

A VISION FOR THE 21ST CENTURY

A public visioning process in 2000 identified the major goals and objectives of the community, in which were reinforced in the Bernards Township Master Plan. These included keeping taxes stable while working to:

1. protect open spaces,
2. provide adequate fire and first aid safety,
3. control and calm traffic in town,
4. connect neighborhoods with pathways/greenways,
5. create accessible programs to meet the needs of youth, and
6. protect downtown Basking Ridge - maintain its charm.

Bernards Township has a long history of proactive planning to address these objectives with implementation strategies that provided affordable housing, expanded emergency service facilities and equipment, acquired extensive and widely distributed public open spaces, developed expanded recreation facilities and an extensive path and bikeway network. Concerns for the safety, community character and livability of historic village areas has led to traffic calming and context sensitive architecture in Basking Ridge and a renewed focus on protecting community character.

The 2008 Reexamination Report cited the long tradition of creative and forward-thinking public policy in Bernards Township, a place where stewardship brings a duty to plan well. The Reexamination Report calls for “the comprehensive integration of the various plan elements into a holistic policy rationale that acknowledges the responsibility of stewardship over open spaces, infrastructure and natural and built systems and promotes sustainable development, operations and maintenance.”

STATUTORY AUTHORIZATION

This section of the Master Plan was prepared in accordance with the Municipal Land Use Law, N.J.S.A. 40:55D-28b:

- (1) A statement of objectives, principles, assumptions, policies and standards upon which the constituent proposals for the physical, economic and social development of the municipality are based.

GENERAL OBJECTIVES

This 2009 Master Plan Update further refines the goals, objectives, policies and strategies outlined in the 2003 Master Plan. The Township goals and objectives below respond to the legislated purposes of the Municipal Land Use Law, which are adopted as general Township planning objectives:

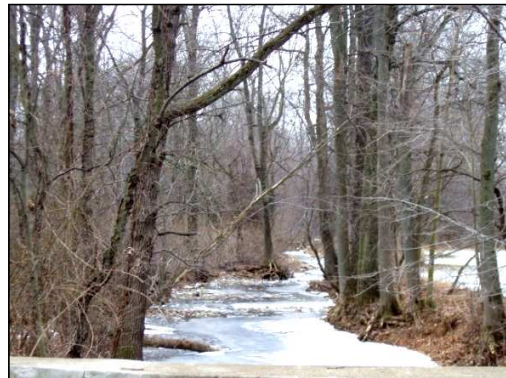
1. To encourage municipal action to guide the appropriate use or development of all lands in this State, in a manner which will promote the public health, safety, morals and general welfare.
2. To secure safety from fire, flood, panic and other natural and manmade disasters.
3. To provide adequate light, air and open space.
4. To ensure that the development of individual municipalities does not conflict with the development and general welfare of neighboring municipalities, the county and the State as a whole.
5. To promote the establishment of appropriate population densities and concentrations that will contribute to the well-being of persons, neighborhoods, communities and regions and preservation of the environment.
6. To encourage the appropriate and efficient expenditure of public funds by the coordination of public development with land use policies.
7. To provide sufficient space in appropriate locations for a variety of agricultural, residential, recreational, commercial and industrial uses and open space, both public and private, according to their respective environmental requirements in order to meet the needs of all New Jersey citizens.
8. To encourage the location and design of transportation routes which will promote the free flow of traffic while discouraging location of such facilities and routes which result in congestion or blight.
9. To promote a desirable visual environment through creative development techniques and good civic design and arrangements.
10. To promote the conservation of historic sites and districts, open space, energy resources and valuable natural resources in the State and to prevent urban sprawl and degradation of the environment through improper use of land.
11. To encourage planned unit developments which incorporate the best features of design and relate the type, design and layout of residential, commercial, industrial and recreational development of the particular site.
12. To encourage senior citizen community housing construction.
13. To encourage coordination of the various public and private procedures and activities shaping land development with a view of lessening the cost of such development and to the more efficient use of land.

14. To promote utilization of renewable energy sources.
15. To promote the maximum practicable recovery and recycling of recyclable materials from municipal solid waste through the use of planning practices designed to incorporate the State Recycling Plan goals and to compliment municipal recycling programs.

GOALS

The following Goals were developed during preparation of the 1982, 1989, 1996 and 2003 master plans, and remain valid today:

1. To protect neighborhood and community character and to retain and improve on the attractive streetscapes throughout the Township.
2. To promote and encourage social comity, civic responsibility and neighborliness, which are key quality of life indicators in Bernards.
3. To promote sustainable practices in the design, construction and operation of public and private facilities.
4. To encourage an overarching respect for the natural environment and a desire to leave Bernards a better place as a result of these plans.
5. To retain the rural and agricultural character of the township to the greatest extent practicable.
6. To maintain the quality of municipal services and community facilities in order to assure a high quality of life for present and future Township residents.
7. To limit development to densities and intensities that can be adequately served by existing and planned private and municipal capital facilities and the natural and built infrastructure, and not purchasing additional wastewater treatment capacity to permit collection line extensions.
8. To limit development to densities and intensities that will retain the remaining natural areas of the Township and protect sensitive environmental areas.
9. To maintain the existing balance between housing and employment and assure an adequate number of retail and service establishments in appropriate locations.
10. To maintain sufficient flexibility in development regulations to permit a variety of housing types serving a broad range of income levels.
11. To encourage the use of design techniques that result in energy and water conservation and minimize the impact of development on the everyday environment.



12. To maintain the mixed use character and protect the unique quality and character of the villages of Basking Ridge and Liberty Corner.
13. To promote the preservation of the Township's historic sites and districts.
14. To maintain a high level of citizen involvement in the land use planning process based on an informed citizenry.
15. To continue to examine, and when appropriate, amend the Land Development Ordinance, to assure flexibility and excellence of design.
16. To examine new design approaches such as lot averaging and other open lands conservation techniques to determine their applicability in Bernards.

OBJECTIVES

Land Use and Management Objectives

The following land use objectives serve to guide the master plan:

1. Land use policies should strive to maintain and enhance community character, protect the integrity of existing neighborhoods and prevent the intrusion of incompatible new development.
2. The densities and intensities of permitted development on the limited remaining vacant lands should respect the environmental capabilities and limitations of these lands.
3. Groundwater aquifers and surface water quality and quantity should be protected, through the proper management of aquifer recharge areas, wetlands and their transition areas and fractured bedrock groundwater aquifers.
4. To plan for a reasonable balance among various land uses that respects and reflects the goals of the Master Plan.
5. Development densities and intensities should be planned at levels which do not exceed the capacity of the natural environment and current infrastructure, and growth-inducing infrastructure should not be extended into the rural countryside.

Community Facilities and Infrastructure Objectives

1. Community facilities should be planned to accommodate anticipated future population needs, in terms of numbers of persons and anticipated age cohorts.
2. The Township's capital improvement program should assure that community facilities and infrastructure are available when appropriate.
3. The Township's capital improvement program relating to roads and drainage should be coordinated with the funding of off-tract improvements by developers.
4. To the maximum extent practical and legal, all future development should pay its

proportionate share of any required off-tract improvements for community facilities and infrastructure.

5. Within the designated sewerred areas of the Township, development should be limited so as to not exceed the capacity of the sewage treatment plant.
6. On-site individual septic disposal systems should be utilized in all areas outside the existing sewer service areas, subject to soil suitability.
7. All future development that increases lot coverage should be designed to reduce stormwater runoff to protect existing and future residents against flooding, to reduce erosion and protect water quality and to promote aquifer recharge
8. Township design standards for infrastructure improvements, both private and public, should include considerations for sustainable design features and minimizing future maintenance costs.
9. Maintain the high quality of municipal services enjoyed by residents.
10. Maintain appropriate emergency services for Township residents.
11. Avoid the extension of infrastructure into non- sewerred areas.
12. Encourage development of alternative energy facilities (solar, geothermal, etc.) on private or public lands and buildings under appropriate conditions, where the rights of neighbors are respected.



Recreation/Open Space Objectives

1. A wide range of recreational facilities should be provided and adequately maintained to meet the needs of all Township residents.
2. The Township policy of centralizing major active recreational facilities and enhancing neighborhood recreation should be continued.
3. Environmentally sensitive land should be protected through acquisitions and/or conservation easements.



4. Recreational opportunities should be enhanced by construction of paths and expansion of greenways that better link neighborhoods with open spaces and natural lands.
5. Township-owned sites should be evaluated for potential active and passive recreational use and the importance of retaining natural lands wherever possible.

6. Open space acquisitions should be prioritized to meet evolving needs and current deficits and in concert with historic preservation objectives.
7. Continue to promote and enhance local stewardship of open spaces.

Traffic and Circulation Objectives

1. Traffic demand generated by development should not exceed the existing and planned capacity of the Township circulation system.
2. Future circulation improvements identified in the Traffic and Circulation Plan should be included in the capital improvement program and based upon the anticipated timing of new development.
3. Pathways for walking and biking, serving as connections between community facilities (commercial and employment and historic sites, parks, playgrounds, schools, transportation nodes) should be encouraged and considered in all site plan and subdivision applications.
4. Traffic demand management strategies should be explored in conjunction with local employment generators.
5. Existing parking facilities should be maintained at commuter rail stations and appropriate bus pick-up and drop-off locations.
6. Township officials should work closely with the County to encourage improvements to County roads as identified in the Bernards Township Master Plan.
7. Additional sidewalks and bikeways should be considered to connect residences with major pedestrian generators and destinations (schools, recreational facilities, shopping, etc.).
8. The Township should continue to require off-tract improvements from developers to provide additional road capacity as needed.



9. The Township should continue requiring pedestrian circulation ways where appropriate and to connect with major pedestrian generators.
10. Improve pedestrian friendliness throughout Bernards, and especially in the historic settlements of Basking Ridge, Liberty Corner and Madisonville.

Housing Objectives

1. To maintain a reasonable diversity of housing to serve diverse household needs.
2. To continue to meet the Township's commitment to providing its fair share of low and moderate-income housing.
3. To maintain the affordability of low- and moderate-income units within the community.

Nonresidential Development Objectives

1. Nonresidential development should be planned for appropriate areas where it will be compatible with and not adversely impact residential development within the Township.
2. Office zoning should be limited to maintain a balance of uses and to reduce traffic impacts on existing and planned Township infrastructure and the effects of noise, glare and light spill-over on the quality of life in residential neighborhoods.
3. Strip commercial development should be discouraged through stringent site planning standards including the use of common driveways, common rear yard parking areas and unified sign plans.
4. Retail shopping opportunities in the existing business zones should be strengthened by restricting office uses from ground floor areas.
5. The continued viability of the existing Basking Ridge and Liberty Corner business districts should be enhanced through the construction of additional municipal parking facilities, along with traffic calming and pedestrian ways to promote a walkable environment.
6. Future uses for the quarry that can preserve open space and protect the Long Hill ridgeline should be explored.



Historic Preservation Objectives

1. The distinctive character of the historic villages of Basking Ridge, Franklin Corners and Liberty Corner and the hamlet of Madisonville should be maintained.
2. Coordinate the identification and preservation of historic areas, historic sites, landscapes, archeological sites and scenic corridors within the municipality, and maintain a municipal central repository of data collected.
3. Encourage the preservation of historic buildings and structures and promote the protection of archaeological, historic and other cultural resources.
4. Promote the adaptive reuse of historic structures in ways that respect architectural and historic integrity.
5. Promote and encourage these historic preservation objectives through a combination of strategies: encourage private, voluntary initiatives; administer and enforce existing design guidelines and requirements; and utilize Township and other funds, where appropriate.
6. Explore creation of a Historic Preservation Commission as provided in the Municipal Land Use Law.



Environmental Resources Objectives

1. Identify and protect environmentally sensitive areas within the Township, including moderate and steep slopes, wetlands, flood plains, water bodies, ridge lines and areas of significant vegetation.
2. Preserve ridge lines in their natural state. Roof lines should be kept below the ridge line to preserve distant views and significant vegetation along the ridge lines should be maintained.
3. Protect streams, waterways and wetlands through careful stormwater and wastewater management practices and/or ordinances, and other efforts to minimize non-point pollution.
4. Protect naturally occurring steep slopes from development impacts, in order to protect existing natural systems and to prevent soil erosion and degradation of surface water quality.
5. Require conservation easements on environmentally sensitive areas in private ownership to prevent future disturbance.



6. Preserve existing vegetation, with special emphasis on the protection of native forest cover.
7. Utilize native vegetation as replacement plantings in areas of disturbance.
8. Minimize site disruption by establishing clearly marked limits of clearing.
9. Plan the intensity of permitted development, in areas relying on groundwater supplies and on-site sewage disposal, in response to conservative estimates of available water resources and the ability to sustain on-lot disposal systems without degrading or impairing surface or groundwater quality.
10. Protect environmentally sensitive areas, encourage use of renewable resources, particularly energy, promote energy conservation and provide design flexibility for passive solar design with appropriate design standards and techniques in the Land Development Ordinance where appropriate.
11. Protect biological diversity through the maintenance of large continuous tracts and corridors of recreation, forest, flood plain and other undisturbed open space lands.
12. Maintain and/or provide natural vegetation in stream corridors and buffer areas in order to maintain and improve water quality, wildlife corridors and opportunities for passive and active recreation.
13. Plan and manage land uses to preserve, protect and enhance surface water and groundwater quality, in part by managing the impacts of development on headwaters tributaries.
14. Preserve and protect the high quality waterways in the Township from point and non-point source pollution. Wherever appropriate, Best Management Practices (BMP's), such as, but not limited to, buffering, created wetlands, multistage storm water treatment systems, drywell infiltration systems for groundwater recharge, and storm water bio-retention strategies, should be used to maximize groundwater recharge and protect downstream public drinking water supplies.
15. Encourage the use of recommended management practices for agriculture, forestry and land development.
16. Encourage and assist in implementing the goals and management principles of The Ten Towns Great Swamp Watershed Management Committee to protect and enhance the ecological condition of the Great Swamp and its watershed and tributaries.
17. Promote sustainable landscape management and restoration practices that maximize use of native plant material and reduce reliance on fertilizers, pesticides, herbicides and irrigation.
18. Promote forest stewardship and cultivate respect for existing trees in neighborhoods.

Agriculture & Farmland Preservation Objectives

1. Promote a better environment for agriculture to continue as a business by preserving as many agricultural operations as possible, utilizing a variety of land preservation techniques.
2. Analyze issues affecting the survival of economically viable agriculture in Bernards and identify strategies to support the survival of viable farming operations and family farms.
3. Develop strategies focused on maintaining agricultural activities in the community including promoting farming, encouraging future farmers and citizenry to participate in this necessary industry.
4. Focus preservation activities in the area of existing agricultural operations in order to retain farms that have survived in spite of suburban development.
5. Retain core areas of preserved farmland, so that agriculture can be sustained into the future.
6. Preserve agricultural lands to protect scenic rural landscapes, groundwater water recharge areas and wildlife habitat and to assure that the precious remaining pieces of the Township's rural fabric are not lost forever.
7. Consult with the Agriculture Advisory Committee to guide municipal farmland preservation efforts and assist with development and implementation of agricultural retention strategies. including prioritizing farmland easement acquisition, conducting community outreach.
8. Maintain communication with Bernards' agricultural community, which can assist the Township with the formulation of public policy meaningful to farmers and their interests.

Compatibility with Other Planning Efforts

1. The Township should continue to participate in the State and County planning processes.
2. The Township Master Plan should take into account Somerset County Master Plan and the State Development and Redevelopment Plan, as well as other State and County planning documents.
3. The Township should cooperate with Regional Planning Agencies and consider the policies and recommendations of the Ten Towns Great Swamp Watershed Management Committee, Bernards Township Shade Tree Commission, Bernards Township Parks, Paths and recreation Committee Open Space Committee, and Upper Raritan Watershed Association, the Association of New Jersey

Environmental Commission, Passaic River Coalition and New Jersey Division of Watershed Management.

4. The Township should work with utility companies to minimize the aesthetic and environmental damage from pruning and promote cooperative planning for utility maintenance activities.

INTRODUCTION

This Farmland Preservation Plan has been prepared to maximize the opportunities to retain agricultural lands and the industry of agriculture in Bernards Township, which is located in a highly developed portion of Somerset County, New Jersey. Proximity to interstate and local highways, superior schools, and open spaces that protect wildlife and encourage recreation entice newcomers to reside in the Township and long-time residents to stay. With a population of about 28,000 and the threat of development encroaching into unprotected open areas, the Township is preparing this plan to establish goals for farmland preservation in this rapidly urbanizing area of central New Jersey. (Figure XII-1)

Bernards Township history is rooted in agriculture; however postwar development and recent development trends have had the effect of transforming Bernards' once vast agricultural landscape into desirable suburban neighborhoods. Nodes of agricultural areas remain among the Township's neighborhoods. Farms and agricultural uses primarily remain in the Township's southwesterly and south-central portion of the Township, as well as in the northeasterly portion of the Township. In the southwest, farmland and agricultural areas generally remain in areas that are not currently served by the municipal centralized sewer system. Within this portion of the Township, some preserved lands located in proximity to remaining agricultural lands contribute to a less developed character.

In Bernards Township, agricultural practices on the town's current farms are in full swing. In an effort to educate the public about agriculture in the community, the Township's Agricultural Advisory Committee hosted a booth at this year's Charter Day. Bernards is home to farms that produce apples, maple syrup, produce such as vegetables, chickens and eggs, while other farms in the town are pasturelands where cows, goats and sheep graze. This is a fairly similar outlook to that of the County's farms and has been a trend for at least the past twenty years.

There are a variety of farmlands in the region; however, Bernards Township does not host the same amount of horses as much of the rest of the County farms. There are also not many agricultural related industries present in Bernards Township. However, the sense of community amongst Bernards farmers makes up for what little active farmland is present compared to the rest of the County.

As stated by many of the farmers in town, if they need equipment they borrow from each other. Bernards farmers are aware of equipment and supply providers outside of the Township, and do utilize them, but it is more likely that they will help each other out within their own community.

Bernards' planning policy is generally supportive of agriculture. The Township with this Farmland Preservation Plan is aiming to create a better environment for agriculture to continue as a business through a variety of means. First and foremost, the Township will seek to preserve as many agricultural operations as possible, utilizing a variety of land preservation techniques. Recognizing that land preservation is only the first step, the Township will analyze issues affecting the survival of economically viable agricultural and undertake a variety of additional measures to help support the survival of economically viable agricultural operations and family farms. In addition to preservation, strategies focused on maintaining agricultural activities in the community include promoting farming, encouraging future farmers and citizenry to participate in this necessary industry.

XII. FARMLAND PRESERVATION PLAN ELEMENT

The Township will focus preservation activities in the area of existing agricultural operations and seek to retain farms that have survived the suburban development pressures that have contributed so heavily to the loss of agriculturally productive lands. By retaining core areas of preserved farmland, agriculture can be sustained into the future. Preservation of agricultural lands provides other significant benefits including the protection of scenic rural landscapes, groundwater water recharge areas and wildlife habitat. Preservation of farmland and agriculture will also assure that the precious remaining pieces of the Township's rural fabric are not lost forever.

The Township has created an Agriculture Advisory Committee (A.A.C.) to guide municipal farmland preservation efforts and assist with development and implementation of agriculture retention strategies. The Committee will assist in prioritizing farmland easement acquisition, conducting information outreach to the township community, as well as establish communication with Bernards' agricultural community. This will assist the Township with the formulation of public policy meaningful to farmers and their interests.¹

On December 4, 2006, revised State Agriculture Development Committee (SADC) Rules were published for comment. The revised rules are expected to take effect on our about June 20, 2007. These rules established new requirements for municipal farmland preservation plans to address eligibility for funding under the SADC's Planning Incentive Grant (PIG) Program. The SADC is currently preparing a guidance document for municipalities that wish to establish PIG Programs under the revised rules and receive funding through the SADC's Planning Incentive Grant Program.

STATUTORY AUTHORIZATION

The Municipal Land Use Law (*N.J.S.A. 40:55D-1 et seq.*) provides for preparation and adoption of a farmland preservation plan (FPP) element (*N.J.S.A. 40:55D-28b.13.*) as follows:

(13) A farmland preservation plan element, which shall include:

1. An inventory of farm properties in the entire municipality and a map illustrating significant areas of agricultural lands;
2. A detailed statement showing that municipal plans and ordinances support and promote agriculture as a business;
3. A plan for preserving as much farmland as possible in the short-term by leveraging monies made available by the Garden State Preservation Trust Act, N.J.S.A. 13:8-1 et seq., P.L. 1999, c. 152 through a variety of mechanisms including but not limited to:
 - i. Option agreements;
 - ii. Installment purchases; and
 - iii. Encouraging donations for permanent development easements.

¹ Bernards Township Farmland Preservation Plan Executive Summary, 2005

I. BERNARDS TOWNSHIP’S AGRICULTURAL LAND BASE

Over the last 20 years, Bernards has seen an increase of the amount of land developed into non-agricultural uses. Medium sized farms saw the greatest decline. However, lands that have remained in agriculture have held their own by developing agricultural programs that serve the community. From apple-picking to maple syrup harvesting to farm stands, Bernards farms provide not only produce, but also an experience to both residents and visitors alike.

Of the 1,364 farmland-assessed acres in Bernards, 82% (1,134 acres) are located within the proposed boundaries of the CR-1 and CR-2 districts. Farmland-assessed lands throughout the Township make up 26% of the 4,320 acres included in the CR districts. (2003, Master Plan).²

The following information includes a number of maps and tables providing information on the soils, water sources, farmland assessment and census statistics, farm sizes in the Township and in the County, and the agricultural use of farms in the Township and in the County.

A. Location and Size of Agricultural Land Base

Bernards Township overall does not have a large amount of land in farms, but farms that are in operation in the town are part of an active market in the region. Approximately 11% of the Township’s total 14,350.57 acres (1,509.38 acres) qualify for reduced tax assessment under the Farmland Assessment Act of 1964 (Figure XII-2). Table XII-1 identifies farmland-assessed and farm-qualified parcels within Bernards, according to the 2007 MOD IV tax data.

Table XII-1: Bernards Township Property Class³

Class	Total	%
Residential	5,982.15	4.35%
Public Property	2,619.11	18.25%
Farm Assessed⁴	485.45	3.38%
Farm Qualified⁵	1,023.93	7.14%
Roadways		
Industrial	199.45	1.39%
Commercial	1,118.74	7.8%
Public School	135.21	.94%
Vacant	1,490.78	10.39
Rail Road		
Private School	198.85	1.39%
Church	180.91	1.26%
Apartment	14.85	.1%
Other Exempt	153.13	1.07%
No Data	624.37	4.35
Cemetery	123.64	.86%
TOTAL	14,350.57	100

² Bernards Township Master Plan, February 2003.

³ Somerset County GIS Dept.

⁴ Farmland assessed parcels are those that have been given farmland status through a tax assessment.

⁵ Farmland qualified parcels are those that have the qualities of farmland, but have not gained farmland status via tax assessment.

XII. FARMLAND PRESERVATION PLAN ELEMENT

The Township has identified a proposed project area and farms targeted for preservation (Figure XII-3). The project areas totals 3,708.64 acres and is located in the southern portion of the Township, straddling Route 78. The proposed project area represents the lands with the highest concentration of farm assessed/qualified land and public property (Table XII-2). Of the total project area, 27.02% (approximately 1,000 acres) are farm assessed/qualified and about 8% (293.5 acres) are public property. This totals approximately 35% of the project area as farm and preserved lands. (See also Figure XII-4.)

Table XII-2: Property Class for Bernards Township Proposed Project Area⁶

Class	Acres	%
Farm Qualified	645.12	17.4%
Public Property	293.46	7.91%
Farm Assessed	356.79	9.62%
Residential	1,109.4	29.91%
Private School	173.45	4.68%
Industrial	4.87	.13%
Commercial	391.65	10.56
Vacant	323.26	8.72%
Other Exempt	120.77	3.26
No Data	289.87	7.82
TOTAL	3,708.64	100

The nature of the Township is further highlighted by the 2002 Land Use/Land Cover data (Figure XII-5). Table XII-3 identifies the Land Use/Land Cover for the entire Township. There are 694 acres (4.84%) of the Township classified as Agricultural.

Table XII-3: 2002 Land Use/Land Cover for Bernards Township⁷

Type	Total	%
Urban	6,922.74	48.24%
Agriculture	694.44	4.84%
Forest	3,542.56	24.69%
Wetlands	2,811.38	19.59%
Barren Land	291.29	2.03%
Water	88.14	.61%
TOTAL	14,350.55	100

Focusing the 2002 Land Use/Land Cover on the Township’s proposed project area, the agricultural land totals 12.6% (470 acres) of the area.

Table XII-4: 2002 Land Use/Land Cover for Bernards Proposed Project Area⁸

Type	Total	%
Agriculture	470.5	12.66%
Wetlands	650.00	17.49%

⁶ Somerset County GIS Dept.

⁷ NJDEP

⁸ NJDEP

XII. FARMLAND PRESERVATION PLAN ELEMENT

Forest	1,362.25	36.66%
Urban	1,161.55	31.26%
Barren Land	52.64	1.24%
Water	18.81	.51%
TOTAL	3,715.74	100

Table XII-5 identifies the amount of cropland and pastureland identified by the 2002 Land Use/Land Cover for both the entire Township and the Proposed Project Area (Figure XII-3). As shown above, the total area of cropland is concentrated in the proposed project area.

Table XII-5: 2002 Land Use/Land Cover Cropland and Pastureland⁹

Category	Acres	Percentage of Area
Township Wide Cropland and Pasture Land	554.7	3%
Township Project Area Cropland and Pasture Land	386.71	10.4%

To date, Bernards has participated in three farmland preservation efforts where development rights were purchased. These included:

English Farm lot, Valley Road
Block 9301, lot 9.01
64.298 ac.

English meadow lot, Valley/Mount Airy Roads
Block 7703, lot 22
16.281 ac.

English wood lot, Allen Road
Block 11201, lot 1
58.596 ac.

The proposed project focuses preservation on farms that not only address the SADC criteria for preservation, but are clearly active farms in the Township. These target farms, and those already acquired, will establish a baseline of preserved farmland and create large contiguous areas of active and preserved farms. These targets will be discussed further in Sections 4 and 5 below but are noted here to show the proximity and nature of the Township’s proposed Project Area (Figure XII-3).

B. Distribution of Soil Types and Their Characteristics

The Natural Resources Conservation Service (NRCS) categorizes farm capable soils into five areas: Prime, Statewide, Local, Unique and Other soils. Below is a brief description of each category.

*Prime Soils*¹⁰

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. In general,

⁹ NJDEP

¹⁰ <http://www.nj.nrcs.usda.gov/technical/soils/primefarm.html>

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prime farmland has an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, an acceptable level of acidity or alkalinity, an acceptable content of salt or sodium, and few or no rocks. Prime farmland is not excessively eroded or saturated with water for long periods of time, and it either does not flood frequently during the growing season or is protected from flooding.

Statewide Important Soils¹¹

Farmlands of statewide importance include those soils that do not meet the criteria as Prime Farmland, These soils are nearly Prime Farmland and economically produce high yields of crops when treated and managed according to acceptable farming methods, Some may produce yields as high as Prime Farmland if conditions are favorable.

Locally Important Soils¹²

Farmland of local importance includes those soils that are not prime or statewide importance and are used for the production of high value food, fiber or horticultural crops.

Unique Soils¹³

Land other than prime farmland that is used for the production of specific high-value food and fiber crops...such as, citrus, tree nuts, olives, cranberries, fruits, and vegetables. (7 U.S.C. 4201(c)(1)(B))

Other Farmland Soils¹⁴

This category of soils typically includes soils of a hydric nature. These soils do not typically appear in Bernards or nearby Somerset County areas.

Less than 50% of soils found in the township are suitable for farmland, while less than 25% of soils in the project area are suitable for farmland (Table XII-6). This information is also shown on Figure XII-6, Farm Capable Soils in the Township with the proposed project area highlighted. Table XII-7 below shows the amount of farmland in the proposed project area that has soils capable of supporting farming activities.

Table XII-6: Farm Capable Soils for Bernards Township

Soil	Acres	%	Cropland and Pastureland	Orchards/Vineyards/Nurseries/Horticultural Areas	Other Agriculture
Prime Soils	3,385.56	21.79%	181.17	18.4	22.24
Statewide Important	1,334.09	8.59%	110.71	3.25	4.52
Locally Important Soils	156.4	1.01%	4.97	0	0
Other	10,661.43	68.62%	15,240.63	15,515.83	15,510.72
Total	15,537.48	100%	15537.48	15537.48	15537.48

¹¹ <http://www.nj.nrcs.usda.gov/technical/soils/importantfarm.html>

¹² <http://www.nj.nrcs.usda.gov/technical/soils/localfarm.html>

¹³ http://recreation.usgs.gov/env_guide/farmland.html

¹⁴ <http://www.nj.nrcs.usda.gov/technical/soils/hydric.html>

Table XII-7: Farm Capable Soils for Bernards Proposed Project Area¹⁵

Soil	Acres	%	Cropland and Pastureland	Orchards/Vineyards/Nurseries/Horticultural Areas	Other Agriculture
Prime Soils	564.04	14.36%	151.67	18.4	8.5
Statewide Important	235.83	6.00%	68.21	3.25	4.41
Locally Important Soils	0	0%	0	0	0
Other	3,127.77	79.63%	3,707.76	3,905.99	3,914.73
Total	3,927.64	100%	3,927.64	3,927.64	3,927.64

Soils descriptions¹⁶

Bernards has three major soil groups in the township: Neshaminy-Mount Lucas-Amwell Association; Penn-Klinesville-Reaville Association; and Parsippany-Lansdowne-Watchung Association. They are described below.

Neshaminy-Mount Lucas-Amwell Association – Gently sloping to very steep, deep, well-drained to somewhat poorly drained, loamy, gravelly, and very stony soils that have bedrock mainly below a depth of 4 feet on uplands.

Penn-Klinesville-Reaville Association – Nearly level to very steep, moderately deep and shallow, well drained to somewhat poorly drained loamy and shaly soils underlain mainly by red shale; on uplands.

Parsippany-Lansdowne-Watchung Association – Nearly level to gently sloping, deep, very poorly drained to moderately well drained loamy soils underlain mainly by shale, granitic gneiss, diabase, and basalt; on lake plains.

The Township’s Project Area consists of a combination of these three soil types, with the majority of the project area made up of the Neshaminy-Mount Lucas-Amwell association. This soil type, as described above, can vary from very deep, gently sloping and well-drained to very stony with bedrock only four feet below the surface. In general, limitations to farming would be the wetness of soils after heavy rains.¹⁷

C. Number of Irrigated Acres and Available Water Sources

Bernards has a total of 11 irrigated acres in the township. Two acres are used for fruit and nine acres are used for vegetables. According to the Highlands Regional Master Plan, Bernards Township is mostly within the 0.10-0.39 mgd range of water availability (highest water availability) and there are a few areas south of Route 78 that fall within the -0.09-0.00 mgd range, with the lowest water availability.¹⁸ With regard to the target farms identified in this plan they mostly fall within these ranges, with the majority in the higher range.

Field crops such as corn, grass, alfalfa, and small grains typically rely on groundwater resources and require no additional irrigated water sources. As described above, most of the soils in the township

¹⁵ **SSURGO**

¹⁶ Soil Survey of Somerset County, USDA Soil Conservation Service, 1979.

¹⁷ Soil Survey of Somerset County, New Jersey. USDA Soil Conservation Service. December, 1976.

¹⁸ New Jersey Highlands Council, 2007 and New Jersey Department of Environmental Protection, 2006

are deep and moderately well drained, allowing for the soils to retain water longer than a well-drained soil.

Table XII-8: Irrigated Acres¹⁹

Crop	1983	1990	2000	2004	% Change 1983-2004
Field crops	n/a	0	0	0	0
Fruit	n/a	0	0	2	0
Ornamental	n/a	0	0	0	0
Vegetables	n/a	0	2	9	0
TOTAL IRRIGATED ACRES	4.6	0	2	11	139%

D. Farmland Assessment and Census of Agriculture Statistics and Trends

The information listed below gives a comparison of farmland in the County and the Township over the past 20 years.

Table XII-9a shows that the number of farms in the Township have decreased significantly, while the farms in the County have increased only a small amount.

Table XII-9a: Number of Farms

	2002	1982
Somerset County	442	414
Bernards Twp	30	178

In the same respect, the number of smaller farms in the County has increased, while the number of larger farms has decreased over the last two decades. (Table XII-9b).

Table XII-9b: Farms by Size - Somerset County

	2002	1982
1 to 9 Acres	106	65
10 to 49 Acres	220	168
50 to 179 Acres	73	114
180 to 499 Acres	25	44
500 to 999 Acres	12	14
1,000 to 1,999 Acres	5	7
2,000 Acres or More	1	2

Table XII-10, Average and Median Farm Size, shows that again, the numbers have decreased only slightly in the County over the past 20 years. In the Township, the average farm size is much smaller than the County average, but the median farm size is comparable to the County median farm size. This information was not available for the Township in 1982.

¹⁹ SSURGO

Table XII-10: Average and Median Farm Size

	2002		1982	
	Average (ac)	Median (ac)	Average (ac)	Median (ac)
Somerset County	82	23	106	24
Bernards Twp	24.2	18.51	--	--

Table XII-11 describes again how the amount of land harvested, pastured or in woodlands has decreased over the past 20 years. The only category of agricultural lands that has increased are lands used for equine facilities. This information is displayed in Figure XII-7, Cropland and Pastureland in the Township.

Table XII-11: Cropland Harvested, Pasture, Woodland, Equine, Total for Agricultural Use

	Somerset County			Bernards Township		
	2002	1991	1983	2005	1991	1983
Cropland Harvested (ac)	17,876	28,980	31,942	332	724	737.7
Cropland Pasture (ac)	2,013	5,209	5,635	26	275	349.73
Permanent Pasture (ac)	6,532	8,425	9,919	125	255	617.13
Attached Woodland (ac)	10,430	10,643	18,139	724	575	--
Unattached Woodland (ac)	5,832	8,615	--	140	1,213	2,268.6
Equine (ac)	357	--	--	17	--	--
Total for Ag Use (ac)	43,040	61,873	62,984	1,364	3,042	3,585.7

II. MUNICIPALITY'S AGRICULTURAL INDUSTRY – OVERVIEW

A. Trends in Market Value of Agricultural Products

According to the 2002 USDA Census of Agriculture, agriculture accounted for more than \$15.1 million in sales during 2002. The total amount of revenue generated by farms in Bernards Township is hard to identify. As stated in the Somerset County Draft plan, the use of the United States Department of Agriculture's National Agriculture Statistics Service (*NASS*) is tabulated annually with certain crop yields recorded in recent years that were not previously recorded. Additionally, trends in the market value are not compiled annually at the County level, but rather reported every five years as part of the National Census of Agriculture. The next Census report will be available at the beginning of 2008. While these statistics are available at the County level, they are not typically available at the municipal level. However, much of the trending visible at the County level correlates to the Township level.

The Agricultural Advisory Committee has stated that currently, support services for agriculture do not exist in the Township. Farmers in Bernards typically use regional contacts or the internet to obtain supplies and to locate facilities for services such as processing, fuel oil distribution, and bulk distributors. Most farmers will travel between central NJ and eastern Pennsylvania to pick up products, if needed. Others travel to West Milford, NJ to the garden centers and equestrian facilities.

Some of the active farms in the community include:

- The **English Farm** is located at Liberty Corner and offers produce such as vegetables, flowers, eggs, pork, beef, hay straw and mulch during seasonal hours of operation. Their website www.Englishfarm.org for more hours and details.
- **Harrison Brook Farm** is also located at Liberty Corner and offers produce including Dorset mix sheep and lambs, bantam chickens, bantam eggs, and herbs, plants and cuttings.
- **Shannon Hill Farms**, also at Liberty Corner specializes in the sale of horses and ponies.
- **The Anderson Farm** is located in Basking Ridge and sells apples at a farmstand in the fall.
- **Ripple Hill Farm** sells peaches, apples and tomatoes and offers Pick Your Own activities seasonally.

According to the Census of Agriculture, as identified in the Somerset County Draft Plan, County sales from “crops, including nursery and greenhouse” category, which had steadily increased from 1987 to 1997, were down 27% from \$10.5 million in 1997 to \$8.3 million in 2002. Similar declines were seen across New Jersey due to the severe drought conditions that were observed during the 2002 Census year. “Livestock, poultry and their products” from Somerset County produced \$6.8 million in sales during 2002, up 66% from \$4.1 million in 1997. This trend is seen in Bernards Township as lands devoted to cropland have generally decreased.

B. Crop/Production Trends Over the Last 20 Years

As identified in the previous section, production trends have been decreasing throughout the State over the past 20 years. Bernards Township has also become subject to this decline. For the most part, all agricultural production units have been on the decline with the exception of Christmas Trees and a small population of livestock. Table XII-12 identifies the 20 year trend of acres devoted to field crops such as barley, grains, grasses and soybeans. In each case, acres devoted to field crops have been on the decline.

Table XII-12: Bernards Township Land Devoted to Field Crops (Acres)

	1983	1990	2000	2004	Acreage Change 1983-2004
Barely	4.0	0	0	0	-4.0
Grain Corn	203.37	71.0	6.0	0	-203.37
Silage Corn	35.0	8.0	10.0	0	-35.0
Grass Silage	8.04	104.0	0	0	-8.04
Alfalfa Hay	172.0	56.0	14.0	15.0	-157
Other Hay	485.86	344.0	216.0	208.0	-277.86
Oats	58.0	7.0	0	7.0	-51.0
Rye Grain	20.0	40.0	0	3.0	-17.0
Sorghum	0	0	0	0	--
Soybeans	23.0	10.0	0	0	-23.0
Wheat	12.0	0	0	0	-12.0
Cover Crop	0	0	14	0	--
Other Field Crops	37.0	12.0	0	25.0	-8.0

XII. FARMLAND PRESERVATION PLAN ELEMENT

Table XII-13 identifies acres devoted to fruit productions. Apples, peaches, and other mixed fruit continue in production and only the total number of acres for mixed fruit has increased. All other categories of fruit have either decreased or are completely gone.

Table XII-13: Bernards Township Fruit Production (Acres)

	1983	1990	2000	2004	Acreage Change 1983-2004
Apples	28.63	34	28	19	-9.63
Grapes	0	0	0	0	0
Peaches	8.3	9	23	7	-1.3
Strawberries	1.28	0	0	0	-1.28
Blackberries/Raspberries	0.25	1	0	0	-0.25
Other Fruit	0.5	1	8	9	+8.5

Table XII-14 depicts the amount of farm acres devoted to vegetable production. Asparagus, Sweet Corn, Pumpkins, Tomatoes, and Mixed Vegetables are still in production in the Township. Pumpkins had a major decrease in just the past few years, going from 40 acres to just one acre. These vegetables target a specific niche group usually sold at farmers market, farm stands and seasonal demand.

Table XII-14: Bernards Township Vegetable Production (Acres)

	1983	1990	2000	2004	Acreage Change 1983-2004
Asparagus	0	0	0	1	0
Lima Beans	0	0	0	0	0
Snap Peas	1.45	1	0	0	-1.45
Cabbage	0.35	0	0	0	-0.35
Sweet Corn	1.0	4	19	7	+6.0
Cucumbers	0.6	0	1	0	-0.6
Eggplant	0	0	0	0	0
Lettuce	0	0	1	0	0
Melons	0.71	0	0	0	-0.71
Onions	0	0	0	0	0
Peas	0.5	0	0	0	-0.5
Peppers	0.3	1	1	0	-0.3
Sweet Potatoes	4.1	0	0	0	-4.1
Pumpkins	0	1	40	1	0
Spinach	0.5	0	0	0	-0.5
Squash	0	1	21	0	0
Tomatoes	3.52	6	6	1	-2.52
Mixed Vegetable Crops	9.29	3	7	2	-7.29

Table XII-15 identifies nursery and tree stock acres produced in the Township. This category has only seen an increase in Christmas Trees. Trees and Shrubs have decreased significantly, while all other categories of nursery stock have been completely removed.

XII. FARMLAND PRESERVATION PLAN ELEMENT

Table XII-15: Bernards Township Nursery and Tree Production (Acres)

	1983	1990	2000	2004	Acreage Change 1983-2004
Bedding Plants	0	0	0	0	0
Cut Flowers	0.63	1	1	0	-.63
Trees & Shrubs	105.51	116	13	8	-97.51
Sod	0	0	0	0	0
Christmas Trees	14.23	17	13	17	+2.77
Other Nursery	15.0	3	0	0	-15
Pond Fish	1.3	1	1	0	-1.3

Table XII-16 identifies timber and woodland production and areas in the Township. As woodland management is continually important to the overall health of natural systems, woodland areas continue to be preserved. However, the number of acres of woodlands has decreased dramatically over the last 20 years. In the cases of State, Federal and Private Woodlands Plans and programs, these categories have been completely erased.

Table XII-16: Timber and Woodland Product and Areas

	1983	1990	2000	2004	Acreage Change 1983-2004
Fuelwood (Cords)	273	184	107	96	-177
Pulpwood (Cords)	0	0	3	0	0
Timber (Board Feet)	124,029	38,138	51,430	3,000	-121,029
Other wood (Board Feet)	0	--	--	--	0
Woodland State Plan (Acres)	243.86	0	0	--	-243.86
Woodlands Private Plan (Acres)	651.34	0	0	--	-651.34
Woodland No Plan (Acres)	746.86	--	--	--	-746.86
Land in Federal or Government Program (Ac)	29.60	111	0	0	-29.60

The last trend analyzed is livestock and poultry product (Table XII-17). Only the "Other Livestock" category has seen an increase, of about 76%. All other categories have decreased, and dramatically. In particular, over the last 20 years, the number of Meat Chickens has been completely removed, while the number of Laying Chickens has only decreased about 14%. Goats, Pigs, Beef Cattle, Rabbits and Turkeys saw the greatest declines. Alternative livestock such as Bee Hives and the number of Ponies and Horses has also decreased, but are still fairing well amongst other livestock.

Table XII-17: Bernards Township Livestock and Poultry Products (head)

	1983	1990	2000	2004	Acreage Change 1983-2004
Beef Cattle	95	43	40	22	-73
Bee Hives	21	23	10	13	-8.0
Mature Dairy	8	3	0	0	-8
Young Dairy	7	1	0	0	-7
Ducks	35	14	0	0	-35

XII. FARMLAND PRESERVATION PLAN ELEMENT

Fur Animals	0	0	14	0	0
Geese	50	0	0	0	-50
Goats	54	23	8	11	-43
Ponies & Horses	51	48	35	42	-11
Meat Chickens	780	42	35	0	-780
Laying Chickens	289	79	156	203	-86
Rabbits	150	0	0	0	-150
Sheep	25	25	13	22	-3
Swine	29	15	6	8	-21
Turkeys	175	0	0	10	-165
Other Livestock	4	509	400	17	+13

Overall the trends witnessed in the Township reflect the trends of the County. As identified in the Somerset County Draft Comprehensive Farmland Preservation Plan, total land area and total net production has been decreasing over the last 20 years. Development pressures and land costs have forced out many farms, especially farms devoted to livestock.

C. Support Services within Market Region

The Somerset County Draft Comprehensive Farmland Preservation Plan identified a variety of local support services in the Region. Overall, large production farmers in the County generally rely on mail order for special items and will travel to Pennsylvania or other large agricultural areas to purchase large scale items such as tractors and other heavy equipment. This has led to a decrease in retail stores specializing in farm supplies in the County.

However, there are still retailers that tailor to farm supplies. As identified in the County Plan some farmers will still shop locally for small items such as seeds and large equipment parts. Other niche markets have opened up to address a growing equine base in the County. Hillsborough and Bedminster have stores that cater to horse supplies. Grain and feed stores are found in Hackettstown and Bernardsville, and Branchburg has a supplier catering to turf and irrigation supplies. Table XII-18 is taken from the Draft County Plan and discusses local retailers.

Table XII-18: Local Farm Supply Retailers

Supplier	Address	Town	Phone	Webpage
Coach Stop Saddlery Limited	244 Lamington Rd	Bedminster, NJ 07921	908-234-2640	
Binder Machinery	2820 Hamilton Blvd	South Plainfield, NJ 07080	908-561-9000	
Somerset Grain, Feed, & Supply Corp	74 Mine Brook Rd	Bernardsville, NJ 07924	908-766-0204	www.somersetgrain.com
Storr Tractor Company	3191 Route 22	Somerville, NJ 08876	908-722-9830	www.storrtractor.com
The Horse and Rider Shop	284 Route 206	Hillsborough, NJ 08844	908-281-5333	www.thehorseandrider.com
Raritan Agway	77 Thompson St	Raritan, NJ 08869	908-725-9252	

Local farmers also take advantage of agricultural organizations such as the Somerset County Board of Agriculture and Agriculture Development Board, the New Jersey Farm Bureau, Rutgers Cooperative Extension of Somerset County, Somerset 4-H Club, Duke Farms, Somerset-Union Soil Conservation District, and the Natural Resource Conservation Service. These types of agricultural organizations can help farmers in a variety of ways.

Farmers markets are also valuable tools to the retention and promotion of agriculture. Local resident’s who frequent farmers’ markets appreciate locally grown products and can be the largest advocates for the retention of agriculture in an area. The following Table XII-19, taken from the County’s draft plan, identifies local farmers’ markets.

Table XII-19: Regional Farmers’ Markets

Market:	Bernardsville Farmers' Market	Bound Brook Farmers' Market	Franklin Township Farmers' Market	Montgomery Farmers' Market	North Plainfield Farmers Market
Address:	Rt. 202 & Clairmont Road, Bernardsville	Main Street - NJ Transit Parking Lot	720 Hamilton Street, Franklin Township	Route 206 & Route 518, Montgomery	Somerset & Race Streets, North Plainfield
Phone:	(908) 766-5836	(908) 894-0515	(732) 873-2500, x 362	(908) 359-9665	(908) 755-1526
Contact:	Christa O'Conner	Karen Fritz	Efren Dato	Kim Rowe	Doug Singletary
Open:	June 9 – November 24, Saturdays, 9 am - 2 pm	June 23 – October 27, Saturdays, 9 am - 2 pm	May 12 – November 17, Saturdays, 9am 2 pm	June 14 – October 25, Thursdays, 12:30pm - 6:30pm	July 14 – September 27, Saturdays, 9am - 2pm
Products:	Variety of fruits and vegetables	Variety of fruits and vegetables	Variety of fruits and vegetables	Variety of fruits and vegetables	Variety of fruits and vegetables
Other:	WIC and Senior FMNP ²⁰ checks accepted by some farmers	WIC and Senior FMNP checks accepted by some farmers	WIC and Senior FMNP checks accepted by some farmers	WIC and Senior FMNP checks accepted by some farmers	WIC and Senior FMNP checks accepted by some farmers

III. LAND USE PLANNING

A. State Development and Redevelopment Plan

The State Development and Redevelopment Plan (SDRP) establishes policies to guide the formulation of land management and natural resource conservation strategies (Figure XII-8). The State Development and Redevelopment Plan provides a balance between growth and conservation by designating planning areas that share common conditions with regard to development and environmental features:

- **Areas for Growth:** Metropolitan Planning areas (Planning Area 1), Suburban Planning Areas (Planning Area 2) and Designated Centers in any planning area.

²⁰ The WIC & Seniors Farmers’ Market Nutrition Programs (FMNP) provide locally grown unprepared fresh fruits, vegetables and herbs to nutritionally at-risk pregnant, breast-feeding, or post-partum women, children 2-5 years old as well as eligible seniors 60 years of age and older. <http://www.state.nj.us/agriculture/divisions/md/prog/wic.html>

- **Areas for Limited Growth:** Fringe Planning Areas (Planning Area 3), Rural Planning Areas (Planning Area 4), and Environmentally Sensitive Planning Areas (Planning Area 5). 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:** Fringe Planning Area (Planning Area 3), Rural Planning Areas (Planning Area 4), and Environmentally Sensitive Planning Areas (Planning Area 5).²¹

The SDRP also identified five types of Centers where development is encouraged: Urban, Regional, Town, Village, and Hamlet. Developing in any of these types of centers allows for better conservation of the Environs of the town. The environs are the land outside Centers, including farmland, greenbelts, open space and large forest tracts, that are protected from inappropriate development.²²

The Township contains Suburban (PA2), Fringe (PA 3), Rural Planning Area (PA4), Rural Environmentally Sensitive (PA4B) and Environmentally Sensitive (PA5). However, the entire Township's project area is designated as Rural Planning Area (PA4) and Environmentally Sensitive Planning Area (PA5). These designations recognize the valuable agricultural resources and environmentally sensitive natural features that Bernards Township seeks to protect from development pressure within the region and can transform valued agricultural areas.

SDRP guidance for management of the Rural Planning Area has been provided, as follows:

“Prudent land development practices are required to protect these resources and retain large contiguous areas of agricultural land. If a viable agricultural industry is to be sustained in the future, the conversion of some of the lands to non-farm uses must be sensitive to the areas predominant rural character and agricultural land base. Throughout New Jersey, some Rural Planning Areas are subject to greater development pressure than other areas. Without greater attention to maintaining and enhancing our rural areas, these economic activities are at risk. Tools and techniques need to be tailored to address the distinctive situation. In particular, new development may require additional attention in areas with environmentally sensitive features.”

For the Environmentally Sensitive Planning Area, the State Plan offers the following:

“The Environmentally Sensitive Planning Area contains large contiguous land areas with valuable ecosystems, geological features and wildlife habitats. . . The future environmental and economic integrity of the state rests in the protection of these irreplaceable resources. . . Environmentally Sensitive Planning Areas are characterized by watersheds of pristine waters, trout streams and drinking water supply reservoirs; recharge areas for potable water aquifers; habitats of endangered and threatened plant and animal species; coastal and freshwater wetlands; prime forested areas; scenic vistas; and other significant topographical, geological or ecological features, . . . These resources are critically important not only for the residents of these areas, but for all New Jersey citizens.

The Environmentally Sensitive Planning Area is highly vulnerable to damage of many sorts from new development in the Environs, including fragmentation of landscapes, degradation of aquifers and

²¹ <http://www.state.nj.us/dca/divisions/osg/plan/>

²² <http://www.nj.gov/dca/divisions/osg/docs/execsumm030101.pdf>

potable water, habitat destruction, extinction of plant and animal species and destruction of other irreplaceable resources which are vital for the preservation of the ecological integrity of New Jersey's natural resources. . . New development in these Environs has the potential to destroy the very characteristics" (environmental sensitivities) "that define the area".

The SDRP promotes the retention of large open land areas in PA4B & 5, and the Plan defines "large contiguous area".

"When applied to habitat, (large contiguous area) means the area of undisturbed land required to maintain a desired community of plants and animals", and "when applied to farmland, large contiguous area means the amount of contiguous farmland usually considered necessary to permit normal farm operations to take place on a sustained basis."

The Township is endowed with large contiguous land areas with valuable ecosystems, geological features and wildlife habitats that support critical habitat. Whether it is the maintenance of these large contiguous areas for farmland or protection of environmentally-sensitive areas, Bernards' stewardship of these areas requires policies and management techniques to sustain the landscape in such a way that the long-term viability and function of these lands and natural systems may be assured. Bernards seeks to manage these resources consistent with the SDRP policy orientation for the Environmentally Sensitive Planning Area.

SDRP Policies seek to maintain the viability of agricultural areas and the function of natural systems through strategies aimed at the protection of these resources and coordinated growth policies that orient new development adjacent to either Centers or existing developed areas with infrastructure capable of supporting development. Development should be compact and innovative development approaches, such as clustering or open lands zoning, will be needed to discourage sprawl-type patterns of development that typically fragment and destroy the very resources that the Rural and Environmentally Sensitive Planning Area designations seek to protect.

B. Special Resource Areas

The entirety of Bernards Township is located within the Highlands Planning Area (Figure XII-9). . The Highlands Regional Master Plan (RMP) works to further the goals and requirements of the Highlands Act and focuses on two areas of action to address the need to protect Highlands' agriculture resources. These areas are:

- Identify high quality agricultural lands in need of preservation; and
- Develop a process to ensure sufficient financial and institutional resources are available for agriculture protection and sustainability in the Highlands Region.

Development pressure in the Highlands, in general, is great and while the average size of a preserved farm in the Highlands is only 55 acres, the need to keep these lands in agriculture is also great and is a significant factor in Highlands planning and preservation, alike.²³ Although the Highlands Agricultural Priority map shows farm assessed properties south of Route 78 as low or moderate priority farms, the Township Agricultural Advisory Committee is concerned that the RMP has the

²³ Highlands Final Draft Regional Master Plan, November 2007.

potential for increased development which would threaten the town’s remaining farmland – preserved or not.

C. Bernards Township Master Plan and Development Regulations

Bernards Township, although possessing a small number of farms, has long recognized the value of agricultural resources in the town. With a few family farms settled in the Township for five or more generations, it is evident that these families have chosen to remain in the area to continue their family tradition and livelihood into the future. Not only is protection of farmers’ livelihoods an important aspect of this effort, but there is also consideration for the natural environment and those elements that support Bernards’ Township as a place to live and to visit.

Bernards’ 2003 Master Plan states that “Farmland and agricultural activities are an important part of the rural character that remains in Bernards Township. Preserving and protecting farmland offers many economic and environmental benefits, since farms require less in municipal services; farmers manage the land at no cost to the taxpayers; and the most scenic byways are those roads passing through active farming landscapes. Agricultural activities create and maintain rolling fields, hedgerows and wooded stream corridors. The County Master Plan cites agriculture as an important long-term land-use. Supportive municipal planning and zoning are fundamental to farm viability.”²⁴ (Table XII-20 and Figure XII-10). The farms targeted for preservation in this plan are located within the R-1 District (three acres/unit) or the 2-acre R-2, and R-3 districts. All three of these zones have minimum lot area requirements that are designed for residential uses. While farming, agriculture and horticulture are permitted in these zones, raising and keeping of livestock are conditional uses and should be in compliance with Section 21-12 of the Township’s Land Development Ordinance.²⁵

Table XII-20: Existing Zoning for Proposed Project Area²⁶

Zone	Acres	%
Highway Corridor	108.3200	2.85%
B-4	10.4500	0.28%
E-2	157.7300	4.15%
E-3	221.1000	5.82%
P-1	111.8200	2.94%
PUD-5	260.5600	6.86%
R-1	995.6800	26.22%
R-2	413.2900	10.88%
R-3	1,343.2100	35.37%
R-4	54.1500	1.43%
RC-2	43.5900	1.15%
RC-3	78.1000	2.06%
TOTAL	3,798	100%

²⁴ Bernards Township Master Plan, February 2003.

²⁵ Township of Bernards, New Jersey Revised General Ordinances, v25.1 and Revised Land Use Ordinances, v24 Updated 12-31-2007. Chapter XXI, Land Development. Article IV, Zoning Section 21-10 Zones. § 21-10.4. R-1, R-2, R-3, R-4, R-5, R-6, R-7 Residential Zones.

²⁶ Somerset County GIS Dept.

D. Current Land Use and Trends

The Township’s development and land use trends have resulted in a loss in agriculture, but also a decrease in urban lands. Typically in the county and state there has been a trend of loss of agricultural lands due to encroaching urban and developed areas. For the most part, Bernards is following that trend, as the table below shows. Table XII-21 shows the breakdown of the land use cover from 1986 to 2002. Figure XII-5 graphically depicts current land use.

Table XII-21: Land Use/Land Cover Change 1986 to 2002²⁷

	1986		1995		2002		Percent Change
	Acres	%	Acres	%	Acres	%	
Agriculture	1,248.37	8.71%	916.86	5.89%	694.44	4.84%	-44.0%
Barren Land	560.88	3.91%	447.23	2.87%	291.29	2.03%	-48.0%
Forest	4,297.49	29.97%	4,357.96	28.03%	3,542.56	24.69%	-17.6%
Urban	5,260.6	36.69%	6,693.28	43.05%	6,922.74	48.24%	-31.5%
Water	70.15	0.49%	74.87	0.48%	88.14	.61%	+24.5%
Wetlands	2,901.67	20.24%	3,057.2	19.66%	2,811.38	19.59%	-3.21%
TOTAL	14,339.16	100%	15,547.4	100%	14,350.55	100%	0.08%

E. Sewer Service Areas

There are four major sewer service areas in the Township (Figure XII-11). The Bernards Township Sewer Authority comprises the majority of the land area in the Township and encompasses the Veterans Administration service area. The next largest is the Environmental Disposal Corp (EDC), followed by the SRVSA. Small portions of the Bernards Township Sewer Authority and the EDC are located within the PIG Project Area, while the entirety of the SRVSA is in the Project Area. None of the targeted farms are located within a service area.

F. Bernards Master Plan and Zoning Overview

1. General Lot Size Categories and Distribution throughout the Township

The same development pattern emerges when viewing lot comparison (Figure XII-12). The central portion of the Township is mainly comprised of low, medium, and high density residential areas with sewer service. A portion of the proposed Project Area is located within the Environmental Disposal Corporation’s service area, but the majority of the proposed Project Area is not located within any sewer service area. (Table XII-22).

²⁷ NJDEP

Table XII-22: Lot Comparison²⁸

Lot Size	Acres	% (from Acres)
Lots less than 1 acre (serviced by sewer)	2,300.4	16.03%
Lots greater than 1 acre (serviced by sewer)	29.72	0.2%
Lots between 1 and 5 acres (septic/well)	3,576.82	24.92%
Lots between 5 and 10 acres (septic/well)	1,146.71	7.99%
Lots greater than 10 acres (septic/well)	7,296.92	50.84%

As depicted on Table XII-22, 83.75% of the total land area is lots serviced by on-site septic systems with 50.84% of the total lots greater than 10 acres serviced by on-site septic systems. The majority of targeted farms are greater than 10 acres in size; however there are a few between 5 and 10 acres. There are no farm parcels targeted for preservation that are less than five acres in size.

2. Innovative Planning Techniques

Where the following planning techniques are considered in the Township, the agricultural community has expressed their desire to ensure that the look and feel of a farming community is maintained. In addition, they would like to ensure that the viability of farming is maintained as these techniques may be utilized for development and preservation.

Cluster Zoning. Bernards Township’s CR-1 and CR-2 (Conservation Residential) Zones allow for planning techniques other than the conventional. Although the term “clustering” is not used in the Land Use Plan element of the Township’s Master Plan, flexibility is given to these zones to provide a reduction in lot size and an increase in the amount of land conserved. Techniques such as “open lands” zoning permit a 50% open lands conservation density increase over the number of units possible in a fully conforming plan. This density is permitted when at least 33% to 50% of a tract remains in one large “open-lands” parcel, deed-restricted to permit no more than one single-family dwelling (and its accessory uses and structures) with the balance to be used for natural resource conservation and/or agricultural uses. To achieve the desired pattern of development, the conservation subdivision would permit lots as small as three (3) acres.

Non-contiguous Cluster Zoning. Non-contiguous clustering is a technique that allows creation of a non-contiguous tract for development purposes, and allows preservation of farmland or other resource lands as a by-product of development. The Township does not currently have a non-contiguous cluster zoning provision. The Township’s densely developed central area does not lend itself naturally to a non-contiguous zoning provision. The northern and southern portions of the Township, where large contiguous farm and open space areas exist, could benefit from this technique.

Lot Averaging. Lot averaging is a development technique that allows the sizes of lots within a subdivision to vary, provided the overall development density for the tract remains unchanged. This allows the creation of a number of small lots along with some large remaining lands parcels. This is another area that the Township has not explored and again the densely populated central area of the town would not lend itself to this type of zoning. The larger lands in the northern and southern most

²⁸ Somerset County GIS Dept.

parts of the township might benefit from this type of zoning, but only when preserving the land outright is not an option.

Transfer of Development Rights. The Township currently does not have a TDR program. The Planning Board has determined that TDR is not an appropriate tool for use in Bernards.

Use of Mandatory vs. Voluntary Options. As stated above, the Open Lands option for zoning in the CR-1 and CR-2 districts is a voluntary option for the landowner.

3. Description of Buffer Requirements

The Township’s Land Development Ordinance defines buffer to “mean a strip of land of specified width containing natural woodlands, earth mounds or other planted screening material, and separating one kind of land use from another or separating a planned development from any other form of development.”²⁹ There are currently no provisions for a required buffer area between agricultural uses and non-agricultural uses. The Township does subscribe to the Right to Farm Act and adopted a Right to Farm ordinance in 2004.

4. Discussion of Development Pressures and Land Value Trends

As identified in the previous sections, development pressures have resulted in a greater urgency to protect farmland in the Township. Bernards has recently purchased some open space as well as preservation easements. The preservation easements have been valued at 80% of the land value. One cause of this increased value is that the State has also allowed the use of approved lot values versus raw land per acre value. In dollar amounts, the Township has seen appraisals of about \$375,000 per proposed lot for preservation easements.³⁰

As undeveloped land in the State, and the Township, becomes more and more scarce, farmland becomes an attractive opportunity for further development. This trend can be seen in Table XII-23 below. While the number of new building permits has declined significantly from year to year, the number of alterations and additions has increased. Additions especially increase the density of a site, creating the feeling of a more urbanized area. The combination of these factors has resulted in an increase in land value and an increase in the desire to maintain a rural character through farmland preservation.

Table XII-23: Building Permits Issued (2000-2007)³¹

	2000	2001	2002	2003	2004	2005	2006	2007
New Buildings	292	225	140	83	92	81	97	75
Alterations	1302	1478	1366	1362	1425	1610	1728	1890
Additions	67	62	91	97	106	107	123	112
Total Permits	1486	1696	1522	1510	1567	1754	1859	1921

²⁹ Township of Bernards, New Jersey Revised General Ordinances, v25.1 and Revised Land Use Ordinances, v24 Updated 12-31-2007 Chapter XXI, Land Development. Article II, Definition of Terms. Section 21-3 Definitions.

³⁰ Township of Bernards Engineer, Peter Messina

³¹ Township of Bernards Construction Official, Dennis Bettler

G. Transfer of Development Rights Opportunities

Transfer of Development Rights (TDR) is a planning tool that allows the movement of development rights from an area where development is not suitable (sending area) to an area where development is more compatible (receiving area). TDR programs allow land owners to profit from the sale of their land while moving that development to more suitable areas. The goal of a TDR program is to channel development away from valuable resource areas to areas where development is more suitable.

Pinelands Development Credit Program

Transfer of development rights was first authorized in the state in 1981 with the Pinelands Development Credit (PDC) Program. The PDC Program is a component of the Pinelands Comprehensive Management Plan (CMP) created to regulate development in the Pinelands region. The program was enacted to offset the severe development restrictions imposed within the Preservation Area District, Agricultural Production Areas and Special Agricultural Production Areas designated by the CMP, and to transfer development out of these sensitive areas. Development potential is transferred to infrastructure-supported areas designated by the CMP as Regional Growth Areas. Before property owners may sell PDCs, they must first be certified by the Pinelands Development Credit Bank.

The PDC program is administered by the Pinelands Commission and the Pinelands Development Credit Bank. As of December 2006, this regional TDR program had resulted in the preservation of more than 49,000 acres, according to the Pinelands Development Credit Bank.

The New Jersey State Transfer of Development Rights Act (*N.J.S.A. 40:55D-140*) is the enabling legislation that authorizes the transfer of development rights by municipalities and outlines procedures to adopt or amend a TDR ordinance. The New Jersey Highlands Council is currently establishing a regional TDR program that will be open to all Somerset County municipalities. Through the Highlands program, landowners may sell the development rights on their lands at pre-Highlands Act prices to a Highlands TDR Bank, which will then allocate them to voluntarily designated receiving areas throughout the seven-county region.

IV. BERNARDS TOWNSHIP'S PLAN TO PRESERVE FARMLAND

A. Somerset County Agricultural Development Areas

The Somerset County Draft Comprehensive Farmland Preservation Plan has identified one ADA in Bernards Township (Figure XII-3). The project area is located in the southern portion of the Township and is identified as the Northern Bernards ADA. All currently preserved farmland in Bernards Township is situated within the proposed ADA, where several additional farms are targeted for preservation over the next decade.

Individual farm characteristics are provided on the enclosed tables. The tables show that the farms targeted for preservation in Bernards Township are mostly made up of "other soils". Three farms are more than 50% Prime Farmland soils, while only one farm is more than 50% Statewide Important soils (Table XII-23).

Prime Farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops and is also available for these uses. It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed according to acceptable farming methods, Prime Farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.³²

Farmlands of *statewide importance* include those soils in land capability Class II and III that do not meet the criteria as Prime Farmland, These soils are nearly Prime Farmland and economically produce high yields of crops when treated and managed according to acceptable farming methods, Some may produce yields as high as Prime Farmland if conditions are favorable.³³

B. Bernards Township Farmland Preservation Strategies

The following sections will identify the various types of farmland preservation programs that the Township can use as it moves forward with efforts to protect active farmland.

1. County Easement Purchase

The County Easement Purchase Program allows a farmer within the County's Agricultural Development Area (ADA) to sell their development rights to the County and retain ownership of the farm. The farmer is able to continue to farm the land and even sell the property at any time, but they must agree to permanent deed restrictions that allow only agricultural use. In order to enter into the program a landowner must submit an application to the County where it is reviewed and a site inspection conducted. Approved applications are then sent to the State. Two independent appraisals of the property are conducted to determine the land's fair market value, and one to determine its agricultural value. The difference between these two is the price of the farm's "development rights," also known as the easement value. This is the price that is offered to the landowner.

2. County Planning Incentive Grants

The County Planning Incentive Grants (PIGs) program is intended to protect and preserve large pieces of contiguous farmland through the purchase of development easements. In order to qualify for PIGs, the County must create an agricultural advisory board and must also maintain a dedicated funding source to purchase farmland. County PIG's require that the County and Township applications correlate with county comprehensive farmland preservation plans. Bernards Township is developing this Comprehensive Farmland Preservation Plan in order to conform to these policies.

3. Municipal Planning Incentive Grants

The Municipal Planning Incentive Grants (PIG's), like the County PIG's program, have similar requirements. Municipal PIG's require the adoption of a Farmland Preservation Plan, an Agricultural Advisory Board and a standing commitment for preserving farmland. Grants for a municipal PIG are provided by the SADC to purchase development easements. As identified in this Plan, several target farms have been identified by the Township for future preservation efforts. These targets will continue to be updated as farmer interest changes and farms are either preserved or are removed

³² USDA,NRCS NJ Important Farmlands Inventory <http://www.nj.nrcs.usda.gov/technical/soils/primefarm.html>

³³ USDA,NRCS NJ Important Farmlands Inventory <http://www.nj.nrcs.usda.gov/technical/soils/importantfarm.html>

due to ineligibility. Somerset County requires matching funding (50:50) between the County and the municipality, as part of a municipal PIG.

4. SADC Direct Easement Purchase

Another option for farmland preservation is the SADC Direct Easement Program. The State Agriculture Development Committee (SADC) purchases development rights or farmland outright for preservation purposes under its state acquisition program. Landowners can sell the development rights to their land and continue to own and farm the land, or sell their land outright. In both cases, the land is permanently deed-restricted for agricultural use. When the SADC purchases farms outright, it resells them at public auction as permanently preserved farms.

The SADC provides direct cost share funding to purchase farms and development easements from landowners. Landowners do not have to be within an ADA if they are making an application directly to the State. In most cases, the State will pay up to 100% of the certified appraised easement value in the direct easement purchase program. By participating in this program, the landowner still retains ownership of their land, but agrees to restrict land use to agricultural purposes. The Direct Easement Program does not receive monetary contributions from the County.

5. SADC Fee Simple

The SADC fee simple acquisition program involves an entire property being purchased directly by the state. The SADC pays the survey and title costs, the landowner is exempt from paying rollback taxes for farmland assessment and the transaction can be completed in a matter of months. The SADC negotiates a purchase price subject to recommendations of two independent appraisers and review by a state review appraiser. The land becomes restricted so that it becomes permanently preserved for agriculture. In this type of acquisition, the landowner does not retain any rights. The property is then resold at auction; the SADC does not retain ownership. To qualify to participate in this program, the farmland must be within an ADA and be eligible for Farmland Assessment.

6. Nonprofit Grant Program

Nonprofit organizations have also been able to help achieve farmland preservation goals. Grants can be leveraged from SADC to fund up to 50% of the fee simple or development easement values on farms. The SADC reviews and ranks applications based on the following criteria: percentage of high-quality soils; percentage of tillable acres; suitable boundaries and buffers, such as other nearby preserved farms and open space; the local commitment to agriculture (e.g., right to farm ordinances, community financial support); size of the farm; agricultural density of the area, and imminence of development.

These grants help to preserve farmland throughout the County. Generally, these transactions involve properties with both agricultural and environmental significance. As with other programs, grants are obtained through an application process, in which the land is valued by independent appraisers. Bernards Township may seek to preserve farms in this manner and continually look for alternative funding source to help achieve farmland preservation goals.

7. Transfer of Development Rights

The transfer of development rights is a growth management tool that transfers development rights from one location, a preservation area, to another, an identified growth area. The development rights are used to allow for development at a higher density than what the previous zoning of the receiving

area allowed. To date, this program has not been used to preserve farmland in the Township and is not currently recommended for use in Bernards Township.

C. Consistency with the SADC Strategic Targeting Project

The purpose of the SADC Strategic Targeting Project is to prioritize farmland to be preserved by targeting farms for preservation based on specific criteria, including the prioritization of prime and statewide soils in agricultural production outside sewer service areas. According to the SADC, the Strategic Targeting Project has three primary goals. These are as follows:

- The coordination of farmland preservation and retention of agricultural practices “with proactive planning initiatives.”
- To update and create maps which serve as a tool for more accurate preservation targets.
- To coordinate different preservation efforts, such as open space, with farmland preservation.

Through the use of the Strategic Targeting Program, the SADC hopes to more efficiently target and designate farmland for preservation and, by doing so, boost the State’s agricultural industry. Bernards Township has identified target farms that meet the SADC primary goals (Figure XII-3) and continues to update all available information, through GIS, statistical data and the like, in order to maintain a data base of potential target farms for preservation efforts. Currently, the A.A.C. Chairperson occupies a seat on the County Agricultural Development Board and hopes to retain that seat.

D. Eight Year Programs

The 8-Year Farmland Preservation Program is a cost sharing programs for soil and water conservation projects. Landowners receive no direct compensation for participating but are eligible to apply to the State Agriculture Development Committee (SADC) for grants that fund up to 50 percent of the costs of approved soil and water conservation projects.. Farmland owners agree to voluntarily restrict nonagricultural development for a period of eight years in exchange for certain benefits. There are two types of eight-year programs: municipally approved programs, which require a formal agreement among the landowner, county and municipality, and non-municipally approved programs, which require an agreement between only the landowner and county. The landowner must sign an agreement that restricts the land to agricultural use for eight years. A farm must be located within an ADA to qualify for the program.

E. Coordination with Open Space Preservation Initiatives

Bernards Township has partnered with Green Acres and Somerset County to preserve key properties in the Township. Partnering with a variety of agencies allows the Township to leverage funds from various sources to help achieve open space preservation. As seen on Figure XII-13, Somerset County and Green Acres both hold the rights to large parcels in the Township. These parcels help to create larger contiguous tracts of land to maintain the rural character that is cherished by Township residents. These areas also help to promote natural resource conservation by preserving large areas that create a buffer between open areas and more developed regions. The Township will continue to

support the preservation of open space especially if it is able to compliment farmland preservation efforts.

F. Farmland Preservation Program Funding Expended to Date

To date, Bernards has participated in three farmland preservation efforts where development rights were purchased. These included:

English Farm lot, Valley Road
Block 9301, lot 9.01
64.298 ac.

English meadow lot, Valley/Mount Airy Roads
Block 7703, lot 22
16.281 ac.

English wood lot, Allen Road
Block 11201, lot 1
58.596 ac.

The easement on the English Farm was purchased for just under \$9.7 million, with 60 percent of the funding coming from the township and 40 percent from Somerset County. The easement legally requires the owners of the farm – now and in the future – to maintain it for agricultural use.

The township also used its open space and farmland preservation fund to pay \$3 million to acquire the Sons of Liberty Farm.

G. Monitoring of Farmland Preservation

Most farms in New Jersey have been preserved through the County Easement Purchase Program, but the agency holding the easement is responsible for annual monitoring. Currently the Township is developing an easement monitoring plan, and an educational program is evolving to promote stewardship of land easements. Prior to developing the monitoring plan, the Township will notify the responsible agency if violations are expected on preserved land. Should the Township consider creating an easement monitoring plan, the checklist would include the following:

- change in ownership since the previous inspection
- evidence of non-agricultural development (approved or otherwise)
- use of the premises for agricultural activities
- presence of expansion of non-agricultural activity since the previous inspection
- if the non-agricultural practice has been abandoned
- evidence of mining or removing of materials such as sand, gravel, rock, etc
- evidence of dumping
- whether or not the farm has an approved conservation plan
- any improvements to farm buildings and residences

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- any new agricultural buildings erected

H. Coordination with Transfer of Development Rights Programs

Transfer of Development Rights (TDR) are sometimes used in conjunction with the traditional Purchase of Development Rights (PDR) program; these two programs are not mutually exclusive. As noted previously, the Planning Board does not recommend the use of TDR in Bernards Township.

V. FUTURE FARMLAND PRESERVATION PROGRAM

One criterion for protecting farmland and receiving funding for the effort requires the township establish the A.A.C.. The Township did this by passing a resolution that identifies the responsibilities of the A.A.C. as:

- Continuing the sustainable use of economically viable farmland for agricultural production;
- Preserving large, contiguous and economically viable tracts of agricultural land;
- Encouraging appropriate conservation strategies and agricultural activities;
- Promoting interest in township children in 4-H and other related agricultural activities; and
- Promoting local farming through municipal avenues, such as websites, the municipal cable channel, guidebooks, community events, schools, etc.

Bernards Township in assessing the farm parcels within the Northern Bernards ADA has determined that the following parcels are targeted for preservation. (Table XII-24)

Table XII-24: Target Farms and Farmland Capable Soils

Name	Block	Lot	Acres	Prime Soil Acres	% Prime Soil	Statewide Important Soil Acres	% Statewide	Other Soils	% Other
HARRISON BROOK LLC	9301	49	09.22	4.54	49.22	2.12	22.99	02.56	27.79
BLACK, PATRICK B & ENGLISH, C W	9301	31	7.53	2.31	30.66	2.54	33.72	2.68	35.62
SORGE, JOSEPH M & CATHERINE A	11401	42	36.85	2.3	6.24	0	0	34.55	93.76
MAOLUCCI, VINCENT J	11501	3	37.05	0	0	0	0	69.03	100.0
MILITO, JEAN B	10901	43	15.28	3.59	23.50	0	0	11.69	76.5
MILITO, EUGENIA	10901	42	11.29	1.41	12.48	0	0	9.88	87.52
ANDERSON, EDWARD & MARIE	11401	2	43.99	15.27	34.71	0	0	28.72	65.29
PINSON, ELLEN	9401	8	37.9	15.95	42.06	2.95	7.78	19.02	50.16
SCHEHERAZADE ENTERPRISES INC	9401	7	43.6	4.46	10.47	5.52	12.95	32.64	76.58
TSAKIRIS, ANDY & DINAPOLI, JOHN	4301	35	8.73	0	0	0	0	8.73	100.0
TSAKIRIS, ANDY &	4301	34	11.29	0.05	.044	0.02	0.18	11.22	99.38

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DINAPOLI, JOHN									
PYNE, EVELYN S.	9601	9	8.38	0	0	0	0	8.38	100.0
PYNE-SLOANE INVESTMENTS, LLC	9601	11	20.22	0.11	0.54	0	0	20.11	99.46
PYNE-SLOANE INVESTMENTS, LLC	9601	13	14.71	0.11	0.75	0	0	14.60	99.25
PYNE-SLOANE INVESTMENTS, LLC	9601	14	18.04	2.86	15.86	0	0	15.18	84.14
WOJNAR, JOHN/TRUST	11401	16	18.98	10.79	56.86	0	0	8.19	43.14
WOJNAR, MARIE	11401	15	27.85	15.98	57.37	0	0	11.87	42.63
HEATHERMEDE CORP;C/O M BERLANT	11401	1	30.18	0.49	1.62	0	0	59.69	98.38
SCARINCI, CONSTANTINE D & FRANCES	11401	14	6.46	0.98	15.17	0	0	5.48	84.83
LENTZSCH, HENRY T/MASCIBORSKI	11002	1	25.49	0	0	0	0	25.49	100.0
MAHALA, THOMAS G & KATHLEEN O	9601	110	8.18	0	0	0	0	8.18	100.0
VODA, STEPHEN E & ELLEN	7301	18	16.21	10.48	64.65	0.99	6.11	4.74	29.24
ORD, DOROTHY B	3201	5	34.83	0	0	0	0	34.83	100.0
UNKNOWN	172	30	32.39	0	0	20.32	62.73	12.07	37.27
ALLEN CENTER LLC; C/O JAMES REID	11201	2	12.99	0	0	0	0	12.99	100.0
Total Targeted Acreage			537.64						

A. Preservation Goals (1, 5 and 10 year acreage targets)

The Township has determined preservation goals based on active farmland in the community and current farmer interest. Although Bernards currently has seen roughly 140 acres of farmland preserved to date, the goal of preserving 702.5 acres over the next ten years is nonetheless ambitious. However, reaching that goal would mean ensuring that more farmland is protected from encroaching development. Table XII-24 highlights the acreage goals over the first year, in five years, and then at the 10 year point.

Table XII-25: Preservation Goals by Year

Year	Acres
1	165
5	265
10	270
Total	702.46

B. Bernards Project Area Summary

The Northern Bernards Project Area seeks to establish the Township's preservation efforts and will also establish Bernards' goal of creating a viable agricultural base by creating preserved farmland, especially where contiguous farm parcels currently exist in the southern portions of the Township. The Township's Northern Bernards Project Area includes active farmland and dedicated open space (Figure XII-3). In order to ensure that farmland meets the criteria for preservation funding, the Township Agricultural Advisory Committee developed the following list as a preliminary ranking system:

- Tenure – long-term ownership of the farm;
- Likelihood of continued farming in the future;
- Productivity.

In addition, the Township A.A.C. recommends discussing the following, to advance the efforts to establish a local farmland preservation program:

- Quality of soils (prime, statewide important, locally important);
- Adjacent land use character – if developed as residential, identify density of adjoining residential development;
- Type of agriculture conducted – i.e. market driven production vs. federally subsidized crops;
- Proximity to active farmland;
- Proximity to preserved farmland, open space, recreation lands, land under conservation easement.

A Task Force of the A.A.C. developed a report to document the priorities of farmland preservation in the Township and the important considerations for the ranking criteria. Excerpts from that report include:

- A priority in preservation / retention of economically viable working farms in the Township;
- Farmland preservation efforts should be focused on economically viable working farms.
- Imminent threat – potential for loss of farmland to suburban development in the near future;
- Retention of scenic rural landscapes that reinforce community character, from which residents derive a strong sense of community;
- Retain aspects of the Township's historic, agricultural heritage and remaining elements of the agricultural heritage, which survives in the community today.
- Potential for supplementing a "farmland preservation" component of a tract, with an open space land preservation component – potential for public access

In a solicitation letter to landowners, the Township stated the intent to permanently preserve active viable farmland, encourage the continuation of agriculture and farming in the community, and thereby maintain the Township's remaining rural character.

C. Municipal and County Minimum Eligibility Criteria Coordination

N.J.A.C. 2:76-6.20 identifies minimum eligibility criteria that all farms participating in the program must satisfy. The criteria differentiate between farms that are less than or equal to 10 acres in size and farms that are greater than 10 acres in size, as follows:

- For lands less than or equal to 10 acres in size, the land must produce agricultural or horticultural products of at least \$ 2,500 annually; at least 75 percent of the land must be tillable or a minimum of five acres, whichever is less; at least 75 percent of the land, or a minimum of five acres, whichever is less, must consist of soils that are capable of supporting agricultural or horticultural production; and the land must exhibit development potential based on certain standards.
- For lands greater than 10 acres in size, at least 50 percent of the land or a minimum of 25 acres, whichever is less, must be tillable; at least 50 percent of the land, or a minimum of 25 acres, whichever is less, must consist of soils that are capable of supporting agricultural or horticultural production; and the land must exhibit development potential based on standards set forth in the rule.
- Lands that do not meet the minimum criteria are not eligible for a State cost share grant for farmland preservation purposes.

D. Municipal and County Ranking Criteria Used to Prioritize Farms

Somerset County and Bernards utilized the minimum eligibility criteria as outlined in the state regulations § 2:76-6.16 – Criteria for evaluating development easement applications. The evaluation is based on the merits of the individual application with a weighted factor assigned to each criterion. These include soil quality, tillable acres, boundaries and buffers, local commitment, size of farm and density of lands dedicated to farmland preservation, local factors encouraging agriculture and threat of development. A brief overview of the SADC minimum eligibility criteria under NJAC 2:76-6.20 indicates that the State ranks farms in the following manner:

For lands less than or equal to 10 acres

1. The land produces agricultural or horticultural products of at least \$2,500 annually;
2. At least 75% of the land is tillable or 5 acres, whichever is less;
3. At least 75% of the land or a minimum of 5 acres, whichever is less, consists of soils that are capable of supporting agricultural or horticultural production;
4. The land must exhibit development potential based on a finding the following standards are met:
 - i. The municipal zoning ordinance for the land as it is being appraised must allow additional development, and at least one additional residential site beyond that which will potentially exist on the premises.
 - ii. Where the purported development value of the land depends on the potential to provide access for additional development, the municipal ordinances allowing further subdivision of the land is possible. If access is only available pursuant to an easement, the easement must specify that further subdivision to the land is possible.
 - iii. The land shall not contain more than 80 percent soils classified as freshwater or modified agricultural wetlands according to the New Jersey Department of Environmental Protection (DEP) wetlands maps. If the DEP wetlands maps are

in dispute, further investigation and onsite analysis may be conducted by a certified licensed engineer or qualified wetlands consultant and/or a letter of interpretation issued by the New Jersey Department of Environmental Protection, may be secured and used to provide a more accurate assessment of the site conditions, provided, however, that nothing herein shall require the Committee to conduct such additional investigation.

For lands greater than 10 acres:

1. At least 50% of the land, or a minimum of 25 acres, whichever is less, is tillable;
2. At least 50% of the land, or a minimum of 25 acres, whichever is less, consists of soils that are capable of supporting agricultural or horticultural production; and
3. The land must exhibit development potential based on a finding that all of the following standards are met:
 - i. The municipal zoning ordinance for the land as it is being appraised must allow additional development, and at least one additional residential site beyond that which will potentially exist on the premises.
 - ii. Where the purported development value of the land depends on the potential to provide access for additional development, the municipal ordinances allowing further subdivision of the land is possible. If access is only available pursuant to an easement, the easement must specify that further subdivision to the land is possible.
 - iii. The land shall not contain more than 80 percent soils classified as freshwater or modified agricultural wetlands according to the New Jersey Department of Environmental Protection (DEP) wetlands maps. If the DEP wetlands maps are in dispute, further investigation and onsite analysis may be conducted by a certified licensed engineer or qualified wetlands consultant and/or a letter of interpretation issued by the New Jersey Department of Environmental Protection, may be secured and used to provide a more accurate assessment of the site conditions, provided, however, that nothing herein shall require the Committee to conduct such additional investigation.

As noted above, Bernards based its proposed preservation efforts on the State regulations. The Township established a ranking system in the event that several farms became available for preservation at the same time and funding decisions need to be made. This ranking system follows the State and County criteria and may be impacted local factors including limited funding for preservation efforts. The Township has prioritized their goals for farmland preservation based on the above criteria, but also with the potential of limited funding in mind. Circumstances under which waivers would be considered include imminence of a farm to change to a non-agricultural land use in situations where an individual farm is highly productive.

E. Municipal and County Policies Related to Farmland Preservation Applications

The Township abides by the SADC's policies, including those regarding housing opportunities, division of premises and approval of exceptions. As previously stated, the Township's farms are not of an appropriate size to accommodate housing for farm labor. The A.A.C.'s perspective for each of the sections below is that the need for this type of housing has not presented itself within the Township. The A.A.C. does however have an indirect obligation to COAH to provide affordable housing. This is discussed in the Township's Housing Plan Element.

The draft Somerset County Comprehensive Farmland Preservation Plan provided a brief summary of the state policies for each of these issues:

Approval of Housing Opportunities

Agricultural labor housing: The State of New Jersey does not currently protect agricultural labor housing. However, the State Agricultural Development Committee understands the need for this type of housing and does have a policy that a landowner may refer to in order to construct labor housing. These applications are reviewed by the State Agricultural Development Committee. The Township A.A.C. should be consulted by the permitting authority before agricultural labor housing and other farm housing is constructed, with the preference of locating housing within exception areas as much as possible. The Planning Board recommends that the Township develop policies and possibly regulations regarding farm labor housing.

House replacement: The policy of the State Agricultural Development Committee on house replacement is that requests for replacement of a residence on permanently preserved land must be reviewed and approved on an individual basis by the CADB and the SADC. The Township A.A.C. should be consulted before any housing is constructed, with the preference of locating housing within exception areas as much as possible so as to locate the new residence where it has a minimum impact on any agricultural operation.. The Planning Board recommends that the Township develop policies and possibly regulations regarding farm labor housing. Presumably, the Township A.A.C. and CADB will review each housing case as it arises.

Residual dwelling site opportunity allocation: Residual Dwelling Site Opportunities (RDSOs) are lingering potential housing prospects located within a deed-restricted farm. By designating an area as an RDSO, the landowner is implying that the land will be used for a residential unit or other structure as referred to in N.J.A.C. 2:76-6.17. These prospective residential units can be allocated to parcels that are up to 100 acres in size. The purpose of the building in question must be for “single-family residential housing and its appurtenant uses.” To qualify as an RDSO, the SADC requires that the use of the residential unit be for agricultural purposes and “at least one person residing in the residential unit shall be regularly engaged in common farm site practices.”

Division of the Premises. The goal of the State Agricultural Development Committee is to preserve large tracts of farmland and, therefore, a division of the premises is not an encouraged practice. A landowner wishing to divide permanently preserved farmland must submit a written request. The application must be approved, in writing, by both the State Agricultural Development Committee and the CADB.

Approval of Exception. Exceptions are defined by the SADC as “acres within a farm being preserved” which are “not subject to the terms of the deed of easement.” When an exception is made, the landowner does not receive any compensation in the excepted area. Exceptions are not a practice that is encouraged by the SADC and, when they occur, it is recommended that they should be as small as possible. There are two types of exceptions that can occur; severable and non-severable.

Severable: A severable exception is defined by the SADC as an “area which is part of an existing Block and Lot owned by the applicant that will be excluded from the restrictions of the Deed of

Easement and may be sold as a separate lot in the future.” A severable exception is made “if a landowner wants to be able to sell the excepted area separate from the deed-restricted farm.”

Non-severable: Non-severable exceptions are defined by the SADC as “area which is part of an existing Block and Lot owned by the application that will not be subject to the restrictions of the Deed of Easement but cannot be sold separately from the remaining premises.” Unlike a severable exception, a non-severable exception is “always attached to the protected farm.” Exceptions made to farmland have the potential to impact the value of the property. When an appraisal occurs, both severable and non-severable exceptions are considered in the determination of the restricted/after value of the property.”

F. Funding Plan

1. Description of Municipal and County Funding Sources

Bernards Township has a healthy tax ratable base, collecting \$0.04 / \$100 for a total annual revenue of \$3,029,522 in 2007. As established by ordinance, \$11 million of past and future open space revenues will be dedicated to farmland preservation. The Township also receives funding from the State, County, and from interest earned on the Open Space Trust Fund.

Somerset County’s 2006 Open Space Inventory shows that approximately 9,800 acres have been preserved in permanent open space. Approximately \$81 million dollars from the County Open Space Trust Fund has been spent to date in acquiring these open spaces for Somerset County residents. These open spaces range from areas where active recreation is prevalent, such as parks and various sports fields, to lands of passive recreation with trails and natural features. Somerset County has also provided financial assistance for municipalities to pursue preservation of over 250 acres with nearly \$11 million dollars in funding through the County/Municipal Open Space Partnership Program, which began in 1999. Through this program, municipalities submit applications to Somerset County, which are reviewed by staff and a series of committees formed through the Somerset County Planning Board and Somerset County Park Commission. The Somerset County Board of Chosen Freeholders offers final approval on applications, and awards are then distributed to the respective municipalities. Municipalities often seek the technical and advisory assistance of nonprofits during this process.³⁴

2. Financial Policies

Bernards Township's plan for farmland preservation for the Northern Bernards Project Area will combine a variety of techniques to encourage as many landowners as possible to preserve their farms. These efforts will include encouraging farmers to enter their farms into Municipally Approved Farmland Preservation Programs, entering into option agreements for easement purchase with landowners, installment purchase agreements and direct development easement purchase.

Preservation of all farms in the project area is being sought for this application. Assuming inclusion in the PIG budget, including local, county and state contributions, it is hoped that the majority of parcels identified can be preserved. This total amount can be expanded through the use of option agreements and installment purchases, which will be determined after negotiations with landowners. Options for

³⁴ http://service.govdelivery.com/docs/NJSOMER/NJSOMER_38/NJSOMER_38_20070720_en.pdf

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funding from the County and State include the following policies. County match policies are dollar for dollar with farms that are greater than 25 acres, unless the property in question is situated adjacent to a preserved farm or open space. The SADC also has a sliding scale for easement acquisition where the committee established the percent cost share based on the land owner's asking price and certified value of the easement on a per acre basis. As the value of the easement increases, the percent SADC cost share decreases.³⁵

Upon approval of this Planning Incentive Grant Application, Bernards will correspond with all property owners of the targeted properties in the Northern Bernards Project Area and advise them of the parameters of the program. Bernards will encourage property owners to consider the financial and other advantages of participation in the Farmland Preservation Plan, and outline the per acre maximum easement value to be offered. Additionally, owners will be encouraged to assist in leveraging available funding through donations of easements, partial donations of easements and/or bargain sales of development rights.

In order to maximize preservation opportunities, Bernards Township will utilize option agreements or installment sales where possible for easement purchases. These vehicles will allow the Township and property owners to develop agreements regarding price and terms that maximize the amount of farmland which can be brought into the preservation program in the early period.

3. Cost Projections and Funding Plan

Somerset County has established a county average of easement costs of \$15,788 per acre. Because Bernards Township has preserved only one farm (three parcels), the Township has relied on the cost of the easements purchased as part of the English Farm. The per acre easement value for the three English parcels (see Table XII-24) have been estimated at \$100,000-\$125,000 per acre and \$80,000 per acre for the woodlot. Therefore the Township of Bernards estimates that the per acre value of development easements in the Northern Bernards Project area will be roughly \$75,000. Table XII-26 below reflects these numbers.

The total target farm acres located in the project area is 702.46 acres. Given a per acre value of \$75,000 the total cost to preserve all the target farms would be approximately \$55,345,000 (Table XII-26).

Table XII-26: Funding Needed for Target Farm Acquisition as of 2008

Year	Acres	Value	STATE Cost-Share	COUNTY Cost-Share	MUNICIPAL Cost-Share
1	165	\$15,220,000	\$8,873,000	\$3,044,000	\$3,302,740
5	265	\$19,875,000	\$11,587,000	\$3,975,000	\$4,312,875
10	270	\$20,250,000	\$11,806,000	\$4,050,000	\$4,394,250
TOTAL	700	\$55,345,000	\$32,266,000	\$11,069,000	\$12,010,000

Assuming an SADC cost-share of 58.3%, a County cost-share of 20% and 21.7% Municipal cost-share, over the ten year preservation period the Township is in need of \$32,266,135 from the State, \$11,069,000 from the County CADB and the Township will have to provide \$12,009,865 over the course of ten years. The Township's goal over the ten years could be achieved through the use of their

³⁵ SADC Section 2:76-6.11(d)1.

open space fund, which in 2009 collected \$2,729,430, and still be able to share funding with open space preservation efforts. Bernards may need to extend the open space tax in order to achieve the Township's preservation goal.

4. Other Financial Information

G. Farmland Preservation Program and A.A.C. Resources

1. Municipal Staff and Consultant Resources

The Bernards Township Planning Board and Governing Body participate and authorize the Agricultural Advisory Committee. The Agricultural Advisory Committee meets every third Thursday of the month. The Agricultural Advisory Committee receives consulting services, through the Township's Planner, Banisch Associates, Inc. and from Laura Szwak with the New Jersey Conservation Foundation (NJCF).

2. Legal Support

Legal support for the Township's farmland preservation program is provided by the Township's Attorney John Belardo, Esq. with the firm McElroy, Deutsch, Mulvaney, and Carpenter, LLP.

3. Database Development and Geographic Information System Resources

The Township's Planning Consultants, Banisch Associates, Inc currently provide database management, mapping and GIS resources for the Township. The Township also has GIS capability through Peter Messina at the Township's engineering department.

H. Factors Limiting Farmland Preservation Implementation

1. Funding

Funding for farmland preservation within the Township is dependent on the amount and timing of funding sources on the State and County level. The Township should look to continue their relationship with the County to preserve additional properties. The Township is able to produce enough funding through the collection of the Open Space Tax to meet their require 20% match, but these funds are a shared resource with open space preservation efforts and can not fund entire projects on their own and require the assistance of County and State matching funds. Therefore the limiting factor for funding is dependant on matching funds for the County and State.

2. Projected Costs

The Township has been able to identify a reasonable per acre value that can be projected out through the 10 year funding cycle. Given the \$75,000 per acre value and the amount of income generated in the Township for preservation efforts, the Township should be able to meet its preservation goals.

3. Land Supply

Bernards Township finds that land supply is always a limiting factor. Development pressure in the town has been increasing. However a strong agricultural base exists in the Township with an active community of farmers and supportive land owners. This has resulted in a continued land supply of agricultural areas that can still be brought under the farmland preservation program.

4. Landowner Interest

Bernards is fortunate to still have actively farmed areas with land owners dedicated to the promotion of agricultural retention. Currently, the Township has five land owners who have displayed interest in placing their land in farmland preservation and the town anticipates talking with more landowners. These farms are at the top of the priority list for preservation in the proposed project area.

5. Administrative Resources

The Agricultural Advisory Committee and the NJCF have been extremely proactive in promoting farming activities, as well as farmland preservation in the Township. Land owners have been able to contact the A.A.C. and/or NJCF for assistance in preparing applications for farmland preservation. Administrative resources are not a limiting factor to the Township's preservation efforts.

VI. ECONOMIC DEVELOPMENT

The Bernards Township farming community is a tight-knit one. They have worked to promote local farm stands and farmer's markets and to support each other through their own resources. They want to keep Bernards farmers and farm stands providing to Bernards residents and visitors.

Preserving farmland and providing a positive climate for the business of farming has been a major concern of the Somerset County Agriculture Development Board (CADB) from the inception of its agricultural retention program in 1983. The CADB's position reflects the full intention of the "Agriculture Retention and Development Act," which gives viability the same level of importance as easement purchase. The Somerset County Freeholders, Planning Board and its sub-board, the CADB, support the long-term use of agricultural land in the County. They recognize the need to provide an atmosphere in which agriculture can continue to be a viable industry, contributing not only aesthetically and environmentally but also economically to a healthy and inviting county, one that balances the needs for development, open space and quality of life.

Working with the CADB, Bernards will ensure the preservation and enhancement of farming in the township. Work will focus not only on acquisition but also on monitoring farms, creating farm friendly atmospheres, and coordinating with county- and state-level and other organizations to maximize the agricultural potential of the town, including an awareness of the need to support agriculture from an economic development perspective. To that end, the plan includes the latest requirements of the State Department of Agriculture relative to economic development and what can be done going forward to strengthen the business of agriculture in the County.

A. Consistency with NJ Department of Agriculture Economic Development Strategies and Other Regional Economic Development Plans and Initiatives

At the state level, New Jersey offers Somerset County farmers a number of support services and programs ranging from technical advice to farm loans. While Bernards Township does not participate in many State programs, local initiatives identify and propose methods to expand and enhance various subsets of the agriculture industry in Bernards, including produce, horticulture, dairy, livestock and poultry, field crops, organic, equine, and agritourism. The NJDA observes that "local access to large affluent markets has long been an advantage for the marketing of (those) products.

While our markets are still there, competition for those markets has become tougher. New Jersey's (produce) industry must continually work to rediscover its competitive advantages, improving access to nearby markets and strengthening consumer loyalty."³⁶

Bernards Township farmers continue to look for ways to reinvent themselves and their products, and to explore new markets and new methods for promoting their businesses. Some participate in the Jersey Fresh program, selling produce to warehousing operations. However, many of Bernards' farms are too small to produce enough to make it worth selling to warehouses. Bernards farmers agree that any initiatives that work to preserve the history and character of the town are highly desirable to the A.A.C. New ideas are shared at the community's Charter Day each spring and new farmers recruited from the local Future Farmers of America organization.

It is important that the Bernards' focus remains on ways to help farmers increase their profitability and coordinate with federal, state and county agencies other organizations, both in the public and private sector to find solutions. These include workshops, newsletters and other opportunities for farmers to continue to educate themselves about:

- Better ways to manage their farm as a business;
- Trends in agriculture;
- Ways to diversify, add value, and maximize profitability;
- Technical advice and assistance with choosing and marketing their products; and
- Advances in technology that may help them farm more efficiently and productively.

Using the recommendations outlined above, Bernards can investigate ways to expand and/or diversify into more profitable sectors and continue to utilize county and state programs to ensure sustainable agriculture practices and profitability. The following is a brief discussion of each of the sectors of Bernards' agriculture industry.

PRODUCE. Bernards Township is working to promote the farms in town that operate farm stands and pick your own establishments. In 2005, Bernards vegetable growers produced fruits and vegetables on 2 farms covering 12 acres.³⁷ Major efforts by the NJDA are directed at increasing the demand for New Jersey grown produce through branding, agritourism, farm direct sales programs, and farm markets. The NJDA *2007 Economic Development Strategies* include all of these activities. Bernards promotes agritourism through programs such as the town's Charter Day, the distribution of printed materials, and other forms of advertisement. Bernards Township farms with appropriate activities, as well as roadside stands and pick-your-own farms, can benefit from this promotion. NJDA's *Jersey Fresh* and *Jersey Grown* labels program is undergoing strengthening throughout the state.

Bernards can continue to develop strategies to promote produce, increase marketing opportunities, and encourage farmers by:

- Investigating the feasibility of diversifying into different vegetable and/or fruit production. While diversifying requires upfront expenses to establish new operations, equipment, and marketing materials, the payback for increased sales and visibility will increase.
- Continuing to promote existing community/farmers' markets, farm/roadside stands and pick-your-own operations and seeking to introduce new outlets such as community events through

³⁶ NJDA 2007 Economic Development Strategies

³⁷ Somerset County Agricultural Profile, 2007

websites and press releases; coordinate between state, county and regional/association websites and literature to achieve consistency, inclusiveness and up-to-date, accurate information;

- Ensuring that residents outside the township and in urbanized areas of the county and the region are aware of the farming community, its products and benefits, through publicity and product offerings on a regular basis at urban community events such as farmers markets, street fairs, festivals and other public events, with the goal of getting urban consumers to depend on and value Bernards' products and, thus, support its farmers and farming initiatives;
- Exploring expansion/diversification into value-added produce products, in concert with the NJDA and Rutgers and ensuring farmers awareness of these opportunities through workshops and direct communications;
- Continually seek out availability of state promotional campaigns and free signage; and
- Encouraging more participation in the *Jersey Fresh Hospitality Program* from County restaurants, hotels, specialty and grocery markets, and institutional food services such as schools, hospitals, and prisons; help County farmers connect with these outlets.

NURSERY, GREENHOUSES, FLORICULTURE, AND SOD. This is the highest ranking category of agricultural commodities in Somerset County in 2002, bringing in \$6.1 million, representing 74% of total crop sales and 40% of total agricultural sales, versus 54% and 48% statewide. In Bernards Township, this category produces only a handful of total acreage. Trees and Shrubs account for 8 acres in the township, while Christmas Trees account for 17 acres. A total of 25 acres in Bernards Township is used for the sale of this type of agriculture.³⁸

For farmers who want to expand their existing practices into this area, some strategies to follow are:

- Explore the feasibility of more diversifying a portion of their output into this sector, including ways to deal with the challenges of irrigation needs/expenses, increased labor demands and short-term lease issues versus the start-up costs to change over;
- Increase consumer awareness of the *Jersey Grown* brand;
- Seek contracts with large box store operations such as Home Depot and Lowes';
- Promote "drive up" operations where consumers can buy directly from the nursery or greenhouse; and
- Encourage a) research into alternative water management strategies, such as drip tape and b) municipal support for irrigation (often necessary for sod and other crop cultivation in this area).

DAIRY. In 2002, dairy ranked as the second highest sales producing sector in Somerset County, at \$1.3 million. This \$1.3 million represents a small percentage of the state's sales, reported at \$29.1 million. Bernards Township does not contribute to any of these statistics, as there are no dairy cattle in the Township.³⁹ Should a farmer decide to explore the possibility of expanding their current operations, some strategies for shifting into the dairy industry might include:

- Exploring various additional products and markets for dairy, including local restaurants and grocery markets;
- Promoting *Jersey Fresh* dairy products locally and statewide;

³⁸ Ibid.

³⁹ Ibid.

- Working to ensure the health of the dairy industry, and the quality of raw and processed milk;
- Working to bring more livestock veterinarians back to the area. This strategy may include economic incentives, as many veterinarians prefer to treat house pets (dogs, cats, etc.) to increase profitability; and,
- Aggressively marketing value-added dairy products.

FIELD AND FORAGE CROPS. Bernards Township farmers grow a combination of alfalfa, oats, rye, hay, and other field crops for a total of 258 acres dedicated to this category.⁴⁰ The advantages to Bernards Township farmers are that these crops are suitable products for farming land that is on a short-term lease¹⁴ since they are fairly easy crops to grow and do not require the additional start-up expenses or ongoing irrigation needs and labor expenses of more intensive crops such as vegetables and fruits. The disadvantages lie in their lower profitability, since more of the output is sold at wholesale, rather than retail level, and in increasing crop loss due to wildlife damage; the soybean crop, according to Mark Kirby, Chair of the Somerset CADB, is particularly vulnerable. (*Mark Kirby*)¹⁵

Strategies for Bernards Township to consider include:

- Working with the County to develop improved management practices and ways to improve yield per acre;
- Alerting farmers to any available workshops on pasture and cropland management;
- Encouraging diversification to row crops that meet newly emerging markets or markets with increasing demand (such as spelt as a dietary substitute for wheat) or lend themselves to value-added marketing opportunities (such as sorghum for homemade jams and jellies that can be marketed from roadside stands, at community markets and over the Internet);
- Encouraging transition to certified organic or naturally grown bean and grain crops to increase their value;
- Researching participation with the Somerset County Business Partnership¹⁶ in a campaign to promote the County as a site for construction of biofuels processing plant(s) by connecting with the multi-agency working group¹⁷ that is carrying forward the NJDA initiative to create a biofuels plant. The NJDA sees biofuels – ethanol, biodiesel and biogas – as an excellent opportunity for farmers in New Jersey to develop new markets for their agricultural products, byproducts and waste-stream items;
- Hosting educational workshops on:
 - The availability of state-sponsored grain marketing;
 - The role of crop insurance in mitigating marketing risk; and
 - The availability of free deer fencing programs, as well as other measures for deterrence of wildlife.

LIVESTOCK AND POULTRY. Operations include cattle and calves, sheep and goats, hogs, poultry, and a new category on the *2002 Census of Agriculture*, horses, ponies, mules, burros and donkeys. However, the equine industry is discussed in a later section, in keeping with the categories put forward by the NJDA in its economic development strategies. Livestock historically has been a strong agricultural sector in Somerset County. In 2002, total livestock sales came in at \$6.8 million, versus \$4 million in 1997, and, represented 45% of total agricultural sales for the County.

⁴⁰ Ibid.

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In Bernards Township, the breakdown of livestock and poultry is as follows: there are 22 head of beef cattle; 22 head of sheep; 8 head of swine; 13 bee hives; 11 goats; 203 egg chickens; 10 turkeys; and 17 other livestock. There are also 42 horses, but they are discussed later.

To strengthen and expand its place in the County economy, some non-dairy cattle, sheep, hogs, and poultry strategies may include:

- Ensuring animal health, including investigating incentives for bringing large animal veterinarians back to the area;
- Exploring various additional products and markets, including local hospitals and assisted living operations, restaurants and grocery markets, and increased outlets for meat sales at community markets and special events;
- Investigating outlets for dairy products for goats, and educate farmers about the benefits of diversifying into this sector, especially considering the development of value-added dairy products for goats;
- Assisting farmers with farming techniques, regulatory requirements and the latest research for livestock and poultry, including continued and additional cooperation with the RCRE, NJDA and Natural Resources Conservation Service (NRCS); and
- Promoting the agritourism portion of livestock, including exotic animals and poultry, such as “looking” zoos and educational school tours.

ORGANIC FARMING. Organic crops and animals have the potential to be an important market for Bernards Township. With a base of affluent and educated consumers in the town and the surrounding region and increased consumer awareness regarding food production, organic products and the markets that support them should continue to gain a stronghold and become more “mainstream” as people demand high quality, readily accessible and affordable organic products. Certification of organic farms is regulated by the U.S. Department of Agriculture via the Organic Food Production Act of 1990.

Below are a few examples of organic farms in Somerset County:

- *Sun Meadow Farm in Neshanic Station*
- *Pitspone Farm in Kendall Park*
- *Carriage Farm in Hillsborough*
- *Runnin’ Free Organic Farm in Hillsborough.* This farm is a good example for any farm that wants to explore expanding their market. For instance, they have a farm stand open seasonally and they sell only what they produce. They provide their organic produce to restaurants in the area – namely, The Ryland Inn in Whitehouse NJ, and The Bent Spoon and Small World Coffee both in Princeton NJ. They also provide their organic produce wholesale to markets such as the Whole Earth Center in Princeton NJ, Health Shoppe in Morristown NJ & Chester NJ, Princeton Health Foods in Princeton NJ, George Street Co-op in New Brunswick NJ, Balance Health Foods in Clinton NJ, and JB’s Natural Foods in Somerset NJ.

Increased interest by consumers in organic produce and animal products may encourage Bernards Township farmers to expand or diversify into this sector. They may look to:

- Improve marketing of organic and natural produce;

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- Explore various additional markets, including local restaurants and grocery markets and cooperative farm stands at County events;
- Explore feasibility of establishing licensed food preparation facilities and meat processors in the County to facilitate growth of value-added products in this sector;
- Promote agritourism for organic and natural farms stands;
- Promote the *Jersey Organic* Brand when established by the NJDA;
- Educate growers about organic and natural regulatory and certification requirements and about the availability of federal funds to help offset certification costs; and,
- Explore ways to support organic food growing and processing, such as assisting growers, with the help of the NJDA and the Rutgers Extension, to identify products that can benefit as organic (high value/high demand products).

EQUINE. The *2002 Census of Agriculture* reported some 1,046 horses and ponies on 123 farms in this small but viable agriculture sector in Somerset County. Sales of horses, ponies, mules, burros and donkeys combined totaled \$661,000, or 5% of total agricultural sales. Many of the equine farms in Somerset County consist of pasture and stable horses, some provide riding lessons and others are breeding farms, which can make use of the *Jersey Bred* logo when marketing their animals.

Bernards Township is home to 42 horses. 11 acres of the township are used for boarding facilities and 6 acres are used for equine training. To continue to retain and grow its market share in the state and regional equine industry, Bernards Township can:

- Ensure the health of equine animals, including investigating incentives for bringing large animal veterinarians back to the area, particularly with the potential for growth in the equine sector;
- Educate farmers about the benefits of the new equine rules, when adopted, to commercial and preserved equine operations, and educate municipalities about the rights of equine farmers;
- Promote the industry at shows and festivals, such as the annual Somerset County 4-H Fair;
- Promote the industry through enhanced listings of County equine events in state, regional and county website and print listings; and
- Promote the agritourism aspect of the equine industry through farm tours, horse and pony rides, and boarding and riding lessons.

AGRI-TOURISM. This sector can benefit agriculture in the Bernards both from an individual farmer's perspective and from the perspective of increased visibility for, and understanding and appreciation of, farming by Bernards residents and visitors. It can be an important contributor toward the long term sustainability of the town's agricultural industry. According to the State's 2007 Economic Development Strategies, "Agricultural tourism draws upon two great strengths of the Garden State, a rich agricultural heritage and a large population of affluent consumers," and "...Agritourism is critical to ensuring the future viability of agriculture in the state." Agritourism can draw its clientele not only from the county and region but also, across state borders, from New York and Pennsylvania.

Agritourism in Bernards Township is evidenced in its farm stands, pick your own farms, and seasonal activities like Christmas Trees. A few farms offer other on-site activities, such as hay rides, corn mazes and farm tours. Some of these activities are listed on the Visit NJ Farms and the Things to Do Calendar at the County. Other websites and publications also list these and/or other, similar operations and Bernards farmers should look to promote their farm activities in these areas.

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A highly successful example of agritourism in the County is the three-day Somerset County 4-H Fair²⁵ held in August at North Branch Park in Milltown. The fair, which celebrated its 60th birthday in 2007, draws an estimated 60,000 visitors each year. Free to the public, it showcases the accomplishments of more than 1,000 Somerset County 4-H members, as well as offering food by more than 20 community organizations and exhibits by other organizations in the County, including Somerset County Government, Raritan Valley Community College and the Rutgers Cooperative Research & Extension. The table below shows a variety of agritourism opportunities currently available in Somerset County and the website or publication sources that promote these operations.

**Table XII-27: Agritourism Opportunities in Somerset County
- Number of Operations Listed**

Source	NJDA website	Somerset County Things to Do ⁵	Skylands Brochure ⁷	Visit NJ Farms ²	Local Harvest	Other	Source
Community Markets	5				2	4	NJDA: www.jerseyfresh.nj.gov Other: NJCFC Farmers' Markets www.njcfc.org
Roadside Markets	13		1	3	2		NJDA: www.jerseyfresh.nj.gov
Pick-Your-Owns	5	5		1			NJDA: www.jerseyfresh.nj.gov
Certified JG Suppliers	4						www.jerseygrown.nj.gov
Christmas Tree Farms		5	1	2			www.njchristmastrees.org
Source	NJDA website	Somerset County Things to Do ⁵	Skylands Brochure ⁷	Visit NJ Farms ²	Local Harvest	Other	Source
On-Farm Activities	36	1	1	1			
CSAs					1		
4-H Fair ³		Yes (annual events)	Yes				
Organic					1(cert.) 1(non)	2	Other: www.nofan.org
Riding ⁴	7						www.jerseyequine.nj.gov
Equine Events	3						www.jerseyequine.nj.gov
Agritourism	2						www.jerseyfresh.nj.gov/agrilinks.htm http://www.njskylands.com/guideag.htm

Notes:

1 Farms may be listed in more than one category

2 VisitNJFarms is accessible from the N.J. Travel and Tourism website as a link on the left nav bar on the Outdoor Adventures and 101 Fun Things to Do pages; it is not shown on the Attractions sidebar; it is also accessible from the agri-tourism events & attractions page (<http://www.state.nj.us/jerseyfresh/agritourismhome.htm>) on the *Jersey Fresh* website

3 Somerset County 4-H Fair is not listed on the N.J. Travel & Tourism calendar of events, even though other county fairs are

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4 Five riding stables/academies are listed in the N.J. Travel & Tourism Eco-Tourism brochure, but none of them appear to be private farms.

5 Things to Do in Somerset County www.beachcomber.com/Somerset/

6 As indicated by write-up; not listed as a separate category on site

7 "Enjoy Four Seasons of Agriculture in the New Jersey Skylands" www.njskylands.com

The Opportunity for Agritourism Development in New Jersey, a report prepared for the NJDA by two independent consultants and personnel from the Food Policy Institute at Rutgers, defines agritourism as "the business of establishing farms as travel destinations for educational and recreational purposes." The report states that "agritourism represents an opportunity [for the farmer] to generate supplemental income during periods when land and equipment may be underutilized or idle and afford the opportunity for feedback from consumers regarding preferences for various farm products and services." In addition it "can create positive interactions between non-farmers and farmers," helping to reduce right to farm conflicts and garnering support for farm retention policies"; it "contributes to and enhances the quality of life in communities" and provides consumers with "direct access to fresh, locally-produced farm products" (page 2). The New Jersey State Board of Agriculture formally recognized agritourism development as a strategy for "bolstering the viability of New Jersey agriculture" and in 2005, New Jersey's Secretary of Agriculture, Charles Kuperus, convened the New Jersey Agritourism Industry Advisory Council.

Among the series of recommendations included in this report are:

- Develop a centralized promotion system, agritourism marketing website, better inclusion and integration of agritourism on the N.J. Division of Travel and Tourism marketing materials; stronger links between farmers and WIC, Senior and school lunch nutritional programs; and assisting counties with funding for agritourism promotion;
- Support a New Jersey Agritourism Limited Liability act modeled after laws in Virginia and North Carolina and explore ways to reduce cost of liability insurance;
- Support a state level Agritourism Industry Development program to enhance regional agritourism initiatives and to assist operators with marketing and promotion;
- Regulatory Guidance for Operators – include proactive communication about relevant regulations, and education about requirements and protections under the Right to Farm Act; address impediments to signage;
- Municipal Outreach – support fellow farmers to learn about building agricultural retention elements and regulations supportive of agritourism into their master plans and ordinances;
- Training and Information Workshops for Farmers – include hospitality training, marketing strategies and other, issue specific workshops such as liability, grant, traffic, signage; offer a forum for farmers getting into agritourism to interact with those who already are involved;
- Work with the CADB to examine preservation policies to identify and address any restraints to agritourism development; provide outreach to operators and municipal officials; develop model long-term leases for farmers renting preserved farmland; host open houses and tours at agritourism operations "such as those offered by the Somerset CADB and County Board of Agriculture"; encourage municipal adoption of model Right to Farm ordinance;
- Continue to seek out resources that provide model programs, innovation fund providing grants or low interest loans, technical assistance for farmers in identifying and obtaining grant funding, and
- Support a farm-related curriculum for different grade levels; provide opportunities for farmers to participate in school programs; and develop "fast facts" to educate farm visitors.

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The study concludes that farmers have, over the years, adopted a range of agritourism activities that show agritourism is financially beneficial to both the farmer and the economy and farmers need specific assistance and resources in order to be successful at integrating agritourism activities into their operations⁴¹

Farmers can again work with the CADB, the State, other agencies, and organizations to take an active interest in the recommendations to affect a strong agritourism presence in the Township. Strategies may include:

- Establishing a permanent, three season farmers' market, which may assist local farmers in selling farm and value-added products, strengthening the business of agriculture within the County;
- Establishing cooperative farm stands at community events in the County, to continue promoting farming and increasing opportunities for product sales;
- Organizing farm tours as part of the County's Heritage Trail Association²⁷ Bus & Walking Tours in the fall or creating a farm tour as a separate event. This might be similar to the "On the Rails" event scheduled for November 2007, where tour participants "can ride the rails and learn all about the role railroads played in our County's history in this fun-filled intergenerational program." The Association also may serve as the point of contact linking farmers and schools;
- Submitting township agri-events to the Skylands Visitor and/or finding sponsorship for advertising the County's agricultural highlights in the Skylands Visitor magazine as a farm destination;
- Establishing a working farm devoted to public education;
- Implementing a permanent signage program to alert and direct tourists and local residents to agritourism destinations will help increase business and income for these farming establishments;
- Working with schools and farmers to develop and promote an expanded curriculum of opportunities for school tours to farms and for farmer visits to schools, maintaining a list of available farmers, and acting as a clearinghouse or coordinating link between schools and farmers; and
- Exploring growth in other sections of agritourism such as hunting, fishing, and trapping. The 1999 survey indicated that many farmers do not charge for these privileges, perhaps, in part because of liability issues.

Liability also has become an issue for petting zoos, causing some farmers in other areas to repurpose to "looking zoos" to avoid the safety and health issues that can ensue from interaction between farm animals and visitors. If the Limited Liability protection mentioned above were enacted, farmers might feel freer to generate income from these activities. Successful expansion of agritourism in Somerset County could be supported by:

- Making long-term leases for farmers who rent more readily available, allowing farmers to make long-term investments in crop diversification;
- Providing tools for farmers to engage in a variety of agritourism markets, so as not to become a saturated market; and
- Providing more recognition for agriculture in regulations and master plans, and including municipal, federal or state regulations that may encourage farmers to participate.

⁴¹ The Opportunity for Agritourism Development in New Jersey, p. 84

GENERAL STRATEGIES. Working with the CADB, local agencies involved with the business of agriculture can make sure that messages about the availability of tools for helping farmers with the business of agriculture reach the farmers. One way to implement this is to expand the frequency and distribution of a quarterly newsletter published by the township, keeping the website updated. A grant or other sponsorship could enable an increase in the frequency from quarterly to six times a year and may cover the cost of print distribution to local farmers. Advertisements from local suppliers and processors also would enhance this program and may offset the cost of mailing.

Other ways to communicate to farmers include press releases to local papers and handouts developed for distribution at venues where farmers congregate, such as public meetings, farm organization meetings, fairs, workshops. Some of the general strategies that can be helpful to farmers include:

- New Market Opportunities (drawn from projects within the Economic Development Workgroup and disseminated directly to growers through Rutgers' plant and pest advisory) – Organizations at the County level, such as the CADB and the RCRE, can supplement the state's efforts, by providing other vehicles for communicating the availability of this list to the farmers;
- Farmland Assessment and Crop Insurance and Technical Assistance – Publicizing these programs also will help improve farmers' financial health; programs include the Jersey Crop Insurance Education Initiative, technical assistance with the N.J. Uniform Construction Code, interpretation of the Real Property Appraisal Manual, Farm Building Section, motor vehicle regulations for farm vehicles, financing and developing business plans for their farms; and,
- Processed Foods – The focus here can be on connecting County growers with processors who are seeking local sources of food and agricultural products, as well as on publicizing state outreach programs that educate farmers about government grants and services (including technical support services for those entering into new agribusiness with value added agricultural commodities).

OTHER DOCUMENTS THAT ADDRESS AGRICULTURAL ECONOMIC DEVELOPMENT. Several documents that address agricultural economic development in Somerset County include the *1987 Somerset County Master Plan and 1998 Master Plan Re-examination Report*, the *2007 Somerset County Smart Growth Strategic Plan (SGSP)*, which is currently being drafted and will update the *1987 Master Plan*, and the planning objectives outlined as a result of the *2001 Agriculture Retention & Development Plan*, which fall into the following main categories:

- Strengthen agricultural viability as a land-based economic enterprise
- Retain agriculture as an economic sector and industry;
- Preserve agriculture as a lifestyle and increase the viability of agriculture;
- Maximize farmland preservation; and
- Strengthen the agricultural preservation program.

Although a lot of these recommendations are focused on the Highlands, they are suggestions that any community can adopt as practices. Some of these recommendations include:

- Develop Long Term Goals to
 - Increase farmer access to local markets

- Create programs that encourage land leases to farmers
- Promote the long-term viability of the agriculture industry by addressing health care, banking practices, housing and labor issue.
- Explore agricultural sustainability through value-added programs to provide farmers with tools to enhance their profitability. Such programs could include:
 - Deer Fencing Program – provides fencing materials and 30% of the line posts to qualified farmers to assist in preventing crop damage from deer
 - Value-Added, USDA Rural Development – provides equity and technical Assistance to finance and foster growth in homeownership, business development and critical community and technology infrastructure
 - Value-Added Producer Grants – financial assistance for independent producers and producer groups for feasibility studies, business plan development or working capital for start-ups
 - Value-Added Tools for Agricultural Products – Agricultural Marketing Resource Center website³¹ to help producers create or expand value-added agricultural businesses and attract buyers
 - Farmer/Grower Grants – help farmers shift to practices that are environmentally sound, profitable and beneficial to the wider farm community (i.e. successful projects offer an innovative approach that could be adopted by other farmers)
 - NJDA Farm Link Program – resource and referral center for new farmers, farmers seeking access to land and farming opportunities, landowners seeking farmers, and farmers working on estate and farm transfer plans; linking service provides listings farms available for lease or sale and listings of farmers seeking land
 - Sustainable Agriculture Research and Education (SARE) – regional program supporting research and education that helps build future economic viability of agriculture in the U.S.
 - Partnership Grants – for Cooperative Extension, Natural Resources Conservation Service, nonprofits and agricultural consultants who work directly with farmers; supports on-farm research and demonstration projects
 - Farmers Market Promotion Grants – targeted to help improve and expand domestic farmers markets, roadside stands, community-supported agriculture programs and other direct producer-to-consumer market opportunities
 - Farmers Market Resource Guide – lists grants, programs, and other financial and informational resources available from public and private organizations
 - *Jersey Fresh* Matched Funds Program – agricultural organizations may apply for grants to be used to adapt the *Jersey Fresh* program to their individual advertising and promotion of New Jersey agricultural products

B. Agricultural Industry Retention, Expansion and Recruitment Strategies

As previously stated, Bernards farmers are continually looking for ways to expand their operations within this agricultural market. It is this commitment that portrays the Township's support for retention, expansion and recruitment strategies for agriculture as an industry. This is also expressed in the way the Township and the A.A.C. supports farmers with marketing of their products, continuing education, and market, product, and technical research. Still, many farmers feel that the

size of farms in the Township limits interest in farming. Some farmers expressed interest and described previous efforts to engage youth in farming activities.

1. Institutional

FARMER SUPPORT (E.G., FARM LINK PROGRAM, ESTATE PLANNING). Farmers in Bernards can benefit from the support and knowledge of the experienced farmer who owns a multigenerational farm and is concerned about farm succession, to a tenant farmer who seeks ways to maximize his profitability, to a young would-be farmer looking for guidance on how to break into agribusiness. There are a variety of resources at the state level, published on the SADC website. One such program, *Farm Link*, serves as a resource and referral center for new farmers, farmers seeking access to land and farming opportunities, landowners seeking farmers, and farmers working on estate and farm transfer plans. The following programs and resources can offer a farmer a wealth of support and information:

- On the FarmLink website
 - Estate Planning Tools
 - First Pioneer Farm Credit
 - Information on everything from deer fencing to farmers' market assistance
- New Jersey Department of Agriculture Strategic Plan
- Rutgers Cooperative Research and Extension (RCRE)
- New Jersey Agricultural Leadership Development Program

MARKETING/PUBLIC RELATION SUPPORT (E.G., LOCAL USE OF THE JERSEY FRESH PROMOTIONAL PROGRAM, AGRITOURISM). Marketing and advertising are critical to profitability. According to the 1999 Survey of Somerset County Farmland Owners, some Somerset County farm operations market their crops to regional wholesale outlets (grain elevators, such as Perdue in south Jersey and Penfield in New York State and the Livestock Cooperative Auction in Hackettstown, which deals in crops and eggs as well as livestock). Many more directly market to consumers from farm stands or more often out of the barn on the farm. Some market through participation in community markets as well.

ADVERTISING. According to survey results and direct conversations with farmers, few farmers take the route of individually advertising their product in print, although many of those involved in on-site direct marketing do maintain websites. There are a variety of free promotional channels such as the *Jersey Fresh*, *Jersey Bred*, *Jersey Grown* and *Jersey Equine* websites, and various agritourism websites that the Township can tap into for promoting their farm produce and operations. Working with the CADB to ensure the websites and promotional materials are up to date, the township can benefit greatly as visitors and residents seek out farm activities.

DIRECT MARKETING. For those direct marketers who want to consider paid advertising and garner media coverage, Web resources can help with the planning. One Bernards farmer participates in the WIC and Seniors Farmers' Market Nutrition Programs (FMNP) to deliver fresh produce to facilities that accept payment through these programs. This farmer also delivers produce directly to senior care facilities where seniors are not able to get out and purchase it themselves. WIC and FMNP provide locally grown unprepared fresh fruits, vegetables and herbs to nutritionally at-risk pregnant, breast-feeding, or post-partum women, children 2-5 years old as well as eligible seniors 60 years of age and older. Some farmers use the Jersey Fresh program to sell produce to warehousing

operations, but again the CADB and the State can both be instrumental in assisting Bernards to move forward with additional marketing strategies.

VISIBILITY AT COMMUNITY EVENTS. Bernards holds an annual Charter Day that exhibits local businesses and organizations. This past year the township Agricultural Advisory Committee was present at the event and received much attention from residents. Many people wanted to know more about farming in Bernards, what products are sold and what hours the farms are open to the public. Events such as community events are valuable and valid marketing tools. The town can work more with the CADB to refine the presentation of farming at such community events.

For farmers who do produce their own brochures or flyers, these events could be a valuable distribution point for disseminating this information.

FESTIVALS AND TOURS. Some recommendations for Bernards to consider include:

- Promoting the seasons with festivals in the summer, spring and fall;
- Working with a nonprofit organization to organize a farm tour as a fundraiser; and
- Reaching out to schools to build farm tours into their curriculum. According to the 1999 survey, schools are more than willing to pay \$2-3 per person for these tours. In addition, once a child has visited a farm, they often bring the family back for another visit.

SIGNAGE. There is a critical need for signage in Somerset County since the numerous state and county highways that transverse the County take away from the visibility of agriculture. Signage promotes visibility and for farmers who qualify for the *Jersey* series of marketing programs, signage is free. For farmers who want to use their own signs, the township will need to consider this in their sign ordinances.

Jersey Fresh point-of-sale signs and other materials, both free and fee-based, can be ordered from the NJDA's Marketing and Development Web pages⁴⁴.

LEARNING FROM OTHERS. Sussex County is one example of a successful agritourism program from which Bernards can take a cue. The County has made agritourism a major focus. Bernards might be able to glean helpful strategies from a study of how Sussex County is promoting agritourism.

GETTING THE WORD OUT. For Bernards Township, getting the word out does not seem to be a major issue. As previously stated, the Township is a tight knit community, the farmers, especially. From talking to neighbors in the grocery store or at the local coffeeshop, we have learned that residents in Bernards share information about farming in the community. The County and the RCRE can also play helpful roles in getting the word out throughout the region about agricultural activities and opportunities in Bernards.

Examples include notification on the Somerset County website, development of media contacts at local papers and follow-up with those contacts to encourage publication of the information, submitting articles to *Green and Growing* and submitting listings to the RCRE website, and updating listings on the Visit NJ Farms website.

INFORMATION OUTLETS. For Bernards farmers to gain even more visibility in the county and state, the following venues for listing information can be very useful. Currently the English Farm and Ripple

Hill Farms are listed on the Visit NJ Farms website where there is much information about the type of farm, their hours, and other useful information. Township farmers use the New Jersey Fresh website and the township newsletter to place ads about events and keep the community informed about agricultural activities.

Other useful portals for Bernards farms include:

- *State* – Travel and Tourism websites for listings of roadside stands, community markets, pick your own, on-site farm activities, Christmas tree farms, equine events and activities and other agriculture-related events
- *Regional* – Skylands website and the quarterly Skylands Visitor Guide. The website lists Somerset County farming operations and the appropriate County office should provide additional listings to match the County Things to Do / Agricultural Activities page and the state’s listings of roadside stands, pick your own operations and Christmas tree farms.
- *County* –
 - Somerset County Business Partnership website as a way to promote the business of farming.
 - The Things to Do Tourism Guide includes an Agricultural Activities page. It is available from the county website email subscription page under Events and by email subscription
 - Green and Growing a quarterly newsletter by the RCRE is listed on the RCRE website and on the county website email subscription page under Newsletters, and is available by email subscription
- *Private publications* -- According to Linda Van Zandt, in the county office of public information, many newspapers, such as the Princeton Packet and the Star-Ledger, go to the county website and grab information off of it for publication.

COMMUNITY FARMERS MARKETS. Currently, the Township has a few farms where produce can be purchased on site. The Crane, English, Sorge, and Anderson farms all sell produce grown on their farms. With vegetables in the summer, apple picking in the fall and soon maple syrup in the late winter/early spring, the combination of these markets will ensure that farm stands are open practically year round.

The Township does not have plans at the moment to host a community farmers market that would be held on a weekly or monthly basis. If the township were to consider this, a review of the local ordinances would be necessary to ensure farm markets are a permitted use for the town. If they are not and the township decides to move forward with the idea, then an ordinance amendment might be called for.

COMMUNITY SUPPORTED AGRICULTURE. The issue of Community Supported Agriculture in Bernards has been discussed and the consensus among the farmers is that the township is too small to accommodate an operation that could prove too large. Again, if the township were to consider this, a review of local ordinances would be necessary for issues such as parking, signage, hours of operation, farm labor, etc.

AGRICULTURAL EDUCATION AND MARKET RESEARCH COORDINATION. Bernards Township farmers are aware of the need to keep up to date with the latest information on agricultural practices and new market

opportunities, as they strive to maximize their profitability and achieve their farming goals. Some recommendations to keep informed include:

- Coordinate with the CADB, Rutgers Extension and NJDA to research and market agricultural education;
- Seek grants to fund farmer education; and
- Work with nonprofit organization(s) to develop a teaching farm on preserved land. The goal here is to instill an understanding and appreciation for agriculture among the non-farming community. This will help them to support an industry that provides a ready market for those who are aware of it and support it.

NEW JERSEY AGRICULTURAL EXPERIMENT STATION (NJAES) AND RUTGERS COOPERATIVE RESEARCH AND EXTENSION. According to the NJAES website *Jersey Fresh* Information Exchange,⁵⁴ Rutgers Cooperative Extension launched an innovative produce distribution and merchandising pilot project in 2004 to help New Jersey farmers get their products into new retail locations, such as white-table restaurants and grocery chains. Bernards Township farmers should consider selling produce to local restaurants and grocery stores.

RUTGERS SCHOOL OF ENVIRONMENTAL AND BIOLOGICAL SCIENCES. The Bernards Township Agricultural Advisory Committee should subscribe to the Rutgers newsletter, *Green and Growing*, to keep farmers informed of any upcoming special workshops or information or appropriate continuing education curriculum. Members of the farming community have worked with this organization and have attended workshops.

OTHER. Other avenues of promotion and marketing include reaching out to the County's vocational/technical school and Raritan Valley Community College regarding the feasibility of expanding or introducing agricultural curriculum, linking agriculture students (the vocational/technical school has a horticultural course at the high school level) with farmers and nurseries for intern/apprenticeship learning experience (transportation logistics may be an issue). Bernards township farmers have employed youth for farm work to generate an interest in farming among the younger generations.

The township can support and encourage the County to continue the Future Farmers of America program at the vocational/technical school and promote attendance at the Annual Livestock Symposium, designed to encourage young farmers.

2. Businesses

INPUT SUPPLIERS AND SERVICES. Many Somerset County farmers obtain farm supplies from a number of sources in and near the County, such as Belle Mead Farmers Coop; Neshanic Home & Garden; Somerset Grain, Feed & Supply, Bernardsville; and the Raritan Agway. Additional Agways are nearby and Bernards Township farmers say they look to the internet for supplies and equipment and travel as far as West Milford, New Jersey to find supplies they need. They also tend to look to each other for resources when needed. Bernards farmers tend to be satisfied with the resources they have, but have expressed that if resources were within a closer proximity to the Township it would be much more convenient.

PRODUCT DISTRIBUTORS AND PROCESSORS. The same can be said for these services. Many Bernards farmers go to nearby resources or to the internet when supplies are low. As stated in the County plan, hay and other forage crops are often sold locally, to other farms, equine operations, landscapers and nurseries as baled straw, or used for the farmer's own livestock and other uses. Some grain crops also are sold locally to small farmers with a few animals.

A state initiative that could be an opportunity for grain farmers in the township is the construction of biofuels facilities. The Somerset County Business Partnership is looking to promote Somerset County as a site for such a facility.

3. Anticipated Agricultural Trends

PRODUCT DEMAND. As biofuel processing is studied more and becomes more of a reality in New Jersey, this should serve the County well, since it would serve as an additional outlet for the grain sector, which has been in steady decline for the past 30 years. The combination of high crop loss from wildlife damage and high input costs for fertilizers would have to be addressed before farmers might be willing to invest more acreage in such crops. While there is concern for growing grain for fuel rather than for people, this might be a viable option for the small farms in Bernards.

In the livestock sector, one avenue for diversifying is to look into exotic animals, which are marketable from an agritourism perspective as part of "looking" or "petting" zoos and whose byproducts, such as alpaca fur, can provide value-added direct marketing products, e.g., the sheared wool itself or clothing and other products made from that wool. As the County's plan states, sheep and goats may offer the advantages of value-added marketing opportunities as well, in the form of goat cheese and products made from sheep's wool. Another opportunity for expansion may be in the area of supplying goat meat, which has seen a rise in demand due to the growing ethnic populations in the County and region.

In Bernards Township vegetable and fruit crops make up a small sector of the town's agricultural output, this is certainly not from a lack of demand. Some challenges farmers face includes short-term leases versus high upfront costs, the cost of labor and difficulty getting labor to the farm site. New challenges for those considering selling homemade food products at farmers markets is the need to have the goods prepared in inspected facilities. However, there are the advantages of selling from your own location rather than having to pay transport costs, and there are advantages to generating additional income by developing value-added products such as pies, cheeses, jams, honey, and other products. These products serve the increasing numbers of customers who want the advantages of ready-made.

Consumers are also increasingly aware of the locally-grown and organic foods. As the demand increases farmers may be encouraged to adopt more natural farming methods. This shift in practices not only has a benefit to the consumers, but also to the land. Not applying fertilizers and pesticides increases water quality and only contributes to the health of consumers. However, a farm does not have to become a certified organic operation to have a positive effect. Farmers are increasingly adopting natural practices that have the same positive effect, but are not certified. Certification does instill confidence in the consumer that products were grown organically, but it is not essential to operating a healthy farm facility.

Other avenues to explore include the following areas put forth in the 2001 ARDMP:

- Changing the Farm Operation's Mix of Products
 - Consider new crop opportunities such as tree nut crops, organic or low input produce or meat products, aquaculture, biotechnical and pharmaceutical use of farm products or animals (this concept should be introduced to the Somerset County Business Partnership, which is pursuing the development of a Biotechnology center in the County), and ethanol production (the construction of an ethanol plant in New Jersey is being actively pursued by a working group that includes the state and the Farm Bureau).
- Value-adding
 - Marketing livestock as dressed meat on a retail basis (certain farms already do this)
 - Fresh herbs, sold at retail, in bunches or as potted plants
 - Vineyard development – poorly draining soils, cost of land acquisition and long lead time before first harvest (several years) could be deterrents, but state wine production exceeds the state-grown supply of grapes, creating a ready market for an operator with enough carrying capital
- Economic Development through Preservation – Selling a development right is cashing in a non-performing asset which can create new options for the farm, including transferring property to the next generation, creating new markets, improving the existing operation, or expanding into new ones.

MARKET LOCATION. Certainly from a market location perspective Bernards Township is in a strong position and has the clientele to support agricultural businesses. In the 1990s Somerset County was one of the fastest growing counties in the state and the second most affluent county in the United States according to the U.S. Census Bureau's *2004 American Community Survey*.

In addition, the Bernards Township and Somerset County are centrally located in a metropolitan area that includes New York and Philadelphia and other affluent New Jersey counties. Bernards' close proximity to major highways and affluent neighborhoods is an incentive to market products to populations outside the township as well as to the Township's own population. Residents nearby may be inclined to travel for locally grown produce.

4. Agricultural Support Needs

Any municipality engaging in a farmland preservation program needs to understand the emotional, as well as economic connection farmers have to their land. Support from the town and county should respect that and should support the farmers with their vision to maintain the property as the farmer sees fit. A lot of support measures have been identified here and the township should be prepared to help the farmer with as much of it as possible. Bernards farmers have expressed that continued financial and programming support from the County and State are incentives to continue farming.

That support could include:

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- A positive municipal regulatory environment is much needed, according to the 1999 Survey of Somerset County farmland owners.
- Encourage farming by supporting agricultural economic development activities.
- The effective use of marketing and advertising to raise farm sales and productivity while also increasing the visibility of Bernards Township farms.
- County and municipal support for irrigation and greenhouse additions as ways to intensify farm production. Will require an analysis of a farm's cropping and management can result in changing the product mix to include more valuable crops. Financial and regulatory support will be necessary to bring about suggested changes.
- Connection needs to be made between state value-added agricultural programs and Somerset County farm operations.
- Explore the following sectors:
 - Nursery, greenhouse and Christmas tree production (and sod)
 - Cash grains and field crops
 - Vegetables and fruit
 - Dairy and beef
 - Equine
 - Other livestock (poultry, sheep, goats)
 - Wood products

In addition, the municipality should strive to “educate other business leaders about the extent and character of agriculture in the town, and the potential business activities that might be created or attracted to serve these farm operations.

Fortunately, in New Jersey the state and the RCRE are actively involved in this process and, often times, Bernards should work with the CADB to find ways to bring farmers together with resources, to get the word out that help and alternatives are available.

AGRICULTURAL FACILITIES AND INFRASTRUCTURE. As stated previously, additional community market-type opportunities could help support increased produce production; hospitals, assisted living facilities and other operations with food services are other prospective outlets that could support produce sector growth, in addition to any state or county correctional institutions and school district facilities, restaurants and gourmet and other food stores. Bernards should consider working with the CADB to provide produce to these facilities

Additional support could come from a concerted effort to promote agritourism through signage, publications, website and media promotion.

FLEXIBLE LAND USE REGULATIONS

State level – The *2006 Agricultural Smart Growth Plan for New Jersey*, prepared by the NJDA, identified flexibility in government regulation as an important component relative to farm viability. (*Agricultural Smart Growth Plan 2006*)

Municipal level – Bernards can work with local residents toward understanding the importance of agriculture to the economy of the town and the importance of an agriculture-friendly environment to increase support. Right to Farm and accommodations for agricultural vehicle

movement and the building of an awareness of and provisions supportive of agriculture into municipal master plans and zoning ordinances go a long way towards the kind of support agriculture needs in order to be an economically viable sector.

Other areas where municipal sensitivity to the land use needs of agriculture can be helpful include consideration of the following issues when creating municipal ordinances and regulations:

- Setting specific buffer standards for non-farm development adjacent to working farms that help to limit trespassing and littering and also protect the residential landowner from dust and spray materials spread during farming activities, thus minimizing potential Right to Farm conflicts;
- Code or ordinance provisions requiring developers to notify purchasers of the proximate existence of active agriculture;
- Exemptions for certain farm structures from building height restrictions;
- Allowing additional principal dwelling units on farms in order to meet the needs of farmers for additional housing for their children or for farm managers;
- Exemptions from setback requirements when farmers seek to expand an existing nonconforming structure;
- Flexible fencing ordinances that make allowances for types of fencing on farms that might not be desirable in residential zones, in consideration of the farmers needs to prevent wildlife damage; and
- Construction fee reduction for agricultural buildings.

AGRICULTURE REPRESENTATION IN ECONOMIC DEVELOPMENT ORGANIZATIONS. The following Somerset County organizations support the agricultural community and Bernards Township should either build or maintain relationships with each:

- Somerset County Business Partnership – Leads efforts to ensure that smart growth programs/initiatives create economic vitality for Somerset County businesses and communities. This Chamber focuses upon business retention, expansion, and attraction, smart targeted development, infrastructure investment, workforce development, and our One Stop Center for Business and Municipal Assistance.
- Somerset County Agricultural Development Board – lead organization in farmland preservation and sustainability and Right to Farm mediation. Agricultural representation: Chair: Mark Kirby, farmer; Vice Chair: Peter Staats, farmer; Richie Norz, farmer; John Higgins, farmer.
- Somerset County Board of Agriculture – composed of volunteers who are individuals or representatives of corporations and associations willing to promote sustainable agriculture in Somerset County; President: Joanne Powell; Treasurer: Paul Smith (Duke Farms); Secretary: Ed Pierce.
- Rutgers Cooperative Research and Extension Service – Nick Polanin, certified tree expert
- Somerset-Union Soil Conservation District – Ernie Thurlow, soils specialist

5. Agricultural Support Implementation

Suggestions for future agricultural support have been mentioned throughout this document, including workshops and other educational opportunities at the state and county level. Some of these

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opportunities will require funding through the many state and federal programs, of which the Township should take advantage. In addition, support for the implementation and monitoring of farmland preservation, one of the chief ways to protect and ensure the continued presence of agriculture in the township, is done by the county. Funding for this program comes from the County's open space trust fund, local contributions from municipalities, SADC dollars through programs such as Planning Incentive Grants and soil and water conservation grants and federal dollars from federal programs such as the Farm and Ranch Lands Protection Program.

Agricultural support for implementation mostly comes from the CADB. The County works to maximize the amount of land it preserves by encouraging applicants to donate a portion of the land preserved through the traditional easement program and to accept a lower amount for the land than the certified market value. This benefits the preservation program by enabling the acquisition of property it might not otherwise have been able to acquire, while at the same time providing the landowner with tax benefits. The CADB also reassesses on an annual basis all available funding opportunities to optimize money available for both the acquisition of farmland and the support of county farmers. The CADB currently is in the process of seeking a grant that would provide money for workshops and other tools that will be helpful to its farm community.

The CADB is seeking to expand its staff to be able to provide more outreach to farmers and municipalities. They are also looking to expand marketing efforts and awareness of agriculture as a valuable contributor to the economy and quality of life in Somerset County. Where possible, Bernards should work with the County to develop these plans and ensure that farming in Bernards gains more awareness and provides the best market possible for the residents.

Listed below are County organizations that support or potentially can offer support to the Bernards' business of agriculture:

- Planning Division and CADB
- Rutgers Cooperative Extension.
- Soil-Conservation District.
- Somerset County Vocational and Technical Schools.
- Somerset County Business Partnership (SCBP).
- Cultural & Heritage Commission.

VII. NATURAL RESOURCE CONSERVATION⁴²

The Somerset County Draft Plan provided information on various services involved in farmland preservation and natural resources protection. The following section has been provided by the County Draft Plan. Bernards Township has made an active commitment, and will continue to, provide education and outreach opportunities to farmers and to the community. This is represented in a few ways. One is the Township's work with Ms. Laura Szwak of the New Jersey Conservation Foundation. Ms. Szwak is employed by the Township to reach out to landowners in the Township to inquire about their interest in preserving their land through either open space or farmland preservation funding.

The Township also seeks to increase communication with the Natural Resource Conservation Service

⁴² Somerset County Draft Farmland Preservation Plan, September 2007

(NRCS) and the Somerset County Soils District to encourage agricultural retention and best management practices by local farmers. Please refer to the full County Draft Plan for additional information.

A. Natural Resource Protection Coordination

1. Natural Resource Conservation Service

The local NRCS office serving Somerset, Hunterdon and Union Counties is located at 687 Pittstown Road, Suite 2 in Franklin Township (mailing address of Frenchtown). Somerset County farmers may utilize this local NRCS office for technical assistance with conservation issues. NRCS will also reach out directly to landowners if they know of a farmer who is in need of assistance, or can use the guidance of the NRCS staff. The local NRCS office also helps to prepare Conservation Plans for Somerset County farmers. These Conservation Plans nearly always include strategies to conserve soil and water, but may also include conservation practices for flora, fauna and clean air. If all five elements are included, they are referred to as Resource Management Plans.

Conservation Plans are a prerequisite for those who wish to sell their property or sell a development easement via the Farmland Preservation Program, or apply for natural resource conservation program grants such as the WHIP and EQIP. The plans are required within one year after closing on a farm property. The local NRCS office administers these conservation program grants, which offer financial incentives to support conservation projects, including stream riparian buffers and wildlife habitat. Administration of these grant programs includes field visits to prepare the Conservation Plans, preparation of grant program contracts, assistance with installation of contract conservation practices, and inspection of farms to verify contract conservation practices are implemented and maintained. It should be noted that the Somerset County Soil Conservation District gives final approval on all Conservation Plans and program contracts, and the USDA Farm Service Agency (FSA) assists NRCS in administration of an additional natural resource conservation program entitled Conservation Reserve Enhancement Program (CREP). The phone number for the local NRCS office is (908) 782-4614, and the District Conservationist is Gail Bartok.

The Landowner Incentive Program (LIP), through the NJDEP's Division of Fish and Wildlife, is another partnership that can provide private landowners interested in conserving threatened and endangered species on their property with financial and technical assistance. It is the goal of LIP to work with private landowners to protect important habitats so our children and great grandchildren can benefit from our conservation efforts. The NJ Division of Fish & Wildlife, through the Nongame and Endangered Species Program (ENSP), administers this program. ENSP was successful in its 2007 grant request to US Fish and Wildlife Service and was awarded \$849,510 for landowner projects. ENSP will make \$774,510 available for grants beginning in 2009 to landowners. \$75,000 will be used for a small grants (under \$5,000) program.⁴³

2. Somerset County Soil Conservation District

An additional partner in the conservation of agricultural resources is the New Jersey Department of Agriculture, Division of Agricultural and Natural Resources. Among its responsibilities, the Division implements natural resource conservation programs, administered by the State Soil Conservation Committee (SSCC). These programs "provide engineering services and regulatory guidance to soil

⁴³ http://www.state.nj.us/dep/fgw/ensp/lip_prog.htm

conservation districts, homeowners, engineers, planners and virtually all development activities. The Division provides technical standards applicable to construction and mining sites regulated by the Soil Erosion and Sediment Control Act program ...”

The SSCC coordinates and supports the work of the state’s 15 local soil conservation districts (SCD), one of which is the Somerset County SCD. The Somerset County SCD is charged with reviewing and approving natural resource conservation and assistance program grants, implementing agricultural conservation planning assistance, agricultural conservation cost-sharing program grants, application of organic materials on agricultural land, agricultural water supply and management, soil erosion and sediment control, storm water discharge authorization, and soil surveys.

The Somerset County SCD office is located in the 4-H Center at 308 Milltown Road in Bridgewater. Somerset County Farmers may approach this local SCD office (as well as the local NRCS office) with a Request for Assistance (RFA), to apply for funds from natural resource conservation grant programs such as WHIP and EQIP. If approved, the RFA is forwarded to the local NRCS office in Franklin Township for processing. The administration of the RFA includes preparation of a Conservation Plan and grant program contract, as previously described. The Somerset County SCD is involved in review of Conservation Plans and grants program contracts, and must give final approval to both.

The phone number for the Somerset County SCD office is (908) 526-2701, and the District Manager is Ernest Thurlow.

B. Natural Resource Protection Programs

The following section is taken from the Somerset County Draft Comprehensive Farmland Preservation Plan. The Township and local farmers are encouraged to use any available grant program to retain agricultural production in the Township. The Township will seek to provide additional support to local farmers in educating and outreach to ensure that land owners are aware of all the support opportunities available to them. The follow is an outline of some of the grant opportunities provided by the State and Federal programs.

NJDA SOIL AND WATER CONSERVATION GRANTS. The New Jersey Department of Agriculture, State Agriculture Development Committee (SADC) has in the past provided soil and water conservation grants to farms that are permanently preserved, or are enrolled in the eight year preservation program, with priority for preserved farms. The eight year program is currently unfunded, but efforts are underway to restore such funding. The purpose of the grants and program is to protect Somerset County agricultural lands from soil erosion.

These grants fund soil and water conservation projects approved by the Somerset County Soil Conservation District (District), with the program administered by both the district and the local NRCS office in Franklin Township. Once the District deems the conservation project necessary and feasible, applications are forwarded to the N.J. State Soil Conservation Committee, which recommends projects to the SADC for funding approvals. Traditionally 50% of the costs of approved soil and water conservation projects are paid with grant funds, but up to 75% has also been approved in the past. Hopefully these funds will be restored so that conservation projects can continue in Somerset County.

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The types of soil and water conservation projects funded by SADC include soil erosion and sediment control systems (terrace systems), control of farmland pollution (stream protection; sediment retention, erosion or water control systems; animal waste control facilities; and agri-chemical handling facilities), the impoundment, storage and management of water for agricultural purposes (diversions; water impoundment reservoirs; irrigation systems; and, drainage systems), and management of land to achieve maximum agricultural productivity (land shaping or grading).

CONSERVATION RESERVE ENHANCEMENT PROGRAM (CREP) AND CONSERVATION RESERVE PROGRAM (CRP). Through CREP and CRP, agricultural producers voluntarily retire land to protect environmentally sensitive areas, decrease soil erosion, provide and restore wildlife habitat, and protect ground and surface water. Examples of conservation practices include riparian buffers and filter strips for water quality, and contour buffer strips to reduce soil erosion. With incentive payments for farmers to fully implement a CREP contract, payment for this program can be fully funded by NRCS and NJDA. Within Somerset County, CREP has been “slow getting started” due to strict eligibility requirements. This includes requirements that the land must have been cropped for 4 of the 6 years between 1998 and 2002, and detailed paperwork documentation is required when applying. CRP is more widely used in Somerset County than CREP.

CONSERVATION INNOVATION GRANT PROGRAM (CIG). The aim of the CIG program is to stimulate the development and adoption of conservation approaches and technologies which are innovative, in conjunction with agricultural production. Funds are awarded as competitive 50-50 match grants to non-governmental organizations, tribes, or individuals. At present, CIG is not being used in Somerset County.

ENVIRONMENTAL QUALITY INCENTIVE PROGRAM (EQIP). EQIP is a conservation program in which farmers receive financial and technical assistance with structural and management conservation practices that address soil, water, and grazing land concerns. EQIP is the most popular and widely used conservation program in Somerset County, and is the most well funded of all the programs, receiving approximately \$4 million statewide on an annual basis. Nationally, the proposed 2007 Farm Bill would raise authorized EQIP funding to \$1 Billion. In Somerset County, between 2005 and 2007 there are 2,056 contracted acres, with 10 active contracts. However, newly enrolled acreage has declined from 2005 to 2006, and again from 2006 to 2007.

FARM AND RANCH LAND PROTECTION PROGRAM (FRPP). FRPP provides up to 50% matching funds to purchase development rights and conservation easements to keep farm and rangeland in agricultural use. The USDA partners with state, tribal, or local governments, and non-governmental organizations. Farmers accepting funds through this program must adhere to strict impervious surface limitations. In New Jersey, this program receives approximately \$500,000 to \$1 million annually. The local NRCS office prepares the Conservation Plans used in the Program, which is then administered by the NJDA. To date, acreage in Somerset County is not available for this report. Nationally, the proposed 2007 Farm Bill would raise authorized FRPP funding to \$300 million.

GRASSLAND RESERVE PROGRAM (GRP). GRP offered landowners the opportunity to protect, restore, and enhance grasslands on their property, which play a vital role in protecting water quality and providing wildlife habitat. This program was coordinated through several federal agencies, but has become inactive in Somerset County. The proposed 2007 Farm Bill would provide only minimal funding for GRP.

WETLANDS RESERVE PROGRAM (WRP). WRP offers farmers payments for restoring and protecting wetlands on their property that had been previously drained for agricultural use. Wetlands help reduce flooding, filter pollutants from water, provide critical wildlife habitat, and protect open space. Payment by NRCS is based upon appraised agricultural land value. With appraised values from \$100 to \$2000 per acre, many farmers are not willing to create wetlands on otherwise productive agricultural lands. As a result, the WRP has not been used in Somerset County.

WILDLIFE HABITAT INCENTIVES PROGRAM (WHIP). WHIP provides technical and financial assistance for creating, enhancing, and maintaining wildlife habitat. The State Technical Committee for WHIP in New Jersey awards project contracts for designated wildlife habitat categories. Since its inception in 1998, WHIP has been a popular program for non-federal landowners interested in wildlife habitat management in New Jersey. WHIP is second only to EQIP in use for Somerset County, with 1,800 contracted acres and 8 active contracts since 2005.

C. Water Resources

Competition for water will increasingly become problematic for the agriculture industry in the Township and in the Region in years to come. First and foremost, NJ farmers should practice water conservation and research innovative water technologies such as greywater reuse and drip irrigation. Much of the active farmland in the Township relies on groundwater and rain water recharge. Prudent use of water helps to maintain aquifer recharge and groundwater supplies. The following section is a brief description of the local water supply characteristics and conservation strategies relevant to the Township as provided by the Somerset County Draft Plan.

SUPPLY CHARACTERISTICS. The physiographic and geologic layout of Somerset County dictates water supply, availability and recharge, as well as location of agriculture. As discussed in the *Natural Resource Inventory for Somerset County, New Jersey*, the County “ ... exhibits four distinct geologic regions which are reflected in its topography”. The Somerville Lowlands are located within Branchburg Township. These lowlands are a local division of the Piedmont Province. These lowlands are underlain mainly by red shale, sandstone, and lesser areas of limestone. The terrain is generally of low relief, low rolling hills, and wide valleys.

The major (water) aquifer in Somerset County is known as the Brunswick Shale. It has a limited capacity for water storage, and is usually filled during periods of normal precipitation. The limited ability of this aquifer to accept and transmit water is exhibited in the extreme differences between minimum and maximum flow in streams overlying the shale. In areas underlain by highly fractured shale containing mineral voids, the groundwater storage capacity is moderately high. Large diameter industrial wells in the Brunswick Formation of the Raritan Valley typically yield over 200 gallons per minute, and can exceed 500 gallons per minute.

Groundwater recharge within Somerset County is derived primarily from the local region. It comes either from precipitation falling on intake or outcrop areas, vertical leakage from nearby runoff, or from infiltration from adjacent water bodies. Variables such as depth to water table, runoff, vegetation, soil type, soil thickness, temperature, and topography can affect the amount of water available and able to enter the aquifer. Most of the natural infiltration in Somerset County occurs between late fall and early spring, when the ground is not frozen and vegetation is in early growth or

dormant. It is possible for the prolonged withdrawal of water to exceed the recharge potential in an aquifer, resulting in diminution of available water which can be economically pumped. Over-development can cause a serious and continuous decline in the water supply.

Natural groundwater quality is considered to be generally good in Somerset County. However, this quality can be affected by infiltration from surface sources, particularly in populated and industrialized areas. Contamination can come from such diverse sources as malfunctioning or improperly designed septic systems; infiltration of agricultural fertilizers such as nitrates, and pesticides; salt run-off from winter road de-icing; gas and oil products from leaking underground storage tanks; leachate from landfills; and, industrial discharges.

WATER CONSERVATION STRATEGIES. An adequate water supply is important to successful agriculture operations in Somerset County. Droughts in recent years have highlighted the precarious nature of the agriculture (and general) water supply, and the need for water conservation systems and regimens.

The State Agriculture Development Committee, through its Agricultural Smart Growth Plan, encourages farmers to “ ... work to accelerate the use of efficient water conservation technologies, such as drip irrigation. Identify and promote new and efficient methods to conduct water distribution on farms, utilizing farm ponds and water reuse options.”

The dominant field crops in Somerset County are corn, soybean and hay. These crops rely on rain and some groundwater for water needs, and as such water conservation strategies per se are difficult to implement. With nursery and greenhouse, sod, and vegetable farming, it is possible to implement conservation strategies such as drip irrigation, or watering crops in the cooler parts of the day so as to minimize evaporation. Water re-use is another possible option. For livestock, floats and timers in watering troughs can conserve water by negating the need for constantly running water to keep troughs full. Somerset County farmers should implement water conservation strategies whenever feasible, and include such in Conservation Plans whenever practicable.

D. Waste Management and Recycling

Waste management for the Township exists on several levels. Field crop production and nursery stock can create a large amount of agricultural byproducts. Additionally livestock production creates a great deal of organic waste byproducts that need to be carefully disposed of to avoid pollution issues. The following section, as provided by the Somerset County Draft Plan, highlights the current strategies employed by the County that are also subscribed to by the Township.

Management of livestock waste has serious implications for the quality of ground and surface waters. Unchecked, or poorly managed, these wastes can cause serious water quality problems by the introduction of unwanted microorganisms into natural systems. Poor management of animal waste can also cause disease among farm animals. Proper animal waste management is not only required, but is also a sign of good environmental stewardship, as is recycling of farm by-products whenever possible.

CONCENTRATED ANIMAL FEEDING OPERATIONS & ANIMAL FEED OPERATIONS. Concentrated Animal Feeding Operations (CAFO) are defined at N.J.A.C. 7:14A-2.13 (New Jersey Pollutant Discharge Elimination

System (NJPDES) as:

- Operations with more than 1,000 slaughter or feeder cattle, 700 dairy cattle, 2,500 swine, 500 horses or other animal populations. Somerset County does not have any operations that fit into this category; or,
- Operations with more than 300 slaughter or feeder cattle, 200 dairy cattle, 750 swine, 150 horses or other animal populations, and which discharge pollutants directly to state waterways either through manmade devices or as a result of water passing through the facility or having direct contact with confined animals. A number of Somerset County farms do fit into this latter category, and are required to have waste management plans to ensure that animal wastes are properly managed. In addition, any livestock operation receiving EQIP funds must have a waste management plan.

CAFOs and Animal Feeding Operations (AFO) have the potential to, or do cause, water pollution through the collection of large amounts of animal waste in relatively small areas. Mismanagement of the animal waste has the potential to cause large amounts of soil and groundwater contamination via introduction of the bacteria, fecal coliform, a known contaminant from animal farming operations. The state's agricultural community bears a responsibility to help protect and restore natural resources for which they are the stewards.

The NJDEP has outlined a statewide strategy to manage and regulate these operations. The strategy calls for NJDEP to administer CAFO permits and NJDA to administer the appropriate measures for AFOs. The permits and measures require development and implementation of comprehensive waste management plans, utilizing "animal waste standards", proposed by NJDA for adoption in late 2007. The strategy emphasizes the use of cost-effective voluntary measures, limiting the need for permits.

NJDEP, DIVISION OF WATER QUALITY - CAFOs. To protect the quality of surface and groundwater in and around animal farming operations, the NJDEP has adopted a general permit for managing and regulating CAFOs. The permit is administered through the New Jersey Pollutant Discharge Elimination System (NJPDES) regulations at N.J.A.C. 7:14A-2.13, under authority of the Water Pollution Control Act. In general, the permits require CAFOs to comply with the federal effluent limitation guidelines that prohibit discharge to state waters.

The New Jersey Department of Agriculture, State Soil Conservation Committee, Natural Resources Conservation Service and New Jersey Soil Conservation Districts have partnered with NJDEP to implement the general permit as part of a statewide strategy to control pollution from CAFOs.

RECYCLING. Recycling is an important part of natural resource conservation for the agriculture industry. Recycling saves natural resources, and also saves farmers money through creative reuse, such as using leaves and grass clippings to mulch and fertilize farm fields, and saving on solid waste disposal costs. Recycling reduces the amount of refuse finding its way to limited landfill space. Corn, soybeans and hay, the dominant field crops in Somerset County, use limited products which can be recycled, and as such limit recycling opportunities.

However, the nursery and greenhouse industry in the County does offer recycling opportunities for such things as nursery film, and potting and pesticide containers. Discussions with the Somerset County Solid Waste Management Division indicate that the County does not do any type of

agricultural recycling, and has no plans to do such. One of the reasons cited is lack of space at County facilities to operate such a recycling program. However, it was indicated that Somerset County may be interested in partnering with a neighboring county if it is logistically feasible to transport materials from Somerset County to the partner county.

E. Energy Conservation

Energy conservation has wide ranging implications, not only on the local environment but on a global scale. Climate change has been on the forefront of the world stage and strategies to combat the resulting issues have been promoted and encouraged. One such strategy is to conserve energy and find alternative energy production that does not further degrade the environment. The following section has been prepared as part of the County Draft Plan and reflect the hopes of the Township to encourage alternative energy sources and energy conservation practices. To date the Township has not amended or created new policies directly related to energy conservation. However, installation of alternative energy infrastructure (solar, wind) should not be permitted on the deed-restricted portion of a preserved farm.

SOLAR ENERGY. Solar energy can be harnessed via the installation of solar panels. This harnessed or stored energy can then be used to create electricity and provide heat. If excess electricity is generated, it can be sold back to the electric grid for a profit. The overall use of solar panels has greatly increased in New Jersey. EQIP does provide some funding for solar panels, and farmers interested in using this alternate energy source can contact the local NRCS office in Franklin Township for more information. This technology is being used in Bernards Township at a growing number of locations, including the Verizon campus, Fellowship Village and the Sorge Farm, which has produced solar powered electricity for a number of years, and sets an example for homeowners in the township.

WIND ENERGY. The power of a strong wind can be captured by turbines or windmills, turning such power into electricity. Expanding and evolving technology is making this option more attractive to farmers as a way to cut energy costs. According to the NJDA the northwestern part of New Jersey, which includes Somerset County, has ample and consistent enough wind power to make turbine energy feasible. One possible roadblock to use of wind turbines, is that few, if any, municipal ordinances allow the use of wind turbines.

ETHANOL. Ethanol is a renewable fuel “made by distilling the starch and sugar in a variety of plants.” It can then be blended into gasoline as an “oxygenate”, reducing air pollution. Its use may also reduce dependence on foreign oil, and the harmful environmental effects of oil drilling. Also, unlike the gasoline additive MTBE, Ethanol will not contaminate groundwater. Corn, a dominant field crop in Somerset County (along with hay and soybeans), could position Somerset County farmers to financially capitalize on the spreading movement towards ethanol-blended fuels. More study would need to be done on whether this would be profitable for County farmers, and how it would affect other local agriculture industries (for instance, how it would affect the dairy industry’s supply of, and price for, feed corn).

BIO-DIESEL. Petroleum diesel is an emitter of sulfur emissions, a major air pollutant. Bio-diesel, made from the oils of soybeans, is an alternative to petroleum diesel. This organic fuel can be blended and used in diesel engines without modification. The result is a significant reduction of the harmful fumes produced by pure petroleum diesel. As of 2004, there were 866 acres of soybeans that were farmland

assessed in Somerset County.

RENEWABLE ENERGY GRANT PROGRAMS. The NJDA provides the following information on renewable energy grant programs, which can help encourage the use of these energy sources:

NEW JERSEY'S CLEAN ENERGY PROGRAM. Administered by the New Jersey Board of Public Utilities, this program provides financial incentives to install clean energy systems, including fuel cells, solar energy, small wind and sustainable biomass equipment. Financial incentives are in the form of rebates, grants and loans. Additional information is at www.njcep.com/.

RENEWABLE ENERGY SYSTEMS AND ENERGY EFFICIENCY IMPROVEMENTS PROGRAM. As part of the 2002 Federal Farm Bill, this program "funds grants and loan guarantees to agricultural producers for assistance with purchasing renewable energy systems and making energy efficiency improvements". Final rules for loans and grants were adopted by the U.S. Department of Agriculture in July 2005. The proposed 2007 Farm Bill would reportedly continue this funding. Additional information can be found at the following website: www.rurdev.usda.gov/rbs/farmbill/index.html.

BIOMASS RESEARCH AND DEVELOPMENT INITIATIVE GRANTS. The United States Departments of Agriculture and Energy support development of biomass energy. Grants are available for research, development and demonstrations on bio-based products, bio-energy, bio-fuels, bio-power and additional related processes. In the recent past, grants have focused on development and demonstration projects that lead to greater commercialization. Additional information is available at the following website: <http://www.state.nj.us/agriculture/news/hottopics/topics060222.html>.

F. Outreach and Incentives

The Township's plan, prepared under the supervision of the A.A.C., is coordinated with the County FPP as the basis for the plan. As previously mentioned, the Township A.A.C. is working with groups such as the NJCF to ensure landowners in the town are aware of the preservation program, funding, and other assistance that may be available to them. According to the A.A.C., existing farmers are satisfied with programs available to them, but would like to see more assistance where environmental regulations may hinder farming activities. A request for tools to work with or around constraints would be appreciated.

VIII. AGRICULTURAL INDUSTRY SUSTAINABILITY, RETENTION AND PROMOTION⁴⁴

A. Existing Agricultural Industry Support

1. Right to Farm

New Jersey has enacted a strong right-to-farm statute, which applies statewide and the Township adopted a Right to Farm ordinance in 2004 that is consistent with the NJ SADC model ordinance. Member of the A.A.C. stated that since the adoption of the ordinance, they have not had any farmer, non-farmer conflicts.

New Jersey's Right-to-Farm Act provides commercial farm owners or operators with certain protections from restrictive municipal ordinances and public and private nuisance actions. Protected

⁴⁴ Somerset County Draft Farmland Preservation Plan, September 2007

agricultural activities include production, processing and packaging of agricultural products, farm market sales and agriculture-related educational and farm-based recreational activities. Commercial farms are also protected from unduly restrictive municipal regulations and public and private nuisance lawsuits.

These protections are available to commercial farms which:

- are operated in conformance with federal and state laws, agricultural management practices recommended by the New Jersey State Agricultural Development Committee (SADC) or site specific agricultural management practices;
- are not a direct threat to public health and safety; and
- are located in an area where agriculture was a permitted use under municipal zoning ordinance; or
- were operating as of December 13, 1997

The SADC seeks to preserve agricultural viability, an individual parcel's ability to sustain "a variety of agricultural operations that yield a reasonable economic return under normal conditions. . .". However, to maintain the agricultural viability of a region or sector, smaller agricultural parcels, which may continue in agriculture through hobby-farming or other forms of household subsidy, remain an important part of the fabric of the agricultural landscape. Both the SADC and the State Planning Commission seek to retain large masses of viable agricultural land. SADC policies recognize that agricultural parcels may become less viable if reduced in size.

While the New Jersey right-to-farm statutes extends protection to all farms in the State, incorporating right-to-farm language into the municipal ordinance makes a strong statement to those developing lands within the Township. Continuing development will undoubtedly be at odds with existing agricultural operations and nuisance conflicts will arise.

The Township helps to avoid conflict by informing residents of the benefits of farming to the community and offers mediation where needed. The A.A.C. uses community events such as Charter Day as an opportunity to educate the public and to talk with farmers about the preservation program. Members of the A.A.C. and farmers have also visited Township schools to talk to students about farming in Bernards Township.

2. Farmland Assessment

The Somerset County Draft Plan identifies the following summary on the Farmland Assessment Act of 1964:

"The Farmland Assessment program is a tax incentive which reduces property taxes on active commercial farmed land, thereby assisting farmers with a critical financial aspect in helping to keep land in farms. This tax incentive is made possible by the Farmland Assessment Act of 1964, N.J.S.A. 54:4-23.1 et seq."

The County further identifies the eligibility requirements as:

- The applicant must own the land;
- The property owner must apply annually for Farmland Assessment on or before August 1

- of the year immediately preceding the tax year;
- Land must be devoted to agricultural and/or horticultural uses for at least two years prior to the tax year;
- Land must consist of at least five contiguous farmed and/or woodland management plan acres. Land under or adjoining a farmhouse is not counted towards the minimum five acres;
- Gross sales of products from the land must average at least \$500 per year for the first five acres, plus an average of \$5.00 per acre for each acre over five. In the case of woodland or wetland, the income requirement is \$.50 per acre for any acreage over five. Dependent on the agricultural or horticultural products being produced, the farmer can also offer clear evidence of anticipated yearly gross sales, payments, or fees within a reasonable period of time; and,
- The property owner must represent that the land will continue in agricultural or horticultural use to the end of the tax year.

The Township uses the 1964 Farmland Assessment Act and subscribes to the eligibility standards it uses. As mentioned in previous sections, the Township currently has 1,134 acres under farmland assessment. Members of the A.A.C. have expressed the importance of Farmland Assessment as an incentive to continue farming. Especially in Bernards where the farming community is particularly small, farmers rely on assessment to continue their practices.

B. Additional Strategies

The following strategies for retaining farmland in the Township again exemplify the A.A.C.'s commitment to staying current with the changing needs of the agricultural industry. In addition, the Township supports and promotes the *Jersey Fresh*, *Jersey Grown*, and other state marketing materials, that bring attention and awareness to the Township's farming community, and help to preserve the history and character of the town.

1. Permit Streamlining

Municipalities play a key role in the preservation of farming as an industry. Without strong and active support from municipal governments, farming can be too costly and burdensome to be profitable or worthwhile. The viability of farming in New Jersey is impacted by many issues, including government regulation, development pressures and the economics of the marketplace. While land preservation is vital for maintaining a sufficient land base suitable for farming, sustaining a community's agricultural base requires support on many fronts, one of which is flexibility in government regulation. The Township's Right to Farm Ordinance is an active example of the municipality's commitment and support for agriculture. Support of municipal governments must also be actively practiced so that agriculture is seen as an important and permanent part of the community as a whole. An example of this support is advertising local farm stands and seasonal events and activities on Bernards' farms. This assists farmers in running their agriculture business and creates an atmosphere favorable to agriculture, its economics and profitability.

2. Agriculture vehicle movement

Bernards farmers have expressed the fact that there are no farms requiring signage for agricultural vehicle movement. There are few, if any, farms that require use of roadways for accessing farm fields. Should traffic ever become a problem and farmers find themselves dealing with conflicts with

suburban dwellers, signage can be installed to alert drivers to slow moving vehicles. The Township's Right to Farm ordinance also recognizes as a specific right the operation and transportation of large, slow moving equipment over roads.

3. Farm Labor Housing/Training

Labor supply in Bernards is not as integral to farming as it is in most communities. As many of the farmers in the Township have expressed, their operations are not of an appropriate size for housing agricultural labor. Crops in the Township occupy far less land than in most other communities and therefore, the need for housing labor is not as crucial.

4. Wildlife Management Strategies

Management of nuisance and crop damaging wildlife is critical to the short and long term sustainability of Bernards' agriculture industry. Crop damage from wildlife leads to economic loss for the farmer and/or land owner, and is a serious problem in the Township. Most damage is caused by a multitude of insects, as well as deer, turkey, Canada Geese and other wildlife. It is imperative to not only control and manage damage to crops, but also to do it in a manner which creates the least amount of collateral natural resource damage (i.e. limit pesticide use to the greatest extent possible, using natural pest control). State, county, and local government units must be sensitive to the negative economic impacts caused by crop damage, and support efforts to control it through education, technical and financial assistance, and regulatory flexibility.

Deer exclusion fencing may be effective for protecting produce, since produce is grown on relatively small plots of land. One key way for Bernards farmers to control damage from deer is through hunting of crop damaging animals. This hunting is allowed on private lands through depredation permits, issued by the New Jersey Department of Environmental Protection's (NJDEP) Fish and Wildlife Program. In many instances, this is the only short term solution to control damage of crops by what is widely considered an excessive deer population in the Township and the County. Bernards farmers continue to work with the NJDEP and NJDA, as well as counties and municipalities, to implement wildlife control strategies on privately and publicly owned land. One example of this cooperation is coordinated hunting of nuisance animals on county owned lands.

Another example of a coordinated effort to control nuisances is between municipalities and the New Jersey Department of Agriculture's Division of Plants Industry. This department works to safeguard New Jersey's plant resources from injurious insect and disease pests. The Division implements several programs for detection, inspection, eradication and control of insect pests, which helps to ensure that the public can enjoy high quality, pest-free agricultural products. In addition, "the Division oversees programs that certify plant stock for interstate and international shipments, protects forested communities from tree loss caused by the gypsy moth and Asian long-horned beetle, inspects honeybees for harmful bee diseases and pests, regulates the quality of plant seeds, and produces and releases beneficial insects to reduce crop and environmental damage and decrease dependence on chemical pesticides.

Protection of forest resources is important to Bernards farmers who harvest wood as part of woodland management plans on their farmland assessed properties. One important example of the Division of Plant Industry's work is in control of the gypsy moth. The gypsy moth is considered the most destructive defoliation forest insect pest in New Jersey. The Division's Gypsy Moth Suppression Program is a voluntary cooperative program involving local governments, county and state agencies,

as well as the USDA Forest Service. The Division promotes an integrated pest management approach, which “encourages natural controls to reduce gypsy moth feeding and subsequent tree loss.”

5. Agriculture Education and Training

The Township currently supports the efforts of the Rutgers Cooperative Research and Extension. The following is an outline provided by the county on the RCRE efforts:

“One educational link for Somerset County agricultural land owners and operators is to collaborate with the Rutgers Cooperative Research and Extension (RCRE) of Somerset County (associated with Cook College, Rutgers University). There is not a minimum or maximum size farm to which the RCRE will lend assistance, so long as it is farmland assessed.

RCRE of Somerset County also provides practical assistance to farmers. Examples include:

- Assistance in obtaining water certification and registration permits from the New Jersey Department of Environmental Protection, for groundwater and/or surface water allocations;
- Soil testing for fields and pastures;
- Assistance with obtaining farmer certificates for N.J. Division of Motor Vehicle registrations;
- Assistance with applications for “Outstanding Young Farmer” (OYF) nominations. OYF is a state award given annually by the NJDA which “recognizes the outstanding achievements of a young person engaged in farming in New Jersey” (*Outstanding Young Farmer’s Award*)¹⁴;
- Assistance with grant applications to the NJDA for various types of economic assistance. Examples include “Jersey Fresh” grants to advertise;
- Distribution of “Jersey Fresh” and “Jersey Grown” promotional material such as bumper stickers, banners and t-shirts;
- Assistance to connect owners of farmland with tenant farmers, so that land may stay in farmland assessment;
- Assist new farmers with various regulatory requirements, and acquaintance with various farmer organizations;
- Provide outreach through the RCRE of Somerset County Website, and at the annual 4-H Fair; and,
- Joint publication with the Somerset County Board of Agriculture of the quarterly “Green and Growing” newsletter, which is mailed to County farmers, and is also available at the RCRE of Somerset County website (<http://somerset.rcre.rutgers.edu/ag/greenandgrowing.html>).

IX. CONCLUSION

The Agricultural community, and its continued contribution to the quality of life in Bernards Township, is continually supported through farmland preservation, agricultural viability advocacy and public education efforts. The Bernards Township A.A.C. strives to identify issues facing local agricultural enterprises and provide recommendations for resolution; continue the sustainable use of economically viable farmland for production through farmland preservation options; promote local

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agriculture through municipal activities; provide education to agricultural community to meet future economic challenges; promote community interest in agriculturally related activities; foster responsible stewardship of land; promote communication and cooperation among farmers and the public; communicate, educate and promote contributions made by agriculture to the local community.⁴⁵

⁴⁵ Mission Statement and Goals of the Bernards Township Agricultural Advisory Committee
<http://www.bernards.org/Default1.aspx?Item=Agricultural%20Advisory%20Committee>

Green Buildings and Environmental Sustainability Plan for Bernards Township

Prepared by Bernards Township Planning Board and
Bernards Township Green Team
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INTRODUCTION

This Green Buildings and Environmental Sustainability Plan Element of the Master Plan (Green Plan Element) has been prepared in accordance with the Municipal Land Use Law (M.L.U.L.). N.J.S.A. 40:55D-28a provides that the Planning Board “may prepare and, after public hearing, adopt or amend a master plan or component parts thereof, to guide the use of lands within the municipality in a manner that protects public health and safety and promotes the general welfare.” The purpose of the Green Plan element is to establish goals, policies and strategies to protect natural resources and to create a healthy and sustainable economy and society.

Municipal planning for ‘green buildings and environmental sustainability’ is a new and dynamic field, and the 2008 statutory authorization for this plan element is among the most recent amendments to the Municipal Land Use Law. According to N.J.S.A. 40:55D-28b(16), a Green Buildings And Environmental Sustainability Plan Element:

“...shall provide for, encourage, and promote the efficient use of natural resources; consider the impact of buildings on the local, regional and global environment; allow ecosystems to function naturally; conserve and reuse water; treat storm water on site; and optimize climatic conditions through site orientation and design.”

The M.L.U.L. focus is on integrating local planning goals and objectives in a way that simultaneously addresses these several new provisions in the law. It raises the question “how can a municipality promote the efficient use of natural resources while at the same time allow ecosystems to function naturally?”

Community goals and objectives can be expected to change and evolve rapidly as new and innovative green approaches are conceived and developed, but it is critical that this plan element reinforce, and not detract from, Bernards’ desirable established community character as a carefully planned community.

Since the terms “green” and “sustainable” have become commonplace in today’s lexicon, it is important to define the terms “green” and “sustainable”. A glossary of “green” terms is appended to this plan, which includes the following two terms:

“Green design” is a general term implying a direction of improvement in design- i.e., continual improvement towards a whole and healthy integration of human activities with natural systems.

“Sustainability” is the capability to equitably meet the vital human needs of the present without compromising the ability of future generations to meet

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their own needs by preserving and protecting the area's ecosystems and natural resources. The concept of sustainability describes a condition in which human use of natural resources, required for the continuation of life, is in balance with nature's ability to replenish them.

When viewed together with the M.L.U.L. provisions for this Plan Element, a theme emerges centered on an underlying principle of conservation at a broad-based level.

More than one-half (nine out of fifteen) of the purposes of the M.L.U.L. direct the Planning Board to protect the environment, prevent urban sprawl, and protect the State's natural resources. These nine purposes of the law are listed below, which are consistent with the locally identified goals and objectives of this plan.

- (a) To encourage municipal action to guide the appropriate use of or development of all lands in the state, in a manner which will promote the public health, safety, morals and general welfare;
- (b) To secure safety from fire, flood, panic, and other natural and man-made disasters;
- (c) To provide adequate light, air and open space;
- (d) To ensure that the development of individual municipalities does not conflict with the development and general welfare of neighboring municipalities, the county and the State as a whole;
- (e) To promote the establishment of appropriate population densities and concentrations that will contribute to the well-being of persons, neighborhoods, communities and regions, and the preservation of the environment;
- (g) To provide sufficient space in appropriate locations for a variety of agricultural, residential, recreational, commercial, industrial uses, and open space both public and private, according to their respective environmental requirements in order to meet the needs of all New Jersey citizens;
- (j) To promote the conservation of historic sites and districts, open space, energy resources and valuable natural resources in the State and to prevent urban sprawl and degradation of the environment through improper use of the land;
- (n) To promote utilization of renewable energy sources; and
- (o) To promote the maximum practicable recovery and recycling of recyclable materials from municipal solid waste through the use of planning practices designed to incorporate the State Recycling Plan goals and to compliment municipal recycling programs.

The Planning Board has prepared this Green Plan element in furtherance of the M.L.U.L. purposes to conserve natural resources and promote the maintenance of a clean and healthy natural and built environment.

GOALS AND OBJECTIVES

The overriding goal of this Green Plan Element is to outline successful, sustainable practices to guide local business, industry, school, government and community policies, including efforts to reduce pollution, promote energy efficiency and use of renewable energy.

The following Master Plan Goals and Objectives are directly relevant to the Green Plan:

GOALS

1. To promote and encourage social comity, civic responsibility and neighborliness, which are key quality of life indicators in Bernards.
2. To promote sustainable practices in the design, construction and operation of public and private facilities.
3. To encourage an overarching respect for the natural environment and a desire to leave Bernards a better place as a result of these plans.
4. To retain the rural and agricultural character of the township to the greatest extent practicable.
5. To limit development to densities and intensities that can be adequately served by existing and planned private and municipal capital facilities and the natural and built infrastructure, and not purchasing additional wastewater treatment capacity to permit collection line extensions.
6. To limit development to densities and intensities that will retain the remaining natural areas of the Township and protect sensitive environmental areas.
7. To encourage the use of design techniques that result in energy and water conservation and minimize the impact of development on the everyday environment.
8. To continue to examine, and when appropriate, amend the Land Development Ordinance, to assure flexibility and excellence of design.
9. To examine new design approaches such as lot averaging and other open lands conservation techniques to determine their applicability in Bernards.
10. To promote the preservation of the Township's historic sites and districts.

OBJECTIVES

Land Use and Management

The following land use objectives serve to guide the master plan:

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1. Land use policies should strive to maintain and enhance community character, protect the integrity of existing neighborhoods and prevent the intrusion of incompatible new development.
2. The densities and intensities of permitted development on the limited remaining vacant lands should respect the environmental capabilities and limitations of these lands.
3. Groundwater aquifers and surface water quality and quantity should be protected, through the proper management of aquifer recharge areas, wetlands and their transition areas and fractured bedrock groundwater aquifers.
4. The Land Use Plan should assure a diversity and balance among various land uses that respects and reflects all the goals of the Master Plan.
5. Development densities and intensities should be planned at levels which do not exceed the capacity of the natural environment and current infrastructure, and growth-inducing infrastructure should not be extended into the rural countryside.

Green Buildings and Environmental Sustainability

1. Environmentally sensitive land should be protected through acquisitions and/or conservation easements.
2. Bernards should continue to promote and enhance local stewardship of open spaces.
3. Bernards should strive to create a more sustainable community through land use, transportation, local economies, and municipal services.
4. The Township should limit the impact of development and redevelopment on natural resources and promote regenerative measures to alleviate negative effects on individual sites and reduce the overall impact on the ecosystem. Historic preservation and adaptive reuse should be encouraged as sustainable green building techniques.
5. Encourage the use of alternative energy technologies, such as active solar collection for electricity or passive solar space heating without negative neighborhood visual impacts.
6. A coordinated policy should be created among municipal departments to purchase green goods and services as a means to save money, energy, and water, and to reduce waste.
7. The Township should promote sustainability, literacy, awareness, understanding, and action among municipal staff, residents, and the business and non-profit sectors of the community, including the need for and benefits of sustainable choices and behaviors.

SUSTAINABILITY IN BERNARDS TOWNSHIP

Planning for sustainability encompasses the decision-making processes for determining where and how to preserve and conserve, and where and how to grow. For a community to be “green,” it should be in harmony and balance with its natural environment. Harmony and balance includes protecting our natural resources and maintaining biodiversity, maintaining a healthy economy, and providing safe, healthy places to live, work, and recreate. It is important to achieve a dynamic balance among the environment, the economy and societal needs, collectively referred to as the “triple bottom line”.

To help bring the environment, the economy and the community into better balance, this plan addresses the interdependence of the three “P’s” of sustainability - *people*, *profit* and *planet*. To achieve a good balance of the “three P’s,” it is necessary to understand a community’s impact on its local, regional, and global environment. For these efforts to achieve maximum effectiveness, a wide range of stakeholders need to collaborate on a comprehensive approach that addresses the “triple bottom line” of sustainability.

For such a balance to be maintained, we need to thoroughly examine and improve our efforts to implement environmentally sound practices while recognizing that there are economic and social constraints that need to be considered when evaluating environmental initiatives. From a planning perspective, the intent is to examine and recommend green initiatives that are sustainable, balancing the environmental benefit against its cost both economically and socially. Bernards Township is committed to work towards becoming a sustainable community and has initiated efforts through the Environmental Commission, the Green Team, and the Sustainable Jersey program.

The Sustainable Jersey Program is for New Jersey municipalities that wish to control costs, save money, and take steps to sustain community quality of life over the long term through green planning. This innovative new program is an initiative of the NJ State League of Municipalities’ Mayors Committee for a Green Future, the Municipal Land Use Center at the College of New Jersey, the New Jersey Sustainable State Institute at Rutgers University, the NJDEP, the Rutgers Center for Green Building, the NJ Board of Public Utilities, and a coalition of non-profits, state agencies, and sustainability experts. Bernards Township earned Sustainable Jersey certification in November 2009. Certification offers technical resources for a municipality to implement their program and funding as it becomes available. However this is just one means to encourage sustainability throughout the community. Interested residents can learn more about Sustainable Jersey certification at www.sustainablejersey.com.

The Township has identified a policy to work towards sustainability in all municipal functions and operations, when appropriate. At the same time, a variety of

initiatives will be offered to inspire residents to move towards a lifestyle that minimizes human impact on the environment. Sustainability practices will be considered in the following activities:

- construction/occupation of new buildings
- retrofit and upgrade of existing buildings
- delivery of municipal services
- maintenance, enhancement, and operation of municipal facilities and properties
- maintenance, enhancement, and operation of our homes and commercial properties
- consumption and disposal of products
- education of our children and ourselves

Sustainability seeks to limit the intensity of potential impacts on the environment on a local and regional level. The intent of Bernards' sustainability movement is to progress beyond minimizing environmental impacts and toward regenerating ecosystem function, as well as repairing and remediating previous damage to the environment.

Green Plan Strategies

In order to achieve the goals outlined above this Green Plan Element is designed to outline successful, sustainable practices to guide local policies, including efforts to reduce pollution, promote energy efficiency and use of renewable energy. This can be achieved through:

- Municipal Planning and Design
- Resource Protection
- Energy Conservation
- Operations & Maintenance
- Education & Outreach

The greatest achievement of the plan will be to gain the involvement and acceptance of green initiatives in the local community. Continuing education and outreach are needed to lead in the direction of a more sustainable future.

MUNICIPAL PLANNING AND DESIGN

Creating a sustainable community is a top-down and a bottom-up approach. Through municipal planning and design, local officials will make planning decisions that will create a more sustainable community. Simultaneously, residents will work together to take action and provide necessary feedback that will determine the success of the Township's efforts toward sustainability.

This plan considers a number of larger issues to lessen the Township's environmental impact. Allocating resources in a responsible, more effective and efficient manner, will be a key element in land use planning, land preservation, and creating community vitality. Like much of New Jersey, Bernards Township is a product of sprawl-induced rapid development that did not account for sustainability. While the Township has done an excellent job of acquiring open space throughout the community, parcels of open land remain, presenting an opportunity to more wisely and proactively plan for their use.

In 2007, the Township Committee created the Bernards Township Green Team Advisory Committee to advise the Township Committee on ways to improve municipal operations with "Green" initiatives that are economically and environmentally sound through research and evaluation. The Green Team's goals were to audit municipal facilities, evaluate municipal fleet vehicles, and report on suggested best practices for greener municipal operations. Having met those goals, new goals were given in January, 2010: Maintain certification, and strive for the next certification level in Sustainable Jersey; advice on potential renewable energy projects at municipal facilities; and maintain and enhance the www.bernards.org based "Green Guide" as a reference for our citizens and a resource to other communities.

In October 2007, the Green Team prepared a report entitled, Sustainability Planning in Bernards Township (Appendix __). This report identifies areas where the Township could improve policies toward becoming a more sustainable community. For example, promoting alternative modes of transportation throughout the community requires that facilities be put in place to accommodate all users.

While Bernards Township features many bike paths and trails through parks and recreation areas, the Township should consider additional or improved bike paths in heavy traffic areas and areas where they would be used most. Areas that generate heavy traffic, like schools and local shopping centers, could benefit from the addition of bike paths to provide alternative means of travel and to reduce motor vehicle traffic, thereby reducing vehicle trips, idling and tailpipe emissions. The Circulation Plan discusses the walking and biking pathways serving as connections between community facilities (commercial and employment and historic sites, parks, playgrounds, schools, transportation nodes). Such features,

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which reduce motor vehicle use and help to improve air quality, should be encouraged in all site plan and subdivision applications.

In addition, the Township has been a leader in energy efficiency (see Energy Conservation) and encourages green building practices, such as utilizing the LEED rating system, which may be considered for use as a model in the Township's planning and future ordinances.

In summary, to achieve sustainability goals in Municipal Planning and Design, the Township should consider a comprehensive and holistic view of planning decisions and consider measures to:

- a. Encourage design options that create a visually pleasing pedestrian experience, that preserve greenfields and natural resources, and that promote a sense of community.
- b. Promote transportation alternatives to the automobile and encourage the single-occupancy driver to utilize those alternatives.
- c. Encourage practices and opportunities with local farmers.
- d. Encourage local businesses to adopt green business practices.
- e. Promote sustainability in municipal services to increase energy efficiency, protect and properly manage wildlife areas, and conserve water.
- f. Encourage the utilization of green building standards and integration of renewable energy technologies for new or renovated buildings that can reuse materials, minimize environmental impact, and reduce future energy costs through innovative construction.

RESOURCE PROTECTION

Development and redevelopment, which modifies the natural features of individual sites, can also have a greater impact on the surrounding ecosystem. Regenerative design objectives encourage development, preservation and restoration practices that limit environmental impact. Bernards Township should promote regenerative design principles that are aimed at multiple objectives including economic savings, remediation or restoration of natural systems that bring back the resource's natural state and design that improves quality of life. Regenerative design objectives applied to agricultural lands, open spaces, soils, and greenways can serve to improve natural function and increase the utility of these productive landscapes for people and for wildlife.

WATER

Bernards Township's stormwater management systems include drainage basins and storm sewers, which are highly effective in removing flood water from the community. Most of Bernards' roads are outfitted with Belgian block curbing and storm sewer systems that collect stormwater and nonpoint pollutants into storm sewers that discharge to surface waters. Proper maintenance of storm sewers and drainage basins can extend the life and function of these systems. Basin maintenance can improve the groundwater recharge function of these structures and reduce stormwater flows to surface waters. The section on surface water in the Conservation Plan addresses the benefits of natural stormwater management techniques to protect local waters from pollution.

The reduction of pesticide, herbicide and fertilizer use on landscaping and lawn areas decreases the amount of non-point source pollution entering local waterways as well as the groundwater regime. Integrated Pest Management (IPM) is a method of managing insects, undesired plants, and plant diseases with the tools that are least likely to impact human health or the environment. In 2008, Resolution #080520 established an Integrated Pest Management (IPM) policy within the Township. Preventing pollutants from entering the storm sewer system can significantly reduce nitrogen pollutant loads in stormwater and serve to improve water quality and biodiversity in streams and rivers in Bernards as well as downstream.

Snow removal is also a concern as water quality is threatened with every application of salt during winter weather. According to the Township Public Works Department, "deicers, primarily salt, are used regularly in a sensible application. At times other environmentally safe additives are used to enhance the deicing ability of salt at lower temperatures." The Township should consider utilizing the environmentally-safe option for deicing over traditional road salting.

WILDLIFE & VEGETATION

The Township's Conservation Plan states that 50% of Bernards Township's land mass is categorized as habitat suitable to threatened or endangered species. In order to protect these critical habitats from further degradation and to promote species diversity, the Township should consider inventorying species in the community, identify their habitat requirements, and monitor the effectiveness of policies put in place to protect these habitats over time. Bernards has adopted a Natural Resources Inventory (NRI) and established a Community Forestry Program, both of which can help to educate the public and continue to inform data sources such as the NJ Landscape Project.

LIGHT POLLUTION

Street lights, security lights, decorative lighting – all of these become an increasing issue as population growth leads to new homes and more light. A 1996 study by the NJ Light Pollution Study Commission found that the effects of light pollution include glare, energy waste, light trespass (nuisance light) and sky glow. The study recommended twelve strategies to reduce light pollution. Some of the recommendations include: aiming of lighting; public awareness of light pollution; designation of dark sky areas; and other potential guidelines for the development of local ordinances. Using reduced voltage in outdoor decorative lighting will serve to dim and reduce lighting impacts on the dark sky and reduce energy consumption that can yield important energy cost saving benefits.

AIR QUALITY

The Township currently has an ordinance in place banning excessive idling of all motor vehicles within the Township; however there is a lack of public awareness of the ordinance. In Bernards there are a number of locations where idling occurs: at convenience stores, at bus stops, in parking lots, in drive-thru service lanes (i.e. bank or gas station) and in lines of cars waiting to pick up or drop off children at schools. Bernards should develop a public awareness campaign to reduce the amount of idling that occurs in the Township.

In summary, to promote enhanced protection and restoration of the Township's natural resources, the Township, in partnership with local organizations, should consider:

- a. Adopting or refining Water Quality Best Management Practices (BMP's) to protect the quality of surface waters and promote healthy wildlife habitats.
- b. Encourage land use practices that reduce the potential impact to surface waters from non-point source pollution.
- c. Conducting an inventory of wildlife habitat to evaluate best practices for preserving and monitoring of wildlife and ecology.
- d. Reducing light pollution and designating "dark sky" areas where limited exterior lighting is permitted.

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- e. Promote and enforce additional anti-idling policies to improve air quality.

ENERGY CONSERVATION

According to the U.S. Department of Energy, buildings consume approximately 37% of the energy and 68% of the electricity produced in the United States annually. In addition, burning of fossil-based fuels to generate electricity releases carbon dioxide, which contributes to global climate change.¹ Development of efficient energy use practices within a building helps to reduce the amount of electricity used and reduces the demand for carbon-based fuels. Innovative technologies, such as solar, wind, and geothermal power, can also reduce the need for extraction of additional fossil fuels to generate electricity.

The 2007 Green Team report “Sustainability Planning in Bernards Township” found that the largest energy consumers under the control of Bernards Township are the Municipal Building, the Police Department, the Library, the Health Department, and the Department of Public Works. Average monthly energy expenses for these buildings combined is about \$15,000. The Green Team further recommended that Bernards Township reduce the combined total of energy expenses by one third, to \$10,000.

Since the release of that report, the Township has promoted better insulation in homes, encouraged the use of more energy-efficient appliances, and promoted other innovative techniques to reduce the community’s dependence on fossil fuels.

In summary, to ensure greater energy independence, the Township should advance strategies designed to:

- a. Promote the construction of green buildings.
- b. Promote utilization of context sensitive and compatible green rehabilitation strategies for existing buildings.
- c. Encourage the utilization of resources through the Sustainable Jersey program to increase energy efficiency and energy conservation.
- d. Encourage Township residents to participate in the NJ CleanPower Choice Program and to consider renewable energy sources and technologies when possible. (More information on the NJ CleanPower Choice Program is available at: <http://www.njcleanenergy.com/renewable-energy/programs/cleanpower-choice-program/new-jersey-cleanpower-choice-program>).
- e. Promote awareness education among Township staff, businesses, schools and residents on the benefits of energy conservation.

¹ US Green Building Council, New Construction & Major Renovation Version 2.2 Reference Guide. 2nd Edition, September 2006.

OPERATIONS & MAINTENANCE

Bernards Township has established a policy on purchasing that works to minimize the impacts on human health and the natural environment. A coordinated policy for environmentally preferable purchasing (EPP) of green goods and services, as an alternative to potentially harmful products can save residents, government and businesses money, energy and water and reduce waste. Green purchasing also takes into account the raw materials used to manufacture the product, the production itself, packaging and distribution and the distance of transporting the product to the final destination.

The Township's integrated policy on the maintenance of lawns and landscaping requires the use of natural pesticides and fertilizers, thereby reducing the potential to degrade local waterways and groundwater sources. The use of drought-tolerant, hardy varieties of grass can reduce the need for watering and fertilization in municipal parks. The Township should expand outreach regarding this Township-wide policy to individual homeowners and businesses.

In addition, the Township maintains and continually adds to procurement measures, environmentally-preferable products and services in an effort to support green and sustainable industries. This growing list also guides the Township to utilize the EPP program to avoid the purchase of harmful products. This helps protect employees who spend significant amounts of time working with potentially harmful products. The Rutgers website at <http://www.cook.rutgers.edu/~envpurchase/> provides a variety of EPP lists that will assist Bernards Township through the development of their EPP program. The categories of lists include: Paper, Electronics, Packaging, Building Materials, Chemicals/Cleaning, Landscaping and Other.

In summary, to advance an integrated sustainability policy within municipal operations, the Township should:

- a. Encourage all municipal departments to establish a coordinated Green Purchasing Program for the purchase of goods and services.
- b. Expand the green Grounds and Maintenance Program to ensure that municipally-maintained parks, gardens, and landscaped areas are managed in the most efficient and environmentally friendly manner.
- c. Encourage recycling and waste reduction throughout all municipal departments, and among residents, businesses, schools, and other public facilities.
- d. Continue to expand recycling programs.

EDUCATION & OUTREACH

An aware and educated public can provide support and feedback to policy-makers as short-term and long-term actions are implemented. The education and outreach process is a continuous effort through which Bernards Township can model and share sustainable practices, such as conserving energy, green purchasing, recycling, etc.

This Green Plan Element offers many opportunities for Township residents to participate in reducing the individual, as well as the community, environmental footprint. The success of the plan will be measured by a change in behavior among various stakeholders, who in turn, learn about sustainability initiatives and implement sustainable practices.

Presently, the Township involves the public in a number of community activities such as Charter Day and Community Wildlife Habitat projects. In addition, the Township and Green Team have published several information pieces to educate the public about topics like cost effective home improvements, recycling guidelines, and best use practices for energy consuming appliances, energy saving computing practices, and best office practices.

In summary, to ensure an educated, involved, and informed public body, the Township should strive to:

- a. Provide opportunities for sustainability education throughout all sectors of the community.
- b. Promote awareness and education on energy conservation through the use of established materials such as the Bernards Township Green Guide, and through media outlets that exist in the Township.
- c. Encourage community involvement and support volunteerism to increase the level of participation in green initiatives and community projects.
- d. Encourage residents to initiate their own sustainability projects, to share their experiences and to provide suggestions for such actions to the Township.

SUMMARY

Bernards Township is acknowledged as a leader in New Jersey's green movement through its 2009 Sustainable Jersey certification. Further success in becoming a more sustainable community will occur through local planning choices that are consistent with the green buildings and environmental sustainability goals and objectives of this plan. Through the decisions, practices and policies of local government and Bernards' residents, the community will achieve success in its efforts to strive for a sustainable future.

GLOSSARY OF GREEN TERMS

Adaptive Reuse The process of adapting old structures for purposes other than those initially intended. An example of adaptive reuse could include transforming an old warehouse or factory into apartments or lofts.

Context-Sensitive Design Roadway design that is in harmony with the community and preserves the environmental, scenic, aesthetic, historic, and natural resource values of an area.

Environmental Footprint A measure of human demand on the Earth's [ecosystems](#), it compares human demand with planet [Earth's ecological](#) capacity to regenerate. It represents the amount of biologically productive land and sea area needed to regenerate the resources a human [population](#) consumes and to absorb and render harmless the corresponding waste. Using this assessment, it is possible to estimate how much of the [Earth](#) (or how many planet Earths) it would take to support humanity if everybody lived a given lifestyle. For 2005, humanity's total ecological footprint was estimated at 1.3 planet Earths - in other words, humanity uses ecological services 1.3 times as fast as Earth can renew them.²

Environmentally Preferable Purchasing (EPP) Program initiated by former President Bill Clinton in September 1998, with Executive Order (EO)13101, entitled "Greening the Government through Waste Prevention, Recycling and Federal Acquisition." The program encourages the purchase of products or services that "have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance or disposal of the product or service."³

² Global Footprint Network. www.footprintnetwork.org

³ US EPA, EPP guidelines <http://www.epa.gov/epp/pubs/guidance/finalguidance.htm>

Fossil Fuels	Fuels formed by natural resources such as anaerobic decomposition of buried dead organisms. Fossil fuels range from volatile materials with low carbon-hydrogen ratios like methane, to liquid petroleum, to nonvolatile materials composed of almost pure carbon, like anthracite coal. Fossil fuels are non-renewable (see definition below) resources because they take millions of years to form, and reserves are being depleted much faster than new ones are being formed.
Geothermal Power	Power extracted from heat stored in the earth. The Earth's geothermal resources are theoretically more than adequate to supply humanity's energy needs, but only a very small fraction of it may be profitably exploited.
Green Business	A business that manufactures and/or sells organic and eco-friendly products. Successful green businesses not only benefit the environment, but also use green business practices as means to market their products. ⁴
Green Goods and Services	Organic and eco-friendly products, typically manufactured and sold by a green business.
Greenfield	Any parcel of land that has not had any previous type of development on site. Greenfield sites are almost always found in suburban or rural areas. Parcels of land include but are not limited to undeveloped farmlands and woodlands.
Greenhouse Gas	Gases in the atmosphere that absorb and emit radiation within the thermal infrared range. The main greenhouse gases in the Earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone.
Indicators	Provide direction for further investigation and progress towards achieving goals; they do not provide the solutions themselves. ⁵ Examples include: average vehicle miles traveled by residents of the community; average energy use of all government facilities in the

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⁵ NJ Sustainable State Institute www.njssi.org

community; voter turnout at primary elections, etc.

LEED™

The Leadership in Energy and Environmental Design (LEED™) Green Building Rating System was developed by the U.S. Green Building Council, a non-profit trade organization that promotes sustainability in building design and construction. LEED™-certified buildings use resources more efficiently when compared to conventional buildings that are simply built to code.

**Non-Point Source
Pollution (NPS)**

Generally results from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification. Any source of water pollution that does not meet the legal definition of "point source" in section 502(14) of the Clean Water Act (see definition of Point Source Pollution, below). Non-point sources can include, but are not limited to: excess fertilizers, herbicides and insecticides from agricultural lands and residential areas; oil, grease and toxic chemicals from urban runoff and energy production; sediment from improperly managed construction sites, crop and forest lands, and eroding streambanks; salt from de-icing and irrigation practices and acid drainage from abandoned mines; bacteria and nutrients from livestock, pet wastes and faulty septic systems; and atmospheric deposition and hydromodification.

**Non-Renewable
Resource**

A natural resource that cannot be produced, re-grown, regenerated, or reused on a scale which can sustain its consumption rate.

**Point Source
Pollution**

Any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. Does not include agricultural storm water discharges and return flows from irrigated agriculture.

**Raw Materials
Regeneration**

the process of restoring, renewing or revitalizing sources of energy and materials, creating sustainable systems that integrate the needs of society with the integrity of nature.

Remediation

Removal of pollution or contaminants from environmental media such as soil, groundwater, sediment, or surface water for the general protection of human health and the environment or from a brownfield site intended for redevelopment.

Renewable Resource

Those replaced by natural processes at a rate comparable or faster than its rate of consumption by humans. May also include commodities such as wood, paper, and leather, if harvesting is performed in a sustainable manner.

Restoration

Renewing a degraded, damaged, or destroyed ecosystem through active human intervention.

Solar Power

The capture of energy from sunlight. The energy can be in two forms: heat or electricity. Heat from the sun can be captured to heat water or air; photovoltaics (PV) generate electricity directly from solar rays. Power gained from PV can reduce or eliminate the need for purchased electricity (usually electricity gained from burning fossil fuels) or, if energy gained from PV exceeds the home's requirements, the extra electricity can be sold back to the home's supplier of energy, typically for credit.

Sustainability

The capability to equitably meet the vital human needs of the present without compromising the ability of future generations to meet their own needs by preserving and protecting the area's ecosystems and natural resources. The concept of sustainability describes a condition in which human use of natural resources, required for the continuation of life, is in balance with Nature's ability to replenish them.⁶

⁶ American Planning Association – Policy Guide on Planning for Sustainability – p. 3

Targets quantitative measures that identify what a community needs to do to achieve sustainability. Targets identify if a community is generally moving in the right direction and how far it still has to go to achieve sustainability.

Triple Bottom Line (TBL) A method of accounting that attempts to describe the social and environmental impact of an organization's activities, in a measurable way, to its economic performance in order to show improvement or to make evaluation more in-depth.

Wind Power The conversion of wind energy into a useful form of energy, such as using wind turbines to make electricity, wind mills for mechanical power, or wind pumps for pumping water or drainage.

RELATED TERMS NOT FOUND IN THIS PLAN

Brownfield	Sites that are abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contaminations
Carbon Footprint	A measure of the impact our activities have on the environment, and in particular climate change. It relates to the amount of greenhouse gases produced in our day-to-day lives through burning fossil fuels for electricity, heating and transportation etc. ⁷
High Performance Design	Design that realizes high efficiency and reduced impact in the building structure, operations, and site activities; Focuses on technical efficiency; May limit embracing the larger natural system benefits.
Green Design	A general term implying a direction of improvement in design- i.e., continual improvement towards a whole and healthy integration of human activities with natural systems.
LEED Accredited Professional (LEED-AP)	A professional accreditation indicating professional excellence and a strong depth of knowledge and practical understanding of the LEED Rating Systems.
Sustainable Design	See "Green Design" with an emphasis on reaching a point of being able to sustain the health of the planet's organisms and systems over time.
Restorative Design	A design approach that uses the activities of design and building to restore the capability of local natural systems to a healthy state of self organization.
Regenerative Design	A design approach, in which an ecosystem restores, renews, or revitalizes its own sources of energy and materials, creating a sustainable system that integrates the needs of society with the integrity of nature. Based on a closed loop input-output model in which the output is greater than or equal to the input with all outputs viable and all inputs accounted for. The model is meant to be applied to many different aspects of

⁷ www.carbonfootprint.org

human habitation such as urban environments, buildings, economics, industry and social systems.

Whole System

Integration Process

A process that seeks to optimize (make the best use of) the relationships among key systems and entities in the service of desired objectives. Typically requires that the smallest unit of design be the largest manageable watershed within which a project resides.

Appendix A

“Sustainable Planning in Bernards Township” prepared October 2007
(see attached)



Sustainable Planning in Bernards Township

October 2007

Introduction

According to coolnewjersey.org, “New Jersey has about .1 percent of the world’s population; but produces .5 percent of the planet’s greenhouse gas emissions.” The following study was conducted to help Bernards Township reduce our resource pollution and curb our greenhouse gas emissions through making changes in our operations and purchasing practices. We have chosen the following four pronged approach to begin action against climate change and pollution:

- Internal Efficiency
- Legislation
- Community Incentives
- Education

This report will refer to these four prongs throughout, while focusing on many of the important issues that play a role in greenhouse gas emission and resource pollution. Topics to be covered include: Energy, Transportation, Municipal Planning and Design, Operation, Public Awareness, and finally suggested initiatives. The Green Team and its initiative were established by Resolution #070292 which states:

WHEREAS, the Township Committee of the Township of Bernards strives to save tax dollars, assure clean air and water, improve working and living environments to build a community that is sustainable economically, environmentally and socially; a community which would thrive well into the new century; and

WHEREAS, the Township Committee of the Township of Bernards wishes to build a model of government which benefits our residents now and far into the future with green community initiatives which are easy to replicate and affordable to implement; and

WHEREAS, in an attempt to focus attention on “Green” issues, the Township Committee wishes to establish a Green Team Advisory Committee (GTA); and

WHEREAS, the Township Committee of the Township of Bernards wants to begin the process of focusing on “Green” issues by starting with audits of municipality facilities and operations first.

WHEREAS, the Township Committee of the Township of Bernards has appropriated “seed money” in their 2007 budget to begin the process of making its operations greener, and more environmentally friendly beginning with energy audits of the Township’s facilities to pinpoint the most effective ways to reduce energy consumption; and

WHEREAS, solar power, changes to fleet purchasing and maintenance, water quality improvements, and operational changes will all be considered as the Township moves to do their share to lessen the environmental impact of its operations.

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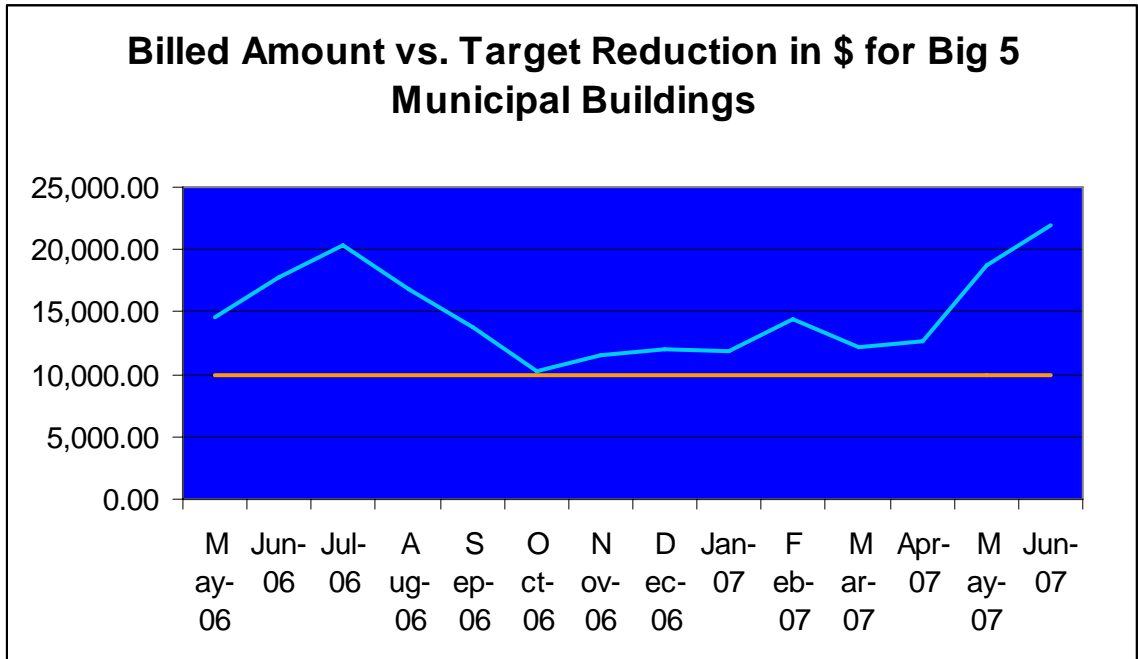
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I. Energy

Energy, which encompasses the costs of running appliances, lighting, heating and cooling, and communications equipment is not only a large polluter but a crippling cost for many municipalities. Many machines pull energy from the grid even when they are not in use, not during business hours, and almost all facilities consume the most energy during peak hours, when the rates are also at their highest. The source of pollution from the use of energy is not something easily witnessed either, because the most pollutants are released at the point of generation, at the coal burning plants that supply us with the majority of our power.



The utility of electrical power is enormous, but the supply itself is often unintentionally wasted by outdated appliances and practices. Modern technology has supplied us with new innovative appliances that are lighter, faster, and more energy efficient, as well as ways individuals, corporations, and governments can make energy of their own. Although many of these technologies have a high up front cost, their cost is almost always justifiable in a life cycle analysis of their utility.

The largest energy consumers under the control of Bernards Township are the Municipal Building, the Police Department, the Library, the Health Department, and the Department of Public Works. Average monthly energy expenses for these buildings combined is about \$15,000. It is recommended that Bernards Township make reducing the combined total of energy expenses by one third, to \$10,000.

- **Internal Efficiency –**

1. **Energy Audit** – Can be performed internally by skilled employees or externally by a firm or individual with an architectural/engineering background. Energy Audits can determine cost saving opportunities concerning the use of electricity, gas, water, and fossil fuels. Auditors will typically need information such as 1 to 2 years of utility bills, entry point of utility, square footage of buildings, location and service area of meters, footprint of building, land area of property, and structural information about the buildings

being analyzed. An audit can help to determine cost saving opportunities that involve little or no investment as well as outline capital improvements that will improve efficiency. The services of an auditor, however, are not necessary for making more energy efficient and cost-effective improvements to your facilities. Bernards Township has not yet had an energy audit performed on any facilities but has consulted with several firms about an energy audit in some of our buildings that carry the largest energy load: the Municipal Building, Police Department, Department of Public Works, Library, and Health Department.

Firms offering this service:

<u>Firm</u>	<u>Estimated Cost</u>
PMK Group Contact: James Ferris P.E., Executive Vice President Operations (908) 497-8900 jferris@pmkgroup.com www.pmkgroup.com	\$0.10 per square foot, per consultation with James Ferris, has worked with Union, Mercer, Monmouth...
Metro Energy Solutions (973) 439-7283 conserve@metroenergysolutions.com www.metroenergysolutions.com	Firm used by Montclair, cost Montclair between \$5,000 and \$10,000 for 13 buildings per Gray Russell, Montclair Township Environmental Affairs Coordinator
Advanced Solar Products, Inc. (609) 466-4495 Contact: Edward M. Seliga, Vice President ed@advancedsolarproducts.com Contact: Doreen Holley, Residential/Commercial Sales Doreen@advancedsolarproducts.com www.advancedsolarproducts.com	No price for energy audit indicated upon consultation with Bernards Township, more interested in bidding on an energy audit if in conjunction with a solar panel project

<u>Big 5 Buildings</u>	<u>Square Footage</u>
Municipal Building	14,433
Police Department	6,328
Library	26,900
Department of Public Works	22,260
Health Department	2,337

Bernards Township will contract with PMK Group on August 28th, 2007 and from them we hope to be supplied information about our current energy usage, overlooked opportunities for saving, and assistance in drawing plans for a solar panel array on the Department of Public Works. They have been supplied with the square footages as well as plans for the buildings listed above. We also plan to consult with them about energy procurement. A copy of their proposal can be found attached at **Appendix A**.

Energy Audit Executive Summary:



2. Solar Power – Solar power from the installation of Solar Panels can be a great investment for a municipality not only because it is a cost-effective way to meet energy needs, but because it makes a statement about conserving energy and often inspires individuals to make independent conservation geared changes. Solar power serves the unique purpose of decreasing electricity bills and usage in two ways. First, the electricity produced by solar panels feeds into the electrical grid of the property in question, thus reducing the amount of electricity used coming from the electrical provider. Next, solar panels characteristically produce the most power when the sun is at its strongest, thus offsetting the amount of energy used during sunny peak use hours, and allowing the avoidance of the heavier fees associated with such hours.

The New Jersey Clean Energy Program made a grant available for the installation of photovoltaic solar panels, among other clean energy sources, which will cover 50-60% of the up-front cost of buying and installing panels. However, because of its popularity the value of this grant, the Customer Onsite Renewable Energy Program (CORE), is expected to decrease after August 31st, 2007, so it is imperative to have plans for a solar system drawn, and grant application submitted as quickly as possible. In addition, the Clean Energy Program is offering an another incentive for the installation of solar power systems: SRECs. Solar Renewable Energy Certificates (SRECs) are credits awarded to an energy producing solar power system in the quantity of 1 SREC per 1,000 Kilowatt hours. The New Jersey Board of Public Utilities will require energy suppliers to produce roughly 22.5% of their electricity from clean energy sources by 2020, and are planning a more aggressive clean energy plan for the years beyond 2020 which will be released no later than 2018 (www.ucsusa.org). Energy providers such as JCP&L can do this by building their own clean energy system, but they can also meet this requirement by purchasing SRECs from owners of private clean energy systems. Pricing for one SREC typically falls between \$150 and \$250. SRECs can also be sold to corporations or private investors hoping to meet clean energy goals. The price of an SREC is only expected to increase as more organizations are required to get more of their power from clean energy sources.

This may be the perfect time to invest in solar power because of the climbing cost of electricity. New Jersey has removed the rate caps that held electrical rates steady in

the past, in an effort to deregulate the industry. Since the caps were removed increases in electricity rates in the State of New Jersey were seen across the board, and with increased demand these rates are only expected to rise.

Although it is no longer the site of interest, Bernards Township staff did receive information on the costs, expected utility, and life cycle pay off period of hosting a solar panel system on the roof of the Mountain Park Maintenance Garage from The Solar Center.

Projected Cost:	\$78,900.00	
Annual kWh Production:	11,919	
System Size (sq/ft):	908	
Projected Savings per kWh (2006):	\$0.135	
Projected Savings in First Year:		\$1,609.05
Revenue per SREC:	\$225.00	
Annual Revenue from SRECs:		\$2,681.75
First Year Annual Return:		\$4,290.80
Proposed Panels:	Sharp 208 watt	Model: ND-208U1
Quote from The Solar Center, Appendix B.		

The simple payback period for this investment at the listed price and annual return is about 7 years if both the CORE grant and SRECs are attained. Moreover, solar panels have an expected life of 25 years, so depending on energy usage, the period between year 7 and as long as the panels are still effective the township can expect extremely discounted energy bills, or perhaps even earning a profit from SREC sales.

After a consultation with Advanced Solar Products Inc., the site of interest has shifted from the Mountain Park Maintenance Building to the Department of Public Works. The DPW building is more ideal because of its large, flat roof that is free of shade spots because of the absence of trees immediately around the building. This site would also be able to accommodate a larger solar array, produce more electricity, and more opportunity to earn SRECs.

In addition, a Solar Energy system can also be acquired through a power-purchase agreement. In such an agreement, a third-party firm agrees to install a solar energy system on a site location belonging to the customer, who pays for the power generated by the solar system and used by their facility. With a third-party agreement, the Municipality would be able to buy the power supplied by the on site solar energy system, which would run more expensive than conventional power, but not require the high up front cost of constructing a independent system. Ownership of a solar energy system constructed by a third party is typically turned over to the customer in a period less than 10 years. However, if a solar power system is acquired through a power purchase agreement the Township would not be eligible for the CORE grant, and only the owner is allowed to sell the SRECs, therefore this revenue would be lost to the 3rd party during the time period in which they own the system.

Featured in the Bernardsville news on Thursday, August 2nd was a story reporting that Ridge High School is to get solar panels on the roof of their new gymnasium, which is currently under construction. It is reported that they plan to spend between \$650,000 and \$775,000 on a solar system that would also pay itself off in 7 years. They have

applied for and are factoring both the CORE grant and SRECs into their anticipated payback period. Also reported by the Bernardsville news, they are expecting the CORE rebate to lessen the project's cost to \$325,000 to \$450,000.

Judging by the prices quoted it is evident that they are planning the installation of a large panel system, while the projected costs for the Mountain Park system are lower, because the system was relatively small. Size and price of the solar panel system sought for the DPW will likely be small and less costly than the one planned for Ridge High School, but bigger and more costly than Mountain Park.

3. Light Retrofitting – Florescent lighting is far more energy efficient than standard incandescent light bulbs, but there has been much debate about its environmental impact because florescent bulbs contain small amounts of mercury. Mercury is a naturally occurring substance, but can be harmful to the environment if it finds its way into the air or water supply. However, according to the EPA the largest amount of mercury finds its way into the environment from burning fossil fuels. So while compact florescent bulbs contain the mercury an incandescent bulb does not, in the same amount of time incandescent bulbs require more electricity from fossil fuel burning electric plants to run, thus being the bigger mercury polluters. In addition, florescent bulbs disposed of correctly pose no threat to the environment. Florescent bulbs and other mercury containing products are to be disposed of at Somerset County Hazardous Waste Days; Bernards Township disposes of all mercury containing florescent tubes and compact florescent lights via this event. The EPA Fact Sheet on Compact Florescent Lights can be found attached as **Appendix C**.

Undoubtedly the most cost-effective and immediate savings change a Municipality can make is to replace incandescent light bulbs in Municipal offices and other facilities with Compact Florescent Lights. A 14 watt CFL can replace a 60 watt incandescent in the same light fixture, and produce the same amount of soft white light. A typical CFL of this type costs between \$3 and \$4 dollars, while its incandescent counterpart typically comes in a multi-pack with a price breakdown of under \$0.50 cents a bulb. Although the sticker price of incandescent bulbs is lower, they consume more energy than and have 1/5 the lifespan of CFLs.

Energy Savings Calculator for Replacing Light Bulbs

	Incandescent Light Bulbs	CFL (Compact Fluorescent Light Bulbs)
Life Span (in hours)	1,500	10,000
Watts	60	14
Cost	<u>\$1.345</u>	<u>\$2.98</u>
KWh of electricity used over 60k hours	3,600	840
Electricity Cost (@ \$0.10 per KWh)	\$360.00	\$84.00
Bulbs needed for 60k hours of usage	40	6
Equivalent 60k hour bulb expense	\$53.80	\$17.88
Total 60,000 Hour Lighting Spend	\$413.80	\$101.88

http://www.productdose.com/LightBulb_Comparison.xls

In addition, the majority of Bernards Township municipal buildings are equipped with overhead fluorescent lighting in the form of T12 lights which should be updated to more efficient models. **According to Westar Energy, T5**

lamps, a similar style lamp that differs in width and wattage, uses 45% less energy than the T12 model. Westar’s explanation of the different types of bulbs and their energy usage can be found in **Appendix D**. Typically these lights are on 8 hours a day, 5 days a week, and we have hundreds of fixtures so the realized savings on electricity would be significant. Additional energy savings can be realized from switching to 2 bulb fixtures instead of 4 bulb fixtures, the fixtures currently most common in Municipal offices. Rebates for updating T12 fixtures to T5 fixtures are available from the New Jersey SmartStart Buildings Program through the New Jersey Clean Energy Program. Applications can be found at njcleanenergy.com; the 2007 Prescriptive Lighting Application and Worksheet can also be found attached to this document as **Appendix E**.

**T12 Fluorescent Lights:
Municipal Building, 1 Collyer Lane**

<u>Fixture Type</u>	<u># of this fixture</u>	<u>Bulbs per fixture</u>	<u>Total Bulbs</u>	<u>Watts per Bulb</u>	<u>Total Watts per Fixture</u>	<u>Total Watts</u>	<u>Total kWh (one 8 hr. day)</u>	<u>Total kWh (1 year)</u>	<u>Projected T5 comparison</u>
6" x 4'	6	2	12	34	68	408	3.26	850.97	468.03
6" x 8'	1	4	4	60	240	240	1.92	500.57	275.31
16" x 2'	2	4	8	20	80	160	1.28	333.71	183.54
1' x 4'	60	2	102	34	68	4080	32.64	8509.71	4680.34
2' x 2'	24	2	48	20	40	960	7.68	2002.29	1101.26
2' x 4'	73	4	292	34	136	9928	79.42	20706.97	11388.83

It is recommended that these retrofits be made in all municipal facilities, including the courtroom.

4. Motion Detectors - An inexpensive way to cut down on energy usage was observed during a tour of the Willow School, a sustainable elementary school in Gladstone, NJ. In spaces that get little traffic and do not need constant lighting the school features motion detectors, so lights will switch on automatically as soon as an occupant enters the room. Examples of environments well suited for this technology are bathrooms, mailrooms, and copy rooms. The price of this type of improvement was indicated to be relatively inexpensive, costing around \$20 per motion detector. Not including installation, recouping investment should happen within the 1st year.

Potential kWh Savings from the addition of Motion Detectors

	<u>kWh per hour</u>	<u>kWh per day</u>	<u>kWh per year</u>
1 100 watt incandescent lighting a small bathroom 8 hrs. a day	0.1	0.8	208.57
Same bulb and location operating 1 hr. a day	0.0125	0.1	26.07

100 Watts x 1 hour = 1 Wh; 1000 Wh = 1 kWh

5. LED Exit Signs – 42 Bernards Township Exit signs were retrofitted with LED exit signs at the price of \$13.68 a light. The electricity usage of the LED Exit signs is less than 1 watt a lamp, and they replaced both 15 and 25 watt incandescent exit signs, most of which were 25 watts. Both incandescent and LED models were outfitted with two lamps a piece, and there were significant savings achieved by retrofitting the signs instead of just outright buying new signs. The following cost comparison is provided by Energy Star and available at energystar.gov:

Exit Sign Energy Use by the Numbers				
Exit Sign Lighting Technology	Annual Energy Use	Annual Energy Cost	Lamp Service Life	Annual Carbon Dioxide (CO ₂) Pollution
<i>LED</i>	44 kWh	\$4	10+ Years	72 pounds
<i>Fluorescent/CFL</i>	140 kWh	\$11	10.8 months	230 pounds
<i>Incandescent</i>	350 kWh	\$28	2.8 months	574 pounds

6. LED Traffic Lights - Somerset County converted all Bernards Township traffic lights to LED traffic lights between 2003 and 2004. Although the traffic lights are owned and maintained by Somerset County, Bernards Township is responsible for covering the cost of the energy they require. Although the cost of powering a traffic light may seem insignificant, it can accrue to a substantial total considering the lights operate all day and night, every day of the year. Post LED traffic light conversion Bernards Township has experienced decreased electricity costs and total energy consumption. Aside from significant savings on monthly energy bills they also need replacement and less frequently than incandescent traffic signal lights, which typically burn out prior to 24 months after they have been installed. According to energystar.gov, LED lights typically last 10 times as long as their incandescent predecessors. Also, costs of frequent repairs due to burnt out light bulbs is avoided and made infrequent when LED traffic lights are used. In addition, LED traffic lights, unlike incandescents, do not burn out all at once, but instead fade over time, giving maintenance crews advanced notice that it is time to replace the light. As a result of their energy saving capacity, LED lights expend less carbon dioxide into the atmosphere than do incandescent lights. **According to energystar.gov, LED lights use 90% less energy than incandescents, which directly correlates to CO2 emissions, subsequently reducing the emissions by 90%.** A full report on the cost and emission savings experienced by Bernards Township post-LED installation can be found attached as **Appendix F**.

7. Efficient Appliances – In order to save electricity and make cost-effective decisions periodic update of machinery and appliances in municipal buildings is necessary. Appliances like air conditioners, hot water heaters, furnaces, and computing equipment use substantial amounts of electricity in all municipal facilities. It is recommended that all air conditioners purchased by the municipality be a higher seer, but at the very least 13 seer. It is recommended that all newly purchased furnaces purchased by the municipality be at least 90% efficient. It is recommended that all newly purchases hot water heaters purchased by the municipality be energy star certified models. It is recommended that all lighting in new municipal construction be 90, if not 100% energy star certified lighting. It is recommended that 90, if not 100% of all future technology purchases by energy star

certified computing/technology models. A resolution describing this philosophy can be found attached as **Appendix G**.

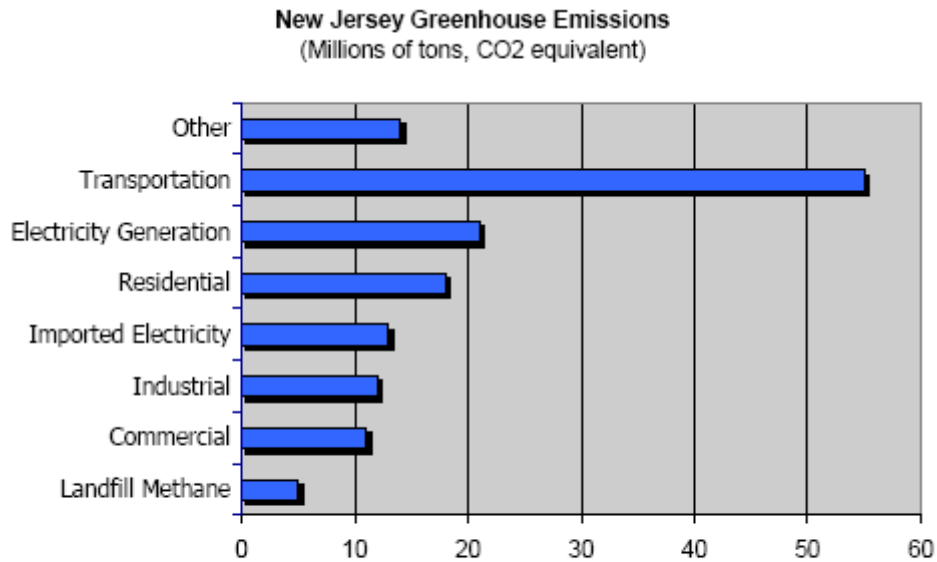
In addition, New Jersey's Clean Energy Program (www.njcep.com) has made grants available for the installation of new efficient heaters and air conditioners in New Jersey residences. For details on the *WarmAdvantage* and *CoolAdvantage* programs reference **Appendix H**.

8. Inventory – Bernards Township covers the electricity expenses for several series of streetlights throughout the township in addition to the traffic lights. Some of these lights operate on the timed schedule, whereas others have sensors that dictate when they turn on or off. Regular checks and an inventory of these lights should be kept. A check should be performed to make sure the sensors on the sensor controlled lights are not blocked, thus causing the light to operate unnecessarily.

Township funded streetlights and traffic lights should ultimately be added to the Township's Geographic Information System, which would allow us to better manage and keep record of these utilities.

9. Energy Procurement – At present the Bernards Township Sewerage Authority has a contracted Energy Agent who locates the best rates on energy for the Sewerage Authority and contracts with the lowest priced energy provider. The Energy Agent then collects their fees by charging the Sewerage Authority a very low amount for every kilowatt hour used during that pay period. The Sewerage Authority currently has a contract with Gabel Associates, and was quoted rates of \$0.0005 per kWh for a one year contract and \$0.0003 kWh for a two year contract by them. Resolution #0705 establishing Gabel Associates as the Sewerage Authority Energy Provider is attached as **Appendix I**. It is recommended that the services of an energy agent be looked into for Municipal Buildings/Facilities as well.

II. Transportation –



Transportation is the largest single source of climate changing emissions in New Jersey

www.coolnewjersey.org

According to coolnewjersey.org, about 44% of climate changing emissions in New Jersey are caused by transportation. With New Jersey's ever-increasing population, the only ways to stabilize or decrease the amount of fossil fuels burned by transportation and the resulting pollution are through increased mass transit, increased opportunities for alternative modes of transportation, alternative sustainable fuels, and improved vehicle technology. **In addition, Governor Corzine recently signed a bill pledging to reduce greenhouse gas emissions to 1990 levels by 2020, and reduce 2006 levels 80% by 2050.** Improvements in transportation will undoubtedly be on the Governor's agenda for the remainder of his term, as it should be for every level of government down to municipalities.

▪ Internal Efficiency –

1. Fleet Vehicles - Bernards Township recently purchased its first two hybrid vehicles, a Toyota Prius, and a four wheel drive Ford Escape Hybrid. The vehicles were purchased with the assistance of two grants from the Board of Public Utilities that had a combined total of \$6,200. The Prius is currently a member of the fleet at Town Hall while the Escape is expected to join the Construction Department fleet late this year or in early 2008. These vehicles were chosen not only because their hybrid status agreed with our environmental initiatives, but because they would be available for the use of municipal employees and hopefully create a positive feeling about conserving resources. There were also cost-effective choices, each vehicle making up the difference in the increased cost of the hybrid option with savings on fuel in less than 10 years.

2007 Prius Purchase Price: \$20,823 - \$2,200 (BPU Rebate) = \$18,623

2007 Escape Purchase Price: \$24,940 - \$4000 (BPU Rebate) = \$20,940

2006 Dodge Stratus Purchase Price = \$12,994

2004 Dodge Durango Purchase Price = \$20,150

	<u>2007 Toyota Prius</u>	<u>2006 Dodge Stratus</u>	<u>Savings</u>
Annual Fuel Cost (based on 10,000 avg. miles driven per year and \$2.25 per gallon per wholesaler)	\$479.00	\$1,125.00	\$646.00
Total Fuel expenses after: 2yrs:	\$958.00	\$2,250.00	\$1,292.00
3 yrs:	\$1,437.00	\$3,375.00	\$1,938.00
4 yrs:	\$1,916.00	\$4,500.00	\$2,584.00
5 yrs:	\$2,395.00	\$5,625.00	\$3,320.00
6 yrs:	\$2,874.00	\$6,750.00	\$3,876.00
7 yrs:	\$3,353.00	\$7,875.00	\$4,522.00
8 yrs:	\$3,832.00	\$9,000.00	\$5,168.00
9 yrs:	\$4,311.00	\$10,125.00	\$5,814.00
10 yrs:	\$4,790.00	\$11,250.00	\$6,460.00
The Toyota Prius runs about \$6,000 more expensive (after clean energy rebates) than a similar economy model, the Dodge Stratus, but makes up for this cost difference in fuel savings in 8-9 years.			

	<u>2007 Ford Escape Hybrid</u>	<u>2004 Dodge Durango 4WD</u>	<u>Savings</u>
Annual Fuel Cost (based on 10,000 avg. miles driven per year and \$2.25 per gallon per wholesaler)	\$804	\$1,731	\$927
Total Fuel expenses after: 2yrs:	\$1,608.00	\$3,462.00	\$1,854.00
3 yrs:	\$2,412.00	\$5,193.00	\$2,781.00
4 yrs:	\$3,216.00	\$6,924.00	\$3,708.00
5 yrs:	\$4,020.00	\$8,655.00	\$4,635.00
6 yrs:	\$4,824.00	\$10,386.00	\$5,562.00
7 yrs:	\$5,628.00	\$12,117.00	\$6,489.00
8 yrs:	\$6,432.00	\$13,848.00	\$7,416.00
9 yrs:	\$7,236.00	\$15,579.00	\$8,343.00
10 yrs:	\$8,040.00	\$17,310.00	\$9,270.00
The Ford Escape Hybrid is only \$790 more expensive (after clean energy rebates) than the similar model it is replacing, the 2004 Dodge Durango, but makes up for the cost difference in savings on fuel in only 1-2 years.			

It is recommended that the Township be forward minded with vehicle procurement now and into the future, also exploring vehicles that use alternative fuels such as biodiesel, electricity, and hydrogen fuel cells. It is recommended that future Township vehicle purchases be limited to vehicles rated PZEV or better.

SULEVs are super-ultra low-emission vehicles, extremely clean. There are both gas SULEVs and gas-electric hybrid SULEVs on the market today. The classifications of ZEV, PZEV, or SULEV only refer to the air emissions, by the way -- not the fuel efficiency. The EPA Green Vehicle Guide in the link below will allow you to look up vehicles and compare both emission and fuel efficiency characteristics. Remember that 2005 and 2006 trucks and Sport Utility Vehicles do not have the same standards and ratings as cars, so a SULEV Sport Utility Vehicle can pollute much more than a SULEV car.

PZEVs are partial zero-emission vehicles, the closest you can get to zero without being a ZEV. The partial refers to the fact that automakers get partial ZEV credit for making and selling PZEVs. They're cleaner than SULEVs since they also have a design that doesn't allow evaporative emissions from the gas tank. There are PZEV versions of several new gasoline car models on the market today. To see a list of these, visit the California Air Resources Board link in the list below.

AT PZEVs are PZEVs that have an advanced-technology component, such as a hybrid system.

ZEVs are zero-emission vehicles, the cleanest you can find. The only ZEVs are electric vehicles, and some fuel cell vehicles (not available to consumers for several years). It's difficult for a consumer to purchase a new electric vehicle at this point, as there are not many on the market.

Santa Barbara County Air Pollution Control District, (2007), <http://www.sbcpd.org/sbc/linkscars.htm>

2. Biodiesel – Diesel fuel is the petroleum based fuel used to power most municipal utility vehicles and heavy trucks, the burning of which is a large source of air pollution in the state of New Jersey. Fortunately, cleaner burning options are now available, and their use requires little or no engine modifications.

Biodiesel, according to the EPA, is a fuel with a similar composition to traditional diesel produced through refining sustainable biological oils, mostly vegetable oils. Also according to the EPA, “Biodiesel has a higher cetane number, but slightly lower energy content than diesel. To the average driver, this means better engine performance and lubrication, but a small decrease in fuel economy (2-8 percent).” Biodiesel is offered in a variety of different blends from B5 (5 percent biodiesel, 95% petrodiesel), to B100 (100% Biodiesel). There are some petrodiesel vehicles that are approved for use of B100, however the use of this fuel currently annuls the warranty of many vehicles. Biodiesel also tends to be slightly more expensive than traditional diesel, although rebates are currently available that make it more affordable. According to coolnewjersey.org, the Atlantic County Utilities Authority runs its entire fleet on B20 Biodiesel. The New Jersey Board of Public Utilities is currently offering a rebate that covers the difference in cost between blends of biodiesel and petrodiesel; for more information see **Appendix J**.

Biodiesel Distributors in New Jersey

<u>Distributor</u>	<u>Contact</u>	<u>Blend</u>
J.W. Pierson CO. 89 Dodd St, East Orange, NJ 07017	George Scoles (973) 673-5000	B20
Taylor Oil Co., Inc. 2610 S. Black Horse Pike, Williamstown, NJ 08094	Bob Dilullo (856) 262-3133	All
Taylor Oil Co., Inc. 77 Second Street, Somerville, NJ 08876	Frank Bloom (908) 725-7737	All
TransMontaigne 78 Lafayette St, Carteret, NJ 07008	Danny Sells (303) 860-5379	All
Woodruff Energy 73 Water Street, Bridgeton, NJ 08302	B. Woodruff (856) 455-1111	All

www.biodiesel.org

According to the BPU, biodiesel can also be purchased through the State of New Jersey using State Contract #T-1844. For additional information on biodiesel from the EPA see **Appendix K**.

Considering the warranties of several of our diesel engine vehicles, it is not advised that B20 or greater blends be used at this time. It is advised that in future vehicle procurement the Township focus on lighter flex-fuel and hybrid vehicles that are built biodiesel compatible. The use of biodiesel in large quantity would warrant another fuel tank, which may be a capital improvement needed by the Department of Public Works in the near future anyhow.

3. Hybrid Utility Vehicles - Hybrid technology has been shown to be especially efficient when paired with a vehicle that does mostly city driving, or a vehicle that includes features that the vehicle must be running to utilize. For this reason, hybrid electric engines have proven to be particularly useful in utility trucks, such as dump trucks, that need to be on in order to operate the bucket even if the vehicle will remain stationary while doing so. Current Heavy Utility Vehicles consume fuel to remain on and operate their electronics, even if the vehicle remains stationary. Hybrid Utility Vehicles are the advised choice for future Utility Vehicle Purchases.

- **Legislation –**

- 1. Anti-Idling Ordinance** – Bernards Township Ordinance No. 1034 bans excessive idling of commercial trucks within Bernards Township. A revision of ordinance 1034, which makes the original ordinance applicable to all motor vehicles, as well as the original ordinance can be found attached as **Appendix L**. Adoption of the proposed revisions or revisions with similar implications is advised. Also, we should consider adding signs on public school campuses that ask motorists to please turn off their engines when not in motion. Signs may read something like, “Please do not idle your engine, it’s the law.”

- **Community Incentives –**

- 1. Discounted Parking Passes for Advanced Technology Partial Zero Emissions, Zero Emissions Vehicles and Carpool Vehicles** – Vehicles with an AT PZEV rating should be eligible for a parking decal pertaining to the 3 municipal lots for a fee at \$100

less than the standard price. Current parking decal price for a Bernards Township resident is \$150, while the price for a non resident is \$250. With the proposed change this price would decrease by \$100 dollars for both parties. AT PZEVs are vehicles with an Advanced Technology Partial Zero Emissions Rating, and it is important to distinguish vehicles by emissions rating rather than gas mileage because some vehicles may have a poorer gas mileage but use a cleaner more sustainable fuel type. PZEV rated vehicles are not only low on emissions but have superior fuel efficiency as well. Current AT PZEV vehicles include gasoline – hybrid vehicles like the Toyota Prius. ZEV vehicles are vehicles with a Zero Emission Vehicle rating, including electric, hydrogen gas, and hydrogen fuel cell vehicles. These models are especially clean, creating little or no greenhouse gasses, and vehicles that burn hydrogen produce only a byproduct of water. A list of qualifying vehicles can be found attached as **Appendix M**.

Carpool vehicles should also be eligible for the same discount, if all applicants involved can prove they are frequent rail and/or bus commuters. If a carpool pass is applied for and granted the names of all carpoolers involved should be taken down, and a duplicate pass cannot be issued to any of the parties involved until the pass expires. Two or more residents who reside in the same household should not be eligible for a carpool pass, however if a third party from another household was included in their carpool route the carpool pass would then be available to them. **A system that rewards carpooling may even be more effective in reducing emissions and increasing mass transit ridership than discounted passes alone**, as carpool agreements may introduce new riders to the available public transportation.

III. Municipal Planning and Design -

- **Internal Efficiency –**

1. LEED Certified Sewerage Authority Addition – LEED Certification, in Bronze, Silver, Gold, or Platinum, is one of the most prestigious and sought after certification a building can achieve. LEED certified status, short for Leadership in Energy and Environmental Design, can be achieved by a commercial building, building addition, schools, commercial interiors, and homes. LEED certification and level of certification, Platinum being the highest, is based on a point system that grades the sustainability of the materials used in construction, energy efficiency, water efficiency, operations, and materials used in cleaning and maintenance of the structure. Peter Messina, Township Engineer and Planner is currently working with a LEED Certified Architect in designing a LEED certified addition to the Administrative Building of the Bernards Township Sewerage Authority located on Martinsville Road. It has been indicated that the LEED elements slated for use in the addition are as follows:

- Bike racks
- Carpool Parking Spaces
- Reduced site disturbance
- Stormwater management via Bio-filtration
- Shade trees
- Reduced light pollution
- Rainwater capture
- No potable water usage for irrigation
- Low flow toilets/urinals
- Solar panels (voltaic)
- Solar hot water panels
- No halons or CFCS
- Building reuse
- Construction waste management
- Reuse salvage
- Recycled new materials
- Certified woods
- CO2 Monitoring system
- Upgrade ventilation air exchanges
- Indoor air quality management
- Low emitting materials – adhesive, sealant, paints, and wood
- Entrance floor grill
- Operable windows
- Skylights

This project is still in the planning stages but should be under construction by late winter 2008.

2. Capital Improvements to Facilitate Non-Vehicular Transportation - Citizens concerned with Climate Change and reducing individual impact on the environment have

been taking action into their own hands by making climate friendly lifestyle changes such as green purchasing or using alternative modes of transportation and mass transit. But many would agree that suburban communities like ours are built for vehicular transportation, and because of local design, transportation like walking or biking lack everyday utility. Bernards Township, with few parcels of land vacant for development, has entered a “maintenance period”, and improvements that increase the utility of walking and biking are among the improvements we should be making.

Although Bernards Township does feature many bike paths and trails through parks and recreation areas, **the Township needs to see an increase in bike paths in heavy traffic areas and areas where they would have the most everyday utility.** Areas that see heavy traffic, like schools and local shopping centers, could benefit from the addition of bike paths through reduced car and truck traffic, thus reduced vehicle idling and tailpipe emissions. Already in place are bike paths to Liberty Corner School through the Canterbury Estates development, paths to and around Mt. Prospect in the Hills, paths weaving through the adjoining properties of Ridge High School and Cedar Hill School, as well as access available to Oak Street School on almost all sides.

However, William Annin Middle School, the school at which all three elementary schools convene for 6th through 8th grade, is only accessible from one side. Since the school is only accessible from its front, there are often long lines of cars weekday mornings of parents dropping their children off at school, as well as after school for pick up. Not only is vehicle idling an environmental ill, but children are often late for school because of traffic. The back end of the school, which is connected to pieces of municipal land opening up to developments like Gristmill and Autumn Drive, cannot be utilized as walking or biking routes to school because of the presence of Harrison Brook between the school and the street accesses to these properties.

It is proposed that in an effort to reduce road traffic, and prepare for safe and sustainable population growth in Bernards, that permitting be applied for and funds allocated for the development of back accesses and alternative routes to William Annin. Because both of these areas are wetland areas, permitting for the paths from the Department of Environmental Protection should be sought. Areas of focus should be the stated municipal properties located off Autumn Drive, Block 106, Lot 73.03, and Gristmill Drive, Block 106, Lot 92. In addition, only one bridge would be necessary to facilitate the access of both neighborhoods to William Annin.

Paths to the Middle School in these locations would not only serve the Gristmill and Autumn Drive neighborhoods, but would open up an alternative access to the school for several neighborhoods located along the areas of Lake and Mt. Airy Roads such as Fairview Drive, Galloping Hill, areas near Stockmar Drive and Kensington Road, as well as Flintlock Court and Kinnan Way. Maps highlighting the proposed location of these paths can be found attached as **Appendix N**.

Expenses of such a project would include permitting, architectural drawings, materials for construction of a bridge, as well as expense of labor. In addition, there would be expenses involving the purchase of stone for footpaths as well as clearing trails. Expenses involved in the creation of paths and routes to school are eligible for grants from the New Jersey Department of Transportation’s Safe Routes to School Program as well as from the New Jersey Department of Environment Protection division of Parks and Forestry’s New Jersey Trails Program. The maximum award for the New Jersey

Trails grant is \$25,000; Safe Routes to School award amount varies based on need. More information on both grants can be found attached as **Appendix O**.

In addition to bike paths for increased non-vehicular transportation, additional bike racks are also needed. Again, these facilities would have the most utility and most impact on reducing car traffic when they are located in high traffic areas. Examples of such areas are near shopping centers, schools, and transit hubs. Suggested sites for the addition of bicycle racks are the Lyons Park & Ride lot, additional and updated bike racks at the district middle and high schools, local trail stations, as well as at Municipal Parks. Also, property owners, especially those that own shopping complexes, should be encouraged to add and keep updated the bike racks at their facilities. It is also suggested that in locations where bikes may be parked for long stretches of time, like the Lyons Park & Ride lot, and the train stations, that covered and stall style bike racks be installed. These types of racks not only provide protection from theft and vandalism, but protection from the elements as well.

Also, widening roads in high traffic areas for the inclusion of marked bicycle lanes or wider shoulders facilitates bicycle and alternative modes of transportation. Some



www.pedbikeimages.org

may argue that additional pavement will only harm the environment by adding to the area of impermeable cover and creating additional potential for polluted stormwater runoff. However, in high traffic areas elements like bike lanes have been proven to have a traffic calming effect. Road widening does not have to happen in a linear fashion with the addition of a certain amount of area to each side of an existing road; a road that was originally straight can be made to weave more from

side to side wherever the most land for widening is available or pitch of the land permits, and traffic lines painted to match the new contours. This type of road widening should be done in conjunction with road resurfacing, as it would require the repainting of traffic stripes for inclusion of a bike lane, and the outline of the new, curvier road. **In fact, the addition of both bike lanes and road curvatures both have the effect of traffic calming, and should be considered in areas where speeding is a problem.** We cannot simply encourage alternative modes or transportation without the addition of amenities to facilitate them.

3. Zoning Considerations – To lessen our environmental impact we must rethink how we allocate our resources, including land. More effective land use planning is essential to land preservation and community vitality. Our community, like much of New Jersey is a product of sprawl, which induced rapid development that did not account for sustainability. According to coolnewjersey.org, “Since most of the remaining land is either protected or not buildable, New Jersey is likely to be the first state to exhaust its supply of buildable land. This is called buildout. Some think we’ll reach that point in as

little as two to four decades.” Bernards Township has done a superior job of acquiring open space throughout the community, but there are still parcels of open land that we have the opportunity to plan for the use of more wisely and progressively than we had in the past. Local Government needs to take charge of land planning and management instead of letting developers buy and build piecemeal.

The addition of mixed-use zoned properties in Bernards Township is essential to smart growth and sustainable design. Mixed use properties attract small businesses, medical and professional practices, and individuals in the young adult and “empty nester” demographics. Not only do a wide range of local industry and population promote a vibrant community, but individuals in these age groups generally do not have schoolchildren who require the use of public schools.

In a document dated July 2nd, 2007, Town Demographer William Draper writes, “Sale of new homes and single family homes of seniors and recent “empty nesters” continue adding about 1.7 public school children and 0.4 pre-school age children per home. Other homes add few school children - averaging about 0.1 additional public school children and 0.2 pre-school children per sale. On average, resale by other out migrating families is to a replacement family of similar composition.” It can be assumed given the demographics of Bernards Township that “other homes” refers to the various developments of condominium and multi-family units that exist throughout the township. **A statistic of .1 children per “other home” would mean that 1 in 10 of these units has a child. Alternatively, 10 single family homes would yield approximately 17 school aged children according to the statistic above. It can then be deduced that it would take approximately 170 homes classified as “other homes” to create the equivalent amount of school aged children as 10 single family homes.**

These statistics speak volumes, however, the development of other homes and affordable housing alone will not make our community more sustainable. Mixed use housing offers much more than multi family units alone can. Mixed use properties allow people to both live and work in the same place, thus cutting down on travel time, travel associated pollution, and fosters a sense or pride in one’s community. Mixed use properties would be particularly useful in cutting down pollution from transportation in areas near metro, rail, and bus stations. Properties that include commercial entities as well as residential create more pedestrian friendly communities, promoting public health and mental satiation. It is recommended that parcels of land on, near, or that have easy access to transit be reviewed and their zoning reconsidered. Land areas within walking distance to Lyons and Basking Ridge Train Stations should be of particular interest. To help with this and similar initiatives monies are available through the New Jersey Department of Transportation’s Transit Village Initiative. According to coolnewjersey.org, some communities have received up to \$100,000 from this initiative. More information about the Transit Village Initiative is available online at www.state.nj.us/transportation/community/village.

▪ **Legislation –**

1. Cluster Developing - Another method of land use planning that preserves environmental integrity is cluster developing. Cluster developing is the practice concentrating the development of buildings on one section of a property by allowing for smaller lot sizes, while using the remainder of the land as environmental preservation

areas and community facilities. A development of this style is not typically allowed any more houses than if it had followed the existing zoning regulations in place for the land, they are simply allowed smaller lots with greater untouched areas. This type of building can be appealing to both local planning boards and builders alike; it is appealing to planning boards because of the land preservation aspect, whereas builders can typically save money on clearing land. A sample Cluster Development ordinance from the American Planning Association (www.planning.org) is attached as **Appendix P**.

2. Requirement for the Recycling of Construction and Demolition Waste – Bernards Township has entered a ‘maintenance period’, a period in the Township’s history where there is almost no buildable land available and it is time to maintain the spaces we already inhabit. As a result of this, many buyers cannot buy new homes and instead choose to expand or update older ones. While these changes beautify and add value to neighborhoods, they also generate a lot of waste, usually at least several dumpsters full. The city of Santa Monica, California has enacted an ordinance requiring all within the city limits to recycle 60% of construction and demolition waste materials if the project costs exceed \$50,000 or are greater than 1,000 square feet. The Township of Bernards may alter the language and requirement, but an ordinance of a similar nature would be largely beneficial and have a direct impact on the amount of construction and demolition waste going to landfills. A copy of Santa Monica’s ordinance on construction and demolition waste is attached as a model, as **Appendix Q**.

▪ **Community Incentives** –

1. Alternative Fee Determination for Sewer Users - It has been long standing practice in Bernards Township that every user of the Sewerage Authority pays a flat annual fee of \$360 for its services. Although this system furnishes the Sewerage Authority with ample resources to operate, it does not account for water usage. Presently, condominiums with one resident and single family homes with 5 residents are paying the same fees. In an effort to distribute fees more fairly and encourage water conservation it is recommended that sewer users pay rates based on water usage figures furnished by the water company. The rates should be scaled based on 1000 gallons of water usage per water utility furnished information. The water usage at the beginning of the first quarter (i.e. Jan-March months) will be the utility information used to base sewer rates off of. The scaled system could resemble a system similar to the following:

Class A	0 – 2,449 gal/mo	\$60 /year
Class B	2,500 – 4,999 gal/mo	\$132 /year
Class C	5,000 – 8,999 gal/mo	\$250 /year
Class D	9,000 – 13,999 gal/mo	\$402 /year
Class E	14,000 – 19,999 gal/mo	\$522 /year
Class F	20,000 + gal/mo	\$522 + \$2.00 per thousand gallons over 20,000 /year

Figures from the water company should be rounded both up or down depending on the next closest whole number in order to determine what class a resident is in, thus determining their annual fee. Class F would normally be reserved for corporate campuses and only the largest water users. The hopes are that a scaled system would

reduce not only the amount of water needing treatment by the sewerage authority, but usage of clean potable water altogether. The rates listed above vary somewhat substantially, thus providing fiscal incentive for a sewerage authority customer who uses 3,000 gallons a month to lower their usage to a Class A rating. These rates along with notification of the system change should be published on the Bernards Township website, in local publication, and sent through the email listserv months before the rate change is effective, in conjunction with water saving tips that can be used to conserve and waste less potable water. Some easy tips residents should be informed of are installing faucet and shower aerators, as well as fixing leaky sinks and toilets.

Sewer rates for well users should remain the current flat rate of \$360 annually, or another reasonable flat rate determined.

2. Accelerated Permitting for LEED Certified Buildings – As incentive for building LEED buildings as compared to the conventional style of building, permitting materials for LEED planned commercial and residential buildings as well as additions should allowed to be “fast-tracked”. The amount of wait time for permits on buildings drawn to be LEED by a LEED certified architect should reduce substantially from the standard 30 day period, as building LEED structures can be significantly more complicated and expensive. It is proposed that the wait time for permits for LEED certified structures be 5 business days, instead of 30 days after submitting the application.

Accelerated permitting should also be considered for construction and demolition projects that intend to recycle 60% or greater of their construction and demolition waste. Such projects must submit a waste management plan detailing the materials to be recycled and method of recycling along with permit application in order to be eligible.

IV. Resource Protection –

▪ Internal Efficiency –

1. Natural Drainage Systems – Like many communities Bernard Township is outfitted with several water and stormwater management provisions, like drainage basins and storm sewers. While these amenities are highly effective in removing excess water from the community but, they are often, because of their design, flooded with polluted water.



http://ricecreek.org/content/bmp/images/rg_rainfall_s.jpg

Storm sewers can be found on and are essential to the design of most Bernards Township roads. They are an essential feature because most Bernards Township roads have Belgium block curbing, thus preventing runoff from spilling off the road naturally. When stormwater falls on roads, it picks up pollutants and chemicals on the road, mostly vehicle discharge and other chemicals, and

then enters the storm sewer. In the storm sewers water is mixed with other polluted waters, all of which eventually merge into the Passaic river.

Similarly, drainage basins are frequently mowed, contributing to air pollution by burning fossil fuels, but the grass also has the potential to be polluted with chemicals. In addition, grass is a highly impermeable form of vegetation, making groundwater recharge and natural drainage in a basin more difficult.

The pollution of stormwater could be prevented by practicing better stormwater management tactics that allow for natural filtration, purification, and groundwater recharge. Bio-filtration systems are stormwater management facilities that can both retain and filter water naturally. Bio-filtration is an umbrella term that captures bioretention systems, rain gardens, and constructed wetlands.

Despite their many different names they all work similarly: they capture stormwater and allow it to infiltrate the ground to be purified naturally, and require little maintenance. Bioretention systems are usually the most involved, combining elements of natural filtration with special raised or buried storm sewer infiltration features for when there is substantial runoff. These systems are typically used to treat large amounts of water where space is limited. Rain gardens are smaller systems commonly found on private residences and parks, comprised of a kidney shaped 3 to 8 inch indentation in ground surface, and the depressed surface planted with native plants that are compatible with a wet environment. Constructed wetlands, which are typically the largest

biofiltration system, according the NJDEP, being at least 10 acres in size. Constructed wetlands are typically different from the other two mentioned systems because they are typically used to purify water that has already been captured by storm sewers and other stormwater management facilities and diverted there, they are not the point of capture.

In addition, these systems are planted, rain gardens usually planted with the owner's plants of choice and the larger ones with native trees and deep rooted species, which absorb some of the water. The goal is to eventually have a small ecosystem that also filters and purifies water through passing through layers of minerals, and waste materials being filtered by plant roots. These systems also minimize obstruction of groundwater recharge. Additional information on biofiltration systems can be found attached as **Appendix R**. It is recommended that these natural filtration systems be used in lieu of storm sewers, and raised curbs and parking lot islands be avoided and replaced with a depressed system that allows for groundwater recharge, like the one in the Mountain Park parking lot.

Bernards Township is currently examining Township maintained basins to see which basins are ideal candidates to be fitted with native plants instead of turf grass. Many non-township maintained basins are also turf grass, the homeowner associations who maintain these basins should be supplied with information on biofiltration and encouraged to stop mowing. For additional information on Municipal Stormwater Management Planning Reference a guide from the Association of New Jersey Environmental Commissions in **Appendix S**.

2. Alternative Fertilizers – Fertilizers are designed to add nutrients to the soil so grass and other plants can flourish. However, fertilizer is a chemical compound and hazardous to wildlife, and often makes its way into local streams as well as the Sewerage Authority where it adds excess phosphorus to the sewerage system. It is recommended that fertilizer use be held at a minimum, with one application a year if possible. It is also recommended that an organic or low toxicity fertilizer be used in place of a traditional kind.

3. Audubon Cooperative Sanctuary Program for Golf Courses – Coakley-Russo Golf Course, Bernards Township's municipal golf course is a sprawling 95 acre course located off Valley and Kinnan way near the VA hospital. This large stretch of land is closely mowed, regularly watered, and fertilized to keep it in prime condition for golfing. Because it is such a big stretch of land, and because of its nature frequent maintenance is essential, it is recommended that safer methods of maintaining the land be examined. The Audubon Society, distinguished for its environmental stewardship and work in bird species preservation has developed a program for golf courses that enables them to maintain their current structure, while offering assistance in ways to change operation to make the course more wildlife friendly. It also suggests alternative fertilizers and lawn care strategies that lessen the impact of a beautiful green on water quality as well as landscaping with native plants to reduce water demand. If improvement is noted in the care and operation of the golf course by Audubon Officials, a golf course can achieve the prized Audubon Certification. Annual Membership fee is \$200 and it is accompanied by *Guide to Environmental Stewardship on the Golf Course*, several guides describing best practices, and a log to describe progress which can be used to achieve certification. It is recommended that Bernards Township join and eventually apply for certification for the

Coakley-Russo Course. Recommendations made by the Audubon Society for the Golf Course can be applied to other municipal properties as well.

4. Water Audit – Since the population of both industry and residences in the community has increased rapidly during the last decade, it is important to be aware of how the community’s water supply has responded. Since several residents obtain their water from wells, and because there is occasionally runoff from areas like the Millington Quarry and other both residential and industrial sites where the water has potential to be contaminated, it is important to monitor water quality. It is recommended that Bernards Township have samples taken, and water audited, done by staff if possible, to make sure water quality is up to par. If it is determined that water quality has decreased, the situation can be improved with natural solutions, like water diverted to an areas of open space and a constructed wetland created.

5. Community Forestry Program- Trees in our cities and towns help clean the air, conserve soil and water, moderate temperature and bring nature into our daily lives. Trees are a vital component of the infrastructure in our cities and towns and provide environmental and economical benefits. Through the coordinated effort of the Shade Tree Commission, Parks Dept. and Dept. of Public Works, Bernards Township has an effective on going community forestry program and has been recognized by The National Arbor Day Foundation. Details can be found attached as **Appendix T**.

▪ **Legislation –**

1. Preserving Native Plants – The definition of Native Plants is the species of plants that were deciduous to an area before the intervention of European settlers. Native Plants are the species of plants that have lived in an area for hundreds or thousands of years, thus adapted and become well acclimated to the local climate and precipitation patterns. However, when settlers migrated to North America, they both intentionally and unintentionally brought non-native plants with them and introduced them to the ecology of the new world. Now, non-native species that have survived and proved to have a competitive nature are in areas overrunning the natural landscape. Many plants classified as “weeds” are also classified as “non-native”. However, a plant does not need to be competitive to be deemed non-native. Plants that require a lot of water, chemicals, or extensive treatment and attention are usually also classic signs of non-natives. A sample ordinance can be found attached as **Appendix U**. A list of approved native plants, also available on the website can be found attached as **Appendix V**.

▪ **Community Incentives –**

1. Increased Availability of Recycling Bins on Municipal Properties – Increasing the availability of recycling bins on public properties would increase recycling by patrons of these properties. Bernards Township residents as a whole have a good recycling record and it is believed that this attitude paired with available receptacles for recyclables would yield a positive response. More information on recycling can be found in section V. Operation.

V. Operation –

- **Internal Efficiency –**

1. Increased Naturalization of Municipal Property - Bernards Township maintains the landscape of a large amount of properties distributed throughout the township including athletic fields, areas around municipal buildings, and about 15 drainage basins. Many of these properties have been planted with turf grass, and that grass been frequently maintained during the growing season. Results found in a Swedish study, and reported here (<http://abcnews.go.com/Technology/story?id=98532>) by ABC news, found that operating a lawn mower for an hour creates an equivalent amount of air pollution as does a 100 mile car trip. Not only is frequent mowing harmful to air quality and creates harmful greenhouse gas emissions, it also hurts the Township's bottom line. It is suggested that Bernards Township cease to maintain lawn areas where feasible to both improve air quality and the Township's bottom line. It is proposed that in place of the turf grass plants that require little maintenance be placed, like native shrubs and wildflowers. These plants will need more extensive maintenance upon initial planting, but far less once established. Below is a study by Roth and Associates entitled A Comparison of Sustainable and Traditional Landscapes that proves the fiscal advantage of native landscaping.

In addition to fields and drainage basins the Township of Bernards maintains many traffic islands. Traffic islands are usually raised and grass covered, although some of the more recently installed parking lots, like Mountain Road Park, feature more eco friendly depressed rock filled islands, which allow for water inflow and ground infiltration. The raised, grass covered islands require frequent maintenance which requires money and manpower, and occasionally lawn chemicals. In order to save money, employee resources, and adopt a landscaping scheme that is more environmentally friendly it is suggested that all Township raised parking islands be covered in either low maintenance native shrubs and mulched, or replaced with rock.

Activity/Year	Sustainable Landscape (Annual Cost)	Traditional Landscape (Annual Cost)	% of Difference Sustainable/Traditional
Up Front Installations			
Traditional landscape require a wider spectrum of landscape treatments, so their up front investment is necessarily greater than that for a new native landscape.			
Design	\$25,000	\$25,000	0%
Construction	\$100,000	\$216,000	52%
Post-Planting Management	\$16,000	\$28,000	43%
Total Up-Front Costs	\$141,000	\$269,000	48%
Annual Long-term Management			
In a new native landscape, the first 4-5 years are fairly intensive inasmuch as a balance is being established between the native and non-native plants. After approximately 5 years the system begins to set into its own internal self-renewing capacities, needing only the addition of increased species richness in areas where annual monitoring dictates.			
In a traditional landscape, the frequency and intensity of mowing, sod-maintenance, weeding, and early plant replacement initially keeps costs in the same general area as the new native landscape. After about 5 years, the stresses of herbicide application, shrub and tree mortality, and other aging syndromes of a landscape that does not renew itself results in a greater maintenance costs than for sustainable landscapes.			
Year 1	\$19,000	\$33,000	42%
Year 2	\$32,000	\$33,000	3%
Year 3	\$17,000	\$33,000	49%
Year 4	\$30,000	\$33,000	9%
Year 5	\$15,000	\$33,000	55%
Year 6	\$13,000	\$30,000	43%
Year 7	\$5,000	\$30,000	83%
Year 8	\$13,000	\$30,000	43%
Year 9	\$5,000	\$30,000	83%
Year 10	\$13,000	\$30,000	43%
Ten-year Totals	\$162,000	\$315,000	52%
Year 11+	\$5,450	\$40,000	86%
Subsequent Years	\$5,450	\$30,000	82%

http://www.cdfinc.com/CDF_Resources/Sustainable_Landscape_Cost_Comparison.pdf

2. Recycling – Bernards Township and Somerset County as a whole have an excellent recycling record. Somerset County has provided curb side pickup of recyclables from residents for quite a while. The county even has hazardous waste days and other specialized recycling events a few times annually, many of which Bernards Township hosts and publicizes. For example, once annually Somerset County holds a hazardous waste day at the Department of Public Works Garage and the event is publicized by the Township through signs and mailers. Bernards Township recycles all used materials through the County including fluorescent bulbs at the mentioned hazardous waste days, because they contain small amounts of mercury. Bernards Township has recently gotten the County to agree to accept Township computer and electronic equipment for recycling as well as recycling pick up from Pleasant Valley Pool. However, recycling is a service paid by the Township to the County, and not all municipal sites are currently being

serviced. It is recommended that the Township continue asking for County assistance in recycling pick up at the currently not serviced sites.

Also, it has been indicated that recycling at the parks is often unsuccessful because of garbage mingling with the recyclables. There are recycling bins posted around Township parks, but park patrons seem to use them for trash as well. Sites of particular problem should be checked to make sure that a garbage bin is either next to or near the recycling bins, thus likely alleviating the problem.

Recycling bins should be available in lunchrooms of all municipal offices. It is suggested that lunchrooms without recycling bins acquire them.

Somerset County also does not offer recycling pick up for businesses that operate within the county. Even though these businesses pay taxes and support the recycling program, they are likely not services because the County fears large increases to the amount of material they collect. Somerset County Businesses and Restaurants are required to recycle but to do so they must hire and pay their own hauler. We should encourage businesses to pressure Somerset County to service them as well, even if they are only allowed two bins, similar to resident pick up.

In addition, it has been noted that there is no available recycling at Bernards Township Post Offices, which is a problematic considering the amount of paper likely collected at garbage material. Post Offices should be consulted about their recycling policy.

3. Procurement – Bernards Township is currently working with the Rutgers Green Cooperative Purchasing Program to begin a schedule of green purchasing. A resolution on Bernards Township’s Agreement with the Rutgers Green Purchasing Cooperative can be found attached as **Appendix W**. We are currently only purchasing one item from them but hope to expand this list soon.

Green Product	Green Features	Cost	Replaced Item	Cost
Natural Towels, JCP Paper Co.	Not Bleached	\$ 18.45 /case	Bleached Towels	\$ 34.40/ case

It is suggested that more sustainable products be added to our list, not only in an effort to support green and sustainable industries, but in order to protect employees who spend significant amounts of time working with harmful products. Many products purchased by Bernards Township from cleaning products to products used for body work at the DPW garage come with a Material Safety Data Sheets, or MSDS. These safety data sheets provide information about the product, like ideal storage area, boiling point, flash point, but their main purpose is to communicate their toxicity, safe disposal, and information on how to handle spills. The lower the score on the MSDS form, the safer the product is. There are currently employees at the Bernards Township Health Department who devote energy to maintaining a history of these data sheets for products used by Bernards Township. The goal is to use products with a low MSDS score where applicable. It is recommended that holistic and non-toxic alternatives to current products be sought. The Township may even be able to secure savings on insurance if it can prove to the Environmental Joint Insurance Fund that it is using safer products.

Specific products Bernard Township should buy the ‘green’ version of are cups as well as recycled sustainable paper. Suggested suppliers are:

Supplier	Contact
Treecycle	Treecycle.com
Ecoproducts	Ecoproducts.com
Gaiam	Gaiam.com
C & H Distributors	(414) 744-4280
Superior Group	(201) 339-5100

On 9/5/07 township staff met with Pro Link Green representatives to review their line of green products and also arraigned for an audit of the Township facilities. They will make recommendations on developing an effective Green Cleaning Program.

VI. Promoting Public Awareness -

▪ Internal Efficiency –

1. Green Charter Day – It had been discussed among Bernards Township officials that the 2008 Charter Day should have less of a commercialized feel and return to its original purpose, celebrating the charter of Bernards Township while creating a fun family atmosphere. It is suggested that the 2008 Charter Day should also be used as a vehicle to educate the public about green initiatives. One avenue of publicizing Bernards Township’s green initiatives, as well as ways the community can get involved would be to distribute fact sheets along with or independent of sustainable tote bags. Speakers from the Environmental Education Center in Lord Stirling may be invited to make a presentation, or Bernards Township might be interested in making a presentation of its own. In addition, green vendors, local farmers, and regional organic farmers should be invited to sell their produce at Charter Day. Registration fees for these vendors should either be very minimal or free. The public should be informed of the benefits of eating locally including supporting the longevity of local farms, and injecting money into local instead of foreign economies. In addition, local foods require less fossil fuel to travel from the fields to your fork.

2. Community Wildlife Habitat Project - Bernards Township has been certified as a Community Wildlife Habitat with the National Wildlife Federation. This organization raises awareness of citizen’s immediate environment and the small things they can make to enhance it for local wildlife. Conventional landscaping has reduced the natural ecological balance of our land and certification as a Community Wildlife Habitat benefits the community by:

- Attracting songbirds, butterflies, frogs and other interesting wildlife.
- Increasing curb appeal by replacing grass lawns with native wildflowers, shrubs and trees.
- Restoring habitats where commercial and residential development has degraded natural ecosystems.
- Reducing the use of chemicals, conserving energy and water and composting helps to improve air, water and soil quality.

With more education and a better understanding of natural landscapes and how food, water and shelter provide for our wildlife, we can restore balance and make a difference one backyard at a time. Visit www.bernardshabitat.org for additional information.



3. Climate Friendly Citizens Guide – A document found on the website entitled ‘Conservation Tips’ is a guide designed for citizens outlining cost effective home improvements, recycling guidelines, and best use practices for energy consuming appliances. This document was created by and for the use of Bernards Township and its residents. It was written in a tone that encourages conservation while being cost effective. This document should be disseminated to the public to educate and inform. It can be found attached as **Appendix X**.

4. Website with Climate Friendly Information – The Bernards Township Website now features a section with information on the measures Bernards Township has taken to green its operations, along with advice on how residents can do the same. This section of the website should be further disseminated to the public through the Bernards Township listserv. It is already advertised on Channel 15.

5. Energy Saving Computing Practices – Bernards Township Director of Information Technology Chris Kyriacou created a guide on the best practices for computing to save energy. Some of the tips include:

- Set the Power settings on your computer to automatically go into Sleep/Standby mode after 15 minutes or so of inactivity. If you do nothing else, do this.
- If you use a desktop, use an LCD monitor. They use lots less energy than CRT's.
- Turn your computer off when you're done for the day.
- Use a laptop computer. They use lots less energy than desktops.
- Use a power strip so you can easily turn off all your computer accessories at once. BITS makes a special power strip that goes one step further, automatically cutting power to peripherals when you turn your computer off.

The full guide can be found attached as **Appendix Y**.

6. Best Office Practices – In an office setting, some of the greenest as well as cost-saving measures involve saving paper. It is recommended that email be used as communication in place of paper documents whenever possible, and that the IT department examine the possibility of getting Bernards Township online with many forms, especially ones that are used frequently. Other suggestions include:

- Xerox Copies – always copy 1-2 sided copies
- Save documents only printed on one side and load these papers for printing unofficial documents
- Scan and e-mail rather than copy and e-mail whenever possible
- Use e-mail whenever possible to disseminate information both internally and externally
- Agenda Packages for TC and Boards – post agendas on township website and hyperlink associated documents rather than providing paper copies
- All document forms which currently exist (i.e. developer agreements, easements, deeds, license applications, etc.) should be reformatted from double spacing to single spacing
- Reduce unnecessary copies of existing NCR forms

- Whenever possible, do not produce paper copies of reports; save and disseminate reports on the computer adhering to proper records retention guides as established by the State
- IT Department should investigate digital signatures to allow for on-line approval of various forms and documents

▪ **Community Incentives –**

1. Green Festival – Green Team member Karen Witt has informed Bernards Township that there will be a First Annual Green Community Festival on November 3rd 2007 in Liberty Park, Peapack Gladstone. Contact Karen Witt for additional information on the festival to disseminate to the community.

▪ **Education –**

1. Channel 15 – Channel 15 is the Bernards Township public access channel that is used to report local happenings, announcements, as well as broadcast Town Council meetings to township residents. Bulletins and Green events can also be posted on the channel if a message is sent to ch15@bernardsboe.com.

2. Church Bulletins – Most Bernards Township churches distribute a weekly bulletin to churchgoers on Sundays, many of which are free to publish an article in. Green events as well as short facts may be published via this method in an effort to educate the community.

3. Bernards Township listserv – Bernards Township distributes email newsletters periodically to individuals that subscribe to the listserv. This tool should also be used to inform subscribers of green modification in the community, events, as well as tips and tricks

VII. Suggested Initiatives -

- Continue meeting with appointed Green Team members at least once monthly until the end of their appointed term, December 31, 2007.
- Further publicize the Green section of the Bernards Township website by making Bernards Township listserv subscribers aware of it in the next newsletter.
- Obtain additional information on and publicize the Green Community Festival set to take place on November 3rd 2007. Contact Karen Witt for additional information.
- Direct model ordinances of interest to the department they concern and have them checked for correctness and feasibility/compliance with existing code.
- Obtain a trial ream of recycled copy paper and test its compatibility with Bernards Township printers and copiers.
- Develop an effective green cleaning program.
- Investigate the purchasing of sustainable hot/cold cups and paper.
- Make sure all Park and Public recycling bins have a garbage can either next to or near their location to avoid the mingling of trash with materials to be recycled.
- Check that all municipal office lunchrooms are outfitted with a recycling bin. If none are present one should be added. A regular garbage can be converted to recycling if marked with a sign. Educate employees that they can recycle all metals, but only #1 and 2 plastics per Somerset County recycling.
- Invest in a publication like Co-op America (www.coopamerica.org) or a “Green Pages” directory to keep the Township abreast of environmental issues and vendors.
- Continue asking for County Assistance with recycling at Township properties and Parks.
- Consult Bernards Township businesses on their recycling practices, possibly through an anonymous poll. Encourage businesses to ask Somerset County for recycling pick up servicing.

- Bernards Township Post Offices should be consulted about their recycling policy. If they have none in place they should be encouraged to adopt one.
- Sign the 'Cool Cities' Pledge to reduce emissions in Bernards Township.
- Sign up to participate in the Audubon Cooperative Sanctuary Program for Golf Courses. For more information on how to sign up visit:
<http://www.auduboninternational.org/programs/acss/golf.htm>.
- Have an energy audit completed on Municipal Properties (Town Hall, Police Department, DPW, Library, Health Department), and add main details from the executive summary to box labeled Executive Summary, (p.7).
- Inquire with an energy agent about Energy Procurement and explore the possibility of purchasing energy through them for municipal facilities if they can secure a more competitive rate.
- Have plans drawn for a solar panel array to be installed on the roof of the DPW. If possible submit these plans to the Board of Public Utilities New Jersey Clean Energy Program Customer On-Site Renewable Energy (CORE) Program before August 31st 2007. After that date the value of the rebate is being reduced.
- Install motion detectors for overhead lights in at a few locations to test their effectiveness. Areas of interest to test the technology would be multi-stall bathrooms where lights are typically left on for long periods, and walk-in closets/storage areas. Motion sensors in trial areas should be installed and in service no later than Friday, September 14th.
- Check all street lights that are controlled by sensors and make sure their sensors are not blocked from light causing them to operate unnecessarily.
- Begin the purchasing and installation of T5 overhead lights.
- Survey Harrison Brook for narrow locations/locations that could accommodate a footbridge on Block 106 Lot 92.
- If adopted, inform Police Department about the changes in our anti-idling policy. Also if adopted, consider adding signs asking drivers to please turn off their engines if not in motion while on Township public school campuses.
- Review fields and drainage basins maintained by the Township and determine which areas can cease to be mowed. Furnish the areas of high visibility with

wildflower seeds and inform all concerned Parks and Grounds employees of the changes.

- Convert grass covered raised traffic islands to stone cover, shrub and mulch cover, or another form of fill that requires little maintenance. Not only are the mowers used to maintain these islands polluters, but the maintenance grass creates in these small, tight areas is an unnecessary expense.
- Encourage local Homeowners Associations to furnish their drainage basins with native plants, and cut down on lawn mowing.
- Determine fair and sufficient scaled sewer rates based on water usage for all sewer users. Alert the public of the change and of ways they can conserve to save money on their annual rates.
- Add Township maintained facilities to GIS system in order better organize these facilities. Utilities of particular interest are traffic lights, street lights, and drainage basins. Additional topographical sustainability related features, stormwater management features, and areas of concern should be mapped as well to form a sustainability layer in the Bernards Township GIS system. This process should begin no later than May 2008.
- Actively maintain, weed, and water newly planted shrubs and seeded areas until are established. Seeded areas should also be seeded seasonally until the plants are of a healthy population.
- Determine if there are any parking lots, roads, or other parcels where small areas of curbing can be eliminated and bio-filtration systems can be constructed on the other side to treat the stormwater runoff.
- Install a solar photovoltaic panel array on the roof of the DPW building.
- Explore the possibility and feasibility of digital signatures, allowing various forms and documents available for online completion.
- Hire an Environmental Coordinator to ensure that the initiatives outlined in this document as well as those proposed by PMK are carried out, and that all future affairs and decisions are made with sustainability in mind.

XI. HISTORIC PRESERVATION PLAN ELEMENT

STATUTORY AUTHORIZATION FOR LOCAL HISTORIC PRESERVATION

The Municipal Land Use Law (*N.J.S.A. 40:55D-1 et seq.*) encourages “...municipal action to guide the appropriate use or development of all lands” in ways that promote the general welfare through local plans and zoning. Among its purposes, the MLUL (NJSA 40:55D-2) highlights the importance of conserving our heritage, as reflected in historic landscapes, buildings and structures, with the following purposes:

- i. *To promote a desirable visual environment through creative development techniques and good civic design and arrangement;*

- j. *To promote the conservation of historic sites and districts, open space, energy resources and valuable natural resources in the State and to prevent urban sprawl and degradation of the environment through improper use of land;*

Conserving historic sites and districts helps retain the authentic character that enriches our understanding of “place” and allows the past to inform and influence the evolving landscape. The civic design principles of the “pre-sprawl” era provided a strong sense of community through the type, style and arrangement of buildings.

In furtherance of its heritage conservation objectives, the MLUL provides for preparation and adoption of a Historic Preservation Plan Element (*N.J.S.A. 40:55D-28b.10.*) as follows:

“(10) a historic preservation plan element:

- (a) indicating the location and significance of historic sites and historic districts;
- (b) identifying the standards used to assess worthiness for historic site or district identification;
- and
- (c) analyzing the impact of each component and element of the master plan on the preservation of historic sites and districts”.

This historic preservation plan recounts the story of this place with a brief history (Appendix A) and includes the requisite identification of historic resources. It also reviews how other plan elements will affect historic preservation efforts as it seeks to establish a framework for historic preservation planning and other preservation activities that can assure that this heritage is not lost and can inform and inspire future generations.

XI. HISTORIC PRESERVATION PLAN ELEMENT

HISTORIC PRESERVATION GOALS AND OBJECTIVES IN BERNARDS

The following are overarching goals that guide this historic preservation plan:

1. Encourage the preservation of the distinctive character of the historic villages and hamlets of Basking Ridge, Liberty Corner, Franklin Corners, and Madisonville.
2. Coordinate the identification and preservation of historic sites, neighborhoods, and landscapes, archaeological sites, and scenic corridors within the municipality; maintain a municipal central repository of data collected.
3. Encourage the preservation of historic buildings and structures and promote the protection of historic, archaeological, and other cultural resources.
4. Promote the adaptive reuse of historic buildings and structures in ways that respect architectural and historic integrity.
5. Promote and encourage these historic preservation objectives through a combination of strategies: encourage private voluntary initiatives; administer and enforce existing design guidelines and requirements; and utilize Township and other funds, where appropriate.
6. Explore creation of an advisory Historic Preservation Committee as provided in the Municipal Land Use Law.

HISTORIC PRESERVATION POLICIES

The following policies are intended to advance Bernards Township's Historic Preservation Goals and Objectives:

1. Promote an appreciation of Bernards Township's cultural, physical and architectural resources, and communicate with citizens and stakeholders about the importance of preserving this heritage, bringing together homeowners, shop owners, cultural, educational and environmental organizations, and government agencies;
2. Maintain cohesive neighborhoods; ensure a compatible and harmonious context for historic buildings, structures, sites and districts; and discourage new construction that would destroy the character of Bernards Township's neighborhoods;
3. Discourage unnecessary demolition, destruction or other actions disruptive of historic resources;

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4. Integrate consideration of historic resources into Bernards Township's land use plan, subdivision and site plan reviews and approvals, economic development plans, and other strategic planning tools;
5. Establish a municipally appointed Historic Preservation Advisory Committee to help guide township boards and committees and to develop recommendations for specific strategies to achieve Bernards Township's historic preservation goals. The purpose of the Committee should be to advise and advocate rather than control or exercise approval powers. It is not intended for the Committee to be vested with authority to regulate changes to the exterior or interior of a structure. The Committee would, however, regularly review and provide advice regarding proposed exterior site alterations in connection with land use decisions by the Planning Board and the Board of Adjustment.

HISTORIC PRESERVATION PLANNING IN BERNARDS TOWNSHIP

As a town proud of its 18th century roots, Bernards Township values the historic buildings, structures and districts that remind us of the important role this region played during the Revolutionary War. The villages and hamlets that dot the Bernards countryside reflect a rich heritage spanning nearly 300 years of settlement. Its historic farmsteads and landscapes serve as reminders of the lifestyles of those early settlers and their descendants. Buildings representing different styles and ages, from pre-Revolutionary and Federal-period dwellings to early 20th century Bungalow, Eclectic and Colonial Revival houses, create the variety that gives the community much of its physical appeal and special character. Bernards Township's rich heritage is entrusted from generation to generation, enhanced and then passed on.

A key purpose of this Historic Preservation Plan is to chart the way forward toward identifying, preserving, and improving the historic buildings, structures, and streetscapes of Bernards Township so they can continue to play an integral, vibrant role in the community. This plan will help Bernards Township identify and characterize elements of community character and preservation strategies appropriate to the township. Understanding and documenting these historic resources is fundamental to this process. A process of education about a variety of values will be key, including the community values reflected in these resources, their intrinsic value to the neighborhood fabric, and their strong real estate value.

The historic buildings, structures, neighborhoods, streetscapes and landscapes that have shaped the community's identity, provide a unique sense of place. Their charm is a fragile commodity, one that can be easily damaged when style and scale are not respected. As the community evolves and changes over time, important aspects of the community character can be lost. On one level these risks include the disruption of neighborhood cohesiveness, when a massive addition or replacement house

XI. HISTORIC PRESERVATION PLAN ELEMENT

violates the scale and rhythm of the neighborhood and removes established landscaping. A more subtle threat involves the slow erosion of Bernards Township's historic fabric, setting and materials, as insensitive change can diminish the quality of historic buildings and landscapes.

This plan promotes and encourages the preservation of those historic resources that exemplify Bernards Township's cultural, social, economic, and architectural history. Historic villages and hamlets, landmark buildings, sites, and architectural styles are among the resources Bernards Township intends to preserve for the education, enjoyment, and general welfare of its citizens and visitors.

HISTORIC PRESERVATION CHALLENGES

As Bernards faces the challenges of a new century, the town's historic resources will likely come under attack in some quarters. While the preservation of historic sites and districts serves to promote the value of surrounding properties, many of these sites have the potential for significantly more development. When the real estate development opportunity afforded by the township zoning is sufficiently attractive, historic buildings will come under threat.

1. Balancing Preservation and the Rights of Property Owners

One of the most important components of successful historic preservation efforts relates to the needs and rights of owners of historic structures. While historic preservation is sometimes cast as averse to property rights, these values can coexist by working to achieve a balance. A successful balance requires conscious planning and coherent and well-articulated public policies that support preservation goals as well as present-day needs. As Bernards Township moves forward with plans to implement historic preservation goals, the participation of property owners will be a key ingredient for success. Interaction and communication with owners of historic homes and residents of historic districts should build upon a common interest in the values (historic and financial) to be protected.

Increased public education can lead to a broader knowledge of Bernards Township's history as well as a deeper understanding of history's relevance to the present. Future efforts should formalize a learning environment and process and establish a municipal repository where cultural resource and architectural historical data can be maintained.

2. Protecting Established Neighborhoods

Recent demolitions have renewed concerns about the loss of character in some of Bernards Township's older neighborhoods not previously recognized for their special interest. There are several small neighborhoods built during the 1930s and early 1940s that are comprised of fine examples of modestly-scaled Colonial Revival

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styles. Many of these houses still retain a high degree of historic integrity and represent high-quality work of several local builders. These houses were designed with an understanding of the historic prototypes that the Colonial Revival style was based, and more closely resemble the prototypes than the grand landmark Colonial Revival houses, such as the Frothingham-Sloan House at the United States Golf Association.

These small collections of well-crafted Colonial Revival houses enhance the value of all real estate within their spheres of influence and provide a permanent reminder of the scale and character of this place in an earlier time. They are also more affordable to purchase and maintain than their would-be 21st century replacement.

As the historic character of these neighborhoods comes under increasing threat from demolitions (permitted and de facto), subdivisions, new buildings at inappropriate building scale, and inappropriate infrastructure (such as cull de sacs), local policy will determine how neighborhood character is protected or exposed. A continuing trend toward neighborhood deconstruction/reconstruction may change the neighborhood scale that has been prized in Bernards for generations, by setting a new “neighborhood standard”.

3. Preserving Architectural Character

Portions of Bernards Township look much as they did in the early 20th century, before the late 20th century building and population booms. Particularly significant are the Basking Ridge and Liberty Corner village centers and the hamlets of Franklin Corners and Madisonville with their 18th and 19th century traditional and high-style buildings, and the pre-war subdivisions of small-scale houses in a variety of historical revival styles. Bernards Township’s historic landmarks and streetscapes of historic buildings contribute greatly to the beauty of the townships varied and unique neighborhoods, tree-lined streets and vibrant business districts.

Contributing to the township’s distinctive sense of place are such landmark buildings as the Brick Academy, the Van Dorn Mill, the Lode Mill Inn, the two Presbyterian churches, the Houdini-Ross house, the Kennedy-Martin-Stelle Farmstead dwelling and barns, the USGA Golf House (designed by John Russell Pope) and Samuel Owen’s “Cedar Hill” mansion (now Bernards Township Municipal Building).

In addition, there are numerous private homes that are stylistically noteworthy, many of which are potential candidates for changes to accommodate the needs of a modern family. The design and construction of complimentary additions, that reinforce the neighborhood scale rather than overpower it, can permit the old established neighborhoods to thrive, which can help prevent undesirable and unfriendly teardowns. Neighborliness extends beyond keeping a neat yard, and remaking a neighborhood

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When modern building codes are applied to rehabilitation of existing buildings, the standards are often too costly to allow these projects to proceed. New Jersey's Rehabilitation Sub-code enables building rehabilitation, consistent with preservation objectives to retain original features, to be safer and less costly, while maintaining the original design of the building.

4. Open Space

In order to preserve the essence of place that anchors community character, it is important to preserve the character-defining buildings on properties acquired for open space, which typically have consisted of centuries-old agricultural tracts. A process to properly identify, document and, where possible, protect historically significant buildings on these properties could utilize a variety of strategies that would avoid costs to taxpayers.

HISTORIC SITES AND HISTORIC DISTRICTS

Designated Historic Sites and Districts

A number of historic sites and historic districts in Bernards Township have been listed on the New Jersey and National Register of Historic Places. The State and National Register listing for Bernards Township is provided in Table XI-1 below. The listing is compiled and maintained by the NJDEP Division of Parks and Forestry, Historic Preservation Office and identifies the general location of sites and districts within the Township.

Listing on the State and/or Federal Register of Historic Places provides protection against destruction of historic resources when state or federal government funding is involved. However, listing on historic registers does not preclude the destruction or substantial alteration of historic resources when no government funds are involved.

The DEP provides the following explanation of the historic places, sites and districts that are listed on the Register:

“The listings for the New Jersey and National Registers of Historic Places listings include properties and historic districts in New Jersey for which a formal action was taken by the State Historic Preservation Officer or designee. The listings are current through the end of 2005, and the HPO will update these listings on a periodic basis to reflect ongoing additions and corrections.”

TABLE XI-1

NJ DEP - Historic Preservation Office
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New Jersey and National Registers of Historic Places Last Update: 11/21/2005	
<i>Bernards Township, Somerset County NJ</i>	
The Brick Academy (ID#2467) 15 West Oak Street SR: 11/25/1975 NR: 7/21/1976 (NR Reference #: 76001185)	Kennedy-Martin-Stelle Farmstead (ID#4200) 450 King George Road COE: 5/14/2001 SR: 6/9/2003 NR: 5/5/2004 (NR Reference #: 03000868) (Referred to in COE as "Reverend Samuel Kennedy Parsonage Farmstead")
Alward House (ID#2468) 40 Mount Airy Road SR: 2/5/1986 NR: 3/13/1986 (NR Reference #: 86000388)	Liberty Corner Historic District (ID#2473) Church Street, Lyons Road, and Valley Road SR: 8/16/1991 NR: 10/11/1991 (NR Reference #: 91001477)
Basking Ridge Historic District (ID#2469) North & South Finley and North & South Maple avenues; Lewis, West, Craig & Oak streets DOE: 8/18/1994 (DOE/Owner Objection)	Lyons Railroad Station (ID#2474) Lyons Road SR: 3/17/1984 NR: 6/22/1984 (NR Reference #: 84002805) (Thematic Nomination of Operating Passenger Railroad Stations)
Basking Ridge Presbyterian Church (ID#2470) 6 East Oak Street SR: 10/24/1974 NR: 12/31/1974 (NR Reference #: 74001190)	Lord Stirling Manor Site (ID#2475) 96 Lord Stirling Road SR: 12/1/1976 NR: 5/22/1978 (NR Reference #: 78001795)
Coffee House (ID#2471) 214 North Maple Avenue SR: 3/28/1977 NR: 11/7/1977 (NR Reference #: 77000906)	Veterans Administration Complex (ID#2476) Knollcroft Road north of Valley Road SHPO Opinion: 6/12/1980 DOE: 11/26/1980
Franklin Corners Historic District (ID#2472) Hardscrabble and Childs roads SR: 12/12/1974 NR: 5/12/1975 (NR Reference #: 75001159)	

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Existing Formal Surveys

The *Bernards Township Reconnaissance Level Inventory*, which is part of the 1989 *Somerset County Cultural Resource Survey*, lists 232 historic sites. The absence of stone arch bridges from the inventory is a significant missing link to the Township's early history. The very few that remain should be evaluated for their ability to yield significant information about early Township history, particularly in the face of increasing traffic loading and possible bridge replacements.

IMPACT OF OTHER MASTER PLAN ELEMENTS ON HISTORIC PRESERVATION

The provisions of other master plan elements can have direct bearing on the preservation of historic sites and districts. Proposals for future land use, circulation or community facilities can directly affect these resources. As required by statute, the impacts of other components and elements of the master plan on the preservation of historic sites and districts are addressed below.

General Objectives

The Master Plan cites the legislated purposes of the Municipal Land Use Law, which have been adopted as General Objectives, including the following purpose:

“10. To promote the conservation of historic sites and districts, open space, energy resources and valuable natural resources in the State and to prevent urban sprawl and degradation of the environment through improper use of land.”

Land Use Plan

Bernards Township's Land Use Plan calls attention to the importance of conserving community character, both within and beyond the limits of the Township's historic districts. Key recommendations of the land use plan call for scrutiny of bulk and intensity standards that can precipitate change in historic districts and structures.

The Land Use plan discusses a series of planning considerations and policy statements related to managing growth and change in the context of preserving historic character:

- “. . . The rural character that pervades the edges of Bernards Township, which includes scenic vistas, wooded hillsides, agricultural fields, expansive floodplains and historic settlements, is highly susceptible to degradation. . .”
- “Regulatory techniques such as Floor Area Ratio that may be “useful in protecting the character of historic villages or residential neighborhoods, by

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preventing the introduction of large buildings, which frequently disregard historic architectural styles, village form or neighborhood scale.”

- “The scale and character of historic villages is also a major concern, and Liberty Corner and Basking Ridge stand as testimonials to the historic past of Bernards Township. These mixed-use village areas have a fabric, which is susceptible to damage by the removal and replacement of older and smaller buildings with new larger buildings. Yet, in many cases, prevailing zoning standards permit a building envelope, based on setbacks, coverage and other standards, which can accommodate substantially more development than the historic forms. Strategies should be directed at preventing the removal of older homes or other buildings that play a key role in the streetscape and unique character of these historic areas.”
- “A principal objective of this land use plan is that the highly prized community character and quality of life be protected and maintained, throughout Bernards Township, whether in newly constructed or older suburban neighborhoods, historic settlements or rural portions of the Township. Protecting these features will likely require a combination of regulatory techniques, including carefully crafted strategies to protect and enhance these assets.”
- Floor Area Ratio controls, which are utilized in Bernards’ non-residential districts, should be evaluated for their ability to control against overbuilding in non-residential areas, and adjusted if appropriate.

Circulation Plan

The Circulation Plan includes a goal to “improve pedestrian friendliness throughout Bernards, and especially in the historic settlements of Basking Ridge, Liberty Corner and Madisonville.”

The Circulation Plan concludes that four lanes of traffic are not practical or desirable on two historic township roads, North Maple Avenue and South Finley Avenue.

The Circulation Plan suggests improvements in sight distance and alignment of the Church Street and Valley Road/Lyons Road intersection, which is within the Liberty Corner Historic District and is under Somerset County jurisdiction. Planning for this improvement will require Section 106 review which requires government agencies to take historic resources into consideration when government funds are expended.. Section 106 of the National Historic Preservation Act of 1966 requires consideration of historic properties and requires federal agencies to consult with the State Historic Preservation Officer (SHPO) and give the Advisory Council on Historic Preservation an opportunity to comment before projects are implemented.

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The Circulation Plan references recommendations based on the Somerset County Scenic Corridor and Roadway Study pertaining to preserving scenic assets:

- Coordination of circulation, conservation and historic preservation plan policies with scenic resource protection goals.
- Development of an objective rating system based on designation criteria to evaluate candidate local roads as “scenic corridors” or “scenic roadways”. Liberty Corner Road (CR 512) has already been designated as a scenic county roadway.
- Zoning ordinances can provide "scenic zones" based upon the boundaries of the "view shed" observed from a scenic corridor or roadway. Standards for such zones would provide for development that minimizes visual intrusion on the landscape.

Community Facilities Plan Element

The Community Facilities Plan encourages development of alternative energy facilities on public lands and buildings, which could potentially impact township-owned historic properties.

Bernards Township leases the Brick Academy to The Historical Society of the Somerset Hills and has been supportive of its long-term preservation plan. Similarly, Bernards Township leases the Kennedy-Martin-Stelle Farmstead to the Friends of the KMS Farmstead, whose goal is to create a new use for the property. These leases are cost effective methods to preserve historic landmarks and provide community amenities.

Farmland Preservation Plan

The Farmland Preservation Plan identifies a series of priorities that advance the goals of the Historic Preservation Plan, including:

- A priority in preservation / *retention of economically viable working farms* in the Township;
- Retention of scenic rural landscapes that *reinforce community character*, from which residents derive a strong sense of community;
- Retain aspects of the Township’s historic agricultural heritage and remaining built and natural elements of the agricultural landscape,

These priorities, which guide the farmland preservation program, are in harmony with the Historic Preservation Plan and Bernards’ other master plan elements.

Parks and Recreation Plan

Stewardship of historic buildings is a special responsibility that sometimes accompanies open space acquisitions. During 2008, Bernards Township acquired two open space parcels that included historic buildings, the McCollum Farmstead and the Sons of Liberty Farm. Planning for the parcels' intended use for passive recreation provides an opportunity to consider strategies to properly identify, document, and, where appropriate, preserve the historic buildings while avoiding costs to taxpayers. Evaluation of the viability of preserving historic buildings should be done early, since deferred maintenance is the enemy of many of these structures.

Conservation Plan

The Conservation Plan acknowledges the following recommendation in relation to the conservation of valuable historic resources:

“Basking Ridge and Liberty Corner are areas which exhibit distinct character with respect to historically significant elements. The building, inter-relationship of buildings and relationship to the street, landscaping, signs, lighting and pedestrian orientation all contribute to this character. The Township should consider design standards which would regulate potential demolition and future construction in a manner that maintains the integrity of these areas.”

Environmental sustainability goals support preservation and adaptive reuse of historic buildings and structures. Preservation is *sustainable development* for many reasons, including:

- The demolition of buildings adds significant amounts of material to landfills. The EPA has determined that building construction debris constitutes approximately one third of all waste generated in this country.¹
- It frequently requires less material, effort and cost to make an existing building more energy efficient than to replace it with a new building. Also, it is energy expended locally with materials and workers, rather than in the long-distance shipping of manufactured materials.
- The materials that were used to create an existing building required a certain amount of energy to get them there in the first place (i.e. to cut the wood, transport it to the site and to construct the building). That is energy that is embodied in the existing building -- energy that would be destroyed by the destruction of these buildings.

¹ Donovan D. Rypkema, *Historic, Green and Profitable*, Speech given at the Traditional Building Conference, Boston, March 8, 2007

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- In calculating the energy used in a building, much is made of how much annual energy is used in the building. Even in a new, energy efficient building, the energy saved pales in comparison with that used in construction. “The energy consumed in the construction of a building is 15 to 30 times the annual energy use.”²

SUMMARY AND RECOMMENDATIONS

The array of historic landscapes, sites and districts within Bernards Township contribute a cultural richness that enriches the quality of life and reinforces community values within Bernards Township. Protection of these resources serves to enhance the value of all real estate within their sphere of influence, while they also provide a permanent reminder of the scale and character of this place in an earlier time.

This historic preservation plan acknowledges the importance of these resources, which connect Bernards with its past, and calls upon all stakeholders to protect the authentic elements of place that make Bernards special. A review of the other Master Plan elements suggests that the other plan elements of the Bernards Township Master Plan, particularly the Land Use Plan Element, substantially advance the objectives of preserving and protecting historic sites and districts in Bernards Township.

The following specific recommendations are designed to advance the agenda for protecting historic buildings and structures in Bernards Township:

1. Establish an Historic Preservation Committee to
 - a. advise the Planning Board and Board of Adjustment on any application for development submitted to either board for development of any historic site or land within any historic district identified in any component element of the master plan.
 - b. prepare a survey of historic sites.
 - c. advise the Planning Board regarding the Historic Preservation Plan and other Master Plan elements.
 - d. advise the Planning Board regarding the inclusion of historic sites in the recommended Capital Improvement Program.
 - e. prepare written reports as appropriate.
 - f. conduct advisory, educational or informational activities to advance historic preservation.

2. Expand the collection of cultural and historic data in Bernards Township, particularly when development will alter or eliminate historic features.

² Ibid.

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3. Develop a standard protocol for the recording of historic buildings to be removed, including a photographic record, recorded measurements, etc.
4. Craft an Action Plan for historic preservation activities that includes:
 - a. expanded surveys and documentation of additional historic resources such as out-buildings, stone arch bridges and archaeological remains.
 - b. education for the citizenry (school curriculum, senior citizens, homeowners, etc.).
 - c. securing grants for historic preservation activities.

APPENDIX A

A Brief History of Bernards Township

(Adapted from National Register Nominations for Basking Ridge, Liberty Corner, and Olcott Avenue Historic Districts)

Bernards Township originally included all of Bernardsville and Far Hills Boroughs as well as a small portion of Warren Township. Far Hills was established as a separate municipality in 1921 and Bernardsville followed in 1924. Throughout most of the 19th century, the population in Bernards Township remained relatively constant, rising slowly from 1,790 people in 1810 to 2,558 in 1890. By 1910, the population had risen to 4,608. After Bernardsville and Far Hills were incorporated as separate boroughs in the early 20th century, Bernards Township's population dropped to 2,293 people. The estimated population of the township as of 2007 was 26,590.

The Lenni-Lenape of the Delaware band of Native Americans (part of the Algonquin peoples), were the first known inhabitants of the Bernards Township area. Scattered throughout Bernards Township are traces of these early inhabitants – arrowheads, tomahawks, hearthstones, hammerheads and camp rubble – which indicate long occupation. One of the areas most intensely used by Native Americans was a campsite along the Passaic on the present Verizon property. A second major campsite area was located along the Passaic River on property now part of the Somerset County Environmental Education Center. A burial ground is known to have existed on the east side of Childs Road on the hillside across from the Indian Graves Brook. In 1717, John Harrison, agent of King George I of England, purchased 3,000 acres for \$50 from Chief Nowenoik of the Lenape, which comprised much of what became Bernards Township, and was known as Harrison's Neck or Harrison's Purchase.

Basking Ridge

The name Basking Ridge first appeared in 1733 in the records of the Presbyterian Church and is recorded as being derived from the fact that "the wild animals of the adjacent lowlands were accustomed to bask in the warm sun of this beautiful ridge." "Baskeridge" and "Baskenridge" were commonly used spellings.

At the time of the American Revolution, Basking Ridge was a small village on a hill above the Passaic River, populated by farmers who were descendants of Scottish and English settlers. These yeoman farmers had been in the areas for at least two generations; organized settlement of the area dated to around 1720, about the same time as the Presbyterian Church was founded. In the course of the Revolutionary War, as many as one hundred men from Bernards answered the call to arms.

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During the Revolutionary period, the most prosperous member of the community was William Alexander, Lord Stirling, whose Palladian mansion stood southeast of the village center. Lord Stirling began to build his countryseat in Basking Ridge in 1761, after inheriting 700 acres of property there. He inherited thousands of other acres as well, but the wealthy and well-educated Lord Stirling seems to have chosen Basking Ridge as the site of his estate for its rural seclusion combined with a road network which provided access to his many business interests in New York and his political interests in Perth Amboy. Intent on recreating a countryseat on the Thames on a low knoll overlooking the Passaic, Stirling's estate, known as "The Buildings," was a local wonder.

Lord Stirling attended the Basking Ridge Presbyterian Church, and socialized with its prominent minister, the Rev. Dr. Samuel Kennedy, who was both physician and clergyman. Stirling gave up his position in the royal government of New Jersey and lost his considerable fortune by allying himself with the patriot cause during the Revolution. Commissioned as a Brigadier General in the Continental Army, he raised a regiment in the late summer of 1775. Using his home as a headquarters, Stirling brought uniformed excitement to Basking Ridge as the Revolution unfolded, through the coming and going of couriers, visits from General George Washington, and the headquartering of General Nathanael Greene and his brigade there in 1777-78. In December 1776, General Charles Lee, second in command under General Washington, was captured and taken prisoner from Widow White's Tavern by the elite Sixteenth British Light Dragoons.

These events were witnessed not only by the locals, but also by a number of well-to-do New York families who sought a haven from the occupied city and the threats of war. Perhaps best known of the circle to posterity is Elias Boudinot, a delegate to (and later, president of) the Continental Congress. He moved to an estate near Madisonville from his Elizabethtown seat, perhaps on the suggestion of his friend and legal client, Lord Stirling. Another important refugee from New York City was John Morton, who relocated to a farmhouse not far from Boudinot. A wealthy import merchant, Morton became known as the "Rebel Banker" and owned a nearby mill prior to his early demise in 1782.

Only weeks after the war was over, the New York families began to leave Basking Ridge, yet the excitement of the Revolutionary period was long remembered, and colored much of the village's perception of itself throughout the 19th century. As early as 1850, Harper's Weekly Magazine published a series on historic houses, and included articles and drawings on the Lord Stirling house and the Widow White's Tavern.

By the turn of the 20th century, there was a cultivation of the perception that Basking Ridge was a "colonial" town. That the number of 19th century buildings greatly outnumbered the 18th century survivors, and the landmark buildings of the war were already demolished, did not hinder the antiquarians. Significantly, local

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conservatism caused traditional architecture to linger well into the 19th century, so that eclectic and elaborate Victorian-era styles were slow to catch on. New buildings were constructed in the turn-of-the-century Colonial Revival style while existing buildings were often modernized in the same style. Some genuinely old houses, such as the Finley House at 200 South Finley Avenue, were enlarged and improved in the Neo-Georgian mode. Other old houses were moved, including the dwelling at 87 South Finley Avenue, reputed to be the oldest standing house in the village. It was relocated from a side street to a prominent site on the main thoroughfare. Small traditional East Jersey cottages at 147 South Finley and 64 South Maple Avenue were preserved; their additions and minor alterations reflect different generations' varying interpretations of "colonial" architecture.

During the early years of the 20th century, partly in response to the aesthetic reforms proposed by the City Beautiful Movement, and partly in response to the call for public amenities promoted by social reformers, there emerged an entire class of civic improvement organizations. Their impact may have been most measurable in small towns and rural places, where there had existed virtually no infrastructure. In Basking Ridge, an improvement society was founded in February 1903. The Basking Ridge Improvement Society exercised a strong impact on the way the village appears and operates today. In fact, many of the village features we associate with its "historic" character actually took shape during this period as a direct result of the society's activities. The society dedicated itself to such high-minded concerns as "law and order," fire protection, and improved educational facilities, but its most lasting accomplishments concern features still visible to anyone who walks or drives through the village: trees, roads and sidewalks, and street lights. Trees may seem like a natural feature of a place as rural as Basking Ridge, but by the beginning of the 20th century, commercial development and lack of a systematic planting program had resulted in shabby looking shade trees at the center of the village. Characteristic of the center of Basking Ridge are raised sidewalks and stone retaining walls necessitated by road cuts and other changes in grade.

Liberty Corner

First named Annan's Corner, the village was settled in 1722 by John Johnston of Annandale, a Scottish immigrant who purchased from William Penn a large tract of land that comprises the present village center. Annan's son William built a locally famous stone house in 1766, just outside of the present village on Lyons Road. The house, no longer extant, served as a church, a soldier's hostelry, a military hospital, and a school as well as a residence. Farming was the chief occupation of those living in and around the village. In 1838, a Presbyterian Church was established in Liberty Corner, with Rev. James T. English as minister. A new building was constructed in 1868, where Rev. English continued to serve until his death in 1873. English's descendants remain in Liberty Corner today. During the American Revolution, French troops of Comte de Rochambeau camped overnight on this property, August

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30-31, 1781, en route to Yorktown, Virginia, and final victory from General Cornwallis.

Easy rail transport commencing in 1872 was key to the development of dairying as an industry in Bernards Township, greatly and instantly expanding the market for fresh dairy products. In addition, other dairy products became increasingly important to dairy farmers in and around Liberty Corner, including condensed milk, which came to be preferred by many Civil War veterans accustomed to army-supplied processed milk and butter. The development of the cream separator in the 1870s led to the mechanization and standardization of butter production in centralized creameries, rather than on individual farms. Several creameries were located in Liberty Corner and Basking Ridge.

In 1889, William Childs and his brother Samuel of Bernards Township gave the local dairy industry a boost by opening the first of what grew to be a 105-restaurant chain featuring vegetarian meals and dairy products.

Liberty Corner was linked to the late 19th century tourist trade fostered by the railroad and offered lodgings for travelers in the Liberty Corner Hotel, which was built in the 18th century as Bullion's Tavern. At the end of the 19th century it was operated by Dennis Van Lieu and was later renamed the William Allen Hotel. It is no longer extant. Liberty Corner also served as an attractive destination for outings by local vacationers in Bernardsville and Basking Ridge making a daytrip to a "quaint," historical town.

In the early 1920's, taking advantage of available bus service to Lyons station, Charles Romph, a World War I veteran, purchased a tract just north of Church Street, which he subdivided to create a tiny "romantic suburb" of "English Cottage" style bungalows, Liberty Corner's sole residential development until the last quarter of the century.

Education

In 1750 a classical school, designed to prepare young men for college, was established in Basking Ridge by Dr. Samuel Kennedy, fourth pastor of the Presbyterian Church. For a period of several years, the school was moved to Kennedy's farmstead in the southeastern corner of the Township. After Kennedy's death, Rev. Robert Finley reestablished the academy in 1799 and in 1809 built the Brick Academy. Pupils came from New York City and other states, as well as New Jersey; residents provided lodgings. Finley's first class of four students graduated in 1802 and all entered the College of New Jersey (later renamed Princeton University). Among the Academy students were Samuel Southard (1787-1842), governor of New Jersey from 1832 to 1833 and United States Senator from 1833 to 1842; Theodore Frelinghuysen (1787-1862), United States Senator from 1829 to 1835, vice-presidential candidate with Henry Clay in 1844, chancellor of New York

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University, and president of Rutgers College; Robert Field Stockton (1795-1866), hero of the Mexican War who served as the first military governor of California and as United States Senator (1851-1853); and William Lewis Dayton (1807-1864), United States Senator from 1842 to 1851 and vice-presidential running mate of John C. Fremont in 1856.

Beginning in 1903, the Basking Ridge Improvement Society, which had been organized with the modernization of the local school system as one of their major concerns, worked to have men sympathetic with progressive ideas, including William Childs, elected to the local school board. Childs, who was by then a successful New York City restaurant entrepreneur, attended the local public school as a child, but then had had to travel to Morristown to attend high school. Under Childs, three new multi-room schools were constructed between 1903 and 1905, a remarkable accomplishment for a rural community that resulted in the closure of five outdated schoolhouses. New four-room schools were built in Basking Ridge (1903) and Liberty Corner (1904).

In 1905, the Improvement Society backed efforts by the Board of Education to establish two grades for a new high school in the township – using two rooms in the Bernardsville School. For the first time a public high school education was available in Bernards Township. Prior to that year, the nearest public high school would have been eight to ten miles away in Morristown, or Summit. In his 1904 School Report, Somerset County Superintendent H.C. Krebs singled out Bernards Township for taking the lead – through its ambitious school construction program – in a movement toward “an awakening and an enterprise that augur well for the educational future of the county.” Unlike most other rural communities, Bernards Township was clearly in the vanguard to provide a publicly financed higher education

Transportation

Even before paved roads to the village were contemplated, Basking Ridge’s citizens wished to be connected to the rest of the world. Although stagecoach lines had served Basking Ridge since colonial days, by the mid-19th century all other modes of transportation were considered inferior to the railroad. By that time, Bernards Township had been bypassed by two railroads, the Morris and Essex through Morristown to the north, and the Jersey Central, through Somerville to the south. Citizens organized and agitated to get a rail line laid through the village, which was finally accomplished in 1872 with the Passaic Valley & Peapack Railroad. The line ran from Bernardsville to Summit, but the Basking Ridge depot was placed so far north of the center of town as to have virtually no impact on the life of the village center (effectively preserving the 19th century village streetscape).. Although the Rail Road immediately began promoting the sale of nearly a thousand proposed tiny lots in Basking Ridge, hoping to create a commuter suburb that would provide steady revenue to the railroad, little development occurred there. Instead, to the

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chagrin of Basking Ridge's civic boosters, the railroad helped Bernardsville become the dominant town center of the region by facilitating the lifestyle of the enormously wealthy newcomers. Basking Ridge would continue as an inexpensive summer destination for families of more moderate means, who boarded at several hotels or with local farm families.

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*“The purpose of conservation:
The greatest good to the greatest number of people for the longest time”*

Gifford Pinchot, US Forest Service

INTRODUCTION

In furtherance of the conservation objectives of the State Legislature, the Municipal Land Use Law (*N.J.S.A. 40:55D-1 et seq.*) provides for preparation and adoption of a Conservation Plan Element (*N.J.S.A. 40:55D-28b.8.*) as follows:

“Conservation plan element, providing for the preservation, conservation and utilization of natural resources, including, to the extent appropriate, energy, open space, water supply, forests, soil, marshes, wetlands, harbors, rivers and other waters, fisheries, endangered or threatened species, wildlife and other resources, and which systematically analyzes the impact of each other component and element of the Master Plan on the present and future preservation, conservation and utilization of those resources;”

STATUTORY AUTHORIZATION

This section of the Master Plan was prepared in accordance with the Municipal Land Use Law, N.J.S.A. 40:55D-28b:

(8) A conservation plan element providing for the preservation, conservation, and utilization of natural resources, including, to the extent appropriate, energy, open space, water supply, forests, soil, marshes, wetlands, harbors, rivers and other waters, fisheries, endangered or threatened species wildlife and other resources, and which systemically analyzes the impact of each other component and element of the master plan on the present and future preservation, conservation and utilization of those resources;

The MLUL authorizes municipalities to plan and zone to promote the general welfare of the citizens of New Jersey. The 15 purposes of the MLUL (NJSA 40:55D-2) explain the State’s rationale for the statutory authorization for municipal land use planning and regulation. Eight of these purposes highlight the importance of conserving natural resources and maintaining a clean healthy environment.

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1. The public health and safety (subsection “a”) bear a direct relationship to the use and management of New Jersey’s land and water resources.
2. Securing safety from floods and other natural and manmade disasters (subsection “b”) and providing adequate light, air and open space (subsection “c”) are similarly directed at conserving natural resources.
3. “Preservation of the environment”, in part through planning for “appropriate population densities and concentrations” (subsection “e”) is a key underpinning of local land use policy.
4. Providing sufficient space in appropriate locations for a variety of land uses is intended, according to their respective environmental requirements, to meet the needs of all New Jersey citizens” (subsection “g”).
5. The statute also seeks to promote the conservation of “open space, energy resources and valuable natural resources in the State and to prevent urban sprawl and degradation of the environment through improper use of land” (subsection “j”).
6. The conservation of energy is cited in subsection “n” (“promote utilization of renewable energy sources”) and subsection “o” (“promote the maximum practicable recovery and recycling of recyclable materials”).

The MLUL also provides for the preparation of a Green Building and Environmental Sustainability Plan Element (Green Plan Element), which is a separate but related element of the master plan.

GOALS AND OBJECTIVES

The following Master Plan Goals and Objectives are directly relevant to the Conservation and Open Space Plan:

1. To promote and encourage social comity, civic responsibility and neighborliness, which are key quality of life indicators in Bernards.
2. To promote sustainable practices in the design, construction and operation of public and private facilities.
3. To encourage an overarching respect for the natural environment and a desire to leave Bernards a better place as a result of these plans.
4. To retain the rural and agricultural character of the township to the greatest extent practicable.
5. To limit development to densities and intensities that can be adequately served by existing and planned private and municipal capital facilities and the natural

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and built infrastructure, and not purchasing additional wastewater treatment capacity to permit collection line extensions.

6. To limit development to densities and intensities that will retain the remaining natural areas of the Township and protect sensitive environmental areas.
7. To encourage the use of design techniques that result in energy and water conservation and minimize the impact of development on the everyday environment.
8. To promote the preservation of the Township's historic sites and districts.
9. To continue to examine, and when appropriate, amend the Land Development Ordinance, to assure flexibility and excellence of design.
10. To examine new design approaches such as lot averaging and other open lands conservation techniques to determine their applicability in Bernards.

OBJECTIVES

Land Use and Management

1. Land use policies should strive to maintain and enhance community character, protect the integrity of existing neighborhoods and prevent the intrusion of incompatible new development.
2. The densities and intensities of permitted development on the limited remaining vacant lands should respect the environmental capabilities and limitations of these lands and not exceed the capacity of the natural environment and current infrastructure
3. Groundwater aquifers and surface water quality and quantity should be protected, through the proper management of aquifer recharge areas, wetlands and their transition areas and fractured bedrock groundwater aquifers.
4. To plan for a reasonable balance among various land uses that respects and reflects the goals of the Master Plan.
5. Development densities and intensities should be planned at levels which will not require growth-inducing infrastructure to be extended into the rural countryside.

Conservation and Open Space

1. Environmentally sensitive land should be protected through acquisitions and/or conservation easements.
2. Recreational opportunities should be enhanced by construction of paths and expansion of greenways that better link neighborhoods with open spaces and

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natural lands.

3. Township-owned sites should be evaluated for potential active and passive recreational use with an emphasis on retaining natural lands wherever possible.
4. Open space acquisitions should be prioritized to meet evolving needs and current deficits and in concert with historic preservation objectives.
5. Bernards should continue to promote and enhance local stewardship of open spaces.

CONSERVATION PLANNING IN BERNARDS TOWNSHIP

Bernards contains a multitude of natural resources which together help define the essential character of the Township. The rolling landscape that surrounds the developed environment lends to a sense of place that should be fiercely protected; its vanishing would have a profound effect on the future character of the Township.



The rolling landscape of Bernards lends to its desirable sense of place.

Toward this end, since 2003 the Township has considered a series of ordinances addressing native species plantings and neighborhood tree conservation and has adopted minimum improvable lot area and density calculations based on natural resource limitations and other constraints.

This Conservation Plan proposes the continuation and expansion of Bernards' land stewardship efforts and outlines Bernards Township's strategies to meet the statutory purpose to preserve, conserve and utilize natural resources. Land stewardship involves the actions of both landowners and government agencies. The Township's approach to stewardship should be two-fold, including public education and implementation of ordinances for conservation subdivision designs, stormwater management, and protection of stream corridors, steep slopes, ridgelines and forests.

Public education on the importance of stewardship in protecting these valuable natural resources is available through existing educational programs offered by the County and State, and private non-profit organizations including the New Jersey Conservation Foundation, the Great Swamp Watershed Association and the Upper Raritan Watershed Association. The Township should seek to partner with these organizations to advance these efforts, and should explore the creation of new

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programs through Township schools and Township agencies such as Parks and Recreation or the Environmental Commission.

Sustainable Jersey, a statewide program to register and certify “green” municipalities, has outlined an agenda of environmentally friendly initiatives that municipal leaders can select from, when pursuing Sustainable Jersey certification. Sustainable Jersey is further described in the Green Building and Environmental Sustainability Plan (Green Plan).

While the Conservation Plan Element is designed to function in concert with the other plan elements, the most important linkage will be with the Land Use Plan. Together, these plan elements propose the location, scale and intensity of new development and the resource management strategies needed to protect the environment. By providing for development at densities that the land can support, the Land Use Plan effectively carries out the objectives of the Conservation Plan and vice versa.

This Master Plan reiterates the concern that retaining the existing zoning will overtax the natural environment, with substantial degradation of surface water and groundwater quality. It will also entail the removal of substantial forested areas, and farmlands, which are particularly vulnerable to suburban sprawl. It has become increasingly obvious that there are other alternatives available, and that zoning for sprawl does not protect the general welfare, but rather substantially degrades the environment and erodes the quality of life and human interaction.

Fragmentation and degradation of vegetation, land and water resources has been a byproduct of human activity. Woodlands, initially cleared for agricultural use, have given way to residential neighborhoods easily developed on these high, dry and usable soils. Water quality has been progressively altered and impacted by human activity.

The quality of the air we breathe and the water we drink determines the health of the human organism and all life forms. This Conservation Plan seeks to minimize further degradation of these resources for the 21st century and beyond. This plan recognizes the inherent limitations of our ability to disassemble the natural world and put it back together again. It argues in favor of a lighter touch on the land, one that is more respectful of natural systems, and that limits the resource commitments and impacts of human intervention. This calls for a systems approach to natural resource conservation, where interconnected natural systems are viewed as a collective resource, not a series of separate features.

The variety of biological species is an indicator of the health of an ecosystem. Maintaining biological diversity requires protection of critical habitat areas. While habitats of endangered or threatened plant or animal species are of special importance, threatened or endangered status may be transient. For instance, the

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great blue heron and bald eagle have been removed from the protected list, yet their critical habitats remain essential to their continued survival. Additionally, the extirpation of rare species removes elements from the food chain that help maintain ecological balance. The explosive deer population in New Jersey is but one example of the damage wrought when this natural balance is lost.

Protecting biodiversity requires the protection of terrestrial and aquatic habitats that are highly susceptible to degradation. Pristine waters cannot be maintained without protection of their watershed areas. Freshwater wetlands play an important role in filtering contaminants from the surface water and groundwater regime and, while protected by state statutes, are not immune from impacts that occur beyond the regulated areas. Similarly, prime forested areas, including mature stands of native species, are easily lost or damaged through fragmentation, a manmade impact that reduces bio-diversity.

The scenic wonder of ridgelines, slopes and ravines is only one aspect of the value of these natural features, without which certain species will not remain. Similarly, grassland habitats are essential to the nesting, feeding and breeding of a variety of grassland bird species, yet such areas are frequently lost to development. Land development should be arranged to maximize the conservation of substantial masses of critical habitat areas, by limiting the aerial extent of development and promoting conservation techniques targeted to these resources.

Aldo Leopold wrote in *A Sand County Almanac*: "A land ethic, then, reflects the existence of an ecological conscience, and this in turn reflects a conviction of individual responsibility for the health of the land. Health is the capacity of the land for self-renewal. Conservation is our effort to understand and preserve this capacity..."

THE HIGHLANDS REGIONAL MASTER PLAN

The New Jersey Highlands Council adopted a Regional Master Plan (RMP) for the Highlands in September 2008. The RMP divides the Highlands into two primary components - the Planning Area, where RMP policies are optional, and the Preservation Area, where conformance to the RMP is mandatory and must be completed by December 8, 2009.

Bernards Township is entirely within the Planning Area, where any local decision to conform to the RMP is optional. While there is no time line for Planning Area communities to "opt-in" to the RMP, making the standards of the RMP applicable in the Planning Area, Bernards Township has not adopted a resolution indicating an intent to conform to the RMP.

Ironically, capacity analysis and build out assessment, key elements that the RMP requires municipalities to perform, have long guided the Bernards Township Master

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Plan, particularly since 2003 when reductions in residential density were recommended in the proposed Conservation Residential Districts.

SUMMARY OF CONSERVATION FACTORS

Bernards Township possesses a number of unique natural resources. The greatest concentration of these is found at the periphery of the developed suburban core of the Township along the Passaic River to the east, the Dead River to the south and the Second Watchung Ridge, spanning the Township's entire southwestern border with Bridgewater and Bedminster Townships. The following paragraphs identify these resources and highlight their importance in the ecosystem.

TOPOGRAPHY

The topography of Bernards Township ranges from the higher elevations on the Second Watchung Ridge to the low lying areas of the Great Swamp and Dead River. Elevations are generally between 199 and 609' above sea level (see Figure VIII-1). The core of the Township is characterized by rolling terrain, with higher elevations on the surrounding ridges to the north and west.

The Second Watchung Ridge is part of the Watchung Mountains, extending westward from Millburn Township in Essex County. This topographic feature forms the southern and western borders of Bernards. The western border is a minor extension of the Watchung Ridge, which also serves as a gateway to the Somerset Hills, which fan out through Bernardsville Borough. There are two other distinct ridge features present, one in Basking Ridge running north to south and another south of Lyons Road running east to west. The latter is part of Long Hill, which extends from Chatham Borough to the eastern border of Bernards.

BEDROCK GEOLOGY

The topography of Bernards Township reflects the underlying bedrock geology, depicted in Figure VIII-2. The Preakness Basalt flows which formed the Watchung Mountains are evident on the southern and western borders, in a radial pattern evident in the Second Watchung Ridge. The Towaco Formation, which consists of fine-grained sand and siltstone, extends throughout the central portion of the Township. The Hook Mountain Basalt runs through the southern part of Basking Ridge, south of the railroad line. The Boonton Formation, spanning the northern half of the Township border with Harding, underlies the Great Swamp area. The Hook Mountain Basalt, which underlies Basking Ridge and the portion of Long Hill within

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Bernards Township, is a fine to coarse grained intrusion similar to the Watchung Mountains. The Boonton Formation is a fine grained sand, silt and mudstone.

Protection of groundwater resources requires, in part, that development impacts to aquifers are managed in a way that protects recharge areas. Recharge areas are areas where permeable soils and natural drainage patterns permit the infiltration of surface runoff into the underlying geologic structure. Protecting aquifer recharge areas requires limitations on impervious coverage, to limit the negative effects of contaminated stormwater and to assure that recharge areas remain open to infiltration. Adequate functioning of on-site septic systems is a major concern in this regard.

Figure VIII-3 depicts a series of “Conservation Factors” affecting Bernards Township, including streams, forests, wetlands, steep slopes and floodplains. This composite mapping highlights areas of the Township where sensitive resource limitations overlap or converge. These areas merit a high level of protection.

WATERSHEDS

The majority of Bernards Township (i.e., 88.4%, 21.4 square miles) is located within Watershed Management Area 6 (Upper & Mid Passaic, Whippany & Rockaway), as defined by the State Development and Redevelopment Plan (see Figure VIII-4). Small portions of the Township’s westernmost boundary are located within Watershed Management Area 8 (North & South Branch Raritan), and a small portion of the southern tip of the Township is located within Watershed Management Area 9 (Lower Raritan, South River and Lawrence).

All of the medium residential zones (R4, R5, R6 and R7) are located within Watershed Management Area 6, which itself consists of five subwatersheds, (1) Upper Passaic (above Osborn Mills); (2) Upper Passaic (Dead River to Osborn Mills); (3) Dead River (below Harrisons Brook); (4) Harrisons Brook; and, (5) Dead River (above Harrisons Brook).

SURFACE WATERS

Bernards Township has approximately 57 miles of streams and rivers, which are depicted on Figure VIII-3. The Passaic River forms the Township’s eastern border with Harding and Long Hill Townships and flows roughly north to south. The two other main flowing water bodies are Harrison Brook and the Dead River. Harrison Brook has its origins in the north-central portion of the Township, north of I-287, and flows south to its confluence with the Dead River. The Dead River originates in the northwestern corner of the Township, north of I-287, and flows south and east along the Township’s southeastern border where it then joins the Passaic River.

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Since 2003, NJDEP regulations have expanded controls over the streamside zone, with minimum 50' buffers on all streams.

FLOODPLAINS

Floodplains flank the streams and rivers that drain the Township, as depicted on Figure VIII-3. By far the most extensive floodplain is associated with the Passaic River in the northeastern portion of the Township. Most of the floodplain areas here are within the Great Swamp watershed and part of Lord Stirling Park, permanently protected as open space and recreation land. The floodplain in this area extends as far as 3000' from the Township border, and is variable in width. The Dead River also has an extensive floodplain within Bernards, major portions of which are encompassed within Township- owned lands directly south of Spring Valley Boulevard. With the exception of a few elevated areas to the interior of these properties, the floodplain extends to Spring Valley Boulevard.

Further north, where the Dead River flows from the northwestern corner of the Township, the floodplain is variable, ranging in width from 200' to 2500' at its widest point. Harrison Brook, flowing through the central portion of the Township, also has a variable width floodplain. As the brook flows south, its floodplain fans out further, reaching 1000' at its widest point. Altogether, floodplains total 2,200 acres and account for roughly 15% of the Township's acreage.

NJDEP Flood Hazard rules now set strict limits on building in the flood hazard area, prohibiting construction of basements and restricting construction of crawlspaces and garages unless their floors are more than one foot above the high water mark, as is also required for any new road. The rules also impose a 25-foot setback from any top of bank or edge of water for all new construction, or reconstruction of existing buildings, regardless of whether the site is located in a flood hazard area. And a "Zero Net Fill" requirement prohibits construction from covering more than 20% of the flood storage volume of a site and requires developers to remove fill to compensate for the flood storage volume reduced by the development.

Riparian Zones are subject to NJDEP Flood Hazard Area regulations that require permits for construction, filling or clearing land within either 50 feet, 150 feet or 300 feet of a watercourse, depending upon its environmental sensitivity, with very limited circumstances under which vegetation in the Riparian Zone may be disturbed or removed.

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WETLANDS

Wetlands within the Township account for approximately 20% of the total land area of Bernards. Many of these wetlands correspond to the floodplains of the three major rivers and streams of the Township; however, there are wetlands in various locations that are part of the greater hydrologic system as depicted on Figure VIII-3. The largest concentrations of wetlands occur in the vicinity of Lord Stirling Park/Great Swamp, and along the Dead River floodplain, south of Spring Valley Boulevard. Wetlands within Bernards play an important role in filtering contaminants as well as retaining precipitation and slowly feeding it to headwater streams.

STEEP SLOPES

Steep slopes occur in various locations throughout the Township (see Figure VIII-3), but are primarily found along the Second Watching Ridge on the Township's southern and northwestern boundaries. Slopes greater than 15% are also found along the extension of Long Hill in the very center of the Township south of Basking Ridge and in the northernmost part of the Township in the vicinity of Hardscrabble Road. Bernards currently regulates slopes over 15% and requires detailed grading plans and architectural plans.

FORESTED AREAS

Despite the substantially developed character in north/central Bernards, the western and southern portions of the Township retain large contiguous forests, many of which are permanently preserved as parks and open space. The more developed portion of the Township has spotty forested areas, primarily found on remaining undeveloped parcels and along stream corridors. Roughly 28% (4,360 acres) of the Township remains forested.



Approximately 28% of Bernards Township remains forested.

Forests provide a wide range of benefits, improving air quality, aiding aquifer recharge and preventing soil erosion. Most of the forests in Bernards also provide critical habitat for endangered and threatened species (see next section on Critical Habitat). The preservation of this forest cover is not only of critical importance to the perpetuation of these species, but also to the rural character of the district.

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The NJDEP publication titled “Protection and Care of Urban Forests” provides a detailed list of the resources protected and offered by forested areas. It notes that forests:

- Modify local climatic conditions near or within their boundaries
- Create the feeling of privacy
- Serve as recreational facilities
- Provide habitats for plants and animals
- Reduce surface runoff because of the high moisture holding capacity of the forest soils and tree canopy
- Enhance the visual characteristics of the scenic corridors
- Reduce noise pollution
- Produce oxygen

CRITICAL HABITAT FOR THREATENED AND ENDANGERED SPECIES

In 1993, the New Jersey Department of Environmental Protection Endangered and Non-game Species Program (ENSP) initiated a move to a landscape level approach for endangered species protection. With suburbanization and development occurring in all areas of the State, an increasing amount of habitat suitable for threatened and endangered species was being lost daily.

In order to address habitat loss, ENSP partnered with the Center for Remote Sensing and Spatial Analysis (CRSSA) at Cook College, Rutgers University. Utilizing LandSat Thematic Mapper satellite imagery, CRSSA mapped land cover for the entire State of New Jersey, broken down into 20 different habitat/land cover types. After generalized cover types were classified, detailed methodologies were developed to address the habitat suitability issues for each focus category, including beach/dunes, emergent landscapes, forested wetlands, forested areas and grasslands.

After reclassifying data based on standards developed for each focus category, the habitat data was intersected or combined with the Natural Heritage Program’s Biological Conservation Database (BCD). This database is a Geographic Information System (GIS) coverage that provides information on the sighting of threatened and endangered species, based on the field work of ENSP scientists and sightings reported by members of the public. It is the most comprehensive data available in digital form on the location of threatened and endangered species.

The combination of these two data sets resulted in the data depicted on Figure VIII-5. The Landscape Project data provides users with scientifically sound, peer-reviewed information on the location of critical habitat based on the conservation

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status of the species that are present. Habitats are ranked on a scale of 1 to 5, based on the criteria outlined in the following table:

NJ Landscapes Project Ranking System

Rank	Indication
1	Suitable habitat, no special concern, threatened or endangered species sighted
2	Habitat patch with species of special concern present
3	Habitat patch with State threatened species present
4	Habitat patch with State endangered species present
5	Habitat patch with Federal threatened or endangered species present

Bernards Township is rich in habitat that is suitable to support populations of threatened and endangered species. Many of the forest and wetland/forest resources that are present in the Township are ranked 3 and 4, indicating the presence of State Threatened and State Endangered species. Approximately 68% of the Township's forest resources are Rank 3 while the remaining 32% are Rank 4. Roughly 32% of the wetland/forest resources are Rank 3 with 45% Rank 4. In addition to these high quality habitats, there are also grassland and emergent habitats present within the Township.

While forest is the most extensive habitat found in the Township, the wetland/forest habitat is the most critical. There are roughly 730 acres of Rank 4 wetland/forest habitat, primarily within the floodplain of the Passaic River in Lord Stirling Park and along the corridor of the Dead River in the eastern part of the Township. The critical forest habitat of Bernards Township stretches along the southern boundary of the Township with Bedminster and Bridgewater, wrapping around to the eastern boundary with Far Hills and Bernardsville. Some of the critical forest resources also extend north along the Dead River and Harrison Brook corridors.

Bernards Township also has critical emergent and grassland habitat. Although not as high ranking as much of the forest and wetland/forest habitat, it nonetheless is worthy of noting. Emergent habitats are those that are critical to the reproduction of many amphibian species, which occur on these early spring pools for this process. The NJDEP is currently undertaking a project to identify and monitor these emergent habitats, with the hopes of giving them the same protection that wetland areas are afforded under State legislation. Rank 1 and Rank 2 emergent habitats are located along the Passaic and Dead River floodplains and total approximately 640 acres. The grassland habitat depicted in Figure VIII-5 is primarily rank 3, with small areas of rank 1 present as well. Grassland resources are concentrated near Lord Stirling Park, the southern tip of the Township and along the eastern border of the

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Township near Far Hills. There is a total of 664 acres of grassland habitat in the Township.

The Landscape Program data was intended to aid municipalities, County and State governments, conservation agencies and citizens by identifying the extent of critical habitat within their respective jurisdictions and communities. A variety of means should be employed to protect these critical habitats, including the following:

- Prioritizing open space acquisitions based on the presence of habitat for threatened and endangered species
- Adopting regulations aimed at protecting critical habitat
- Adopting management policies for open space that are consistent with protection of critical habitat
- Permitting flexibility in development techniques to protect critical habitat
- Promoting land stewardship practices that are consistent with the protection of critical habitat

More than half of the land area in the Township is categorized as critical habitat for threatened and endangered species, whether it's forest, grassland, emergent or forested wetland. The Landscape Project data highlights the extent and critical nature of these resources found within Bernards Township.

CARRYING CAPACITY

Carrying capacity is a planning technique used to establish the maximum population level of a species based on the availability of natural resources. Carrying capacity had its genesis in ecological studies, used to manage wildlife habitat rangeland for grazing. In the context of land use planning, carrying capacity has been defined as the ability of natural and man-made systems to support a level of population growth and ancillary development while maintaining established standards of performance. When applied to land use planning, an assessment of carrying capacity is useful in establishing maximum densities or intensities of development. However, sustainability requires a margin of safety, not planning for the maximum development that can be supported.

The policies and strategies of this Conservation Plan seek to limit the impacts of development and retain the natural terrain and features to the greatest extent practicable. This plan also promotes the restoration of natural systems that have been degraded by past activities. As new regulatory tools or techniques become available, they should be evaluated for their ability to promote the Conservation Plan objectives and adopted where appropriate. Conservation easements for critical resources should be expanded, and a program of mapping and monitoring instituted. Additionally, open

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space and woodlands acquisition priorities should support the goals of the Conservation Plan.

Since the preparation of the 2003 Master Plan, Bernards retained Matthew Mulhall, PG to prepare a groundwater evaluation ("Evaluation of Groundwater Resources of Bernards Township, Somerset County, New Jersey" 2008) that has again called attention to the need for lower development densities in unsewered areas to protect groundwater from septic contamination.

The groundwater management strategy from the 2003 Master Plan in the proposed CR-1 and CR-2 Districts seeks to limit the degradation of groundwater while also permitting appropriate uses of land. The Plan seeks to program uses of land that can conserve and manage limited resources, while also permitting development at densities that limit degradation and serve to better protect the potability and availability of groundwater resources. New DEP septic density standards may require a further evaluation of the minimum lot criteria needed to meet this state mandate.

DEP regulations require a 300' buffer for all Category 1 streams and their tributaries and 50' to 150' buffers on other waters. As a result, Bernards should amend and update stream corridor regulations to reflect all current DEP buffer standards. Bernards includes some high quality stream segments in the northern portion of the Township, including trout production waters, and streams in the Township that are headwaters to the Dead River and Harrison's Brook, which flow to the Passaic River. Headwaters are particularly vulnerable to degradation because of the limited available flow, and any degradation in headwaters is transferred downstream throughout the surface water system.

In unsewered areas, Bernards Township's Master Plan proposes to achieve the objectives of the State Plan through zoning techniques that avoid sprawl. A key Mulhall finding (page 69) calls attention to the need for adequate recharge areas to dilute septic system contaminants:

Within the small portion of the township underlain by Precambrian rocks, recharge areas open to infiltrating precipitation ranging from 9.3 to 12.9 acres are necessary to ensure adequate recharge is available to dilute septic system contaminants that migrate into bedrock aquifers in this area. Given the very low replenishment rate of the Preakness Basalt, if septic system contaminants migrate into the same fractures used for water supply, recharge to the equivalent of 23 to 67 acres will be necessary to adequately dilute the nitrates in these discharges to the current antidegradation level. Within

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the slightly more than 2400 acres underlain by the Jurassic sedimentary rocks, recharge to 7.3 acres will be necessary for diluting nitrates in septic system discharges to a concentration of 5.8 mg/l.

Thus, Mulhall concludes that the minimum recharge areas per septic system for the aquifers that underlie the proposed CR-1 and CR-2 Districts are generally comparable to or in excess of the 7-acre and 10-acre minimum lot criteria recommended in the 2003 Master Plan. Both the DEP septic density standards and the Mulhall study corroborate the 2003 Master Plan recommendation to reduce residential densities in non-sewered areas.

SUMMARY OF CONSERVATION PLAN POLICIES

ENERGY AND AIR QUALITY

Protection of air quality is a measure difficult for individual municipalities to control given that most impacts to air quality come from outside the region. The combination of coal burning power plants and industry to the west in the Ohio Valley along with prevailing wind directions create the greatest impact to air quality in our region.

Promoting sound principles will aid in reducing further effects on local air quality and maximize energy efficiency and use of alternative technologies. To effectuate this, the following measures are recommended:

- a. Promote alternative means of transit by providing opportunities and access for alternative transportation systems (buses, car and van pooling, bicycling, and walking).
- b. Reduce the need for vehicular trips by facilitating better connections among residential, commercial, office, and recreational uses.
- c. Encourage staggered work hours for large employment centers.
- d. Encourage energy conservation through subdivision design, building design and building orientation to maximize passive solar gain.
- e. Recommend landscaping standards that provide buildings with maximum solar access, shading, and wind protection.

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- f. Encourage the maximum recovery of recyclable materials and the use of renewable energy sources.
- g. Require air quality assessments at principal intersections for significant developments (three hundred (300) or more vehicle trips per day) to identify problem areas and mitigation strategies.
- h. Design and encourage bikeways, pedestrian walkways and other routes, where appropriate, to maximize opportunities for non-motorized travel in existing and new development.
- i. Encourage the use of alternative energy technologies, such as active solar collection for electricity or passive solar space heating, and recommend ways to accommodate these features without negative neighborhood visual impacts.

The Conservation and Open Space Plan functions in tandem with the Green Plan Element, which should be consulted for the full range of energy conservation, sustainability and green building strategies.

FOREST RESOURCES

Woodlands serve a number of important functions in the ecosystem. The most basic is the production of oxygen through the assimilation of CO₂; this is critical to the survival of both humans and animals, and gives forests an undeniable intrinsic value and indicates the need for their conservation. Forests are also excellent filters for surface runoff, reducing runoff volume and providing valuable recharge areas for groundwater. Woodlands are the primary habitat areas for a number of plant and animal species, some of which are threatened or endangered. Forests also play an important role in regulating climate, providing shade for water bodies and cooling the environment. Removal of trees and other vegetation results in ecological, hydrological, and economic impacts.

Aside from ecological benefits, woodlands and other native vegetation also provide visual diversity in the terrain. They enhance property values and contribute to the latent value of open space and recreation amenities, making them more attractive places within the community.

The following approaches are recommended to preserve, protect and improve the forest resources in the Township.

- a. A woodland conservation plan should be required as part of any application for development where critical forest resources have been identified. This plan should include identification of the floodplain, mesic and upland forest

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- stands on the tract and should be a primary consideration in the arrangement of development.
- b. Performance standards should be established limiting the extent of forest removal, based on the quality of the forest type. Priority wooded areas for preservation include unique forest types, woodlands adjacent to public water supply tributaries, habitats critical for endangered and threatened species, specimen trees, large wooded patches, 100-year floodplains, wetlands, stream corridors, and slopes of 15 percent or greater.
 - c. Performance standards should be developed to encourage the preservation of habitat areas that are as large and circular as possible, gradual and undulating at the edges and connected by wildlife corridors wide enough to maintain interior conditions (i.e. 300' or more).
 - d. Hedgerows and forest areas along traveled roadways and established property boundaries should be retained and enhanced, where appropriate, with native species. This is especially important on roadways identified in scenic roadway studies. These naturalized features also serve as buffers, providing separation between residential and commercial and industrial areas.
 - e. Existing and proposed greenways should promote and preserve existing woodland corridors to the greatest extent possible. This is especially important where greenways are proposed along stream corridors.
 - f. Reforestation and afforestation of open spaces through the use of native species should be required to enhance habitat, promote recharge and reduce surface runoff, erosion and flooding.
 - g. A construction mitigation plan, which minimizes construction-related impacts on woodlands, should be required prior to disturbance of more than 10,000 square feet of woodlands.
 - h. Reduced residential densities and the use of creative development techniques such as clustering, lot averaging and non-contiguous clustering provide the ability to protect valuable forest resources identified in the Township. Flexibility in design allows development to occur in a manner more consistent with conservation goals and objectives.

GROUNDWATER

The groundwater resources of the Township provide potable water to many of the Township's rural areas. Groundwater also provides base flow to rivers and streams

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during low flow periods. In order to protect and maintain this critical resource, it is recommended that the Township consider the following activities:

- a. A program should be established, or coordinated with an existing County or State program, to ensure that existing septic tanks are regularly pumped and maintained in a manner similar to the revised State Health Code standards for new systems.
- b. Ongoing public education should be directed at water conservation and preventing the discharge of toxic and hazardous pollutants to groundwater.
- c. The Environmental Commission, in conjunction with the Health Department, could conduct an environmental audit of groundwater quality, including an analysis of existing groundwater samples and an identification of existing facilities, which could adversely impact groundwater. Among the facilities that should be mapped and inventoried are the following:
 - (1) Underground storage tanks.
 - (2) Gas, fuel, and sewer line locations.
 - (3) Large septic systems for commercial/industrial users.
 - (4) Permitted community septic systems.
 - (5) Hazardous substance storage areas and facilities.
 - (6) Permitted NJPDES groundwater or surface discharge facilities.
- d. The Township should consider a wellhead protection program to protect community water supply systems and areas in the Township with clusters of residential wells that might be threatened by inappropriate land uses.
- e. Stormwater management ordinances should encourage the implementation of best management practices (BMP's) that promote water quality objectives and the recharge of groundwater supplies. Infiltration and water quality basins should be required with new development to the greatest extent practical.
- f. Residential densities in unsewered areas should be reduced as originally recommended in the 2003 Master Plan and subsequently highlighted in the Mulhall report and the new DEP septic density standards. These changes are important to protect the potability of groundwater from the impacts of septic systems.
- g. Landscaping standards should require the use of native and locally adapted plants, and designs, which minimize irrigation, maintenance and turf areas and require mulches to preserve soil moisture.

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- h. Irrigation systems for lawns and landscaping should be curtailed or eliminated in new developments and drip irrigation for localized watering should be encouraged.
- i. The Township should evaluate alternative well testing methodologies in order to assure that groundwater availability is accurately analyzed. Test wells installed as part of a groundwater availability analysis should also be tested for potability.
- j. The Township should relate the intensity of permitted development to conservative estimates of i) available water resources and; ii) the ability of the soil and ground water to sustain on-lot disposal systems without degrading or impairing surface or ground water quality.
- k. Limit impervious cover to foster maximum recharge and sustainable yields in the district and regional watersheds dependent on groundwater supply.

SCENIC RESOURCES

Our “sense of place” is inextricably linked to the views we encounter as we travel along local roadways and rivers. Our perceptual experience of landscape is a dominant element in our perceived “quality of life.”. The protection of scenic vistas, particularly those seen from public rights-of-way, serves to maintain the sense of place that exists within the Township. The Planning Board, as the agency carrying out development review, is the most appropriate agency to promote the maintenance of existing scenic resources within Bernards.

The Municipal Land Use Law (N.J.S.A. 40:55D-1 et seq.) provides a basis for such scenic character concerns, within the purpose, “to promote a desirable visual environment through creative development techniques and good civic design and arrangements” (N.J.S.A. 40:55D-2i). This purpose has particular relevance in subdivision and site plan review. The issue of scenic resource protection is also highlighted in the State Development and Redevelopment Plan (SDRP), which advances scenic resources management strategies.

Identifying Scenic Resources and Corridors

Landscapes are composed of groups of natural and man-made elements that combine to create a specific landscape character. The natural elements of landscape include:

1. *Physical features:*
 - Valley
 - Hills
 - Plains

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- Ridgelines
- High points
- Elevation changes
- 2. *Hydrographic features:*
 - Ponds
 - Lakes
 - Streams
 - Swamps
 - Marshes
- 3. *Vegetative features:*
 - Fields (natural, agricultural, cultural open spaces)
 - Forests
 - Hedgerows along fields
- 4. *Cultural or man-made elements:*
 - Roads (paved/unpaved; primary/secondary)
 - Structures (buildings and monuments)
 - Stonewalls and fences
 - Land use patterns

The observer's position in the landscape shapes the interaction with the scenic resource, which in turn shapes the perception of visual beauty. In general, the distance to the landscape scene increases the observer's visual focus shifts from details and particular features to forms and patterns.

Management Considerations

Standards should be established for the review of subdivisions and site plans that take into consideration the features that establish roadside and distance views. The following issues should be considered.

- a. *Roadside Views:*
 - Vegetation management
 - Clearing to promote visual penetration.
 - Planting to shield development
 - Selective cutting to maintain corridor
 - Access points for local streets
 - Utilize natural breaks
 - Subdivision configuration
 - Maintain stone rows and hedgerows
 - Utilize forested areas as backdrops
 - Shield development via street design
 - Arrange home sites to protect open fields
- b. *Distance Views:*
 - Location of development

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Foreground or midground of hillsides, away from ridge lines
Behind visual barriers
No higher than tree line
Street alignment
Follow hedgerows and stone rows
Screening material consistent with existing topography and native vegetation

Bernards Township has a wealth of scenic character elements, as a drive through the Township will confirm. Stone House Road, one of the more scenic thoroughfares, is a good example of a scenic roadway that may merit protection. The Township should develop a methodology for identification of scenic corridors in Bernards Township and priorities for conservation of those particularly scenic areas that merit special treatment.

The Somerset County Planning Board prepared a study of Scenic Corridors and Roadways (July 1992) that developed a rating system for scenic corridors and roadways. According to the County, scenic corridors have an area of influence that extends beyond those lands that border the roadway to include the entire landscape, while scenic roadways focus on the visual foreground at the edge of the roadway.

The County study suggests that while the State Development and Redevelopment Plan espouses worthy objectives relative to scenic corridors, "... the State Plan has not provided practical guidance on how to implement these policies." The County Planning Board suggests that "... use of an objective rating system ...lend credibility and support to a scenic roads program and thereby shield the municipality from court challenges."

The County developed designation criteria to allow an objective evaluation of candidate roadways. A rating system was developed to establish the relative scenic merits of various roadways, and all appropriate County road segments were analyzed. These designation criteria included positive features (vegetation, landscape composition, road characteristics and structures or historic districts); and negative features (landscape "scars" such as quarry sites or utility lines, structures such as junkyards, car lots or storage tanks and "other features such as high traffic volumes, litter, and landscape manipulation).

The County also suggests that municipalities utilize the master plan, zoning ordinance and site plan and subdivision standards to enhance scenic resource protection. Master plans should coordinate circulation, conservation and historic preservation plan policies with scenic resource protection goals. Site plan and subdivision standards may have the greatest role in protecting scenic qualities since they can control the siting of buildings, lots and roads.

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Specific road design and maintenance standards are recommended by the County including standards for cartways, bridges and culverts, curbing and drainage, guide rails, vehicle limits, intersection treatments, landscaping, lighting and signage. The County also cites mitigation strategies, including landscape management plans and lighting and signage controls.

The Township should pursue the following activities to develop a program for the protection of scenic resources:

- a. The scenic resources of the Township should be identified and ranked according to the combination of elements present and proximity to the public way.
- b. Design standards should be developed for different categories of attractive views, including enclosed roadside views, extended roadside views, and distance views.
- c. Significant ridgelines in the Township should be identified and offered protection through the Land Use Ordinance. This could include a ridgeline protection section which defines ridgelines and offers measures to buffer them from residential development.
- d. Design standards should be incorporated into the Township's subdivision and site plan process, in order to guide the location and configuration of development to protect scenic corridors and viewsheds.
- e. Enhanced setback standards should be established to limit the intrusion of new development along scenic roadsides.

STEEP SLOPES

Development on steep slopes has far reaching impacts. Clearing of trees and disturbance in steep slope areas leads to soil erosion and sedimentation of streams and water bodies, even with strict protective measures in place. A number of the steep slope areas in the Township occur on the banks of streams and rivers, where there is a significant threat of environmental damage if these slopes are disturbed. To avoid impacts due to disturbance and clearing of steep slopes, the following are recommended:

- a. Strict adherence to development standards limiting the extent of disturbance to slopes greater than 15%, and requiring individual lot grading plans where disturbance is permitted.

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- b. Develop land use strategies which allow parcels to be developed utilizing lot averaging and clustering techniques, to avoid disturbance and clearing of trees on steep slopes.
- c. Steep slopes have been included in the natural resource deductions contained in the Land Development Ordinance.

STREAM CORRIDORS

With nearly 57 miles of streams and rivers in the Township, protection of stream corridors is critical. Many streams and rivers form municipal boundaries, suggesting a need for cooperation at an inter-municipal level. Protecting the integrity of the stream corridor will lessen impacts to water quality. To this effect and to protect stream corridors from development impacts, the following management approaches are recommended:

- a. Vegetated buffers should be maintained along all stream corridors in the Township. Where past land use practices have resulted in the removal of trees along stream corridors, management practices should include the reestablishment of tree cover. Stream buffers should extend at least 95' from each side of the stream centerline.
- b. A stream corridor protection program should be developed and implemented which seeks to protect the stream corridor and adjacent wetlands, floodplains, and contributory uplands with steep slopes. The program established by the Delaware and Raritan Canal Commission provides a valuable model.
- c. Management strategies and monitoring standards should be developed for stream corridor areas.
- d. Bernards and neighboring municipalities should develop consistent and/or compatible management strategies along stream or river corridors.
- e. Floodplains have been included in the natural resource deductions contained in the Land Development Ordinance.

SURFACE WATER

Surface water is impacted by both point and non-point source pollution. Non-point source pollution, a major factor affecting Bernard's surface waters, should be mitigated by local land use strategies and management approaches. Non-point

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source pollutants include septic system effluent, agricultural runoff, stormwater runoff, and construction activities. In order to mitigate potential impacts to the Township's surface waters, the following management approaches are recommended:

- a. Water quality Best Management Practices (BMP's) should be adopted or refined, to protect the quality of surface waters and promote maximum habitat values. These include:
 - Arrange development on the least porous soils, to promote infiltration and reduce sediment and pollutant loading,
 - Buffer strips and techniques to maximize overland flow, such as grassed swales and filter strips,
 - Regional stormwater management approaches and extended detention facilities,
 - Wet ponds (retention basins) and wetland or marsh creation,
 - Infiltration practices to detain runoff, including trenches, basins, drywells and other structural solutions, and
 - Water quality inlets and oil/grit separators.
- b. Reductions in permitted residential densities and impervious coverage should be considered to reduce the potential impact to surface waters from non-point source pollution.

THREATENED AND ENDANGERED WILDLIFE SPECIES

With 50% of the Bernards Township land mass categorized as habitat suitable to threatened or endangered species, it is important to protect this habitat from further degradation and promote species diversity. Toward this end, it is recommended that the Township pursue the following actions:

- a. An ongoing inventory of threatened and endangered species, combining the records of the Natural Heritage Database with local sighting records should be developed and maintained.
- b. Alternative development options should be developed to aid in the preservation of critical habitat for threatened and endangered species should be studied. Techniques such as clustering and lot averaging,

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along with conservation easements, should be used to protect habitat areas with a landowner's utility of his or her land.

- c. The Township should develop a list of habitat requirements for endangered species.
- d. The Township should promote the potential re-establishment of habitat on open space lands while also protecting existing habitat through open space purchases.
- e. Reductions in permitted residential density will help to preserve critical habitats.

WETLANDS

Although wetlands are regulated at the State and Federal level, it is important for the Township to remain involved in the conservation of these areas. This is especially important as conservation easements are routinely granted through the development review process. Most of the wetland delineations and conservation easements required in the last few years have been converted to digital data, making management of these areas easier. Given the availability of this data, a system to periodically monitor and enforce conservation easement restrictions should be developed.

- a. Wetlands and wetland transition areas required by the New Jersey Freshwater Wetlands Protection Act have been included in the natural resource deductions contained in the Land Development Ordinance.
- b. Permitted development should be arranged to avoid all significant wetlands, and when road crossings are unavailable, they should be located at the point of minimum impacts.

LIGHT POLLUTION

While development continues at a rapid pace throughout New Jersey, lighting and light pollution become increasingly critical issues. The State Development and Redevelopment Plan recommends that "In the interest of improved safety, energy conservation and maintenance of environmental integrity, outdoor roadway and area lighting should be designed, installed and maintained to minimize misdirected and upward light and optimize the use of the lighting system."

This issue led the New Jersey Legislature to form a panel of experts to study the problem of light pollution and to advise the Legislature as to the severity of the problem and recommend legislative or administrative measures to alleviate it.

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In 1996 the Light Pollution Study Commission (LPSC) filed its report with the Governor and the Legislature. The LPSC recognizes Light Pollution as a problem and provides the recommendations and actions of its report to the Governor and the Legislature for their information and further consideration. While most of the recommendations pertained to State agencies there are a number of recommendations that are appropriate to local governments and particularly to Bernards Township and its rural character.

Some of the recommendations to be considered are:

1. Nationally recognized lighting recommendations for illuminance levels and uniformity ratios should be followed, such as contained in the Illuminating Engineering Society of North America (IESNA) Lighting Handbook.
2. Architectural and sign lighting should be designed to minimize light that does not illuminate the target area.
3. Lighting of building exteriors should be minimized or eliminated during those hours when it is not needed. Lighting controls (such as timers, dimmers, motion sensing devices, and photo sensors) should be encouraged.
4. Areas of New Jersey determined to be especially suitable for astronomical observations or which provide nocturnal benefits to flora and fauna should be considered for designation as "dark areas." A "dark area" is an area in which lighting is prohibited or limited in order to 1) address concerns regarding Light Pollution which impact the environment and 2) restore a more natural view of the starry sky.

In 2001 Clinton Township received the Hunterdon County Planning and Design Award for its "light pollution ordinance." This was a voluntary action on the part of the Township evolving from a perceived need to protect the night sky by fostering good design and safety in lighting. The Township addressed non-mandatory suggestions from the public and quasi-public agencies such as the New Jersey Light Pollution Study Commission and the New Jersey Astronomical Association. It also retained an expert on light pollution.

Bernards Township shares the night sky with New Jersey and its neighboring municipalities. It should therefore consider instituting strict controls on lighting design and incorporating them into the Land Development Ordinance.

VIII. CONSERVATION AND OPEN SPACE PLAN ELEMENT

NEIGHBORHOOD DESIGN ALTERNATIVES

While Bernards has a wide range of housing types and no shortage of multiple family units, the build out of remaining lands is of considerable concern for its potential impact on neighborhood character, water resources and flora and fauna. The opportunity to meet multiple objectives above can sometimes be better served by offering alternatives to traditional subdivision design standards. A recent example of an alternative subdivision approach in Bernards that offered multiple conservation benefits is a neighborhood that received approval on Mine Brook Road. In this case, homes were placed in such a manner that expansive wetland buffers and open agricultural lands could remain along with the permitted residential development.

Bernards should consider employing conservation overlay zoning where specific environmental objectives could be better served than with conventional zoning.

OPEN SPACE CONSIDERATIONS

The Township's goal of developing an open space system, including linear corridors along rivers and brooks, continues to be realized. The preservation of parks and open space advances the Township's conservation goals while providing active and passive recreation amenities for Township residents. Open space preservation provides a number of benefits, including protection of flood prone and wetland areas from development and disturbance, maintenance of contiguous wildlife habitats adjacent to rivers and streams and preservation of the natural environment. Open Space and Conservation Areas are depicted in Figure VIII-6 and listed in Table VIII-1.



Open space preservation advances both conservation and recreation goals.

The creation of linear corridors along rivers and streams also provides an access link between parks, schools and the residential neighborhoods throughout the Township, promoting goals of both the Circulation Plan Element and the Parks and Recreation Plan Element. Figure VII-1 in the Parks and Recreation Element depicts the location of potential open space corridors and greenways. This Conservation and Open Space Plan is designed to work in conjunction with the Parks and Recreation Plan and the Circulation Plan to promote connectivity between open space and recreational facilities through non-vehicular travel using greenways and bikeways.

VIII. CONSERVATION AND OPEN SPACE PLAN ELEMENT

The Planning Board should encourage the use of a variety of land development techniques in the Land Use Ordinance to encourage the preservation of open space and further the creation of a cohesive network of recreation amenities. The Planning Board should encourage the establishment or preservation of open space areas that provide linkages to existing parks and recreation facilities, as outlined in the Recreation Plan. The Township Committee has the ability to expand on the Planning Board's initiatives by providing capital funding for the purchase of property in fee simple, purchase of access and conservation easements from existing developed lands and creation of trails and other recreation amenities. The Township should continue to assess lands for recreation potential as they become available, regardless of the zoning district in which they are located.

Somerset County continues to promote the creation of a municipal park system along the Second Watchung Ridge and the Dead and Passaic Rivers. These areas of the Township, along the border of Bridgewater and Bedminster Townships (Second Watchung Ridge) and along the border of Warren Township (Dead River) and Harding and Long Hill Townships (Passaic River), are proposed open space corridors in the Parks and Recreation Plan Element. The Township and County have significant land holdings along the two river corridors and the Township is encouraging expansion of its holdings through this plan element. The Land Use Plan recommends reduced residential densities in the area of the Second Watchung Ridge, which will allow buffering of the Ridge from development. Cluster subdivision regulations are a valuable tool, which can protect critical lands as open space.

The Great Swamp Watershed is a valuable regional resource shared by the ten towns, which surround it, including Bernards Township. The Township currently participates in the efforts of the "Ten Towns Great Swamp Watershed Management Committee". The Committee, founded in 1995, provides a cooperative agreement among member towns which studies issues of water quality and management. The Committee is in the process of establishing a common and comprehensive set of regulations and operating practices within the realm of their operating authority, which would prevent and/or minimize adverse impact upon water quality, wildlife and human well-being within the Watershed.

Working farms and land in agricultural production are a valuable asset to the community. The pastoral landscapes that endure on the fringe of the more densely developed core of the Township are a reminder of Bernard's agrarian roots. They also play an important role in imparting a sense of "open space" that is still apparent in many areas of the Township. Encouraging agricultural retention through farmland preservation efforts, agriculturally friendly land use policies and promoting agriculture as a business will help to retain the remaining farmland in the Township.

VIII. CONSERVATION AND OPEN SPACE PLAN ELEMENT

TABLE VIII-1 OPEN SPACE AND CONSERVATION AREAS

No.	BL	LOT	OWNER	PARCEL NAME/LOCATION	FUNCTION	AREA (Acres)
1	103	1	NJ Audubon	Hardscable Road/Passaic River	Private OS	0.91
2	1005	8	Bernards Twp	Woodland Glen-40 Walnut Circle	Twp OS	1.25
3	1005	19	Somerset Co.	Ross-No. Maple Ave	County OS	8.25
4	1302	12	Bernards Twp	Vacant Lot - West Oak Street	Twp OS	0.32
5	1403	1.01	Bernards Twp	Washington Ave. Park	Twp OS	3.84
6	1406	1	Bernards Twp	Basking Ridge Park-No. Brook Ave.	Twp OS	1.79
7	1406	34.01	Bernards Twp	Basking Ridge Park-No. Brook Ave.	Twp OS	8.971
8	1409	1	Bernards Twp	Basking Ridge Park-Conkling Street	Twp OS	0.332
9	1506	1	Bernards Twp	Fireman's Park-No. Finley Ave.	Twp OS	1.74
10	1512	2	Bernards Twp	Vacant lot-Conkling St.	Twp OS	0.11
11	1609	21	Bernards Twp	Southard Park-No. Maple Ave.	Twp Park	13.92
12	1611	39	Somerset Co.	Manchester Drive	County OS	0.726
13	1701	11	Somerset Co.	Ross Farm-No. Maple Ave.	County OS	53.39
14	1701	13	Somerset Co.	Lord Stirling Park-So. Maple Ave.	County Park	839.972
15	1701	14	Somerset Co.	Environmental Ed. Center-Lord Stirling Road	Env. Ed.	4.139
16	1701	15	Somerset Co.	Stirling House-Lord Stirling Road	County Park	3.388
17	1701	18	Somerset Co.	Crane Farm-Lord Stirling Road	County Farm	3.94
18	1701	23	Somerset Co.	Crane Farm-So. Maple Ave.	County Farm	4.895
19	1701	24	Somerset Co.	County Riding Stables-So. Maple Ave.	Riding Stables	18.68
20	1901	33	Bernards Twp	Brown-East Ash St.	Twp. OS	5.00
21	1902	26	Bernards Twp	Spencer Willow-Voorhees Dr.	Twp OS	1.17
22	2101	10	Bernards Twp	Mount Airy Heights-Mt. Airy Road	Twp OS	5.714
23	2101	45	Bernards Twp	OS-Chimney Ash Farm Road	Twp OS	2.806
24	2301	11	Bernards Twp	Former Landfill-Pill Hill Road	Twp OS	32.48
25	2301	37	Bernards Twp	OS-Meeker Road	Twp OS	4.23
26	2301	41	Bernards Twp	OS-Meeker Road	Twp OS	9.42
27	2401	9	Bernards Twp	287/DOT tract-Mt. Airy Road	Twp OS	7.7
28	2501	23	Bernards Twp	Bernards Manor-Kinnan Way	Twp OS	2.34
29	2801	1	Bernards Twp	OS/Astor Fields-Collyer Lane	Athletic Fields	20
30	2801	6	Bd. of Ed.	So. Maple Ave. Fields	Athletic Fields	12.44
31	2801	9	Bernards Twp	Loocke-So. Maple Ave.	Fields/Dog Park	6.05
32	2801	10	Bernards Twp	War Memorial Field-So. Maple Ave.	Athletic Fields	11.63
33	2905	6	Bernards Twp	Homestead Park-Grove Road	Twp OS	0.73
34	3101	18	Bernards Twp	Meadowview Estates-Riverside Dr.	Twp OS	1.036
35	3201	7	Somerset Co.	Croot -Lord Stirling Road	County OS	22.02
36	3201	8	Somerset Co.	Croot -Lord Stirling Road	County OS	20.596
37	3201	18	Bernards Twp	Meadowview Estates-Riverside Dr.	Twp OS	12.879
38	3302	6	Bernards Twp	Meadowview Estates-Castle Way	Twp OS	1.44

VIII. CONSERVATION AND OPEN SPACE PLAN ELEMENT

No.	BL	LOT	OWNER	PARCEL NAME/LOCATION	FUNCTION	AREA (Acres)
39	3303	12	Bernards Twp	Meadowview Estates-Castle Way	Twp OS	1.00
40	3303	17	Bernards Twp	Meadowview Estates-Riverside Dr.	Twp OS	0.828
41	3402	14	Bernards Twp	Meadowview Estates-Hill Top Road	Twp OS	0.3786
42	3802	22	Bernards Twp	DB-Woods End	Twp OS	3.84
43	3901	61	Bernards Twp	Prince Edward Pointe-Springhouse La.	Twp OS	19.993
44	3901	62	Bernards Twp	OS-Tamarisk Ct.	Twp OS	0.90
45	4005	1	Bernards Twp	Som. Hills Luth. Church-Autumn Dr.	Twp OS	1.74
46	4005	5	Bernards Twp	Dawn Ridge-Sleepy Hollow Road	Twp OS	1.2
47	4201	2	Bernards Twp	OS-Whitenack Road	Twp OS	3.499
48	4301	51	Bernards Twp	McCollum Farm-Whitenack Road	Twp OS	10.72
49	4601	5.01	Bernards Twp	Whitenack Woods-Whitenack Road	Twp OS	185.19
50	4902	21	Bernards Twp	Rebel Hill Park-Fairview Dr. So.	Twp Park	10.42
51	5303	19	Bernards Twp	Cedar Knolls-Galloping Hill Road	Twp OS	2.6
52	5303	28	Bernards Twp	Cedar Knolls-Galloping Hill Road	Twp OS	6.00
53	5503	13	Bernards Twp	Prince Edward Pointe-Brittany Place	Twp OS	6.999
54	5601	10	Bernards Twp	Prince Edward Pointe-Jeffrey Ct.	Twp OS	1.463
55	5602	5	Bernards Twp	Somerset Homes-Gerard Ave.	Twp OS	1.58
56	5602	35	Bernards Twp	Prince Edward Pointe-Jeffrey Ct.	Twp OS	4.093
57	5802	1	Bernards Twp	Thompson Island-Lyons Road	Twp OS	0.63
58	5901	1	Bernards Twp	OS-Stonehouse Road	Twp OS	3
59	5901	2	Bernards Twp	OS-So. Finley Ave.	Twp OS	14.902
60	5901	29	Bernards Twp	Summit-Stonehouse Road	Twp OS	14.136
61	6001	11	Bernards Twp	Schmidt Park-Pond Hill Road	Twp OS	5.00
62	6102	1	Bernards Twp	Schmidt Park-Pond Hill Road	Twp OS	3.83
63	6103	1	Bernards Twp	Schmidt Park-Pond Hill Road	Twp OS	6.73
64	6303	12	Bernards Twp	Fawn Hill-Pheasant Run	Twp OS	1.968
65	6401	1	Bernards Twp	Summit-Stonehouse Road	Twp OS	13.884
66	6401	5	Bernards Twp	Sherbrook-Governor Dr.	Twp OS	6.246
67	6404	9	Bernards Twp	Sherbrook-Blackburn Dr.	Twp OS	4.465
68	6404	27	Bernards Twp	DB Sherbrook-Governor Dr.	Twp OS	4.587
69	6501	1	Bernards Twp	Summit-Summit Dr.	Twp OS	15.01
70	6503	1	Bernards Twp	Sherbrook-Blackburn Dr.	Twp OS	5.514
71	6703	7	Bernards Twp	Pleasant Valley Park-Penwood Road	Twp Park	4.34
72	6801	27	Bernards Twp	Summit-Summit Dr.	Twp OS	3.878
73	6801	44	Bernards Twp	Summit-Knollcroft Road	Twp OS	2.409
74	6802	4	Bernards Twp	Glenbrook-Bryon Dr.	Twp OS	5.77
75	7001	15	Bernards Twp	Grist Mill Park-Grist Mill Dr.	Twp OS	1.261
76	7002	22	Bd. of Ed.	OS-Lincroft Dr.	Bd. of Ed. OS	14.69
77	7002	33	Bernards Twp	Lincroft-Lincroft Dr.	Twp OS	0.3569
78	7101	9	Bernards Twp	Canterbury Road Walkway	Twp OS	0.264
79	7101	25	Bernards Twp	Canterbury Road Walkway	Twp OS	0.203
80	7101	29	Bernards Twp	Canterbury Road Walkway	Twp OS	0.137
81	7201	28	Bernards Twp	OS-Mine Brook Road	Twp OS	0.92

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No.	BL	LOT	OWNER	PARCEL NAME/LOCATION	FUNCTION	AREA (Acres)
82	7301	27	Bernards Twp	Arrow Head-Mine Brook Road	TWP OS	21.129
83	7301	35	Bernards Twp	River View-Liberty Corner Road	Twp OS	3.727
84	7302	1	Bernards Twp	Arrow Head-Mine Brook Road	Twp OS	0.657
85	7302	5	LC Fire Co.	LC Fields-Church St.	LC Fire Co.	8
86	7302	11	Bernards Twp	Arrow Head-Mine Brook Road	Twp OS	4.911
87	7402	12	Bernards Twp	Canterbury Road Walkway	Twp OS	0.131
88	7501	3	Bd. of Ed.	Fields-Liberty Corner School	Fields	5.01
89	7601	15	Bernards Twp	Harrison Brook-Goltra Dr.	Twp OS	3.83
90	7703	22	English Family	English Farm Meadow-Valley Road	Farm Pres.	16.281
91	7804	8	Bernards Twp	Pleasant Valley Park-Lurline Dr.	Twp OS	1.43
92	7901	10	Bernards Twp	Pleasant Valley Park-Archgate Road	Twp OS	0.92
93	7903	6	Somerset Co.	Harrison Brook-Lyons Rd	County OS	1.21
94	8001	1	Bernards Twp	Pleasant Valley Park-Valley Road	Twp OS	79.14
95	8001	2	Bernards Twp	Pleasant Valley Park-Valley Road	Twp OS	24.52
96	8001	3	US VA	Coakley Russo Golf Course-Valley Rd	Twp Golf	23
97	8002	4	US VA	Coakley Russo Golf Course-Valley Rd	Twp Golf	22
98	8101	3	Bernards Twp	Sherbrook-Stonehouse Road	Twp OS	49.469
99	8101	23	Bernards Twp	DB Sherbrook-Stonehouse Road	Twp OS	2.077
100	8101	47	Bernards Twp	DB Sherbrook-Stonehouse Road	Twp OS	4.013
101	8102	18	Bernards Twp	Sherbrook-Valley Road	Twp OS	0.3356
102	8301	1	Bernards Twp	Pine Hills-Haas Road	Twp OS	3.22
103	8301	6	Bernards Twp	Pine Hills-Haas Road	Twp OS	10.22
104	8301	11.02	Bernards Twp	Bologna-Haas Road	Twp OS	11.06
105	8401	16	Bernards Twp	Hayefields-Crest Dr.	Twp OS	6.5
106	8501	1	Bernards Twp	Spring Ridge-Acken Road	Twp OS	73.524
107	8501	2	Bernards Twp	Crown Court-King George Road	Twp OS	0.337
108	8501	3	Bernards Twp	Crown Court-King George Road	Twp OS	5.887
109	8501	4	Bernards Twp	Crown Court-King George Road	Twp OS	0.261
110	8501	5	Bernards Twp	Crown Court-King George Road	Twp OS	54.169
111	8501	41	Passaic Rv. Co.	Passaic River Coalition-King George Rd	Private OS	82.77
112	8501	44	Bernards Twp	Dewy Meadow-King George Road	Twp Fields	4.849
113	8501	45	Bernards Twp	Crown Court-King George Road	Twp OS	14.094
114	8501	46	Bernards Twp	Spring Ridge-Acken Road	Twp OS	25.071
115	8501	47	Bernards Twp	Spring Ridge-Acken Road	Twp OS	37.05
116	8502	2	Bernards Twp	Farmstead Park-King George Road	Twp Park	32.035
117	9101	2	Bernards Twp	Society Hill-Spring Valley Blvd.	Twp OS	90.05
118	9101	3	Bernards Twp	Cedars-Spring Valley Blvd.	Twp OS	130.391
119	9204	4	Bernards Twp	Little League Fields-Valley Road	Twp Fields	23.70
120	9204	6	Bernards Twp	Society Hill-Spring Valley Blvd.	Twp OS	32.01
121	9204	8	Bernards Twp	Society Hill-Spring Valley Blvd.	Twp OS	28.45
122	9205	1	Bernards Twp	Martinsville Rd Island-Mt. Airy Road	Twp OS	0.79
123	9301	9.01	English Family	English Farm Preservation-Valley Rd	Pres. Rights	64.298
124	9401	11	Bernards Twp	Sons Of Liberty Farm-Allen Road	Twp. OS	23.08
125	9501	3	Bernards Twp	Dunham Park-Liberty Corner Road	Twp Park	69.543

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No.	BL	LOT	OWNER	PARCEL NAME/LOCATION	FUNCTION	AREA (Acres)
126	10301	26	Bernards Twp	The Hills-Allen Road	Twp. OS	4.523
127	10301	27	Bernards Twp	The Hills-Allen Road	Twp. OS	4.523
128	10401	38	URWA	Upper Raritan OS-Milito Way	URWA OS	19.25
129	10402	3	Bernards Twp	Old Somerville Road	Twp. OS	0.36
130	10704	39	Bernards Twp	The Hills-Old Stagecoach Road	Twp. OS	3.88
131	10704	95	Bernards Twp	The Hills-Old Stagecoach Road	Twp. OS	1.76
132	10704	96	Bernards Twp	The Hills-Old Stagecoach Road	Twp. OS	1.76
133	10801	97	NJDOT	Old Stagecoach Road	NJDOT	9.59
134	11001	14	Somerset Co.	DeMarco-Somerville Road	County OS	5.38
135	11001	15	Somerset Co.	Somerville Rd.	County OS	11.47
136	11101	2	Somerset Co.	AT&T-Rickey Lane	County OS	33.904
137	11101	6	Somerset Co.	Knox-Somerville Road	County OS	6.596
138	11102	5	Somerset Co.	AT&T-Mountain Road	County OS	0.633
139	11102	6	Somerset Co.	AT&T-Mountain Road	County OS	84.898
140	11102	41	Somerset Co.	Rickey Lane	County OS	20.108
141	11201	1	English Family	English Wood Lot-Allen Road	Pres. Rights	58.596
142	11201	6	Bernards Twp	Pinson-Allen Road	Twp. OS	5.228
143	11201	11	Bernards Twp	Pinson-Allen Road	Twp. OS	4.978
144	11501	5.02	Somerset Co.	Prochaska-Mountain Road	County OS	14.357
145	11501	6	Somerset Co.	McNellis-Mountain Road	County OS	29.264
146	11501	18	Somerset Co.	Maolucci-Mountain Road	County OS	25.763
147	11501	19	Somerset Co.	Maolucci-Mountain Road	County OS	14.20
148	11501	20	Somerset Co.	Maolucci-Mountain Road	County OS	1.65
149	11501	21	Somerset Co.	Maolucci-Mountain Road	County OS	0.91
150	11501	22	Somerset Co.	Maolucci-Mountain Road	County OS	1.19
151	11501	23	Somerset Co.	Maolucci-Mountain Road	County OS	31.021
152	11601	1	Bernards Twp	Mountain Park-Mountain Road	Twp Park	143.864
153	11601	23	Somerset Co.	Pasnik-Sunset La.	County OS	20.961
154	11601	25	Somerset Co.	Off Long Road	County OS	15.24
155	11701	19	Somerset Co.	DB-Martinsville Road	County OS	0.56
156	11702	7	Bernards Twp	Darren Woods-Darren Dr.	Twp. OS	0.86
157	11702	10	Bernards Twp	Darren Woods-Darren Dr.	Twp. OS	2.44
158	11702	11	Bernards Twp	Darren Woods-Darren Dr.	Twp. OS	13.872
159	11702	28	Bernards Twp	20' wide trail-end Darren Dr.	Twp OS	0.331
				Total		3235.88

HISTORIC STRUCTURES AND DISTRICTS

A document entitled "Inventory of Historically Significant Homes in Bernards Township" identifies more than 370 historically significant buildings in Bernards

VIII. CONSERVATION AND OPEN SPACE PLAN ELEMENT

Township. The inventory includes lot and block, address, use, circa and style of each building of significant age, heritage or style, and is a rewrite of the document originally prepared in the late 1970's.

A detailed history of Bernards Township and recommendations for management of historic and archaeological resources are found in the Historic Preservation Plan Element.

RELATIONSHIP OF THE CONSERVATION PLAN TO OTHER PLAN ELEMENTS

Bernard's Conservation Plan works in tandem with the Land Use Plan, the latter providing for low intensity residential, farm and conservation uses outside the developed neighborhood areas of the Township. The Conservation Plan promotes resource management efforts that will retain ecological function, prevent destruction of sensitive resource areas and provide long term protection of the natural resource base.

The conservation objectives of retaining large contiguous areas of sensitive natural lands will be assisted by proposals for future land uses contained in the Land Use Plan. The low density of permitted development recommended throughout the remainder of Bernards will assist the preservation of the desirable features of the countryside, and permit coordinated conservation and preservation efforts.

The Parks and Recreation Plan element proposes to continue the Township's program of open space preservation and development of recreation facilities. Potential park development is assessed based on the presence of critical features and is carried out in a manner which respects them. As such, the Parks and Recreation Plan supports the objectives of this Conservation Plan.

The Circulation Plan element proposes the establishment and expansion of a comprehensive network of sidewalks, bikeways and paths that will promote non-vehicular travel and reduce the air quality impacts of motorized vehicles. These expanding opportunities for access to open spaces, recreation areas and other destinations will also have human health benefits as more residents become involved in these activities.

The impacts on natural resources from the circulation and utility service plan elements will be minor, since they do not propose significant alterations to the existing road network and no new infrastructure and utility services are proposed.

VII. PARKS AND RECREATION PLAN ELEMENT

INTRODUCTION

The recommendations contained in this Parks and Recreation Plan Element are the result of an extensive planning process involving the Planning Board and the Bernards Township Parks and Recreation Department. Following the review and analysis of the information provided by the Parks and Recreation Department, the Board examined a series of planning considerations relating to needs and opportunities for recreation and open space in the Township. This discussion and public input led to the findings and recommendations that constitute this plan.

The Township of Bernards last updated its Parks and Recreation Master Plan Element during the 2003 Master Plan Reexamination, which was preceded by the 1996 Master Plan.

In this element, the Planning Board identified existing recreation and open space facility needs, and developed strategies and implementation plans to increase these opportunities in Bernards Township. Furthermore, the Board identified all public, quasi-public and private lands that provide recreational and open space opportunities for Bernards' residents. In addition, specific goals and objectives seek to protect and acquire valuable natural resources; including important wildlife habitat and other land areas with environmental sensitivity or exceptional scenic value are identified. Finally, the Planning Board included the identification of a comprehensive system of areas and public sites for recreation, and the identification of open space lands and greenways for passive recreational uses.



Bernards Township contains a wide array of active and passive recreation facilities, including Dunham Park, pictured here.

STATUTORY AUTHORIZATION

This element of the Master Plan was prepared in accordance with the Municipal Land Use Law, N.J.S.A. 40:55D-28b:

- (7.) A recreation plan element showing a comprehensive system of areas and public sites for recreation.

GOALS AND OBJECTIVES

The following goals and objectives for parks and recreation outline a consistent vision to provide Bernards' residents with adequate active and passive recreation

VII. PARKS AND RECREATION PLAN ELEMENT

facilities and to protect and enhance the natural and rural environment in an environmentally conscious manner.

1. To provide a wide range of recreational facilities to the meet the present and future needs of the Township for all age groups.
2. To expand upon the broad range of cultural arts provided by township recreation programs and facilities.
3. To establish linkages of public spaces through the purchase, development and maintenance of greenways, greenbelts, waterways, paths and bikeways and provide non-vehicular access to the Township's neighborhoods, parks, schools and commerce centers.
4. To encourage creative recreation programming, with activities and opportunities for all age groups
5. To continue to evaluate, maintain and enhance neighborhood recreational facilities.
6. To promote the provision of appropriate and balanced public open space and recreational facilities through public action and the development review process.
7. To encourage the preservation of areas with exceptional recreational or scenic value, or environmental sensitivity, at all levels of government, with priority given to acquisition of land to meet present and future demand for active and passive recreation through the use of public acquisitions, private donations, farmland preservation, purchase of development rights and conservation easements.
8. To acquire land from developers, or residents willing to sell/donate property deemed useable for active and passive recreational uses before being accepted.
9. To protect environmentally sensitive land in our parks from development, including wetlands, stream corridors forests and critical wildlife habitat.
10. To consider programming for cultural/performing/visual arts in existing or alternative facilities.
11. To maintain parks, recreation and open space areas using best management practices for the protection and conservation of natural resources and maintenance of critical habitat.
12. To update the existing maps of parks and greenways.

NEEDS ASSESSMENT

The Parks and Recreation Department is constantly evaluating the needs of the residents. During the past two decades, the Township had experienced rapid residential growth; however that growth has remarkably declined. According to Township demographer William Draper Sc.D., P.E., Bernards Township had a July 2009 population of 27,942 people occupying roughly 10,313 housing units, roughly approximating the peak population of 28,000 forecast for 2010. Bernards' peak population is expected to increase to approximately 28,000 persons in 2010.

A 2004 survey of Township residents indicated a demand for expanded cultural arts programming in the form of art, music, dance and theater. Currently the Township

VII. PARKS AND RECREATION PLAN ELEMENT

provides art classes for senior citizens, wood carving art on display at Dunham Park and summer special events including outdoor concerts, family films and *Plays in the Park*. As the Department of Parks and Recreation continues to expand cultural arts programming in existing facilities, it should also explore the possibility of programming in new or alternative facilities.

According to the Bernards Township Department of Parks and Recreation, the Township has experienced steady growth since 2003 in the participation of programs and leagues sponsored and supported by the Department. This trend indicates that the residents of Bernards Township are active and interested in the leisure time activities that are available to them. With the completion of Mountain Park in 2006, with its four baseball fields and four soccer/football fields, the Township's existing athletic facilities finally meet the active recreational needs of the current population. At the same time, the township has acquired several open space properties for passive recreation areas and "places where one can get lost in the woods". The township has rendered a well thought out approach to the acquisition and development of open space lands providing a balance for both active and passive recreation.

The Planning Board believes that providing attractive, well maintained recreational opportunities and facilities contributes to the high quality of life experienced in the Township. Therefore, improvements to the existing facilities are recommended as part of the Parks and Recreation Plan Element, including the redesign of existing facilities to improve functionality and environmental sustainability and maintain the aesthetics of these facilities for Township residents. In addition the township should continue to link multi use pathways connecting parks to residents. A prime focus should be on park & facility promotion – i.e. "get the people to the parks". The Parks and Recreation department should continue to adapt and creatively provide activities and opportunities for the residents. In addition the Township should explore the option of a skateboard park facility.

In the past, towns have relied on the New Jersey Balanced Land Use Concept and the National Park and Recreation Association (NRPA) "Level of Service" approach to determine open space and recreational needs. The land use method recognizes that land is a finite resource and sets its goals in perpetuity, while the NRPA method uses a standard based on current or forecasted population. It should be noted that these methods provide minimum guidelines. As New Jersey continues to become more densely populated, open space and parks are more highly prized. Thus, when we evaluate parks and open space for its sufficiency, more is definitely better.

As shown in Table VII-1, the State's Balanced Land Use Concept (BLUC) seeks to allocate 3% of all developed and developable land, less County, State, and privately protected and environmentally sensitive land, to municipal open space. In the 2003 Master Plan Reexamination Report a deficit of 53.28 acres of parkland was calculated for the Township. In 2009 the calculations show a surplus over the minimum standards of approximately 211 acres. "The Economic Benefits of Open

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Space” according to the Trust for Public Land (TPL) indicate that easy access to parks and open space has become “a new measure of community wealth—an important way to attract businesses and residents by guaranteeing both quality of life and economic health,

Studies from across the nation have shown a high correlation between open space and community desirability. Bernards’ desirable quality of life derives in part from the amount, types and locations of protected open space in the community. According to TPL, “...mid- and high-level executives increasingly choose to work in locations that offer a high quality of life outside the workplace. Availability of quality education is of prime importance..., but not far behind comes recreation, along with cultural institutions and a safe environment. Proximity to open space is seen as an important benefit.”

TABLE VII-1 BALANCED LAND USE CONCEPT

Total Land in Township	15,680 acres
Vacant	547 acres
Developed	15,133 acres
County Lands	1,300 acres
Federal Lands	297 acres
Environmentally Sensitive	750 acres
(Minus County, Federal and Environmental Sensitive)	(2,347 acres)
Total Developed and Developable lands	12,786 acres
3% BLUC Minimum Recreational Acreage	384 acres

With the recent purchase of the Whitenack Woods, McCullom Farm and Sons of Liberty Farm property, which totals approximately 219 acres, a recalculation of the minimum requirements of the BLUC indicates a 211-acre surplus of parkland in the Township (See Table VII-2). Along with this ample supply of recreation land, creative recreation programming should be provided, with activities and opportunities for all age groups.

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TABLE VII-2 TOWNSHIP ACTIVE PARKLAND ACREAGE INVENTORY

Facility	Acreage	BLUC Acreage
Southard Park	13.92	13.92
War Memorial Complex	14.63	14.63
B&B Little League Complex	23.7	23.7
Pleasant Valley Park	103.66	103.66
Liberty Corner Tennis Courts	0.55	0.55
Astor Athletic Fields	4.00	4.00
Rebel Hill Park	10.42	9.42
Community Center	1.08	1.08
Washington Ave Athletic Field	1.87	1.87
Dunham Park	69.5	30.0
Dewy Meadow Athletic Field	4.85	4.85
Allen Street Gazebo	1.74	1.74
Schmidt Park	15.56	2.5
Pine Hill	10.22	6.5
<u>Farmstead Park</u>	<u>32.03</u>	<u>32.03</u>
Brown Property	5.00	5.00
<u>Grove Road Park</u>	<u>0.69</u>	<u>0.69</u>
Mountain Park	148.89	148.89
<u>Whitenack Woods</u>	<u>185.18</u>	<u>185.18</u>
<u>McCullom Farm</u>	<u>10.72</u>	<u>10.00</u>
<u>Sons of Liberty Farm</u>	<u>23.09</u>	<u>23.09</u>
Total Acreage	469.96	595.3
BLUC Minimum Recreation Acreage		384
Acreage Over Minimum		<u>211.30</u>

The NRPA approach includes generic ratios for “Suggested Facility Development Standards.” The NRPA defines a hierarchy of recreational facilities used to classify a recreational facility in light of its size, service area and population served. Table VII-3 (Bernards Township Recreational Facility Matrix) compares the Township’s and other community recreational facilities to the NRPA standard for a population of 28,000.

TABLE VII-3 BERNARDS TOWNSHIP RECREATIONAL FACILITY MATRIX

ACTIVITY	Bernards Township	Board of Education	Private	Community Total	NRPA Standard
Amphitheater	1	0	1	2	N/A
Basketball	2	1.5	3	6.5	12
Golf Course	0.5	0	2	2.5	N/A
Ice Skating	2	0	0	2	N/A
Paddle Courts	4	0	0	4	5
Picnic Shelter	4	0	1	4	N/A
Playground	4	4	5	13	25
Pool	1	0	9	10	2

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Tennis Courts	12	2	37	53	14
Volleyball	3	3	0	6	5
Community Center	1	0	1	2	1
Disc Golf	1	0	0	1	N/A
Bocce Court	2	0	0	1	N/A
Shuffle Board	1	0	0	2	N/A
Horseshoe	1	0	0	1	N/A
Roller Rink	1	0	1	2	N/A
Indoor Pavilion	2	0	3	5	N/A
Dog Run	1	0	0	1	N/A
Skateboard Park	0	0	0	0	N/A
Performing Arts Center	0	0	0	0	N/A
BALL FIELDS					
<u>Multi-purpose*</u>	17	6	5	27	**
Baseball	3	2	0	4	5
Softball	16	5	1	16	24

* Multi-purpose fields include use for soccer, lacrosse and football

**The NRPA standard for soccer fields depends upon the local popularity of the sport.

In June 2001, the Bernards Township Parks and Recreation Department conducted a town-wide survey focusing on parks and recreational needs. The survey sought information on the types of facilities most important to Township residents. The Township collected these surveys and reviewed responses to assist in planning for future programs/services and leisure time infrastructure. The top four results of the survey expressed a strong desire of Bernards Township residents for a high level of facility maintenance, continued acquisition of open space, the linkage of neighborhoods, parks, schools and commerce centers via bike/walking paths, and the need for more athletic fields. These responses continue to provide an invaluable tool in the needs analysis for the Township.

The Township has recognized the benefits of sports and recreational programs as an important aspect of the quality of life in Bernards Township. Currently, the Township offers its residents a range of organized youth and adult recreational programs that operate year-round.



Township facilities support youth and adult recreation programs, such as this soccer field in Dunham Park.

The youth programs offered by the Township include floor hockey, softball, basketball, summer camps, tennis lessons, therapeutic recreation programs and special events. Local Youth Sports Organizations utilize Township athletic fields and facilities and provide football, soccer, lacrosse,

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field hockey and baseball programs. In addition to these sports, students at Bernards' schools can participate in a wide variety of interscholastic sports.

The Township's adult recreational programs include yoga, aerobics, art classes and tennis as well as a monthly schedule of trips for active older adults. While Bernards doesn't sponsor adult recreation programs on Township fields, ad hoc use of active recreation facilities is increasingly accommodated in the Township. To assure continuing high quality of these facilities, field conditions should be monitored.

It should be noted that high demand for playing fields can result in damage to turf surfaces and related safety hazards. A schedule of resting periods for these facilities can help to assure that these fields are maintained in safe condition and ready for play.

INVENTORY

This plan includes an inventory of public, quasi-public and private land that provides recreational opportunities for Bernards Township's residents. The inventory identifies the size, location, ownership, and usage of each property.

Bernards Township has approximately 3,200 acres of open space and parkland. However, Somerset County Park Commission owns 1,180 acres or 33% of this total. The Township owns and maintains over 430 acres of active public parks and recreational facilities, which provide a host of recreational opportunities for Bernards' residents. Figure VII-1 depicts the location of each municipal park.

BERNARDS TOWNSHIP ACTIVE RECREATION FACILITIES

Southard Park, North Maple Avenue – 13.92 acres

- 1 softball/Little League field
- 1 multi-purpose field
- 1 shuffle board courts
- 1 basketball court with 6 baskets
- 1 ice skating area
- 1 sand volleyball court
- picnic shelter with comfort station
- trout pond
- barrier free playground
- 1 Bocce court
- 1 horseshoe pit

War Memorial Field (South Maple Ave.) – 17.683 acres

- 1 baseball field

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- 2 soccer fields
- 1 softball field
- 1 dog run

B & B Little League Complex, Valley Road – 23.70 acres

- 4 Little League fields
- pond and ice skating area
- utility building, comfort station
- Storage building with comfort station
- Batting cage

Liberty Corner Tennis Courts, Church Street; 0.543 acres

- 2 tennis courts

Pleasant Valley Park, Valley Road - 103.66 acres

- 1 baseball field
- 3 softball fields
- 4 multi-purpose fields
- 8 all weather tennis courts
- 4 paddle tennis courts (lighted)
- 1 sand volleyball court
- 1 basketball court with six baskets
- walking/bicycle/fitness trail; 1.5 miles with fitness cluster
- 1 barrier free playground/tot lot
- pond and pond shelter
- amphitheater
- indoor meeting room/warming hut/comfort stations
- 2 picnic shelters

Pleasant Valley Pool, Valley Road

- 50 meter pool
- training pool
- 1 volleyball court
- 2 shuffle board courts
- picnic area
- water play area
- zero depth entry baby pool and Splash area
- concession stand
- administrative – staff building
- men’s and women’s changing area and restrooms
- well house, pump house

Astor Fields, Municipal Building, Collyer Lane – 4.0 acres

- 3 multi-purpose fields

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- 1 practice field

Rebel Hill Park, Fairview Drive – 10.42 acres

- Barrier free playground/tot lot
- 1 softball field/combo
- 2 all weather tennis courts

Community Center, 289 South Maple Avenue; 1.08 acres

- activity room for groups up to 35
- recreation room for groups up to 50

Washington Ave. Basking Ridge Firemen’s Field; 4.0 acres

- 1 Little League/softball field/combo soccer field

Dunham Park, Somerville Road/Liberty Corner Road; 69.5 acres

- 1 baseball field
- 1 multipurpose field
- 1 mile 8’ wide paved path
- 0.8 mile wood chip nature path
- roller hockey rink
- 2 barrier free playgrounds
- picnic shelter
- indoor pavilion with comfort stations
- 9 hole disc golf course
- sand volleyball court

Dewy Meadow, Acres, King George Road; 4.849

- 1 multi-purpose field

Mountain Park, Mountain Road and Martinsville Road, 148.89 acres

- 4 multi-purpose fields, irrigated and 2 lighted
- 4 baseball fields, irrigated and 2 lighted
- 1 ¼ mile jogging path
- 2 comfort/concession buildings

Farmstead Park, King George Road; 32.035 acres

- 1 Multi-purpose field
- River walk

Manchester Drive Field, Manchester Drive; 0.726 acres

- 1 Multi-purpose field

Coakley Russo Golf Course, Valley Road, Owned by VA Medical Center, leased to Bernards Township

- 9 hole golf course

BERNARDS TOWNSHIP PASSIVE RECREATION AREAS

As a complement to the active recreation areas, Bernards Township owns and maintains 1162 acres of passive open space dedicated to walking and hiking trails or places to just relax. The main areas are as follows:

Allen Street Gazebo, 1.74 Acres

- A colonial gazebo

Schmidt Park: Pond Hill Road – 15.56 acres

- The restoration of this property resulted in the re-establishment of the trail system, identification of the local fauna and flora, some clearing of trees for the establishment of vistas of the Passaic River and a general cleaning of the property. The restoration is a continuing Eagle Scout Project for local Scout Troops.

Basking Ridge Park, 9.28 acres

- Forested open space

Dead River Trail, 490.696 acres

- 2 ½ mile river trail

Whitenack Woods: Whitenack Road, Minebrook Road, Annin Road – 185.18 acres

- Hiking paths

McCollum Farm: Whitenack Road – 10.72 acres

- Meadows and open space

Sons of Liberty Farm: Allen Road and Somerville Road – 23.09 acres

- Forested open space area
- Fishing ponds

English Farm woodlot: 68 acres (public access easement)

- Paths and stream

UNDEVELOPED MUNICIPAL LAND (SUITABLE FOR RECREATION)

1. Pine Hill Tract: 10.22 Acres, Haas Road
2. Brown Property: 5 Acres, East Ash Street
3. Farmstead Park – 32 acres, King George Road Future Development Potential

Proposed Uses for Farmstead Park (32 acre tract)

- 1 Multipurpose Field (Existing - This will be the only active-recreation field.)
- Fishing & bird watching
- Walking Path/sitting areas throughout and along Passaic River
- Bike Path within park parallel to King George Road
- Canoe Landing
- Ice Skating
- Picnic Area(s)
- Additional Parking area along southern border.

Proposed Restrictions:

- No sports lighting
- No permanent structures such as bleachers or field houses, backstops for baseball, or goal posts for football.

OTHER ACTIVE RECREATION FACILITIES

In addition to Township-owned facilities Bernards Township residents have access to recreational facilities owned by the Bernards Township Board of Education, and the Fireman's Field owned by the Liberty Corner Fire Company. These facilities provide additional recreational space in the Township. (See Figure VII-1, for the complete survey and location of open space and recreational lands in Bernards Township).

In addition to the Township and County owned parkland, Bernards contains many other facilities, which are at least partially devoted to indoor and outdoor recreational activities. Some are located in or around public or private schools, while some are in condominium or corporate ownership.

The following facilities are owned by the Bernards Township Board of Education.

Liberty Corner School (Church Street)

- 2 Little League baseball fields
- playground area/tot lot
- indoor gym
- outdoor basketball court with 6 baskets (4 – 8' high, 2 10' high)

Oak Street Tennis Courts

- 2 all weather tennis courts

William Annin Middle School (Gold Blvd.)

- 3 soccer fields
- 1 Little League/softball field
- 2 indoor gym
- 1 auditorium

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- 3 sand volleyball courts

Oak Street School (Oak Street)

- 1 basketball court
- 1 soccer field
- 2 playgrounds
- 1 indoor gym/adjustable height baskets
- 1 auditorium

Ridge High School (S. Finley Avenue)

- 1 ¼ mile running track, with lights
- 1 artificial turf football field, with lights
- 1 softball field
- 1 field hockey field
- practice football fields
- 4 indoors gyms
- 1 wrestling room
- 1 weight room
- 1 auditorium

South Maple Avenue Varsity Field Complex (So. Maple Ave.)

- 1 baseball field
- 1 softball field
- 1 soccer field
- ½ court size basketball field
- 1 batting cage

Cedar Hill School (Peachtree Lane)

- 1 baseball field
- 1 indoor gym with adjustable height baskets
- 1 multi-purpose auditorium/cafeteria

Mt. Prospect School (Hansom Road)

- 1 large multipurpose field
- 1 gymnasium
- 1 multipurpose auditorium/cafeteria

COUNTY PARKS, PRIVATELY OWNED, PRIVATE SCHOOLS, NON-PROFIT ORGANIZATIONS AND OTHER GOVERNMENT AGENCIES

In addition to the Township's parks, the recreation system in the Township includes over 2,000 acres of county, state or privately held open space and recreational land. Somerset County alone owns over 800 hundred acres along the Passaic River, representing the largest single public land holding in the Township. The County

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Parks offer an abundance of low-intensity recreational opportunities, including fishing, hiking and nature study and provide additional opportunities for recreation to meet the needs of the Township's expanding population.

The following parcels are owned and maintained by private, non-profit or other public entities and provide additional recreational opportunities for many Township residents. With a shortfall of Township-owned recreational sites, the availability of these public, semi-public and private properties is indispensable in meeting the needs of the citizenry.

YMCA (Mt. Airy Road)

- 25 yard, 6-lane swimming pool
- Second swimming pool
- indoor gym
- gymnastic facilities
- exercise room/fitness center
- 1 outdoor basketball court
- playground area/tot lot
- outdoor pavilion/picnic area
- 1 baseball field

The Albrook School (Somerville Road)

- Outdoor swimming pool
- playground
- open field for variety of uses (no regulation size facilities)

The Pingry School (Liberty Corner Road)

- 1 softball field
- 2 Junior Varsity Baseball/football fields
- 1 Varsity baseball/soccer field
- 1 football field & 400 meter track
- 1 field hockey field
- 1 practice field (open area)
- 2 soccer fields
- 12 tennis courts
- 2 basketball courts

St. James School (S. Finley Avenue)

- open field (no regulation size facilities)
- playground
- softball field/soccer field
- 1 gymnasium/auditorium

Lord Stirling School (Lord Stirling Road)

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- swimming pool
- open field (no regulation size facilities)

Bonnie Brae School (Valley Road)

- 1 indoor gym
- 1 baseball field
- 1 soccer/football/rugby field

Lord Stirling County Park

Environmental Education Center

- Developed Natural Area
- 600 Total acres; 10 Developed acres:
- Outdoor Theatre
- Unpaved Trails - 8.5 miles
- Fishing Pond
- Visitor center, gift shop, cross country skiing, restrooms

Lord Stirling Stables

- Special Use Park
- 325 Total acres
- 15 Developed acres
- Outdoor Facilities
- Horse Trails – 14 miles
- Dog Park - 0.5 acre
- Equestrian support facilities, indoor riding ring, barns, stalls, restrooms.
- 11 acres of open space leased to Bernards Township

VA Hospital (Valley Road)

- 2 soccer fields
- 1 amphitheater
- 1 indoor gymnasium
- 1 picnic shelter
- 9 hole golf course
- Driving range

Fireman's Field (Church Street) – 9.55 acres

- 1 Softball field

PRIVATELY-OWNED RECREATIONAL FACILITIES IN MULTI-FAMILY DEVELOPMENTS

The Barons (132 units)

- 2 tennis courts

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- 1 swimming pool

The Cedars (526 units)

- 4 tennis courts
- 1 swimming pool

Crown Court (96 units)

- 1 tennis court

Countryside (150 units)

- 2 tennis courts
- 1 swimming pool

Lord Stirling Village (175 units)

- 2 tennis courts
- 1 swimming pool

Maple Run (64 units)

- 2 tennis courts

The Ridge (104 units)

- 2 tennis courts

Society Hill (830 units)

- 8 tennis courts
- 1 swimming pool

Spring Ridge (1,150 units)

- 8 tennis courts
- 1 swimming pool

The Hills (1886 homes)

- two swimming pools
- trail network
- 8 all weather tennis courts
- 3 basketball courts
- 2 tot lots
- 1 multi-purpose field

ADDITIONAL CORPORATE-OWNED RECREATION FACILITIES

The Township should explore all opportunities with current and future owners of the following properties to potentially make these facilities available to its residents.

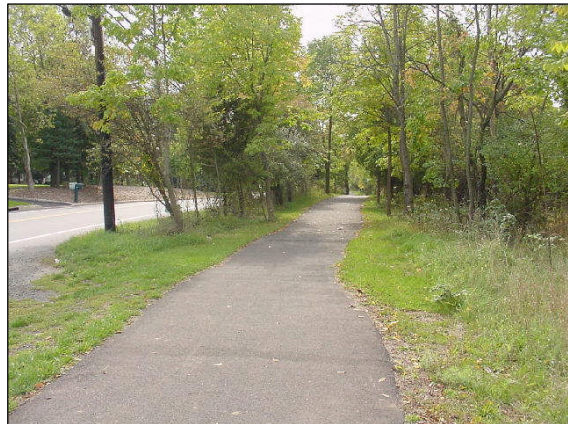
Verizon Center, Basking Ridge

- jogging trail
- cardiovascular exercise machine room
- aerobics facility
- 2 softball fields

RESOURCE ASSESSMENT

An assessment of public and private land and water resources, which have potential for providing open space or recreation opportunities has been compiled by the Planning Board. The resource assessment provides valuable information regarding opportunities to create linear open space and recreational facilities, including trails, bicycle paths or greenways and identifies areas where preservation is critical to protect valuable natural resources and ecosystems.

One of the objectives of this plan is to establish “linkages of public spaces through the purchase and development of greenways, greenbelts, waterways, paths and bikeways and provide non-vehicular access to the Township’s neighborhoods, parks, schools, public transportation and commerce centers.” The Township should continue to explore and develop new opportunities for linear open space, trails, and system linkages. The Circulation Plan, designed to work in conjunction with the Conservation and Open Space Plan and the Parks and Recreation Plan promotes connectivity between open space and recreational facilities through non-vehicular travel using greenways and bikeways. The Circulation Plan recommends implementing a pedestrian/bike way and sidewalk system to increase connectivity between existing neighborhoods, commercial areas, open space and recreational facilities.



Bikeways and greenways can establish linkages between open space and recreational facilities.

The Township contains many valuable natural resources and important habitats that will benefit substantially from conservation efforts. The benefits of acquiring open spaces go far beyond creating additional recreational facilities. Safeguarding open space ensures the viability of ecosystems that support the high quality of life that residents associate with living in Bernards Township. Protecting interconnected forests, wetlands, edge habitats, stream corridors and other environmentally sensitive areas creates an overall healthy environment. An

analysis of these areas and their potential to provide recreational benefits are discussed in the Conservation and Open Space Plan.

Somerset County Parks, Recreation and Open Space Master Plan 2000

This Parks and Recreation Plan Element provides a means for Bernards Township to ensure that an appropriate balance of recreational opportunities are available to Township residents and future generations. Expanding the scope of a parks and recreation plan beyond the political boundaries to include the County facilities, increases recreational opportunities for Bernards residents and helps guide policies that reflect the larger objectives in the County plan. This section reflects the policies adopted by the County Plan with emphasis on areas in and around Bernards Township.

County Goals and Objectives

Somerset County recently revised the goals and objectives set forth in the Somerset County Parks, Recreation and Open Space Master Plan of 1994 in order to reevaluate the previous goals and make changes and additions where necessary. The following is a summary of the current goals and objectives from Somerset County Parks, Recreation and Open Space Master Plan Update.

1. Create an open space system preserving lands of countywide significance.
2. Preserve open space to protect critical environmental resources of Somerset County
3. Provide open space for a diverse mix of quality of recreational experiences appropriate for a County Park system.
4. Provide County parks where they will most easily serve the greatest population concentrations in Somerset County.
5. Provide open space, which enhances the quality of life in Somerset County.

Somerset County Greenways

Greenways are generally defined as corridors of private and public recreation lands and waters that provide linkages between open spaces. Greenways protect natural vegetation and limit development impacts on steep slopes, floodplains and scenic natural areas. Greenways also maintain wildlife corridors and protect the nesting,

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breeding and feeding areas of numerous wildlife species, some of which have been classified as "endangered" or "threatened."

The Somerset County Parks, Recreation, and Open Space Master Plan includes greenways as part of its program to provide linkages of open spaces, and provides the following discussion in the section on County Initiatives:

"Linkages - The County is actively planning linear corridors to serve as linkages between open space areas. These linkages will vary in accessibility and use in providing contiguous open space, conservation areas, and recreational opportunities. They will be created through such mechanisms as greenways planning, conservation easement programs, stream corridor preservation and abandoned rail conversion."

Somerset County proposes "Park Acquisitions for the 21st Century" totaling over 12,000 acres. These areas include an additional 279 acres at Lord Stirling Park "...to ensure the integrity of the Passaic River watershed of the Great Swamp National Wildlife Refuge and to increase the opportunities for public recreation experiences in this area of the County". Nearly 300 additional acres in the Second Watchung Mountain Greenway are also targeted for purchase by the County.

State Development and Redevelopment Plan (SDRP)

The 2001 State Development and Redevelopment Plan includes statewide goals, strategies, and policies which places a high priority on protecting and conserving natural resources and open space. The State Plan recognizes the importance of environmental resources as valuable community assets that are essential to sustaining the health and existence of ecosystems. Water, air and soil are no longer viewed as separate resources, but rather part of a larger system involving watersheds, ecosystem regions, and broader defining landscapes. The following section describes in more detail the goals of the State Plan for regions within the Township.

Statewide Policy – Open Space and Recreational Lands

The SDRP includes 19 Statewide Policies designed to improve the planning and coordination of public policy among all levels of government. Policy number 12: Open Lands and Natural Systems is designed to:

"Protect biological diversity through preservation and restoration of contiguous open spaces and connecting corridors; manage public land and provide incentives for private land management to protect scenic qualities, forests and water resources; and manage the character and nature of

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development for the protection of wildlife habitat, critical slope areas, water resources, and for the provision of adequate public access to a variety of recreational opportunities.”

The "State Development and Redevelopment Plan (SDRP)" also highlighted greenways as an important component in the state's open space and recreation planning policies. The SDRP contains the following policy on greenways:

“Greenway/Blueway Public Open-Space Linkages

Through the cooperation of State, regional and local governments, prepare and implement a comprehensive, statewide plan for a network of open-space corridors (greenways) and waterway corridors (blueways) that link recreational and open-space land by way of corridors, paths, river and stream corridors, migratory routes, hiking and biking trails, beaches, abandoned railroad rights-of-way, scenic trails and outlooks, historic areas and other resources and public open spaces.”

Greenways are an important goal for the County and the State. Greenways provide open space links to various natural areas throughout New Jersey. County greenways in Bernards would follow the 2nd Watchung Ridge along the southwestern border of the Township and portions of the Passaic River. The County Plan also encourages local committees to develop greenways throughout their municipalities.

LOCAL GREENWAYS

The Township should work in concert with Somerset County, the Bernards Township Greenways Advisory Committee and the Bernards Township Open Space Committee to develop a greenway plan for the Township. The plan should incorporate the Passaic River and Dead River along the Township's borders where potential conservation and public access easements can be pursued to establish a continuous linkage along the waterways. Other preservation strategies, including stream corridor ordinances, which ensure that vegetated riparian buffers are maintained by regulating setbacks to floodplains and limiting the disturbances and uses within these corridors, should also be explored.

The Bernards Township Greenways Advisory Committee and Open Space Committee recognized that many of the Township's neighborhoods had no pedestrian or cycle links to nearby schools, businesses and recreational areas. Its mission is to *expand opportunities for walking and biking throughout the Township and to encourage their use*. These linear open spaces can also provide valuable buffers between land uses of differing intensity. The Township has identified paths

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for walking and biking throughout the township as shown on the Bicycle, Pedestrian, and Greenway Plan (Figure V-4) in the Circulation Plan Element. Particular attention was paid to paths that facilitate school access, close missing links between existing paths, and provide access to township open space.

IMPLEMENTATION APPROACHES AND RESOURCES

This section focuses on various strategies available to the municipality to implement open space acquisition and recreational planning and development. In addition to these resources, the Township is encouraged to explore other avenues for additional preservation and recreational improvements.

The Planning Board should continue to work with the Bernards Township Committee, Bernards Township Parks and Recreation Committee, and the Township staff to implement the Parks and Recreation Plan in concert with the goals and objectives of the Conservation and Open Space Plan, discussed in the following Section VIII. This will require a combined effort between all parties to continue to evaluate the effectiveness, methodology, and strategies of the plan as it is implemented.

A coordinated open space and recreation approach should integrate environmental protection strategies as core elements of the preservation effort. A “stewardship plan” for the development, operation and maintenance of Township parkland can provide a basis for implementation strategies that respect the environment and natural systems.

The programs and approaches outlined below represent a “toolbox” of implementation strategies, and a variety of approaches will be required to meet the objectives of this open space plan.

- a. *Open Space Tax*
The Township of Bernards adopted Open Space Tax in 1998. These revenues have been used to fund the acquisition of land for open space preservation and recreational purposes. The Bernards Township Open Space Tax is anticipated to generate approximately \$28 million from 2003 through 2017.

- b. *New Jersey Department of Environmental Protection Green Acres Program*
In 1999 the State Legislature passed the Garden State Preservation Trust Fund, which secured funding for a state-wide open space plan for New Jersey. In order to provide support to local governments who have adopted an open space tax and prepared an Open Space and Recreation Plan (OSRP), the Green Acres Program developed the Planning Incentive Grant. This program provides 50% matching

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grants to local governments for the acquisition of land for recreation and conservation purposes.

To be eligible for funding, local governments must have a Green Acres approved OSRP, and either an open space tax, or an approved alternative funding source, which is stable and sufficient, such as an annual tax levy. As the Bernards has elected not to continue to participate in the Green Acres Program, the Township relies solely on development set-asides and the Open Space Tax to purchase land for open space and recreation.

- c. *Somerset County Open Space Partnership Program*
The County/Municipal Open Space Planning Partnership Grant Program was established in 1995 to assist municipalities in the acquisition of open space, which would advance local preservation efforts. Since the program's inception, more than \$6.7 million dollars has been awarded through the Partnership to help preserve over 1,000 acres of open space. The grant program is only open to municipal governments in Somerset County. County Planning Board staff administers the program, which operates as a competitive grant process on an annual basis. The County Planning Board, Park Commission and Open Space Advisory Committee review applications based on a number of criteria and recommend awards to the Board of Chosen Freeholders.
- d. *The Environmental Infrastructure Trust Financing Program*
This program provides low interest loans to municipalities, counties and authorities for clean water-related activities, including land acquisition when watershed management and water quality benefits are provided. With funding from both NJDEP and the NJ Environmental Infrastructure Trust, the program utilizes a Federal Priority System developed each year by DEP. Loans are made for 20-year terms at a blended interest rate (DEP - 0%, Infrastructure Trust - market interest or below).
- e. *National Recreational Trails Program*
NJDEP provides financial assistance for developing and maintaining trails and trail facilities for non-motorized, motorized and multi-use purposes. The maximum grant award is \$25,000, and projects are funded on a 80% federal share and 20% matching share basis.
- f. *Private Development Initiatives Land Donations and Dedications*
Land donations and dedications from private developments can be utilized for recreational purposes and the preservation of scenic resources. Land reserved for neighborhood and community benefits may be retained in private ownership by homeowner's associations or

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dedicated to the Township. As part of development approvals, developers can be encouraged to include neighborhood parks, tot lots and other facilities to meet the recreational needs of the community. Bernards Township has been quite successful in working with developers to provide adequate recreational facilities in most of its multi-family and planned neighborhood developments.

- g. *Conservation Easements*
Land for conservation and passive recreation can be made accessible through the establishment of conservation easements.

- h. *Developments Rights*
Land can be protected from development through the sale and purchase of developments rights. The landowner is allowed to continue to use the property for non-development purposes. The Township should consider this option for farmland preservation opportunities.

SYSTEM MAP

The Active and Passive Recreation Areas System Map (Figure VII-1), illustrates the locations of all existing public and private recreation and open space sites, public and private institutional facilities and tax-exempt properties. In addition, the System Map identifies proposed open space and open space corridors, or greenways, for potential acquisition in response to steep slopes and ridge line protection goals. Table VII-4 lists the property name and acres of each facility identified on the Active and Passive Recreation Areas System Map.

TABLE VII-4 ACTIVE AND PASSIVE RECREATION AREAS

BLOCK	LOT	OWNER	PARCEL NAME- LOCATION	ACRES	FUNCTION
103	1	NJ Audubon	Hardscabble Road	0.91	Private OS
1004	1	Bernards Twp	Maple Ridge-Birch Dr.	0.655	Twp OS
1005	8	Bernards Twp	Woodland Glen-40 Walnut Circle	1.25	Twp OS
1005	10	Somerset Co.	Ross-No. Maple Ave	8.25	County OS
1302	13	Bernards Twp	Vacant lot-West Oak St.	0.32	Twp OS
1306	6	Bernards Twp	No. Brook Ave.	0.2645	Twp OS
1401	1	Bernards Twp	Basking Ridge Park-Washington Ave.	0.316	Twp OS
1402	1	Bernards Twp	Basking Ridge Park-Washington Ave.	0.008	Twp OS
1402	2	Bernards Twp	Basking Ridge Park-Washington Ave.	1.076	Twp OS
1402	3	Bernards Twp	Basking Ridge Park-Washington Ave.	0.028	Twp OS
1403	1	Bernards Twp	Basking Ridge Park-Washington Ave.	1.87	Twp OS

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1406	1	Bernards Twp	Sloping Hills-Brook Ave.	1.79	Twp OS
1406	17	Bernards Twp	Basking Ridge Park-No. Brook Ave.	1.047	Twp OS
1406	18	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.112	Twp OS
1406	19	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.184	Twp OS
1406	20	Bernards Twp	Basking Ridge Park-No. Brook Ave.	1.518	Twp OS
1406	21	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.079	Twp OS
1406	22	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.012	Twp OS
1406	23	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.098	Twp OS
1406	24	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.287	Twp OS
1406	25	Bernards Twp	Basking Ridge Park-No. Brook Ave.	1.19	Twp OS
1406	26	Bernards Twp	Basking Ridge Park-No. Brook Ave.	1.72	Twp OS
1407	1	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.103	Twp OS
1407	2	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.077	Twp OS
1408	1	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.009	Twp OS
1408	2	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.23	Twp OS
1408	3	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.057	Twp OS
1408	4	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.334	Twp OS
1408	5	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.096	Twp OS
1408	6	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.027	Twp OS
1408	7	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.003	Twp OS
1409	1	Bernards Twp	Basking Ridge Park-No. Brook Ave.	0.332	Twp OS
1506	1	Bernards Twp	Fireman's Park-No. Finley Ave.	1.74	Twp OS
1512	2	Bernards Twp	Vacant lot-Conkling St.	0.11	Twp OS
1601	1	Bernards Twp	So. Finley/Collyer Island	0.042	Twp OS
1605	1	Bernards Twp	Island - Village Green-So. Finley Ave.	0.0248	Twp OS
1606	1	Bernards Twp	Island - No. Maple Ave.	0.01	Twp OS
1609	21	Bernards Twp	Southard Park-No. Maple Ave.	13.92	Twp Park
1611	39	Somerset Co.	Manchester Drive	0.726	County OS
1701	11	Somerset Co.	Ross Farm-No. Maple Ave.	53.39	County OS
1701	13	Somerset Co.	Lord Stirling Park-So. Maple Ave.	839.972	County Park
1701	14	Somerset Co.	Environmental Ed. Center-Lord Stirling Road	4.139	Env. Ed. Center
1701	15	Somerset Co.	Stirling House-Lord Stirling Road	3.388	County Park
1701	18	Somerset Co.	Crane Farm-Lord Stirling Road	3.94	County Farm
1701	23	Somerset Co.	Crane Farm-So. Maple Ave.	4.895	County Farm
1701	24	Somerset Co.	County Riding Stables-So. Maple Ave.	18.88	Riding Stables
1901	33	Bernards Twp	Brown-East Ash St.	5.00	Twp. OS
1902	26	Bernards Twp	Spencer Willow-Voorhees Dr.	1.17	Twp OS
2001	2	Bernards Twp	leftover parcel-Culberson Road	0.012	Twp OS
2101	10	Bernards Twp	Mount Airy Heights-Mt. Airy Road	5.714	Twp OS

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2101	45	Bernards Twp	OS-Chimney Ash Farm Road	2.806	Twp OS
2301	11	Bernards Twp	Former Landfill-Pill Hill Road	32.48	Twp OS
2301	37	Bernards Twp	OS-Whitenack Road	4.23	Twp OS
2301	41	Bernards Twp	OS-Whitenack Road	9.42	Twp OS
2401	9	Bernards Twp	287/DOT tract-Mt. Airy Road	7.7	Twp OS
2501	23	Bernards Twp	Bernards Manor-Kinnan Way	2.34	Twp OS
2601	3	Bernards Twp	leftover parcel-Culberson Road	0.001	Twp OS
2601	4	Bernards Twp	leftover parcel-Culberson Road	0.2	Twp OS
2801	1	Bernards Twp	Astor Fields-Collyer Lane	5.5	Athletic Fields
2801	6	Bd. of Ed.	So. Maple Ave. Fields	12.44	Athletic Fields
2801	9	Bernards Twp	Loocke-So. Maple Ave.	6.05	Fields/Dog Park
2801	10	Bernards Twp	War Memorial Field-So. Maple Ave.	11.63	Athletic Fields
2905	6	Bernards Twp	Homestead Park-Grove Road	0.73	Twp OS
3101	18	Bernards Twp	Meadowview Estates-Riverside Dr.	1.036	Twp OS
3201	7	Somerset Co.	Croot -Lord Stirling Road	22.02	County OS
3201	8	Somerset Co.	Croot -Lord Stirling Road	20.596	County OS
3201	18	Bernards Twp	Meadowview Estates-Riverside Dr.	12.879	Twp OS
3302	6	Bernards Twp	Meadowview Estates-Castle Way	1.44	Twp OS
3303	12	Bernards Twp	Meadowview Estates-Castle Way	1.00	Twp OS
3303	17	Bernards Twp	Meadowview Estates-Riverside Dr.	0.828	Twp OS
3402	14	Bernards Twp	Meadowview Estates-Hill Top Road	0.3786	Twp OS
3605	1	Bernards Twp	Island -S. Finley/Stonehouse	0.22	Twp OS
3802	22	Bernards Twp	DB-Woods End	3.84	Twp OS
3901	61	Bernards Twp	Prince Edward Pointe-Springhouse La.	19.993	Twp OS
3901	62	Bernards Twp	OS-Tamarisk Ct.	0.90	Twp OS
4005	1	Bernards Twp	Som. Hills Luth. Church-Autumn Dr.	1.74	Twp OS
4005	5	Bernards Twp	Dawn Ridge-Sleepy Hollow Road	1.2	Twp OS
4201	2	Bernards Twp	OS-Whitenack Road	3.499	Twp OS
4301	51	Bernards Twp	McCollum Farm-Whitenack Road	10.72	Twp OS
4601	5.01	Bernards Twp	Whitenack Woods-Whitenack Road	185.19	Twp OS
4902	21	Bernards Twp	Rebel Hill Park-Fairview Dr. So.	10.42	Twp Park
5303	19	Bernards Twp	Cedar Knolls-Galloping Hill Road	2.6	Twp OS
5303	28	Bernards Twp	Cedar Knolls-Galloping Hill Road	6.00	Twp OS
5503	13	Bernards Twp	Prince Edward Pointe-Brittany Place	6.999	Twp OS
5601	10	Bernards Twp	Prince Edward Pointe-Jeffrey Ct.	1.463	Twp OS
5602	5	Bernards Twp	Somerset Homes-Gerard Ave.	1.58	Twp OS
5602	35	Bernards Twp	Prince Edward Pointe-Jeffrey Ct.	4.093	Twp OS
5802	1	Bernards Twp	Thompson Island-Lyons Road	0.63	Twp OS

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5901	1	Bernards Twp	OS-Stonehouse Road	3	Twp OS
5901	2	Bernards Twp	OS-So. Finley Ave.	14.902	Twp OS
5901	29	Bernards Twp	Summit-Stonehouse Road	14.136	Twp OS
6001	11	Bernards Twp	Schmidt Park-Pond Hill Road	5.00	Twp OS
6102	1	Bernards Twp	Schmidt Park-Pond Hill Road	3.83	Twp OS
6103	1	Bernards Twp	Schmidt Park-Pond Hill Road	6.73	Twp OS
6201	15	Bernards Twp	Elmi-Overlook Ave.	0.02	Twp OS
6208	10	Bernards Twp	Elmi-Overlook Ave.	0.03	Twp OS
6303	12	Bernards Twp	Fawn Hill-Pheasant Run	1.968	Twp OS
6303	33	Bernards Twp	Elmi-Overlook Ave.	0.09	Twp OS
6401	1	Bernards Twp	Summit-Stonehouse Road	13.884	Twp OS
6401	5	Bernards Twp	Sherbrook-Governor Dr.	6.246	Twp OS
6404	9	Bernards Twp	Sherbrook-Blackburn Dr.	4.465	Twp OS
6404	27	Bernards Twp	DB Sherbrook-Governor Dr.	4.587	Twp OS
6501	1	Bernards Twp	Summit-Summit Dr.	15.01	Twp OS
6503	1	Bernards Twp	Sherbrook-Blackburn Dr.	5.514	Twp OS
6703	7	Bernards Twp	Pleasant Valley Park-Penwood Road	4.34	Twp Park
6801	27	Bernards Twp	Summit-Summit Dr.	3.878	Twp OS
6801	44	Bernards Twp	Summit-Knollcroft Road	2.409	Twp OS
6802	4	Bernards Twp	Glenbrook-Bryon Dr.	5.77	Twp OS
7001	15	Bernards Twp	Grist Mill Park-Grist Mill Dr.	1.261	Twp OS
7002	22	Bd. of Ed.	OS-Lincroft Dr.	14.69	Bd. of Ed. OS
7002	33	Bernards Twp	Lincroft-Lincroft Dr.	0.3569	Twp OS
7101	9	Bernards Twp	Canterbury Road Walkway	0.264	Twp OS
7101	25	Bernards Twp	Canterbury Road Walkway	0.203	Twp OS
7101	29	Bernards Twp	Canterbury Road Walkway	0.137	Twp OS
7201	28	Bernards Twp	OS-Mine Brook Road	0.92	Twp OS
7301	27	Bernards Twp	Arrow Head-Mine Brook Road	21.129	TWP OS
7301	35	Bernards Twp	River View-Liberty Corner Road	3.727	Twp OS
7302	1	Bernards Twp	Arrow Head-Mine Brook Road	0.657	Twp OS
7302	5	LC Fire Co.	LC Fields-Church St.	8	LC Fire Co.
7302	11	Bernards Twp	Arrow Head-Mine Brook Road	4.911	Twp OS
7402	12	Bernards Twp	Canterbury Road Walkway	0.131	Twp OS
7501	3	Bd. of Ed.	Fields-Liberty Corner School	5.01	Fields
7502	1	Bernards Twp	Liberty Corner Island	0.0223	Twp OS
7601	15	Bernards Twp	Harrison Brook-Goltra Dr.	3.83	Twp OS
7703	22	English Family	English Farm Meadow-Valley Road	16.281	Farm Pres.
7804	8	Bernards Twp	Pleasant Valley Park-Lurline Dr.	1.43	Twp OS
7901	10	Bernards Twp	Pleasant Valley Park-Archgate Road	0.92	Twp OS

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7903	6	Somerset Co.	Harrison Brook-Lyons Rd	1.21	County OS
8001	1	Bernards Twp	Pleasant Valley Park-Valley Road	79.14	Twp OS
8001	2	Bernards Twp	Pleasant Valley Park-Valley Road	24.52	Twp OS
8001	3,4	US VA	Coakley Russo Golf Course-Valley Road	45	USVA/Twp Golf
8101	3	Bernards Twp	Sherbrook-Stonehouse Road	49.469	Twp OS
8101	23	Bernards Twp	DB Sherbrook-Stonehouse Road	2.077	Twp OS
8101	47	Bernards Twp	DB Sherbrook-Stonehouse Road	4.013	Twp OS
8102	18	Bernards Twp	Sherbrook-Valley Road	0.3356	Twp OS
8301	1	Bernards Twp	Pine Hills-Haas Road	3.22	Twp OS
8301	6	Bernards Twp	Pine Hills-Haas Road	10.22	Twp OS
8301	11.02	Bernards Twp	Bologna-Haas Road	11.06	Twp OS
8401	16	Bernards Twp	Hayefields-Crest Dr.	6.5	Twp OS
8501	1	Bernards Twp	Spring Ridge-Acken Road	73.524	Twp OS
8501	2	Bernards Twp	Crown Court-King George Road	0.337	Twp OS
8501	3	Bernards Twp	Crown Court-King George Road	5.887	Twp OS
8501	4	Bernards Twp	Crown Court-King George Road	0.261	Twp OS
8501	5	Bernards Twp	Crown Court-King George Road	54.169	Twp OS
8501	41	Passaic Rv. Co.	Passaic River Coalition-King George Rd	82.77	Private OS
8501	44	Bernards Twp	Dewy Meadow-King George Road	4.849	Twp Fields
8501	45	Bernards Twp	Crown Court-King George Road	14.094	Twp OS
8501	46	Bernards Twp	Spring Ridge-Acken Road	25.071	Twp OS
8501	47	Bernards Twp	Spring Ridge-Acken Road	37.05	Twp OS
8502	2	Bernards Twp	Farmstead Park-King George Road	32.035	Twp Park
9101	2	Bernards Twp	Society Hill-Spring Valley Blvd.	90.05	Twp OS
9101	3	Bernards Twp	Cedars-Spring Valley Blvd.	130.391	Twp OS
9204	4	Bernards Twp	Little League Fields-Valley Road	23.70	Twp Fields
9204	6	Bernards Twp	Society Hill-Spring Valley Blvd.	32.01	Twp OS
9204	8	Bernards Twp	Society Hill-Spring Valley Blvd.	28.45	Twp OS
9205	1	Bernards Twp	Martinsville Rd Island-Mt. Airy Road	0.79	Twp OS
9301	9.01	English Family	English Farm Preservation-Valley Rd	64.298	Pres. Rights
9401	11	Bernards Twp	Sons Of Liberty Farm-Allen Road	23.08	Twp. OS
9501	3	Bernards Twp	Dunham Park-Liberty Corner Road	69.543	Twp Park
10301	26	Bernards Twp	The Hills-Allen Road	4.523	Twp. OS
10301	27	Bernards Twp	The Hills-Allen Road	4.523	Twp. OS
10401	38	URWA	Upper Raritan OS-Milito Way	19.25	URWA OS
10402	3	Bernards Twp	Old Somerville Road	0.36	Twp. OS
10704	39	Bernards Twp	The Hills-Old Stagecoach Road	3.88	Twp. OS
10704	95	Bernards Twp	The Hills-Old Stagecoach Road	1.76	Twp. OS

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10704	96	Bernards Twp	The Hills-Old Stagecoach Road	1.76	Twp. OS
10801	97	NJDOT	Old Stagecoach Road	9.59	NJDOT
11001	14	Somerset Co.	DeMarco-Somerville Road	5.38	County OS
11001	15	Somerset Co.	Somerville Rd.	11.47	County OS
11101	2	Somerset Co.	AT&T-Rickey Lane	33.904	County OS
11101	6	Somerset Co.	Knox-Somerville Road	6.596	County OS
11102	5	Somerset Co.	AT&T-Mountain Road	0.633	County OS
11102	6	Somerset Co.	AT&T-Mountain Road	84.898	County OS
11102	41	Somerset Co.	Rickey Lane	20.108	County OS
11201	1	English Family	Wood Lot-Allen Road	59.235	Pres. Rights
11201	6	Bernards Twp	Pinson-Allen Road	5.228	Twp. OS
11201	11	Bernards Twp	Pinson-Allen Road	4.978	Twp. OS
11501	5.02	Somerset Co.	Prochaska-Mountain Road	14.357	County OS
11501	6	Somerset Co.	McNellis-Mountain Road	29.264	County OS
11501	18	Somerset Co.	Maolucci-Mountain Road	25.763	County OS
11501	19	Somerset Co.	Maolucci-Mountain Road	14.20	County OS
11501	20	Somerset Co.	Maolucci-Mountain Road	1.65	County OS
11501	21	Somerset Co.	Maolucci-Mountain Road	0.91	County OS
11501	22	Somerset Co.	Maolucci-Mountain Road	1.19	County OS
11501	23	Somerset Co.	Maolucci-Mountain Road	31.021	County OS
11601	1	Bernards Twp	Mountain Park-Mountain Road	143.864	Twp Park
11601	23	Somerset Co.	Pasnik-Sunset La.	20.961	County OS
11601	25	Somerset Co.	Off Long Road	15.24	County OS
11701	20	Bernards Twp	Sunset Lane	0.71	Twp. OS
11701	19	Somerset Co.	DB-Martinsville Road	0.56	County OS
11701	21	Bernards Twp	Sunset Lane	1.12	Twp. OS
11702	7	Bernards Twp	Darren Woods-Darren Dr.	0.86	Twp. OS
11702	10	Bernards Twp	Darren Woods-Darren Dr.	2.44	Twp. OS
11702	11	Bernards Twp	Darren Woods-Darren Dr.	13.872	Twp. OS
11702	28	Bernards Twp	20' wide trail-end Darren Dr.	0.331	Twp OS
			Total	3223.32	

PUBLIC PARTICIPATION AND PLANNING CONSISTENCY

The Parks and Recreation Department has previously conducted a town-wide survey focusing on parks and recreational needs. The survey provided information on the types of facilities most important to Township residents. The Planning Board

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also holds public hearings to allow the public to participate in discussions regarding community open space and recreation planning.

The Township should periodically review the Parks and Recreation Plan, as part of its six-year statutory Master Plan review. Each amendment to the plan will require public hearings, which will give the public an opportunity to comment on the planning process.

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*“The purpose of conservation:
The greatest good to the greatest number of people for the longest time”*