Green Buildings and Environmental Sustainability Plan for Bernards Township

Prepared by Bernards Township Planning Board and
Bernards Township Green Team
with assistance from
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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

> 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:

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,

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.

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 Unites 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

[4]

[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]
Targets	quantitative measures that identify what a community needs to do to achieve sustainability. Targets identify if

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

	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

[7] www.carbonfootprint.org

	is meant to be applied to many different aspects of 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.