

A. NATURAL RESOURCES AND OPEN SPACE

Summary of Planning Issues

Environmental resources refer to the natural, often interdependent, components of an area's ecosystem. They include groundwater and surface water resources, vegetation and open space.

The Town of Ramapo is located within two distinct geologic areas. The western portion of the Town lies within the Reading Prong projection of the New England Uplands (part of the New England Province, considered a northward extension of the larger Appalachian mountain chain). The Reading Prong is known locally as the Ramapo Mountains, the New York-New Jersey Highlands, or simply the Highlands. The eastern portion of the Town lies within the Piedmont Province which, in contrast, consists of broad valleys and low hills. This topographic pattern has had a profound impact on land development within the Town. The topography of the western portion of the Town is characterized with steep-sided ridges and narrow valleys. The severe nature of the slopes in these areas has significantly limited development, and much of the land has remained undeveloped and/or been dedicated for park purposes. The eastern portion of the Town, however, is characterized by rolling terrain with gentle valleys and moderate ridges. Thus, since the eastern lowland and valley portions of the Town tend to have less severe slopes and topography, these areas have experienced the highest proportion of intensive development, while the western portion of the Town has remained relatively undeveloped.

The necessity to protect the Town's groundwater supply from various pollution sources is required to both ensure future supply and maintain its quality. Groundwater is the source of most of the Town's potable water. The Ramapo-Mahwah Aquifer, which underlies the Ramapo and Mahwah River valleys, is located in the western portion of the Town and along the southeastern edges of Harriman State Park. This aquifer has been designated as a sole source aquifer (SSA) by the United States Environmental Protection Agency (USEPA) and has been designated as a "Primary Water Supply Aquifer" by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH). The USEPA defines a SSA as one that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer, and where these areas have no alternative drinking water sources.

This aquifer is an unconfined, surficial aquifer, a type of aquifer that is vulnerable to contamination because its water-bearing soil and rock formations are close to the land

surface. Further, most of the soil overlying the aquifer is highly permeable, which allows potentially contaminated water to be readily transmitted to these formations. Moreover, the Ramapo River, which feeds an adjacent well field that provides a significant percentage of Rockland's drinking water, naturally recharges the aquifer. As such, there is potential for incidents of surface water contamination to affect public supply wells tapping the aquifer. The sensitivity of the Ramapo-Mahwah Aquifer is made more significant since its location correlates with areas within the Town that are largely not connected to public sewer (i.e., the western area of the Town and portions of the Mahwah River valley).

Continued reliance on septic tanks over this aquifer has the potential to cause significant contamination of public water supply. As a result, Rockland County Sewer District #1 is pursuing an extension of sewer services to the Villages of Hillburn and Sloatsburg, and to western portions of unincorporated Ramapo. The extension will involve sewer lines, pump stations, force mains and the construction of an advanced wastewater treatment facility (level III tertiary treatment). The primary potential benefits of the advanced wastewater treatment facility and the extension of sewer service in this area of the Town are: protection of the health of the residents from contamination due to failing septic systems; providing treatment levels that exceed those required by Federal, State and local agencies; and using the effluent from the treatment plant to recharge the sole source aquifer.

While construction of a new wastewater treatment plant may address some of the issues discussed above, careful land use planning of the western portion of Ramapo is needed so that the potential benefits of such a plant are not negated. As noted in the *Development Potential Study* in the Basic Studies document of this comprehensive planning process, the western portion of the Town is the only substantially undeveloped area in the unincorporated area of the Town. Due to the large amount of undeveloped land in this area of the Town, potential exists for a significant amount of additional development in western Ramapo under existing zoning. While potential development of this area is highly constrained by the presence of steep slopes and other environmental factors including waterbodies, floodplains and wetlands, potential development of this area may be most highly influenced by the expansion of central sewage disposal into the area. In addition to this factor, development pressure in this area may increase as a result of improved access to Manhattan via the Secaucus Transfer Station and the Suffern and Sloatsburg rail stations.

The Brunswick aquifer system which underlies the eastern portion of the Town, while less productive than the Ramapo-Mahwah Aquifer, is also tapped for public water supply along with numerous residential and irrigation wells. This aquifer system relies primarily on infiltration and stormwater runoff within the Town for recharge. The use of this

aquifer system for water supply makes open space preservation (for the purposes of maintaining aquifer recharge) throughout the eastern portion of the Town very important as well.

The Mahwah River, which runs along the southeastern boundary of Harriman State Park and generally parallel with Route 202 in the eastern portion of the Town, drains into the Ramapo River and is part of the Ramapo-Mahwah Aquifer. Like the Ramapo River, portions of the Mahwah River have been classified as “A” by the NYSDEC – a classification assigned to protect waters for uses including drinking and cooking. In addition, this area contains steep slopes, floodplains and a number of Class 1 NYSDEC-regulated wetlands. As discussed in the *Development Potential Study* these factors have significantly impacted development potential in this area of the Town.

Floodplains are low-lying land areas near rivers and streams that are subject to recurring inundation from heavy rains or severe snowmelts. Left undisturbed, floodplains provide many beneficial functions, including natural moderation of floods, water quality maintenance, and ground water recharge. Floodplain filling, changes in the amount of impervious land cover, and other activities that alter the drainage characteristics of a watershed can affect the shape and size of floodplains within that watershed. Areas subject to periodic flooding include properties along the Mahwah River and Pascack Brook.

The Town of Ramapo contains a relatively very high proportion of park and open space land within its borders. For example, 50% of the unincorporated area of the Town is public park/open space (31% of the Town as a whole); 2% of the Town is occupied by private recreation/open space; and 20% of the unincorporated area of the Town is vacant or undeveloped (18% of the Town as a whole). The largest contiguous area of open space in the Town consists of a portion of Harriman State Park that occupies the Ramapo Mountain range in the western portion of the Town. In addition, eight County Parks are located, either wholly or partially, within the Town. The Town itself operates a park system that totals over 719 acres.

In addition to active parks, a number of unimproved Town-owned parklands are located throughout the Town. Further, numerous privately-owned recreation and open space areas throughout the Town, primarily in the western portion of the Town, contribute to the sense of open space. It is significant to note that many of the public parks located in the Town encompass some of the most environmentally sensitive portions of the Town, including: South Mountain County Park and Mount Ivy Park in the northeastern portions of the Town; Harriman State Park in the western portion of the Town; Kakiat State Park along the Route 202 corridor; and numerous smaller Town and village-owned parcels, many of which were preserved through the use of average density subdivisions. Open

space resources support outdoor recreation, protect diverse vegetation and wildlife communities, help store and replenish critical surface and groundwater supplies, and in suburban communities serve as buffers between land uses and offer relief from congestion and noise. Efforts should continue to be made to preserve open space for the reasons mentioned above.

Goal and Objectives

Goal: Open space, scenic and environmental resources, such as water bodies, wetlands, floodplains, aquifers, steep slopes, escarpments, ridgelines, rock outcroppings and scenic viewsheds should be preserved and/or protected.

- 1. Objective:** Investigate the suitability of the type and intensity of future development as permitted by existing zoning relative to the ability of the land to appropriately accommodate such development, with lower densities permitted on lands less supportive of, and suitable for, additional development and higher densities permitted in areas that contain fewer sensitive natural resources.
- 2. Objective:** Introduce local laws, regulations and programs that help protect natural resources such as steep slopes, wetlands, stream corridors and watersheds.
- 3. Objective:** Maintain the scenic qualities of the Town's natural resources for the enjoyment of residents and visitors.
- 4. Objective:** Pursue the preservation of environmentally sensitive lands and/or lands suitable for passive recreation through acquisition and/or through alternative means.

Planning Recommendations and Implementation Strategies

One of the most powerful tools that a local government possesses in the protection of environmental resources is the power to regulate the physical development of lands within its borders. Thus, a number of suggested regulatory approaches are discussed below, which if implemented can be very effective in achieving the Town's environmental resource protection objectives, while not depriving land owners of their development rights. Other, more direct approaches, such as open space acquisition, are also recommended.

1. *Designation of the Torne Valley Area of Western Ramapo as a “Critical Environmental Area”*

The New York State Environmental Quality Review Act permits municipalities to designate a specific geographic area having exceptional or unique environmental characteristics as a “critical environmental area” or “CEA.” The importance of CEA designation is that the potential impact of any proposed development or other action on the environmental characteristics of the CEA area is automatically a relevant area of environmental concern and must be evaluated by the lead agency in determining whether a project will have any significant adverse impacts. This provides an additional level of environmental protection from development in these sensitive geographic areas. Much of the Torne Valley area of western Ramapo appears to meet the “exceptional or unique environmental characteristics” for CEA designation, thus the Town will pursue designation of this area as a CEA.

2. *Elimination of Planned Industry (PI) Zoning Existing in the Torne Valley and Amendment of Commercial and Industrial Zoning in Other Environmentally Sensitive Areas.*

The Plan recommends the elimination of Planned Industry (PI) zoning in the Torne Valley in order to prevent any further industrial development in this area. A significant portion of the Torne Valley is located within the Planned Industry (PI) zoning district – a district that allows a wide variety of industrial uses including light manufacturing, warehousing, and freight and truck terminals. As described above, this area contains numerous critical natural resources including the Ramapo-Mahwah Aquifer that has been designated as a sole source aquifer by the United States Environmental Protection Agency and as a “Primary Water Supply Aquifer” by the NYSDEC and the NYSDOH. The Ramapo River and an associated tributary and floodplains run through this area. As also described above, the Ramapo River, which naturally recharges the aquifer, feeds an important nearby well field that provides a third of Rockland's drinking water. Thus, while centrally-located portions of this area contain existing utility functions (i.e., a former municipal landfill and a electric substation), additional development in the form of industrial development in the rest of the area would have considerable potential to cause significant harm to these critical resources. Present threats to this environmentally significant region posed by proponents of a quarry operation and by power plant operators will be virtually eliminated through elimination of industrial zoning in the Torne Valley.

The impact of such zone changes on County facilities in the area will need to be considered by the Town Board in the preparation of the implementation zoning regulations.

The Town should also review the zoning of certain commercially- or industrially-zoned properties that are located in more environmentally sensitive areas of the Town. Generally, large-scale commercial or industrial development has greater potential than residential development to significantly impact sensitive environmental resources considering the greater amount of impervious surfaces (e.g., roof top, parking and other paved areas) and the resulting increase in stormwater runoff, the greater amount of traffic, and the greater amount of overall land disturbance (which results in more tree removal, potential for erosion and sedimentation, etc.) typically involved with such land uses. The Town should consider efforts that would serve to reduce potential impacts of large-scale industrial development in this area, including:

- Amending the types of permitted uses in the zone so as to prohibit uses that have the greatest potential to cause environmental impact;
- Restricting the amount of permitted impervious surfaces; and
- Changing the zoning of portions of this area to a district(s) that permits less intensive land uses.

3. *Special Resource Overlay Zoning*

One approach that may be particularly effective at ensuring appropriate development in certain environmentally sensitive areas of the Town is overlay zoning. In a special resource overlay district, the underlying zoning district (e.g., RR-80, LO, etc.) generally remains in effect, but greater restrictions on the development of properties containing certain environmental resources are imposed in order to minimize impacts to the resources intended to be protected.

One particularly appropriate use of overlay zoning in the Town may be the creation of an aquifer protection overlay zone that would be applied to the portions of the Town underlain by the Ramapo-Mahwah Aquifer. Specific restrictions, such as maximum impervious surface requirements and specific design criteria related to steep slope disturbance, erosion control and stormwater management, could be imposed to minimize impacts to the aquifer. In addition, an overlay district can also contain special clustering or setback provisions to protect environmentally constrained areas such as wetlands and watercourses.

The following areas of the Town are underlain by the Ramapo-Mahwah Aquifer and should be considered for special resource overlay zoning intended to protect the aquifer:

- Portions of the western part of the Town; and
- The Route 202 corridor along the southeastern border of Harriman State Park.

Due to the unique nature and particular environmental sensitivity of the western portion of the Town, the Town should consider placing other portions of the western portion of the Town, not within the aquifer overlay zone but containing steep slopes and/or environmental resources such as water bodies and wetlands, within a resource protection overlay zone intended to preserve those resources. Such an overlay zone should contain standards that specifically require the preservation of such environmental resources and which require that development occur on the least constrained portions of the property. The mandatory use of cluster development (discussed in detail below) within the residentially-zoned portions of this area could be included as a requirement in such overlay district(s). Such a resource protection overlay zone could work in tandem with a watershed protection law and well-field protection program discussed below.

4. *Clustering (also known as Average Density Subdivision)* - Consideration should be given to increasing the use and flexibility of the Town's "average density" subdivision regulations (known as "cluster development" in New York State Town Law). The use of clustering can serve as a means of protecting critical resources – particularly those not already specifically protected. Under the use of clustering the dimensional requirements in the Zoning Law are allowed to be modified so as to provide an alternative permitted method for the layout, configuration and design of lots, buildings, and structures; roads, utility lines and other infrastructure; and parks in order to preserve the natural and scenic qualities of open land. It is important to note, however, that use of this technique does not result in greater density (i.e., number of housing units) than if the land were subdivided into lots conforming to the normally applicable minimum lot size and other dimensional requirements of the zoning district in which the property is located.

The use of "average density" subdivision is not new to the Town of Ramapo. The Town Board enacted a resolution in 1964 authorizing and setting forth the permitted use of "average density" subdivision in the Town and, in fact, a large number of the single-family neighborhoods in the Town approved and developed in the decades to follow were done using "average density." For example, the Concord Drive

neighborhood south of Viola Road is an “average density” subdivision. This neighborhood, though located within the R-40 District (40,000 square feet per lot) contains lots largely ranging between 22,000 and 30,000 square feet in size. The flexibility provided allowed for the preservation of land that eventually augmented Weldler Park.

The 1964 “average density” resolution was essentially geared towards preserving lands for community services (sewer plants, schools, etc.) as the Town went through its most intensive period of suburbanization. Now that the Town is substantially developed and most of its critical facilities are in place, the use of “average density” subdivision has waned significantly over the past two decades or so.

It is recommended that there be increased use of clustering once again, this time with the emphasis on preserving environmental resources located on lands proposed for subdivision (as compared to reserving lands for community services as was done when the Town was developing). The use of clustering subdivision in this manner would be particularly appropriate since a number of the larger undeveloped properties in the Town contain significant environmental features that may have hindered their development in the past and which could be largely preserved if developed in the future using clustering. An important feature of this use of clustering is that landowners and developers are encouraged to pay close attention to the unique topography and natural features of their properties, and to shift development away from ecologically sensitive areas. It simply encourages that development occur in areas of a site that are most suitable to development. The lands set aside using clustering can be preserved using a variety of measures, including acquisition by local government or a non-profit conservation group, ownership by a homeowners association, or through conservation easement.

In order to provide incentives for its use and to increase the effectiveness of it, additional flexibility in the use of clustering should be considered. Consideration should be given to changing the Town’s “average density” requirements so as to:

- Make it easier for the Planning Board to allow or require the use of clustering without having to receive Town Board authorization on a case-by-case basis; and
- Allow greater flexibility in the layout of clustering subdivision, including the form of housing that may be provided in an “average density” development. For example, the use of alternative forms of housing, such as townhouses or semi-attached dwellings, has significant potential to result in the preservation of more open space than single-family detached homes spread out over larger areas.

However, the Town may wish to require Town Board approval on a case-by-case basis for the provision of semi-attached or multi-family units in cluster developments.

In addition to the potential environmental benefits, the use of clustering can also help achieve other benefits, such as lowering site development costs (e.g., less roads, sewers, utilities, land disturbance and tree removal, etc), reducing number of access points to adjacent roads, and allowing a greater variety of layouts and design options for subdivisions including increasing the diversity of housing types in a community.

The following areas have been identified for potential use of clustering because they contain lots identified in the *Development Potential Study* as subject to further subdivision, because the *Comprehensive Plan* recommends that these areas remain within low density residential districts, and because the use of clustering in these areas could serve the purpose of open space preservation and environmental protection:

- The Route 202 corridor along the southeastern border of Harriman State Park;
- The northeastern portion of Ramapo north of Conklin Road;
- The undeveloped properties to the north of Viola Road between College Road and Route 306;
- The underdeveloped properties along West Maple Avenue in the vicinity of Weldler Park;
- The Patrick Farm property
- The underdeveloped properties on the north side of Carlton Road west of its intersection with College Road; and
- The residentially-zoned areas in the western portion of the Town.

[Note: These properties, recommended for cluster development, have been overlain by the “Conservation Development” designation (i.e., over the underlying “Low Density Residential” land use category) on the “Land Use Plan” map.]

While the larger parcels identified above may be particularly suitable for the use of clustering due to their size, location and/or presence of environmental resources, clustering should be considered throughout the Town when there is opportunity to set aside land for one or more of the following purposes:

- Preservation of water recharge areas and aquifers, steep slopes, stream buffer areas, wildlife habitat areas or other environmental resources not specifically protected through other means;
- Preservation of community character through the preservation of buffer zones along roadways and other property boundaries;
- An extension of a public park or linear connection between parks;
- Holding of land for a needed community facility; and/or
- The preservation or protection of streams, wetlands or waterbodies and the lands surrounding such areas.

5. *Addition of "Public Parkland Dedication Development" as a Special Permit use in the R-40 District Which Would Apply to the Wrightman Plateau Property and Surrounding Lands.*

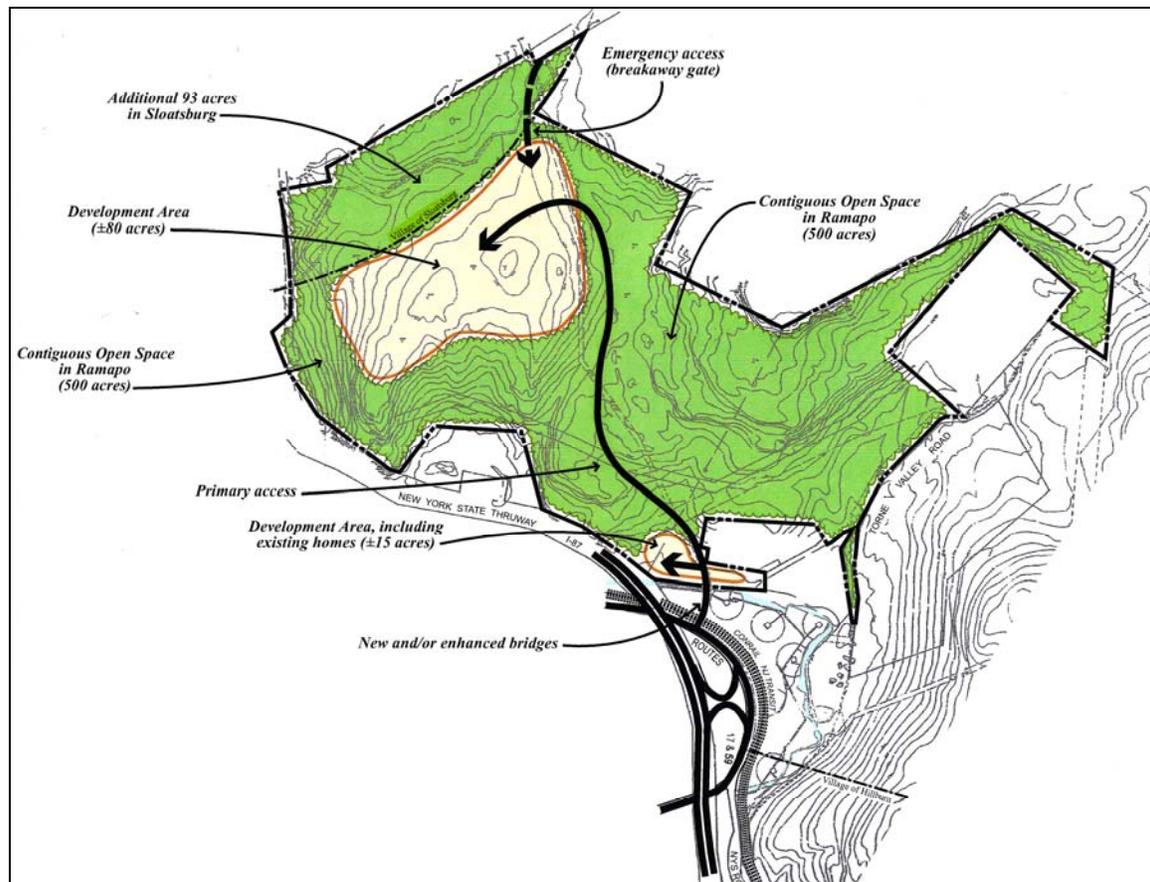
In order to prevent further industrial development in the Torne Valley area of western Ramapo north of Route 17 and to encourage the preservation and dedication of substantial portions of largely undisturbed and environmentally sensitive lands in this area as parkland, a change in zoning to R-40 is proposed for the Wrightman Plateau and adjacent industrially-zoned lands. While the underlying R-40 low density residential zoning district will itself limit the size and type of potential development in this area, significant efforts would be made to limit any development to isolated areas or clusters, and to have areas adjacent or in close proximity to Harriman State Park become public parkland. In order to encourage this, a "public parkland dedication development" should be added to the Zoning Code as a special permit use in the R-40 zoning district, which would be applied to this area in western Ramapo. This special permit use would have the following features:

- Land area of 500 acres or more;
- Mandatory cluster development;

- Dedication in fee of at least 80% of the land as public parkland to the Town, County, State or PIPC;
- The number of units may not exceed the total acreage, less wetlands, less 50% of the areas' steep slopes, multiplied by 43,560 (square feet/acre) divided by 40,000;
- Up to 10% of the units would be restricted to occupancy by moderate income households;
- The proposed use (e.g. private use or for dedication as public parkland) of contiguous properties under the same or related ownership (whether in unincorporated Ramapo or a neighboring municipality) may be considered by the Town in determining the allowable number of units;
- The amended bulk table to be applied to this special permit use must include an adequate minimum lot size for each unit of housing to be constructed; and
- Residential housing may consist of single family detached homes, townhouses or a combination thereof.

The figure below represents a conceptual “development/ preservation plan” for the property. Such plan would cover the “Wrightman Plateau” property as well as adjacent Planned Industry (PI)-zoned land in the Torne Valley. As shown on the figure, this approach would involve the permanent preservation of approximately 500 acres of open space within unincorporated Ramapo (which under the zoning described above would be dedicated in fee as public parkland to the Town, County, State or PIPC). The open space lands would cover roughly 80% of the property. The development area in this conceptual plan would be limited to approximately 100 acres. Adjacent land (about 93 acres) in the Village of Sloatsburg could be sought to be preserved as parkland as well. Coordination with the Village of Sloatsburg would, of course, be necessary.

Conceptual Development/ Preservation Plan of Wrightman Plateau and Surrounding Area



Source: Saccardi & Schiff, Inc.

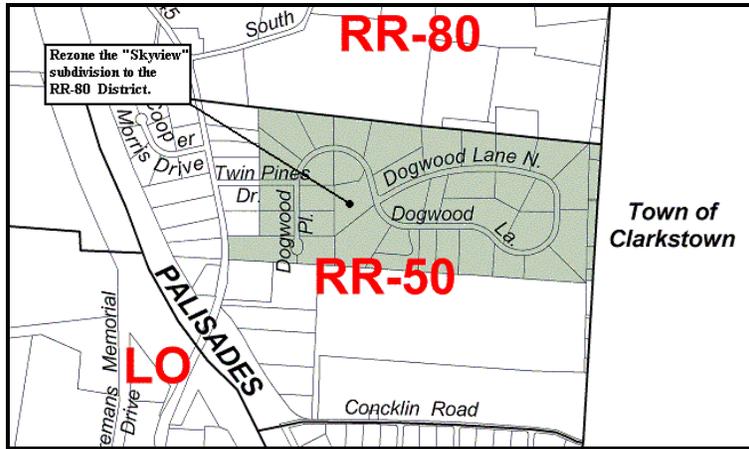
The number of units which would result from application of this zoning approach to the Wrightman Plateau area would not exceed 463 units. Reflective of this density, the property is indicated within the “Low Density Residential” land use classification on the *Land Use Plan*. However, if this property is not developed according to the parameters described above (e.g., if it is proposed to be subdivided in the standard manner), such development should be subject to the property’s existing RR-80 zoning designation.

6. Rezoning Certain Areas to Reflect Their Existing Density

Certain environmentally sensitive areas of the Town have been subdivided at densities (i.e., larger sized lots) that are lower than required by the Town’s Zoning Law.

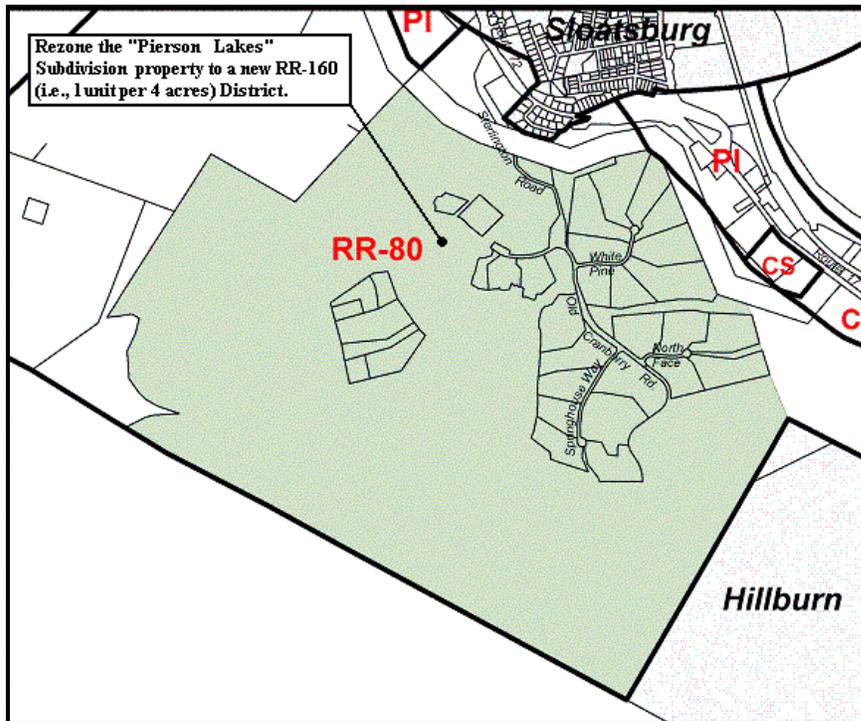
Despite being located within an RR-50 district (50,000 square foot minimum lot size) the Skyview Acres subdivision in the northeast area of the Town, for example, has been subdivided with lots that exceed 80,000 square feet. The Town should consider rezoning such subdivided areas to zoning districts that reflect their existing

development pattern in order to prevent further subdivision that would impact the natural resources and character of such areas.



Although located in the RR-50 District (50,000 square foot lots), the Skyview subdivision has been subdivided with lots that exceed 80,000 square feet. The Town should rezone such areas to zoning districts that reflect their existing development pattern in order to prevent further subdivision that would impact the natural resources and character of such areas. (Map not to scale; zoning districts indicated are existing).

Another such area is the Pierson Lakes subdivision in the western portion of the Town in the RR-80 District south of Route 17. A private restriction (“offering plan”) limits the density of this subdivision to no more than 1 unit for every 4 acres. Phase I of this subdivision has been developed in accordance with this restriction and future development of Phases II and III are also restricted by the terms of the offering plan. The Town should consider rezoning the area encompassing Phases I, II and III of the Pierson Lakes subdivision to a district that reflects the terms of the private restrictions already applied to the area. This would involve the creation of a new zoning district – the RR-160 District – that would limit density of area to no more than 1 unit for every 4 acres. It is noted that the Pierson Lakes subdivision covers a very large portion of the western area of the Town.



The Town should rezone the area encompassing Phases I, II and III of the Pierson Lakes subdivision to a district that reflects the terms of the private restrictions already applied to the area. This would involve the creation of a new zoning district – the RR-160 District – that would limit density of area to no more than 1 unit for every 4 acres. (Map not to scale; zoning districts indicated are existing).

[Note: The Pierson Lakes area is overlain by the “Conservation Development” designation indicating that the use of “average density” subdivision would be appropriate for Phases II and III.]

7. Local Environmental Protection Laws

The Town provides a certain level of regulatory protection to natural resources located within its borders via existing provisions in the Town’s Zoning Law and Subdivision Regulations. In addition, Federal and State law provides additional protection to certain natural resources in the Town including certain State-classified watercourses and wetlands that meet the criteria for federal or State protection within the respective legislation. However, the Town should consider a wetland and watercourse protection to further control environmental impact. Pursuant to the Freshwater Wetlands Act, the NYSDEC regulates wetlands that are at least 12.4 acres or, if smaller, have unusual local importance, and also regulates a 100-foot buffer surrounding these protected wetlands. The U.S. Army Corps of Engineers also

protects wetlands under Section 404 of the Clean Water Act, irrespective of size, although no buffer area is protected.

The Town should investigate whether it would be appropriate to enact a local wetlands law in order to provide an additional level of protection to this resource. Other communities have local wetland and watercourse protection laws that regulate activities within 100 feet of such resources. Such a law provides additional local control in the design of land development proposals in areas containing wetlands and traversed by watercourses.

Another local resource protection law that the Town should consider is a tree harvesting law that would place limitations on the harvesting of trees – this may be of concern in the western portion of the Town.

For ecosystem concerns as well as for scenic value, steep slopes, escarpments, rock outcrop and ridgelines must be safeguarded. Each of them is especially vulnerable to visual, physical or biologic harm. The thousand-year process that produced one half inch of soil on a rock surface can be undone in minutes. Without that soil, an entire natural micro-system may be compromised. Ramapo will review and revise its land use controls to ensure the maximum practicable protection of these natural features. That revision, which may include special zoning overlay districts, will consider development regulations with stringent limits on lot area credit for steep slopes, escarpments, rock outcrop and ridgeline. It also will prohibit, to the extent practicable, buildings sited on such places.

Wetlands and watercourses are important to Ramapo's ecosystem in general and to its water supply in particular. Protection of unregulated and (to the extent not pre-empted by existing law) under-regulated riparian buffer, wetlands and watercourses is essential. To protect these natural assets, Ramapo may supplement existing federal, state and county regulation with local regulation. This regulation also may include watershed, well field and aquifer protection overlay districts in its zoning law. The town is developing a watershed protection law and well field protection program. These are the actions Ramapo contemplates for the Ramapo and Mahwah basins:

- Vegetation buffer zones along watercourses;
- Well-head protection zones;
- Riverbank stabilization and restoration;
- Strict soil erosion and sedimentation controls;
- Public education;
- Monitoring of hazardous material traversing the sole source aquifer and

contingency plans for clean-up of spills; and strengthened enforcement and protection efforts.

8. *Amendment to Minimum Lot Area Requirements*

Section 376-42.A of the Town's Zoning Law currently requires that only 50% of lands that are underwater, within a 100-year floodplain, within certain easements or rights-of-way, or with slopes greater than 25% can be counted towards meeting the minimum lot area requirement at the time of subdivision or site plan review. This section further requires that the lot contain an area equal to at least 50% of the minimum lot area requirement without the specified impediments.

The purpose of Section 376-42.A is to decrease potential impact to such areas by reducing the permitted intensity of development on lands that contain the specified impediments. While effective, the Town should consider enacting all or a combination of the following changes to this section:

- Require that the area of the lot without the specified impediments be a contiguous area and in a location on the lot that makes development on it feasible in light of other considerations (e.g., zoning setbacks);
- Increase the percentage of the lot that must be free of the specified impediments from 50% to a higher percentage (e.g., 75%);
- Require that wetland areas be deducted from minimum lot area requirements;
- Consider decreasing the percentage of such areas that may be counted towards meeting the lot area requirement from 50% to a lower percentage (e.g., 25%); and
- Also apply these provisions to lots intended for non-residential use - the first sentence of Section 376-42.A states that these provisions apply only to minimum lot area requirements for residential uses.

9. *Amendments to the Town's Subdivision Regulations*

The Town should review its Subdivision Regulations in order to determine whether there are standards contained within it that are inconsistent with the objective of minimizing overall land disturbance during subdivision development. For example, many communities have found it appropriate to reduce the required

roadway widths and required cul-de-sac dimensions in order to reduce the amount of land disturbance and impervious surfaces.

10. Open Space Preservation

The Town should continue to investigate lands suitable for permanent preservation. In order to accomplish this, the Town should prepare an open space plan which would inventory lands suitable for preservation and which would identify the potential means by which to acquire specific properties. Ramapo recognizes that open space is a trans-boundary concern. The town will collaborate with its villages in open space planning, protection and acquisition,

In preserving open space, it should be the Town's policy to acquire land and water that:

- Connects other open spaces.
- Safeguards environmentally sensitive resources.
- Preserves agricultural areas.
- Protects historic and cultural places.
- Protects the natural values of the Ramapo and Mahwah Rivers and their riparian buffers (as well as those of their tributaries) while promoting compatible public enjoyment of those watercourses.
- Provides for recreation.
- Limits sprawl.
- Maintains or improves all lakes, rivers and streams in the Town.
- Preserves ridgelines, hilltops and escarpments.

a. Connecting Open Spaces

The Town of Ramapo should continue to acquire open space to form a connected system of parklands or greenways in the tradition of the major parks, parkways and regional trailway system which currently exist in the Town. Preference should be given to:

- Land or water which connect protected open space (State, County or local parks, parkways, nature preserves, cemeteries).
- Land that allows for foot and bicycle and bicycle travel.

- Bodies of water that allow boating.
- Abandoned railroad rights-of-way.
- Scenic or historic roads.
- Existing and proposed trails.

b. Environmentally Sensitive Resources

The Town of Ramapo should protect and preserve properties that have special natural, scenic or environmental significance. Preference should be given to:

- Steep slopes.
- Wetlands.
- Ridgelines.
- Viewsheds, especially those visible for long distances, such as those seen from the Palisades Interstate Parkway and the New York State Thruway.
- High places, especially those visible from long distances, such as Torne Mountain.
- Land and water with potential for restoring wetland and other environmentally sensitive areas that have been altered or adversely affected.
- Mature woodlands.
- Land or water that provides special habitat for plants, fish or wildlife.
- Land or water that provides habitat corridors.
- Properties which can be restored or modified to provide biodiversity or other environmental benefits.
- Land and water within a Critical Environmental Area (A specific geographic area designated by a State or local agency, having exceptional or unique environmental characteristics).

c. Farms

The Town of Ramapo should protect and encourage the opportunity to farm. Preference should be given to:

- Farms, crop fields, orchards, retail stands, timber forest, or horse farms.
- Fallow agricultural lands or orchards.

d. Historic and Cultural Places

The Town of Ramapo should protect or preserve historically or culturally significant properties. Preference should be given to:

- Historically significant properties which are endangered.
- Properties listed on or nominated to the New York State or National Registers of Historic Places or on the County Historical Society's Inventory of Historic Places.
- Properties within Town-designated historic districts.
- Properties with cultural features, such as museums, art galleries or archeological sites.
- Properties with industrial historic significance, such as mill sites, furnaces or riverfront structures.
- Stone walls.
- Military camps, posts or bases.
- Bridges.

e. Ramapo and Mahwah River

The Town of Ramapo should acquire or otherwise protect the Ramapo and Mahwah River riparian areas for protection and compatible access, use and scenic enjoyment of the public. Preference should be given to:

- River properties with deteriorating, substandard or incompatible development that can be reclaimed for open space or park use.
- Properties having unique natural features or which offer unusual recreational opportunities.
- Properties which foster local revitalization and economic development opportunities at or near the riverfront.

f. Open Space Through Redevelopment

The Town of Ramapo should encourage provision of open space through redevelopment. Preference should be given to:

- Properties located within densely populated neighborhoods.
- Properties which provide community parks and greenway paths.
- Properties which eliminate no-longer viable strip malls.
- Properties which will provide vest pocket parks.

g. Recreation

The Town of Ramapo should promote opportunities for recreation compatible with the existing natural resources. Preference should be given to:

- Properties that provide unique recreation or other benefits not available or accessible elsewhere in the Town.
- Properties that protect or connect trailways and greenways.
- Properties that provide access for water-related activities.
- Properties that can be developed as neighborhood parks.

h. Rivers and Streams

The Town of Ramapo should protect rivers and streams, including their riparian buffers, banks and floodplains. Preference should be given to:

- Properties within the 100-year floodplain of rivers and streams.
- Properties adjacent to the water bodies identified as stressed, threatened, impaired, or precluded on the New York State Department of Environmental Conservation Priority Water Body List.
- Properties adjacent to Class A (a water body classified by the New York State Department of Environmental Conservation as suitable for swimming) rivers or streams, or rivers and streams which support fish.
- Riparian buffers (an area of trees, shrubs and herbaceous vegetation located adjacent to and upslope from a lake, stream or other body of water which maintains stream system integrity, protects water quality and improves the habitat of plants and animals on land and in the water) along stream or river corridors.

- Properties that surround or adjoin springs or intermittent streams.
- i. Watershed

The Town of Ramapo should protect its watersheds (the land that water flows across or under on its way to a stream, river, lake, ground water supply or coastal water body.) Preference should be given to:

- Properties which protect water quality including groundwater recharge areas and aquifers (a geological formation of saturated rock or sediment that is both porous and permeable enough to yield usable quantities of water to a well or spring).
- Properties within or related to the Ramapo River sole source aquifer.
- Wetlands, floodplains and riparian buffers.
- Properties that contain springs.

Consistent with the above considerations, the Town has acquired a 50-acre area along the Ramapo River that would include the Torne Valley wellfields and lands around them. The acquisition of this area serves to protect the Torne Valley wellfields and would allow the creation of a Town riverfront park with opportunities for fishing, canoeing and recreational facilities. In addition to the above potential land acquisitions, the Town should look into acquiring other properties in the Torne Valley for the preservation and recreational purposes.

Open Space Protection Committee. The town has established an Open Space Protection Committee. It will function with a town-wide perspective and town-wide representation that includes villages. It will advise the Town Board on open space protection policy, on designation of parcels to be protected, on financing that protection, on acquisition priorities and on management plans for acquired land.

The Town has also created a Park Foundation that is investigating the acquisition of properties and enhancements to existing parks and open space opportunities.

[Note: There is more discussion of open space in the “Community Resources and Character” section, including potential opportunities for creating linear open space connections through certain areas of the Town for the purpose of increasing opportunities for passive recreation such as hiking trails.]

A wide array of methods and tools can be used to set aside open space, many at relatively little cost to the Town. The approaches that may be particularly suitable in the Town of Ramapo may contain one or a combination of the following:

a. Public Acquisition of Land for Open Space (Fee Simple Purchase)

The most obvious way of preserving land as open space is to publicly purchase and acquire land outright, in fee simple, and to dedicate the land for park and open space use. The main advantage of this approach is that it achieves a permanent and lasting benefit, and affords a maximum degree of public control over the use of land. Purchasing land, though, particularly in a suburbanized part of a metropolitan area of New York like the Town of Ramapo, is expensive. However, a wide variety of funding sources may be useful and should be pursued. Purchase of less than fee interest (such as conservation easements) could also be pursued.

b. County of Rockland Open Space Acquisition Program.

The County of Rockland is currently evaluating properties for inclusion in its open space acquisition program. Currently, the following properties in the Town of Ramapo are being considered for acquisition, or have recently been acquired, by the County:

- *Erickson Property (30 acres) in Monsey* – According to the County’s website, this is one of the five remaining fruit and vegetable farms in Rockland and is under considerable development pressure. The property connects to a Town of Ramapo Park. Further, since it abuts a United Water well field, preserving the property as open space will protect the water quality in the area.
- *Johnsontown Road properties (235 acres) in around the Village of Sloatsburg in the western portion of the Town* – According to the County’s website, acquisition of this site, which consists of three lots adjacent to Dater Mountain County Park and Harriman State Park and which consists of steep rocky slopes and wetlands, would provide access to Dater Mountain County Park. This park is currently landlocked and may include an extensive trail system that would feature the "Charcoal Pits" and scenic vistas.

- *Concklin Farm in northeast Ramapo* – Rockland County recently bought the final acres for their acquisition of the 100-acre Orchards of Concklin property located along South Mountain Road in the northeast portion of the Town of Ramapo.

The Town should coordinate with the County of Rockland in identifying properties for preservation, identifying and securing funding sources for acquisition, and otherwise implementing the open space preservation goals of the Town and County.

c. Conservation Easements

Owning land carries with it a “bundle of rights.” The right to use one’s land, and to exclude others from using and enjoying that land are rights typically associated with owning land. However, owners of land may be willing to part with certain of those rights for fair and due consideration, while nevertheless retaining underlying ownership of land.

A conservation easement is a deed restriction that limits the right of a property owner to use certain portions of his or her land in some way. In certain cases a conservation easement might restrict the ability of the property owner to build something on the land. In other cases it might allow public access to the property. A conservation easement might also impose certain positive obligations and responsibilities on the owner in terms of managing and caring for the property.

Conservation easements can be established in a number of ways. They can be required or negotiated by local governments in the process of reviewing plans for proposed developments. In addition, they can be purchased by, or donated to, public or non-profit conservation organizations. For example, in Dutchess County, New York, the Dutchess County Land Conservancy has succeeded in obtaining conservation easements on over 10,500 acres of land. Money for the purchase of easements was raised from private donations, and a large portion of the conservation easements were donated by private property owners.

d. Charitable Donations and Gifts of Land and Easements

Public open space objectives in many communities have been significantly advanced by generous charitable donations of money, as well as by private gifts of land and conservation easements.

Gifts of land can be directed in a number of different ways. Land can be donated to private, non-profit organizations dedicated to the purpose of protecting and conserving open space or to local units of government (i.e., cities, villages and towns) or to the County.

As a procedural matter, all offers to donate land to local governments (as well as non-profit organizations) need to be formally accepted before they take effect. An owner of land cannot simply decide unilaterally to transfer ownership of a parcel of land to another party. Owning land is a responsibility, which means that a party that accepts ownership of land is also accepting responsibility for maintaining and managing the property. Land donations that meet approved open space criteria and that advance public park and open space objectives should obviously be encouraged and accepted. However, land donations which do not meet approved criteria or advance public park and open space objectives should probably not be accepted.

Parties which donate land for open space and conservation purposes in most cases qualify for Federal tax benefits. However, properties that are donated must provide “significant public benefit” as defined by the Internal Revenue Code by meeting one or more of the following conditions: (1) protection of relatively natural habitats for fish, wildlife or plants; (2) preservation of land for public outdoor recreation or education; (3) preservation of open space, including farm and forest land; or (4) preservation of historically important land or buildings.

e. Non-Profit Organizations and Land Trusts

Land trusts can play a crucial role in preserving and protecting open space and conservation areas. A Land Trust is a private, non-profit organization (comprised mostly of local citizens) formed to protect and preserve valued natural and cultural resource areas, open space and ecologically significant and sensitive areas. Trusts usually maintain a revolving fund that is available for quick and strategic purchases of land. Land Trusts receive much of their financial support through private donations and memberships, but they are also eligible to receive State and Federal funding as well as grants from foundations. Land acquired by trusts is often resold with restrictive covenants.

Because they are non-governmental organizations, Land Trusts are in a position to approach landowners relative to possible gifts of land, and to enter into negotiations regarding the possible terms under which land might be acquired and permanently protected. Indeed, people who own land are often much more willing to talk and negotiate with them than they would be with a government agency. Land trusts can also act much more quickly than governmental units in reaching the terms of a legal agreement and in taking control of a property. In many cases, this can be extremely important because opportunities to protect and preserve properties often present themselves quite suddenly. Where it is not possible to act relatively quickly, the opportunity to preserve open space can sometimes irrevocably be lost.

f. Dedications of Land During Subdivision

As discussed above, local governments can obtain open space land when a new subdivision is approved, primarily through the use of “average density” (“cluster”) subdivisions. A conservation easement on the dedicated area would assure that the land cannot be developed in the future. The land dedicated to open space can be held in common ownership by a homeowners association, can be given to a non-profit conservation organization, or may become public property.

Such dedication of land provides a way of assuring that at least some open space is set aside as land is developed. The one shortcoming of this approach is that it can tend to produce scattered small pieces of open space that are not connected to one another and that are of relatively little value other than to the people who live in the developments where the land has been dedicated. However, the Town should evaluate areas proposed for preservation during subdivision against the objectives described above (e.g., would it provide a linear connection between parks and other open space areas or preserve a critical environmental resource).

- g. Money in lieu of fees – Ramapo will evaluate the basis for the money in-lieu of land fees it collects in its subdivision and site plan approval process. To provide for community recreational needs as their open land is developed, New York authorizes its towns either to collect fees from developers or to take land for parks from the residential property being developed. The money collected, if that is the town’s choice, is meant to provide for present and anticipated park and recreational needs. While the Town in the past has exacted a predetermined per-unit fee, Ramapo may consider a fee based on the market value of the land proposed for development.

11. *Watershed Protection Law/Well-Field Protection Program*

The Town is currently in the process of developing a Watershed Protection Law/Well-Field Protection Program. The intention is to implement a water preservation plan that includes the following:

- Vegetation buffer zones along watercourses;
- Wellhead protection zones;
- Riverbank stabilization and restoration;
- Strict soil erosion and sedimentation controls;
- Public education;
- Monitoring of hazardous material traversing the sole source aquifer and contingency plans for clean-up of spills; and
- Strengthened enforcement and protection efforts.

12. *Other.*

- a. The Hudson River Valley Greenway. The Town should continue to participate in the Hudson River Valley Greenway program. The Hudson River Valley Greenway Compact is a state-sponsored program created to develop a voluntary regional strategy for preserving the scenic, natural, historic, cultural and recreational resources of the Hudson River Valley and encouraging compatible economic development. In exchange for participation in the Greenway program, communities can receive technical assistance and funding for community planning projects that address natural and cultural resource protection, regional planning, economic development, public access and heritage and environmental education. Funding priority is placed on projects that involve intermunicipal collaboration and partnerships to develop, improve, protect or rehabilitate: (1) Greenway Trails; (2) downtown/ main street/ corridor revitalization such as improvements to building facades, streetscapes and pedestrian access; (3) waterfront enhancement projects including those that promote public access to waterways; (4) projects that will protect, preserve, or enhance sensitive open space areas of regional significance.

- b. Phase II Storm Water Program

Since 1990, the U.S. Environmental Protection Agency (EPA) has targeted stormwater as a significant water pollutant contributor. At that time, the EPA promulgated several regulations that required large municipalities (with a population over 100,000), industries, and construction sites over five acres to implement stormwater plans and obtain discharge permits.

The Storm Water Phase II Final Rule is the next step in EPA's effort to preserve, protect, and improve the Nation's water resources from polluted storm water runoff. Phase II is intended to further reduce adverse impacts to water quality and aquatic habitat by instituting the use of controls on the unregulated sources of storm water discharges that have the greatest likelihood of causing continued environmental degradation. The Phase II program expands the Phase I program by requiring additional operators of municipal separate storm sewer (a conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) in urbanized areas and operators of small construction sites (i.e., one to five acres in size) to implement programs and practices to control polluted storm water runoff. The program requires municipalities within urbanized areas to apply for a National Pollutant Discharge Elimination System (NPDES) permit by March 10, 2003. The Town of Ramapo has been identified as a municipality that will be required to develop a Phase II storm water program. Such a program must include the following elements:

- Public Education and Outreach – inform public of storm water pollutant impacts;
- Public Participation/Involvement – provide public opportunity to participate in program developments;
- Illicit Discharge Detection and Elimination – develop and implement a plan to detect and eliminate illicit discharges;
- Construction Site Runoff – develop and implement a plan to control erosion and sediment runoff from sites that disturb more than one acre;
- Post Construction Runoff Control – develop and implement a plan to address discharges from post construction areas; and

- Pollution Prevention/Good Housekeeping – develop and implement a plan to prevent runoff from municipal operations.

The Town should coordinate with the County and the villages within the Town to comply with requirements of this program.

- c. Best Management Practices. The Town should require that land use development proposals (e.g., subdivisions and site plans) incorporate best management practices with regard to stormwater management, erosion and sedimentation control, tree preservation, and issues of environmental protection. The Town should review its subdivision regulations and site plan design standards and revise them to reflect the most up-to-date best management practices.

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