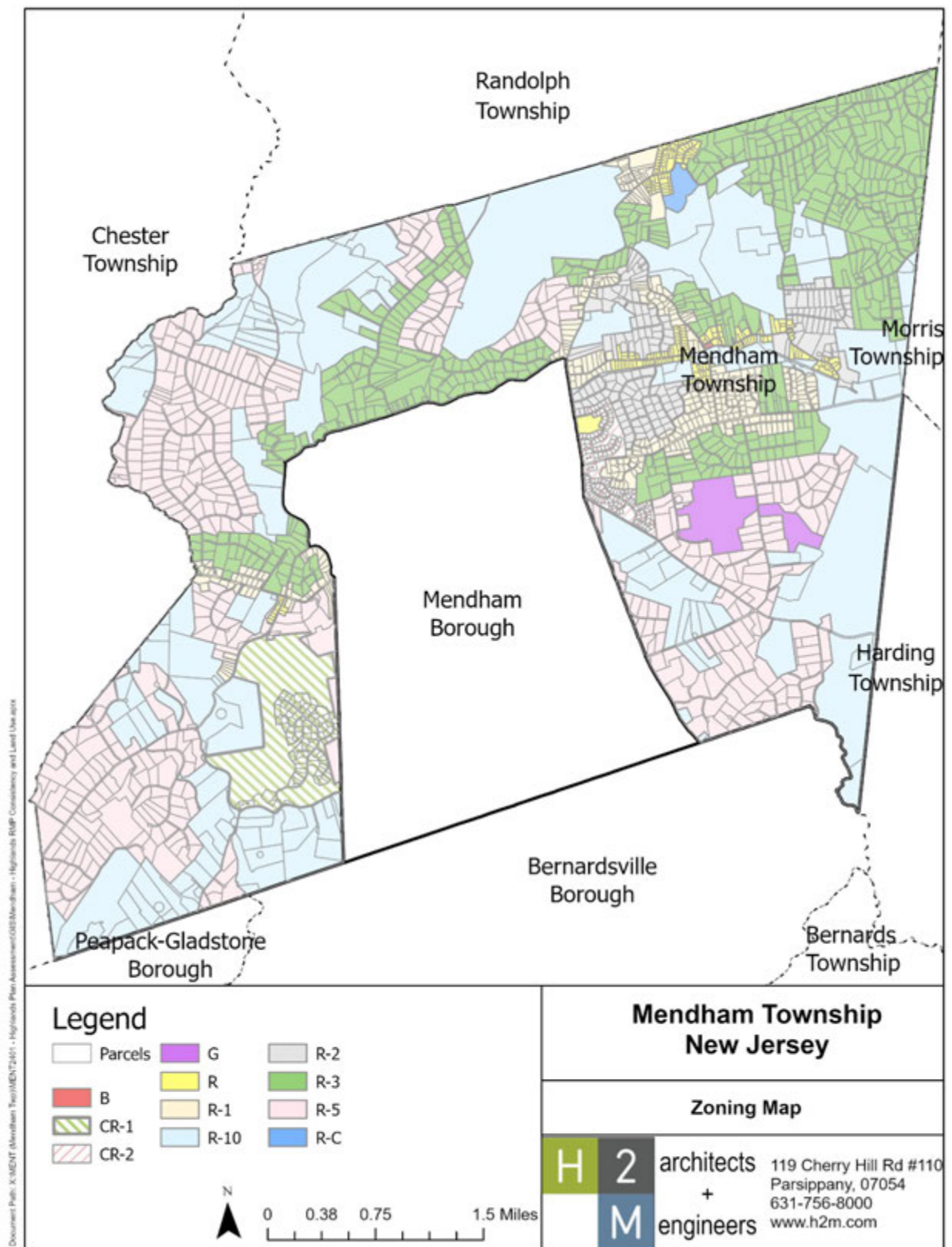


Figure 2

IV. Environmental Resources Present within Mendham

A. Lake Management Areas

The Highlands Council has established a Lake Management Area around all Highlands Region lakes that are greater than ten acres in size. The Lake Management Area is a buffer around lakes, consisting of the following tiers of lake management strategies, to help protect lake water quality and community value from the impacts of present and future development:

- A Shoreland Protection Tier, consists of an area measured 300 feet or the first property line perpendicular from the shoreline of the lake,
- A Water Quality Management Tier, consists of an area measured 1,000 feet perpendicular from the shoreline of the lake, which also includes the Shoreland Protection Tier,
- A Scenic Resources Tier, consists of an area measured 300 to 1,000 feet perpendicular from the shoreline of the lake, which is scaled based upon the view distance from the opposite shoreline, and determined through the size and layout of the lake, with wider portions of lakes having longer view distances, and
- A Lake Watershed Tier consists of the entire land area draining to the lake. This tier is established through the evaluation of drainage areas using LiDAR topographic analyses or other topographic data where LiDAR data are not available.

The Council has also developed a Lake Community Subzone. This subzone consists of patterns of community development that are within the RMP's Existing Community Zone and within 1,000 feet of lakes. Lakes within this subzone are developed or heavily developed lakes. Developed lakes face unique challenges; they tend to be shallower in locations that receive sediment loadings, they often feature extensively hardscaped shorelines with limited natural vegetation, and they are frequently more eutrophic than undeveloped lakes.

The Township of Mendham has three lakes namely Cyldre Potts Reservoir to the northcentral portion of the Township, Pleasant Valley Lake to the southwest, and Ledells Pond to the southeast portion of the Township. A total of 628.5 acres, or 5.5%, of the Township is located within the Lake Management Area.

B. Scenic Resources

Scenic resources within the Highlands Region are a subset of preserved and protected lands. The goals associated with protecting these scenic resources are to maintain the visual integrity and beauty of viewsheds and natural features of significance in the Highlands Region. Such resources include National Park Service Historic Landmarks and publicly owned parks, forests, and recreation areas. Mendham Township contains a total of 943.8 acres, or 8.2% of the Township contains scenic resources. Please see Figure 3.

Scenic Resources in Mendham Township	
Site	Acreage
Lewis Morris County Park	911.6 acres
Morristown National Historical Park	23.2 acres
Patriot's Path	5.6 acres
Mount Paul Memorial Park	3.4 acres

C. Historic, Cultural, Archaeological, Scenic Resources

Mendham Township has cultural and historic resources within its borders that are valuable to both the local community and the Highlands Region. Please see Figure 3. According to the State Office of Historic Preservation, cross referenced with the National Register of Historic Places, the Township has the following historic sites within its borders.

NR = The property/area is listed on the National Register of Historic Places

SR = The property/area is listed on the State Register of Historic Places

COE = A Certificate of Eligibility has been issued by the NJ Historic Preservation Officer. For properties not listed on the SR, a CEO is a prerequisite to apply for funding from the NJ Historic Trust as well as various county funding programs.

SHPO Opinion = This is an opinion of eligibility issued by the NJ Historic Preservation Officer in response to a federally funded activity that will have an effect on historic properties not on the NR.

HD = Local Historic District, not on the NR or SR.

Mendham Historic District and Places	
Name	Status
Brookside Historic District (ID#3385) Tingley Road, East and West Main Street, and Cold Hill Road	NR: 2/16/1996 (NR Reference #: 96000041) SR: 12/8/1995
Stephen Cary House (ID#2148) Mountainside Road	NR: 7/27/1989 (NR Reference #: 89000995) SR: 6/20/1989
Combs Hollow Historic District (ID#3396) Combs Avenue and Combs Hollow Road south of Doby Road	NR: 2/16/1996 (NR Reference #: 96000042) SR: 12/11/1995
Community of St. John Baptist [Historic District] (ID#5111) West Main Street	SHPO Opinion: 7/18/2005 COE: 4/30/2004
Community of St. John Baptist (ID#4278) 82 West Main Street	NR: 4/24/2007 (NR Reference #: 07000356) SR: 2/7/2007
Hillandale (ID#5615) 22 Saint Johns Drive	COE: 3/13/2018
Leddell's Mill and Dam Site (28-Mr-372) (ID#5410)	SHPO Opinion: 2/2/2015
Mosele Road Ford Site (28-Mr-316) (ID#4648)	SHPO Opinion: 11/1/2006
Mosele Road Forge Site (28-Mr-302) (ID#4649)	SHPO Opinion: 11/1/2006
Pitney Farm Historic District (ID#5415) 1 Cold Hill Road	COE: 2/24/2015
Ralston Historic District (ID#2149) NJ Route 24 and Roxiticus Road	NR: 2/20/1975 (NR Reference #: 75001150) SR: 9/4/1973
Ralston Historic District (expanded) (ID#3386) NJ Route 24 (Mendham Road) and Roxiticus Road	NR: 2/22/1999 (NR Reference #: 99000085) SR: 3/11/1997 SHPO Opinion: 8/11/1994
Tempe Wick Road/Washington Corners Historic District (ID#316) Tempe Wick Road from US Route 202 to Cold Hill Road, and short segments of Corey Lane, Cemetery Road, Kenneday Road, Leddell Road, and Jockey Hollow Road	NR: 8/25/2000 (NR Reference #: 00000959) SR: 6/27/2000
Washington Valley Historic District (ID#2179) Washington Valley, Mendham, and Whitehead roads, Schoolhouse Lane, and vicinity	NR: 11/12/1992 (NR Reference #: 92001583) SR: 9/18/1992

As per the Highlands ERI, a total of 2,297.3 acres, or 19.9%, of the selected area is located within the following historic districts:

- Combs Hollow Historic District
- Community of St. John Baptist [Historic District]
- Pitney Farm Historic District
- Tempe Wick Road/Washington Corners Historic District
- Morristown National Historical Park (Jockey Hollow)
- Washington Valley Historic District
- Morristown National Historical Park (New Jersey Brigade Encampment)

- Brookside Historic District
- Ralston Historic District
- Ralston Historic District (expanded)
- India Brook Historic District
- Hardscrabble Road
- Pleasant Valley (O-Wan-O-Massie) Historic District

The following map, based upon the NJDEP GIS database, does not include all the historic districts mentioned above but is provided as a reference.

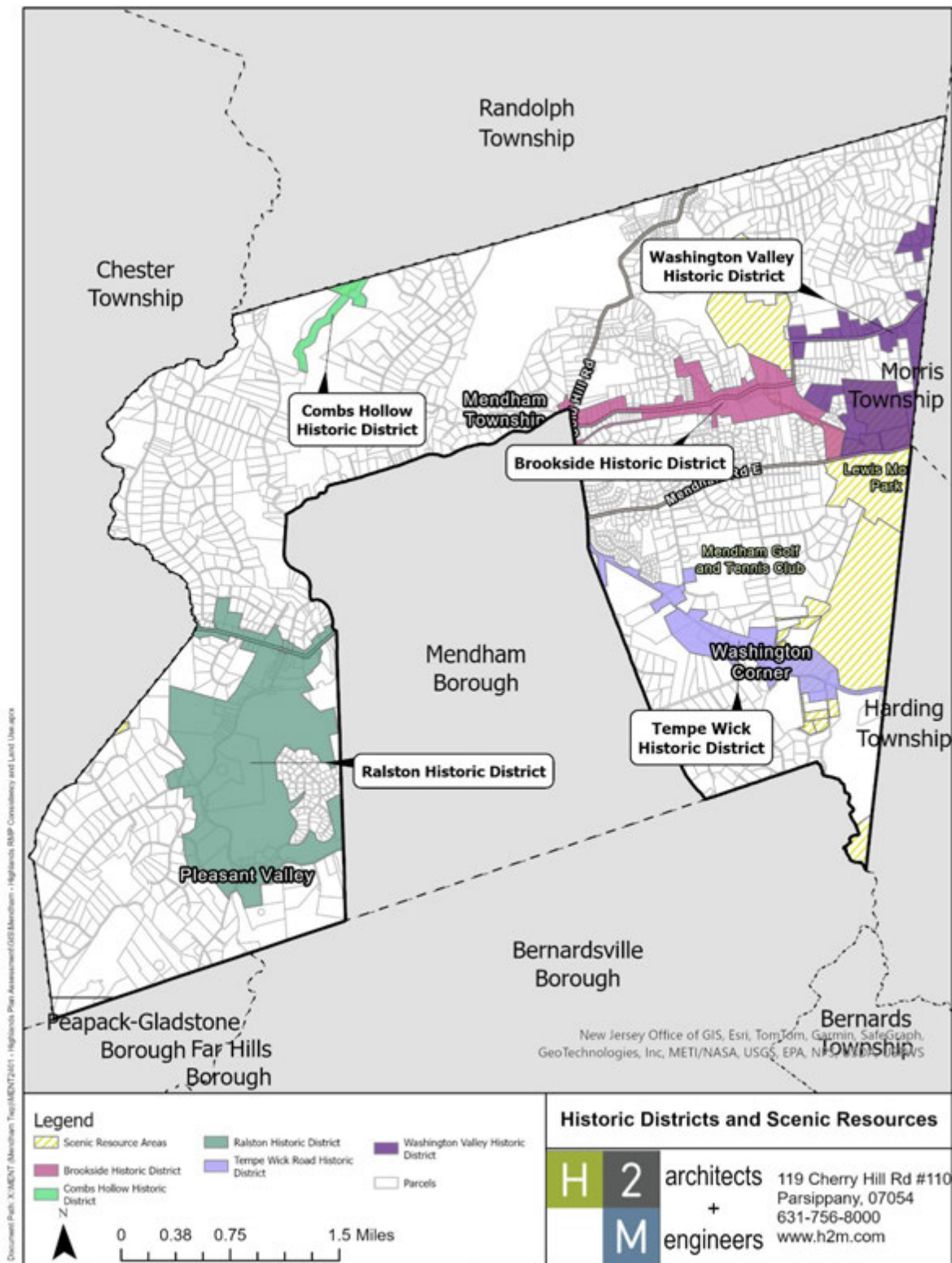


Figure 3

D. Agricultural Priority Areas

Agricultural Priority Areas (APA) display the relative value of agricultural resources and provide a prioritization of future farmland preservation activities in the Highlands Region. The seven indicators used to determine the APA are:

- Agricultural Resource Areas (ARAs) (i.e., areas of most concentrated and contiguous agricultural uses within the Highlands Preservation Area)
- Important Farmland Soils – Undeveloped
- Preserved Farms
- Contiguous Farms greater than 250 acres
- Agricultural Uses 10 acres or greater
- 50% or greater Prime Soils; and
- A quarter mile proximity to Preserved Farms.

To determine the agricultural resource value, low, moderate, and high resource value rankings are determined based on the extent of the above-mentioned indicators:

- *Low Priority Area* – 2 indicators or less
- *Moderate Priority Area* – 3 to 4 indicators
- *High Priority Area* – 5 to 7 indicators

A small portion of the Township contains the low, moderate, and high priority areas. The APA occupies a total of 412.3 acres, or 3.6% of the Township. This portion is located to the southwest, south, and southeast portion of the Township as seen in Figure 4.

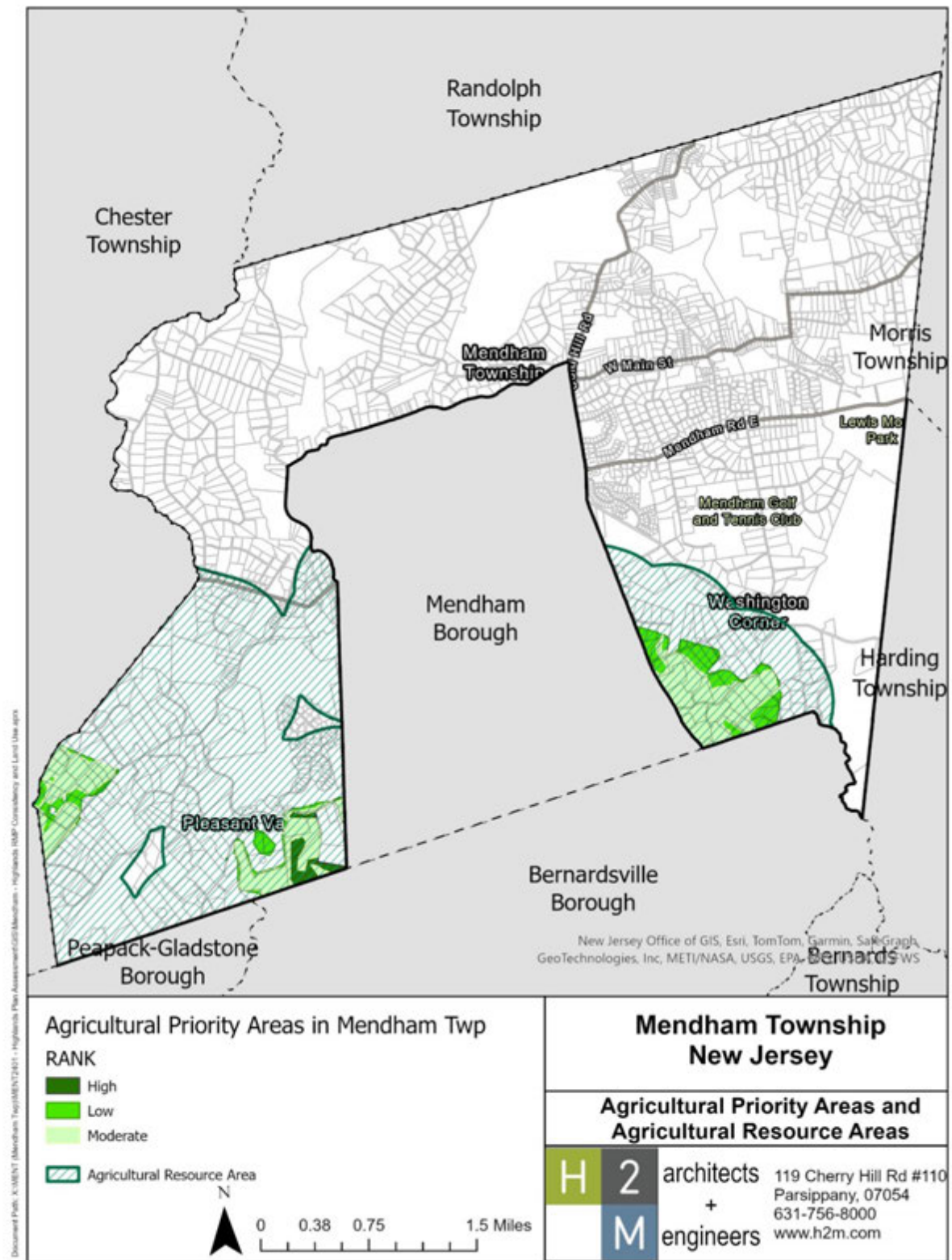


Figure 4

E. Open Water Protection Areas

The Highlands Open Waters include all springs, wetlands, intermittent or ephemeral streams, perennial streams, and bodies of surface water. This categorization includes natural and artificial bodies of water, as well as those located wholly or partially within the boundaries of the Region. The Highlands RMP requires a 300-foot protection area buffer around all Highlands Open Waters. Key functional values that Highlands Open Waters buffers provide or contribute to include, but are not limited to, habitat, stormwater and flood water retention and filtration, water quality protection, temperature moderation, aquatic ecosystem integrity, and channel integrity. The RMP features a mitigation requirement, which requires a demonstration of no net loss of functional value of a protection area buffer through the conduct of a Highlands Open Waters buffer functional value assessment. The functional value assessment entails analysis of the following Highlands Open Waters buffer functions:

Habitat

No net loss of instream food sources and no net loss of terrestrial and aquatic habitat functional value due to a shift to a less valuable overall vegetative condition in the protection buffer based on the following continuum from highest to lowest: forest or wetland, scrub/shrub, pasture or meadow, agriculture, maintained lawn, unpaved impervious surface, and other structures,

Water Quality

A degradation of this functional value will occur if, as a result of the proposed land conversions, pollutant loads increase to the Highlands Open Waters,

Temperature Moderation

A loss in temperature moderation functional value will occur if changes to the existing vegetation result in reduced shading of the Highlands Open Waters or stormwater that discharges to Highlands Open Waters. Further, a loss in temperature moderation functional value may occur with the heating of stormwater by new structures and other impervious surface. Mitigation approaches include removing or relocating impervious surfaces away from the Highlands Open Water or ensuring that stormwater temperature is reduced through shading or other techniques, and

Channel Integrity

A loss of channel integrity functional value will occur if the project will result in: the loss of bank stabilizing vegetation; the placement of infrastructure that can be feasibly located outside the stream corridor; an increase in the peak rate of stream flow generated, or in localized scour potential, that will increase stream bank and stream bed erosion; or the removal or burial of aquatic habitat in any substantial part of a stream bed or for threatened or endangered species.

Mendham Township contains a total of 4,447.0 acres, or 38.6% of the Township is located within an Open Water Protection Area.

F. Wetlands

NJDEP defines a freshwater wetland as an area that is inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation. A wetland is designated using the three-parameter approach (that is, hydrology, soils, and vegetation) from the 1989 Federal Manual as defined in N.J.A.C. 7:7A-1.4. Wetlands are important natural resources that contribute immensely to an area's social, economic, and environmental health. They provide a filtration of chemicals, pollutants, and sediments from water, as well as flood control, critical habitat for wildlife, and recreation and tourism opportunities.

The RMP and Highlands Act include wetlands in its definition of Highlands Open Waters and thus are afforded a 300-foot protection area. Per estimates from the Highlands Region Interactive ERI, a total of

594.8 acres, or 5.2% of Mendham of the Township contains mapped wetlands area. This is slightly lower than Mendham's 2013 ERI which lists a total of 596.70 acres as wetlands, as listed in the table below:

Wetlands in Mendham Township	
Wetland Type (NJDEP Defined)	Acres
Agricultural Wetland	17.10
Coniferous Wooded Wetland	1.72
Deciduous Scrub/Shrub Wetland	32.63
Deciduous Wooded Wetland	523.12
Herbaceous Wetland	4.18
Managed Wetland	6.87
Mixed Forested Wetland	3.90
Mixed Scrubs/Shrub Wetland	4.02
Wetland Right-of-Way	3.15
Total	596.70

G. C-1 Waterways

Waterways designated as Category 1 (C-1) have either exceptional ecological significance, are an exceptional fisheries resource, are defined as having an exceptional water supply significance, or have exceptional recreational significance. Within the Highlands Region, C-1 waterways are typically capable of supporting reproductive populations of trout and other species which depend upon exceptional water quality. The C-1 classification signifies the highest level of protection for waterways throughout the Region and State. Per estimates from the Highlands Region Interactive ERI, Mendham Township contains 43.6 miles of one or more C-1 waterways, as described below and mapped in Figure 5:

C-1 Waterways in Mendham Township	
Body of Water	Approximate Length within Township
Burnett Brook	4.6 miles
Burnett Brook UNT	3.4 miles
North Branch Raritan River UNT	4.4 miles
North Branch Raritan River	3.9 miles
Passaic River	3.8 miles
Whippany River	3.3 miles
Whippany River UNT	2.6 miles
India Brook	2.1 miles
India Brook UNT	1.7 miles
Harmony Brook	1.9 miles
Harmony Brook UNT	1.5 miles
Gladstone Brook UNT	1 mile
McVickers Brook	2,989 feet
McVickers Brook UNT	1,246.8 feet
Dawsons Brook	1,913.9 feet
Dawsons Brook UNT	197 feet

H. Vernal Pools

Vernal pools are unique ecosystems that provide critical breeding habitat for a variety of amphibian and invertebrate species; contribute significantly to local biodiversity by supporting plants, animals, and invertebrates that would otherwise not occur in the landscape; and contribute significant amounts of food to adjacent habitats. Their protection and maintenance of a 300-meter buffer maintains existing ecological integrity and promotes a greater degree of biodiversity within the Township. NJDEP defines vernal habitat as the abiding by the following four conditions (N.J.A.C. 7:7A-1.4):

- 1) Occurs in a defined basin depression without a permanent flowing outlet,
- 2) Features evidence of breeding by one or more species of fauna adapted to reproduce in ephemeral aquatic conditions as identified in N.J.A.C. 7:7A,
- 3) Maintains ponded water for at least two continuous months between March and September of a normal rainfall year, and
- 4) Is free of fish throughout the year or dries up at some time during a normal rainfall year.

Per estimates from the Highlands Region Interactive ERI, Mendham Township contains 72.2 acres of confirmed vernal pools, each within a 300-meter buffer. As seen in Figure 5, these are located in the central portion of the Township and there is a small portion of 300-meter buffer present in the northern boundary, with majority of the vernal pool in Randolph.

I. Riparian Areas

Riparian Areas are hydrologically connected to surface water through overland surface runoff, hydric soils, wetlands, or subsurface flow. They serve as an interface between surface water bodies (e.g., streams, rivers, lakes, or reservoirs) and terrestrial ecosystems. Riparian areas moderate fluctuations in water temperature, help maintain ground water recharge and stream base flow, stabilize stream banks, and provide flood storage areas. During high flow or overland runoff events, riparian areas reduce erosion and sediment loads to surface water and remove excess nutrients and contaminants from flood water. These areas also provide habitat for a variety of animal species and support terrestrial and aquatic food webs. Riparian areas include the integration of the following factors:

Highlands Open Waters

Defined as all mapped rivers, lakes, streams, and wetlands that are adjacent to and hydraulically interconnected with a river or stream as identified in the Highlands Open Water Inventory.

Flood Prone Areas

Defined as NJDEP documented and undocumented flood prone areas and Federal Emergency Management Agency (FEMA) 100-year floodplain.

Riparian Soils

Defined as a hydric soil, a soil exhibiting a shallow depth to seasonal high-water table, or alluvial soil.

Wildlife Corridors

Defined as a 300-foot corridor on each mapped stream bank or from the stream centerline if no stream bank is mapped.

The Highlands Council has assigned a Riparian Area integrity value class to each HUC14 subwatershed in the Region, based on a cumulative assessment of selected watershed indicators, as follows:

High Integrity Riparian Area

These areas include subwatersheds with Riparian Areas that exhibit predominantly natural vegetation, including high quality habitat for water/wetland dependent species, and a generally low incidence of impervious area, agricultural uses, and/or road crossings,

Moderate Integrity Riparian Area

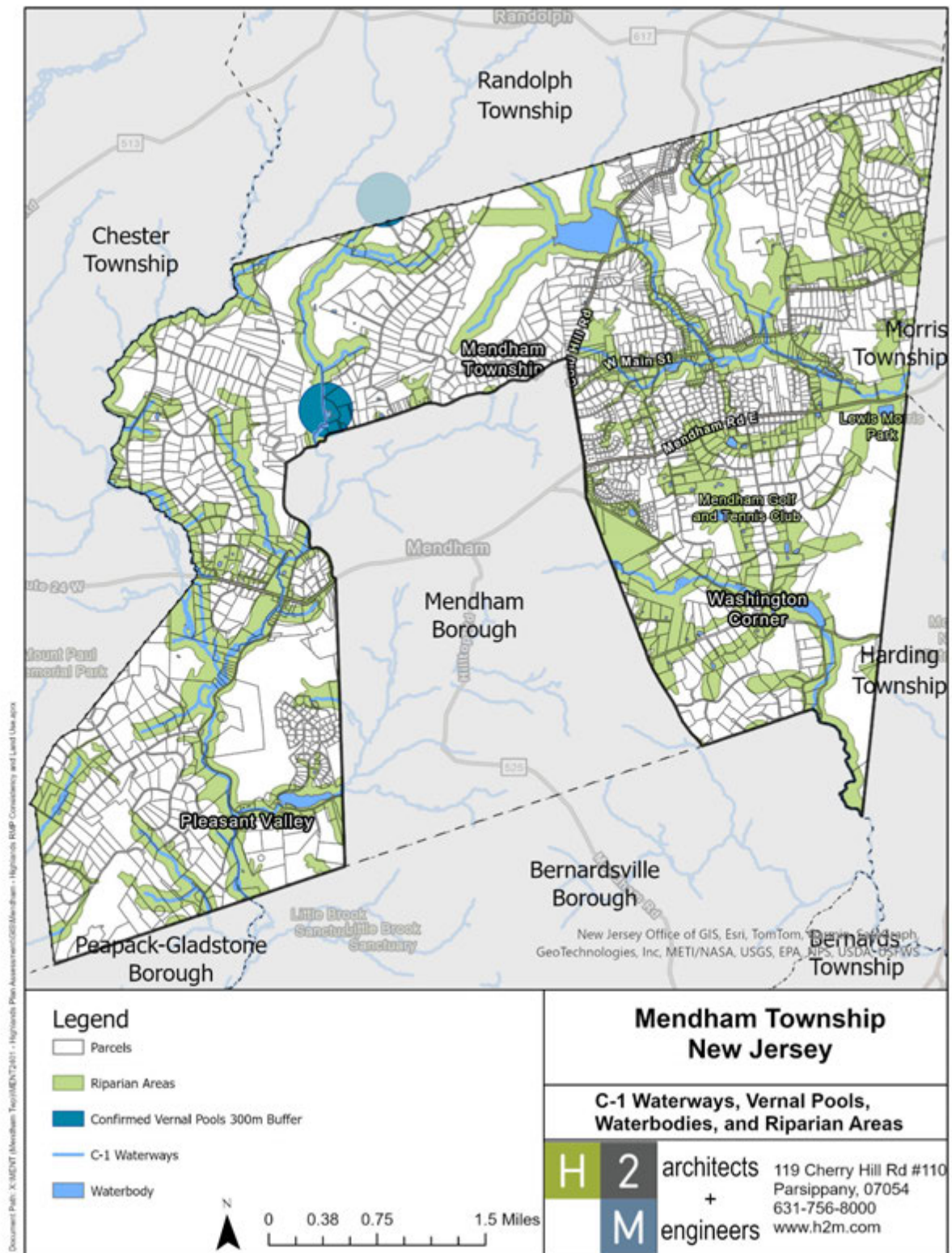
These areas include subwatersheds with Riparian Areas that contain a higher incidence of impervious area, agricultural uses, and road crossings, and a reduced proportion of natural vegetation, including high quality habitat for water/wetland dependent species, and

Low Integrity Riparian Area

These areas include subwatersheds with Riparian Areas that contain a high proportion of impervious area, agricultural uses, and road crossings, and minimal natural vegetation, including high quality habitat for water/wetland dependent species.

Per estimates from the Highlands Region Interactive ERI, a total of 3,948 acres, or 34.2% of Mendham Township are comprised of Riparian Areas. The Riparian areas and their respective Riparian Integrity Score are listed in the table below and mapped in Figure 5.

Highlands Subwatersheds Riparian Integrity Scores (Mendham Township)		
HUC-14 Subwatershed ID Number	HUC14 Subwatershed Name	Riparian Integrity Score
02030103020010	Whippany R (above road at 74d 33m)	High
02030105060030	Raritan R NB(incl McVickers to India Bk)	High
02030103010010	Passaic R Upr (above Osborn Mills)	High
02030103020020	Whippany R (Wash. Valley Rd to 74d 33m)	High
02030105060010	Raritan R NB (above/incl India Bk)	High
02030105060040	Raritan R NB(Peapack Bk to McVickers Bk)	High
02030105060020	Burnett Brook (above Old Mill Rd)	High
02030105060050	Peapack Brook (above/incl Gladstone Bk)	High
02030103020040	Whippany R(Lk Pocahontas to Wash Val Rd)	High
02030103010020	Primrose Brook	High



J. Wellhead Protection Areas

Wellhead Protection Areas (WHPAs) are defined as public water supply wells which serve at least 15-service connections used by year-round residents, which, in turn, regularly serve at least 25-year-round residents. Non-community water supply wells are defined as public water supply wells used by individuals other than year-round residents, for at least 60-days in any given calendar year. A WHPA is mapped based upon the time of travel that it will take for ground water to flow to the well. In New Jersey, well head protection ordinances utilize the following three tiers:

- *Tier 1*– A two-year time of travel to reflect the potential for bacterial and viral contaminant movement.
- *Tier 2* – Equivalent to a five-year time of travel based upon limitations on technological options for preventing long-lived contaminants from reaching a well without interfering with well function.
- *Tier 3* – Equivalent to a twelve-year time of travel, the longest times of travel customarily seen in New Jersey for plumes of long-lived contaminants.

A total of 260.4 acres, or 2.3%, of Mendham Township is within a wellhead protection area for public community water supply wells. Additionally, A total of 165.0 acres, or 1.4%, of the Mendham Township is located within a wellhead protection area for non-public community water supply wells. Figure 6 illustrates the location of these wellhead protection areas.

Wellhead Protection in Mendham Township					
Tier 1 (Two-Year Recharge Level) Acreage		Tier 2 (Five-Year Recharge Level) Acreage		Tier 3 (Twelve-Year Recharge Level) Acreage	
Public Community Water Supply Wells	Public Non-Community Water Supply Wells	Public Community Water Supply Wells	Public Non-Community Water Supply Wells	Public Community Water Supply Wells	Public Non-Community Water Supply Wells
3.5 acres	31.5 acres	59.9 acres	42.4 acres	197.1 acres	91.1 acres

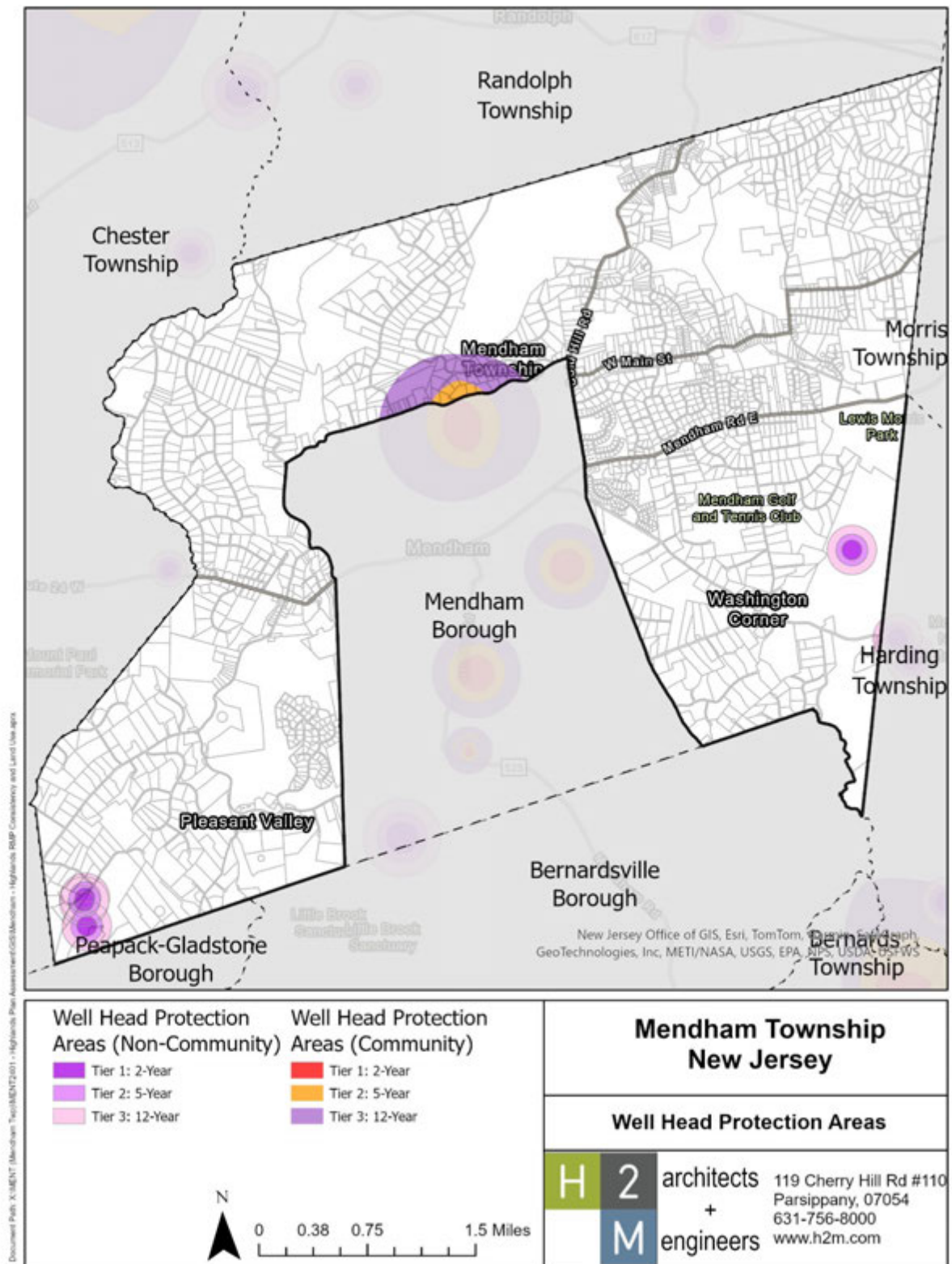


Figure 6

K. Highlands Subwatersheds

A watershed describes an area of land from which all water, above ground (e.g., rain and snowmelt) and below ground (e.g., ground water), drains to the same point. Nearly all watersheds in New Jersey are part of larger watersheds and may range in size from a few acres to thousands of square miles. As water moves downstream, any activity that affects the water quality, quantity, or rate of movement at one location can affect locations downstream. The watershed boundaries used for the analysis in the RMP were 14-digit Hydrologic Units (i.e., subwatersheds or HUC14s). Watershed values are reported at the subwatershed level (HUC14). These are by indicators such as percent developed lands, habitat quality, percent total forest, percent core forest and proportion of total forest and are provided as “Low,” “Moderate,” and “High.”

High Watershed Value

These subwatersheds contain predominantly forest lands and include a significant portion of the watershed that is high quality habitat. A high value watershed typically consists of limited pre-existing developed land within the watershed.

Moderate Watershed Value

These subwatersheds contain forest lands and some habitat suitable for rare, threatened, or endangered species, but typically also contain developed lands.

Low Watershed Value

These subwatersheds contain a low proportion of forest lands, a low proportion of habitat suitable for rare, threatened, or endangered species, and typically consists of higher levels of developed lands.

Highlands Subwatersheds Forest Integrity Scores (Mendham Township)		
HUC-14 Subwatershed ID Number	Huc 14 Subwatershed Name	Forest Integrity Score
02030103020010	Whippany R (above road at 74d 33m)	High
02030105060030	Raritan R NB(incl McVickers to India Bk)	High
02030103010010	Passaic R Upr (above Osborn Mills)	High
02030103020020	Whippany R (Wash. Valley Rd to 74d 33m)	High
02030103020020	Raritan R NB (above/incl India Bk)	Low
02030105060010	Raritan R NB(Peapack Bk to McVickers Bk)	High
02030105060020	Burnett Brook (above Old Mill Rd)	Moderate
02030105060040	Peapack Brook (above/incl Gladstone Bk)	High
02030103020040	Whippany R(Lk Pocahontas to Wash Val Rd)	Low
02030103010020	Primrose Brook subwatershed	High

L. Forest Resource Areas

The RMP acknowledges forested areas as “defining visible and functional feature[s] of the Highlands Region” that perform essential ecosystem functions. These functions include the recharge of the groundwater aquifers and surface water filtration which protects drinking water supplies for the Region and for the state as a whole. Additionally, forested areas are recreation and scenic resources and can be sources of renewable wood products.

The Highlands Council assesses the ecological integrity of forests through the examination of landscape level characteristics at both the forest patch and subwatershed (HUC14) level. The Council utilizes measures of forest fragmentation to identify regionally significant forests (i.e., “Forest Resource Areas”). These are the forests that are most suited to support ecological processes. The Highlands Council spatially delineates the Forest Resource Areas by including those areas which express one or more of the following indicators:

- A contiguous forest patch of equal to or greater than 500 acres in size,
- An area consisting of 250 acres or more of core forest area greater than 300 feet from an altered edge, or
- Areas that include 45% or more of mean total forest cover, and mean distance to nearest patch (HUC14 only).

The Highlands Council also assesses forest cover integrity in the Highlands Region at the watershed level. The Highland Council assigns value classes to each of the 183 HUC-14 subwatersheds in the Highlands Region as follows:

High Integrity Forest Area

Predominantly forested, including a high proportion of forest cover consisting of high core area, large patch size, and a low distance to nearest patch.

Moderate Integrity Forest Area

Predominantly forested, but do not exhibit a high proportion of forest cover, core area or patch size and an increase in distance to nearest patch.

Low Integrity Forest Area

Predominantly non-forested or include low values for proportion of forest cover and patch size, or a high distance to nearest patch.

As illustrated in Figure 7, a total of 10,077.9 acres of 87.4% of the Township is located within a Forest Resource Area as per the Highlands Region Interactive ERI.

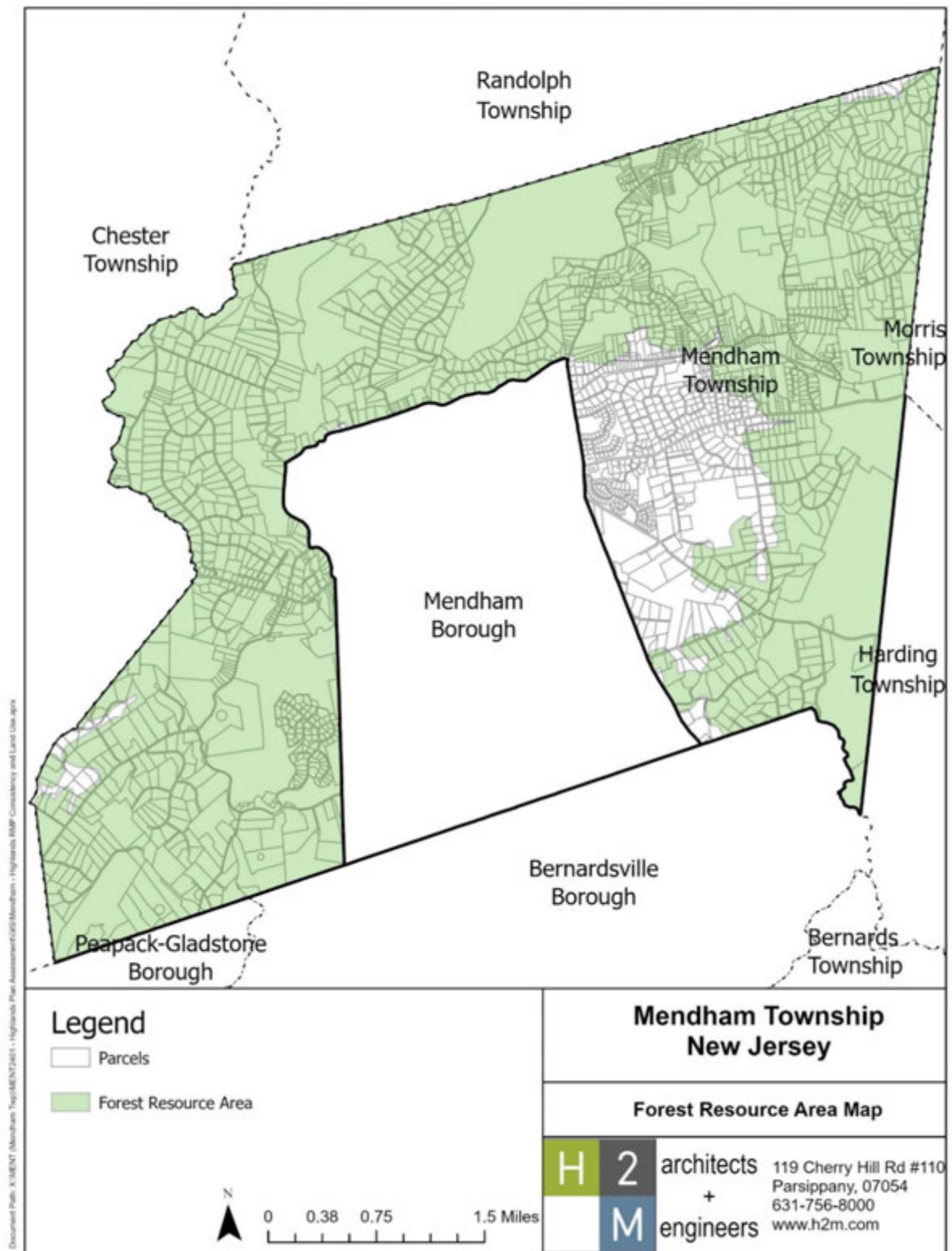


Figure 7

M. Steep Slopes

Steep slopes and rocky ridgelines provide specialized habitats for rare plant and animal species. The RMP requires that an inventory of steeply sloped areas to be documented in an inventory of steeply sloped areas including topographic information identifying the location of any Steep Slope Protection Areas located on the parcel proposed for development. It also requires that applications for development involving parcels of land with slopes of 10% or greater include identification of forested lands, areas which are highly susceptible to erosion, depth to bedrock, and Soil Capability Classes undergo local development review and Highland Projects Review. It also requires the categorization of Constrained Slopes as described below.

The Highlands Council spatially examines slopes in the Highlands Region using the 10-meter Digital Elevation Grids generated from the United States Geological Survey's (USGS) Digital Elevation Model. The Council establishes the following grade classifications as steep slope protection areas:

Severely Constrained Slopes

All lands with slopes of 20% or greater and lands within Riparian Areas with slopes of 10% and greater.

Moderately Constrained Slopes

All non-Riparian Area lands having a slope of 15% to less than 20% which are forested.

Constrained Slopes

All non-Riparian Area lands having a slope of 15% to less than 20% which are non-forested with one or more of the following characteristics: a) highly susceptible to erosion; b) shallow depth to bedrock; or c) a Soil Capability Class indicative of wet or stony soils.

Limited Constrained Slopes

All non-Riparian Area lands having a slope of 15% to less than 20%, which are non-forested, are not highly susceptible to erosion, and do not have a shallow depth to bedrock or a Soil Capability Class indicative of wet or stony soils.

As per the Highlands Region Interactive ERI, a total of 3,488.5 acres (30.3%) of the Township is within a Steep Slope Protection Area. Of which, 2,823.7 acres (24.5%) are categorized as Severely Constrained, and 664.8 acres (5.8%) is categorized as Moderately Constrained. As shown in Figure 8, these areas are found throughout the Township.

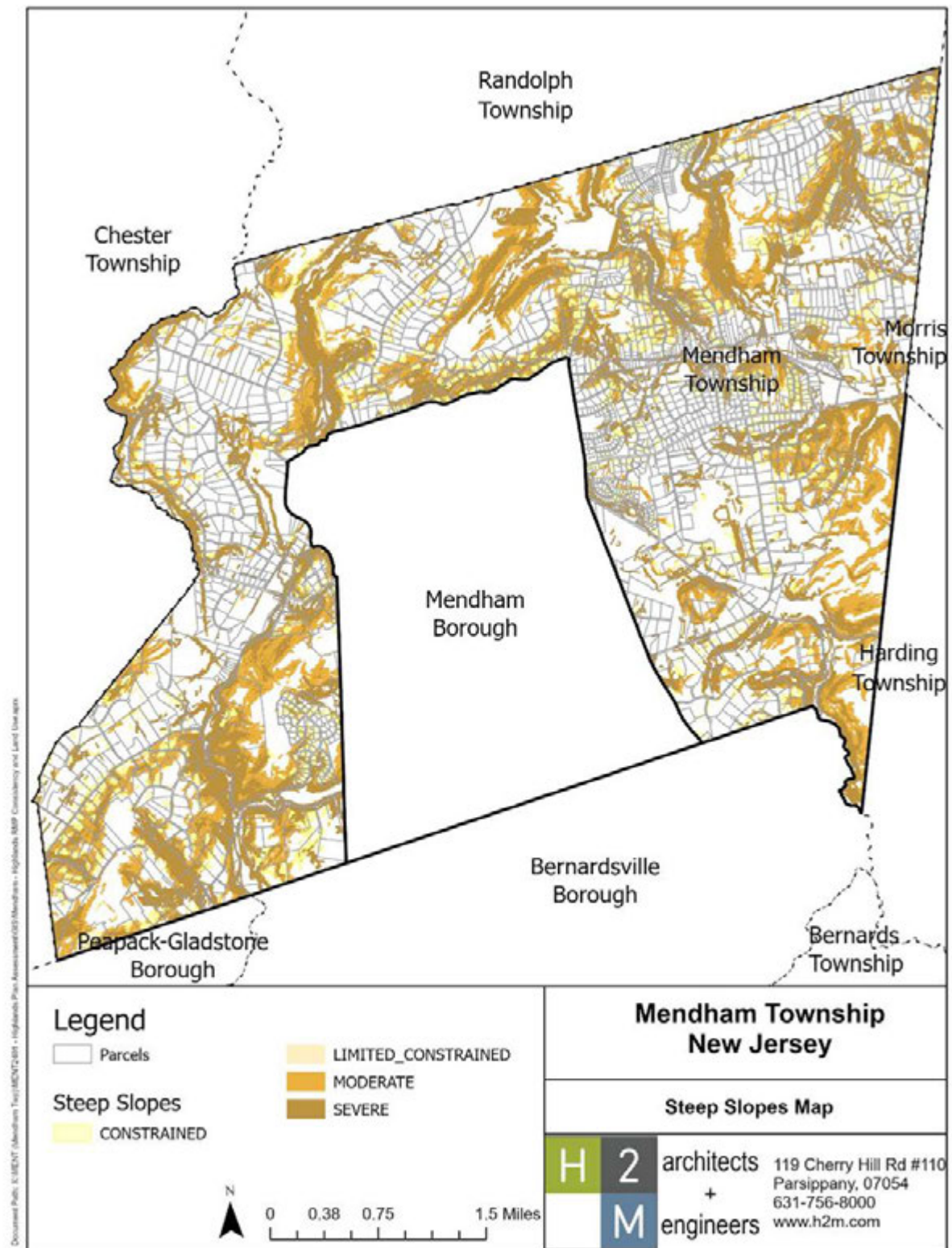


Figure 8

N. Critical Habitat

The Highlands RMP defines three categories of Critical Habitat in the Highlands Region:

Critical Wildlife Habitat

Habitats of animal species identified as endangered, threatened, of special concern, or of regional conservation priority in the Highlands Region,

Significant Natural Areas

Regionally significant ecological communities, particularly for protection of endangered and rare plant species, and

Vernal Pools

Confined, ephemeral wet depressions that support distinctive, and often endangered, species that are specially adapted to periodic extremes in water pool levels.

Critical Wildlife Habitat and Significant Natural Areas are designated based on the presence of species of concern. Vernal pools are certified by the NJDEP, and to protect and promote the biodiversity of Vernal Pools, the Highlands Council has determined that a terrestrial habitat protection buffer of 1,000 feet around Vernal Pools will generally address the habitat requirements of vernal pool-breeding wildlife.

The Highlands Council utilized NJDEP's Endangered and Nongame Species Program Landscape Project data to delineate suitable critical wildlife habitat for species of concern within the Highlands Region. It identifies the locations and types of critical wildlife habitat that are critically important to maintaining biological diversity in the Highlands Region. The Landscape Project ranks habitat according to the status and distribution of wildlife species of concern. Landscape Ranks include the following:

- Federally Listed (5) – A wildlife species listed by the U.S. Fish and Wildlife Service as threatened or endangered,
- State Endangered (4) – A species listed on the official endangered wildlife list that the NJDEP promulgates pursuant to the Endangered and Nongame Species of Wildlife Conservation Act of 1973 (ENSCA),
- State Threatened (3) – A species designated as “threatened” on the list of nongame wildlife species that the NJDEP promulgates pursuant to ENSCA,
- Special Concern (S3) (2) – Nongame wildlife that are considered by the NJDEP to be species of special concern as determined by a panel of experts or S3 according to NatureServe methodology, and
- Suitable (1) – Meets minimum habitat suitability requirements.

The Township of Mendham contains an extensive area of federally listed/endangered species—the majority of which is of Rank 5 or Rank 4. A total of 9,199.2 acres, or 79.8%, of Mendham Township are identified to contain Critical Wildlife Habitat. There are no listed significant natural areas within Mendham Township. These species are as follows:

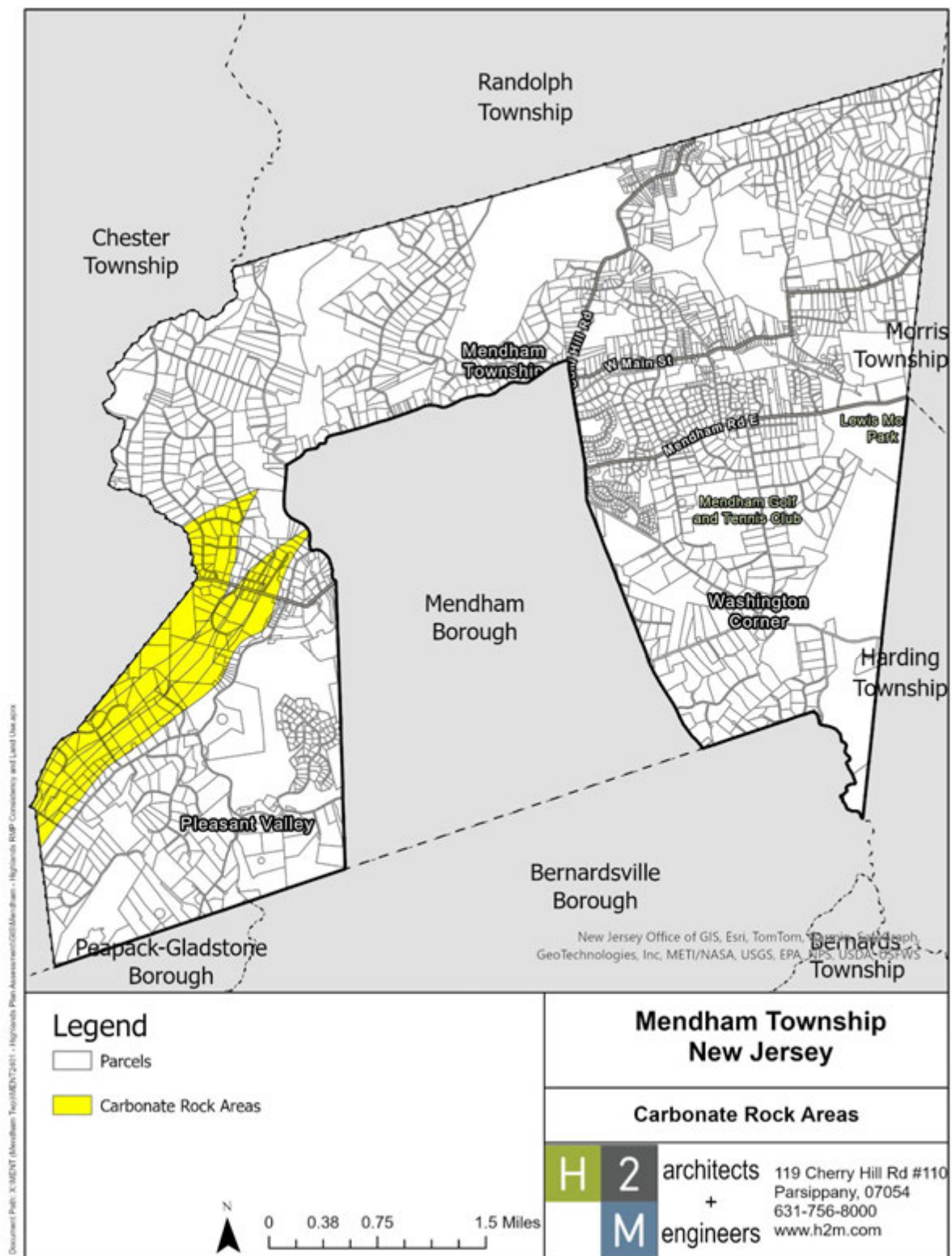
Rare Threatened, or Endangered Species within Mendham Township	
Common Name	Latin Name
Cooper's Hawk	<i>Accipiter cooperii</i>
Tiger Spiketail	<i>Cordulegaster erronea</i>
Indiana Bat	<i>Myotis sodalis</i>
Worm-eating Warbler	<i>Helmitheros vermivorum</i>
Northern Myotis	<i>Myotis septentrionalis</i>
Barred Owl	<i>Strix varia</i>

Eastern Box Turtle	<i>Terrapene carolina carolina</i>
Great Blue Heron	<i>Ardea herodias</i>
Veery	<i>Catharus fuscescens</i>
Hooded Warbler	<i>Wilsonia citrina</i>
Brown Thrasher	<i>Toxostoma rufum</i>
Bobcat	<i>Lynx rufus</i>
Canada Warbler	<i>Wilsonia canadensis</i>
Brook Snaketail	<i>Ophiogomphus aspersus</i>
Brush-tipped Emerald	<i>Somatochlora walshii</i>
Red-shouldered Hawk	<i>Buteo lineatus</i>
Spotted Turtle	<i>Clemmys guttata</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Wood Turtle	<i>Glyptemys insculpta</i>
Wood Thrush	<i>Hylocichla mustelina</i>

O. Carbonate Rocks

Carbonate Rock, or karst, area are a type of topography that indicates the dissolution of underlying carbonate rocks—such as limestone and dolomite—by surface or groundwater over time. The dissolution of carbonate rocks causes surface depressions and the development of features like sinkholes, sinking streams, enlarged bedrock fractures, caves, and underground streams. Stormwater basins, septic system leaching fields, sewers, agricultural runoff, lawn runoff, underground pipelines, and soil disturbance may contribute contaminants directly to ground water through karst features. Sinkholes, according to the RMP, function as funnels directing unfiltered surface water runoff into karst aquifers and, additionally, can undermine such infrastructure as stormwater basins, roads, sewer lines, septic tanks, systems, and natural gas lines.

As per the Highlands ERI a total of 768.8 acres, or 6.7% of the Township is underlain by carbonate rock areas. As seen in Figure 9, these areas are located in the south westerly portion of the Township.



V. Assessment of Developable and Vacant Land

This section assesses the developable tracts and vacant lands within Mendham based upon the natural and cultural resources of the Township as described in Section IV. In 2019, Mendham Township hired an environmental consultant to complete a Nitrate Dilution Model and Current Planning Capacity Model studies to help inform future land use policies and decisions. The Nitrate Dilution Model (NDM) and Current Planning Capacity Modeling was incorporated in this analysis to determine the capacity of the lands within the Planning Area based on the New Jersey Department of Environmental Protection (NJDEP) septic density standards. The NDM was able to model and estimate the Township's optimal land area per household needed to meet nitrate dilution goals. Simply, it estimated the minimum land area required to add enough water back into the ground to dilute specific effluent to the State's target nitrate concentration of NO 2.0 mg/L. The land area needed ranges from approximately 3.7 to 3.9 acres per lot, depending on the zone, which were weighted averages over the area of each zone since there were different soil types across each zone, to meet the State's target nitrate concentration. This concentration is an aggressive estimate and doesn't consider realistic factors such as environmental constraints, zoning standards, etc. that can limit the ability of a property owner to develop homes based on the zoning regulations. H2M included these environmental constraints to adjust the NDM number of sustainable homes to a more realistic number of potential new homes (262) that can be sustained. Once again, this is a higher-end estimate, and that any potential development must consider impacts on water quality and constraints such as steep slopes; thus, the actual lot yield may be much lower than 262 noted under column A.

Projections Estimates for Sustainable Growth, by Zone						
Zone	Projected New Lots	Sustainable number of Homes in zone, 2.0mg/L threshold	Environmental Adjustment ¹	Adjusted Sustainable Additional Number of Homes (A)	H2M estimate of existing homes in Zone (B)	Total estimated existing homes and adjusted sustainable additional homes (A+B)
B-Zone	0	1	0.0%	0	1	1
CR-1 Zone	0	106	0.0%	0	99	99
CR-2 Zone	0	33	0.0%	0	155	155
R Zone	88	42	35.0%	15	199	214
R-1 Zone	47	121	15.7%	19	342	361
R-2 Zone	20	108	19.4%	21	201	222
R-3 Zone	82	529	23.0%	122	534	656
R-5 Zone	41	677	8.2%	56	432	488
R-10 Zone	3	1,021	2.9%	30	114	144
Total:	281	2,638	9.40%	262	2,077	2,339

¹ Environmental Constraint Adjustment is based on the percentage of land area in each zone that can be developed given current zoning and existing environmental constraints.

VI. Water and Sewer Infrastructure

A. Sanitary Sewer

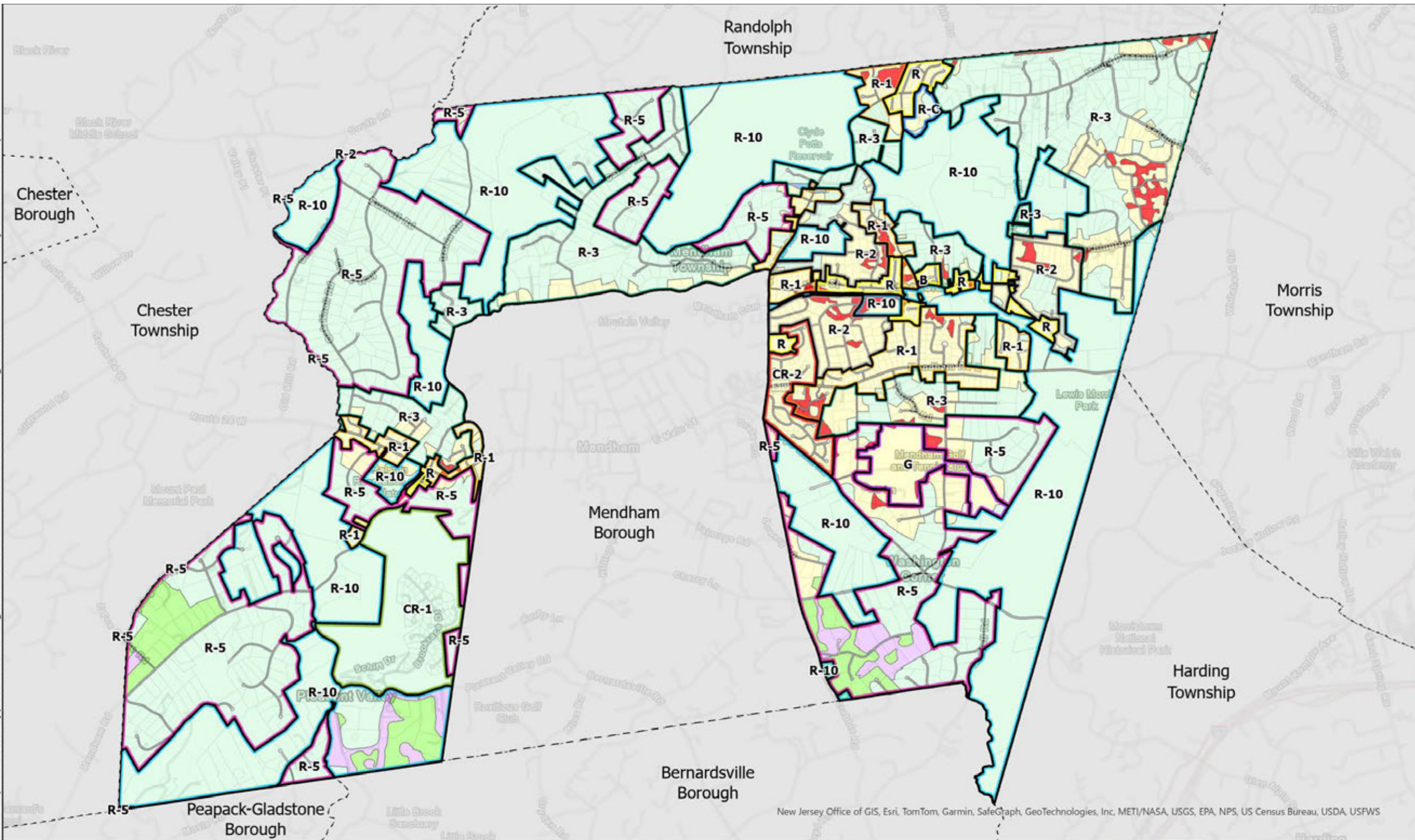
Sewer Service Area is defined at N.J.A.C. 7:15 as the land area identified in an areawide Water Quality Management Plan from which wastewater generated is conveyed to, or has been determined to be eligible, to pursue a permit to connect to a domestic treatment works or industrial treatment works. Inclusion in a sewer service area does not guarantee that capacity exists or will exist to provide treatment for all flow from that area. The Sewer Service Area includes areas that are currently served (connected to) by permitted wastewater treatment facilities as well as areas of permitted discharges to surface or groundwater. As per the Highlands ERI, a total of 469.8 acres or 4.1% of Mendham Township contains wastewater treatment facilities. These include facilities such as Mendham Middle School, Mendham Elementary School, Drakewick, Mountain View, and Brookrace.

The 2021 Land Use Plan Element notes that Mendham Township has a limited sanitary sewer infrastructure. Two separate small-scale public sanitary sewer systems made up of small "package plants" serving small, isolated developments. These systems cannot be expanded without great cost, and without contravention of the planning objectives for PA-5 areas in the State Plan.

B. Water

As noted in the 2021 Land Use Plan, which in turn references from other studies, the Township's low-density residential development makes the extension of public water system impractical and inappropriate in most areas. As per the Highlands ERI, there are few areas that are served by public water; however, there are limiting factors that prevent public water hook ups. For example, the Randolph Water Department, which partially supplies Mendham Township, has put a moratorium on any extension of the system to Mendham Township properties. Nearly all future development is expected to be served by individual wells, onsite septic systems and the existing road system. The limited capacity of this base requires that an overall very low density of development be maintained in the Township.

VII. Appendix A



Legend	Municipal Zones & Land Use Capability Zones	H 2 architects 119 Cherry Hill Rd #110 Parsippany, 07054 631-756-8000 www.h2m.com
<ul style="list-style-type: none">Conservation Environmentally Constrained SubzoneConservation ZoneExisting Community Environmentally Constrained SubzoneExisting Community ZoneLake Community SubzoneProtection Zone	Mendham Township	

APPENDIX B

PUBLIC COMMENTS/HIGHLANDS COUNCIL RESPONSES

**Petition for Plan Conformance
Township of Mendham, Morris**

PUBLIC COMMENTS RECEIVED

The Petition was also reviewed by the Office of Planning Advocacy per the Highlands Council's Plan Endorsement from the State Planning Commission.

APPENDIX C

**IMPLEMENTATION PLAN AND SCHEDULE
Petition for Plan Conformance
Township of Mendham, Morris**

DRAFT
Township of Mendham, Morris County, New Jersey
Highlands Implementation Plan and Schedule

Amended Grant Agreement Task #	PLAN CONFORMANCE TASK	Proposed Cost Fiscal Year 2025	Future Projects (requires future HC Approval)	Status and Comments
1	Housing Element and Fair Share Plan	\$ 25,000.00		Affordable Housing Round IV Tasks (inclusive of Housing Element and Fair Share Plan)
1a	Adoption of Implementing Ordinances	\$ 5,000.00		Adoption of ordinances required as per the Fair Share Plan
2	Highlands Interactive Environmental Resource Inventory	\$ 5,000.00		Review Highlands Interactive ERI, propose amendments as necessary, and adopt.
3	Highlands Element of Municipal Master Plan	\$ 10,000.00		Adoption of Highlands element and reexamination report.
4	Municipal Master Plan Elements (as applicable)			
	a. Land Use Plan Element		TBD	
	b. Land Preservation and Land Stewardship Plan Element			
	c. Sustainable Economic Development Plan Element		TBD	
	d. Historic Preservation Plan Element		TBD	
	e. Trails Planning			
5	Adoption of Highlands Conformance Ordinance	\$ 5,000.00		Adoption of Highlands Land Use Ordinance serves to protect municipal resources; future land use ordinance amendments may follow to update existing municipal ordinances.
	Update Municipal Land Use Ordinances			
	Zoning Map Update			
	Resource Management Plans and Programs			
	a. Water Use and Conservation Management Plan		TBD	
	b. Habitat Conservation and Management Plan			
	c. Stream Corridor Protection/Restoration Plan			
	d. Wastewater Management Plan			
	e. Lake Restoration Management Plan			
	g. Scenic Resource Management Plan			
	h. Municipal Stormwater Management Plan			
	i. Regional Stormwater Management Plan (if applicable)			
	j. Land Preservation and Land Stewardship Program			
	k. Forest Stewardship Plan			
	Board of Health Ordinances			
	a. Septic System Maintenance			
	b. Potential Contaminant Source Management			
	Implementing Ordinances for Management Plans and Programs			
	a. Water Use and Conservation Management Plan Ordinance			
	b. Habitat Conservation and Management Plan Ordinance			
	c. Stream Corridor Ordinance			
	d. Lake Restoration Management Plan Ordinance			
	e. Tree Clearing Ordinance			
	f. Right to Farm Ordinance (if applicable)			
	g. Scenic Resource Mgmt Ordinance (if applicable)			
	h. Stormwater Mangement Ordinance			
	i. Other Ordinance Provisions (specify)			
	Redevelopment and Brownfields Opportunities			
	a. Highlands Redevelopment Area Planning			
	Highlands Center Planning			
	Public Outreach/Education			
	RMP Updates			
	Attendance at Highlands Council Training Sessions			
6	a. Municipal Exemption Determinations		\$ 500.00	Adopt Municipal Exemption Determination Ordinance
	b. Ordinance Administration: Application Procedures, Implementation, Enforcement			
	Estimated Subtotal	\$ 50,000.00		