Pequannock Township **Town-wide Park and Recreation Master Plan**

Morris County, New Jersey



Prepared by: Professional Planning and Engineering, a division of Pennoni Associates, Inc.

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Acknowledgements

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Pequannock Township Recreation Organizations

Boys and Girls Club of Northwest New Jersey
Pequannock Lacrosse Club
Pequannock Little League
Pequannock Soccer Club



Acknowledgements



Executive Summary

Pequannock Township's unique location at the confluence of three rivers and at the base of mountains and the Township's history affords the Township the opportunity to provide its residents with a wide variety of recreation and leisure opportunities.

Pequannock Township has 646.6 acres of open space land utilized for park and recreation purposes. Twenty four acres (24-acres) of two parks, Rockledge and Cherry Street parks, remain undeveloped. The developed parks provide a variety of recreational opportunities ranging from hiking, playgrounds, athletic fields and courts, picnic areas, lake swimming, boating, fishing and camping.



Figure 1 ~ Pequannock Township location in Morris County showing related open waters.

This Town-wide Park and Recreation Master Plan (Master Plan) evaluates the number and quality of facilities provided to Pequannock Township residents against the anticipated needs and provides recommendations for improvements and acquisitions to meet the anticipated demand for recreational facilities in the Township.

VISION, MISSION AND GOALS

The Township's Recreation Advisory Board and Park and Recreation Director developed vision and mission statements and goals and objectives to set the framework for the master plan. See Chapter 2 to review the objectives and associated statements.

Vision

To provide a well rounded recreation and leisure experiences for all members of the community.

Mission Statement

The Township will meet the physical, mental, cultural and social needs of Pequannock residents by providing the best possible overall park system through programs, services, facilities and structures and by preserving and developing new and existing lands and their improvements.



Goals

Goal 1: To improve the quality of life for community residents.

<u>Goal 2</u>: Ensure equitable access to safe and attractive parks and facilities that meet community needs.

Goal 3: Actively pursue adequate open space for future recreation facilities.

<u>Goal 4</u>: To preserve and enhance the social and ecological environment for Township residents.

<u>Goal 5</u>: Implement and update the Parks and Recreation Master Plan (PRMP) so it remains a dynamic guide for the Park and Recreation Department.

Goal 6: Management of the park system to the highest standards.

DEMOGRAPHIC ANALYSIS

We must remember as we go through the planning process for the Township-wide Recreation Master Plan that we are planning for people. Since the level and quantity of parks and recreation services demand is directly related to the number of people demanding the given services, changes in both the number and composition of that local population affects local government planning. A youthful population makes different demands on parks facilities than a much older population does, and an increase in certain cultural groups - Hispanics, for example- can create yet another set of demands.

Since estimates of population change are crucial to planning, budgeting and financing park improvements, they are essential to this Master Plan.

The population has been increasing in Pequannock over the last decade and, according to the most recent Census information, is predicted to continue to rise. The greatest change over the last decade is found in the under 5 age group and 65 and older age group with an increase of 21.72% and 25.38% respectively. The remaining age groups are remaining stable or increasing slightly over the last decade at 0.52% for age 5-24, 5.08% for age 25-44 and 9.55% for age 45-64.

The largest percent of the population at 29.64%, however, is found in the 25-44 age group. Township residents age 5-24 have been steadily decreasing over the last thirty years and they do not dominate the Township population now as they had done historically. Age 5-24 and age 45-64 make up a similar ratio of the population at 24.83% and 24.63% respectively. Residents 65 and older make up 14.08% of the population and children under 5 make up 6.82% of the population.



RECREATION STANDARDS AND NEEDS ASSESSMENT

Balanced Land Use Guidelines

New Jersey's State Comprehensive Outdoor and Recreation Plan identifies the goal for New Jersey municipalities to provide three percent (3%) of the total developable lands within the municipality for recreation uses. This balanced land use approach takes into consideration the extent of wetlands and steep slopes in the municipality and removes those lands from the total developable lands within the municipality.

According to this methodology Pequannock Township, with its 647 acres of park land, has preserved fourteen percent (14%) of its overall lands and thirty percent (30%) of the Township's developable lands for recreation purposes.

This analysis is unevenly balanced, however, due to eighty-two percent (82%) of the preserved lands suitable only for passive recreation or resource areas due to wetlands and steep slopes on the site. So while there is a significant amount of lands preserved for recreation purposes the Township does not have a balance between lands suitable for active and passive recreation.

Population-based Recreation Open Space Needs Assessment

In 1995, the National Recreation and Park Association (NRPA), in collaboration with the American Academy for Park and Recreation Administration, published "Park, recreation, Open Space and Greenway Guidelines." The revised guidelines acknowledge that each community is unique, and that it is difficult to apply one set of special standards to all communities as had been done in the past. Instead, the guidelines reflect a more systematic planning approach that takes into account the unique needs, desires and resources of communities as well as changing environmental, social, economic and demographic trends.

With this framework in mind, the NRPA takes a different approach to park planning, analyzing the types of parks and facilities required for each individual community, along with the amount of acreage required to site those kinds of parks and facilities. The process includes identifying the classifications of parks and the level of service for each facility within each park classification.

Table 1 below identifies Pequannock Township's parks by classification, the recommended acreage per classification and the surplus or deficit per classification. There are no recommended standards for special use parks or natural resource areas. Review of the table shows that based upon this analysis there is a deficit of park land in all classifications with the greatest deficit in the Sports complex classification.



Facility Name	Size (Ac.)	Classification	Total per classification	Total of Developable Area	Acreage/Population (2005) Ratio Standard	Deficit/Surpluss
Lyon Park	0.1	M				
Riverside Park	2	M				
Mini Park			2.1	0.1	8	-8
Foothills Park	27	N				
Lyman Park	20	N				
Neighborhood Park			47	23	31	-8
Greenview Park	31	С				
Community Park			31	26	42	-16
Town Hall Fields	7	sc				
Washington Park	14	sc				
Hillview Park	11	SP				
Sports Complex			32	21	78	-46
Hidden Cove	20	NRA				
Aquatic Park	77	NRA				
Mountainside Park	310	NRA				
Meyers Brook	26	NRA				
Natural Resource Area			433	50	-	-
Pequannock Valley Park	27	SU				
Woodland Lake	40	SU				
Special Use			67	24	-	-
Cherry Street Park	13.5	U				
Rockledge Park	21	U				
Undeveloped			34.5	9	-	
Total Acreage Total Acreage Less NRA areas	646.6 213.6					

Table 1 ~ Parks by classification, standards and deficiencies / surplus

Recreation Need by Park Classification

The majority of the Township parks are located in the central to southern area of the Township. This is most likely due to the location of wetlands and floodplain influencing the initial settlement of the Township with the first homesteads in the north central section of town. When parks and recreation development came to the forefront there was more opportunity to set aside lands for recreation and leisure in the central and southern part of town. This provides an imbalance to access to the provided parks and their recreation and leisure facilities. The residents in the southern and south-central part of the Township have better access to facilities than those in the north and north-central part of the Township.

When evaluating the deficit of park classifications and the typical uses within those park classes the park classification hierarchy is taken into consideration. For example, the facilities found in a Mini Park may also be found in all of the other park classifications except Natural Resource Area and Greenways. This could mean that a Neighborhood Park can supply the demand for a Mini Park depending upon the location within the Township.

In addition, School Complexes may also partially supply the demand for certain park classifications based upon the available facilities and availability for use. In Peguannock, Stephen J. Grace and Hillview Elementary Schools have playgrounds.



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They may act as Mini Parks, Neighborhood Parks or Sports Complexes during non-school hours.

Mini Parks

Mini Parks and the typical facilities of such parks are well distributed in the southern section of town. In addition to Lyon Park and Riverside Park, Greenview Park and Stephen J. Grace Elementary School are in the southern section of town. These provide the facilities that a Mini Park would and are well distributed in the southern section of town.

Hillview Elementary School serves as a Mini Park in the center of town. There is a gap in service for the residents to the south and west of the school.

Two sites in the northern section of the Township provide the facilities found in a Mini park, North Boulevard School and Foothills Park. Both sites have a playground. Access to Foothills Park, however, is by vehicle not by foot as there is no safe pedestrian access to the park. There is a gap in service between Hillview and North Boulevard Schools north and south and east to west in the Township.

Neighborhood Parks

The Neighborhood Parks are located at opposite ends of the Township (northwest and southeast). Greenview Park, a Community Park, can serve the need as a Neighborhood Park. There is a gap in service with no Neighborhood Park in the central or the northeast section of town.

Community Park

Greenview Park is the only Community Park within the Township. This serves the residents in the southwest corner of town with a gap in service for the remainder of the Township.

Sports Complex

Sports Complex should be strategically located within the Township. The current facilities are centrally located on the eastern side of town.

School Complex

The schools in Pequannock Township are located in the north-south central corridor. They serve as Mini Parks, Neighborhood Parks, and Sports Complexes. As these lands are not managed by Pequannock Township they were not included within the surplus/deficit calculations but will be considered as part of the facility recommendations.

FACILITY NEED

This Master Plan evaluates the facility demand based upon previous information discussed in this report, input from the Parks and Recreation Director, the Recreation



Advisory Board and stakeholders. This information as well as analyzing the geographical location of the facilities was used in developing the facility needs.

Pequannock Township provides a variety of indoor and outdoor recreation and leisure opportunities for residents. There is a need for additional facilities to support the demand for these programs.

The outdoor facilities provided include boating, camping, fishing, hiking and nature trails, picnic areas, ice skating, playgrounds, swimming and athletic fields. The Township also has a Senior Center. The Township has a need to provide 3-4 additional soccer/lacrosse fields and one baseball field to meet the growing demand. The other outdoor activities are adequate in number. There are opportunities to capitalize on the undeveloped lands to augment these facilities. This, however, is not a priority.

The Township does not have any facilities to support other indoor programs such as basketball, volleyball, jazzercise, aerobics, little crafters, hands on fun, children's ceramics, karate, etc. The Parks and Recreation Department relies on Board of Education (BOE) facilities for these programs. Time and space for these programs in BOE facilities is getting less and less over the years as the BOE before school and after school programming is expanding. The Township needs an indoor facility to continue to be able to provide the level of programming and services the residents are accustomed to and the Township has the ability to provide with available facilities.

RECOMMENDATIONS

The following are actions to be completed based upon recommendations discussed in Chapter 7 of this report. The tasks are listed in priority order within each task category.

Immediate Actions (within one year)

- 1. Complete Greenview Park parking reconfiguration improvements.
- 2. Develop an action plan to pursue funding sources identified in the Open Space and Recreation Plan to fund the recommended improvements.
- 3. Acquire funding to implement Hillview Fields improvements.
- 4. Remove DPW dump yard from Washington Park and remediate to residential standards. Conduct a pre-application meeting with the NJ DEP to discuss the proposed improvements.
- 5. Complete topographic and utility mapping for Washington Park improvements.
- 6. Develop and implement a comprehensive maintenance operations tasks and schedule for each facility.
- 7. Begin negotiations for acquisition / agreement for use of Block 902 Lot 4 as a soccer / lacrosse field with supporting parking.
- 8. Continue dialogue with the Board of Education on shared use for athletic fields



- and existing field reconfiguration to expand field usage. Work with the sports groups in town to leverage funding and manpower.
- 9. Further explore the programming and location for an indoor community recreation facility.
- 10. Complete master plan for Pequannock Valley Park.
- 11. Develop a plan to coordinate all recreational opportunities and organizations within the Township with possible shared scheduling of facilities.
- 12. Complete site development / park and recreation design guidelines.
- 13. Develop signage system and hierarchy.
- 14. Contact owners of farm assessed lands to encourage their participation in the farmland preservation program.

Intermediate Actions (within three years)

- 1. Jointly implement Board of Education athletic field improvements with the BOE and local recreation groups.
- 2. Develop a self-guided tour map along the adopted greenway identifying cultural, social, recreational and environmental points of interest.
- 3. Complete wetlands mapping for Rockledge Park, Cherry Street Park, Hidden Cove and Lyman Park.
- 4. Update Aquatic Park Master Plan
- 5. Develop "Friends of the Park" program.
- 6. Develop and adopt a Township Greenway Network.
- 7. Complete Hillview Fields Improvements.
- 8. Complete Washington Park improvements.
- 9. Complete Rockledge Park improvements
- 10. Implement signage improvements.

Intermediate Actions (within five years)

- 1. Complete soccer / lacrosse field improvements at Aquatic Park.
- Riverside Park expansion feasibility study.
- 3. Complete Aquatic Park Master Plan recommendations.
- 4. Complete Hidden Cove improvements.
- 5. Complete Cherry Street Park improvements.
- 6. Implement Aquatic Park Master Plan.
- 7. Acquisition of parcels adjacent to Lyman Park (Block 4112 Lots 1&16).
- 8. Complete fundraising for Community Recreation Center.



Long Term Actions (within 10 years)

- 1. Implement Community Recreation Center.
- 2. Complete Woodland Lake improvements.
- 3. Complete remainder of Greenview Park improvements.
- 4. Update Park and Recreation Master Plan including the completion of a statistically accurate user survey.

Ongoing Actions

- 1. Continued park maintenance.
- 2. Continue comprehensive maintenance operations tasks and schedule for each facility.
- 3. Continued signage maintenance.
- 4. Continued streetscape improvements maintenance.
- 5. Add all new land acquisitions to the Township ROSI.
- 6. Actively participate in regional environmental issues (i.e. the Pia Costa Tract wetland mitigation bank) and recreation issues (i.e. the Pequannock River Trail).
- 7. Monitor land acquisition opportunities for use as recreational facilities.
- 8. Monitor environmental regulations and possible weakening of regulations which would increase land acquisition for environmental preservation up in priority.
- 9. Work with Morris County to implement regional trails within the Township including along the railroad right-of-way.
- 10. Designate a Recreation Advisory Board member as liaison to each of the environmental, historic, open space and street tree commissions.
- 11. Encourage stewardship of the parks and social ties through the "Friends of the Park" program.
- 12. Seek continued input from the community regarding recreation programs and facilities.
- 13. Implement the fund raising action plan.



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Pequannock Township Town-wide Park and Recreation Master Plan						

Chapter 1 - Introduction

Pequannock Township is located in the northeast corner of Morris County. It is bounded on the east by the Pompton and Ramapo Rivers. The confluence of the Pequannock, Ramapo and Pompton Rivers is located in Aquatic Park in the northeast corner of the Township (see Figure 1 and Map 1).

The fertile valley at this confluence drew settlers, circa 1700, who farmed all types of vegetables, flax and raised livestock. Many types of mills were built for processing of the farming products. In 1740 Pequannock Township was formed by the General Session of Peace. The initial incorporation of Peguannock Township was 74,000 acres. Succession from the Township began in 1844. By the 1920's the current community of 7.04 square miles, which consists of Pequannock and Pompton Plains, was all that remained as Pequannock Township (Pequannock Township Master Plan, p. 10-12).



Pequannock Township has 646.6 acres of open space land utilized for park and recreation purposes (see Map 1)

Figure 2 ~ Pequannock Township location in Morris County showing related open waters.

and recreation purposes (see Map 1). Twenty four acres (24-acres) of two parks, Rockledge and Cherry Street parks, remain undeveloped. The developed parks provide a variety of recreational opportunities ranging from hiking, playgrounds, athletic fields and courts, picnic areas, lake swimming, boating, fishing and camping.

This Town-wide Park and Recreation Master Plan (Master Plan) evaluates the number and quality of facilities provided to Pequannock Township residents against the anticipated needs and provides recommendations for improvements and acquisitions to meet the anticipated demand for recreational facilities in the Township.

A master plan is an important tool developed to manage a study area and guide its future. A master plan takes into account not only the physical environment, but also the economic and social aspects that have impacts on the study area's growth and management.

The purpose of this master plan is to provide a framework, or roadmap, for the restoration and future improvements within South Mountain Reservation. The master plan provides for responsible stewardship of valuable recreational, ecological, social, and historic resources amidst a suburban environment. Goals are understood as a part



of the process. They are tested against historic, current and anticipated conditions and needs. From this process a series of recommendations were developed for implementation to address the identified needs.

The Master Plan is a living document and should be continuously consulted and updated as improvements are completed and as the residents interests change.

MASTER PLAN PROCESS

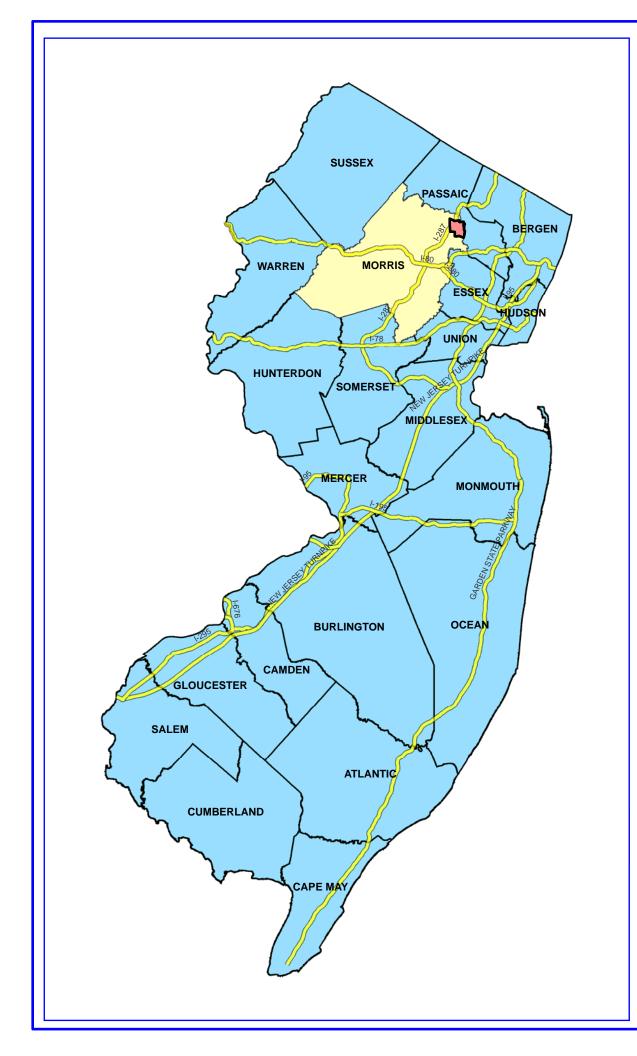
The Master Plan process began with the inventory and analysis of Pequannock Township's existing resources. This includes site visits to the existing parks to evaluative their facilities and natural resources by sight. The recourses evaluated included athletic fields, picnic areas, roadways, parking areas, trails, buildings, structures, ponds/lakes and furnishings.

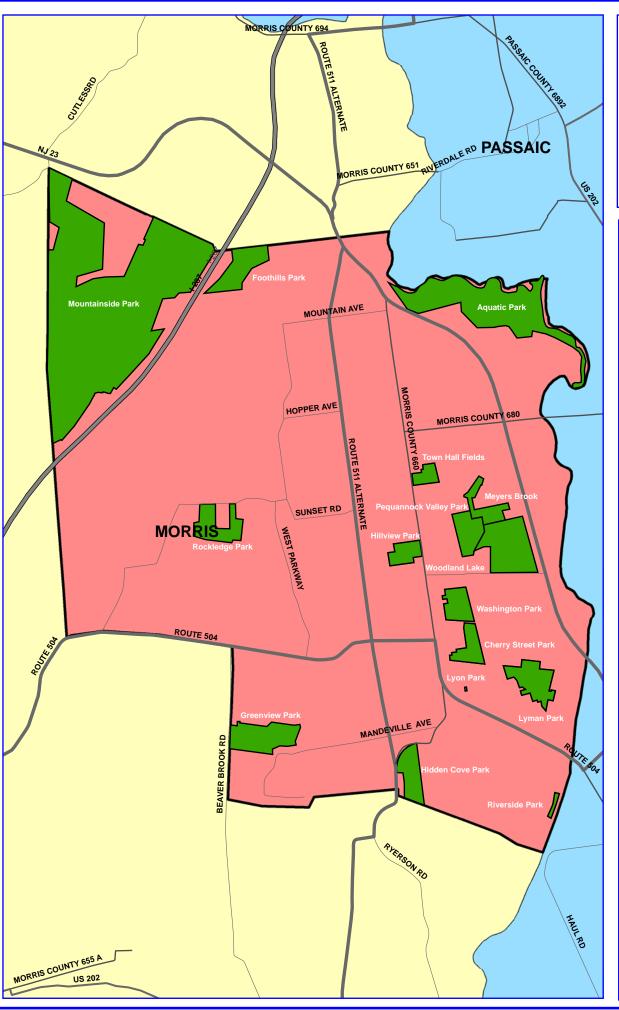
On-site investigations were conducted from June 2006 to November 2006 to observe general conditions, take measurements, photographs and verify locations. Field data was combined with information from New Jersey Department of Environmental Protection (NJDEP), New Jersey Geologic Survey, New Jersey Department of Transportation and the New Jersey Image Warehouse.

Projected capital improvement plans were reviewed. This included the Aquatic Park Master Plan. There were no past capital improvement plans identified. A needs assessment was developed speaking with stakeholders, Township staff and administration and evaluating the number and quality of the existing facilities against the anticipated population. The recreation and leisure facilities provided by Pequannock Township were evaluated against similar communities in Morris County and the neighboring municipalities.

Recommendations were developed from the synthesis and analysis of all of this information. These include acquisition opportunities and capital improvements and prioritization of the identified tasks. Finally a 10-year capital improvement plan was recommended.







Pequannock Township Recreation Master Plan

Context Map Map 1





Chapter 2 - Town-wide Master Plan Vision, Mission, Goals and Objectives

VISION STATEMENT

To provide a well rounded recreation and leisure experiences for all members of the community.

MISSION STATEMENT

The Township will meet the physical, mental, cultural and social needs of Pequannock residents by providing the best possible overall park system through programs, services, facilities and structures and by preserving and developing new and existing lands and their improvements.

GOALS AND OBJECTIVES:

Goal 1: To improve the quality of life for community residents.

<u>Objective 1.1</u>: Enhance community spaces such as parks, streetscapes and cultural resources.

 Statement: Parks, streetscapes cultural resources and environmental resources help define the character of Pequannock Township. The Department of Parks and Recreation through the Director in concert with provide Township agencies and organizations will strive to improve and maintain these vital resources.

Objective 1.2: Provide community activities and programs.

Statement: Providing community activities and programs are essential to encourage healthy active living. The more active Pequannock residents are the happier and more peaceful residents will be. Healthcare costs will also be reduced. The Department of Parks and Recreation through the Director will educate the Pequannock children and adults about healthy alternatives for their eating and recreation habits and provide them a variety of recreation opportunities.

Objective 1.3: Address public safety.

 Statement: The variety of recreation opportunities should be safe to participate in. The Department of Parks and Recreation, through the Director and working with other municipal departments and organizations, will provide recreation opportunities that are as safe as possible taking into consideration the inherent risks associated with some recreation



opportunities. The facilities will be monitored and maintained in that their use is safe.

Goal 2: Ensure equitable access to safe and attractive parks and facilities that meet community needs.

Objective 2.1: Enhance/renovate existing facilities to maximize optimal usage.

Statement: Existing park lands and structures are a valuable resource to the Township residents and should be utilized to their highest and best use. The existing facilities should be continuously evaluated to improve efficiencies and such improvements should be implemented. The Department of Parks and Recreation through the Director will identify possible efficiencies and work towards implementing them as recommended in the Master Plan.

<u>Objective 2.2</u>: Provide a system of community parks with balanced recreation opportunities directed to all residents.

Statement: A variety of recreation and leisure opportunities, including passive and active programs, are important to provide for residents. The Township should not loose sight of the importance of passive recreation such as hiking, boating, fishing, gardening, nature study, etc. The Department of Parks and Recreation through the Director will continue to provide the varied recreation and leisure opportunities to Township residents.

<u>Objective 2.3</u>: Increase the number of active recreation facilities available for use by the Township residents.

• Statement: Participation in active recreation continues to grow. Sports are being played in two or more seasons when they traditionally were played in one. New sports are gaining in popularity with consistent increases in participation. Residents are participating in both recreational leagues and traveling leagues. All of these factors lead to the need for additional fields to support the interest by the Township residents. The Department of Parks and Recreation through the Director will work with the Board of Education to strive to increase usage of their facilities through joint venture projects as well as acquisition of additional lands that support active recreational use.

<u>Objective 2.4</u>: Collaboration and partnership with local groups and surrounding communities and groups for use of facilities and community programs.

Statement: The Township of Pequannock has a small land area with many of its lands ecologically sensitive (wetlands, steep slopes, floodway). This, factored with the active participation in the recreation programs offered in Town, makes it difficult the Township to be the sole provider to meet the demand. The Department of Parks and Recreation through the Director will continue to work with the Board of Education and local community groups who provide supporting programs. The Department will also open dialogues



with local municipalities to evaluate the feasibility to share recreation facilities. The Department of Parks and Recreation through the Director will develop a plan to coordinate all recreational opportunities (organizations) within the Township and neighboring communities.

Objective 2.5: Balance the pro vision of open space with other land uses.

Statement: Land is a limited resource. This is even more evident in Pequannock Township with the extensive wetlands, floodway and floodplain within the Township. Other possible land uses should be balanced with the vision of open space for recreation and resource conservation. When this is done the value of open space and resource conservation can be seen as an economic benefit similar to previously typical forms of land development. The Department of Parks and Recreation through the Director will work with the Open Space Committee to evaluate possible land acquisitions for their use as a recreational resource. The Department of Parks and Recreation through the Director will present possible lands for acquisition to the Open Space Committee.

<u>Objective 2.6</u>: Expand the local trail system to a local greenway network linking the Township park system, schools, cultural resources and business district for safe pedestrian access to all facilities.

Statement: A greenway system throughout the Township would provide the opportunity to link the natural environment as well as the human environment together. Natural habitat becomes more valuable for flora and fauna when they are contiguous and not isolated pockets. Similarity, parks and other open space become an even more valuable resource when they are linked together through a greenway system. The greenway would provide opportunities to safely travel throughout Town using alternative means of travel. The Department of Parks and Recreation through the Director will work with the Open Space Committee and administration in developing a greenway network throughout the Township.

<u>Objective 2.7</u>: Link the existing Township trail system to Morris County's trail system.

Statement: Linking the existing trail system and future greenway network to Morris County's trail system will further expand the alternative travel and recreation opportunities for Township residents. The Department of Parks and Recreation through the Director will actively pursue linkages to the Morris County trail system.

Objective 2.8: Link Township bike path to Morris County's bike paths.

Statement: Similar to linking the trail system, linking the existing bike paths to Morris County's bike paths will further expand the alternative travel and recreation opportunities for Township residents. The Department of Parks and Recreation through the Director will actively pursue linkages to the Morris County bike paths.



<u>Objective 2.9</u>: Update and implement the Aquatic Park Master Plan in collaboration with neighboring communities.

Statement: Aquatic Park is a valuable resource largely inaccessible to Township residents. A master plan for the property was previously completed and should be updated based upon new NJDEP regulations and recent findings. The Department of Parks and Recreation through the Director will update the master plan and work with neighboring towns and the administration in implementing the updated master plan.

<u>Objective 2.10</u>: Provide a recreation center that would address the expanding indoor programming needs for day care, gym, weight room, large community meeting room, etc.

Statement: Indoor recreation programs are held within the local schools. While this is a good partnership, the available hours are decreasing due to increasing school programming. The recreation programs are consistently loosing space and time while the demand continues to rise. The demand currently exists to support a building dedicated to recreation programming. The Department of Parks and Recreation through the Director will work with Township committees, boards and administration to implement a new recreation center.

<u>Objective 2.11</u>: Provide for specific recreation opportunities (i.e. camping, fishing, boating, fitness trails).

Statement: Pequannock Township's location at the base of the Waghaw Mountains and the confluence of two rivers gives Township residents the opportunity for recreation experiences unique to the Township. These opportunities should continue to be provided and emphasized as important to the Pequannock recreational experience. The Department of Parks and Recreation through the Director will continue to provide and support these unique, specific recreation opportunities.

<u>Objective 2.12</u>: Support cooperative efforts between the Historic Preservation, Open Space, Shade Tree and Environmental Commissions.

Statement: These Commissions and the Park and Recreation Department have similar and sometimes overlapping goals. These groups should cooperatively update each other and work together to provide the most cohesive and efficient results for Township residents. The Department of Parks and Recreation through the Director will actively work with the other Commissions to support their efforts and with an emphasis on the relationship to providing recreation services to the local community.

Goal 3: Actively pursue adequate open space for future recreation facilities.

<u>Objective 3.1</u>: Update the Township's recreation and open space inventory (ROSI) to include all parks and Township owned open space and submit to Green Acres.



Statement: Lands listed on the ROSI are preserved as open space in perpetuity. By listing all open space lands, not only parklands, these lands will be available for use by Pequannock residents for generations to come. The Department of Parks and Recreation through the Director will update the ROSI immediately to include existing open space lands and will continue to update in the future when additional lands are added to the Township's open space system.

Objective 3.2: Actively pursue new Open Space lands for recreation

• Statement: The Department of Parks and Recreation through the Director will work with the Township Open Space Committee and administration to actively pursue Open Space lands. Immediate action will be to further evaluate the options for the lands identified for acquisition for recreation use in the Open Space Plan and as recommended within this report.

<u>Objective 3.3</u>: Engage the landowners of agricultural lands to participate in New Jersey's farmland preservation program.

Statement: The farmland (farmland assessed properties) within Pequannock Township is one of the major defining elements of the Township's character. To loose these lands to development would change the Township's character forever. The Department of Parks and Recreation through the Director will work with the Open Space Committee and administration to open dialogues with the farm owners to try to gain interest in the States' farmland Preservation program.

<u>Objective 3.4:</u> Follow-up with the proposal for the Pia Costa tract to act as a wetlands mitigation bank.

Statement: The Pia Costa tract is a valuable ecological resource as there are significant wetlands on the property and there have been threatened and endangered plant and animal species sited on the property. It also acts as flood storage for the Township. With the approval of this property as a receiving property as a wetlands mitigation bank the wetlands would be preserved, restored and new wetlands created. The Department of Parks and Recreation through the Director will work with the Open Space Committee and the administration to support this property acting as a wetlands mitigation bank.



Goal 4: To preserve and enhance the social and ecological environment for Township residents.

<u>Objective 4.1</u>: Preservation of environmentally sensitive areas. Coordinate these efforts with adjacent communities.

• Statement: Disturbance of ecologically sensitive lands has a negative impact on the quality of life of Township residents as well as the flora and fauna in the Township. Disturbance of steep slopes of the Waghaw Mountains effects soil stability, disturbance of wetlands effects water quality and disturbance of floodways affects flood limits. The ecological environment is not limited by governmental boundaries. It is important, therefore, for all governing bodies that are spanned by the resource to work together to preserve the resource. The Department of Parks and Recreation through the Director will actively work with governing boards, commissions and conservancy groups of Pequannock Township and neighboring municipalities and county to preserve the ecological resources in the area.

Objective 4.2: Use environmentally sensitive areas as educational resources.

Statement: The numerous ecological resources in the Township provide a unique opportunity to draw the Township residents back to nature. There are spectacular views from Mountainside Park, possible siting of a state threatened species, the wood turtle, at Rockledge Park and numerous opportunities for nature study at Cherry Street Park, Aquatic Park and others. The Department of Parks and Recreation through the Director will actively pursue partnership opportunities to thoughtfully develop environmentally sensitive lands in accordance with regulations and provide programs with the Board of Education that can meet NJ core curriculum standards.

<u>Objective 4.3</u>: Preserve historically significant structures and adjoining lands. Provide a link between the cultural resources to the Township park system.

Statement: Pequannock Township retains is character from its colonial roots and has numerous historical structures that remain from that time. Connecting these sites to the park and open space system can bring opportunities to educate the public about local heritage and active recreation at the same time as they travel from one site to another. The Department of Parks and Recreation through the Director will support the cultural resources in the Township and work to create a greenway system that includes the Township's cultural resources.

Objective 4.4: Educate the public about park resources and park stewardship.

Parks help citizens join together to make their communities better by encouraging them to participate in park planning and management. Ties among community residents can be built and strengthened by bringing people together, including those who are otherwise divided by race or class, and by helping them work together on common projects. The



Department of Parks and Recreation through the Director will continue to support community involvement in the planning and management of their parks.

Objective 4.5: Work in conjunction with state open space preservation goals.

Open space systems become stronger and more beneficial to local and regional residents the more connections there are to other systems. Neighboring towns should have a cohesive network that also connects to the larger county network then the state network. The Department of Parks and Recreation through the Director will meet or exceed the preservation goals outlined by the state by working with the Open Space Committee, administration and through partnerships.

Goal 5: Implement and update the Parks and Recreation Master Plan (PRMP) so it remains a dynamic guide for the Park and Recreation Department.

<u>Objective 5.1</u>: Pursue funding through grants, loans, gifts and donations to implement Township PRMP per the recommendations in the Master Plan.

There are many possible partners to provide the recreation resources for Pequannock residents, many of which were identified in the *Pequannock Open Space and Recreation Plan*. The Department of Parks and Recreation through the Director will work with the administration in pursuing alternative funding sources to implement the CRMP.

Objective 5.2: Develop capitol improvement plans for 1, 3, 5, and 10 years.

 Statement: Priorities for improvements and capital expenditures need to be set to allow for proper planning of expenditures. The Department of Parks and Recreation through the Director will develop and update capitol improvement plans for the years noted.

<u>Objective 5.3</u>: Solicit form the community their program and activities wants and needs and when possible, implement them.

Statement: Recreation trends change over time. The CRMP should be updated approximately once every five years to verify any changes that should be made to support the current way residents recreate. The Department of Parks and Recreation through the Director will work with the community when updating the master plan.



Goal 6: Management of the park system to the highest standards.

Objective 6.1: Raise the standards of the maintenance operations for all facilities.

Statement: When a facility is well maintained it is well respected by the user and receives more respect and less vandalism, even if it is only in the form of trash left on the ground. By constantly striving to improve maintenance the Township staff as well as residents can take pride in the service that is provided. The Department of Parks and Recreation through the Director will strive to maintain all facilities to the highest standards possible. The Department of Parks and Recreation through the Director will develop and implement a comprehensive maintenance schedule for each facility.

<u>Objective 6.2:</u> Provide tools and performance standards to manage the responsibility, authority and accountability of the Park and Recreation Department and its operations.

The Director of the Park and Recreation Department is solely responsible and has full control of the Department's functions and operations allowing for efficiency and full accountability, however, the restructuring and financial operations of the Department would enable the Director to fully utilize the tools necessary to provide services to the Department's constituents. The director will propose changes to the administration consistent with acceptable budgeting and accounting standards to provide a more efficient functioning of the department.



Chapter 3 - Relationships to Other Plans

In the preparation of the Recreation Master Plan for Pequannock Township, many previously completed reports were analyzed and taken into consideration. These reports include the 2003 Master Plan Reexamination Report, the Highlands Council Draft Regional Master Plan, The Pequannock Open Space Plan and the Aquatic Park Master Plan. The recommendations set forth in the Recreation Master Plan strongly reflect the goals set forth in these documents.

2003 MASTER PLAN REEXAMINATION REPORT

In 2003 a reexamination report for Pequannock Township's Master Plan was completed. The purpose of this document was to reevaluate the goals identified within the Master Plan to ensure that they still reflected current community goals. Furthermore, it identifies new goals that may have developed since the initial release of the Master Plan and previous reexamination reports. The implementation of a path and trail system to better connect the townships parks and open space as well as an initiative to provide additions and improvements to the current park facilities are the two major goals set forth in the 2003 Master Plan Reexamination report that address the deficit of recreational space that currently exists within the Township. Specific goals listed in the Reexamination Report related to active and passive recreation and leisure include:

- ➤ Protect the views of the mountains by locating development in areas on or around the mountains so as not to disturb these views. Emphasize collaborative work with the Borough of Kinnelon to help preserve this area.
- > Promote a Path and Trail System that will utilize existing trails and, with new links, will connect the Township's parks and open spaces.
 - Solicit an ANJEC grant to convert the railroad right-of-way into a bike path.
 - Participate in the Morris Land Conservancy's Partners for Greener Communities.
 - Develop conservancy trail initiatives with Pequannock Township see the *Open Space and Recreation Plan*, specifically regarding bike lanes.
- ➤ Limit development along rivers, streams and ditches and around lakes so as to create buffers, and where possible, greenways and paths. Coordinate the conservation of these areas with adjacent communities utilizing conservation easements and other land protection mechanisms.
 - Aquatic Park along the Pequannock River provides a greenway and path along the Pequannock River. Along the length of the river corridor, the severity of the wetlands and floodplains has caused the area to experience limited development. In order to protect and enhance the river, its banks, and the floodplains, an overall plan for river from access and community



use should be created. The Township restricts development of environmentally sensitive lands by restricting construction in flood plains and enforcing wetland protection laws.

- Preserve and protect the area of confluence of the Pequannock and Wanaque Rivers which include numerous islands and coordinate these efforts with adjacent communities.
 - See the *Open Space and Recreation Plan* for more details.
- Protect areas of steep slopes and scenic stream corridors of the Waughaw Mountains.
- Promote clean air.
- > Support the implementation of the recommendations of the Department of Parks and Recreation regarding additions and improvements to park facilities.
 - The Township of Pequannock has an Open Space Tax for the purchase of open space/recreation lands, recreation upgrades of existing facilities and purchase of equipment.
- Seek the implementation of a path and trail system through a variety of land protection mechanisms and public access programs.
 - ANJEC grant application
 - The *Open Space and Recreation Plan* lists a number of possible protection mechanisms.
- ➤ Protect and safeguard the aquifer recharge areas and wells through appropriate zoning and enforcement.
- ➤ The Township Zoning Ordinance provides zoning safeguards to protect the aquifer recharge areas and wells of the Township through its regulation of permitted and prohibited uses.
- Continue to implement floodplain management policies, regulations and programs aimed at promoting safety and preventing flood damage.
- Preserve the Pia Costa tract's floodwater retention capability.
- Pequannock Township is critically situated in a plain at the base of the NJ Highlands at the confluence of the Pompton, Pequannock, and Ramapo Rivers. The community is ideally located and is important for the linkage and transition it provides between the rural Highlands communities and suburban Passaic/Morris County communities. The area is environmentally significant for the flood plain and water resources is affords, but also for the extensive wetlands, and wildlife habitat and linkages adjacent to the river that is provides. Pequannock Township must make it a priority to protect these areas, expand open space opportunities and provide essential linkages to Township and regional trails through improvements to Aquatic Park and along the river.



The river and lands adjacent to the river also offer a unique opportunity to both the community and the region. As such as Aquatic Park along the Pequannock River are ideally located, but have no parking, signage or improvements. Along the length of the river corridor, the severity of the wetlands and floodplains has caused the area to experience limited development. In order to protect and enhance the river, its banks, and the floodplains, and overall plan for riverfront access and community use should be created. Such improvements to consider include property acquisition, trial linkages, and possible playfield.

Highlands Council Draft Regional Master Plan

In August 2004, the New Jersey Legislature enacted the Highlands Water Protection and Planning Act (Highlands Act) with the goal of protecting and planning for a region that supplies drinking water for more than 5.4 million New Jersey residents. As a guide to ensure this goal is met the Highlands Council has issued a draft Regional Master Plan for public comment before a final plan is adopted. The Highlands region, which consists of 860,000 acres in 88 municipalities, is divided into two classifications that are determined by an areas specific level of sensitivity and ecological significance. The more sensitive areas are defined as Preservation Areas while the less critical areas are defined as Planning Areas. All of Pequannock Township falls within the jurisdiction of the Highlands Act. Pequannock Township north of Interstate 287 including Mountainside Park is within the Highlands Preservation area while the remainder of the Township falls within the Highlands Planning Area.

Land that falls within the Preservation Areas must abide by the regulations of the Highlands Water Protection and Planning Act. The Planning Areas, on the other hand, are not required to comply with these regulations although it is strongly recommended. In fact many municipalities are providing incentives to do so. Furthermore, these areas each have specific planning goals. Of particular importance is that the Preservation Areas and Planning Areas share the common goal of preserving outdoor recreation, hunting and fishing, on publicly owned land. For a complete list of goals and requirements please refer to the Highlands Council Draft Regional Master Plan. Another feature of the Highlands Council Draft Regional Master plan is the Land Use Capability Map which breaks the highlands region down into different zones that indicate the type of development the land can support. The Land Use Capability Map is based on an analysis of natural resources, existing development, infrastructure, and agricultural activities. The map establishes three major geographic zones that overlay municipal zoning, each with its own criteria and standards. See below for a description of each:

The Conservation Zone consists of areas with significant agricultural lands mixed with important environmental features that should be preserved when possible. There are no lands within Pequannock Township classified as Conservation Zones.

The Protection Zone consists of environmentally important lands that are critical to maintaining water quality, quantity, and other significant ecological processes. Standards in the zone prohibit the disturbance of natural resources



or expansion of infrastructure. Public land acquisition is a priority in the Protection Zone.

Within Pequannock Township the Protection Zone includes Mountainside Park and the western portion of the Township whose limits appear to conform to the eastern wetlands boundaries, Aquatic Park and the Pia Costa Tract.

The Planned Community Zone consists of areas with existing concentrated development. These areas are less environmentally constrained, and, with planning, may support development in a manner and intensity desired by the municipality. Emphasis will be on increasing land use efficiency, encouraging the use of previously developed lands through techniques such as revitalization, adaptive reuse, in fill, and property assemblage. In addition to zone standards, site specific standards may apply, reflecting the presence of such natural features as streams or steep slopes. The remainder of Pequannock Township is located within this zone.

STATE DEVELOPMENT AND REDEVELOPMENT PLAN

The purpose of the State Development and Redevelopment Plan (State Plan) is to:

Coordinate planning activities and establish Statewide planning objectives in the following areas: land use, housing, economic development, transportation, natural resource conservation, agriculture and farmland retention, recreation, urban and suburban redevelopment, historic preservation, public facilities and services, and intergovernmental coordination (N.J.S.A. 52:18A-200(f)).

The State Plan identified Parks and Natural Areas as a public investment specifically for resource preservation and the provision of recreational opportunities. Parks and Natural Areas fulfill a broad range of functions along continuum from resource conservation to active recreation.

With the delineation of Parks and Natural Areas, the State Plan's intention is to protect critical habitats and resources, provide recreational opportunities and create a connected system of open lands for posterity. According to the map titled "Critical Environmental Sites and Historic and Cultural Sites" there is a ring of critical environmental lands that appear to stretch from Mountainside Park along the northern Township boundary to and including Aquatic Park. Critical Environmental sites are also located along the East Ditch.

Planning Areas

The State Development and Redevelopment Plan (1) provides a balance between growth and conservation by designating planning areas that share common conditions with regard to development and environmental features. Those that are found within Pequannock Township include:

- <u>Areas for Growth</u>: Metropolitan Planning Areas Planning Area 1 in the eastern portion of the Township.
- Areas for Limited Growth: Fringe Planning Areas Planning Area 3 is a finger centrally located pointing southwest to the southern township boundary and



Environmentally Sensitive Planning Areas Planning Area 5 is within Mountainside Park area and the westernmost Township boundary. In these planning areas, planning should promote a balance of conservation and limited growth—environmental constraints affect development and preservation is encouraged in large contiguous tracts.

Areas for Conservation: Environmentally Sensitive Planning Areas Planning Area
 5 is within Mountainside Park area and the westernmost Township boundary.

Planning Area 1 Objectives related to Parks and Open Space includes:

- Natural Resource Conservation: Reclaim environmentally damaged sites and mitigate future negative impacts, particularly to waterfronts, scenic vistas, wildlife habitats and to Critical Environmental Sites, and Historic and Cultural Sites. Give special emphasis to improving air quality. Use open space to reinforce neighborhood and community identity and protect natural linear systems, including regional systems that link to other Planning Areas.
- Recreation: Provide maximum active and passive recreational opportunities and facilities at the neighborhood, local and regional levels by concentrating on the maintenance and rehabilitation of existing parks and open space while expanding and linking the system through redevelopment and reclamation projects.
- ➤ <u>Historic Preservation</u>: Encourage the preservation and adaptive reuse of historic or significant buildings, Historic and Cultural Sites, neighborhoods and districts in ways that will not compromise either the historic resource or the area's ability to redevelop. Coordinate historic preservation with tourism efforts.

Planning Area 3 Objectives related to Parks and Open Space includes:

- Natural Resource Conservation: Strategically acquire open space to define Centers and to maintain contiguous open space corridors that link to other Planning Areas and Centers.
- Recreation: Provide maximum active and passive recreational opportunities and facilities at neighborhood and local levels by targeting and acquisition and development of neighborhood and municipal park land within Centers. Provide regional recreation opportunities by targeting park land acquisitions and improvements that enhance large contiguous open space systems.
- ➢ <u>Historic Preservation</u>: Encourage the preservation and adaptive reuse of historic or significant buildings, Historic and Cultural Sites, neighborhoods and districts in ways that will not compromise either the historic resource or the ability of a Center to develop or redevelop. Outside Centers, coordinate historic preservation needs with open space and farmland preservation efforts. Coordinate historic preservation with tourism efforts.



Planning Area 5 Objectives related to Parks and Open Space includes:

- Natural Resource Conservation: Protect and preserve large, contiguous tracts and corridors of recreation, forest or other open space land that protects natural systems and sensitive natural resources, including endangered species, ground and surface water resources, wetland systems, natural landscape of exceptional value, critical slope areas, scenic vistas and other significance environmentally sensitive features.
- Recreation: Provide maximum active and passive recreational and tourism opportunities at the neighborhood and local levels by targeting the acquisitions and development of neighborhood and municipal parkland within Centers. Provide regional recreation and tourism opportunities by targeting parkland acquisitions and improvements that enhance large contiguous open space systems. Ensure meaningful access to public lands.
- ➤ <u>Historic Preservation</u>: Encourage the preservation and adaptive reuse of historic or significant buildings, Historic and Cultural Sites, neighborhoods and districts in ways that will not compromise either the historic resource or the ability for a Center to develop or redevelop. Outside Centers, coordinate historic preservation needs with open space preservation efforts. Coordinate historic preservation with tourism efforts.

STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN (2003)

A Statewide Comprehensive Outdoor Recreation Plan (SCORP) is produced every five years to serve as a status report, strategic plan and guide for natural and recreational resource protection and planning within the State. The major goals of the 2003 SCORP include preserving open space, promoting the development of parks, implementing policies consistent with New Jersey's smart growth principles, supporting open space initiatives of local government and organizations, and to use funding from open space programs effectively. Furthermore, the 2003 SCORP presents current information on the supply, demand and need for recreation and open space in New Jersey.

For purposes of estimating the amount of open space required for recreation purpose, an

approach referred to as the Balanced Land Use Concept has been determined to be the

most appropriate for New Jersey. The Balanced Land Use approach is a method of estimating the amount of recreational land that should be set aside by governments in New Jersey to provide recreation opportunities for the existing and future residents of the state. According to these guidelines 3% of the land at a municipal level should be set aside for recreation.



During the preparation of 2003 SCORP seven issues were identified as being necessary to meet the current and projected future public open space and recreation needs in New Jersey. The issues stated in this SCORP related to Pequannock Township are:

Land Preservation

Open space is an intricate system serving a variety of functions, often concurrently, which are essential in sustaining and enhancing New Jersey as a desirable place to live and work. Open space can protect the quality and quantity of surface and groundwater resources, guide development and growth, preserve natural and historic resources, shape community character, and provide land for recreation. Additionally, the economic value and benefits of open space have been the subject of several studies. From increasing the value of adjacent properties and generating revenue from recreational activities to reducing the cost for public services, the economic impact of open space can be significant.

Recreation

Recreation providers are finding that while recreation demand is increasing and contributes significantly to the State's economy, the benefits it supplies are not easily dispensed. The demand and need for recreation are being driven largely by the State's increasing population. It seems that it is impossible to build enough soccer fields or softball fields in New Jersey. It also seems difficult to find a park in the state that does not have a problem with Canada geese. There is a statewide trend of residents living near parks resisting the development of recreation facilities, particularly playing fields. Increased usage translates into greater operational and maintenance costs. Demographic trends point not only to an increasing population, but also the ongoing aging of New Jersey's population.

All of these factors, along with others means that public park and recreation agencies must continue to provide the programs and facilities to meet an increasing demand. Annual visitation at state parks tops 15 million and Monmouth and Somerset counties report annual park attendance of nearly four million and two million, respectively. At the municipal level, towns struggle with finding fields for soccer games. That fact and that recreation land often competes with other land use needs complicates matters even more. It is clear that the State and local governments must work together to provide for the parks and recreation needs of its citizens. It is also clear that planning will play a key role in identifying appropriate lands for recreational development. Local government open space and recreation plans can guide the acquisition and development of public conservation and recreation areas to provide a balanced park system.



Greenways

Called parkways or greenbelts in the past, greenways have evolved as an economical and efficient solution to the need for public open space throughout New Jersey. Greenways can offer close to home recreational activities such as walking, running, biking and birding. Those associated with water can provide canoeing and fishing opportunities. Greenways also can protect environmentally sensitive areas, link public open space areas, provide wildlife habitat and preserve community character. Rarely does a greenway serve a single purpose.

The goals of the Garden State Greenways project are to:

- Protect New Jersey's natural resources, water quality, and biodiversity.
- Maintain and enhance large, significant areas of habitat and environmentally sensitive lands as part of New Jersey's green infrastructure.
- Contain urban sprawl.
- Link components of the green infrastructure throughout the state to provide recreational opportunities within walking distance access to New Jersey residents.
- Promote public awareness and use of the State's green infrastructure.
- Foster coordination and partnerships among state, federal, local and non-government agencies involved in conservation, recreation and land use planning efforts.

Partnerships

It is hard to imagine open space preservation in New Jersey without partnerships. In fact, it has become common practice to seek partners to leverage funding, share project responsibilities or assist in land management activities. The need for agencies and organizations to participate in partnership projects in New Jersey is great. The benefits are many but there are also complications. However, time and again, partnerships prove themselves to be an important strategy to employ and worth the effort. Simply put, some projects would not be possible without partnerships. Increased data sharing among governmental jurisdictions and conservation groups would enhance preservation and planning efforts.

Stewardship

Both state and local governments are challenged to meet the goal of proper stewardship of the public's lands and recreational resources. The State Department of Environmental Protection manages 64% of all public lands in New Jersey. Local governments manage 18% of public lands. Though much of the State land is largely undeveloped, many historic, recreation and education



facilities are maintained and operated on both state and local lands. Over many years, funds for the operation and capital needs in recreation areas have fallen short of the needs. Some local governments use open space taxes for development and maintenance expenditures associated with their park systems. In these cases, dedicated funding has given these jurisdictions some predictability and flexibility to meet the needs to acquire open spaces, maintain their recreation infrastructure and meet the needs of visitors.

Deferral of capital spending for renovation and rehabilitation can lead to larger expenses down the road. Some facilities require compliance with disability access guidelines and some are in need of costly upgrades for environmental infrastructure projects such as water and sewage systems. Capital needs left unmet can lead to irreplaceable resource losses, particularly those of historic significance.

Stewardship at times entails enforcement to protect natural resources. The increasing popularity of off-road vehicles (ORV) in New Jersey has presented challenges for the management of public lands and the protection of natural resources. As ORV ownership has increased in New Jersey and neighboring states over the past several years, there has been a marked increase in the unlawful use of these vehicles on public lands. This unlawful usage has caused extensive damage to sensitive natural areas with no provision for restoration; has diminished the use and enjoyment of public lands and other natural areas by other user groups; has diverted resources from other resource protection priorities; and has created serious risks to ORV users, to the public, and to law enforcement personnel. By adopting a policy that prohibits ORV use in state parks, forests and wildlife management areas, and increases fines, together with increased enforcement, the State has taken an aggressive stance against unlawful use of ORV on state lands.

Stewardship, however, also involves planning and working with interest groups to address concerns and find solutions. As part of its ORV policy, the Division of Natural and Historic Resources will work to develop appropriate recreational areas for lawful ORV users with the goal of having two new such facilities in operation by 2005. The New Jersey Trails Council will participate in this effort by establishing an ORV subcommittee representing a cross-section of interested environmental, recreational, ORV industry and ORV user groups. No current state park, wildlife management area or other environmentally sensitive area will be considered in the site review and selection process.

The Governor's Council on New Jersey Outdoors has over the years identified a lack of park operation and maintenance funding as a serious problem confronting public recreation providers. State public open space and recreation areas are challenged by rapidly increasing visitation. The Division of Parks and Forestry has experienced a more than 4.1 million increase in annual visitation between 1991 and 2001. For those that care about the natural, recreational and historic resources and for those that have a clear vision of the imperative to protect open space, it is frustrating to contemplate this question: How can



we spend money to protect more open space when we do not take proper care of the lands and facilities for which we are already responsible?

The answer is that we must do both - balancing fiscal resources for both preservation and stewardship needs. Many lands that are in public ownership require very little, in terms of resources, to manage. Others, particularly the high recreation use areas of parks and some wildlife management areas, need substantive fiscal and personnel resources. Public testimony to the Governor's Council was critical of both local and state governments' inadequate attention to the stewardship of public parks and recreation areas. The need to serve the public through the protection of open space and maintenance of historic and recreational resources is a critical quality of life issue for New Jersey residents.

PEQUANNOCK OPEN SPACE AND RECREATION PLAN

In 1993 an Open Space and Recreation Plan was developed for Pequannock Township. This document inventoried the natural, historic, and recreation assets of the Township and provided suggestions to preserve and expand upon these valuable resources.

The need for additional recreational space was strongly emphasized within the Pequannock Open Space and Recreation Plan. The plan notes that recreation demand remains strong and continues growing with an increasing number of residents participating in sports and suggests the acquisition of additional lands to accommodate this demand.

The recommendations section of this report identifies specific parcels with the potential for development into athletic fields. In addition to the shortage of athletic fields and recreation facilities, the report identifies the need to improve access to existing facilities as well as increase the amount of parking provided. Within our recommendations we have provided concepts illustrating how this can be accomplished. Finally, the report recommends the development of a greenway system connection the Highlands region in the west to the Rivers on the east. This would provide increased protection against flooding, provide increased recreational opportunities along the river and create connectivity between existing parcels of open space. This improved connectivity would make the existing open space much more function from both an ecological and use perspective.

AQUATIC PARK MASTER PLAN

Completed in October 2004 by Burgis Associates, the Aquatic Park Master Plan put forth several goals for the park. These goals included creating a connection with



existing open space resources in the region, provide unique recreational opportunities for a diversity of users, ensuring the continued conservation of this ecologically sensitive area and to provide educational opportunities relation to the environment and habitat such as wildlife viewing areas. Recommendations for Aquatic Park put forth in the master plan included improved accessibility and parking, a park gateway/information kiosk, an amphitheater, a meadow habitat region, an aquatic habitat region and a river trail, and a woodland habitat region.

The Aquatic Park Master Plan addresses the 40 acres of Pequannock owned land. Pequannock Township, however, has the rights to develop and manage the 40 acres of Aquatic Park lands owned by Morris County. It is our recommendation that an update of the Aquatic Park Master Plan be completed to re-address the goals as well as provide updated recommendations for the location of the suggested elements and possible new program elements for the total 90 acres of Aquatic Park.





Chapter 4 - Recreation Standards and Needs Assessment

INTRODUCTION

There are a variety of methods and approaches that have been used in the past by different agencies to consider the necessary and appropriate amount and type of parkland for a given region. The Master Plan presents two different methods for determining the need for recreational open space, which may be applied to Pequannock Township.

The methods include 1) an analysis based on New Jersey's Balanced Land Use Guidelines and 2) a population -based analysis

The population-based standards set a goal for a finite period of time, which may best be used for short-term goals. The Land Use standards set their goals in perpetuity, recognizing that land is finite and any preservation efforts now will benefit all generations to follow.

It is important to note that the population based analysis does not relate the standards to the natural resources of the area such as wetlands, stream corridor, wooded areas and wildlife habitats.

The second analysis looks at recreation activities and the facilities required to provide these activities. This Master Plan establishes the type and quantity of facilities the Township should develop in the future. The ultimate goal of this analysis is to quantify the amount of public open space required to meet the Township's recreational needs.

BALANCED LAND USE GUIDELINES

New Jersey's State Comprehensive Outdoor and Recreation Plan identifies the goal for New Jersey municipalities to provide three percent (3%) of the total developable lands within the municipality for recreation uses. This balanced land use approach takes into consideration the extent of wetlands and steep slopes in the municipality and removes those lands from the total developable lands within the municipality.

According to this methodology Pequannock Township, with its 647 acres of park land, has preserved fourteen percent (14%) of its overall lands and thirty percent (30%) of the Township's developable lands for recreation purposes.

This analysis is unevenly balanced, however, due to eighty-two percent (82%) of the preserved lands suitable only for passive recreation or resource areas due to wetlands and steep slopes on the site. So while there is a significant amount of lands preserved



for recreation purposes the Township does not have a balance between lands suitable for active and passive recreation.

POPULATION-BASED RECREATIONAL OPEN SPACE NEEDS ASSESSMENT

In 1995, the National Recreation and Park Association (NRPA), in collaboration with the American Academy for Park and Recreation Administration, published "Park, recreation, Open Space and Greenway Guidelines." The revised guidelines acknowledge that each community is unique, and that it is difficult to apply one set of special standards to all communities as had been done in the past. Instead, the guidelines reflect a more systematic planning approach that takes into account the unique needs, desires and resources of communities as well as changing environmental, social, economic and demographic trends.

With this framework in mind, the NRPA takes a different approach to park planning, analyzing the types of parks and facilities require for each individual community, along with the amount of acreage required to site those kinds of parks and facilities. The process includes identifying the classifications of parks and the level of service for each facility within each park classification. Map 2 shows the park and school locations within Pequannock Township. The guidelines currently being discussed take into consideration the common shared use of school facilities with Township recreation programming needs.

Park Classifications

Mini Park

These parks are located within walking distance of the area serviced, and they address limited or isolated recreational needs. These parks are the vest pocket and tot lots of the past. Their small size requires intense development and little to no buffer between the park and adjacent land users is provided. Map 3 identifies the locations of the Mini Parks within Pequannock Township.

The standards for mini park development are as follows:

<u>Service Area</u>: ¼ mile radius to serve walk-in recreation needs of surrounding populations.

Acreage/Population Ratio: 0.5 acres per 1,000 persons

Desirable Size: 2500 s.f. to 1 acre



Potential Facilities:

- Playground
- ½ Basketball courts open play area
- Picnic tables with grills (no shelter)
- Benches or bench swings
- Landscaped public use area
- Scenic overlook

Neighborhood Park

Neighborhood parks are the basic unit of the park system and serve as the recreational and social focus of the neighborhood. The parks are usually located within walking distance of the area serviced, and they provide a variety of activities of interest to all age groups. Creating a sense of place by bringing together the unique character of the site with that of the neighborhood is vital to successful design. While their small size requires intense development, fifty percent of each site should remain undisturbed to serve as a buffer between the park and adjacent land users. Map 4 identifies the locations of the Neighborhood Parks within Pequannock Township.

The standards for neighborhood park development are as follows:

Service Area: ½ to 1 mile distance uninterrupted by physical barriers.

<u>Acreage/Population Ratio</u>: 2 acres per 1,000 persons

Desirable Size: 5 to 10 acres

Potential Facilities:

- Playground
- Court games
- Informal play field
- Volleyball
- Trails/walkways
- Picnic shelters with grill
- Picnic tables with grills (no shelter)
- Benches or bench swings
- 50% of site to remain undeveloped
- Parking (7-10 spaces)

School-Park

The trend in public agencies is toward joint use. Through joint use the patrons of both schools and parks benefit for shared use of facilities and valuable land resources. School-park sites often complement other community open lands, such as Hillview Elementary School and Hillview Park in the Township. The school park concept maximizes the joint use concept and provides a planned facility which maximizes public funds. The school park concept typically varies depending on the school. The elementary/middle school provides the ideal setting for a neighborhood park. While



the middle/high school follows the function of a community park or youth sports complex. Map 5 identifies the locations of the School-Parks within Pequannock Township.

The standards for neighborhood park development are as follows:

Service Area: Varies depending on school type and park type.

<u>Desirable Size</u>: Varies depending on school type and park type.

<u>Potential Facilities</u>: Varies depending on school type and park type.

Community Park

Community parks provide for the recreation needs of several neighborhoods or large sections of the community. A range of facilities is typically provided and may support tournament competition for athletic and league sport or passive recreation. These parks also present opportunities of nontraditional types of recreation. Fifty percent of the community park site should be developed for only passive recreation; these relatively undisturbed areas may serve as buffers around the park and/or act as buffers between active facilities.

Community parks sites should have varying topography and vegetative communities. Forested areas should have a variety of tree species. Cleared areas should be present for siting active recreational facilities. One or more natural water feature(s) such as a lake, river, or creek is desirable in community parks. Parkland should also be contiguous and strategically located in order to be accessible to all users within the neighborhoods it serves. Map 6 identifies the locations of the Community Parks within Pequannock Township.

The standards for neighborhood park development are as follows:

Service Area: ½ to 2 mile radius.

<u>Acreage/Population Ratio</u>: 2.5 acres per 1,000 persons

Desirable Size: 30 to 50 acres

Potential Facilities:

- Recreation center
- Basketball courts
- Tennis courts (lighted)
- Baseball/softball fields
- Multi-purpose fields
- Soccer fields (lighted)
- Swimming pool
- Amphitheater
- Observation decks



- Picnic shelter
- Picnic shelters with grills
- Picnic table with grills
- Benches or bench swings
- Nature trails
- Restroom/concessions
- Parking Playgrounds
- Volleyball courts
- Disc golf
- Lakes
- Paddle boat/canoe rental
- Fishing piers/boat docks
- 50% of site to remain undeveloped
- Specialty facilities may be added to, or substituted for, other facilities depending on community needs or special site characteristics.

Sports Complex

Sports complexes function as the major source of active recreation in the community. They are typically at larger and fewer sites strategically located throughout the community. Sports complexes should be developed to accommodate the specific needs of user groups and athletic associations based on demands and program offerings. Passive recreation opportunities are usually limited, but may be found in the undisturbed areas, such as within surrounding buffers.

Sites for sports complexes should be relatively flat to alleviate excessive grading of active facilities. Since most of the land will be developed for athletic fields, sites without significant vegetation or natural features are acceptable and in some cases preferable. Sites should be accessible from major thoroughfares. Direct access to residential areas should be limited and buffers, where adjacent to residential area, should be provided. Map 7 identifies the locations of the Sports Complex within Pequannock Township.

The standards for neighborhood park development are as follows:

Service Area: ½ to 3 mile radius.

Acreage/Population Ratio: 5 acres per 1,000 persons

Desirable Size: 25 to 80 acres

Potential Facilities:

- Ball fields
- Soccer fields
- Football fields
- Outdoor and indoor skating rinks
- Tennis courts



- Playground
- Hard courts
- Volleyball courts
- Group picnic area with shelter
- Parking

Support Facilities:

- Recreation center
- Tennis center
- Running track
- Amphitheater
- Restrooms

Special Use Park

The Special use park classification covers a broad range of parks and recreation facilities oriented toward a single-purpose use. These parks should be viewed as strategically located community-wide facilities rather than as serving a well-defined neighborhood or areas. The site should be easily accessible from local and major roads and centrally located if feasible. The Special Use Parks within Pequannock Township are Pequannock Valley Park and Woodland Lake.

The standards for neighborhood park development are as follows:

Service Area: Community-wide

Desirable Size: Varies depending on use.

Potential Facilities:

- Community centers
- Tennis center
- Performing arts facilities
- Public buildings
- Ornamental gardens
- Hockey arena

Natural Resource Area

Natural resource areas are lands set aside for preservation of significant natural resources, remnant landscapes, open space and visual aesthetics/buffering. These sites consist of individual sites with natural resources and lands that are unsuitable for development but offer natural resource potential.

Recreational opportunities include nature viewing and study. Natural resource areas can also function as greenways. All development should be kept to a level that preserves the integrity of the resource.



Size and location of the Natural Resource Area will be dependent upon the availability and opportunity and quality of the site for preservation. Map 8 identifies the locations of the Natural Resource Area within Pequannock Township.

Examples:

- Parcels with steep slopes and natural vegetation
- Drainage ways and ravines
- Surface water management areas
- Utility easements
- Wetlands/lowlands
- Shorelines along waterways, lakes, and ponds

Greenways

Greenways tie the park system components together to form a cohesive park environment, they emphasize harmony with the natural environment, allow for uninterrupted and safe pedestrian movement between parks and other open space components throughout the community, provide people with a resource based outdoor recreational opportunity and they can enhance property values.

Greenways can either be "natural" following natural resources or "man-made" built as part of a development project or during renovation of old development areas such as an old railroad bed. Existing and proposed greenways are noted in the Township Master Plan

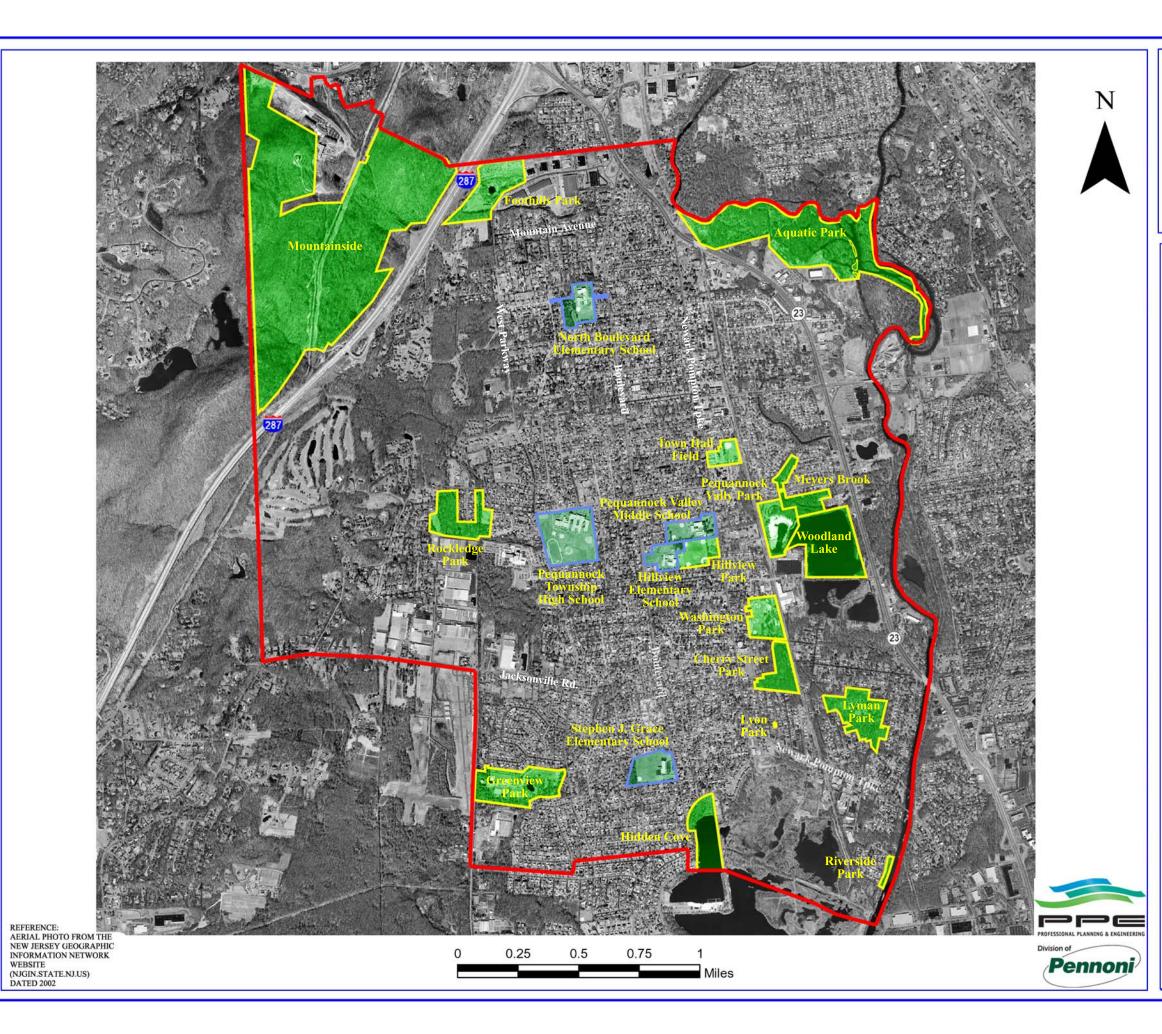
Desirable Size: 50 to 200 foot width

Potential Activities:

- Hiking
- Walking
- Jogging
- Bicycling
- In-line skating
- Cross-country skiing
- Horseback riding
- Canoeing







Park and School Locations Map 2



Parks Aquatic Park

Cherry Street Park

Foothills Park

Greenview Park

Hidden Cove

Hillview Park

Lyman Park

Lyon Park

Meyers Brook

Mountainside Park

Pequannock Vally Park

Riverside Park

Rockledge Park

Town Hall Fields

Washington Park



Schools

Hillview Elementary School

North Boulevard Elementary School

Pequannock Township High School

Pequannock Vally Middle School

Stephen J Grace Elementary School



Park Boundary

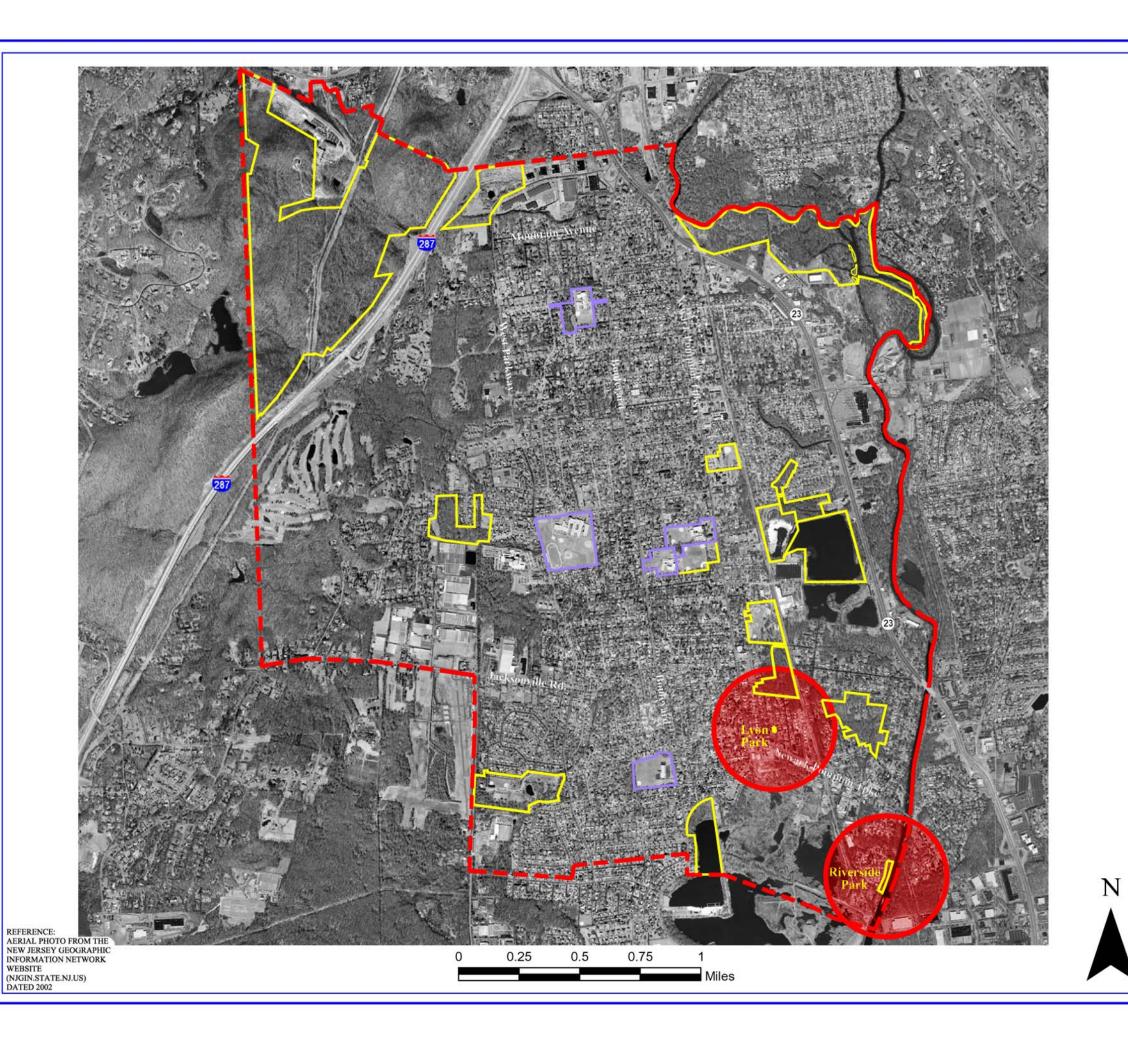


School Boundary



Town Boundary





Mini Parks Map 3



1/2 Mile Use Radius



Park Boundary School Boundary



Town Boundary

Mini Parks in Pequannock Township: Lyon Park

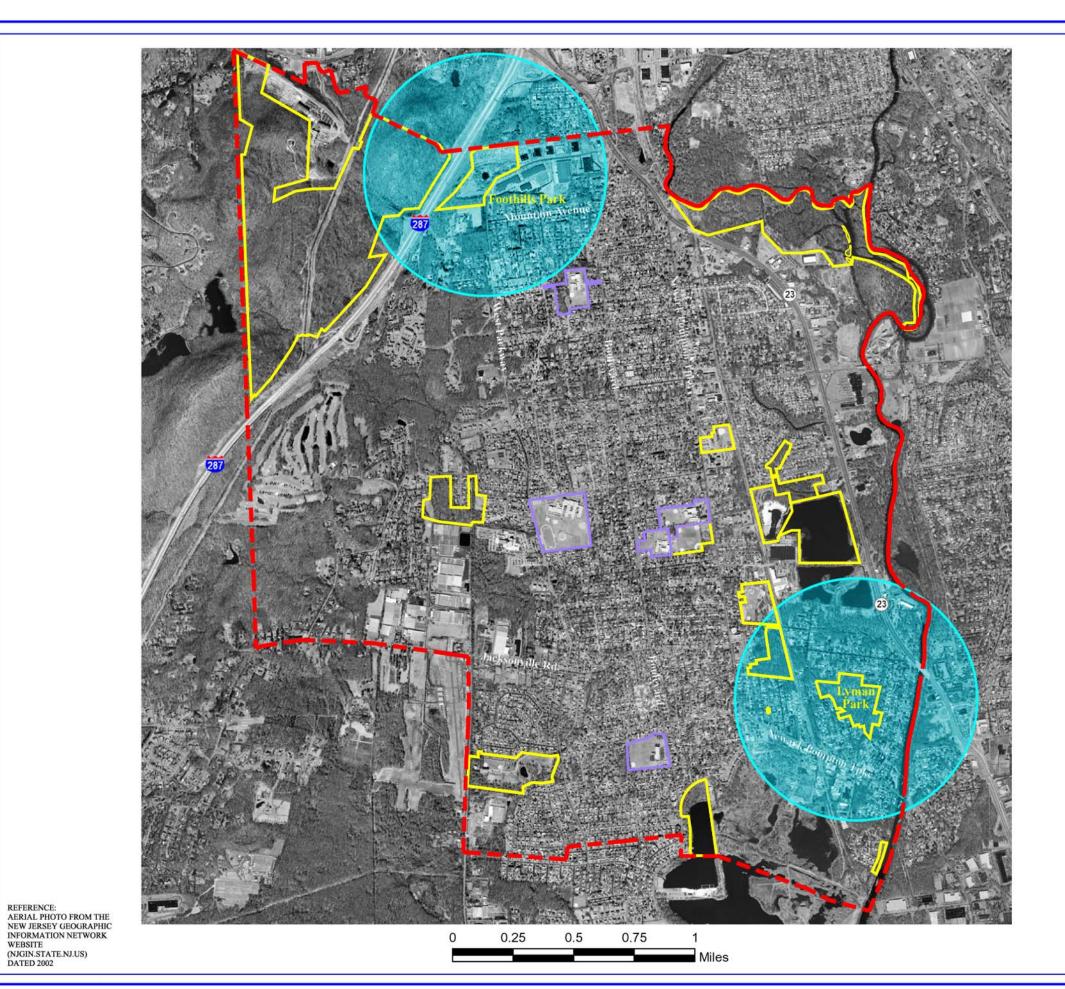
Riverside Park

Mini Parks:

Typically consists of an area between 2500 sq. ft. and one acre. The Mini Park is used to address limited, isolated or unique receational needs.







Neighborhood Parks Map 4



1 Mile Use Radius



Park Boundary School Boundary



Town Boundary



Foothills Park

Lyman Park

Neighborhood Parks:

Typically consists of between 5 and 10 acres. Neighborhood Parks remains the basic unit of parks system and serves as the recreational and social focus of the neighborhood. Focus is on informal active and passive recreation.









School Parks Map 5



1 Mile Use Radius



Park Boundary School Boundary Town Boundary

Schools in Pequannock Township:

Hillview Elementary School

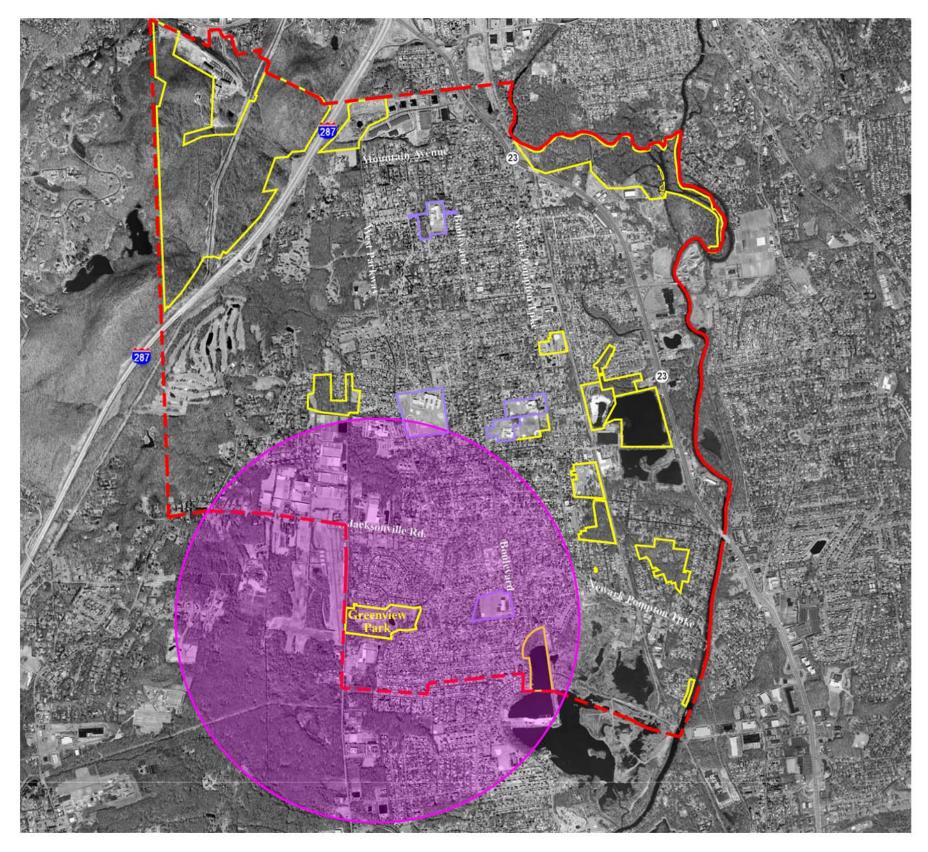
North Boulevard Elementary School
Stephen J Grace Elementary School
Pequannock Vally Middle School
Pequannock Township High School

School Complex:

The size varies depending on function of the type of school. Depending on circumstances, combining parks with school sites can fulfill the space requirments for other classes of parks, such as neighborhood, community, sports complex, and special use.







REFERENCE: AERIAL PHOTO FROM THE NEW JERSEY GEOGRAPHIC INFORMATION NETWORK WEBSITE (NJGIN.STATE.NJ.US) DATED 2002

0 0.25 0.5 0.75 1 Miles

Pequannock Township Recreation Master Plan

Community Parks
Map 6



3 Mile Use Radius



Park Boundary School Boundary



Town Boundary

Community Parks in Pequannock Township:
Greenview Park

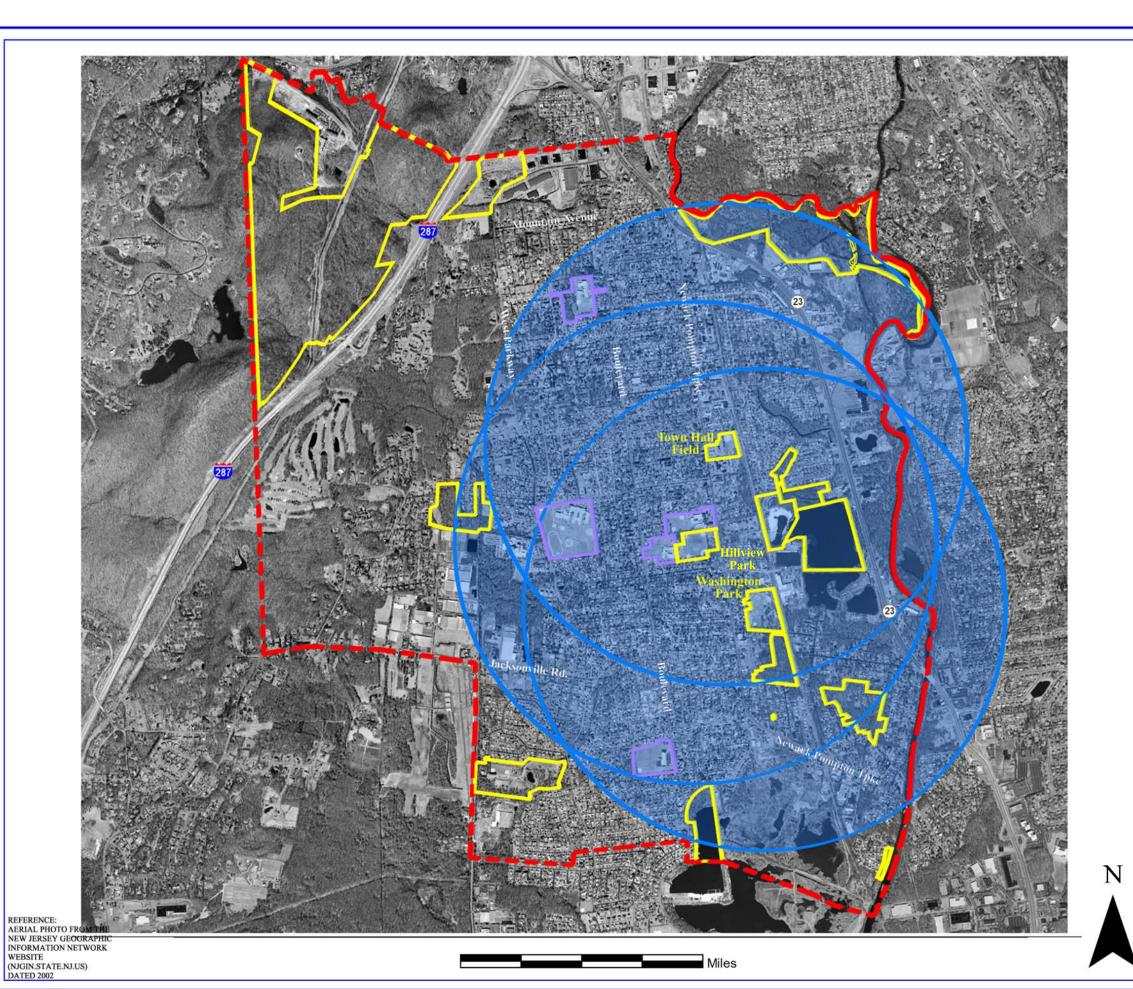
Community Parks:

Typically are large in size and serve a broader purpose than neighborhood parks. Their focus is on meeting the recreation needs of several neighborhoods or large sections of the community, as well as preserving unique landscapes and open space. They allow for group activities and offer other recreational opportunities not feasible nor perhaps desirable at the neighborhood level.









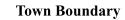
Sports Complex
Map 7



3 Mile Use Radius



Park Boundary School Boundary



Sports Complex in Pequannock Township:

Town Hall Field

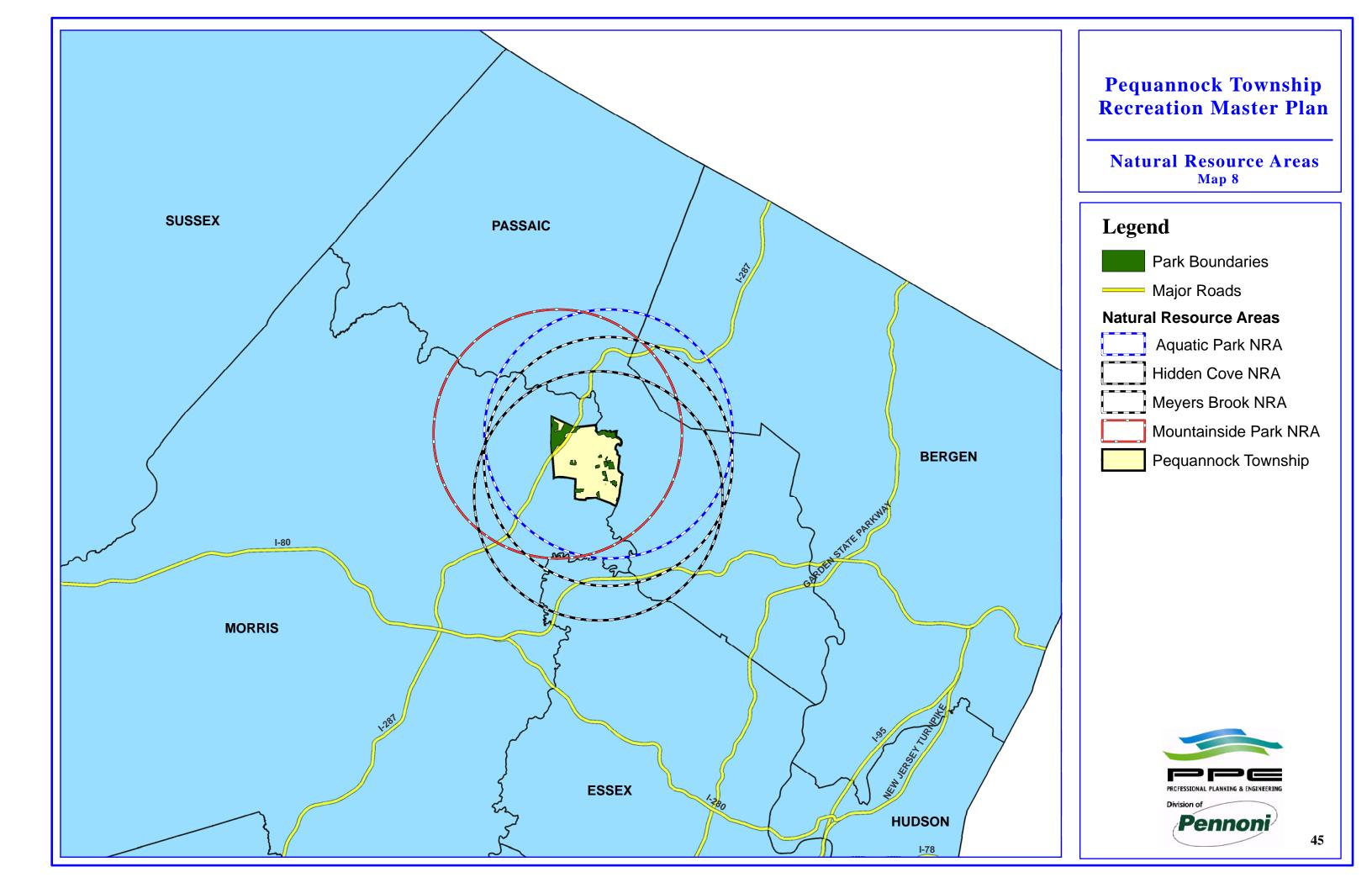
Washington Park

Sports Complex:

Usually a minimum of 25 acres, with 40 to 80 acres being optimal. Sports Complex consolidates heavily programmed athletic fields and associated facilities to larger and fewer sites strategically located throughout the community.









Recreation Need by Park Classification

Level of Service guidelines are set for park classifications except School-Park, Greenways and Special Use Parks.

Based upon the 2005 census data all of the park classifications that receive a level of service in Pequannock Township have a deficit to what should be provided. There is a deficit of eight (8) acres of Mini-Parks, a deficit of eight (8) acres of Neighborhood Parks, a deficit of sixteen (16) acres of Community Parks and a deficit of fifty-seven (57) acres of Sports Complex.

Facility Name	Size (Ac.)	Classification	Total per classification	Total of Developable Area	Acreage/Population (2005) Ratio Standard	Deficit/Surpluss
Lyon Park	0.1	M				
Riverside Park	2	M				
Mini Park			2.1	0.1	8	-8
Foothills Park	27	N				
Lyman Park	20	N				
Neighborhood Park			47	23	31	-8
Greenview Park	31	С				
Community Park			31	26	42	-16
Town Hall Fields	7	sc				
Washington Park	14	sc				
Hillview Park	11	SP				
Sports Complex			32	21	78	-46
Hidden Cove	20	NRA				
Aquatic Park	77	NRA				
Mountainside Park	310	NRA				
Meyers Brook	26	NRA				
Natural Resource Area			433	50	-	-
Pequannock Valley Park	27	SU				
Woodland Lake	40	SU				
Special Use			67	24	=	-
Cherry Street Park	13.5	U				
Rockledge Park	21	U				
Undeveloped			34.5	9	-	-
Total Acreage	646.6					
Total Acreage Less NRA areas	213.6					

Table 2 ~ Parks by classification, standards and deficiencies / surplus

The majority of the Township parks are located in the central to southern area of the Township. This is most likely due to the location of wetlands and floodplain influencing the initial settlement of the Township with the first homesteads in the north central section of town. When parks and recreation development came to the forefront there was more opportunity to set aside lands for recreation and leisure in the central and southern part of town. This provides an imbalance to access to the provided parks and their recreation and leisure facilities. The residents in the southern and south-central part of the Township have better access to facilities than those in the north and north-central part of the Township.



Two Mini Parks, Lyon and Riverside Parks, and one Neighborhood Park, Lyman Park, are located in the southeastern corner of the Township. One neighborhood park, Foothills Park, is located in the northwest corner of the Township. Pequannock Township has one Community Park, Greenview Park, in the southwestern corner of the Township. There are two Sport Complexes, Town Hall Field and Washington Park, centrally located. Hillview Park is considered part of a School-Park as it is adjacent to Hillview Elementary School and Pequannock Valley Middle School. North Boulevard and Stephen J. Grace Elementary Schools and Pequannock Township High School are other School-Parks within the Township (see Map 2 for park and school locations). While the schools are not managed directly by the Township they are a valuable resource that should continue to be actively pursued for partnership for recreation use.

There are four natural resource areas within Pequannock Township, Aquatic Park, Hidden Cove, Meyers Brook and Mountainside Park. Wetlands can be found on ninety seven percent (97%) of the land within Aquatic Park, seventy one percent (71%) of Hidden Cove lands and thirty seven percent (37%) of Meyers Brook's lands. Steep slopes of thirty percent (30%) or more comprise ninety percent (90%) of the land within Mountainside Park. The sensitive lands associated with these parks and the respective regulations as well as their location and configuration (Meyers Brook) limit the development opportunities for these parks to passive trail development.

Community parks can provide facilities similar to Neighborhood Parks and Mini Parks. Neighborhood Parks can also provide facilities similar to Mini Parks.

When evaluating the deficit of park classifications and the typical uses within those park classes the park classification hierarchy is taken into consideration. For example, the facilities found in a Mini Park may also be found in all of the other park classifications except Natural Resource Area and Greenways. This could mean that a Neighborhood Park can supply the demand for a Mini Park depending upon the location within the Township.

In addition, School Complexes may also partially supply the demand for certain park classifications based upon the available facilities and availability for use. In Pequannock, Stephen J. Grace and Hillview Elementary Schools have playgrounds. They may act as Mini Parks, Neighborhood Parks or Sports Complexes during non-school hours.

Mini Parks

Mini Parks and the typical facilities of such parks are well distributed in the southern section of town. In addition to Lyon Park and Riverside Park, Greenview Park and Stephen J. Grace Elementary School are in the southern section of town. These provide the facilities that a Mini Park would and are well distributed in the southern section of town.



Hillview Elementary School serves as a Mini Park in the center of town. There is a gap in service for the residents to the south and west of the school.

Two sites in the northern section of the Township provide the facilities found in a Mini park, North Boulevard School and Foothills Park. Both sites have a playground. Access to Foothills Park, however, is by vehicle not by foot as there is no safe pedestrian access to the park. There is a gap in service between Hillview and North Boulevard Schools north and south and east to west in the Township.

Neighborhood Parks

The Neighborhood Parks are located at opposite ends of the Township (northwest and southeast). Greenview Park, a Community Park, can serve the need as a Neighborhood Park. There is a gap in service with no Neighborhood Park in the central or the northeast section of town.

Community Park

Greenview Park is the only Community Park within the Township. This serves the residents in the southwest corner of town with a gap in service for the remainder of the Township.

Sports Complex

Sports Complex should be strategically located within the Township. The current facilities are centrally located on the eastern side of town.

School Complex

The schools in Pequannock Township are located in the north-south central corridor. They serve as Mini Parks, Neighborhood Parks, and Sports Complexes. As these lands are not managed by Pequannock Township they were not included within the surplus/deficit calculations but will be considered as part of the facility recommendations.

DEMOGRAPHIC ANALYSIS

We must remember as we go through the planning process for the Township-wide Recreation Master Plan that we are planning for people. Since the level and quantity of parks and recreation services demand is directly related to the number of people demanding the given services, changes in both the number and composition of that local population affects local government planning. A youthful population makes different demands on parks facilities than a much older population does, and an increase in certain cultural groups - Hispanics, for example- can create yet another set of demands.

Since estimates of population change are crucial to planning, budgeting and financing park improvements, they are essential to this Master Plan.



Population

The population in Pequannock Township was in decline in the later portion of the 20th century (Table 3). According to the Pequannock Township Master Plan (1995) the decline was in large part due to the decrease in household size and a relatively stable housing stock. The population in the beginning of the 21st Century is on a slight increase and the population trend will continue to increase with a projected increase in 2005 of 12.13% according to projections from the American Community Survey.

	1970	1980	1990	2000	2005
Population total	14,396	13,776	12,884	13,888	15,586
% change		-4.31%	-6.48%	7.79%	12.23%

Table 3 ~ Pequannock Township Population Trends

The age of Pequannock Township residents has been shifting over the last forty years Table 4). There was a big drop in the residents under 5 years of age (-41.10%) between 1970 and 1980. The total numbers of that segment of the population has been gradually increasing since then and represents the second greatest change in age cohort in the Township from 1990 (21.72%). There has been a steady decline in the residents 5 - 24 years of age from the 1970 through 2000, although in the last 10 years the decline is relatively insignificant (0.52%). The change in total numbers in the 25-44 age cohort has shown slight fluxuations from 1970 to 2000. Similarly the numbers of resident's aged 45-64 have shown a steady increase over the years since 1970. The age group that has show the greatest growth in Pequannock Township is those residents aged 65 and over. This age group has significantly increased since 1970 with the latest increase of 25.38% from 1990, the largest increase from 1990 in any age cohort.

	1970/1980		1980/1990		1990/2000	
Age Cohort	Change in Total	Change	Change in Total	Change	Change in Total	Change
Under 5	-484	-41.10%	93	13.40%	169	21.72%
5 - 24	-675	-11.90%	-1543	-31.00%	-18	0.52%
25 - 44	-137	-3.60%	223	6.10%	199	5.08%
45 - 64	406	13.90%	128	3.80%	298	9.55%
65 and over	316	38.60%	424	37.40%	396	25.38%

Table 4 ~ Pequannock Township Age Cohort Trends

The percent of the total population for each age cohort follows the individual trends for the change in the total for each age cohort (Table 5). While the greatest changes in total numbers have been occurring in the under 5 and 65 and over age cohorts they still comprise the two smallest age groups in Pequannock Township in 2000. Their increasing trends, however, indicate the need to pay special attention to confirm



there are adequate facilities for an increasing population in these two age groups. The age group comprising the greatest segment of the population in 2000 is the 25-44 age cohort. This percent of the total population for this age group has shown slight fluxuations since 1970. The age group showing the greatest change in the overall percentages of the total population is the 5 - 24 age cohort, decreasing by almost 15% since 1970 when it had the greatest portion of the population (39.40%). The last age cohort is 45-64 which has remained constant over the last thirty years at just over 24% of the total population.

	Percent of Total Population						
Age Cohort	1970	1980	1990	2000			
Under 5	8.18%	5.02%	6.06%	6.82%			
5 - 24	39.40%	35.99%	26.99%	24.83%			
25 - 44	26.44%	26.44%	30.50%	29.64%			
45 - 64	20.29%	24.35%	24.30%	24.63%			
65 and over	5.69%	8.20%	12.15%	14.08%			

Table 5 ~ Pequannock Township Age Cohort Trends as a Percent of the Total Population

Population density

There are two areas of concern when studying population. The first is the actual number of people dwelling within the area. The second is the density of this population, or how closely the actual number of people approaches the number of planned for during the zoning process. Combined, the two provide important indicators of the need for the size and location of park and recreational programs and facilities.

Density figures provide a measure of an area's degree of development and land availability. Park and Recreation's land use view differs somewhat from that of other Township department: it must look into the future well in advance of build-out to identify suitable land for acquisition and park development. By the time an area has reached 50% density, most of the choice recreation lands may well have been taken for other purposes.

The total acres in Pequannock Township are 4565. In 2000 the population was 13,888 which produces an overall population density of 3.04 persons per acre. The areas of greatest density generally runs north south between the Newark-Pompton Turnpike and Boulevard and State Rt. 23 and the southern Pequannock Township Boundary (Map 9). The population continues from Boulevard to the west getting gradually less dense the further away from Boulevard. The one exception is a residential condominium development called "The Glen" that lies to the northwest of Sunset Road.

Housing



Pequannock's 13,888 residents live in 5,026 housing units. The average household size is 2.76 people and the average family size is 3.23 people. Of the 5,026 housing units 89.5% (4,497) are owner-occupied and 10.5% (529) are renter-occupied. This represents a change from the 1999 Census reports with slight increase (1.40%) in owner-occupied and a slight decrease (10.26%) in renter occupied.

The average household size of a rental occupied unit is 1.88 persons and of an owner-occupied unit is 2.86 persons. This is a continued decline from the 1990 Census of 2.1 persons and 3.1 persons per rental and owner-occupied housing unit respectively.

Education

Education has been shown to have a high correlation with leisure activity. The higher the educational attainment, the more activities participated in and the more frequent the participation. According to the 2000 Census Pequannock Township out of 9,495 residents 25 years of age and older 93.0% earned a high school diploma (including equivalency), which is comparable to overall Morris County at 90.6% and higher than overall New Jersey State t 82.1%

In addition out of Pequannock Township residents 25 years of age and older 19.1% had some college but no degree, 5.8% earned an Associate degree and 37.5% earned a Bachelors degree or higher. The percentage of Morris County residents 25 years of age and older earning a Bachelors degree or higher as noted in the 2000 Census is 44.1% and for New Jersey as a whole is 29.8%.

Income

Income is also tied to recreation participation, the higher the income, the more active people are in recreational pursuits. In part, income also represents the ability to pay for recreation activities and to travel to recreation areas.

The 2000 Census evaluates income for households and families. A household is defined as a group of unrelated people living together. A family is defined as a group of people related in bloodline living together. According to the 2000 Census the median household income in Pequannock Township is \$72,729. This is 24% higher than the State household median income of \$55,146 and 6% lower than the Morris County median household income of \$77,340. The Pequannock Township median family income is \$84,487. This is 22% higher than the State median family income of \$65,370 and 6% lower than Morris County median family income of \$89,773.

In 1999, according to the 2000 Census, 534 persons or 3.8% of all people for whom poverty status was determined, were below the poverty level in the Township. This is an increase from the 1.366% reported in the 1989 Census (Morris County Master Plan, 1995). According to the 2000 Census 2.5% (96) of the families in Pequannock Township are below the poverty level, 8.0% (24) of the families with a single mother householder are below the poverty level and 3.0% (414) of individuals are below the



poverty level. These percentages are similar to Morris County poverty percentages of 2.4%, 10.0% and 3.9% respectively. The Pequannock Township poverty percentages are significantly lower than the State's poverty percentages of 6.3%, 19.4% and 8.5% respectively.

FACILITY NEED

This Master Plan evaluates the facility demand based upon previous information discussed in this report, input from the Parks and Recreation Director, the Recreation Advisory Board and stakeholders. This information as well as analyzing the geographical location of the facilities was used in developing the facility needs.

Pequannock Township provides a variety of indoor and outdoor recreation and leisure opportunities for residents. There is a need for additional facilities to support the demand for these programs.

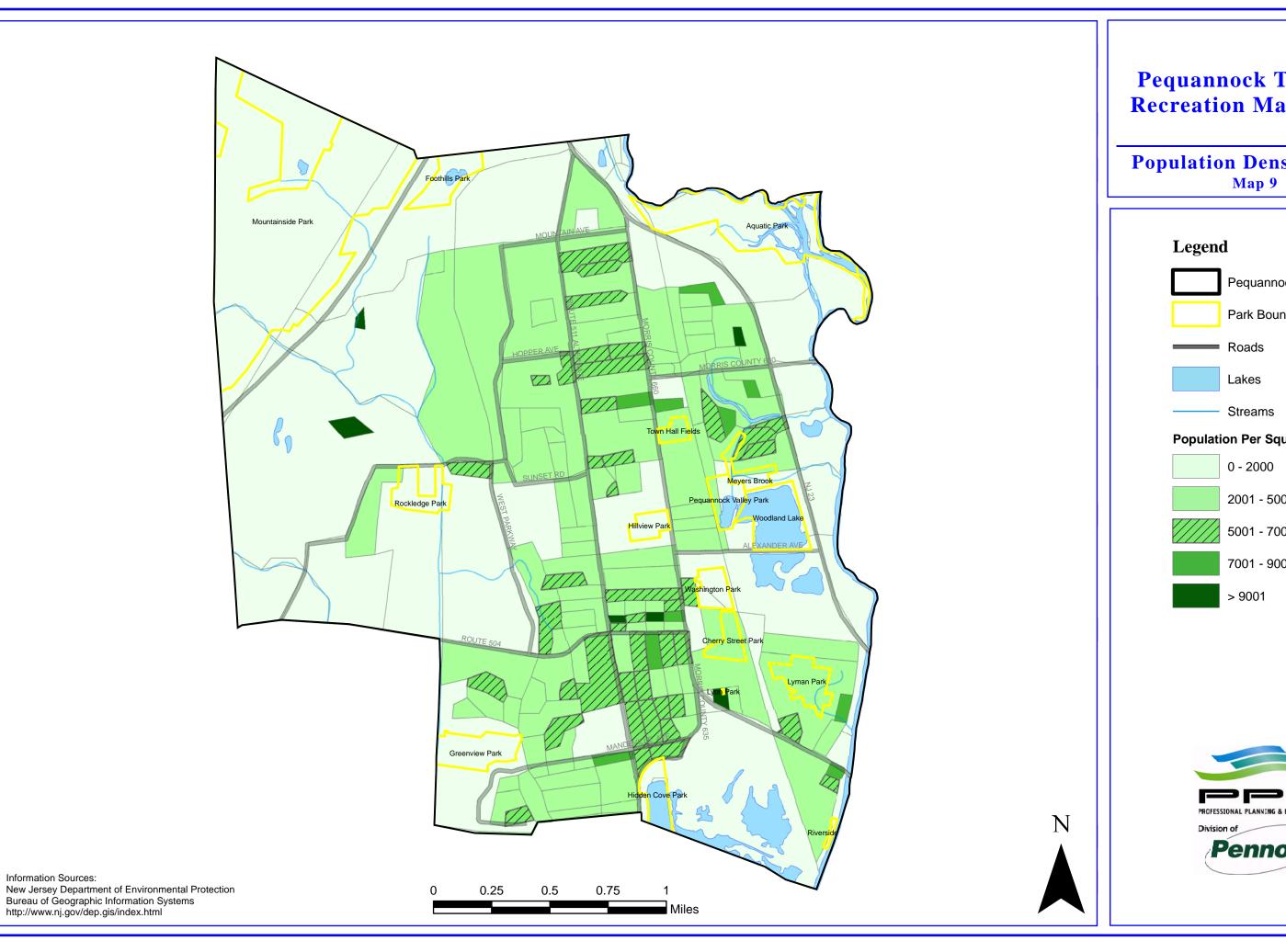
The outdoor facilities provided include boating, camping, fishing, hiking and nature trails, picnic areas, ice skating, playgrounds, swimming and athletic fields. The Township also has a Senior Center. The Township has a need to provide 3-4 additional soccer/lacrosse fields and one baseball field to meet the growing demand. The other outdoor activities are adequate in number. There are opportunities to capitalize on the undeveloped lands to augment these facilities. This, however, is not a priority.

The Township does not have any facilities to support other indoor programs such as basketball, volleyball, jazzercise, aerobics, little crafters, hands on fun, children's ceramics, karate, etc. The Parks and Recreation Department relies on Board of Education (BOE) facilities for these programs. Time and space for these programs in BOE facilities is getting less and less over the years as the BOE before school and after school programming is expanding. The Township needs an indoor facility to continue to be able to provide the level of programming and services the residents are accustomed to and the Township has the ability to provide with available facilities.

The Recommendations section of this report lists specific action items to address the identified needs.

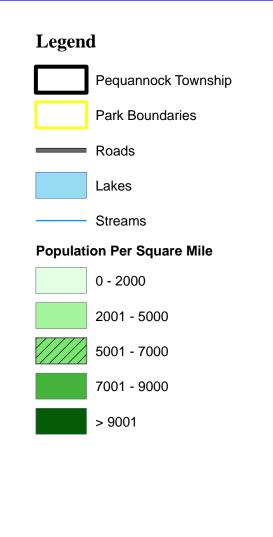






Pequannock Township Recreation Master Plan

Population Density (2000)







Chapter 5 - Inventory and Analysis of Existing Resources

PROCESS

Existing information was gathered from several sources; GIS Data from New Jersey Department of Environmental Protection and New Jersey Geological Society, existing maps and documents, site visits and staff interviews and discussions.

GIS Mapping

Geographic Information System data was gathered for the following: land use, land cover, wetlands, surficial and bedrock geology, depth to bedrock, depth to groundwater, aquifers and sole source aquifers, census data, groundwater recharge

Site Visits

Between June and November of 2006 site visits were conducted for each of the parks within Pequannock Township to evaluate the existing conditions including quantity and quality of recreation opportunities provided.

PEQUANNOCK TOWNSHIP PARK LANDS

The location of Pequannock Township at the base of the Waghah Mountains and at the confluence of three rivers gives the Township a unique opportunity to provide a wide variety of recreation and leisure opportunities. Pequannock Township has fourteen parks totaling 646.6 acres with sizes ranging from 0.1 acre in Lyon Park to 310 acres in Mountainside Park. The green highlighted areas in Figure 3 illustrate the recreation facilities provided by Pequannock Township. The red highlighted areas on the same figure are the Township Board of Education facilities. (See also Map 2 for a larger scale map identifying each park by name.) Table 2 on the next page identifies the size of each park and the amenities within. This table also identifies those outdoor facilities owned by the Pequannock Board of Education whose facilities are used by the Park and Recreation Department.



Figure 3 ~ Township Park and Board of Education facility locations.



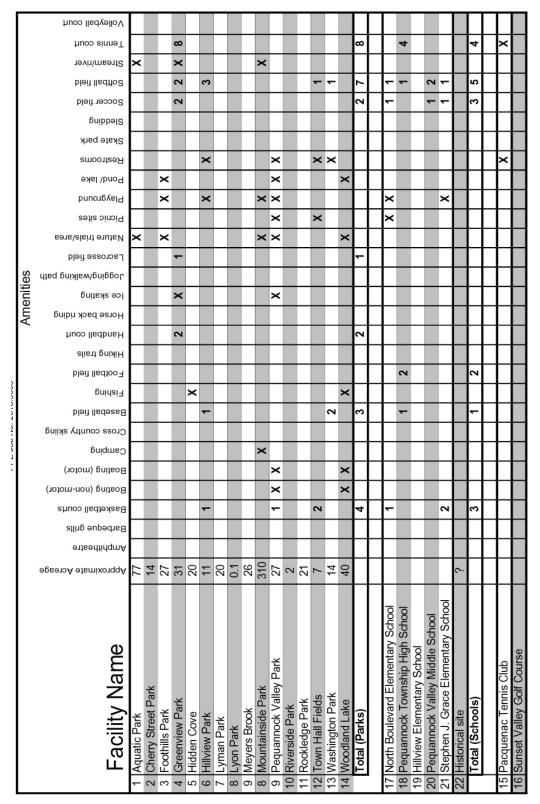


Table 6 ~ Facility Amenities Matrix



Aquatic Park



The seventy-seven (77) acres of Aquatic Park provides the opportunity for varied and unique recreation opportunities. These could include a blueway with canoe portage points, flora and fauna observation, demonstration gardens, nature trails, guided hikes and environmental programs. The existing park, however, provides limited hiking opportunities, whose trails appear to be utilized heavily by ATVs. As the majority of the park is classified as wetlands, the ATVs are disrupting the

environmental ecosystem as well as making it dangerous for people to hike on the trails.

There is no easy access to the park as the only parking available is north of the park and patrons must hike to the park prior to beginning their enjoyment of the park. This limits the number of people utilizing the facility and increases the possibility of ATV use with little policing of the ATV activity occurring. It also limits the possibility of the larger number of patrons accessing the southern limits of the park due to the length of trail that would have to be hiked to reach this area.



Figure 4 ~ Meadow area in Aquatic Park utilized as a circular track by ATVs.

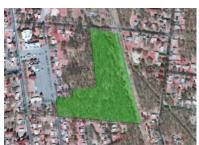


Figure 5 ~ Forested area in Aquatic Park.



Figure 6 ~ Waterway in Aquatic Park.

Cherry Street Park



Cherry Street Park (14-acres) fronts Jefferson Street to the north, residential to the east and south and the New York Susquehanna Western Railway on the west.

Sixty-nine percent (69%) of site is classified as forested wetlands with the area fronting New Street non-wetlands. The City of Newark water supply pipeline right-of-way (ROW) cuts across the northeast corner of

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the park. There is no designated access point into this park. The noted ROW, however, can be utilized for this purpose.

Foothills Park



Foothills Park (27-acres) is located in the northwestern portion of the Township and abuts I-287. It is separated from Mountainside Park by I-287. The park provides a playground and opportunities for open play in the field from spring through fall and sledding in the winter. There is a man-made pond about fifteen feet below the parking grade. The only access to the lake is from the parking area across a lawn down a desire path to the pond edge. The existing grades along

West Parkway at about twenty to twenty-five feet above the pond grade make it difficult to access. In addition, a police training range located at the foot of the I-287 embankment restricts access to the pond from the east.



Figure 7 ~ Open play area in Foothills Park. I-287 and Mountainside Park are in the background.



Figure 8 ~ Sledding at Foothills Park.



Figure 9 ~ Playground at Foothills Park.

Greenview Park



Greenview Park (31-acres) is located in the south-western portion of the Township. It is surrounded by residential development on the north, east and south and Lincoln Park Airport on the east side of Beaver Brook Road. The park does not have access from Beaver Brook Road.

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This park is one of the larger parks in the Township and provides a variety of passive and active recreation amenities. The following amenities can be found in Greenview Park: handball courts, ice skating, lacrosse/soccer fields, picnic area, playground, pond, sledding, softball/Little League fields, tennis courts, restrooms and parking.

In general the amenities are in good condition. Some amenities require maintenance and general improvements to address high use and site drainage issues. The softball field is in overall good condition requiring annual maintenance on the infield and grass areas. The soccer / lacrosse fields are in need of regrading, seeding/sodding and irrigation to begin to address the high use of the fields. The playground area drainage needs to be addressed as it appears water drains through the playground area. It also appears the decomposition of the safety surface is accelerating possibly due to this as well as ground water. The tennis courts are in good condition. The restrooms are functional, however, should be updated.



Figure 12 ~ Greenview Park tennis courts and attendant station



Figure 13 ~ Greenview Park playground area.



Figure 10 ~ Greenview Park soccer/lacrosse field.



Figure 11 ~ Greenview Park Softball/Little League field.



Figure 14 ~ Greenview Park restroom facility.

Hidden Cove



Hidden Cove (20-acres) is located at Lincoln park Road and Boulevard. It consists of a portion of a lake and wooded area a portion of which has wetlands. This facility is used for fishing and hiking. The lake is connected to Lincoln Park's swimming facility. As such, the uses on Pequannock Township's side will have to remain compatible with swimming. As such, no boating will be able to be allowed.

There is poor access with no on-site parking and poor parking availability on adjacent roadways. The adjacent land owner is not

open to a shared parking agreement to allow limited parking for residents who want to access Hidden Cove.

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Hillview Fields



Hillview Fields (11-acres) is located in the south-central portion of the Township. It is contiguous with Hillview Elementary School to the west and Pequannock Valley Middle School to the north. Located on the property are three softball/little league fields, a baseball field, parking and the Township library. The parking lot is shared with Hillview Elementary school. Hillview

Elementary School also has a playground that is near the fields located to the

north of the school building.

The fields are in fair to poor condition. They receive heavy use from both softball/baseball and

soccer/lacrosse teams. The grass is in poor condition from overuse and no time to "rest" and regenerate. The infields and foncing are in fair condition. The parking let is in the parking let in the parking



Figure 15 ~ Hillview Field softball/little league field.

infields and fencing are in fair condition. The parking lot is in good condition.

Lyman Park



Lyman Park is twenty (20) acres of undeveloped park land in the southeast corner of the Township. It is surrounded by residential development. In addition there are residential our-parcels located in the north central of the park area.

The park is primarily forested with a small central clearing. Access is from Hampton Avenue off of Roosevelt Street. Fifty-one percent (51%) of the lands are wetlands. Those that are not include the central clearing and residences and the eastern portion of the site. Existing amenities include a

playground, open play area and parking along the cul-de-sac. The site has poor drainage and takes several days to dry out after a normal rain event.





Figure 16 ~ Lyman Park clearing and playground in



Figure 17 ~ Hampton Avenue access.



Figure 18 ~ Residential outparcels in Lyman Park.

Lyon Park



Figure 19 ~ Lyon Park playground equipment.

Lyon Park is a mini park located on a single lot on Hilton Street at E. Franklin Street. The amenities include playground equipment and benches. They are in good condition.

Meyers Brook



Meyers Brook is a narrow band of twenty-six (26) acres of land that follows a tributary of the Pompton River locally called Meyers Brook. It is located in between backyards in the residential east-central portion of the Township. It connects with Pequannock Valley Park and Woodland Lake. There are no recreation amenities in this park.



Mountainside Park



Mountainside Park is located in the northwest corner of the Township. It is cut off from the remainder of the Township by I-280. Access to the park is from Mountain Avenue Drive. Mountainside Park consists of three hundred and ten (310) wooded acres, hiking trails, camping area, views of the Pequannock Valley and a small parking area. The trails are varied in the section north of the parking lot and east of the utility easement. These trails are blazed but some are overgrown and unclear. There were no apparent trails to the south of the parking lot or west of the utility easement. Students travel to the park to study the geological formations found there.



Figure 20 ~ View from Mountainside Park



Figure 21 ~ Trail and marking at Mountainside Park.



Figure 22 ~ Mountainside Park camp area

Pequannock Valley Park



Pequannock Valley Park is the Township's only swimming facility. There is a membership fee to be able to utilize the twenty-seven (27) acre facility. Recreation amenities include a pond with a sand beach, playground area, picnic areas, nature trails, basketball court and parking.

The lake was created by damming a portion of Woodland Lake. The dam is required in order to regulate the water quality. This dam has received

repairs recently and is in need of additional repairs, in the amount of approximately \$250,000, within the next five years. The remaining amenities are in good condition but have not been updated.





Figure 23 ~ Pequannock Valley Park swimming lanes.



Figure 24 ~ Members entering Pequannock Valley Park.



Figure 25 ~ Pequannock Valley Park picnic area with lake in the background.

Riverside Park



Riverside Park (2 acres) is located adjacent to the Pompton River in the southeast corner of the township. This wooded site has views of the river and Wayne Township. There is also a piece of playground equipment and benches.

Rockledge Park



Rockledge Park (21-acres) is located on Sunset Road with access also from Farm Road and Coopers Court. The majority of the site is forested with the area off of Coopers Court an open grass area. Sixty seven percent (67%) of the site is classified as wetlands with the eastern finger extending towards Sunset Road not classified as forested wetlands. These same areas are New Jersey Landscape Project Rank 3 for the wood turtle. The wood turtle is a state threatened species. Rank 3 indicates that there have been one or more occurrences of sighting the species. The

possibility of the wood turtle on site will require further studies to be completed prior to any site development. Based upon the study findings the site's development may be restricted.



Town Hall Field



Town Hall field is located on Township property behind Town Hall off of the Newark Pompton Turnpike. Recreation amenities on this site include a baseball field, two basketball courts, a gazebo, picnic table, the Senior Building and parking. Also on the site include the Township Police Headquarters and the First Aid Squad.

The baseball field is in good condition. The grass has irrigation and has helped the playability of the field.

The infield is oversized. The basketball courts need resurfacing. This is scheduled as a 2007 capital improvement. Cars park on the current courts during the winter time.



Figure 26 ~ Town Hall baseball field



Figure 27 ~ Town Hall basketball courts.

Washington Park

Washington Park is located off of Jefferson Street across from Cherry Street Park. Access to the park is also from Adams Street to the eastern parking lot and Washington Street to the western parking lot.

The fourteen (14) acres of Washington Park are an athletic complex with three softball/little league fields, scoreboard buildings, concession building and parking. All

three fields have sports lighting and irrigation. The ball fields are all in good condition. The eastern parking lot is in good condition. The western parking lot has several large puddles after a normal rain. The paving is also in need of replacement.

Other uses within the park include the Pequannock Township Department of Public Works (DPW)and Animal Control. DPW is using almost half of the park as a construction debris dumping yard and for material and equipment storage. This area is the first thing seen as you



Figure 28 ~ Washington Park southern ball field.



enter the park from the main entrance off Jefferson Street. Construction traffic uses this entrance to access the DPW yard. This has damaged the entrance road and parking area. The animal control building is on the northern boundary of the park.



Figure 29 ~ DPW dumping area in Washington Park.



Figure 30 ~ Washington Park concessions building.



Figure 31 ~ Washington Park northern ball field.

Woodland Lake



The majority of the forty (40) acres of the Woodland Lake property is the lake itself. The lake is accessed off of Alexander Avenue into a gravel parking area. The lake is used for fishing and boating. There is a desire path along the southern lake edge that connects to what appears is access from the Rt. 23 interchange to a property north of Woodland Lake. Woodland Lake is contiguous with Pequannock Valley Park and Meyers Brook.

The gravel entrance drive and parking area are in fair condition. The boat launch and the eastern lake edge are in poor condition. Other amenities include benches and views.



Figure 32 ~ Woodland Lake boat launch and gravel parking area.



Figure 33 ~ Trail around Woodland Lake



Figure 34 ~ Woodland Lake



PEQUANNOCK TOWNSHIP BOARD OF EDUCATION LANDS

Pequannock Board of Education (BOE) has three elementary schools, one middle school and one high school that is manages for the residents of Pequannock. The athletic fields at all of the elementary schools and the middle school are used also for Township Park and Recreation Department programs. These schools are also utilized for the indoor programming.

OTHER RECREATION OPPORTUNITIES

Morris County operates the 18-hole Sunset Valley Golf Course located adjacent to I-287 off of West Sunset Road. This course, designed by Hal C. Purdy, is regarded as one of the premier golf courses in New Jersey. It is a par 70 - 6,483 yard course and "offers one of the most breathtaking views in Morris County".

NATURAL RESOURCES

New Jersey Landscape Project

The NJDEP completed the New Jersey Landscape Project (NJLP) in 1994 with the primary goal "to protect New Jersey's biological diversity by maintaining and enhancing imperiled wildlife populations within healthy, functioning ecosystems". By combining imperiled and priority species location information with land-use/land-cover data, NJDEP was able to provide a comprehensive guide to allow individuals and agencies to make ecologically responsible decisions regarding land-use in New Jersey. It is important to note that the data contained within the NJLP was specifically designed to function as a planning tool and carries with it no regulatory implications.

The Landscape Project divides habitat patches into five (5) critical area classifications based on the number of occurrences of State or Federal priority, threatened and endangered species. These critical area rankings are as follows:

Rank 5	Assigned to patches containing one or more occurrences of at least one wildlife species listed as threatened or endangered on the Federal list of endangered and threatened species.
Rank 4	Assigned to patches with one or more occurrences of at least one State endangered species. (none in Pequannock Township)
Rank 3	Assigned to patches containing one or more occurrences of at least one State threatened species.
Rank 2	Assigned to patches containing one or more occurrences of at least non-listed State priority species.
Rank 1	Assigned to patches that meet habitat-specific suitability requirements, such as minimum size criteria for endangered,



threatened or priority wildlife species, but that do not intersect with any confirmed occurrences of such species

Of these five classifications, Rank 5 is the only one that does not exist within Pequannock Township. Each rank is further divided by habitat type based on land cover data. Five (5) distinct habitat types were identified within Pequannock Township including: Forest, Grassland, Emergent Wetland, Forested Wetland, and Wood Turtle Habitat. See map titled NJ Landscape Project (Maps 10-14). The following are the critical area/habitat type combinations that can be found within Pequannock Township.

Forest

Within Pequannock Township Rank 2, Rank 3, and Rank 4 priority areas within the forest habitat were identified. The Rank 2 Priority Species forest is present as a single patch within Aquatic Park at Pequannock Township's Northwest corner. Rank 3 Forested Areas are present along much of Pequannock Township's Western half and encompass most of Rockledge Park and parts of Greenview Park.

Grasslands

Grasslands as defined by the New Jersey Landscape Project materialize within Pequannock Township as of a single patch located just north of Route 504 and to the West of West Parkway. This patch does not fall within any of Pequannock Township's existing parks.

Forested Wetlands

Forested wetlands, most of which are Rank 2, are found in abundance throughout Pequannock Township. Rank 1 Forested Wetlands straddle Pequannock Township's western border and are present minimally within Mountainside Park. Rank 2 Forested wetlands are located throughout the township and are typically located adjacent to the Pompton River as well as the East and West Ditches and are found in many of Pequannock Townships Parks including Rockledge, Greenview, Cheery Street, Lyman, Myers Brook, and Aquatic. It is important to keep in mind that although the NJLP does not carry any regulatory weight, all areas identified as forested wetlands within Pequannock Township are subject to NJDEP wetlands regulations.

Emergent Wetlands

Both Rank 1 and Rank 2 Emergent wetlands can be found minimally within Pequannock Township. There is a small portion of Rockledge Park's southwest corner classified as Rank 1 while much of the northern boundary of Aquatic Park falls within this classification. It is important to note that although these areas are not classified as wetlands by NJDEP, they are likely to still exhibit some of the characteristics of wetlands, such as poor drainage and wet soil.



Woodland Turtle Habitat

Much of Pequannock Township's southwestern corner is comprised of Rank 3 Woodland Turtle habitat for threatened species. The only park that this area is present in is Rockledge Park which consists of about 95% of land classified as Rank 3 Woodland Turtle Habitat.

Environmental Resource Inventory

In September 1995 Thonet and Associates completed an Environmental Resource Inventory (ERI) with the help of the Pequannock Environmental Commission. This Master Plan will summarize the environmental inventory findings from the ERI. The ERI should be consulted for more detailed information. Inventory findings have been augmented with data that has been made available since the ERI was completed.

Topography

The largest portion of Pequannock Township is very flat, having elevations that vary between 180 and 200 feet above mean sea level. In the northwestern corner of the Township from the western portion of Mountainside Avenue west elevations begin at about 200 feet and climb up to 734 feet at the top of Pequannock's Turkey Mountain, aka Pequannock Knob. These high elevations provide excellent views of Pequannock Valley and they are viewed from several locations within the Township.

Geology

Pequannock Township lies within the Mesozoic Piedmont and the Precambrian Highlands New Jersey geographic provinces. The Ramapo Fault separates the provinces in Pequannock (Map 15). The Ramapo fault is a series of smaller, parallel faults running in as southwest-northeast strike. The oldest rocks found in Pequannock are the Precambrian gneisses. Fine-textured sediments were deposited on the Glacial Lake Passaic lake bottom forming an impermeable cap which confines Pequannock's subterranean aquifer, the source of most of the township's drinking water (Map 16). In Pequannock, pockets of till can still be found with giant boulders (glacial erratics) on top of the peaks of the Highlands. The valley, however, is mostly filed with fluvoglacial deposits dropped by torrential melt water streams and moraine-dammed Glacial Lake Passaic sediments.

Soils

Soils in Pequannock Township range from gravely stony soils to mucky soils (Map 16). Approximately fifty-two percent (52%) of the soils in Pequannock Township are classified as Urban Lands, are part of the Riverhead-Urban land-Pompton association, whose boundaries generally conform to the developed areas within the Township. These soils consist of wet organic soils, wet clayey soils, and wet or dry gravelly sandy loams. They are underlain by stratified or lacustrine sediment are in basins, on low plains, or on terraces. This association consist of deep, well drained to somewhat poorly drained, nearly level or strongly sloping gravelly sandy loams and sandy loams that overlie stratified outwash sand and gravel on outwash plains and terraces. The



Pequannock Township Town-wide Park and Recreation Master Plan

Pompton and Riverhead soils are in the higher elevations within the low-lying areas in the western section of the Township.

Approximately fifteen percent (15%) of the soils are part of the Rockaway-Hibernia-Urban land association. These soils are deep, well-drained to somewhat poorly drained, gently sloping to steep gravelly sandy loams and stony to extremely stony loams and sandy loams that overlie granite gneiss on uplands. These soils are generally found in the northwest section of the Township in the area of Mountainside Park.

Approximately twelve percent (12%) of the soils in the Township are in the Carlisle-Parsippany-Preakness association. This association was also formed in glacial land sediment or outwash. Soils in this association are deep, poorly drained and very poorly drained, nearly level mucks silt loams, and sandy loams that overlie stratified lacustrine sand, silt, and clay or stratified outwash sand and gravel in depressions or along low-gradient streams.

The following is specific soils information regarding the sites identified in the *Open Space and Recreation Plan* as possible for athletic fields.

Rockledge Park

CarAt-Carlisle muck, frequently flooded (85%), frequent ponding (saturating soil up to one (1) foot in depth, for long periods of time except in July and August, brief flooding, high water table at grade.

PrkAt - Preakness sandy loam - poorly drained brief flooding and ponding year round lasting for brief periods (saturating soil up to one(1) foot depth), depth to high water table at to 6" below grade.

PrsdAt - Preakness dark surface variant sandy loam - rarely occurring, long lasting periods of ponding year round (saturating soil up to 0.4' depth), frequent but brief periods of flooding year round, high water table at grade to 6" below grade.

Aquatic Park

PbphAt - Parsippany, sandy loam substratum - Frequent periods of flooding and ponding in the spring lasting for brief periods (saturating soils up to one (1) foot depth), occasional periods of ponding for brief periods and no flooding in the fall, high water table at to one (1) foot below grade in the fall to spring with the high water table dropping to one to two feet below grade in July and August.

Riverside Park

UR - Urban land - No flooding.

Lyman Park

CarAt-Carlisle muck, frequently flooded (85%), frequent ponding (saturating soil up to one (1) foot in depth, for long periods of time except in July and August, brief flooding, high water table at (above) grade.



Woodland Lake

PrkAt - Preakness sandy loam - poorly drained brief flooding and ponding year round lasting for brief periods (saturating soil up to one(1) foot depth), depth to high water table at to 6" below grade.

USHRVB - Urban Land - Not flooded., not rated.

UR -Urban Land - not rated

Hydrology

Pequannock Township's principal open waters include the Pequannock River, the Pompton River, East Ditch, West Ditch, and Sawmill Creek. The Pompton River is formed as the Pequannock and Ramapo Rivers converge, and flows southerly for about seven miles into the Passaic River in Lincoln Park. It marks the eastern boundary of the Township of Pequannock and the Pequannock, Ramapo, Wanaque River and Pompton Rivers are all tributaries of the Passaic River (Map 17).

Pequannock Township sits atop three distinct watersheds; the Pompton River, which comprises approximately 90% of the Township's area, the Pequannock River which comprises a great majority of the remaining area along the Township's northern border, and the Ramapo River Watershed which occurs minimally at the Pequannock's northwestern corner.

Development implications related to Pequannock Township's surface hydrology include regulations regarding flood hazard areas, net fill, trout production waters and wetlands. Regulations regarding groundwater hydrology include community wellhead protection areas.

Surface Hydrology

Low lying areas of Pequannock are subject to periodic flooding caused by the overflow of the Pompton, Pequannock, and Ramapo Rivers, the East and West Ditches and tributaries to the East Ditch.

Food hazard areas: The floodway is the channel of a stream/river, plus any adjacent flood plain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. The area between the floodway and NJDEP's Flood Hazard Area boundaries is termed the flood fringe. The flood fringe encompasses that portion of the flood plain that could be completely obstructed without increasing the water surface elevation of the 100-year flood more than 0.2 foot at any point, with such encroachment not increasing the magnitude of the peak flows. Map 18 identifies the flood hazard areas within the Township.

Net fill: Grading during land development is regulated along open waters. In the Central Passaic Basin, grading must not exceed zero net fill (overall soil quantities must meet existing volume prior to development), and for the remaining food plains in the western part of the Township north of Jacksonville Road, the maximum net fill allowance is twenty percent.



Pequannock Township Town-wide Park and Recreation Master Plan

Trout production waters: All of the streams in Pequannock are classified by NJDEP as Fershwater-2 Non-Trout (TW2-NT) waters. In all FW2-NT waters, the designated uses are:

- 1. Maintenance, migration and propagation of the natural and established biota;
- 2. Primary and secondary contact recreation;
- 3. Industrial and agricultural water supply;
- 4. Public potable water supply after such treatment as required by law or regulation;
- 5. Any other reasonable uses.

Groundwater Hydrology

Groundwater is subsurface water occurring in fully saturated soils and geologic formation, not as isolated bodies of underground water, but rather as integral parts of the hydrologic cycle (see the ERI for more details on the hydrologic cycle). Map 19 identifies the differing rates of groundwater recharge in the Township.

Community Wellhead Protection Areas: A Well Head Protection Area (WHPA) in New Jersey is a map area calculated around a Public Community Water Supply (PCWS) well in New Jersey that delineates the horizontal extent of ground water captured by a well pumping at a specific rate over a two-, five-, and twelve-year period of time. WHPA delineations are conducted in response to the Safe Drinking Water Act Amendments of 1986 and 1996 as part of the Source Water Protection Program (SWAP).

Water Supply

Pequannock Township acquires their water from 4 sources; 3 high volume wells, Newark Water Supply Aqueducts, Lincoln Park, and Riverdale. The Township relies on the 3 wells for 96 % of its water supply. The wells are located in the north portion of the Township. The Newark Water Supply Aqueducts are use for a back up to the wells as well as the connection to Lincoln Park's water supply. The Riverdale's water supply connection is used as an emergency connection. Map 20 locates the Township's water supply wells and the aquifers underlying the Township.

Wastewater Disposal

Pequannock Township is serviced by the Two Bridges Sewer Authority that is located in Lincoln Pak. Many of the homes are not connected to this sewer system and rely on septic systems. With in the township there is only one treatment plant located at the Plains Plaza Shopping Center, however this is a privately owned facility to be used only by the shopping center.

Land Cover

Pequannock Township is considered fully developed. Those lands that are not developed have environmental constraints associated with them. Map 21 identifies the different land cover types within the Township.



Vegetation and Wildlife

Forest

The natural vegetation in Pequannock is typical for the geographic region with four types of forest that are prevalent within the town. Chestnut forest, mixed oak forest, sugar maple hardwoods forest, and hemlock mixed hardwoods forest; each with their on distinctive characteristic. The chestnut forest is found in the highlands region along ridge tops, slopes, and outcroppings. The mesic uplands is the area were the mixed oak forest, sugar maple hardwoods forest, and hemlock mixed hardwoods forest are found. Further information on what type of vegetation in the types of forest can found in Pequannock Township Environmental Resource Inventory.

Wetlands

Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands play an essential role in the overall well being of the environment and provide natural habitats. Approximately 16% of Pequannock Township is wetlands most of which are protected open space.

Wildlife

The Wildlife found in Pequannock is typical for the geographic region, a list of specific species can be found in Pequannock Township Environmental Resource Inventory. The variety and abundance of wildlife population is a clear indicator that other aspects of the natural environment are relatively stable. According to New Jersey Department Environmental Protection (NJDEP) there are woodland turtles within Pequannock which are a threatened and endangered species. There are several federal and state regulations protecting the woodland turtle and its habitat including the Endangered Species Act (ESA) and the Habitat Conservation Plans (HCP).

Existing Parks Developable Lands

An evaluation of the natural resources of the existing park lands has identifies several environmental factors that will impact the ability to expand existing facilities or develop currently undeveloped park lands. These environmental factors include wetlands, steep slopes and floodway locations. Each of these factors has regulations restricting development in areas where they are located. Table 7 identifies these constraints per park and the overall impact on the amount of land available for unrestricted development.



	Total Area (Ac.)	Wetlands* (Ac.)	Wetlands (% total)	Steep Slopes (Ac.)	Steep Slopes (%)	Floodway (Ac.)	Floodway (% total)	Total Developable Lands (Ac.)	Total Developable Lands (%)
Aquatic Park	77	75	97%	0	0%	73	95%	2	3%
Cherry Street Park - undeveloped	14	10	69%	0	0%	0	0%	4	32%
Foothills Park	27	3	12%	11	43%	0	0%	12	45%
Greenview Park	31	5	16%	0	0%	0	0%	26	84%
Hidden Cove Park	20	14	71%	0	0%	0	0%	6	29%
Hillview Park	11	0	0%	0	0%	0	0%	11	100%
Lyman Park	23	12	51%	0	0%	0	0%	11	49%
Lyon Park	0.1	0	0%	0	0%	0	0%	0.1	100%
Meyers Brook - undeveloped	26	10	37%	0	0%	0	0%	16	63%
Mountainside Park	351	9	3%	315	90%	0	0%	26	8%
Pequannock Valley Park	27	5	19%	0	0%	0	0%	22	81%
Riverside Park	2	0	0%	0	0%	2	100%	0	0%
Rockledge Park - undeveloped	21	14	67%	1	3%	2	8%	5	22%
Town Hall Fields	7	0	0%	0	0%	0	0%	7	100%
Washington Park	14	0.1	0.9%	0	0%	0	0%	13.9	98%
Woodland Lake	40	38	95%	0	0%	0	0%	2	5%

^{*} Wetlands area does not include buffer zone areas. The buffer area will reduce the developable area further.

Table 7 ~ Environmental factors effecting park land development

The fertile valley at the confluence of three rivers that was so appealing for settlers brings with it the associated river floodways and wetlands. The majority of the Township's park lands are greatly affected by these environmental factors. Only those facilities centrally located in the Township are unaffected. In general, wetlands may not be filled or altered. The development of trails, however, is permissible by permit from the New Jersey Department of Environmental Protection (NJDEP). No development is allowed within floodway limits. Steep slopes may be regulated by ordinance as well as best management practices and in this instance the Highlands Act.

AIR QUALITY

Air pollution has been a growing concern among many environmentalists within the last several decades. With words such as greenhouse gases, the ozone, and global warming becoming part of everyday conversation within the past several years a vaster segment of the population is concerned about air quality. New Jersey air quality has improved since the passage of the Clean Air Act in 1970. One of the major pollutants that remains a concern in New Jersey in acid rain with pH level ten times higher then that which naturally occurs. To date there are no regulation to set an air quality standard for acid rain.

Noise Levels

Noise is classified as a pollutant because by definition it is an unwanted sound and can affect the health and well being of people and the enjoyment of property. The three leading causes of noise are Route 287, Route 23, and Lincoln Park Airport.

CONTAMINATED SITES

Pequannock Township has 21 contaminated sites as listed in the NJDEP publication *Known Contaminated Sites in New Jersey,* 7th edition. The sites listed are confirmed to have soil and/or groundwater contaminants.



CONNECTIVITY OF OPEN SPACE SYSTEM

Pequannock Township's open space system lacks a cohesive connective system such as a greenway system or bicycle paths. The parks, board of education properties, township owned lands, other public lands, cultural resources, and environmental resources are not distributed evenly throughout the township.

The majority of the parks within the Township are located in the central to southern area of the town. The two largest parks Mountainside Park and Aquatic Park are located in the northern portion of the Township and both parks are separated from the town by a major roadway, interstate highway 287 separates Mountainside Park and Route 23 separates Aquatic Park. Mountain Avenue is the only access to Mountainside Park within Pequannock. No other access is available within the town due to interstate highway 287 traversing the northwest corner of Pequannock Township. Aquatic Park located in the northeast corner of the township is separated from the nearest residential neighborhood by Route 23 with no pedestrian access other then crossing the highway. The other parks are within the residential neighborhoods and are relatively accessible to the community.

The schools are evenly distributed throughout Pequannock with the elementary schools in the northern, central, and southern sections and the Middle and High schools are centrally located.

The County owned Sunset Valley Golf Course is located on the west side of the township with part of the course in the Borough of Kinnelon. The entrance to the golf course is located on West Sunset Road within a residential neighborhood.

The cultural resources of the Pequannock refer mainly to the historic sites. These sites are located throughout the Township with a majority of the site located on Newark Pompton Turnpike.

Pequannock has a verity of environmental resources from the 720-foot vertical peek at Mountainside Park to the Pompton and Pequannock rivers that create the natural eastern border of the township. The largest of these environmental resources are the preserved wetlands. The wetlands play an integral part in the environmental well being of not only the town but the inter state. These preserved areas are sanctuaries for wildlife within the ever-expanding urban environment. The wetlands also act as a natural filter for storm water prior to the water entering the second largest environmental resources of the township the rivers, streams, lakes, and ponds. These water bodies are both a fundamental part of the uniqueness of Pequannock as well as the town's park system. Sixty percent of the parks are associated with one or more of these water bodies. The vitality of these water bodies is also important to the entire state because they provide refuge for migrating waterfowls and other wildlife. The variety of environmental resources are also an excellent educational tool for the residents of Pequannock.



Pequannock Township Town-wide Park and Recreation Master Plan

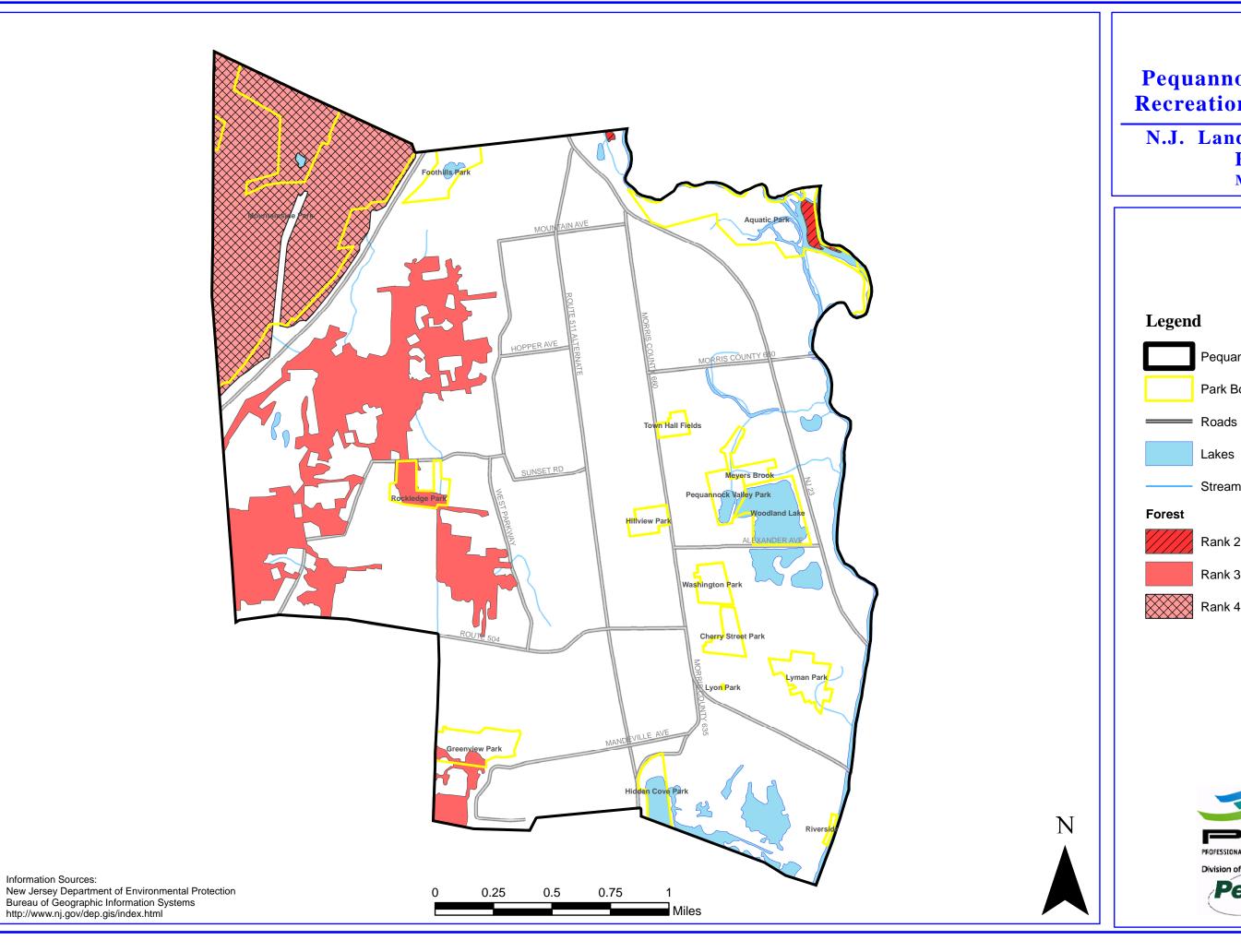
Although Pequannock Township has an array of open space resources, one critical element is missing. A cohesive path/ trail system to link Pequannock open space elements together. Several systems can be used to fill this void such as a greenway or bicycle path. The goal of the path system is to link the varies open spaces making them assessable by walking or bicycle, therefore eliminating the necessity of Pequannock residence to drive in order to enjoy the open spaces of the Township.

A greenway is a multi-purpose linear route usually a railroad right-of-way that is no longer used and converted into a pedestrian and cyclist thoroughfare. The unused New York Susquehanna Western Railway Corporation rail line, which traverses the eastern section of the Township from the northern boarder between Pequannock and Riverdale heading southward parallel to Newark Pompton Turnpike and crossing the Pompton River into Wayne near Pia Costa Lake at the southern boarder between Pequannock and Lincoln Park. Currently the land is owned by the New York Susquehanna Western Railway Corporation. The Township should look at acquire the land because this would be ideal for the much needed greenway. The conversion of this property in to a greenway would also assist the Morris County in realizing their goal of establishing a multi-use trail system in this section of the county.

Another way to define a greenway is a street connected in a network throughout the city, which is enhanced to provide a pleasant environment for pedestrians and cycling. A greenway of this type would coincide with the proposed trail system in the Township master plan, illustrated on appendix MPA #1. Six streets should be converted in to this type of greenway, Newark Pompton Turnpike, West Franklin Avenue, Ackerson Avenue, Mountain Avenue, Sunset road, Ackerson Avenue, and West Parkway. Turning these streets into greenways would enable the parks, cultural and environmental resources, and schools assessable for pedestrians and cycling directly from one of these roads or with a short walk. West Parkway should have a bicycle lane in conjunction with the County's plan to link to an existing bicycle trail in Riverdale, although this plan has been rejected by the residence on this road in the past.

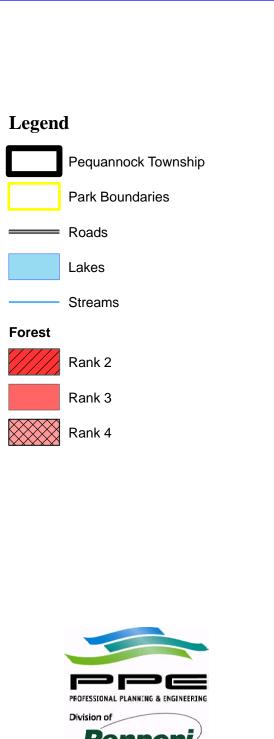




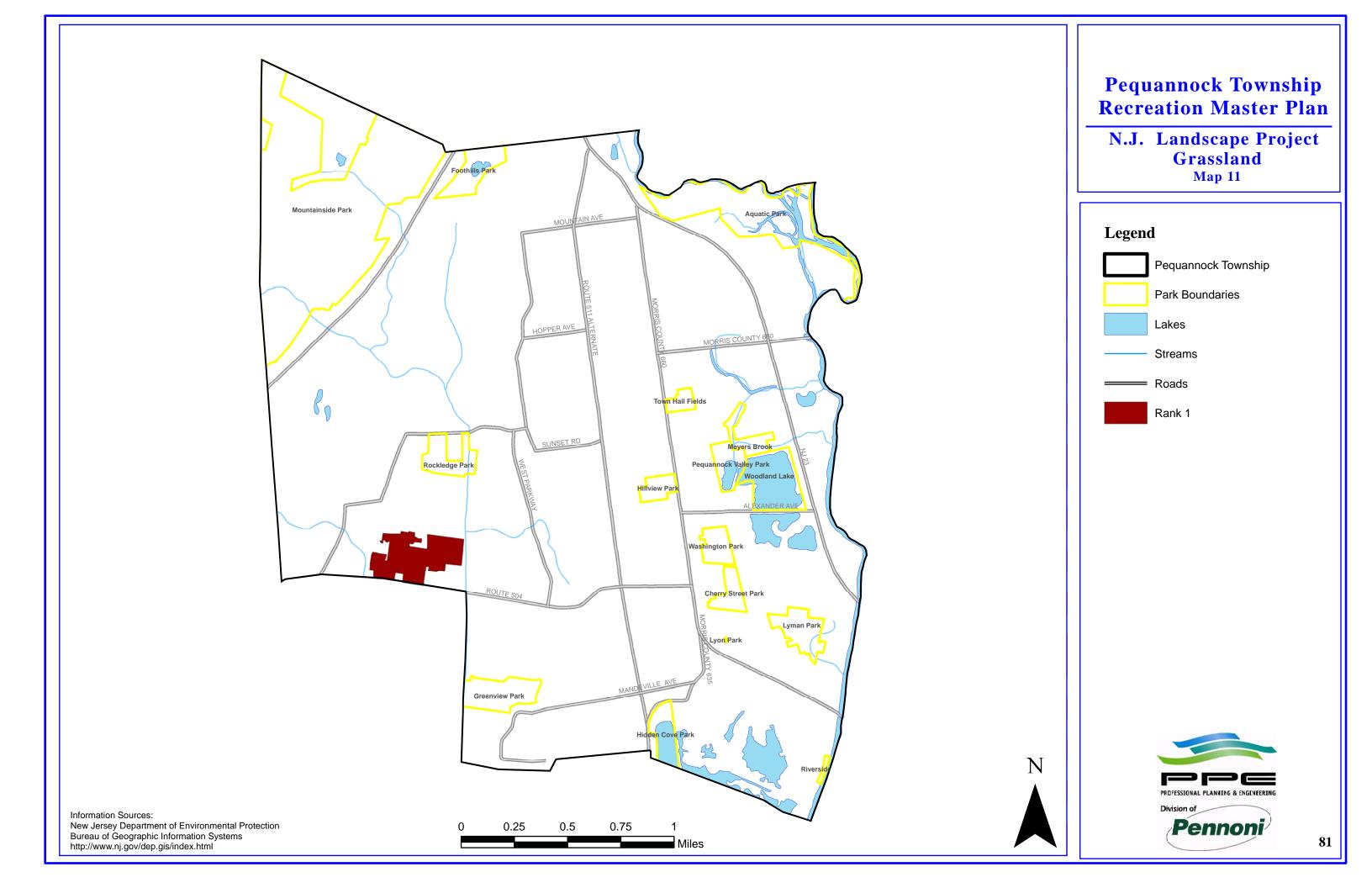


Pequannock Township Recreation Master Plan

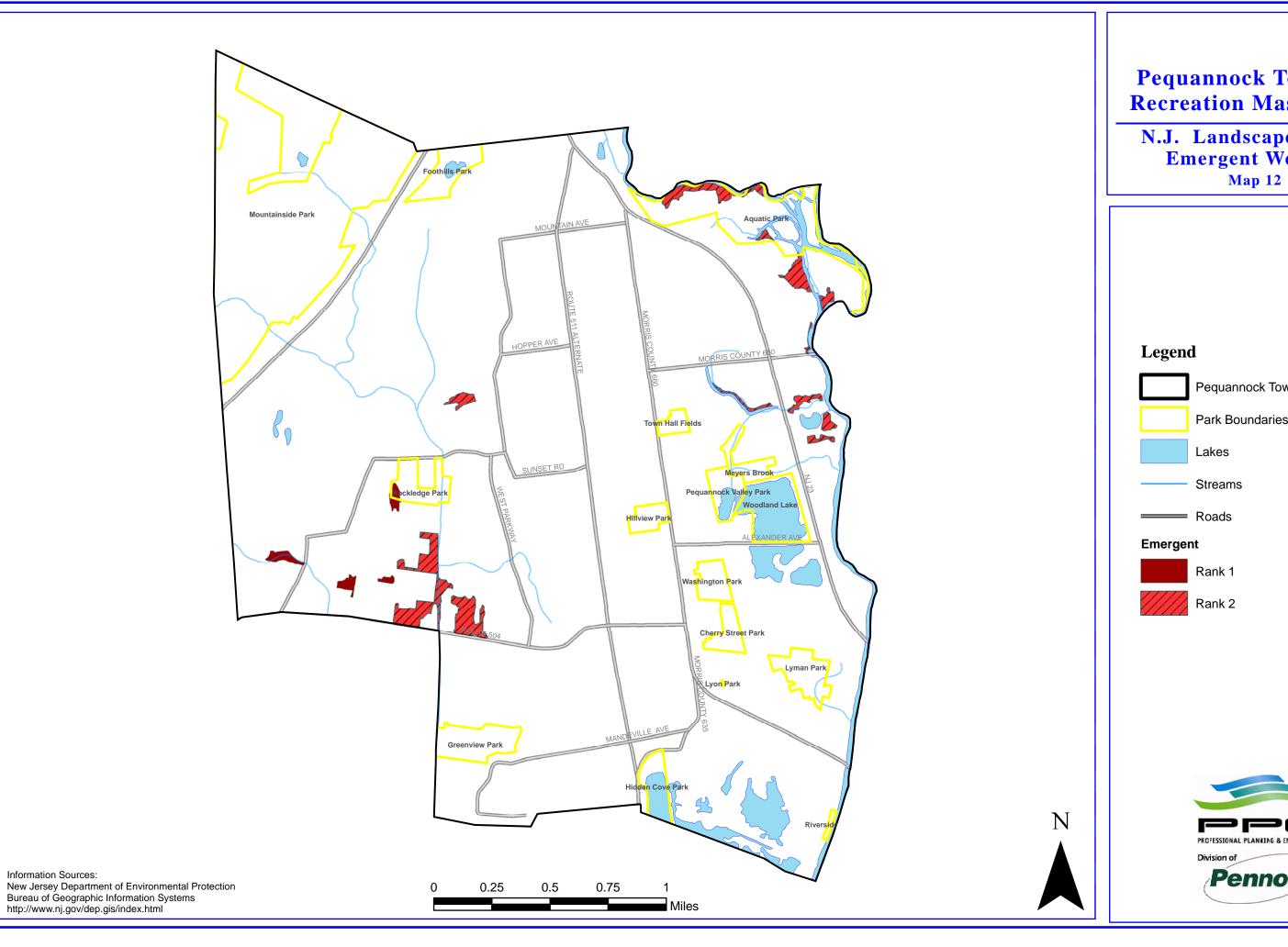
N.J. Landscape Project
Forest
Map 10











Pequannock Township Recreation Master Plan

N.J. Landscape Project **Emergent Wetlands**

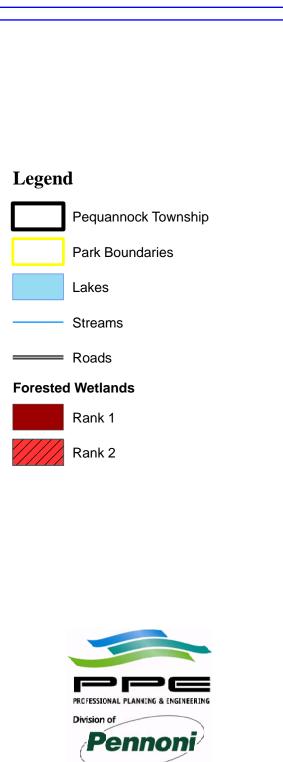




Information Sources: New Jersey Department of Environmental Protection Bureau of Geographic Information Systems http://www.nj.gov/dep.gis/index.html

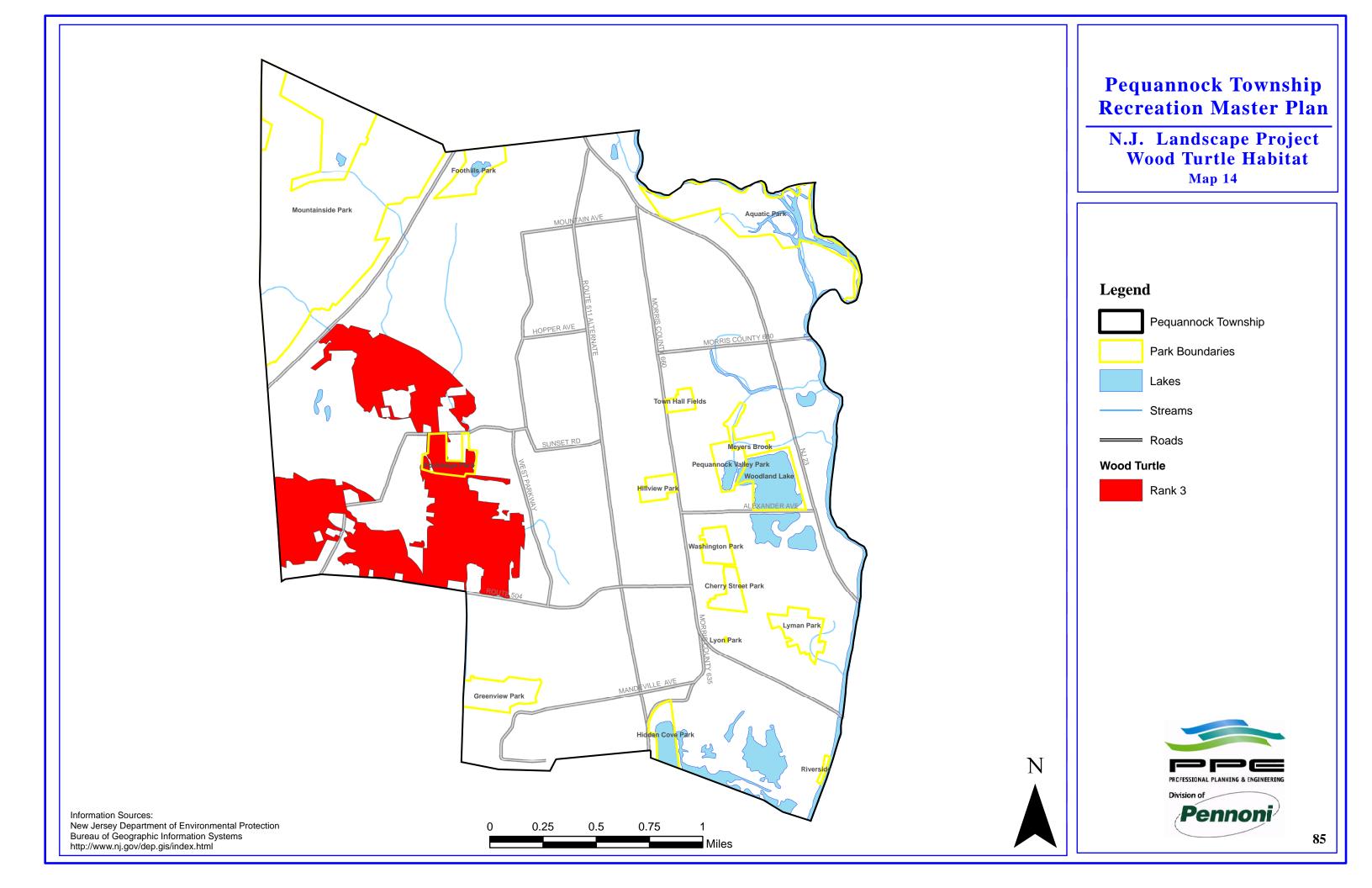
Pequannock Township Recreation Master Plan

N.J. Landscape Project Forested Wetlands Map 13

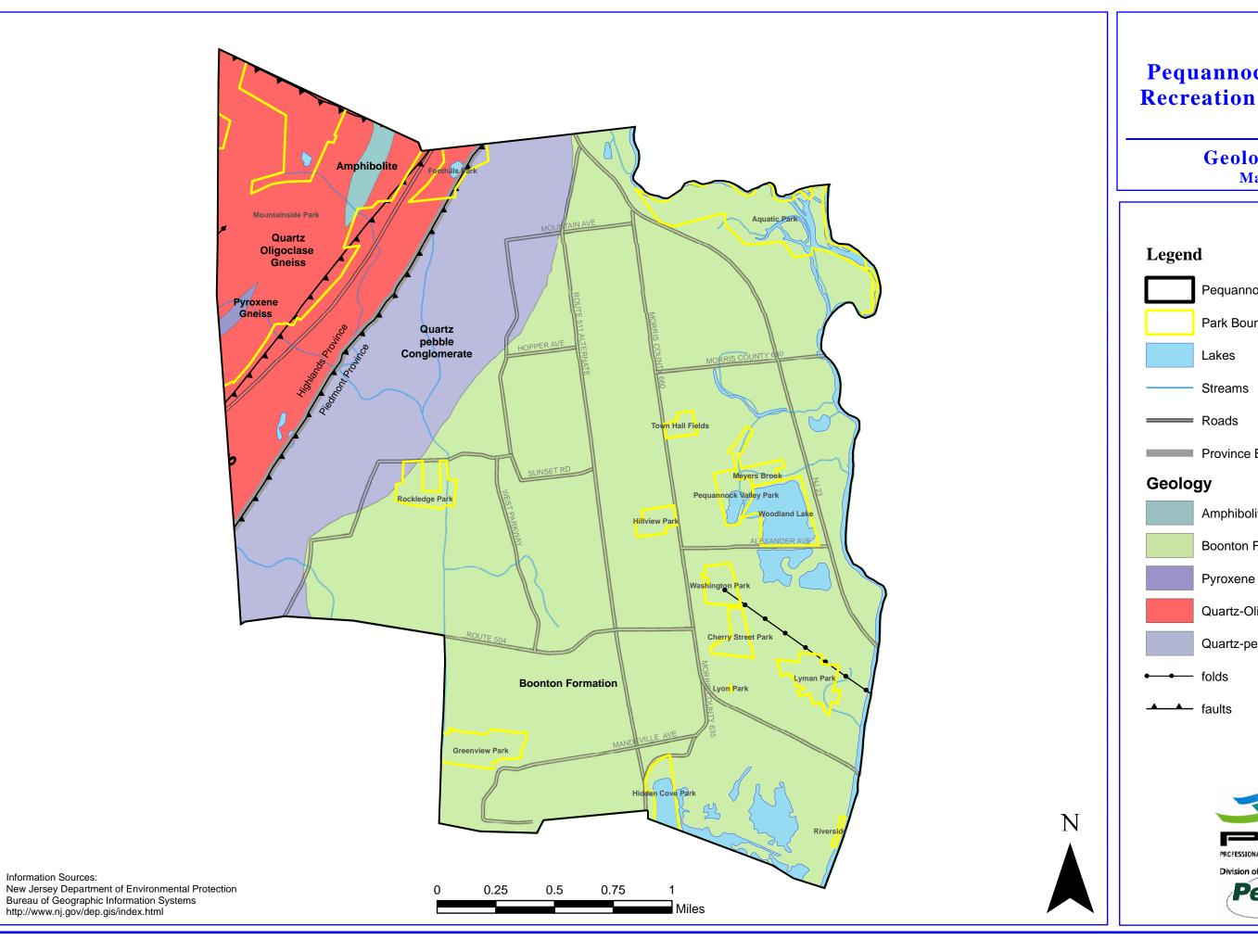


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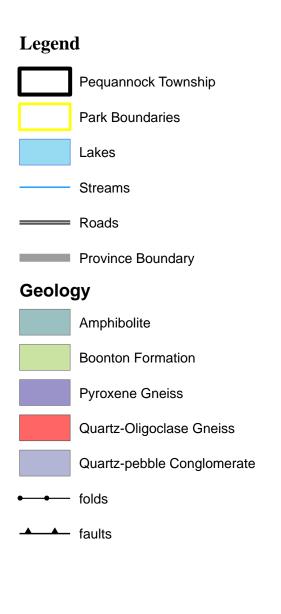






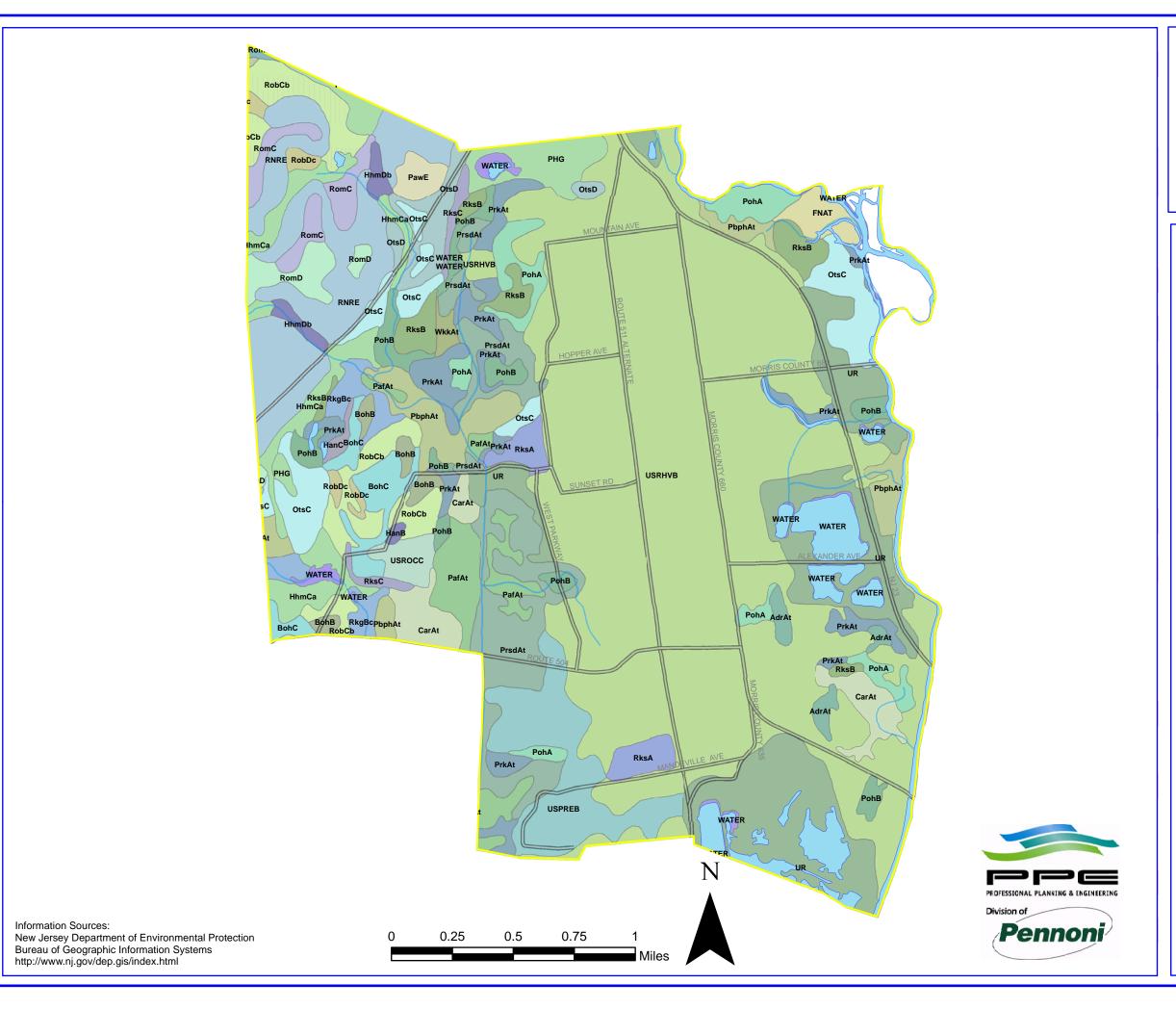
Pequannock Township Recreation Master Plan

Geology Map Map 15

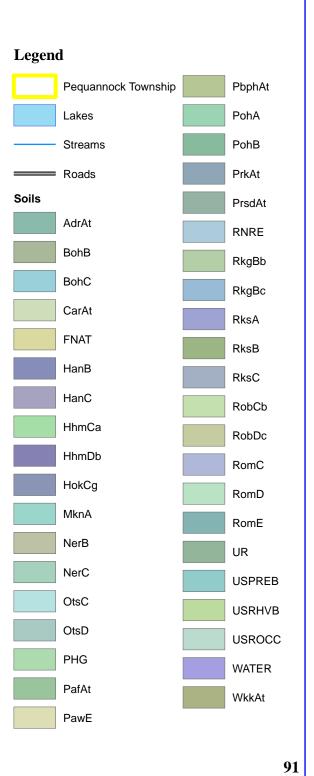




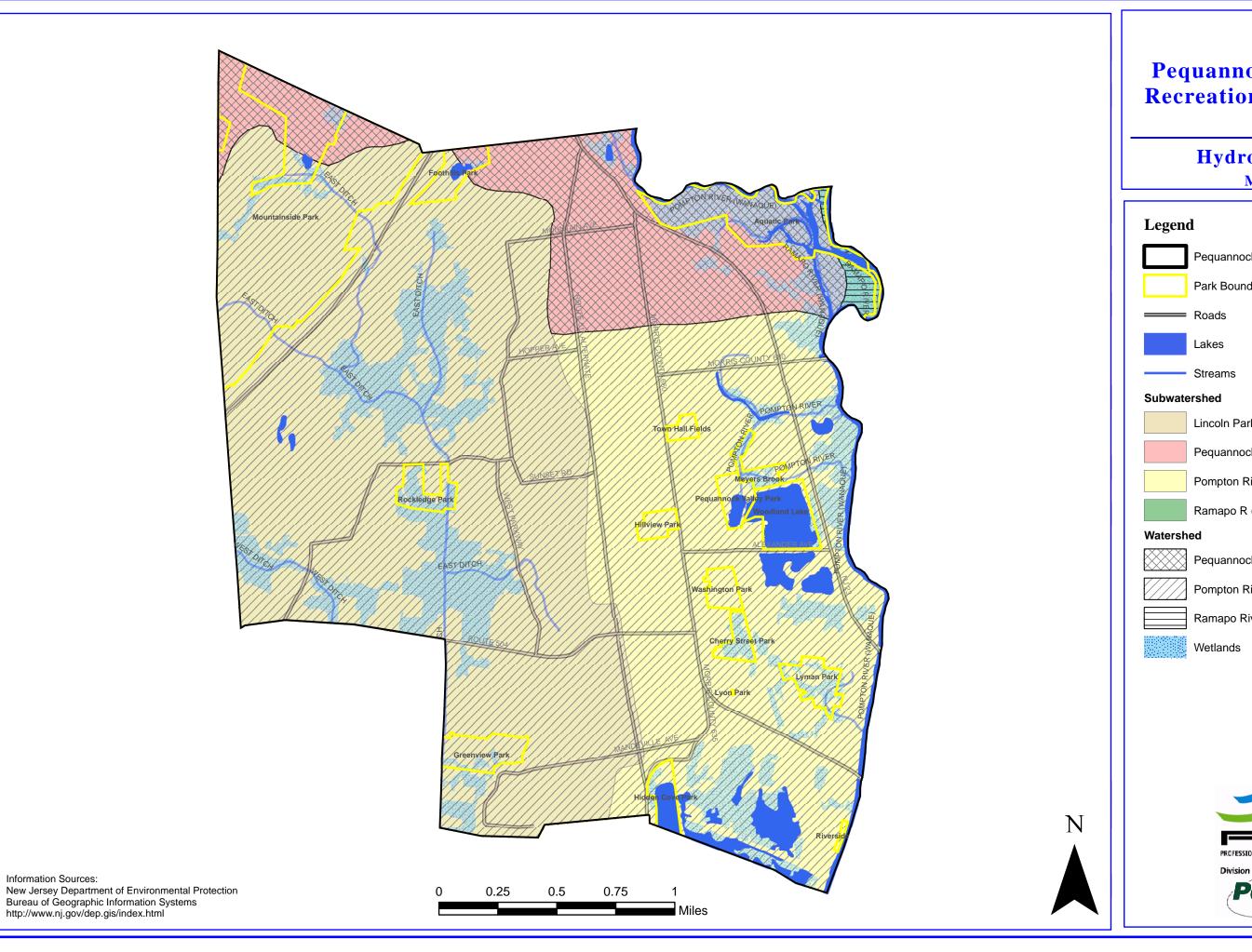




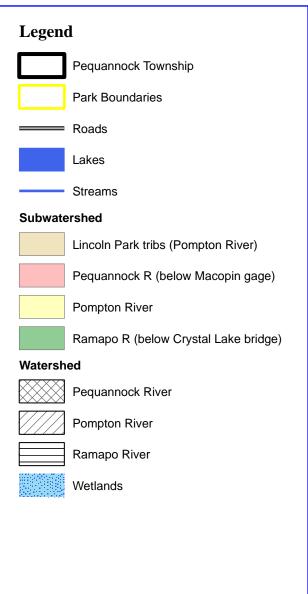
Soils Map 16





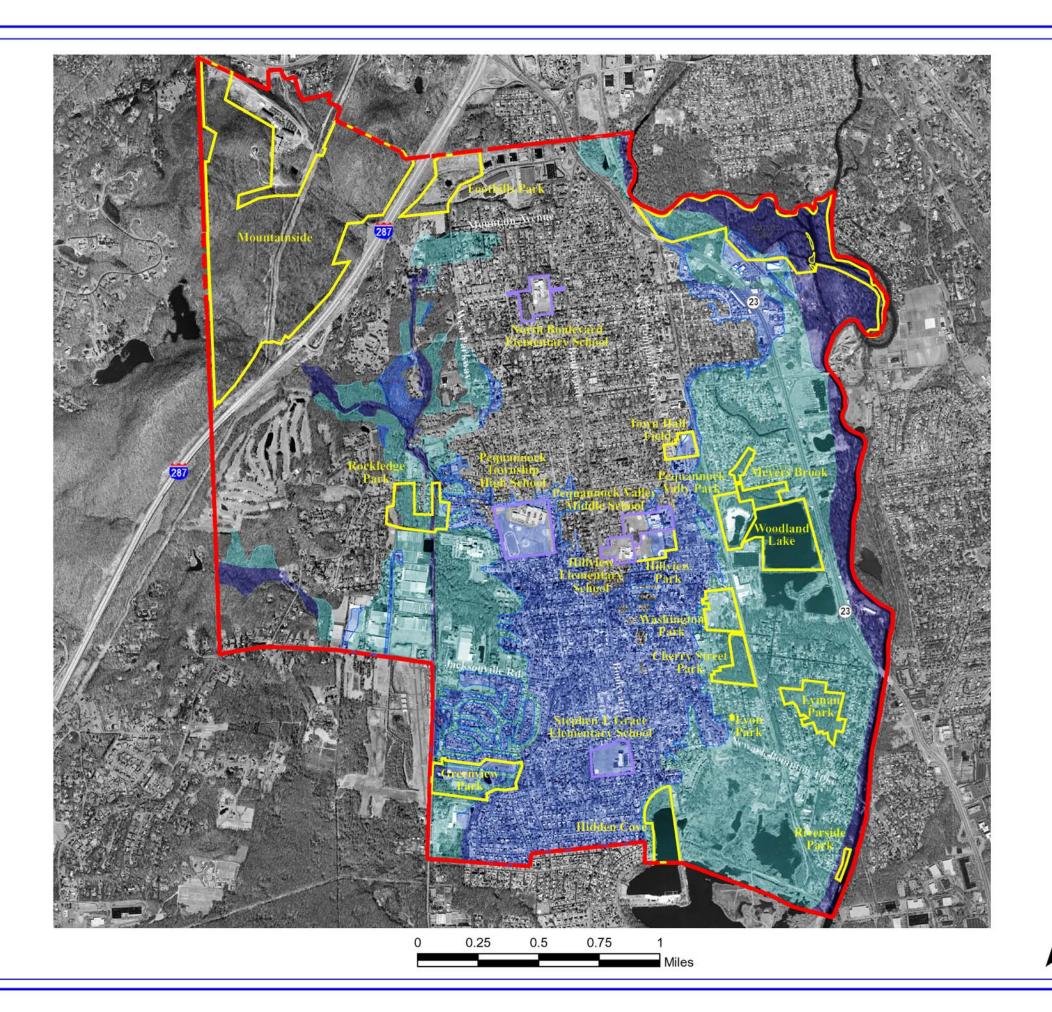


Hydrology Map Map 17









Flood Hazard Areas **Map 18**



Floodway Area in Zone AE Base flood elevations determined



Special Flood Hazard Areas Inundated By100 year Flood

Zone AE: base flood elevations determined



Other Flood Areas

Zone X: Area of 500-year flood; areas of 100-year flood with average depths of less the 1 foot or drainage areas less then 1 square mile; and areas protected by levees from 100-year flood.

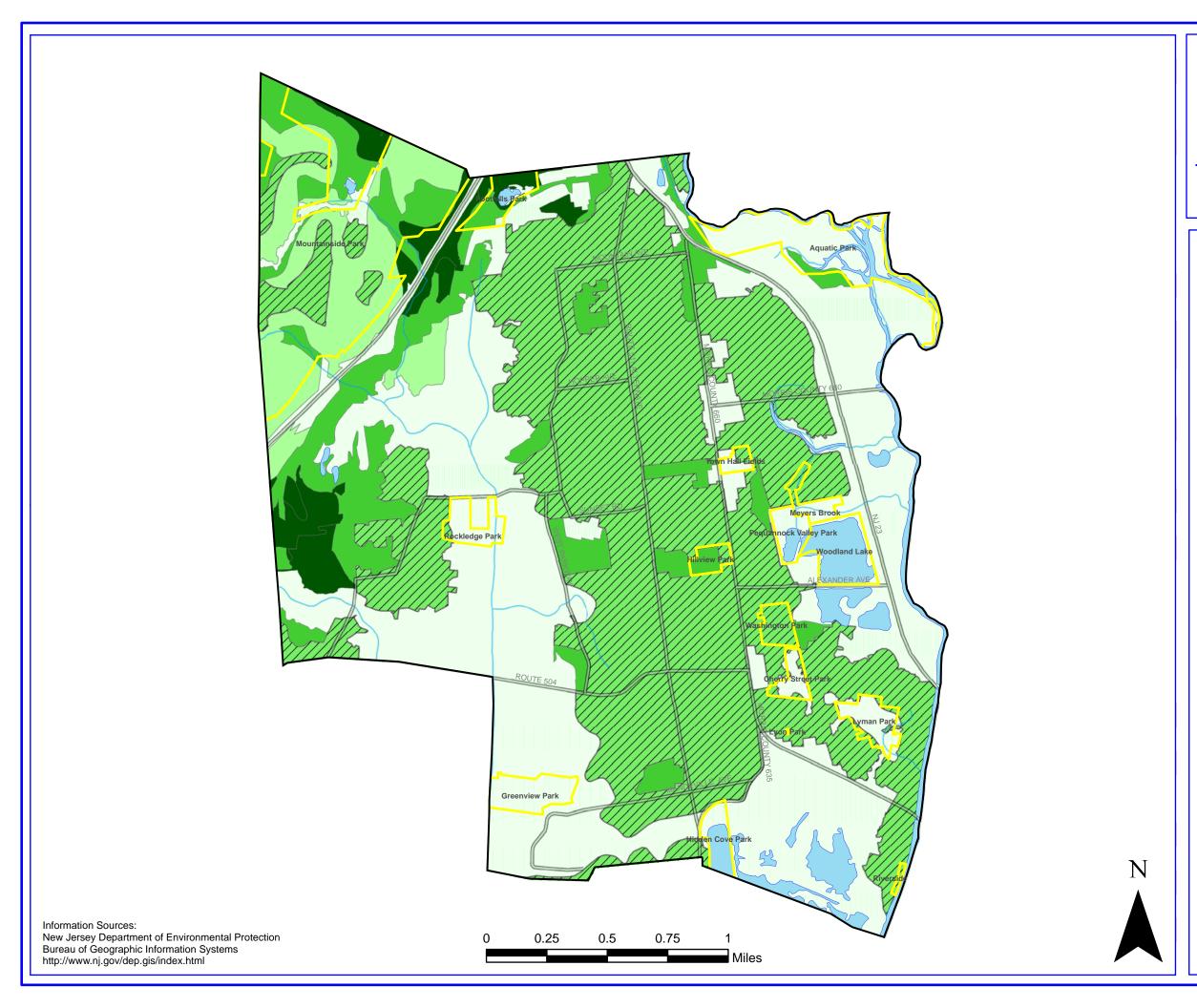
Park Boundary

School Boundary Town Boundary

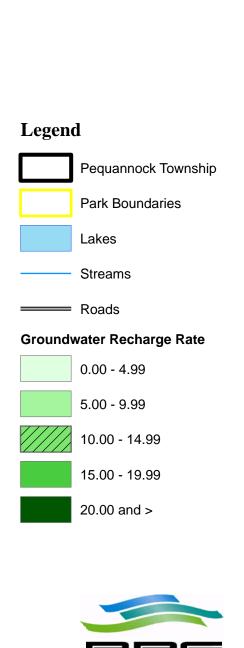






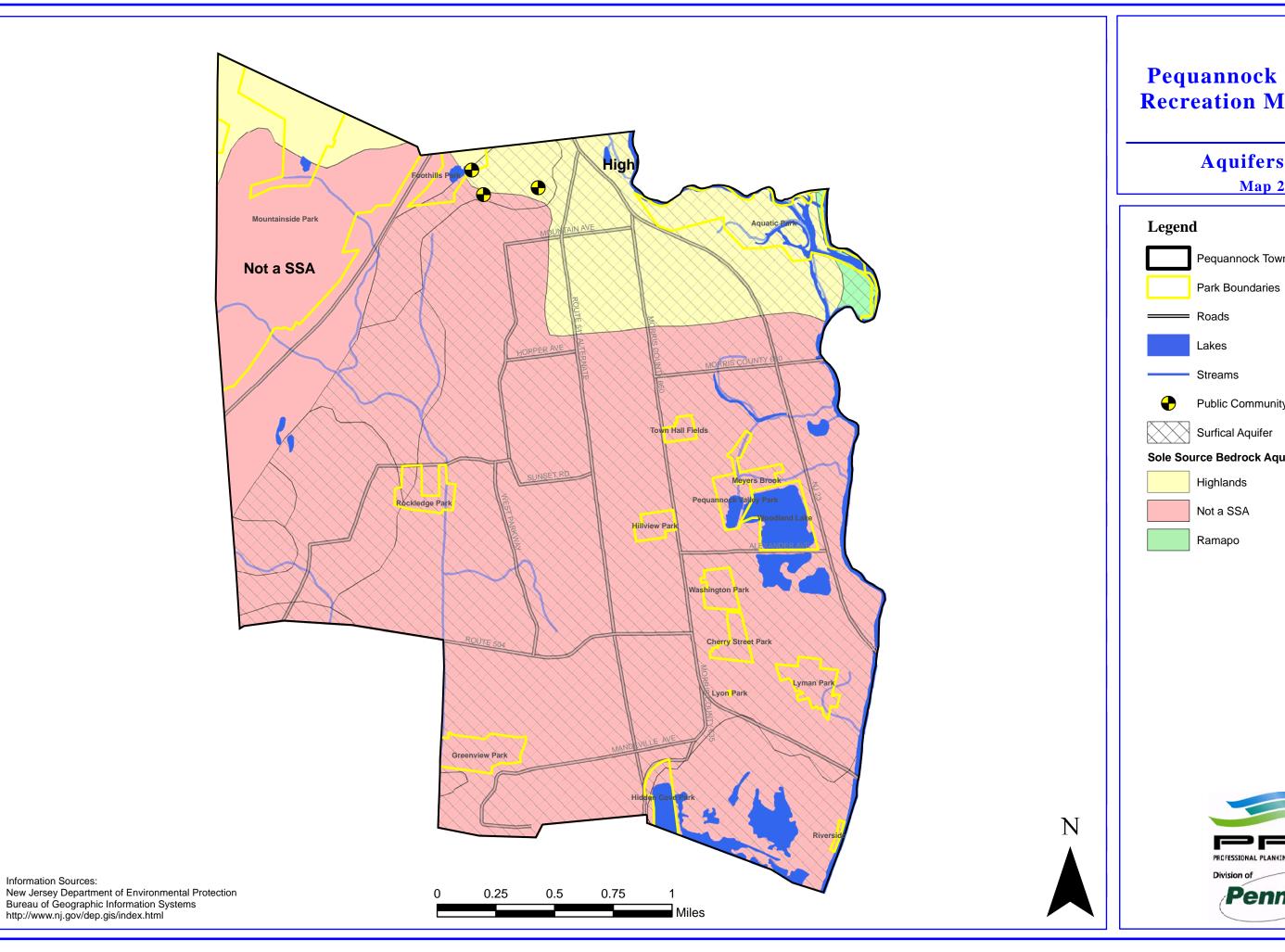


Groundwater Recharge
Map 19

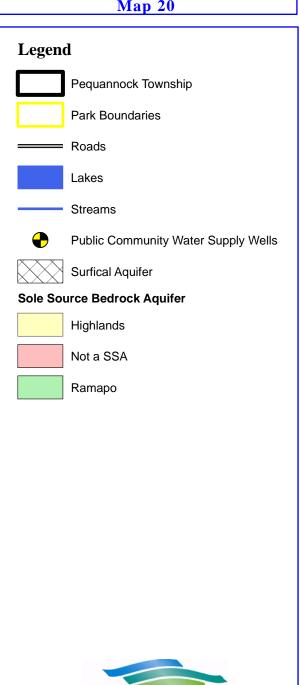






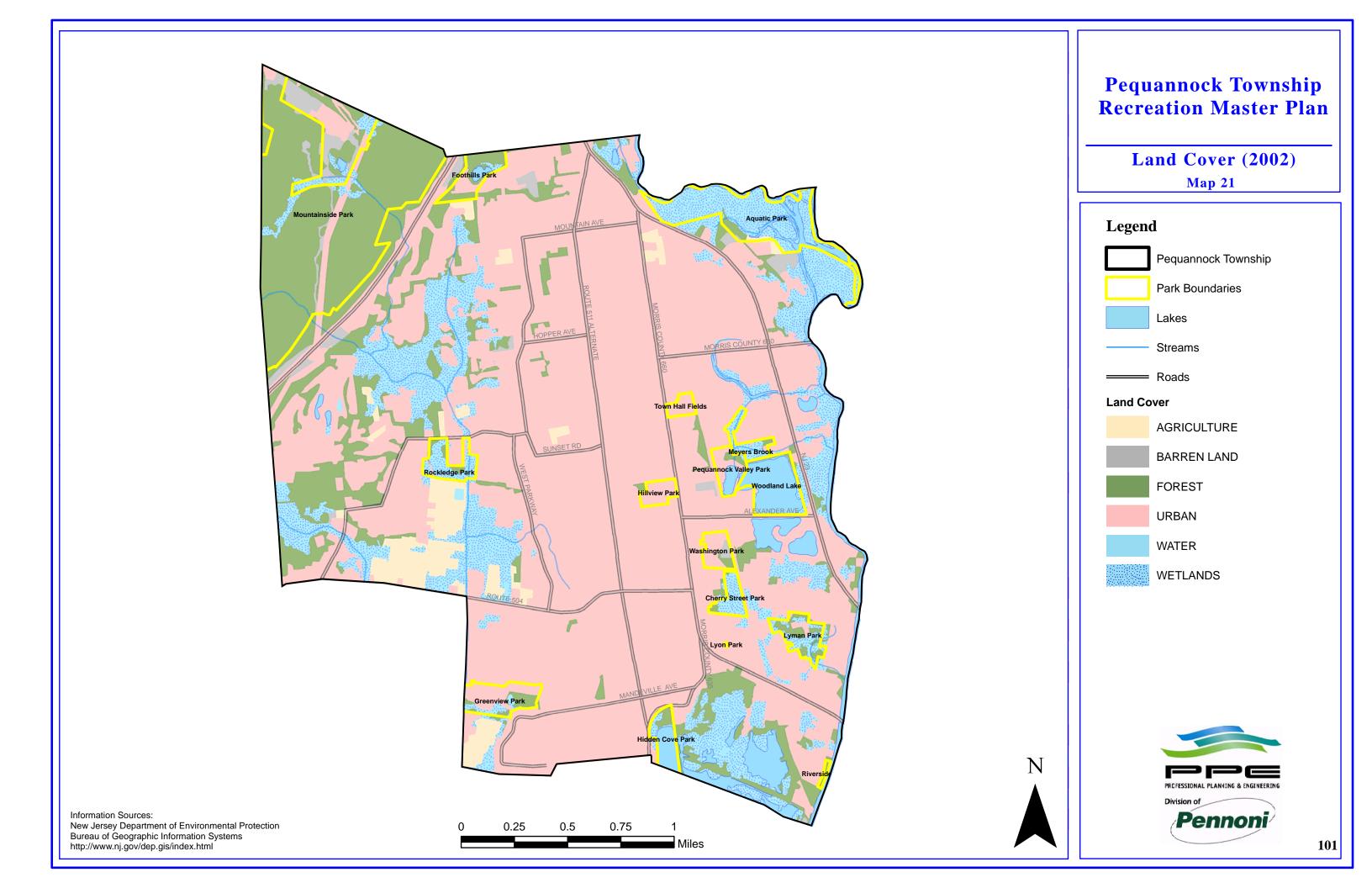


Aquifers Map Map 20











Chapter 6 - Benchmark to Similar Recreation Systems

This master plan took a look at the recreation facilities that the adjacent municipalities provide and municipalities in Morris County that were similar to Pequannock Township (see Table 8). The similar communities were selected based upon similar population, median family income and municipal area. Pequannock Township provides recreation facilities similar to both benchmark groups. The Township also has the opportunity to provide recreation opportunities that the other municipalities don't due to Pequannock Township's location along rivers and at the base of the mountains.

												_	Ame	eniti	ies																\neg
Community Name	Approximate Acreage	Population	Median Family income	Amphilheatre	Barbeque grills	Basketball courts	Boating (non-motor)	Boating (motor)	Camping	Cross country skiing	Baseball fleid	Fishing	Football fleid	Hiking trails	Handball court	Horse back riding	ice skating	Jogging/walking path	Lacrosse field	Nature trials/area	Picnic sites	Playground	Pond/ lake	Restrooms	Skate park	Stedding	Soccer field	Softball field	Streaminver	Tennis court	Volleyball court
1 Pequannock Township	4,594	13,888	\$84,487			7	2	2	1	П	4	2	2	1	2		2		1	5	3	6	3	5			5	12	3	12	
2 Township of Denville	8,042	15,824	\$90,651			1	2				6		3					1		1		3					6	11		9	1
3 Madison Borough	2,673		\$101,798			3					4		1				1	1	1	1	2	2					1	1			
4 Hanover Township	6,881	12,898	\$93,937			1					3							3			5	4			2		2	1		7	3
Neighboring Towns							П			П					П	П	П	П													\neg
5 Borough of Lincoln Park	4,480	10,930	\$77,307							_	_		_	Dic	not re	spond b	o requ	est for	inform	ation											
6 Kinnelon Borough	12,032		\$110,953			2			$\neg \top$	Т	3	$\neg \neg$	1						1								1	2		2	
7 Riverdale Borough	1,344	2,498	\$79,557						=	=:	=	_	=	Dk	not re	spond b	o Mequ	est for	inform	ation				=							
8 Wayne Township	16,128	54,069	\$95,114			10					6		3														22	33		14	\neg
9 Pompton Lakes Borough	2,078	10,640	\$74,701						=	=	=	_	=	Dic	not re	spond t	o Nequ	est for	inform	ation					=						

Table 8 ~ Benchmark communities recreation amenities.

The conclusion is that while Pequannock Township has a need for athletic fields, the recreational facilities the Township provides is at a level similar to the benchmark communities.





Chapter 7 - Acquisition, Capital Improvement and Maintenance Recommendations

Pequannock Township has preserved a large quantity of the Township's lands for recreation use. The lands that are not currently developed are limited in the type of development that can occur due to their location within the floodway or 100 year floodplain or due to wetlands or steep slopes. These lands are regulated through NJDEP and the NJ Highlands regulations. Opportunities, however, remain to address the gap in parks and facilities. The greatest opportunities lie in redeveloping and adding lands to existing parklands.

Existing Park Lands and Adjacent Land Acquisitions

Aquatic Park

A master plan was completed for Aquatic Park in 2004 where development recommendations were made. This Master Plan makes recommendations to build upon the previous recommendations. A new parking area was recommended in the Master Plan at the Rt. 23 jug handle across from the Newark-Pompton Turnpike. This location is feasible should the New York & Susquehanna Western Rail Road line be discontinued and the right of way available for use as a regional trail network. Currently extensive measures would have to be taken to safely convey users across the right-of-way either at grade or under the tracks.

There currently is ATV use in several areas within the park. This use is not permitted and is degrading the sites environmental conditions. More stringent enforcement is needed. To do so, however, required better access. The site currently has access from Carlson Place, which is limited due to no parking provided. In addition, with encroaching uses from the south, potential park users may not be aware of what is park land and what is private lands.

Opportunities exist for trail development, canoe portage points and camping areas. Active recreation opportunities are not recommended for the existing parklands due to poor access and the sensitive nature of the lands (wetlands, floodway and floodplain) and the regulations imposed on these lands.

An opportunity exists, however, to expand the park to the south with the acquisition of Block 306 Lot 4. The majority of this site is not impacted by wetlands and is fairly level and would be suited for development as an athletic field. The site appears to support a full size soccer/lacrosse field with parking for 120 cars. This parking could also serve as trail head parking for the Park with entrance kiosk and map box (see map titled Aquatic Park Concept Plan). The sites wetlands should be mapped to confirm their location and ability to develop the parcel. Development of the site would require NJDEP permits. This site provides one of the few opportunities to add athletic fields in Pequannock



Township. If acquisition is not feasible then exploration of an agreement with the current owner may be able to be reached to allow the Township to use the land for a soccer/lacrosse field.

Aquatic Park Program Elements

- 1.5 miles of trail development
- Land acquisition
- Soccer/lacrosse field development
- Parking lot development (two locations)
- Canoe portage

Cherry Street Park

According to NJDEP GIS mapping the majority of the site has wetlands and thus is regulated by NJDEP. There is an apparent pocket with no wetlands by New Street. The site is within the 100 year floodplain. The eastern border of the site abuts the New York Susquehanna & Western Railway Corporation rail line. Washington Park lies across Jefferson Street to the north. The Township owns four smaller parcels to the south of the Park. These smaller parcels are also affected by wetlands.

This site can be developed with trails that can be a loop walking trail and connected to New Street, Jefferson Street and the adjacent residences. NJDEP permits will be required for development. Future connection to the railroad ROW can also occur should that line be developed as a greenway trail. The smaller lots to the south (Block 3608 Lots 1, 4, 5 &6) should be added to the Township's ROSI.

The Open Space and Recreation Plan recommended acquisition of two other lots (Lot 2 & 3). These lots are adjacent to Cherry Street Park. They currently have a swimming pool located approximately on the joint property line of the two lots. These lots appear not to have wetlands associated with them. Should the land become available the Township should pursue acquisition, as it would fill in between the main portion of the Park and the smaller lots. Acquisition of these lots is not recommended at this time.

Cherry Street Park Program Elements

1.5 miles of trail development

Foothills Park

The park is currently underutilized. There is a playground, parking and a cleared area that is used for sledding in the winter. There is a small pond with a steep drop from the south to the pond and according to NJDEP GIS mapping a small amount of wetlands to the east of the pond. There are steep slopes along the northern border of the park. The police have a training facility in the western section of the site cuts off access to the northern and western portions of the site, thus leaving half of the park unused.

There is potential for development of this site to fulfill its role as a neighborhood or community park and satisfy a portion of that need. To do this the northern and eastern portions of the site need to be easily accessible to the residents. Long range the police training facility should be removed from the park. Upon the discontinuing of the police training facility the parking area may be relocated and a U-10 soccer field placed in that area overlapping part of the existing parking.



A paved loop walking/exercise path should be developed passing by the pond and encircling the eastern area of the park. This will provide opportunities for exercise and nature study of the pond and wetland ecosystem with the inclusion of an overlook. A community center can be developed in the eastern portion of the site with some parking. See conceptual programming and footprint options. The community center building can utilize the topography of the site to enter on the second level with parking built into the hillside similar to other adjacent development. The community center would provide opportunities for community events and a facility that would support the indoor recreation and leisure programming that is currently offered.

A second possible location for the community center would be to the south of the parking and playground area of the park. The top of the hill is relatively flat and access from West Parkway can occur at the southern property line where the site and roadway grade are compatible. Care should be taken to preserve as much of the sledding hill as possible.

The upper area in the southwest section of the park can be developed as a U-10 soccer practice area with the parking area expanded.

The pedestrian connection to the park needs to be improved though either a greenway network including a sidewalk that can safely direct people to the park from the residences to the south.

Foothills Park Program Elements

- 0.2 miles of trail development
- Paved walking trail
- Overlook
- Soccer practice field (U-10)
- Parking lot expansion
- Community Center
- Remove police training facility

Greenview Park

Greenview Park serves Pequannock and the neighborhood as a community park. It has a wide variety of recreation and leisure opportunities. There is a deficit, however, of parking to meet the provided facilities.

The parking demand was evaluated and it was found that there currently is a deficit of seventy (70) parking spaces. This Master Plan presents, therefore, a recommended parking and facility reconfiguration. The western parking lot would be restriped and slightly expanded to improve efficiency. A new parking lot would be provided from the entry off of Colfax Drive. The existing parking by the pond would be slightly expanded and restriped. The parking lot by the tennis courts and the softball fields will be expanded to the south slightly which will allow for a more efficient layout and increase the number of parking spaces. In addition, the existing culvert from the Roberts Place entrance should be lengthened to allow for two way traffic.



The connecting roadway between the parking near the pond and the parking near the tennis courts is removed. This opens up the center of the park for more activities such as a picnic shelter, spray pad and a playground. These new central uses support the existing uses and allow opportunities to spend the entire day at the park.

The playground area would be developed when the existing playground structure needed to be replaced. Short term the poor drainage at the existing playground needs to be addressed.

Expansion of the existing lacrosse field to the east of the tennis courts is not feasible due to the location of wetlands in the adjacent woods and the area being identified as possible habitat for the wood turtle.

Greenview Park Program Elements

- Parking lot reconfiguration and addition
- Roadway paving and curbing
- Existing playground drainage
- Picnic shelter and tables
- Spray pad
- Playground
- Pedestrian walkways
- Landscaping

Hidden Cove

The majority of area within Hidden Cove is open waters. Hidden Cove is used for fishing. As it is contiguous with a swimming facility to the south the open water cannot be used for boating. There is poor access to the site. No parking is provided on site and the owner of the adjacent parcel will not allow shared parking. Users must park across busy Lincoln Park Road and walk across.

A small parking lot of approximately six (6) parking spaces should be developed. Trails should be formalized to the water's edge. Trails to the west of the pond would most likely be within wetlands and would require a permit. Fish habitat should be improved with additional plantings that would eventually overhand the pond edge and sunken logs and aquatic vegetation as places for fish to hide.

Hidden Cove Program Elements

- Six car parking lot
- 0.2 mile trail development
- Fish habitat enhancement

Hillview Fields

This facility is the best location to develop into a higher-use athletic facility. Community uses are adjacent to seventy five percent (75%) of the site (two schools and the library) and single family residential is adjacent on the remaining portion.

The site is heavily used for softball, baseball, soccer and lacrosse. Due to the demands for athletic fields the fields do not have any time to rest the grass and as such the grass



is in poor condition. It is unlikely that unless the fields are allowed to rest and receive irrigation that they would be of the quality that the Township wants to provide it's residents. Recommendations for Hillview fields include the installation of synthetic turf and sports lighting.

Hillview Fields Program Elements

- Synthetic turf
- Sports lighting

Lyman Park

According to NJDEP GIS data wetlands can be found throughout most of Lyman Park. The portion of the park that appears to not have wetlands is in the central area, a portion of which is cleared of trees. This cleared area may be used for soccer practice. The wetlands can also be mapped to see if the field area may be enlarged.

The site is located within the 100 year floodplain and has poor drainage. To maximize the field use subsurface drainage should be installed. Parking is currently available at the end of the entrance road off Roosevelt Street.

Two adjacent lots (Block 4112 Lots 1&16) have been identified in the Open Space and Recreation Plan for possible acquisition. Both of these parcels would be developable, at least in part, for single family homes. It is unlikely, however, that they may be developed for recreational use other than for trails due to wetlands and open waters on both sites. These two parcels should be acquired to preserve these sensitive lands and increase Lyman Park's area.

Lyman Park Program Elements

- Wetlands mapping
- Open field expansion for athletic practice field
- Expand trail network to 0.5 miles of trails.

Lyon Park

This is a small mini-park with a playground and benches. The playground equipment should be evaluated to conform to CPSC standards and upgraded if non-conforming. This park would also benefit from the addition of picnic tables.

Lyon Park Program Elements

- Playground equipment
- Picnic tables

Meyers Brook

Meyers Brook is an open water stream with a small buffer that runs along the backyards of single family homes. This park should remain in it's natural condition with periodic maintenance for the removal of debris and hazardous trees.

Meyers Brook Program Elements

Open waters stream and buffer



Mountainside Park

Mountainside Park has great views of Pequannock and the surrounding valley. The purchase of these properties preserved the ridgeline of the Waghaw Mountain and the aesthetics and water quality for those in the valley below. The recently passed Highlands Regulations has placed Mountainside Park in the Highlands Preservation Area. This designation greatly limits the possible development of trails and supporting facilities such as parking. Trails must be developed utilizing the native soils. It is unlikely that the parking area will be able to be expanded as no new impermeable surfaces may be added and gravel is interpreted as impermeable.

This being said, the trail network north of the parking area provides a varied experience and overlooks of the valley below. A camping area is also located in this area. Opportunities exist to add interpretive signage along the trails and at overlooks describing the natural features and historic significance of the area.

There are no apparent trails south of the parking area. This Master Plan recommends evaluation of this area of Mountainside Park for trail development. Criteria for development should include unique geological features, land forms or vegetation. Should no unique features be found the area is recommended to remain in it's natural state.

A larger, two sided, folded map should be developed consistent with trail system and should include topography to aid in the trail user. The map should identify points of interest. Descriptions of the points of interest should be included. It should be developed to be reproduced in color and in black and white. The map could include a brief description of the Waghaw Mountains and its history, the flora and fauna and the various recreational opportunities within the park.

Mountainside Park Program Elements

- 4 miles of trails
- Parking area
- Camping area
- Interpretive signage
- Revised trail map

Pequannock Valley Park

Pequannock Valley Park is the only swimming facility in Pequannock Township. The facility is heavily used providing a lake with open swim and swim meets, beach, playground, basketball court and bathhouse. These facilities are in good condition. The entire facility, however, is in need of updating to provide new amenities to continue to draw members.

A dam at the eastern end of Woodland Lake creates the pond used for swimming at Pequannock Valley Park. The dam currently is in need of repair in the next couple years that will cost \$400,000 (in 2005 dollars). The repairs would be good for approximately 5 years, then additional repairs are likely.

A master plan specifically for Pequannock Valley Park should be completed the first year



that would evaluate other aquatic complex amenities that could be provided. The master plan should include a guest services plan and market feasibility analysis. It is critical, as part of this work, to assess the current operating profile as well as the future operating potential given an enhanced product and expanded revenue streams.

Pequannock Valley Park Program Elements

- Master Plan
- Swimming lake
- Swimming lanes
- Beach
- Playground equipment
- Basketball court

Riverside Park

This park provides an opportunity for neighborhood children to play on playground equipment and enjoy nature. Similar to Lyon Park, the playground equipment should be evaluated to conform to CPSC standards and upgraded if non-conforming. This park would also benefit from the addition of picnic tables.

The Open Space and Recreation Plan recommend the addition of three parcels to this park, Block 4403/Lot 1, 2 & 3. Block4403/Lot 1 plan would make a good addition to Riverside Park. Two of the three lots are privately owned (Lots 1 & 2). According to NJDEP GIS data a portion of Lot 2 and all of Lot 3 are within the Pompton River floodway and all of Lot 1 and the remaining portion of Lot 2 are within the 100-year flood plain. The parts of the properties within the floodway would not be able to be developed do to environmental restrictions. The developable area on these lots would support a small playground and a U-10 soccer field based upon spatial data only. Topographic information was not available for review. Further feasibility of this site for development as a practice location should be completed to determine final acquisition recommendation.

Riverside Park Program Elements

- Playground equipment
- Picnic tables
- Feasibility study

Rockledge Park

The Township Open Space and Recreation Master Plan recommended two Township owned parcels be added to the existing park holdings. The Township implemented this recommendation.

According to NJDEP GIS data wetlands are located on the majority of this site. Even with the regulation restrictions that go along with the wetlands this park would be good to develop as a neighborhood park as there are two potential areas, east of Farm Road and east of Copley Court, that appear to be non-wetlands. Both of these areas are currently cleared and if they are not wetlands, may be used for athletic fields, playground and/or parking. It is recommended that wetlands mapping be completed for these two areas.



The area east of Copley Court is large enough to support a U-10 practice soccer field, small playground equipment and a small parking lot in the current clearing. The size of development is likely smaller with a required fifty foot (50') buffer minimum around all wetlands. The area east of Farm Road may be used for picnicking or a small practice field. In addition, hiking trails/boardwalks should be developed as a loop trail with connections to the four directions.

The entire park is also within the 100 year floodplain and has been identified as possible wood turtle habitat. There is a restriction on having to balance soil moving done on site. In addition, a study may have to be completed to verify whether wood turtles, a New Jersey threatened species, are found on the site. If they are then the entire park may not be developable, even for trails.

There is currently a basketball hoop installed on the eastern side of Farm Road terminus cul-de-sac. If this is a Township facility it should be moved out of the roadway and if it is not a Township facility it should be removed from the right-of-way.

Rockledge Park Program Elements

- Wetlands mapping
- Playground equipment
- Soccer practice field
- Small parking lot
- Picnic tables
- Basketball hoop

Town Hall Fields

The existing baseball field is in good condition and already has an irrigation system. The basketball courts on site are in fair condition and need resurfacing and new backstops. Installing a playground area will help satisfy a demand for playground equipment in the central park of the Township. Due to the close proximity of facilities within the park it is not recommended to install synthetic turf or lights on this field.

Town Hall Fields Program Elements

- Baseball field
- Playground equipment
- Picnic tables

Washington Park

Reconfiguring Washington Park provides the best opportunities to increase the number of athletic fields in the Township. The Department of Public Works currently utilizes approximately one third of the site as a dump site for spoils from construction work in the Township, either by contractors or Township employees. This has a negative effect on the natural and human environment in the park. The debris piles are beginning to encroach within the wetland buffer and this area is highly visible when entering from Jefferson Street leaving a negative impression with park users.

Washington Park should no longer be used as a dump site. Construction spoils should



be disposed of at an appropriate facility. Prior to cleaning up the site a Phase I environmental analysis should be completed if it hasn't been done previously. The site should be cleaned to residential standards to allow for use as a public park.

Evaluating the site only spatially and from site visits (topographic information was not available) it was found that by reconfiguring the entrance road from Jefferson Street a baseball field and a soccer field as well as supporting parking, playground area and walkways could be developed on site. The playground would meet the need for playground equipment as part of a mini-park, in this part of town as well as a supporting use for the siblings or children of athletes utilizing the fields. The new fields should be developed with synthetic turf and sports lights.

This development would require NJDEP permits and would be predicated on completing a buffer averaging plan where the proposed shift of the buffer is equal in ecological value. If NJDEP will not accept the proposed transition area adjustment then the baseball field can be reduced in size to a softball field.

Washington Park Program Elements

- Soccer field with synthetic turf
- Baseball field with synthetic turf
- Sports lights
- New and reconfigured parking lots
- Playground equipment
- Walkways
- Picnic tables

Woodland Lake

The majority of the area at Woodland Lake is the lake itself. The entrance off of Alexander Avenue goes to a small gravel parking area with a couple benches and a boat launch area. There are some trails through the vegetation. The lake edge at this point has been reinforced with slabs of concrete creating a wall on either side of the boat launch area.

Immediate improvements to this park should include reconstruction of the boat launch and the addition of benches standard with the Township's design standards and further trail development. Long term improvements would include reconstruction of the lake edge adjacent to the boat launch and lake edge habitat enhancement.

The Township's Open Space and Recreation Plan recommended acquisition of Block 2701 Lots 2, 3 & 4. These parcels are recommended for acquisition as stated in the OSRP as a buffer between developments between Rt. 23 and for trail development. There currently is no access to the eastern side of the lake via land as the property lines extend into the lake area.

Woodland Lake Program Elements

- Boat Launch reconstruction
- Lake edge wall reconstruction
- Lake edge habitat enhancement



0.2 miles of trail development

Other Land Acquisitions and Township Owned Lands

Pequannock Township's Open Space and Recreation Master Plan identified other parcels currently owned by the Township as undeveloped lands within Town with the potential for use as recreation opportunities. The following section described these parcels and their possible use for recreation opportunities.

Block 3708 Lot 1,8

These lands are located in the southern section of Town on Rt. 23 and near Pequannock Avenue. They are within the floodway of the Pompton River and have wetlands located on the lands. Access to the site is only from the south from Wayne. They are not developable in accordance with current regulations and as such are not available for recreation use. Acquisition is also not recommended at this time as state regulations prohibit development of these parcels at this time thus, the ecological value of the land will remain for the time being.

Block 2402 Lot 11

This parcel lies just west of West Parkway and in between the hospital and agriculture lands. According to NJDEP GIS data the site is entirely wetlands and is in the middle of a larger wetland area. State wetlands regulations would prohibit the development of this parcel as active recreation. The Township already has varied opportunities for trail development on other wetland parcels. Acquisition of this parcel is not recommended at this time.

Block 4401 Lot 14

This parcel is the Pia Costa Tract. The owner intends to develop the site as a wetlands mitigation bank. This would be a benefit for the Township to continue the sites ability to help control flood waters and act as habitat for flora and fauna. The Township should actively participate in the process to maintain the possibility for trail development connecting Hidden Cove to the possible future developed trail on the railroad right-ofway. No acquisition of this parcel is recommended.

Two other parcels, Block 302 Lot 2 and Block 202 Lot 23 were identified in the Open Space and Recreation Plan as potential recreation sites. The first site has a commercial building and parking on site. The second site has three commercial buildings and parking on site. Neither of them is suitable for recreational use.

Design Guidelines

It is recommended that a coherent set of Design Guidelines be prepared as a first year task. Over the upcoming years, these Guidelines can direct the work of various landscape architects, engineers, foresters, architects, Township maintenance personnel and volunteers in the appropriate design of the landscape and the facilities inserted into it. Thus, the style and materials of construction will be readily understood and can be



applied to the Township's parks over many years as the Master Plan recommendations are implemented.

The Design Guidelines should include:

Structures

- Picnic shelters
- Facade treatment
- Rooflines and roofing materials
- Fenestration
- Bridges
- Culverts and other drainage structures
- Overlooks

Wayfinding System

- Size hierarchy for various purposes
- Color and material of signs
- Letter font and hierarchy

Landscape Elements

- Stone type and jointing for various uses (cobble, walls, drainage courses)
- Road surfaces
- Path materials, cross section, and edges
- Stairs for various conditions
- Handrails, guardrails, and fencing
- Bollards
- Bicycle racks
- Trash receptacles
- Picnic tables
- Fireplace and grill structures
- Benches
- Drinking fountains
- Light fixtures
- Various swale edges and water courses

Vegetation Management

- Native plantings for various purposes
- Establishment of new meadow edges and meadow installation
- Management for reestablishment and maintenance of vistas

Signage

Signage should be consistent throughout the Township (i.e. Woodland Lake). The current signage is hard to read with black letters outlined in white on a dark wood background. It is recommended that the signage be updated with letters easier to read at a minimum. An opportunity exists to redesign the signage with a clear and consistent hierarchy of sizes for various functions. A consistent language of form, color and



graphic design should also be developed for the park system. All entrances to the parks should be clearly marked with such consistent signage. Informational signage could be placed at historically significant locations describing the location such as overlooks in Mountainside Park.

Actions

The following are actions to be completed based upon the previous recommendations. The tasks are listed in priority order within each task category.

Immediate Actions (within one year)

- 1. Complete Greenview Park parking reconfiguration improvements.
- 2. Develop an action plan to pursue funding sources identified in the Open Space and Recreation Plan to fund the recommended improvements.
- 3. Acquire funding to implement Hillview Fields improvements.
- 4. Remove DPW dump yard from Washington Park and remediate to residential standards. Conduct a pre-application meeting with the NJ DEP to discuss the proposed improvements.
- 5. Complete topographic and utility mapping for Washington Park improvements.
- 6. Develop and implement a comprehensive maintenance operations tasks and schedule for each facility.
- 7. Begin negotiations for acquisition / agreement for use of Block 902 Lot 4 as a soccer / lacrosse field with supporting parking.
- 8. Continue dialogue with the Board of Education on shared use for athletic fields and existing field reconfiguration to expand field usage. Work with the sports groups in town to leverage funding and manpower.
- 9. Further explore the programming and location for an indoor community recreation facility.
- 10. Complete master plan for Pequannock Valley Park.
- 11. Develop a plan to coordinate all recreational opportunities and organizations within the Township with possible shared scheduling of facilities.
- 12. Complete site development / park and recreation design guidelines.
- 13. Develop signage system and hierarchy.
- 14. Contact owners of farm assessed lands to encourage their participation in the farmland preservation program.

Intermediate Actions (within three years)

- 1. Jointly implement Board of Education athletic field improvements with the BOE and local recreation groups.
- 2. Develop a self-guided tour map along the adopted greenway identifying cultural,



social, recreational and environmental points of interest.

- 3. Complete wetlands mapping for Rockledge Park, Cherry Street Park, Hidden Cove and Lyman Park.
- 4. Update Aquatic Park Master Plan
- 5. Develop "Friends of the Park" program.
- 6. Develop and adopt a Township Greenway Network.
- 7. Complete Hillview Fields Improvements.
- 8. Complete Washington Park improvements.
- 9. Complete Rockledge Park improvements
- 10. Implement signage improvements.

Intermediate Actions (within five years)

- 1. Complete soccer / lacrosse field improvements at Aquatic Park.
- Riverside Park expansion feasibility study.
- 3. Complete Aquatic Park Master Plan recommendations.
- 4. Complete Hidden Cove improvements.
- 5. Complete Cherry Street Park improvements.
- 6. Implement Aquatic Park Master Plan.
- 7. Acquisition of parcels adjacent to Lyman Park (Block 4112 Lots 1&16).
- 8. Complete fundraising for Community Recreation Center.

Long Term Actions (within 10 years)

- 1. Implement Community Recreation Center.
- 2. Complete Woodland Lake improvements.
- 3. Complete remainder of Greenview Park improvements.
- 4. Update Park and Recreation Master Plan including the completion of a statistically accurate user survey.

Ongoing Actions

- 1. Continued park maintenance.
- 2. Continue comprehensive maintenance operations tasks and schedule for each facility.
- 3. Continued signage maintenance.
- 4. Continued streetscape improvements maintenance.
- 5. Add all new land acquisitions to the Township ROSI.
- 6. Actively participate in regional environmental issues (i.e. the Pia Costa Tract



wetland mitigation bank) and recreation issues (i.e. the Pequannock River Trail).

- 7. Monitor land acquisition opportunities for use as recreational facilities.
- 8. Monitor environmental regulations and possible weakening of regulations which would increase land acquisition for environmental preservation up in priority.
- 9. Work with Morris County to implement regional trails within the Township including along the railroad right-of-way.
- 10. Designate a Recreation Advisory Board member as liaison to each of the environmental, historic, open space and street tree commissions.
- 11. Encourage stewardship of the parks and social ties through the "Friends of the Park" program.
- 12. Seek continued input from the community regarding recreation programs and facilities.
- 13. Implement the fund raising action plan.

The table titled *Facility Strategy and Implementation* on the following page identifies the costs associated with the recommendations noted above. Itemized costs can be found in Appendix A.



			Priority	Cost	ost Unescalated Project Costs per Year																				
PARK	Improvement Scope	Size (Acres)	Park Classification	Im l In3 l In5 l	Estimate of Probable Costs	2007		2008		2009		2010		2011		2012	20	113	2014		2015	2	2016		Notes
Aquatic Park	Tiles of trail/boardwalk, camping sites, cance portages, land acquisition, parking lot, playground, soccer/lacrosse field	77	NRA	lm	\$2,500,000	\$	1,000,000	\$	500,000	\$	1,000,000														First year land acquisition, second and third year design and implementation.
Greenview Park	Parking lot reconfiguration and expansion, roadway paving.	31	С	lm	\$600,000	\$	20,000	\$	580,000																Complete parking and playground drainagae first year, Implement remianig improvements within te years.
Vashington Park	New soccer/lacrosse field, baseball field, parking and playground.	14	SC	lm	\$3,700,000	\$	50,000	\$	1,500,000	-	\$2,150,000														Costs noted are for development costs only and do not include those related to deaning up the norther portion of the site used by DPW.
Pequannock Valley Park	(1)	27	SU	lm	\$100,000	\$	100,000														,				 A park master plan should be completed for PV Park prior to any change to the facility. Costs ndicated are for the master plan only
Hillview Fields	Multi-purpose synthetic field with (3) softball, (1) baseball and (1) soccer/lacrosse fields with sports lighting	11	SP	ln3	\$6,100,000			\$	100,000	\$	3,000,000	\$	3,000,000												
yman Park	Athletic practice field, 0.5 mile trail/boardwalk development	20	N	ln3	\$1,300,000			\$	50,000	\$	1,000,000	\$	250,000												
Rockledge Park	Playground, soccer practice field, small parking lot, picnic tables, 1 mile trail/boardwalk development.	21	U	ln3	\$1,600,000			\$	300,000	\$	1,000,000	4	\$300,000												
own Hall Fields	Rebuild baseball field, new playground, site furnishings.	7	SC	ln5	\$2,200,000							\$	100,000	\$	400,000	\$1	,700,000								
Cherry Street Park	1.5 miles of trail/boardwalk	14	U	ln5	\$300,000									\$	300,000										
Hidden Cove	Six-car gravel parking lot, 0.2 mile trail development, fish habitat enhancements	20	NRA	ln5	\$280,000											\$	280,000								
Foothills Park	0.2 miles of trail/boardwalk, paved walking trail, overlook, parking lot expansion, soccer practice field, Community Recreation Center	27	N	LR	\$14,000,000	\$	100,000										3	3,500,00	\$:	3,500,000	\$ 3,5	000,000	\$ 3,	400,000	Master plan and community center building desig master plan completed in first year.
Greenview Park	Pionic shelter and tables, spray pad, playground, pedestrian walkways, landscaping.	31	С	LR	\$800,000												3	800,000							Phase II development
_yon Park	Playground equipement and safety surface, picnic tables.	0.1	М	LR	\$270,000														\$	270,000					The state of the s
Mountainside Park	4 miles trails, interpretive signage, updated trail map	310	NRA	LR	\$900,000																\$ 5	000,00	\$	400,000	
Riverside Park	Playground equipement and safety surface, picnic tables.	2	M	LR	\$300,000																		\$	300,000	
Woodland Lake	Rebuild boat ramp and shoreline stabilization.	40	SU	LR	\$500,000																		\$	500,000	
Meyers Brook	(2)	26	NRA		ē																				(2) General maintenance is all that is required for tho park.
TAL PER YEAR						\$	1,270,000	\$	3,030,000	\$	8,150,000	\$ 3	3,650,000	\$	700,000	\$ 1,9	80,000	4,300,00	\$ 3,	,770,000	\$ 4,00	0,000	\$ 4,6	00,000	
TAL 10-VEAD UNES	CALATED CAPITAL IMPROVEMENT PLAN					12							-						*						\$ 35,450,00

TOTAL 10-YEAR UNESCALATED CAPITAL IMPROVEMENT PLAN

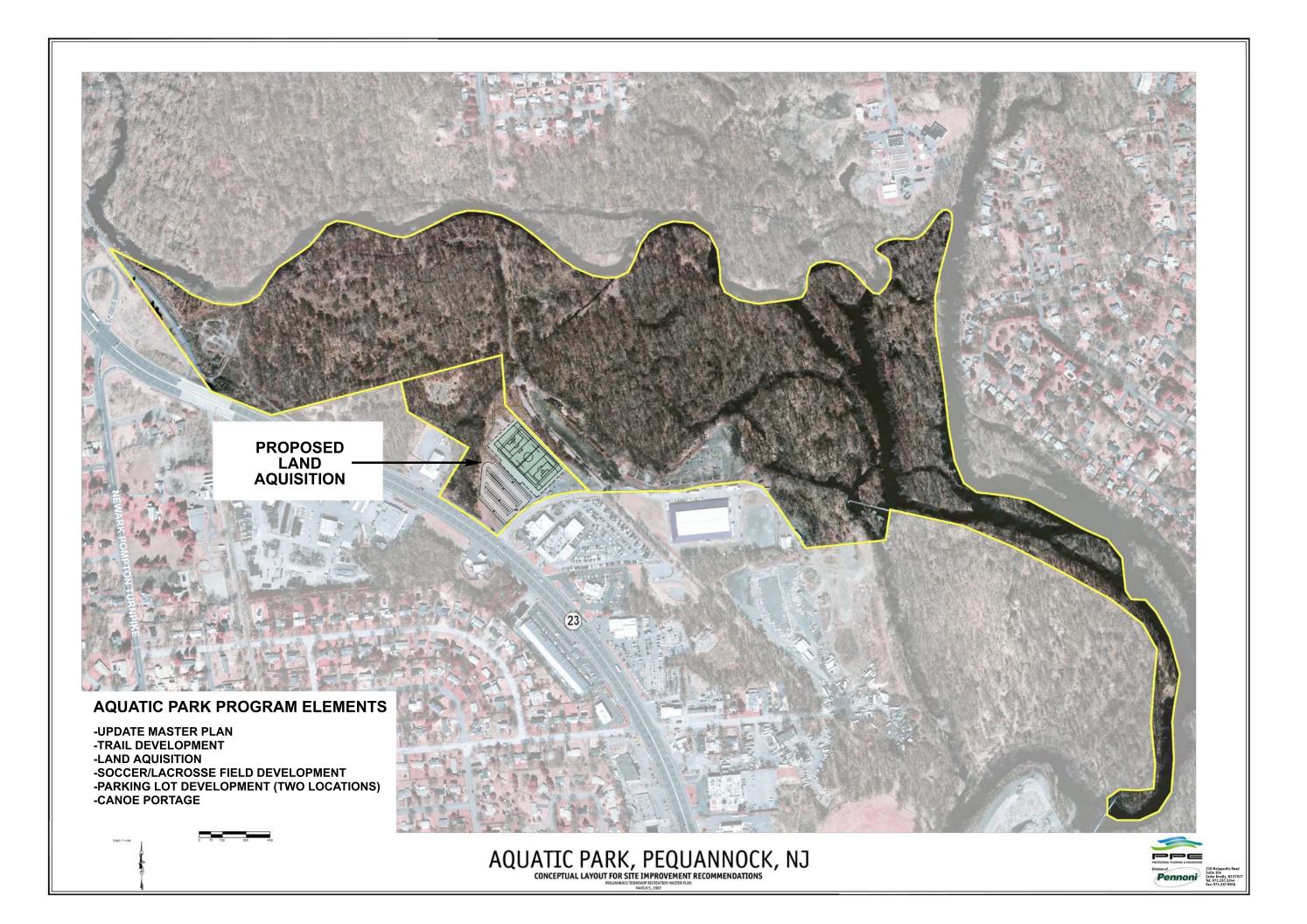
Intermediate (within tree (3) years)
Intermediate (within five (5) years)

Priority Im In3 In5 LR Long Range

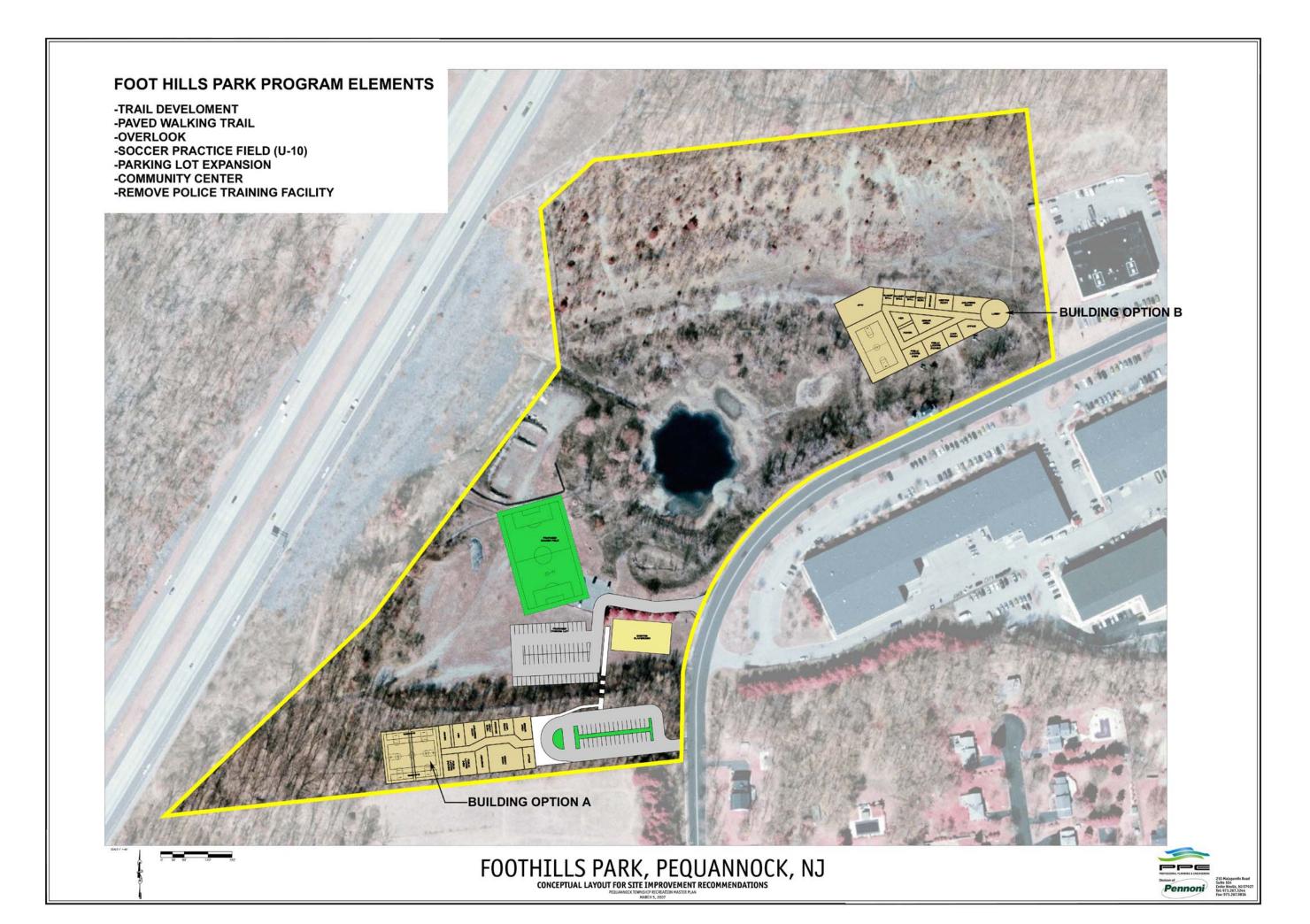
Table 9 ~ Facility Strategy and Implementation Plan



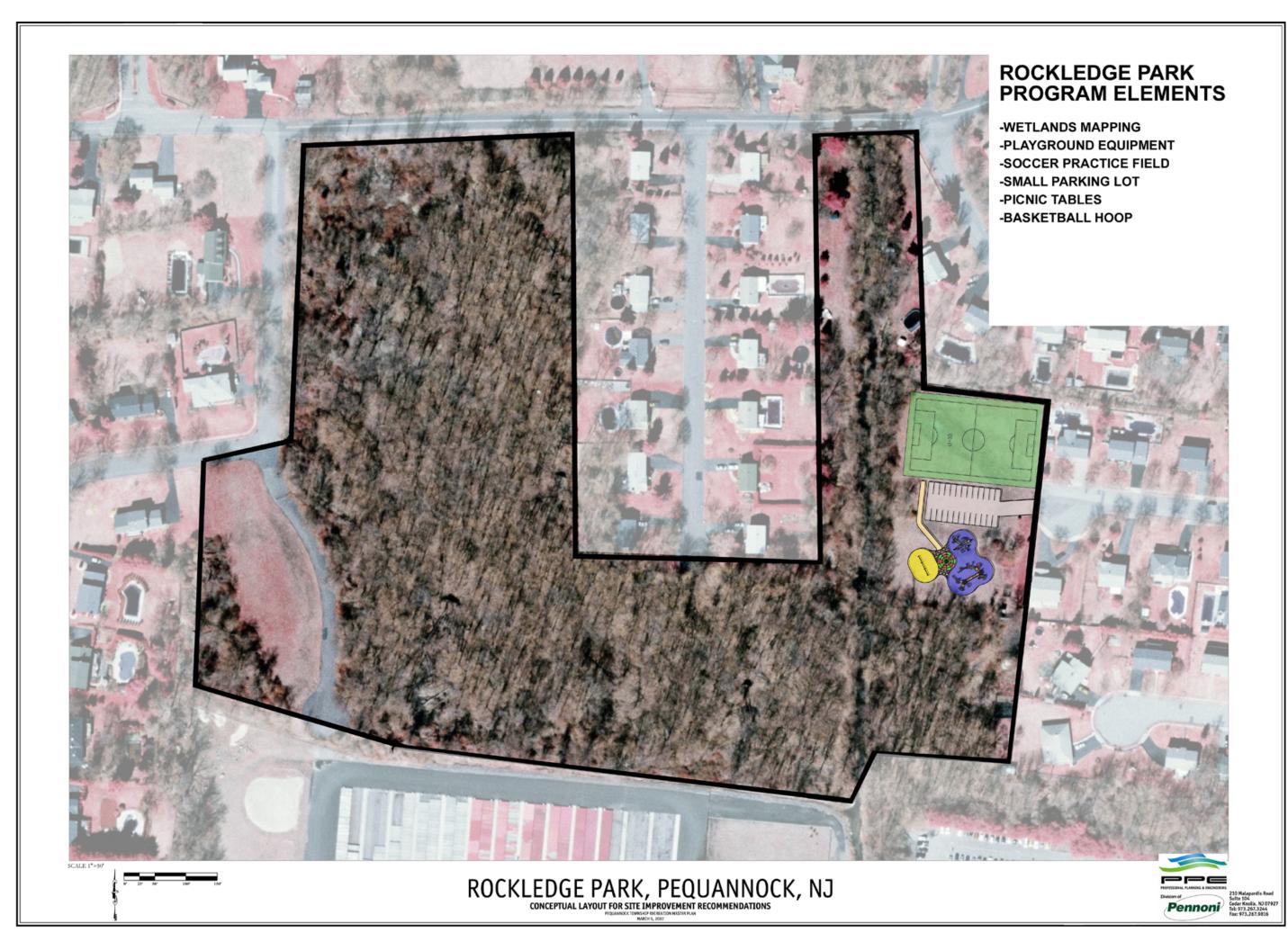




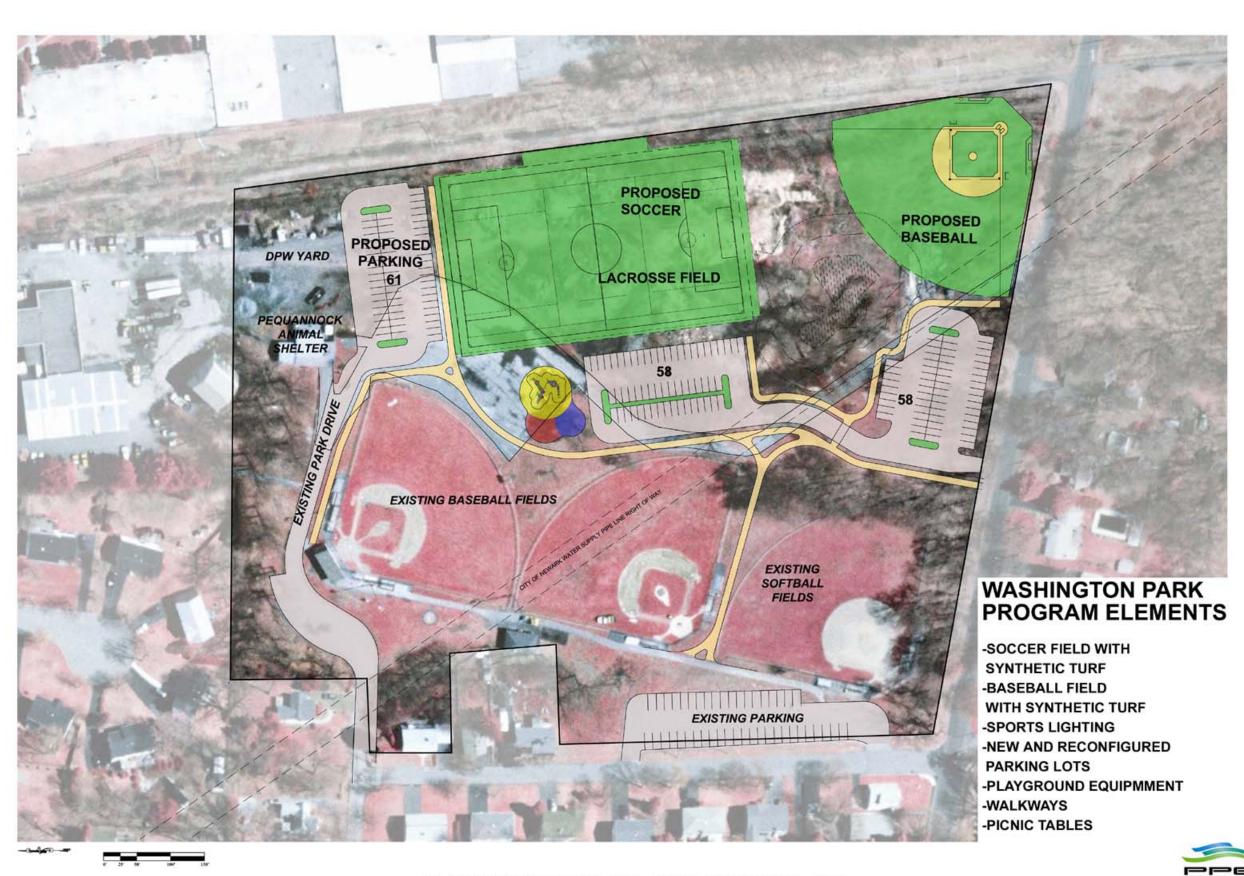












Pennoni 210 Malapartin non-Suite 104 Cedar Knolls, NJ 0797 16973.261.2244 Fax: 973.267.9816



<u>Appendices</u>



Appendix A - Estimates of Probable Costs

Pequannock Township, Morris County, New Jersey

Aquatic Park Programming Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc.

March 2007

Pennoni Job No. 2615.0000

Description	Quantity	Unit	Unit Cost	Total Cost
Land Acquisition				
Block 902, Lot 4	1	each	\$1,068,300.00	\$1,068,300
Demolition				
Tree removals	10	each	\$2,000.00	\$20,000
subbase removal	2000	c.y.	\$15.00	\$30,000
New Work				
Earth work	10000	c.y.	\$26.00	\$260,000
Asphalt paving	5600	s.y.	\$75.00	\$420,000
Asphalt walk	4280	s.f.	\$6.00	\$25,680
Player's benches	6	each	\$800.00	\$4,800
Drainage	1	l.s.	\$30,000.00	\$30,000
Subsurface drainage	1	l.s.	\$50,000.00	\$50,000
Benches	6	each	\$1,180.00	\$7,080
Play structure	1	each	\$45,000.00	\$45,000
Safety surface	1	l.s.	\$58,000.00	\$58,000
Trail	25600	s.f.	\$6.00	\$153,600
Lawn (seed)	2000	s.y.	\$15.00	\$30,000
Lawn (sod, athletic fields)	11500	s.y.	\$25.00	\$287,500
Landscaping	1	l.s.	\$15,000.00	\$15,000
Irrigation	1	l.s.	\$50,000.00	\$50,000
Flag Poles	3	each	\$800.00	\$2,400
Site lighting	20	each	\$2,500.00	\$50,000
Bleachers (3 row, 42 seat)	2	each	\$5,000.00	\$10,000
Drinking fountain	1	each	\$3,500.00	\$3,500
	Subtotal			\$1,552,560
	GENERAL CONDITIONS,	OVERHEAD, A	AND PROFIT (20%)	\$310,512
	DESIGN CONTINGENCY ((15%)		\$232,884
	CONSTRUCTION CONTIN	IGENCY (7%)		\$108,679
	PERMIT COSTS (ALLOWA	ANCE)		\$50,000
	PROFESSIONAL DESIGN	FEES		\$232,884
	TOTAL PROJECT PR	ROBABLE C	COST	\$2,487,519

Notes

A wetlands transition area plan must be approved by NJDEP for this layout. if averaging is not approved U-10 soccer field would need
to be reduced to a U-8 size field. This estimate of probable costs does not include any work regarding the existing wetland mitigation, or
sports lighting.

\$2,500,000

- 2. Permit Costs include storm drainage design, preparation of NJDEP and SESC permit applications and permit fees.
- 3. Playground equipment and safety surface does not include swings.

SAY

- 4. Unit costs include material, equipment and labor costs.
- 5. Land aquisition costs based upon current assessed value.

Pequannock Township, Morris County, New Jersey

Cherry Street Park Programming Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc.

March 2007 Pennoni Job No. 2615.0000

Description	Quantity	Unit	Unit Cost	Total Cost
New Work				
Trail	25600	s.f.	\$6.00	\$153,600
Benches	3	each	\$1,180.00	\$3,540
	Subtotal			\$157,140
	GENERAL CONDITIONS,	\$31,428		
	DESIGN CONTINGENCY	(15%)		\$23,571
	CONSTRUCTION CONTIN	IGENCY (7%)		\$11,000
	PERMIT COSTS (ALLOWA	ANCE)		\$50,000
	PROFESSIONAL DESIGN	FEES		\$23,571
	TOTAL PROJECT PR	ROBABLE C	COST	\$296,710 \$300,000

Notes:

- 1. NJDEP permit(s) are required to develop trails within wetland areas.
- 2. Permit Costs include storm drainage design, preparation of NJDEP and SESC permit applications and permit fees.
- 3. Unit costs include material, equipment and labor costs.

Pequannock Township, Morris County, New Jersey

Foothills Park

Programming Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc.

March 2007 Pennoni Job No. 2615.0000

Description	Quantity	Unit	Unit Cost	Total Cost
Demolition				
Tree removals	10	each	\$2,000.00	\$20,000
Asphalt & subbase removal	1000	c.y.	\$45.00	\$45,000
New Work				
Community Center Building	35000	s.f.	\$220.00	\$7,700,000
Asphalt paving	2000	S.y.	\$75.00	\$150,000
Asphalt walk	5000	s.f.	\$6.00	\$30,000
Earth work	5500	c.y.	\$26.00	\$143,000
Retaining wall	340	l.f.	\$750.00	\$255,000
4' ht chain link fence	340	l.f.	\$240.00	\$81,600
Trail	3600	s.f.	\$5.00	\$18,000
Player's benches	4	each	\$800.00	\$3,200
Drainage	1	l.s.	\$65,000.00	\$65,000
Subsurface drainage	1	l.s.	\$40,000.00	\$40,000
Benches	10	each	\$1,180.00	\$11,800
Lawn (seed)	3000	s.y.	\$15.00	\$45,000
Lawn (sod, athletic fields)	3500	s.y.	\$25.00	\$87,500
Irrigation	1	l.s.	\$75,000.00	\$75,000
Flag Poles	3	each	\$800.00	\$2,400
Site lighting	15	each	\$2,500.00	\$37,500
Bleachers (3 row, 42 seats)	2	each	\$5,000.00	\$10,000
Drinking fountain	1	each	\$3,500.00	\$3,500
	Subtotal			\$8,823,500
	GENERAL CONDITIONS,	OVERHEAD, A	AND PROFIT (20%)	\$1,764,700
	DESIGN CONTINGENCY ((15%)		\$1,323,525
	CONSTRUCTION CONTIN	IGENCY (7%)		\$617,645
	PERMIT COSTS (ALLOWA	ANCE)		\$50,000
	PROFESSIONAL DESIGN	FEES		\$1,323,525
	TOTAL PROJECT PR	OBABLE C	OST	\$13,902,895

.

 This estimate of probable costs includes costs for a community center building based upon concept floor plans. The final programming should be determined as part of the park master plan process.

2. Permit Costs include storm drainage design, preparation of NJDEP and SESC permit applications and permit fees.

SAY

3. Unit costs include material, equipment and labor costs.

Since the engineer has no control over cost of labor, materials, equipment, or over the contractor's methods of determining prices, market conditions, or over competitive bidding; this estimate of costs for the Project is made upon the basis of the engineer's experience and qualifications and represents his best judgment as a design professional, familiar with the construction industry. The engineer does not guarantee that proposals, bids, or the project construction cost will not vary from this cost estimate.

\$14,000,000

Pequannock Township, Morris County, New Jersey

Greenview Park

Programing Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc.
March 2007
Pennoni Job No. 2615.0000

Unit Cost

Description	Quantitiy	Unit	(Material, Equipment, and Labor)	Total Cost
Demolition	•			
Tree removals (approximate)	30	each	\$2,000.00	\$60,000
Asphalt and subbase removal	1200	s.y.	\$6.00	\$10,000
Earthwork	2500	c.y.	\$5.00	\$15,000
New Work				
Asphalt roadway pavement (no curb)	2000	s.y.	\$40.00	\$80,000
Asphalt topcourse	9500	s.y.	\$7.00	\$66,500
Concrete Pavement	13500	s.f.	\$8.00	\$110,000
Athletic turf (seed)	1.3	m.s.f.	\$300.00	\$500
Topsoil (2")	800	c.y.	\$40.00	\$32,000
Play spray (2,500 s.f 5 features)	1	l.s	\$100,000.00	\$100,000
Picnic Shelter	1	l.s.	\$23,000.00	\$23,000
Playground (Phase II)	1	l.s.	\$300,000.00	\$300,000
Storm drainage allowance	1	l.s.	\$60,000.00	\$60,000
	Subtotal			\$857,000
	GENERAL CONDIT	IONS, OVERI	HEAD, AND PROFIT (20%	\$171,400
	DESIGN CONTIGE	NCY (15%)	•	\$128,550
	CONSTRUCTION (CONTINGENC	Y (7%)	\$59,990
	PROFESSIONAL F			\$128,550
	TOTAL PROJEC	T COST		\$1,345,490 \$1,400,000

* Excludes any work regarding existing utility pit, site lighting, restroom upgrades, and permit costs (if required).

Since the engineer has no control over cost of labor, materials, equipment, or over the contractor's methods of determining prices, market conditions, or over competitive bidding; this estimate of costs for the Project is made upon the basis of the engineer's experience and qualifications and represents his best judgement as a design professional, familiar with the construction industry. The engineer does not guarantee that proposals, bids, or the project construction cost will not vary from this cost estimate.

Pequannock Town	Pequannock Township Town-wide Park and Recreation Master Plan						

Pequannock Township, Morris County, New Jersey

Hidden Cove

Programming Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc.

March 2007

Pennoni Job No. 2615.0000

Description	Quantity	Unit	Unit Cost	Total Cost
New Work				
Trail	4000	s.f.	\$6.00	\$24,000
Habitat enhancement	1	l.s.	\$100,000.00	\$100,000
Asphalt pavement	300	s.y.	\$65.00	\$19,500
	Subtotal			\$143,500
	GENERAL CONDITIONS,	OVERHEAD, A	AND PROFIT (20%)	\$28,700
	DESIGN CONTINGENCY	(15%)		\$21,525
	CONSTRUCTION CONTIN	IGENCY (7%)		\$10,045
	PERMIT COSTS (ALLOWA	ANCE)		\$50,000
	PROFESSIONAL DESIGN	FEES		\$21,525
	TOTAL PROJECT PR	OBABLE C	OST	\$275,295 \$280,000

Notes

- 1. NJDEP permit(s) are required to develop trails within wetland areas.
- 2. Permit Costs include storm drainage design, preparation of NJDEP and SESC permit applications and permit fees.
- 3. Unit costs include material, equipment and labor costs.

Pequannock Town	Pequannock Township Town-wide Park and Recreation Master Plan						

Pequannock Township, Morris County, New Jersey

Hillview Fields

Programming Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc.

March 2007 Pennoni Job No. 2615.0000

Description	Quantity	Unit	Unit Cost	Total Cost
Demolition				
Tree removals	30	each	\$2,000.00	\$60,000
Asphalt and subbase removal	3484	c.y.	\$30.00	\$104,520
Fence	365	l.f.	\$25.00	\$9,125
New Work				
Asphalt paving	8500	S.y.	\$75.00	\$637,500
Asphalt walk	12500	s.f.	\$6.00	\$75,000
Player's benches	6	each	\$800.00	\$4,800
Infield clay (6" depth)	1900	c.y.	\$100.00	\$190,000
Backstop	4	each	\$17,500.00	\$70,000
10' high chain link fence	2000	l.f.	\$350.00	\$700,000
Multi-purpose synthetic turf	1	l.s.	\$1,250,000.00	\$1,250,000
Sports lighting	5	each	\$85,000.00	\$425,000
Drainage	1	l.s.	\$55,000.00	\$55,000
Benches	12	each	\$1,180.00	\$14,160
Trash Receptacles	8	each	\$1,500.00	\$12,000
Play structure	1	each	\$45,000.00	\$45,000
Safety surface	1	l.s.	\$58,000.00	\$58,000
Landscape	1	l.s.	\$20,000.00	\$20,000
Shade Trees	30	each	\$280.00	\$8,400
Flag Poles	3	each	\$800.00	\$2,400
Site lighting	25	each	\$2,500.00	\$62,500
Bleachers (3 row)	8	each	\$5,000.00	\$40,000
Drinking fountain	3	each	\$3,500.00	\$10,500
	Subtotal			\$3,853,905
	GENERAL CONDITIONS, (OVERHEAD, A	ND PROFIT (20%)	\$770,781
	DESIGN CONTINGENCY (15%)		\$578,086
	CONSTRUCTION CONTIN	IGENCY (7%)		\$269,773
	PERMIT COSTS (ALLOWA	NCE)		\$50,000
	PROFESSIONAL DESIGN	FEES (15%)		\$578,086
	TOTAL PROJECT PR	OBABLE C	OST	\$6,100,631

Notes:

1. Layout will have to be finalized based upon a buffer averaging plan applicationapproval by NJDEP.

SAY

- 2. Permit Costs include storm drainage design, preparation of NJDEP and SESC permit applications and permit fees.
- 3. Playground equipment and safety surface does not include swings.
- 4. Unit costs include material, equipment and labor costs.

Since the engineer has no control over cost of labor, materials, equipment, or over the contractor's methods of determining prices, market conditions, or over competitive bidding; this estimate of costs for the Project is made upon the basis of the engineer's experience and qualifications and represents his best judgment as a design professional, familiar with the construction industry. The engineer does not guarantee that proposals, bids, or the project construction cost will not vary from this cost estimate.

\$6,100,000

Pequannock Township Town-wide Park and Recreation Master Plan						

Pequannock Township, Morris County, New Jersey

Lyman Park

Programming Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc.

March 2007

Pennoni Job No. 2615.0000

Description	Quantity	Unit	Unit Cost	Total Cost	
Demolition					
Tree removals	10	each	\$2,000.00	\$20,000	
New Work					
Earth work	11500	c.y.	\$26.00	\$299,000	
Asphalt walk	1600	s.f.	\$6.00	\$9,600	
Trails	9000	s.f.	\$5.00	\$45,000	
Player's benches	4	each	\$800.00	\$3,200	
Drainage	1	l.s.	\$30,000.00	\$30,000	
Subsurface drainage	1	l.s.	\$50,000.00	\$50,000	
Benches	6	each	\$1,180.00	\$7,080	
Lawn (sod, athletic fields)	11500	s.y.	\$25.00	\$287,500	
Bleachers (3 row, 42 seat)	2	each	\$5,000.00	\$10,000	
Drinking fountain	1	each	\$3,500.00	\$3,500	
	Subtotal			\$764,880	
	GENERAL CONDITIONS,	OVERHEAD, A	AND PROFIT (20%)	\$152,976	
DESIGN CONTINGENCY (15%)					
	CONSTRUCTION CONTIN			\$53,542	
	PERMIT COSTS (ALLOWA	ANCE)		\$50,000	
	PROFESSIONAL DESIGN	FEES		\$114,732	

TOTAL PROJECT PROBABLE COST SAY

\$1,250,862 \$1,300,000

Notes:

- 1. A wetlands delinieation will need to be completed as a part of the site development to verify limit of field development.
- 2. Permit Costs include storm drainage design, preparation of NJDEP and SESC permit applications and permit fees.
- 3. Unit costs include material, equipment and labor costs.

Pequannock Township Town-wide Park and Recreation Master Plan						

Pequannock Township, Morris County, New Jersey

Lyon Park

Programming Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc.

March 2007

Pennoni Job No. 2615.0000

Description	Quantity	Unit	Unit Cost	Total Cost
Demolition				
Play structure	1	each	\$10,000.00	\$10,000
New Work				
Earth work	300	c.y.	\$26.00	\$7,800
Asphalt walk	500	s.f.	\$6.00	\$3,000
Player's benches	4	each	\$800.00	\$3,200
Benches	4	each	\$1,180.00	\$4,720
Lawn (seed)	100	s.y.	\$25.00	\$2,500
Play structure	1	each	\$45,000.00	\$45,000
Safety surface	1	l.s.	\$58,000.00	\$58,000
Flag Pole (25' ht)	1	each	\$800.00	\$800
Drinking fountain	1	each	\$3,500.00	\$3,500
	Subtotal			\$138,520
	GENERAL CONDITIONS,	\$27,704		
	DESIGN CONTINGENCY	(15%)	, ,	\$20,778
	CONSTRUCTION CONTIN	NGENCY (7%)		\$9,696
	PERMIT COSTS (ALLOWA	\$50,000		
_	PROFESSIONAL DESIGN	FEES		\$20,778
	TOTAL PROJECT PR	\$267,476		

SAY

\$267,476 \$270,000

Notes:

- A wetlands transition area plan must be approved by NJDEP for this layout. if averaging is not approved U-10 soccer field would need to be reduced to a U-8 size field. This estimate of probable costs does not include any work regarding the existing wetland mitigation, or sports lighting.
- 2. Permit Costs include storm drainage design, preparation of NJDEP and SESC permit applications and permit fees.
- 3. Playground equipment and safety surface does not include swings
- 4. Unit costs include material, equipment and labor costs.

Pequannock Township Town-wide Park and Recreation Master Plan						

Pequannock Township, Morris County, New Jersey

Mountainside Park

Programming Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc.

March 2007

Pennoni Job No. 2615.0000

Description	Quantity	Unit	Unit Cost	Total Cost
New Work				
Trails	64000	s.f.	\$8.00	\$512,000
Signage	10	each	\$1,500.00	\$15,000
Trail Map Development	1	l.s.	\$15,000.00	\$15,000
	Subtotal			\$542,000
	GENERAL CONDITIONS, DESIGN CONTINGENCY	\$108,400 \$81,300		
	CONSTRUCTION CONTIN	` '		\$37,940
	PERMIT COSTS (ALLOWA	\$50,000		
	PROFESSIONAL DESIGN	\$81,300		
	TOTAL PROJECT PR	OBABLE C	OST	\$900,940 \$900,000

Notes:

- 1. This estimate of probable costs does not include any work regarding the existing parking lot.
- 2. Permit Costs include storm drainage design, preparation of NJDEP and SESC permit applications and permit fees.
- 3. All work within Mountainside Park must be approved by the Highlands Council.

Pequannock Township Town-wide Park and Recreation Master Plan						

Pequannock Township, Morris County, New Jersey

Riverside Park

Programming Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc.

March 2007

Pennoni Job No. 2615.0000

Description	Quantity	Unit	Unit Cost	Total Cost		
Demolition						
Play structure	1	each	\$10,000.00	\$10,000		
New Work						
Earth work	300	c.y.	\$26.00	\$7,800		
Asphalt walk	3600	s.f.	\$6.00	\$21,600		
Player's benches	4	each	\$800.00	\$3,200		
Benches	4	each	\$1,180.00	\$4,720		
Lawn (seed)	200	s.y.	\$25.00	\$5,000		
Play structure	1	each	\$45,000.00	\$45,000		
Safety surface	1	l.s.	\$58,000.00	\$58,000		
Flag Pole (25' ht)	1	each	\$800.00	\$800		
Drinking fountain	1	each	\$3,500.00	\$3,500		
	Subtotal			\$159,620		
	GENERAL CONDITIONS,	GENERAL CONDITIONS, OVERHEAD, AND PROFIT (20%)				
	DESIGN CONTINGENCY	(15%)		\$23,943		
	CONSTRUCTION CONTIN	IGENCY (7%)		\$11,173		
	PERMIT COSTS (ALLOWANCE)					
	PROFESSIONAL DESIGN	\$23,943				
	TOTAL PROJECT PR	OBABLE C	OST	\$300,603		
	SAY			\$300,000		

Notes:

- 1. NJDEP permit(s) may be required to replace the playground structure.
- 2. Permit Costs include storm drainage design, preparation of NJDEP and SESC permit applications and permit fees.
- 3. Playground equipment and safety surface does not include swings.
- 4. Unit costs include material, equipment and labor costs.

Pequannock Township Town-wide Park and Recreation Master Plan						

Pequannock Township, Morris County, New Jersey

Rockledge Park

Programming Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc.

March 2007

Pennoni Job No. 2615.0000

Description	Quantity	Unit	Unit Cost	Total Cost
Demolition				
Tree removals	10	each	\$2,000.00	\$20,000
New Work				
Earth work	500	c.y.	\$26.00	\$13,000
Asphalt paving	2400	s.y.	\$75.00	\$180,000
Trail	20000	s.f.	\$8.00	\$160,000
Player's benches	4	each	\$800.00	\$3,200
Drainage	1	l.s.	\$15,000.00	\$15,000
Subsurface drainage	1	l.s.	\$25,000.00	\$25,000
Benches	5	each	\$1,180.00	\$5,900
Play structure	1	each	\$45,000.00	\$45,000
Safety surface	1	l.s.	\$58,000.00	\$58,000
Lawn (sod, athletic fields)	11500	s.y.	\$25.00	\$287,500
Landscaping	1	l.s.	\$25,000.00	\$25,000
Irrigation	1	l.s.	\$50,000.00	\$50,000
Site lighting	10	each	\$2,500.00	\$25,000
Bleachers (3 row, 42 seat)	4	each	\$5,000.00	\$20,000
Drinking fountain	1	each	\$3,500.00	\$3,500
	Subtotal			\$936,100
	GENERAL CONDITIONS,	\$187,220		
	DESIGN CONTINGENCY	\$140,415		
	CONSTRUCTION CONTIN	\$65,527		
	PERMIT COSTS (ALLOWA	ANCE)		\$50,000
	PROFESSIONAL DESIGN	•		\$140,415
	TOTAL PROJECT PR	\$1,519,677		

Notes:

1. A wetlands delineation approved by NJDEP is required to finalize development.

SAY

- 2. Permit Costs include storm drainage design, preparation of NJDEP and SESC permit applications and permit fees.
- 3. Playground equipment and safety surface does not include swings.
- 4. Unit costs include material, equipment and labor costs.

Since the engineer has no control over cost of labor, materials, equipment, or over the contractor's methods of determining prices, market conditions, or over competitive bidding; this estimate of costs for the Project is made upon the basis of the engineer's experience and qualifications and represents his best judgment as a design professional, familiar with the construction industry. The engineer does not guarantee that proposals, bids, or the project construction cost will not vary from this cost estimate.

\$1,600,000

Pequannock Township Town-wide Park and Recreation Master Plan						

Pequannock Township, Morris County, New Jersey

Town Hall Park

Programming Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc.

March 2007

Pennoni Job No. 2615.0000

Description	Quantity	Unit	Unit Cost	Total Cost
Demolition				
Tree removals	2	each	\$2,000.00	\$4,000
New Work				
Earth work	10000	c.y.	\$26.00	\$260,000
Asphalt walk	3500	s.f.	\$6.00	\$21,000
Player's benches	6	each	\$800.00	\$4,800
Infield clay (6" depth)	800	c.y.	\$100.00	\$80,000
Backstop	1	each	\$17,500.00	\$17,500
4' ht chain link fence	650	l.f.	\$240.00	\$156,000
10' ht chain link fence	500	l.f.	\$380.00	\$190,000
Drainage	1	l.s.	\$65,000.00	\$65,000
Subsurface drainage	1	l.s.	\$50,000.00	\$50,000
Benches	8	each	\$1,180.00	\$9,440
Play structure	2	each	\$45,000.00	\$90,000
Safety surface	1	l.s.	\$70,000.00	\$70,000
Lawn (seed)	2600	s.y.	\$15.00	\$39,000
Lawn (sod, athletic fields)	3100	s.y.	\$25.00	\$77,500
Shade Trees	15	each	\$280.00	\$4,200
Landscaping	1	l.s.	\$25,000.00	\$25,000
Irrigation	1	l.s.	\$100,000.00	\$100,000
Flag Pole (25' ht)	1	each	\$800.00	\$800
Sports lighting	1	l.s.	\$80,000.00	\$80,000
Bleachers (3 row, 42 seat)	2	each	\$5,000.00	\$10,000
Drinking fountain	2	each	\$3,500.00	\$7,000
	Subtotal			\$1,361,240
	\$272,248			
	DESIGN CONTINGENCY	(15%)		\$204,186
	CONSTRUCTION CONTIN	IGENCY (7%)		\$95,287
	PERMIT COSTS (ALLOWA	ANCE)		\$50,000
	PROFESSIONAL DESIGN	\$204,186		

TOTAL PROJECT PROBABLE COST

\$2,187,147 \$2,200,000

Notes

- 1. Permit Costs include storm drainage design, preparation of NJDEP and SESC permit applications and permit fees.
- 2. Playground equipment and safety surface does not include swings.
- 3. Unit costs include material, equipment and labor costs.

Pequannock Township Town-wide Park and Recreation Master Plan					

Pequannock Township, Morris County, New Jersey

Washington Park Programming Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc. March 2007 Pennoni Job No. 2615.0000

Description	Quantity	Unit	Unit Cost	Total Cost
Demolition				
Tree removals	30	each	\$2,000.00	\$60,000
Asphalt and subbase removal	3500	c.y.	\$30.00	\$105,000
Fence (DPW Yard)	370	l.f.	\$25.00	\$9,250
New Work				
Earth work	10000	c.y.	\$26.00	\$260,000
Asphalt paving	7700	s.y.	\$75.00	\$577,500
Asphalt walk	18500	s.f.	\$6.00	\$111,000
Player's benches	6	each	\$800.00	\$4,800
Infield clay (6" depth)	470	c.y.	\$100.00	\$47,000
Backstop	1	each	\$17,500.00	\$17,500
4' ht chain link fence	1200	l.f.	\$240.00	\$288,000
Drainage	1	l.s.	\$65,000.00	\$65,000
Subsurface drainage	1	l.s.	\$50,000.00	\$50,000
Benches	12	each	\$1,180.00	\$14,160
Play structure	1	each	\$45,000.00	\$45,000
Safety surface	1	l.s.	\$58,000.00	\$58,000
Lawn (seed)	4500	s.y.	\$15.00	\$67,500
Lawn (sod, athletic fields)	11500	s.y.	\$25.00	\$287,500
Shade Trees	40	each	\$280.00	\$11,200
Landscaping	1	l.s.	\$25,000.00	\$25,000
Irrigation	1	l.s.	\$100,000.00	\$100,000
Flag Pole (25' ht)	1	each	\$800.00	\$800
Site lighting	35	each	\$2,500.00	\$87,500
Bleachers (3 row, 42 seat)	4	each	\$5,000.00	\$20,000
Drinking fountain	2	each	\$3,500.00	\$7,000
	Subtotal			\$2,318,710
	GENERAL CONDITIONS, 0	OVERHEAD, A	ND PROFIT (20%)	\$463,742
	DESIGN CONTINGENCY (15%)	` ,	\$347,807
	CONSTRUCTION CONTIN	,		\$162,310
	PERMIT COSTS (ALLOWA	NCE)		\$50,000
	PROFESSIONAL DESIGN			\$347,807
	\$3,690,375			

1. A wetlands buffer averaging plan must be approved by NJDEP for this layout.

SAY

- Permit Costs include storm drainage design, preparation of NJDEP and SESC permit applications and permit fees.
 Playground equipment and safety surface does not include swings.
- 4. Unit costs include material, equipment and labor costs.

Since the engineer has no control over cost of labor, materials, equipment, or over the contractor's methods of determining prices, market conditions, or over competitive bidding; this estimate of costs for the Project is made upon the basis of the engineer's experience and qualifications and represents his best judgment as a design professional, familiar with the construction industry. The engineer does not guarantee that proposals, bids, or the project construction cost will not vary from this cost estimate.

\$3,700,000

Pequannock Township Town-wide Park and Recreation Master Plan					

Pequannock Township, Morris County, New Jersey

Woodland Lake

Programming Estimate of Probable Costs

Professional Planning and Engineering Division of Pennoni Associates, Inc.

March 2007

Pennoni Job No. 2615.0000

Description	Quantity	Unit	Unit Cost	Total Cost
Demolition				
Tree removals	5	each	\$2,000.00	\$10,000
New Work				
Earth work	1000	c.y.	\$26.00	\$26,000
Concrete paving (boat launch)	200	s.y.	\$85.00	\$17,000
Concrete retaining wall	1302	s.f. face	\$150.00	\$195,300
Benches	6	each	\$1,180.00	\$7,080
Shade Trees	10	each	\$280.00	\$2,800
Landscaping	1	l.s.	\$8,000.00	\$8,000
Site lighting	5	each	\$2,500.00	\$12,500
	Subtotal			\$278,680
	GENERAL CONDITIONS,		ND PROFIT (20%)	\$55,736
	DESIGN CONTINGENCY	, ,		\$41,802
	CONSTRUCTION CONTI	, ,		\$19,508
	PERMIT COSTS (ALLOW	,		\$50,000
	PROFESSIONAL DESIGN	NFEES		\$41,802
	TOTAL PROJECT PR	ROBABLE C	OST	\$487,528
	SAY			\$500,000

Notes:

- 1. NJDEP permit(s) are required to complete the scope of work.
- 2. Permit Costs include storm drainage design, preparation of NJDEP and SESC permit applications and permit fees.
- 3. Unit costs include material, equipment and labor costs.

Pequannock Township Town-wide Park and Recreation Master Plan					