John F. Bencivengo
MAYOR

The Township of Hamilton

OFFICE OF THE MAYOR

October 19, 2009

Melissa Stults
ICLEI - Local Governments for Sustainability USA
180 Canal Street, Suite 401
Boston, MA 02114

Dear Ms. Stults:

In cooperation with our Environmental Commission, we recently completed a comprehensive Climate Action Plan for the Township of Hamilton (document attached). The plan was prepared with input from the Hamilton Township administration along with our Environmental Commission. I wholeheartedly endorse this plan.

Our Climate Action Plan represents the Township of Hamilton's desire and intent to reduce energy usage and harmful emissions throughout the Township. Not only can we reap the environmental benefits of reducing emissions, but we can save our residents and taxpayers money through reduced utility bills. Our Climate Action Plan represents a set of guidelines to reach our established goals. Currently, our goal is to reduce our emissions by 20% by the year 2020. With that, our intermediate milestones are to reduce emissions by 2% each year starting with 2010. Ultimately, we hope to follow the State's Energy Master Plan which intends to reduce emissions to 1990 levels by 2020. Efforts are still being made to attain energy usage data for Hamilton back to 1990. At the municipal government level, reaching that aggressive State goal may be dependent on the availability of grant monies, etc. to be used for education, building energy audits and other initiatives. Even without additional funding sources, we feel that much can be done now to reduce energy usage and emissions with little or no additional expense to the Township.

The attached Climate Action Plan outlines the many initiatives that the Township of Hamilton can undertake to reach its goals. The list of initiatives is not all inclusive and

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very well could be modified during the course of implementing this plan. The Climate Action Plan is very much a living document. It will remain dynamic and will require adjustments as we monitor our progress in reaching our goals. Examples of our energy saving and emission reduction initiatives include

1) Creation of a Green Office.
2) Formally establishing a Green Fleet Policy.
3) Formally establishing an Anti-Idling Policy.
4) Creating an Extended Energy Efficient Infrastructure Program (e.g., installation of solar panels, high efficiency lighting and HVAC, creating a "lights out" policy, etc.).
5) Formally establishing a Green Purchasing Policy.
6) Establishing a Brownfields to Greenfields program.
7) Creation of LEED building standards for building construction and renovation.
8) Increased Mass Transit access to the Hamilton Train Station.
9) Biking and Walking initiatives (e.g. more bike paths, etc).
10) Expanding our recycling program to include our schools, etc.

The details of the above noted initiatives are documented in the Township's Climate Action Plan.

We are submitting our plan to ICLEI for their acceptance as a component of meeting ICLEI's five (5) milestones as well as having ICLEI recognize our achievements in meeting the first three (3) milestones. We are also well on our way to meeting the requirement of milestones four (4) and five (5).

If you should have any questions or concerns, please contact Mr. Richard Balgowan of my staff at 609-890-3567.

Sincerely,

Mayor John F. Bencivengo

cc: John Ricci, Business Administrator
Richard Balgowan, Director of Public Works

Climate Action Plan

A No-Regrets Strategy for Municipal Climate Action

The Township of Hamilton

Mercer County, New Jersey

October 07, 2009

Table of Contents

PREFACE……3
Introduction……4
Areas of Consensus……4
Vision – a Sustainable Hamilton……4
"Force Multipliers" – Knowledge, Resources and Lessons Learned……4
Lessons Learned……5
No Regrets……6

A No-Regrets Approach to Climate Action for Hamilton Township……6
Summary……6

No-Regrets Strategies, Policies, and Programs……7
Green Office……8
Green Fleet Policy/Ordinance……9
Vehicle Anti-Idling Policy……10
Extended Energy Efficient Infrastructure Policy……10

Green Purchasing Policy……13

Brownfields to Greenfields……14

LEED Standards for Building Construction and Renovation……15

Increased Mass Transit Access to Hamilton Train Station……16

Biking/Walking Initiatives……17

Green Reserve Fund Infrastructure Upgrades……19

Renewable Hamilton……20

Recycling Program Expansion……22

Additional Strategies, Policies and Programs……22

Implementation Plan……24

Appendix A (Carbon and Green House Gas Inventory)……28

Appendix B (Green Purchasing Policy)……37

Appendix C (Building Energy Conservation Plan)……48

Appendix D (Anti-Idling Policy)……56

Appendix E (Green Fleet Policy)……59

Preface

This document represents the Township of Hamilton's desire and intent to reduce energy usage and harmful emissions throughout the Township. Not only can we reap the environmental benefits of reducing energy, but we can save our residents and taxpayer's money through reduced utility bills. Our Climate Action Plan represents a set of guidelines to reach our established goals. Currently, our goal is to reduce our energy consumption, and associated emissions, by 20% by the year 2020. Intermediate goals are to reduce energy consumption by 2% each year starting with 2010. Ultimately, our goal is to coincide with the State's Energy Master Plan which hopes to reduce emissions to 1990 levels by 2020. At the municipal government level, reaching that aggressive State goal may be dependent on the availability of grant monies, etc. to be used for education, building energy audits and other initiatives. Even without additional funding sources, we feel that much can be done now, to reduce energy usage and emissions, with little or no additional expense to the Township. The plan that follows in this document outlines the many initiatives the Township of Hamilton can undertake to reach its goals. The list of initiatives is not all inclusive and very well could be modified during the course of implementing this plan. The Climate Action Plan is very much a living document. It will remain dynamic and will require adjustments as we monitor our progress in reaching our goals.

INTRODUCTION

Areas of Consensus

The scientific community, government officials, and the general public have slowly been coming to three areas of consensus. The first consensus is that the human contribution to global climate change is real and a threat to our future. The second consensus is that what we are doing to contribute to global climate change can and must be brought under control. The third is that it will take a worldwide effort to stop and then reverse the adverse effects of climate change.

Climate Action Planning has become an important process by which municipal governments take direct action to respond to global climate change. Many New Jersey municipalities are committing themselves to climate action planning:

- Mayors of 94 New Jersey municipalities have signed the US Mayors Climate Protection Agreement
- The New Jersey League of Municipalities has established a Mayors Committee for a Green Future with officials from 7 municipalities participating
- New Jersey municipal government representatives are actively participating in and contributing to the development of state and regional climate action plans.
- Officials of our neighboring communities in Mercer and Burlington Counties have said that they intend to leverage our work in developing their own plans.

Vision – a Sustainable Hamilton

Climate Action Plans all have a common vision: a sustainable community. One widely-accepted definition of sustainability is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." In his 2005 book *Collapse: How Societies Choose to Fail or Succeed*, Jared Diamond describes how societies as diverse as 17th Century Easter Island and present-day Montana and Australia have either learned to adjust their development and consumption of resources to the constraints imposed by their environment or disappeared

Today, EVERY country, state, and individual community faces the same choice to fail or succeed. Hamilton Township's initial Climate Action Plan arises out of Hamilton's choice to succeed. It presents a vision of a Sustainable Hamilton, supported by concrete goals and objectives, a strategy, and an action plan that are all consistent with economic, political, and cultural realities. It presents a vision that, if we pursue it, we will achieve.

"Force multipliers" – knowledge, resources, and Lessons Learned

The basic research at the front end of this effort included reviews of Climate Action Plans developed by other communities across the United States. Their groundwork helped us decide what to incorporate into Hamilton's Climate Action Plan, and what we could either reduce in scope or eliminate completely.

Our initial Plan omits much of the "climate change awareness" content that other plans include. We do not present a history of climate change, or a detailed review of the existing and potential impacts of climate change. This information is widely discussed in every medium available to policy makers and citizens. Television and cable news programs, newspapers, magazines, and even popular movies and television programs are making the basic concepts of climate change and climate action familiar and understandable to most who would be interested in reading this plan.

We learned that the wide range of resources in individual communities (e.g., financial, educational, political, cultural, and even geographic), make what is practical and affordable in one area, impractical and unaffordable in another. We learned that linking our efforts to those of neighboring communities, and leveraging resources at the county, state, and regional level can create force multipliers. Force multipliers can increase the impact and value of policies and programs without increasing investment in public funds.

Finally, we studied Lessons Learned from previous successes and failures in climate action planning. Lessons Learned reflect the evolving global understanding of climate change, and the political, social, economic and technological issues surrounding it. This will reduce the time, cost and effort required to create a practical, achievable plan.

Lessons Learned

1. Climate change is increasing at an accelerating pace, moving in unexpected directions, and causing uneven impacts. The "moving target" nature of climate change complicates the problem of developing long-term strategies that will stay valid.

2. Climate change is reaching, and may already have reached, the "tipping point" beyond which it cannot be reversed or even stopped. Actually, no one really knows if we can stop climate change and if it is reversible. We can only hope that we can undo what has already been done to negatively impact our environment. This makes mitigation and adaptation strategies increasingly important.

3. Municipal Climate Action Plans should include these policies, strategies and programs at the local level and in harmony with regional, national and international efforts.

4. The major drivers of greenhouse gas emissions at the local level are undergoing tidal shifts. These drivers include:

    a. Global demand for energy produced from all sources
    b. The need to upgrade the infrastructure for energy production, transmission, and distribution
    c. The local tax burden of government operating costs
    d. State and Federal pollution control policies
    e. Cultural awareness of personal and family impact on climate change
    f. The decline of industries that have unsustainable business practices
    g. The rate of advancement and adoption of new technology

    Shifts in these drivers mean that, before a Greenhouse Gas Inventory is complete, it describes a "current state" that is no longer current. Current state assessments also assume that going forward strategy choices, for government planners and officials, include a "business-as-usual" option. In the case of climate change, few believe that any such option still exists.

    A Greenhouse Gas Emissions Inventory has the most value as a looking-backward snapshot against which we can measure the progress of a climate action strategy. Although Hamilton Township has already completed its Township wide Carbon and Greenhouse Gas emissions inventory, the strategy introduced in this document does not require an inventory before implementing this strategy.
    A Greenhouse Gas Emissions Inventory's primary value is to establish a benchmark which can be used to assess progress being made in reducing energy usage and harmful gas emissions. It is also valuable as a tool to increase public and official awareness of the problems the magnitude of our harmful emissions problem.

5. Many effective climate action strategies have ancillary benefits that, all by themselves, can quickly outweigh the costs. Depending on the strategy, some of these ancillary benefits are

    a. Lower costs for government operations
    b. Leadership by example
    c. Control over property tax increases
    d. High-quality job creation
    e. Urban revival and brownfields restoration
    f. Reduction of illnesses related to greenhouse gas emissions
    g. Lower total cost of home ownership and higher residential market values
    h. More competitive business operations
    i. Increases in residential property values
    j. Opportunities for entrepreneurship
    k. Preservation of farmland
    l. Preservation of hunting and recreational lands and recreational fishing grounds
    m. Preservation of food fisheries
    n. Energy independence
    o. Protection of drinking water supplies

No Regrets

No Regrets appears to be the most practical model for municipal climate action. In "**The Economics of Mitigating Climate Change: Boom or Bust?"** (Attachment A) Kevin Gurney, says:

> No Regrets, sometimes called "double dividends," include a series of climate change mitigation measures that confer positive economic and environmental side benefits above and beyond those directly derived from avoided damages. For example, lowered emissions of air pollutants such as sulfur dioxide may be a considerable side benefit of greenhouse gas emission reductions (an "environmental double dividend").

In "**The Kyoto Protocol and Beyond: The World After 2012"** (Attachment B), Professor Peter Newell says that No Regrets "…means recognizing that if trade, energy, transport and agricultural policy are more substantively oriented to the goal of sustainability, there should be no need for a separate climate policy."

A No Regrets strategy focuses on short-term achievable actions that result in quick significant positive impacts on the economic, health, and quality of life needs of a community. It focuses on what can be achieved with little investment in public funds, but a major investment in public leadership.

A No-Regrets Approach to Climate Action for Hamilton Township

Summary

The proposed No-Regrets Hamilton Township Climate Action Plan addresses

1. Environmental Protection
2. Public Health
3. Energy Efficiency in Government Operations
4. Economic Development and Revitalization
5. Transportation
6. Residential Property Values

7. Quality of Life

It focuses on

1. Lower costs for government operations
2. Leadership by example
3. Control over property tax increases
4. High-quality job creation
5. Urban revival and brownfields restoration
6. Reduction of illnesses related to greenhouse gas emissions
7. Lower total cost of home ownership and higher residential market values
8. More competitive business operations
9. Increases in residential property values
10. Encouragement of renewable and high-efficiency energy production

The Plan emphasizes continuous progress, and consistent performance and refinement, of best practices that have always shown positive results. It does not define Hamilton specific targets. Instead, it seeks to ensure that Hamilton meets, and wherever possible, exceeds the general goals of the New Jersey Energy Master Plan. As those goals change, so will Hamilton's.

No-Regrets Strategies, Policies, and Programs

The following strategies, policies, and programs support, and are supported by the New Jersey Energy Master Plan, released by Governor Jon Corzine on October 22, 2008.

The Energy Master Plan emphasizes conservation and efficiency as the key strategies to achieve the State's goals for the year 2020:

- 20% reduction in energy utilization from fossil fuels
- 25% of all energy obtained from renewable resources
- Reduction of greenhouse gas emissions to 1990 levels

The Township of Hamilton will attempt to reduce its energy usage and emissions by 20% from January 1, 2010 through December 31, 2019. The plan is to reduce energy and emissions by 2% per year.

The State plans to provide funds to cover the costs of comprehensive energy audits for local governments. The State also proposes funding to support many local initiatives that could result from these audits. However, this funding is not yet included in pending legislation and may or may not be available in the short term.

As a result, local governments will, at least temporarily, have to examine the business case for every proposed climate action initiative. This Plan reflects the current and likely near term realities of funding for climate action strategies, policies, and programs.

Green Office

Description

Hamilton Township should create a Green Office to serve as a clearinghouse for information involving energy conservation and environmentally friendly initiatives for all township residents. The Green Office will also offer incentives to promote energy conservation such as giving residents compact florescent lights in exchange for incandescent bulb. The Green Office will offer free grocery sacks to residents so as to encourage them not to use paper or plastic grocery bags. The office will also consider providing rain barrels to residents and information on constructing rain gardens. The office will promote both water and energy conservation in the home, encourage the installation of smart thermostats and the setting of thermostats higher in summer and lower in winter. The office will also work with the Board of Education to bring this knowledge into the schools.

Status

Proposed

Rationale

Hamilton Township's Green Office would work to establish Hamilton as a center for businesses that develop, produce, and market sustainable products and sustainability services to the rest of the country and to the world. It would educate Hamilton's citizens on steps to take to reduce energy use and lower carbon and greenhouse gas emissions. It would encourage sustainable building practices.

Supported Goals

- Educates the Public
- Encourages energy conservation
- Encourages recycling
- Leadership by example

Anticipated Additional Costs

Minor. The operation of the Green Office could be funded entirely using existing grant monies provided to the township annually. The township receives recycling grants every year that could be used to fund the operation of the Green Office.

Next Steps

- Review and comment by
  - Richard Balgowan
  - Haig Kasabach
  - Richard Watson
  - Michael Angarone
  - Robert Poppert
  - Mayor John Bencivengo
  - Submit to Council

Green Fleet Policy/Ordinance

Description

The Township Council will consider adopting an ordinance that permanently mandates a Green Vehicle purchasing policy. If an ordinance is not justified, then the Township should establish the Green Fleet Policy through an Executive Order or other policy making forum. Hamilton Township currently has an informal Green Fleet Policy.

The ordinance/executive order will require all vehicles acquired by the Township, or used by relevant contractors (e.g. solid waste collection) working for the Township, to use the most energy-efficient, least-polluting technology practical for their purpose and there availability at that time.

Status

Partially complete/Proposed

Rationale

Hamilton now has one of the most comprehensive and innovative Green Fleet Policies in New Jersey and may very well be one of the best in the nation; however, as a policy, it can be undone by a succeeding Council or Mayor responding to short-term considerations. Turning the policy into an ordinance will ensure that it will not be politicized in the future.

For example, Hamilton's recently negotiated contract with its Solid Waste Hauler, requires the contractors to commit to using only Compressed Natural Gas vehicles by July of 2009. Negotiations with the Police Department have resulted in higher-efficiency, lower-emissions vehicles being sought for non-patrol uses.

These policy-related actions reflect the forward thinking and energy conscious views of current Township managers and the current Administration. Future managers and administrations could make different purchasing decisions. A Green Fleet Policy Ordinance would prevent such potential backsliding.

Supported Goals

- Lower costs for government operations
- Reduction of illnesses related to greenhouse gas emissions
- Leadership by example

Anticipated Additional Costs

Minor. Green Vehicles now cost more than less fuel efficient vehicles but result in reduced vehicle maintenance and fuel costs.

Green vehicles also have a longer service life than non-green vehicles which gives them a greater Return on Investment (ROI) and lower total cost of ownership.

Next Steps

- Review and comment by
  - Richard Balgowan
  - Haig Kasabach
  - Richard Watson
  - Michael Angarone
  - Robert Poppert
  - Mayor John Bencivengo
  - Submit to Council

ANTI-IDLING POLICY

Description Hamilton Township prepared and adopted an anti-idling policy for all municipal vehicles. The policy is stricter than the State of New Jersey's policy and applies to all municipal vehicles. The policy should be expanded to include the Board of Education and should also be considered for adoption Township wide.

Status Partially completed.

Rationale Idling vehicles waste fuel, produce unnecessary harmful emissions and also shorten the life of a vehicle. This policy will result in reduced fuel usage costs, reduced emissions and will extend the life of municipal government vehicles.

Supported Goals

- Lower costs for government operations
- Reduction of illnesses related to greenhouse gas emissions
- Leadership by example

Anticipated Additional Costs None.

Next Steps

- Enforce the existing policy. Expand the policy to the Board of Education and consider adopting regulations apply to the entire township. Consideration should be given to make the policy into an ordinance.

EXTENDED ENERGY EFFICIENT INFRASTRUCTURE POLICY

Description Hamilton Township has a policy for energy efficiency and conservation in its public buildings. It completed a comprehensive Energy Conservation Plan for all of its buildings about 2 years ago. The Township has also drafted an ordinance requiring that all future building construction in the township meet Leadership in Energy and Environmental Design (LEED) standards. This topic is specifically addressed in a separate section of this document. All of these efforts provide the foundations for a broad and practical strategy for energy efficiency and conservation throughout the Township.

The State of New Jersey's Energy Master Plan released on October 22, 2008 includes a set of goals, objectives, strategies and specific actions to promote conservation and energy efficiency in the State's existing and planned facilities. These include LEED Silver standards for all new and renovated State buildings. These provide a ready reference model for similar local government planning.

We recommend that the Policy include specific mandates to all department heads such as

- required annual energy saving technology implementation and utilization reports. This would not dictate that any specific technology be utilized or implemented by would support the goals of the township's Climate Action Plan by reducing energy consumption at township buildings.
- energy efficient business operations. This would focus on the energy and energy-related costs of all business operations, including reducing resource consumption,

especially paper based workflows and paper output in office operations.
- reducing lighting costs by reconfiguring workspaces and lighting fixtures to minimize the need for artificial lighting.
- heating and cooling people instead of spaces and fixtures.
- Raise thermostats to 75 in summer and lower them to 68 in winter in all public buildings.
- Have an aggressive program to turn out lights not in use, including the installation of motion sensors in rooms infrequently used so lights can not be left on.
- Replace most incandescent lights and upgrade older florescent lights with new ballasts.

Status Partially completed.

Rationale: Lower risk related to energy cost and supply

The benefits of energy efficiency and conservation start with the reduction of risk related to energy costs and supply. Despite the recent volatility in oil prices (as of this writing a drop in oil prices), energy costs are likely to remain a major line item in every local government's operating budget. Threats to supply are ongoing and likely to increase. In the case of oil, it is not truly a renewable resource. In the short term, the falling price of oil is driving falling prices for gasoline and heating oil. This can create a short-sighted impression that oil-based energy costs will remain low and supply pressures will ease.

It is becoming harder to predict medium and long-term costs and risks related to fuel. A long-term economic downturn will likely reduce tax revenues available for fuel purchases. Falling oil prices will also likely also have immediate, medium and long-term impacts on supply and on Federal and State tax revenues available to support local government budgets. The costs of new oil production and refining capacity are rising to the point where many long-planned projects are becoming financially unviable.

Efficiency and conservation increase the effective supply of and reduce the costs of fuel by

- increasing the effective yield of every unit of fuel. For example, an HVAC system that can provide heat, air conditioning, hot water, and electricity from a single therm of natural gas, effectively doubles the supply of natural gas over an HVAC that can only produce heat from the same therm.
- reducing the energy consumption requirements for every use of fuel. In addition to maximizing the effective energy yield obtainable from every unit of fuel, efficiency and conservation reduce the amount of fuel required for each use. For example, if natural light complements artificial light in offices, the energy consumption required for office functions goes down. If white roofs reduce the amount of heat absorbed in offices, the amount of energy needed for air conditioning goes down.

Long-term volatility in energy costs will make it harder to for local government planners to forecast and manage energy-related costs of government operations. A permanent energy efficiency and conservation strategy will mitigate this difficulty by reducing the net volume of fuel needed for government operations.

Rationale: Demonstration of repeatable health benefits

The second major benefit comes from improvements in public health. Energy efficiency and conservation in buildings has been shown to reduce respiratory and other illnesses in workers.

Office buildings account for 36% of total energy use, 65% of electricity consumption, 30% of greenhouse gas emissions, 30% of raw materials use, 30% of waste output, and 12% of potable water consumption. Raw materials such as steel, wood, brick, and concrete often derived from nonrenewable sources, are extracted by means that damage ecosystems, and commonly travel thousands of miles to reach the construction site.

In office building interiors, carpets contain toxic pollutants, paint can give off gases and deteriorate air quality, and large appliances and air conditioning systems drain energy and contain hazardous materials. Most buildings also fail to take advantage of heating, cooling, and air circulation provided by the elements, neglect to generate solar power, and channel wastewater and contaminated runoff into surrounding ecosystems.

A 2003 study by the US EPA in Region III demonstrated that the health benefits of improved indoor air quality in office buildings translated to economic benefits much greater than the cost of the improvements themselves.

Supported Goals

- Lower costs for government operations
- Reduction of illnesses related to greenhouse gas emissions
- Leadership by example

Anticipated Additional Costs

Minor. Other than demonstration projects, retrofitting most existing facilities for energy efficiency should have a one-year or less payback period. Larger initiatives, such as installing solar panels, will have a longer payback period. Generally, the payback period for solar projects can be 5 to 10 years depending on the magnitude of the project. For new facilities, it has been documented that constructing or reconstructing building so LEED Silver standards does not add to the cost of the construction and it results in lowering building operating costs.

Energy efficient business operations will require investments in

- planning, interior design, and reconfiguration of workspaces
- operations consulting to redesign workflows and processes for maximum efficiency and minimal resource consumption

Next Steps

- Review and comment by
- Richard Balgowan
- Haig Kasabach
- Richard Watson
- Michael Angarone
- Robert Poppert
- Mayor John Bencivengo
- Submit to Council

Green Purchasing Policy

Description

Hamilton Township currently has a Green Purchasing Policy which was established by Executive Order in 2006. The policy should be edited and amended to reference and mimic the Rutgers University Green Purchasing Policy (see Attachment C). Hamilton Township recently became a participant in the Rutgers Green Purchasing Policy. The Rutgers policy includes standards, guidelines, policies, and procedures for purchasing green products and contracting with services that use green products. Rutgers has also created a cooperative purchasing program that includes favorable pricing for green products and services. All municipal governments can adopt the Rutgers Green Purchasing Policy and participate in the Rutgers Cooperative Purchasing Program.

Status

Partially completed.

Rationale: Purchasing decisions based on "Best Value" can and should include environmental, social and economic benefits

As of today, the Township's Green Purchasing Policy document has not been expanded beyond the 2006 Executive Order by Mayor Glen Gilmore. The document should be edited to reference Rutgers Green Purchasing Policy of which Hamilton is a registered participant. Also, the township may wish to consider modifying the Green Purchasing Policy to make it an ordinance rather than an executive order.

According to Sustainable Oregon, green purchasing refers to procurement decisions that factor environmental, social and economic attributes in determining the "best value" for the product or service.

These complementary attributes can be described as

- environmental: reviewing products and services for a reduced effect on human health and the environment. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product or service.
- social: reviewing products for where they are made, by whom, and under what conditions. Examples include utilizing locally-owned companies, minority/women/emerging small businesses, and certified fair-trade products.
- economic: reviewing products and services for their initial price as well as their long term cost, taking into account operating, maintenance, and disposal costs.

Examples of the benefits of green purchasing include

- Reducing waste and associated costs.
- improving efficiencies and reduce operating costs.
- improving indoor and outdoor air quality.
- improving employee health; reduce sick days; improve productivity.
- reducing pollution of all kinds and reduce climate change impacts.
- Improve the quality and sustainability of natural resources now and for future generations.
- stimulating new markets and improve access to better products for the community as a whole.
- strengthening the local/regional economy.

Supported Goals

- Lower costs for government operations
- Reduction of illnesses related to greenhouse gas emissions

- Leadership by example

Anticipated Additional Costs

None. Adopting successful working models saves time and costs, including staff time and consulting fees. Green purchasing can also save money quickly, especially when combined with an effective operations cost reduction program.

Next Steps

- Modify the Hamilton Township Green Purchasing Policy to reference the Rutgers Green Purchasing Policy. Consider making the policy an ordinance rather than an executive order.
  - Richard Balgowan
  - Haig Kasabach
  - Richard Watson
  - Michael Angarone
  - Robert Poppert
  - Mayor John Bencivengo

The Green Purchasing Program/Policy should be reviewed and audited to assure that all Township Departments are complying with its requirements. In addition, it should be confirmed that the Township's Purchasing Department is utilizing the Rutgers' Cooperative Green Purchasing Program where applicable.

Brownfields to Greenfields

Description

The New Jersey Department of Environmental Protection has nominated six Hamilton brownfields sites for renovation and redevelopment. The New Jersey Department of Community Affairs has created brownfields renovation programs and tools.

This program would establish working partnerships with both State Departments to turn the nominated brownfields into greenfields. It would revise the Hamilton Master Plan to establish tax and other incentives designed to attract businesses engaged in research and development, manufacturing, and other activities related to climate change mitigation and adaptation.

The program would also create Green Enterprise Zones within the current zoning structure. Green Enterprise Zones would overlay the current zone structure to ease permitting standards for businesses that provide inherently beneficial uses.

Bills now before the New Jersey State Legislature, S-1303 and A-3062, define "inherently beneficial use" and include facilities that supply electrical energy produced from solar or photovoltaic technologies. While the NJ League of Municipalities opposes both bills, a municipal program could and should overcome the objections that the League has to State legislation that addresses this

The Green Enterprise Zones would at first include the six brownfields in Hamilton turning them into job creation sites. The businesses given incentives to set up in the Zones would enable a demonstration of the ability of new technologies to improve a degraded environment while creating unique, sustainable economic opportunities.

Status

Proposed. Comparable, successful programs exist in other states.

Rationale: Brownfields are underused resource areas suitable for developing a new local economic base

Unrecovered brownfields create serious social and economic problems for local communities and their neighbors. They include toxic materials that contaminate local and surrounding air, soil, and water supplies. They attract rats and other animals that spread diseases. They impact the property values of surrounding residential communities and discourage businesses from staying or locating in surrounding commercial and industrial sites.

Brownfields reclamation mitigates these problems but does not, in itself, provide a transformational economic benefit. Leveraging State and Federal support for brownfields reclamation in combination with a green economic development program could create such a transformational benefit.

Brownfields to Greenfields would encourage the growth of a 21st Century economy in Hamilton. This is especially important since businesses based on green and sustainable models are likely to be the strongest engines of economic growth in the US for the next few decades.

Supported Goals

- Leadership by example
- Reduction in crime
- Restoration of air, soil, and water resources
- Reduction in risk of pest-borne infectious disease
- High-quality job creation
- Urban revival and brownfields restoration
- Reduction of illnesses related to greenhouse gas emissions
- Restoration of residential property values

Anticipated Additional Costs

As proposed, this would not include any monetary payments or tax breaks for existing businesses. It would apply only to new businesses that locate in Hamilton. It would focus on low-cost promotional support, assistance in obtaining grants, and other services that would not require significant Township costs.

Next Steps

- Review the Hamilton Master Plan
- Review the brownfields reclamation programs in NJ DEP and NJ DCA
- Review the US Environmental Protection Agency's Brownfields Program

LEED standards for Building Construction and Renovation

Description

Within the past year, the Township drafted an ordinance requiring that all future building construction in the township meet Leadership in Energy and Environmental Design (LEED) standards. The draft ordinance currently requires that all municipal government building construction, as well as major municipal reconstruction projects, meet LEED Silver standards. LEED Bronze standards are mandated for all new business construction and major reconstruction projects in the township; however, making this a LEED Silver requirement is being considered. We anticipate this becoming a formal ordinance by the end of 2010. It should result in major reductions in overall building energy costs in the Township.

Since LEED standards cannot be applied to all new construction or renovation, an additional set of standards and guidelines should also be considered.

Status Proposed. Comparable, successful programs exist in other states.

Rationale: LEED standards promote energy efficient design Leadership in Energy Efficient Design (LEED) standards are becoming the dominant standards for new building construction AND renovation of existing buildings. The US Green Buildings Council which develops and promotes LEED in the US has demonstrated that LEED Silver standards for new construction add value, promote energy efficiency and conservation, and do so without adding to construction costs.

Supported Goals

- Leadership by example
- Control over property tax increases
- Lower total cost of home ownership and higher residential market values
- Increases in residential property values

Anticipated Additional Costs As proposed, LEED standards would not add costs for builders. The major costs expected at this point are for training the Township's engineering staff in the standards.

Next Steps

- Update the Township Building Code to include LEED Bronze and LEED Silver standards.
- Provide training in LEED standards and inspection practices for Township personnel.

Increased Mass Transit Access to the Hamilton Train Station

Description Township residents now have limited bus access to local shopping centers and to the Hamilton Train Station. Under the Plan, the Township will work with NJ Transit and with new local service providers to increase bus, van and jitney access to local shopping centers and to the Hamilton Train Station.

Status Proposed.

Rationale: Improved access to rail transit would reduce vehicle traffic congestion, commuting costs, and illnesses related to GHG emissions Hamilton residents who commute by rail have limited mass transit access to the Hamilton Rail Station. Only two NJ Transit bus lines (606 and 608) stop at the rail station with limited runs during rush hours. As a result, most commuters must drive or be driven to the station. This has resulted in growing congestion on the approaches to the Hamilton Rail Station and increased parking expenses for commuters.

By increasing and publicizing the number of runs that stop at the Hamilton Rail Station, NJ Transit could reduce congestion throughout morning and evening rush hours. It would also reduce the cost of commuting for more riders and attract more to mass transit.

The Station's unused monthly parking spaces are quickly exhausted when they are opened to daily commuters. Additional bus and jitney services during the day would increase the convenience of train ridership for others who now have limited access to the station outside rush hours.

Supported Goals
- Leadership by example
- Reduction of illnesses related to greenhouse gas emissions

Anticipated Additional Costs Minimal. Most of the costs would be borne by the transit providers and the riding public.

Next Steps Negotiations with NJ Transit and other potential bus and jitney services

Biking/Walking Initiatives

Description Strategies for reducing traffic congestion include increasing mass transit, and also encouraging walking and bicycling alternatives. Dedicated State and Federal grant programs are available to local governments for these programs.

Biking and Walking initiatives in this Plan include
- development of biking and walking trails through the New Jersey Department of Environmental Protection Recreational Trails Program
- participation in the New Jersey Department of Transportation Safe Routes to School program
- development of biking and jogging/walking trails along Public Service Electric and Gas right of ways

With few exceptions, such as the Miry Brook Stream Corridor, most of the land available to Hamilton for biking and walking trails is broken into disconnected segments. The Plan proposes establishing contact with NJDEP to study the options for developing and linking these segments into connected biking and walking trails.

At the same time, the Plan proposes that Hamilton work with the NJDOT to plan a network of sidewalks and on-street bike lanes to encourage school children to walk or bike to school instead of taking either school buses or cars. It also proposes to work with Public Service Electric and Gas to establish bike and jogging/walking trails on Public Service Electric and Gas right of ways. West Windsor township already has an agreement with Public Service Electric and Gas allowing them to use Public Service Electric and Gas right of ways.

Status Proposed.

Rationale: Reduced motor vehicle congestion and improved quality of community life Biking and walking are the lowest cost, and healthiest forms of transportation for getting children to and from school, and also for shopping trips within short to medium distances.

Reduction of school bus ridership can also create an opportunity to cut school transportation costs for the Hamilton Schools, and reduce the greenhouse gases associated with student transportation.

Biking and walking trails promote non-vehicle travel within the community for commuting, shopping, and recreation. These improve quality of life while reducing traffic congestion and greenhouse gases.

A recreational biking and walking trails network could be enhanced through various supporting programs, such as a Bike Share program While US bike sharing programs are in their infancy, the City of Paris has over 10,000 bicycles in constant circulation for its citizens.

Fort Collins, CO and Washington, DC have recently launched free bicycle lending programs for residents. Under Fort Collins' program, residents can sign out a bike at a local library and use it for up to five days. The Washington, DC Smart Bike program is similar. Hoboken has the only Bike Share in New Jersey. It is nicknamed "HoBiken"; however, this program is run by volunteers with constant dependence on donations.

A Bike Share Hamilton would operate in a manner similar to the Fort Collins program. Equipment could be secured by using a credit card or other viable means.

Anticipated Additional Costs

Minimal. Federal funding administered by NJDOT and NJDEP is available for Safe Routes to School initiatives. Federal funding is limited and highly competitive. State funding and planning assistance is available and less competitive. County funding may also be available through Mercer County's Mercer at Play Program.

For biking and walking trails, the NJ Department of Environmental Protection manages the New Jersey Trails Program. Funds are available for planning and creating biking and walking trails, and we have obtained an application for the 2009 Program.

Additional Steps

Based on discussions with Elise Bremer, Safe Routes to School State Coordinator, the fastest and easiest way to plan and implement a program is through the assistance of the Bicycle Pedestrian Program.

Our first step is to contact the Local Planning Assistance Program for more information. Contact: Sheree Davis, Bicycle and Pedestrian Program Coordinator, NJ DOT, PO Box 600, Trenton NJ 08625-0600

Follow-up discussions with Elise Bremer, New Jersey Safe Routes to School Coordinator. Contact information is:

Elise Bremer-Nei, AICP/PP
Safe Routes to School State Coordinator
Office of Bicycle and Pedestrian Programs
NJ Dept of Transportation
P.O. Box 600, Trenton, NJ 08625-0600

Phone: 609-530-2765; fax: 609-530-5411
Email: elise.bremer-nei@dot.state.nj.us
Website: http://www.state.nj.us/transportation/community/srts/

For Public Service Electric and Gas right of way usage, contact both Public Service Electric and Gas and also West Windsor township. Draft an agreement with Public Service Electric and Gas similar to the one implemented by West Windsor township.

For Biking and Walking Trails, we have initiated contacts with Larry Miller, Coordinator for the New Jersey Trails Program, Office of Natural Land Management, and NJ Department of Environmental Protection. We have also obtained an application for the 2009 Grants Program. If the Township decides to proceed with this initiative, the application must be completed and submitted by December 15, 2008.

Additional contact information:

Office of Natural Lands Management
P.O. Box 404
Trenton, NJ 08625-0404
609-984-1339
NatLands@dep.state.nj.us

Next Steps Discuss the feasibility of an agreement with PSE&G which is similar to the one that they have with West Windsor Township. If they agree, a formal agreement should be created.

Green Reserve Fund Infrastructure Upgrades

Description Improvements to storm water and water pollution control infrastructure that qualify for the Green Reserve Fund program established under the American Reinvestment and Recovery Act (ARRA).

The program would include the following components:

- Sanitary sewer system upgrade
- Infrastructure improvements at the Hamilton Township Water Pollution Control Facility (WPC)
- Improvements to storm water management infrastructure
- Integration of solar energy and biogas generation capabilities into the Hobson Avenue facility

Status Proposed.

Rationale: Overdue repairs and upgrades to basic infrastructure Hamilton Township's sanitary sewer system requires major repairs and upgrades. The Water Pollution Control Facility (the Township's WPC facility that has been in operation since 1938 and requires major improvements. According to some estimates, recovery from years of neglect of sewers, pumping stations, and equipment across the Township, could cost over $25M.

The Green Reserve Fund that is part of the American Reinvestment and Recovery Act provides major funding opportunities for these types of projects. A $14M sanitary sewer upgrade project has already been proposed and, according to DEP officials, is on DEP's high-priority list. This will require an aggressive effort for the township which may not be possible; however, the township will make every attempt to attain and utilize any and all available funding.

Another proposed project for major repairs and upgrades at the Hamilton Township

WPC facility was tabled by DEP in July, since it was not considered shovel-ready. The proposal can be resubmitted for 2010 funding at the end of 2009.

An additional project to incorporate solar energy generation and biogas generation technology at the WPC is the type of project clearly favored by the Green Reserve Fund. It would simultaneously bring the facility's infrastructure up-to-date while adding renewable energy capabilities.

Supported Goals

- Basic infrastructure restoration
- Reduced risk of catastrophic infrastructure failures similar to the collapse of sewer mains under Independence and Emeline Avenues in 2007
- Reduced risk of water borne diseases
- Reduced energy costs for the WPC facility

Anticipated Additional Costs

Major.

These investments have been proposed since 2002 but have never been acted on. The increased availability of State and Federal funding makes it possible to finally create the projects that would otherwise cost the taxpayers several more millions of dollars.

Next Steps

- Continue negotiations with NJ DEP for the sanitary sewer system upgrade
- Complete requirements for successful resubmission of the proposal for upgrades to the WPC.

Renewable Hamilton

Description

A program to encourage investments in solar and biomass energy throughout the Township.

The program would include the following components:

- Municipal facilities conversion. Depending on the individual business case and engineering study, municipal facilities would either enter into power purchase agreements with renewable energy suppliers or undergo retrofitting for renewable energy generation. They would also be renovated for maximum energy efficiency and conservation.
- Evaluation of the potential for Community Energy facilities sited on schools, office buildings, "big-box" stores, strip malls and other sites.
- Establishing a waste-to-energy program, in cooperation with Rutgers University, the New Jersey Department of Environmental Protection, and local supermarkets, restaurants, and schools that generate large amounts of biomass.
- Working with local self governing Common Interest Developments that have 200-300 units. These communities have a growing financial incentive to take advantage of solar and biomass energy technologies to reduce energy costs for residents.

Status

Proposed.

Rationale: Secure energy supplies, lower

- Municipal facilities conversion. This would maximize energy efficiency and conservation, enabling the Township to get the maximum energy value out of every unit of electricity and natural gas. It would also reduce the overall energy

energy costs for government, business and residential energy consumers, community-wide reduction in carbon footprint	requirements for Township business operations. This would establish the most cost-effective baseline for planning renewable energy generation for these facilities. • Evaluation of the potential for Community Energy facilities sited on schools, office buildings, "big-box" stores, strip malls and other sites. This would enable large flat spaces that receive unblocked sunlight for most of the day to become sites for solar energy production. These sites could provide clean, renewable energy for their own use and, in many cases generate a surplus that could be resupplied to the grid or supplied to participating neighbors. • Establishing a waste-to-energy program, in cooperation with Rutgers University, the New Jersey Department of Environmental Protection, and local supermarkets, restaurants, and schools that generate large amounts of biomass. Rutgers cites studies that indicate that a city of 50,000 people produces enough food waste to provide feedstock for a medium-sized electrical generating plant. At the same time, this food waste comes out of the waste stream which reduces waste hauling and landfill expenses by as much as 50%. • Working with local self-governing Common Interest Developments (CIDs) that have 200-300 units. These communities have a growing financial incentive to take advantage of solar and biomass energy technologies to reduce energy costs for residents. CIDs are self-governing communities with a common interest in reducing energy costs and securing energy supplies to residents. Since they include about 8% of the township's residents, they offer a significant opportunity to introduce renewable energy for large numbers of the population.
Supported Goals	• Leadership by example • Reduction of illnesses related to greenhouse gas emissions • Enhanced quality of life
Anticipated Additional Costs	Moderate. New and improved tax credits, funding sources, and other incentives, make the investment in renewables increasingly attractive. The payback for community renewables can be as little as 5 years under current programs and is likely to be reduced further new incentives linked to economic recovery programs are implemented. Township officials are already performing financial analyses of different investment scenarios and should be able to complete an investment strategy over the next several months.
Next Steps	• Conduct a State-funded Energy Audit for all Township facilities • Complete investment analyses to determine Hamilton-specific guidelines for solar and biomass investments • Begin dialogues with owners of suitable facilities for solar arrays • Meet with Rutgers experts on food waste recovery programs

Recycling Program Expansion

Description

Expand the current recycling program to require that all entities in the Township, that currently don't actively participate in Mercer County's Recycling Program, begin participating. For example, our Township schools currently do not actively recycle bottles and cans, etc.

The program would include the following components:

- Meet with the proper school officials and prepare an action plan to being a recycling program for all of the schools in Hamilton Township.
- Identify funding sources needed to provide equipment (e.g., recycling containers, dumpsters, etc.) to facilitate recycling. In addition, reach out to Mercer County and/or solid waste collectors, to determine a method to have recycling collected from the schools for processing at a recycling facility.
- Determine (approximate) the quantity of recyclable materials currently being placed in the waste stream and the amount of money that can be saved or avoided by removing those materials from the waste stream and recycling them.
- Put a system in place to monitor compliance and also track the quantities of materials being removed from the waste stream so that accurate cost savings/avoidance can be determined.

Status

Proposed.

Rationale: Secure energy supplies, lower energy costs for government, business and residential energy consumers, community-wide reduction in carbon footprint

- Valuable resources are wasted by including them in the waste stream. These materials can be recycling and made into useful products.
- Recycling results removes materials from the waste stream that currently overburden our limited landfill space.
- Recycling provides a mechanism for cost avoidance by taking reusable products out of the waste stream. Agencies generally pay by the ton to dispose of solid waste. By recycling, solid waste tonnages are reduced which, consequently, reduces the tonnage targeted for disposal.

Supported Goals

- Leadership by example
- Extended the life of natural resources
- Enhanced quality of life

Anticipated Additional Costs

Minor. It is hoped that the cost to implement this program could be offset by the savings/cost avoidance realized by removing recyclable materials from the waste stream. In addition, it is possible the Mercer County could handle collection of the recyclables. There is also grant monies available that could be used if necessary.

Next Steps

- Meet with Board of Education to get "buy in" and develop an action plan.
- Complete a cost analyses to determine all costs that could be incurred to implement this program.
- Educate all participants.
- Implement the program and track its progress and results.

Additional Strategies, Policies and Programs

Description

The Climate Action Plan will implement the above noted programs. In addition, we will evaluate additional programs that will leverage the success of other communities across the US, Canada and the Europe.

Examples of additional programs include the following:

- The 10% Challenge. This is an education, awareness, and incentives initiative that aims at reducing the greenhouse gases emitted by gas powered lawn mowers. Gas powered lawn mowers account for almost 10% of the greenhouse gas emissions in the United States.
- Rain gardens and other programs (e.g. wildflower fields) to reduce the need for mowing. These not only reduce greenhouse gas emissions but improve water quality.

Status

In progress. The township has recently constructed rain gardens at the Hamilton Township Library. It has planted wildflower fields at various locations in the township.

Rationale: Enhancements and "force multipliers" for core programs

To be determined depending on the selected "other" programs. For example, rain gardens reducing mowing which reduce harmful emissions from mowing equipment. They also purify storm water runoff as it percolates into the ground water table. Wildflower fields offer similar benefits.

Supported Goals

- Leadership by example
- Reduction of illnesses related to greenhouse gas emissions
- Enhanced quality of life

Anticipated Additional Costs

Minimal. Any costs associated with these programs could be offset by reduction in labor and equipment costs since operations such as mowing would no longer be required.

Next Steps

Continue installing additional rain gardens and planting wildflower fields. Consider studying areas of the township for candidate sites for rain gardens and wildflower fields and create a strategic plan for construction.

Implementation Plan

Implementing a Township Wide Climate Action Plan requires the commitment of all Township residents, businesses, industry, the schools and government. Our position is that government should lead the way with this initiative. Although some of the strategies addressed in this plan will clearly be the responsibility of the local Township government, the strategies that will have the greatest impact on reducing energy consumption and harmful gas emissions are those that involve ALL of our residents. We can expect significant progress in meeting our goals if everyone gets involved. If residents replace incandescent lighting with compact florescent light, purchase hybrid and other cleaner fuel technology vehicles, purchase energy efficient appliances and building materials (e.g., Energy Star Rated), etc., the potential for significant reductions in harmful emissions is likely.

To implement the strategies in the Climate Action Plan, that involve ALL Township residents, the Hamilton Board of Education will prepare and implement and educational component that educates our students of the actions that can be taken to reduce our harmful emissions. Meetings have already been held between the Hamilton Township municipal government and the Hamilton Board of Education and both entities are in agreement and enthusiastic about this project. The plan is to integrate the teaching of our Climate Action Plan strategies into relevant classes at the schools. This could include science classes, health education classes and others. In addition, special assemblies would be held to help educate the student body of each school. It is also planned to develop a competition among either all of the schools or selected schools (e.g., the high schools). The competition would be based on criteria to measure the reduction of harmful emissions by geographic area (the area that provides students to each specific school). The Township Wide Carbon and Greenhouse Gas inventory will be used as the benchmark for determining reductions. An award(s) will be given out each year to the school(s) that are the most successful in reducing emissions in their specified area. The awards that were discussed were 1) a Green Cup and 2) a Green Flag. The Green Cup would be awarded the similar to how the Stanley Cup is awarded in professional Ice Hockey. The Green Cup would be given to the winning school to showcase for the year. The following year, the Green Cup would go to that year's winner to showcase. A Green Flag would be a flag awarded permanently to each school that wins the competition each year. This flag would be large enough to place on a flagpole outside the school or hang on a wall inside the school. This educational component of our Climate Action Plan is scheduled to begin on Earth Day (April) 2010.
The timeline for implementation of all strategies in the Climate Action Plan is as follows:

Activity/Task	Actions Items	Start Date	Completion Date
Green Office	a. Begin office reconstruction/renovation	Currently	10/31/2009
	b. Supply Office with CFLs, Tote bags & Literature, etc.	in Progress	10/31/2009
	c. Announce to all media (press, WZBN, etc.) that the office is officially open.		
	d. Promote a policy to reset thermostats up in summer, down in winter.		Ongoing
	e. Promote a "lights out" program.		Ongoing
	f. Promote installation of motion detectors in infrequently used rooms.		Ongoing
	g. Promote energy efficient lighting.		Ongoing
	h. Educate the public.		Ongoing
	i. Work with Board of Education on special education programs.		Ongoing

Activity/Task	Actions Items	Start Date	Completion Date
Green Fleet Ordinance	a. Rewrite the existing Green Fleet Policy so that it complies with the Township's format for an ordinance. b. Complete a Council Action Request and submit the ordinance to our Legal Department for review and approval. c. Legal Department discusses ordinance with the Business Administrator and then submits the ordinance to the Clerk's Office. Clerk's Office provides ordinance to all Council Members for review and schedules the ordinance for presentation at a Council Meeting.	Currently in Progress	10/31/2009
Anti-Idling Policy	a. Consider expanding the Township's current Anti-Idling Policy to include the Board of Education and also the entire Township.	Currently in Progress	12/31/2010
Extended Energy Efficient Infrastructure policy	a. Modify the Township's existing Building Energy Conservation Plan to include the specific mandates suggested in the Township's Climate Action Plan.	10/01/2009	12/31/2009
Green Purchasing Policy	a. Rewrite the existing Green Purchasing Policy to reference the Township's association with the Rutger's Green Purchasing Co-op Program and also consider it for conversion to an ordinance.	Currently in Progress	11/15/2009
Brownfields to Greenfields	a. As suggested in the Climate Action Plan, work with the Planning Board, Planning Department and the Township's Redevelopment Commission to encourage development to convert the Township's six Brownfield sites to Greenfield sites. Prepare a specific plan of action for this and also insert into the Township's Master Plan.	10/01/2009	12/31/2010

Activity/Task	Actions Items	Start Date	Completion Date
Board of Education Instructional Program	a. The Board of Education, the Township's Municipal Government and Public Service Electric and Gas will work together to implement a program to educate our school teachers, student body and all Township residents of the things that we can do as a community to reduce energy usage and carbon and green house gas emissions. A specific plan of action is to be developed which will identify a curriculum to be used. The plan will also address methods to track performance of each school involved in the program. Public Service Electric and Gas will play a major role in determining how this is done and provide the data for the evaluation. At the conclusion of the first year, an assessment will be made to determine which school was the most successful in reducing energy usage and carbon and green house gas production. b. A "Green Cup" trophy and "Green Flag" will be awarded to the most successful school. The Green Cup will be transferred to the winning (most successful) school at the end of each evaluation year. The winning school will relinquish the Green Cup to subsequent winners. The Green Flag is given to each winning school to keep. A new flag will be given out each year.	Currently in Progress	June 2011 and then possibly perpetual

LEED Standards for Building Construction and Renovation	a. Submit the draft LEED ordinance to the Mayor's Office and Business Administrator's Office for additional consideration. The recommendation is to move forward and formalize the ordinance rather than wait for ISLES to complete their building construction (LEED GOLD). b. If approved by Mayor and Business Administrator, complete Council Action request and follow the standard procedure for implementing a new ordinance. c. Concurrently with "b", make sure that the Township's Building Inspection Office is fully prepared to enforce the new building construction standards.	Currently in Progress	12/31/2010

Activity/Task	Actions Items	Start Date	Completion Date
Increased Mass Transit Access to Hamilton Train Station	a. Prepare a letter from the Township to NJ Transit requesting additional bus service to and from the Hamilton Train Station and also local shopping center. Also, reach out to private transportation service providers to assess their interest in providing this service and associated costs. b. Implement the additional bus services.	10/31/2009	06/30/2010
Biking/Walking Initiatives	a. Contact PSE&G and propose entering into an agreement to utilize their power line rights of way as part of Hamilton Township's system of biking, walking and jogging trails. If approved, write memorandum of understanding, or other agreement document. Have the document reviewed by the Township's Legal Office. Have all relevant representatives add their signatures. b. Have formal ceremony and notify press (media) of dedication of those areas as bike, walking and jogging trails. Place appropriate signage along the relevant paths.	09/21/2009	10/31/2009
Green Reserve Fund Infrastructure Upgrades	Work involving sanitary and storm water management upgrades are currently underway. The township shall continue to upgrade its infrastructure in accordance with all relevant Federal, State and Township regulations.	In Progress	Unknown
Renewable Hamilton	a. Complete plans for installation of solar panels at various Township buildings. b. Consider power purchase agreements for some Township facilities. c. Consider utility service commodity agreements. d. Evaluate the applicability of creating Community Energy Facilities and also where they would be located. Consider using roofs of large facilities such as schools, shopping centers, supermarkets, etc. e. Create a food waste to energy program and become a partner in Rutger's waste to energy program.	Some items already in progress	12/31/2011
Additional Strategies, Policies and Programs	a. This is a flexible area where new ideas will be considered for implementation always. It will follow the process of continuous improvement where we are always looking for new and better ways to do things. Examples of some existing programs are Rain Gardens, Wildflower Fields, Environmental Basins, etc.	In Progress	No Established End Date

APPENDIX A
(Carbon and Green House Gas Inventory)

Township of Hamilton
Community Greenhouse Gas Emissions
2008 Summary Report

	Equiv CO2 (tons)	Equiv CO2 (%)	Energy (MMBtu)
RESIDENTIAL	548,248.0	34.6	6,244,207.0
COMMERCIAL	517,750.0	32.7	4,660,311.0
INDUSTRIAL	3,273.0	0.2	30,215.0
TRANSPORTATION	515,916.0	32.6	6,021,443.0
WASTE	-2,246.0	-0.1	
SUMMARY TOTAL	1,582,940.0	100.0	16,956,175.0

2008 Detailed Report

		Equiv CO2 (tons)	Equiv CO2 (%)
RESIDENTIAL			
	HEATING OIL/KEROSENE		
	Light Fuel Oil	45,328.0	2.9
	Subtotal HEATING OIL/KEROSENE	45,328.0	2.9
	PSEG		
	Electricity	245,292.0	15.5
	Natural Gas	257,627.0	16.3
	Subtotal PSEG	502,919.0	31.8
Subtotal Residential		548,248.0	34.6
COMMERCIAL			
	Untitled		
	Electricity	373,301.0	23.6
	Natural Gas	144,449.0	9.1
	Subtotal Untitled	517,750.0	32.7
Subtotal Commercial		517,750.0	32.7
INDUSTRIAL			
	Untitled		
	Electricity	2,284.0	0.1
	Natural Gas	989.0	0.1
	Subtotal Untitled	3,273.0	0.2
Subtotal Industrial		3,273.0	0.2
TRANSPORTATION			
	Untitled		
	Gasoline	425,245.0	26.9

	Diesel	90,671.0	5.7
	Subtotal Untitled	515,916.0	32.6
Subtotal Transportation		515,916.0	32.6
WASTE			Disposal Method-Compost
	ECFAC		
	Plant Debris	-2,246.0	-0.1
	Subtotal Untitled	-2,246.0	-0.1
Subtotal Waste		-2,246.0	-0.1
Total		1,582,940.0	100.0

Township of Hamilton
Government Greenhouse Gas Emissions
2007 Summary Report

	Equiv CO2 (tons)	Equiv CO2 (%)	Energy (MMBtu)	
BUILDINGS	3,149.0	25.9	29,694.0	$
VEHICLE FLLET	2,428.0	20.0	32,504.0	$
STREETLIGHTS	2,408.0	19.8	14,927.0	$1,(
WATER/SEWAGE	4,162.0	34.3	31,240.0	$
SUMMARY TOTAL	**12,146.0**	**100.0**	**108,366.0**	**$3,**

2007 Detailed Report

	Equiv CO2 (tons)	Equiv CO2 (%)	Energy (MMBtu)	Cost ($)
BUILDINGS				
BROMLEY CENTER				
Electricity	89.0	0.7	550.0	$22,230.00
Natural Gas	50.0	0.4	803.0	$10,664.00
Subtotal Bromley Center	138.0	1.1	1,353.0	$32,894.00
ECFAC/GATE 2007				
Electricity	0.0	0.0	0.0	$129.00
Subtotal ECFAC/GATE	0.0	0.0	0.0	$129.00
FOUNTAINS - VAR LOC 2007				
Electricity	19.0	0.2	117.0	$4,983.00
Subtotal FOUNTAINS - VAR LOC	19.0	0.2	117.0	$4,983.00
KUSER FARM 2007				
Electricity	62.0	0.5	383.0	$15,145.00
Natural Gas	54.0	0.4	875.0	$12,269.00
Subtotal KUSER FARM	116.0	1.0	1,258.0	$27,414.00
MUHA CENTER 2007				
Electricity	228.0	1.9	1,411.0	$63,644.00
Natural Gas	52.0	0.4	841.0	$11,521.00
Subtotal MUHA CENTER	280.0	2.3	2,252.0	$75,165.00
MUNICIPAL/HEALTH BLDG 2007				
Electricity	261.0	2.1	1,616.0	$69,106.00
Natural Gas	76.0	0.6	1,231.0	$17,281.00

Subtotal MUNICIPAL/HEALTH BLDG	337.0	2.8	2,847.0	$86,387.00
NEIGHBORHOOD SERV CTR 2007				
Electricity	122.0	1.0	758.0	$32,877.00
Natural Gas	61.0	0.5	988.0	$13,228.00
Subtotal NEIGHBORHOOD SERV CTR	183.0	1.5	1,745.0	$46,106.00
PARKS/PLAYGROUNDS/BALLFIELDS 2007				
Electricity	93.0	0.8	577.0	$32,282.00
Natural Gas	12.0	0.1	202.0	$2,886.00
Subtotal PARKS/PLAY/BALL	106.0	0.9	779.0	$35,168.00
POLICE DEPT 2007				
Electricity	450.0	3.7	2,788.0	$109,584.00
Natural Gas	179.0	1.5	2,898.0	$37,598.00
Subtotal POLICE DEPT	629.0	5.2	5,686.0	$147,182.00
PUBLIC WORKS 2007				
Electricity	231.0	1.9	1,431.0	$61,052.00
Natural Gas	272.0	2.2	4,395.0	$61,496.00
Subtotal PUBLIC WORKS	502.0	4.1	5,825.0	$122,548.00
RECREATION DEPT 2007				
Electricity	131.0	1.1	813.0	$34,540.00
Natural Gas	109.0	0.9	1,756.0	$19,962.00
Subtotal RECREATION DEPT	240.0	2.0	2,569.0	$54,502.00
SATELLITE 2007				
Electricity	43.0	0.4	268.0	$12,576.00
Natural Gas	40.0	0.3	649.0	$9,156.00
Subtotal SATELLITE	83.0	0.7	917.0	$21,731.00
SAYEN PARK 2007				
Electricity	99.0	0.8	611.0	$26,710.00
Natural Gas	20.0	0.2	326.0	$4,694.00
Subtotal SAYEN PARK	119.0	1.0	937.0	$31,404.00
VETERANS PARK 2007				
Electricity	303.0	2.5	1,881.0	$89,528.00
Natural Gas	94.0	0.8	1,525.0	$20,621.00
Subtotal VETERANS PARK	398.0	3.3	3,406.0	$110,149.00
Subtotal Buildings	**3,149.0**	**25.9**	**29,694.0**	**$795,763.00**
VEHICLE FLEET				
VEHICLE FUEL USAGE				
Biodiesel (B-20)	713.0	5.9	10,217.0	$195,809.00
CNG	0.0	0.0	0.0	$2,190.00
Ethanol (E-10)	1,715.0	14.1	22,287.0	$377,470.00

Subtotal VEHICLE FUEL USAGE	2,428.0	20.0	32,504.0	$575,469.00
Subtotal Vehicle Fleet	**2,428.0**	**20.0**	**32,504.0**	**$575,469.00**
STREETLIGHTS				
DECORATIVE STREET LIGHTS 2007				
Electricity	73.0	0.6	451.0	$22,596.00
Subtotal DECORATIVE STREET LIGHTS	73.0	0.6	451.0	$22,596.00
FLASHERS - VARIOUS LOCATIONS 2007				
Electricity	8.0	0.1	52.0	$9,258.00
Subtotal FLASHERS - VARIOUS	8.0	0.1	52.0	$9,258.00
STREETLIGHTING 2007				
Electricity	2,305.0	19.0	14,293.0	$979,262.00
Subtotal STREETLIGHTING	2,305.0	19.0	14,293.0	$979,262.00
TRAFFIC LIGHTS 2007				
Electricity	21.0	0.2	132.0	$23,789.00
Subtotal TRAFFIC LIGHTS	21.0	0.2	132.0	$23,789.00
Subtotal Streetlights	**2,408.0**	**19.8**	**14,927.0**	**$1,034,905.00**
WATER/SEWAGE				
WATER POLLUTION CONTROL				
Electricity	3,618.0	29.8	22,435.0	$765,178.00
Natural Gas	544.0	4.5	8,805.0	$106,444.00
Subtotal WPC	4,162.0	34.3	31,240.0	$871,622.00
Subtotal Water/Sewage	**4,162.0**	**34.3**	**31,240.0**	**$871,622.00**
Total	**12,146.0**	**100.0**	**108,366.0**	**$3,277,759.00**

Township of Hamilton
Government Greenhouse Gas Emissions
2008 Summary Report

	Equiv CO2 (tons)	Equiv CO2 (%)	Energy (MMBtu)	Equiv CO2 ($)	Energy ($)	Co
BUILDINGS	3,052.0	25.8	29,152.0		$827,652.00	
VEHICLE FLEET	2,354.0	19.9	31,379.0		$601,966.00	
STREETLIGHTS	2,417.0	20.5	15,034.0		$1,170,783.00	
WATER/SEWAGE	3,986.0	33.8	29,983.0		$941,717.00	
SUMMARY TOTAL	**11,809.0**	**100.0**	**105,548.0**		**$3,542,118.00**	

2008 Detailed Report

	Equiv CO2 (tons)	Equiv CO2 (%)	Energy (MMBtu)	Cost ($)
BUILDINGS				
BROMLEY 2008				
Electricity	85.0	0.7	528.0	$23,726.00
Natural Gas	59.0	0.5	952.0	$13,730.00
SUBTOTAL - BROMLEY	**144.0**	**1.2**	**1,481.0**	**$37,456.00**
EC FAC/GATE 2008				
Electricity	0.0	0.0	1.0	$141.00
SUBTOTAL - ECFAC/GATE	**0.0**	**0.0**	**1.0**	**$141.00**
FOUNTAIN- VARIOUS LOCATIONS 2008				
Electricity	9.0	0.1	56.0	$3,690.00
SUBTOTAL - FOUNTAINS	**9.0**	**0.1**	**56.0**	**$3,690.00**
KUSER 2008				
Electricity	61.0	0.5	380.0	$16,470.00
Natural Gas	46.0	0.4	742.0	$10,996.00
SUBTOTAL - KUSER		**0.9**	**1,122.0**	**$27,466.00**
MUHA CENTER 2008				
Electricity	211.0	1.8	1,310.0	$60,850.00
Natural Gas	45.0	0.4	729.0	$10,534.00
SUBTOTAL - MUHA CENTER	**256.0**	**2.2**	**2,038.0**	**$71,384.00**
MUNICIPAL/HEALTH 2008				
Electricity	242.0	2.1	1,508.0	$82,750.00
Natural Gas	79.0	0.7	1,277.0	$18,490.00
SUBTOTAL - MUNICIPAL/HEALTH	**321.0**	**2.7**	**2,785.0**	**$101,240.00**

NSC 2008					
Electricity	100.0	0.8	624.0	$29,297.00	
Natural Gas	55.0	0.5	894.0	$13,002.00	
SUBTOTAL - NSC	**155.0**	**1.3**	**1,518.0**	**$42,299.00**	
PARKS/PLAYGROUNDS/BALLFIELDS 2008					
Electricity	90.0	0.8	560.0	$30,499.00	
Natural Gas	13.0	0.1	204.0	$3,052.00	
SUBTOTAL - PARKS/PLAY/BALLFIELDS	**103.0**	**0.9**	**764.0**	**$33,551.00**	
POLICE DEPT 2008					
Electricity	437.0	3.7	2,716.0	$117,571.00	
Natural Gas	196.0	1.7	3,174.0	$43,368.00	
SUBTOTAL - POLICE STATION	**633.0**	**5.4**	**5,889.0**	**$160,939.00**	
PUBLIC WORKS 2008					
Electricity	242.0	2.0	1,503.0	$69,634.00	
Natural Gas	295.0	2.5	4,782.0	$52,660.00	
SUBTOTAL - PUBLIC WORKS	**537.0**	**4.5**	**6,285.0**	**$122,294.00**	
RECREATION DEPT 2008					
Electricity	131.0	1.1	813.0	$39,005.00	
Natural Gas	94.0	0.8	1,517.0	$22,216.00	
SUBTOTAL - RECREATION	**224.0**	**1.9**	**2,330.0**	**$61,221.00**	
SATELLITE 2008					
Electricity	48.0	0.4	300.0	$13,998.00	
Natural Gas	46.0	0.4	744.0	$11,087.00	
SUBTOTAL - SATELLITE	**94.0**	**0.8**	**1,044.0**	**$25,085.00**	
SAYEN GARDENS 2008					
Electricity	99.0	0.8	618.0	$30,275.00	
Natural Gas	22.0	0.2	361.0	$5,043.00	
SUBTOTAL - SAYEN GARDENS	**122.0**	**1.0**	**979.0**	**$35,318.00**	
VETS PARK					
Electricity	277.0	2.3	1,726.0	$89,132.00	
Natural Gas	70.0	0.6	1,134.0	$16,436.00	
SUBTOTAL - VETS PARK	**348.0**	**2.9**	**2,861.0**	**$105,568.00**	
SUBTOTAL-BUILDINGS			**3,052.0**	**25.8**	**29,152.0**	**$827**
VEHICLE FLEET					
VEHICLE FUEL USAGE 2008					
Biodiesel (B-20)	586.0	5.0	8,398.0	$158,665.00	
CNG	0.0	0.0	0.0	$2,539.00	
Ethanol (E-10)	1,768.0	15.0	22,982.0	$440,762.00	
SUBTOTAL - VEHICLE FUEL USAGE	**2,354.0**	**19.9**	**31,379.0**	**$601,966.00**	
SUBTOTAL - VEHICLE FLEET			**2,354.0**	**19.9**	**31,379.0**	**$601**

STREETLIGHTS					
DECOR 2008					
Electricity	69.0	0.6	429.0	$22,967.00	
SUBTOTAL - DÉCOR	**69.0**	**0.6**	**429.0**	**$22,967.00**	
FLASHER 2008					
Electricity	8.0	0.1	51.0	$5,322.00	
SUBTOTAL - FLASHER	**8.0**	**0.1**	**51.0**	**$5,322.00**	
STREET LIGHTS 2008					
Electricity	2,316.0	19.6	14,409.0	$1,118,030.00	
SUBTOTAL - STREETLIGHTS	**2,316.0**	**19.6**	**14,409.0**	**$1,118,030.00**	
TRAFFIC LIGHTS 2008					
Electricity	23.0	0.2	145.0	$21,162.00	
SUBTOTAL - TRAFFIC	**23.0**	**0.2**	**145.0**	**$21,162.00**	
WARNING LIGHTS					
Electricity	0.0	0.0	0.0	$1,233.00	
SUBTOTAL - WARNING LIGHTS	**0.0**	**0.0**	**0.0**	**$1,233.00**	
WARNING SIGNALS					
Electricity	0.0	0.0	0.0	$1,233.00	
SUBTOTAL 0 WARNING SIGNALS	**0.0**	**0.0**	**0.0**	**$1,233.00**	
WARNING SIGNS 2008					
Electricity	0.0	0.0	0.0	$836.00	
SUBTOTAL - WARNING SIGNS	**0.0**	**0.0**	**0.0**	**$836.00**	
SUBTOTAL - STREET LIGHTS		**2,417.0**	**20.5**	**15,034.0**	**$1,170**

WATER/SEWAGE					
WATER POLLUTION CONTROL					
Electricity	3,466.0	29.4	21,563.0	$825,291.00	
Natural Gas	520.0	4.4	8,420.0	$116,427.00	
SUBTOTAL - WPC	**3,986.0**	**33.8**	**29,983.0**	**$941,717.00**	
SUBTOTAL - WATER/SEWAGE		**3,986.0**	**33.8**	**29,983.0**	**$941**

Total	**11,809.0**	**100.0**	**105,548.0**	**$3,542,118.00**

APPENDIX B
(Green Purchasing Policy)

Green Purchasing Policy
Hamilton Township

Preserving, protecting, and improving the natural environment and health of the community through the implementation of a policy providing for a cost-effective preference for the purchase and use of environmentally-responsible products and services.

WHEREAS, the Hamilton's interest is served when Local Government makes the most efficient use of natural resources by maximizing its use of environmentally-responsible products and services, promoting recycling and preventing waste whenever possible; and

WHEREAS, this Administration is determined to strengthen the role of Local Government as an environmentally conscientious, as well as fiscally conscientious consumer; and

WHEREAS, Local Government should -- through the responsible exercise of its purchasing power -- work to promote the preservation, protection and improvement of the natural environment, thereby promoting the health of its citizenry and the success of future generations; and

WHEREAS, Local Government should -- through cost- effective waste prevention and recycling activities -- work to lessen the production of waste, and serve as a model in this regard for private and other public institutions; and

WHEREAS, the purchase and use of recycled and environmentally preferable products and services by local government can spur private sector development of new technologies and use of such products, thereby creating business and employment opportunities and enhancing regional and local economies and the national economy;

WHEREAS, Hamilton Township has become a partner with Rutgers University and is a participant in their Green Purchasing Cooperative Program.

1. Consistent with the demands of efficiency and cost effectiveness, the Director of each Township Department shall implement cost-effective procurement preference in favor of environmentally-responsible products and/or services, following all applicable laws and rules concerning public purchasing.

2. The following shall be considered in assessing whether a product or service is environmentally responsible:
    - Depletion of natural resources;
    - Energy consumption;
    - Life-cycle cost;
    - Operation;

- Maintenance;
- Packaging;
- Pollutant releases;
- Raw materials acquisition;
- Recycled content;
- Waste prevention; and
- Overall impact on human health and the environment.

3. Township Departments shall use, where practicable, reusable products, recycled-content products, and recyclable products.

All Departments are to utilize the Rutgers University Green Purchasing Cooperative Program whenever possible. This program provides a mechanism to purchase “Green” environmentally safe products at a discounted price. The Rutgers Green Purchasing Program documentation is attached.

For purposes of this order:

DEFINITIONS

Environmentally-Responsible Products and/or Services: products (goods and materials) or services that have a more beneficial or less adverse impact on human health and the environment when compared with competing products or services that serve the same purpose. This comparison shall consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, and waste management.

Life Cycle Cost: means the amortized annual cost of a product, including capital costs, installation costs, operating costs, maintenance costs and disposal costs discounted over the lifetime of the product.

Practicable: Satisfactory in performance and available at a fair, reasonable, and cost-competitive price in comparison to other readily-available products and services for a similar purpose.

Procurement: Includes the purchase, lease, rental, use or disposal of goods, materials, facilities and services, including the acquisition of goods, materials, facilities and services by construction, renovation or otherwise.

Recyclable Product: A product that, after its intended end use, can demonstrably be diverted from the Township's solid waste stream for use as a raw material in the manufacture of another product.

Recycled Products: Goods or materials manufactured with waste goods or materials that have been recovered or diverted from the waste stream.

Reusable Product: A product that can be used several times for an intended use before being discarded.

Waste Prevention: also known as "source reduction," means any change in the design, manufacturing, purchase or use of materials or products (including packaging) to reduce their

amount or toxicity before they become municipal solid waste. Waste prevention also refers to the reuse of products or materials.

Rutgers Green Purchasing Policy and Guidelines

Goal
In accordance with the University's Purchasing Policy, Rutgers is committed to the use and purchase of environmentally and socially responsible materials and products. Departments are expected to support this policy in accordance with established guidelines and procedures contained in this Green Purchasing Policy. This document is a way in which Rutgers' procurement decisions are made using multiple factors. These procurement decisions include economic criteria as well as strong commitments towards environmental protection.

Assessment of Current Status and Opportunities
The Rutgers' Purchasing Department and those Administrative Units with delegated purchasing authority are responsible for the procurement of goods and services for the entire Rutgers University System.

Selected Goals:

- To develop and maintain a consistent 'cradle-to-cradle' supply chain and purchasing process which considers economic, ethical, social and environmental impacts for all contracts and purchases; where all waste should first be eliminated or avoided and where any remaining waste be considered feedstock for new product development.

- To integrate green purchasing concepts and products into architectural designs, final construction documents and into the final construction of all Rutgers buildings, renovations of property or facilities owned by Rutgers.

- To utilize environmentally responsible biodegradable solvents and citrus-based, rather than oil-based, cleaners.

- To utilize bio-based products, fuels and solvents (e.g. soy-based inks and lubricants).

- To purchase equipment and fleets which utilize alternative fuel and/or alternative environmentally responsible energy methods; target and help Rutgers develop new sources of alternative fuel that can be produced at Rutgers utilizing Rutgers waste.

- To conduct research and procure alternative energy from reliable, certified alternative energy suppliers.

- To make use of recycled paper; used paper is turned into scratch pads for distribution to departments on campus.

- To procure recycled content office supplies (folders, writing pads, etc.).

- To procure environmentally responsible and ergonomically designed furniture and furnishings including floor coverings and window treatments.

- To reuse packing material and plastic bags.
- To comply with New Jersey State recycling policies and regulations and identify, implement and record data for new categories of recycling.
- To increase recycled content offerings across all commodities.
- To recycle ink and toner cartridges.
- To reuse, return or negotiate with suppliers the reduction or elimination of all packing materials.
- To recycle wood pallets; recommend alternative pallets or develop a reuse-return program.
- To recycle fluorescent bulbs.
- To recycle all mercury-type bulbs.
- To recycle lead acid batteries.
- To ensure that proper MSDS (Material Safety Data Sheets) are identified in all contract specifications and kept on record.
- To ensure that Rutgers contract suppliers maintain and practice global standards of corporate social, ethical and environmental stewardship through the market they serve, including sub-contracted suppliers by posting the supplier's annual corporate, social, ethical and environmental reports and other supporting documentation.
- To work with suppliers to develop and implement corporate social, ethical and environmental reports for those suppliers who do not have programs in place.

Action Recommendations

Short-term

Adopt the following proposed Green Purchasing Policy:

It is the objective of Rutgers to support the 3 R's of waste management, namely Reduce, Reuse, and Recycle, and conserve energy and water when purchasing supplies, equipment, and services. In so doing Rutgers intends to minimize the harmful effects of their use and final disposition upon the Environment.

Rutgers is committed to actions designed to conserve and protect the environment, and will continue to implement those actions whenever possible and economically feasible. It is the responsibility of Rutgers' Purchasing Office in conjunction with all Rutgers departments to promote the development and use of environmentally friendly products and services through the following activities:

(1) Reviewing contracts, bids and specifications for goods and services to ensure that, whenever possible and economical, they are amended to provide for the expanded use of

products and services that contain the maximum level of post-consumer reusable or recyclable waste / or recyclable content, without significantly affecting the intended use of the product or service.

(2) Working with the Rutgers Environmental Committee (appointed annually by the Headmaster), the department responsible for consulting with all user departments to identify new environmentally friendly products and services as well as improvements/changes in industry standards that may impact the environment.

(3) Purchasing from suppliers that provide environmentally friendly products and services or suppliers that are environmentally sensitive in their daily operations.

(4) Promoting the purchase of goods and services which support the three R's where available and practical, for the day-to-day operation of Rutgers.

(5) Seeking new suppliers and encouraging existing suppliers to review the manner in which their goods are packaged.

(6) Working with suppliers in the areas of reduction and reuse of packaging materials.

(7) Using cost/benefit analysis to arrive at the correct sourcing decision; one that remains economically practical, reflects effective purchasing practices and satisfies the requirements of the user department.

(8) Making suppliers aware of Rutgers' Green Purchasing Policy. Sending a clear message that Rutgers will favor those suppliers whose products meet the environmental objectives of Rutgers.

(9) More specifically, Rutgers, through its strong commitment to environmental protection, will seek to utilize to the fullest extent possible "environmentally friendly" or "green" products which, to whatever extent possible, have the following attributes or qualities:

(a) Durable, as opposed to single use or disposable items.

(b) Made of recycled materials, maximizing post-consumer content.

(c) Non-toxic or minimally toxic, preferably biodegradable.

(d) Highly energy efficient in production and use.

(e) Can be recycled, but if not recyclable, may be disposed of safely.

(f) Made from raw materials obtained in an environmentally sound sustainable manner.

(g) Manufactured in an environmentally sound, sustainable manner by companies with good environmental track records.

(h) Cause minimal or no environmental damage during normal use or maintenance.

I) Shipped with minimal packaging (consistent with care of the product), preferably made of recycled and/or recyclable materials.

j) Produced locally or regionally (to minimize the environmental costs associated with shipping).

k) Create, adopt, and implement a Rutgers Paper Policy.

l) Evaluate purchasing of recycled materials and environmentally sound products in the Bookstore.

m) Evaluate purchasing of chemicals in the Science and Art departments and research safer, more environmentally sound means (e.g., changing mercury thermometers to alcohol).

n) Ban the purchase of all tropical hardwoods.

o) Reduce/eliminate the purchase of glass and styrofoam.

p) Identify Campus Vendors - All past vendors are on file (numbering in the thousands). Compile database of vendors used in last 18 months (CFO Office will provide).

q) Research (and develop contracts for) the following list of products: paper, packaging, cleaning products and devices, batteries, lighting, paints, carpeting, furniture, fabrics, fixtures, photocopying, photo developing, windows, construction contracts/materials, vehicles, motor oil/tires/fuels, appliances, audiovisual equipment, printing services.

r) Draft a purchasing specification list for departments.

s) Use MSDS (Material Safety Data Sheet) to compare products.

t) Collect and update current MSDS on products listed above.

u) Test the more eco-friendly products with major users on campus for acceptability. Recommend starting with a few products around campus such as

1) Pesticides.

2) Paper: Research companies that provide a recycled paper for Water Mark letter purchase.

3) Fertilizer.

4) Ink for print shop. Evaluate soy-based ink use in print shop. Replace Rutgers green ink from oil-based to soy.
m) Adopt the following checklist for use in Rutgers purchasing:

Checklist for Rutgers Purchasing/Environmental Committee

When purchasing, ask these supplier questions. But first, determine if the product or service is truly necessary. Purchasing will need to be balanced with issues of product performance, cost, and availability.

1) Waste reduction: Is the product durable? Can it be easily and economically serviced and maintained? Is the product designed to reduce consumption and minimize waste? Is the product reusable? Is the product technically and economically recyclable in the immediate area? Do

facilities and internal collection systems exist to recycle the product? Can the product be returned to the supplier at the end of its useful life? Is the product compostable and are systems in place to compost the product on or off-site? Will the product biodegrade over time into harmless elements?

2) Packaging: Is the product necessary? Can it be eliminated? Is minimal packaging used? Is the product packaged in bulk? Is the packaging reusable or recyclable? Are recycled materials used to produce the packaging and at what percent post-consumer waste? Can the packaging be returned to the supplier? Is the packaging compostable? (3) Material source: Are recycled materials used in the product? If so, what percentage? What percentage of post-consumer materials is used? If wood is used in the product, what is its source and how is it harvested? Is the product manufactured from tropical rainforest wood?

3) Energy efficiency: Is the product energy efficient compared to competitive products? Can the product be recharged? Can the product run on renewable fuels? Does the product require less energy to manufacture than competing products?

4) Supplier environmental record: Is the company producing the product in compliance with all environmental laws and regulations? What is the company's record in handling environmental and safety issues? Can the company verify all environmental claims? Does the manufacturer/supplier have a company environmental policy statement? What programs are in place/planned for promoting resource efficiency? Are printed materials available documenting these programs? Has the company conducted an environmental or waste audit? Is the product supplier equipped to bid and bill electronically? Has an environmental life-cycle analysis of the product (and its packaging) been conducted by a certified testing organization, such as Green Seal?

<u>Long term</u>
a) Do not purchase products containing or produced using chlorofluorocarbons (CFC's) or other ozone-depleting chemicals when suitable alternatives exist. This includes aerosols, refrigerators, freezers, air conditioning units, CFC-blown foam (e.g., in furniture), CFC- blown insulating materials and fire extinguishers.

b) Ensure that all wood and wood contained within the products that Rutgers purchases is from sustainably managed sources and avoid the use of tropical hardwoods unless essential, e.g., in preserving the character of listed buildings.

c) Ensure that energy efficiency is a prerequisite when purchasing all appliances including light bulbs and street light bulbs.

d) Ensure that the most water efficient appliances available are purchased.

e) Specify the use of reclaimed stone and brick and the use of secondary or recycled aggregates wherever practicable.

f) Avoid the use and specification of substances known to be deleterious or hazardous to health. If no suitable alternative exists, such substances should be used under strictly controlled conditions and subject to a full OSHA assessment.

g) Avoid the purchase and use of all pesticides and wood preservatives for which safety evaluations to current standards have not been carried out and which are known to be

persistent in the environment. (Avoid in particular atrazine and simazine as total weed killers and wood preservatives and treatment chemicals containing pentachlorophenol, lindane or tributyl tin oxide.) If no suitable alternative exists, such substances should be used under strictly controlled conditions and subject to a full environmental, health and safety assessment (Rutgers can provide this assessment).

h) Purchase recycled paper for all applications where economic use of paper and quality of service is not compromised or the health and safety of employees prejudiced.

I) Where suitable recycled paper cannot be purchased, an attempt should be made to select the most environmentally friendly alternative in terms of its production and disposal characteristics.

j) Ensure that all photocopiers purchased or leased/rented are capable of double sided copying/printing.

k) Avoid the use of peat as a soil conditioner, mulch and growth medium, and where ever possible attempt to purchase plants that have been raised in alternative growth media.

l) Whenever possible purchase organic produce.

m) Purchase phosphate free and biodegradable cleaning materials where their use will not compromise quality of service.

n) Wherever possible, purchase equipment that can use main electricity. Where batteries are essential, ensure that low mercury and cadmium batteries or rechargeable batteries are purchased.

o) Ensure that all petroleum-fueled vehicles purchased run on alternative fuels and are fitted with a catalytic converter. Ensure that vehicles with the best fuel efficiency for the likely operating conditions are sought.

p) Purchase goods made from recycled and recyclable materials.

q) Purchase goods with minimal packaging that are made from recycled and recyclable materials or which can be reused.

Fiscal Year 2006/7 Policy and Green Purchasing Goals (Recommendations)
1. Consult with environmental committee to determine where Green Purchasing may help the institution fulfill Rutgers' main environmental goals.

2. In order to decide what goals to set, it is often useful to determine what concerns or burning environmental issues Rutgers already has. Tackling an existing problem, such as waste/recycling compliance and impacts, hazardous waste issues, high energy costs, environmental violations, or occupational health problems often guarantees support at all levels.

3. In setting goals, examine available resources that can help implement actions to achieve Rutgers' goals.

4. Decide on green purchasing goals that are specific, measurable, and to be completed in a set time period, such as:

- Increase purchase of recyclable or reusable items 30% by the next fiscal year.
- Reduce packaging waste or total solid waste 20% in 12 months.
- Reduce energy or water use 10% every six months for 5 years.
- Reduce purchase of products that become hazardous waste by 10% in next contract.
- Reduce purchase of mercury-containing products 80% by next year.

Implementation of Specific Goal/Pilot Project

Implementation:

- If goal involves replacement or focus on specific product, work with Operational Departments (e.g. Buildings and Grounds, Registrar, Dining Services, etc.) and the Environmental Committee to determine process (for instance, writing environmental specifications for a Request for Proposal.)
- Determine and publicize timeline for implementation of specific goal.
- Determine who is responsible for ensuring timeline and goals are met.
- Determine performance characteristics and items that should be used when evaluating a product. For example, EPA's EPP Guidance to Federal agencies has identified 5 guiding principles to consider when applying EPP to specific acquisitions.
- Determine educational needs to implement green purchasing project. Create a written plan for education of affected parties regarding implementation of this particular project, including who is responsible for the education. Review annotated Chart of Educational Needs or shorter List of Educational Needs to determine specific needs for this project.
- Review importance of communication.
- Implement purchase.

Continual Improvement:

- Determine if measurable goal was met.
- Request feedback from affected parties.
- Review process.
- Incorporate feedback into action plan for next project or improvement of this one.
- Keep records and track progress.

If Goal Was Successfully Met:

- Publicize success to Rutgers and the wider community.
- Assess possibility of expansion of pilot project or determine next specific goal.
- To determine next specific project, consider introducing additional environmental considerations, raising the measurable goal, or expanding the program.
- Track and report on progress.

If Goal Was Not Met:

- Do not be discouraged!
- Determine causes of not meeting goal.
- Brainstorm on how to correct the shortcoming and move forward — be creative!
- Choose an interim goal or pilot to implement to get back on track.
- Move forward on new goal or pilot.

Tracking System

Tracking systems can help Rutgers reach its goals, assist in identifying and financially justifying green products and services, make it easier to measure achievement of goals, and integrate green purchasing into every day decisions. Tracking systems vary from easy and low-tech to sophisticated tracking software.

Examples include:
Manual Tracking -Purchasers can use simple notes or codes on their ledgers or in computer purchasing systems to start simplified tracking of green purchases.

Automated tracking software where green products are automatically marked as such.

Bankcard tracking software.

Systems to track costs of waste segregation; waste disposal; spill clean-up; health, safety, and environmental regulatory reporting and compliance; environmental health education; and inventory obsolescence back to the responsible departments and products and services purchased by those departments.

Publicity and Celebrating Success
Rutgers' Green Purchasing Programs will need widespread support to maintain continual enthusiasm.

Use data to create easily interpreted environmental indicators for publicity:

"Recycled paper purchases saved 455 trees and 8000 gallons of water this year."

"Replacement of scientific research chemical reagent prevented $3500 of hazardous waste disposal costs this quarter."

Report on the total percentage of all purchased items having recycled content.

Publicize reduction in garbage volume or weight over time.
Label environmentally preferable products to educate faculty, staff and students:

- "This memo printed on 100% post-consumer recycled paper. "
- "Mercury-free bulbs are installed in this classroom."

Ask suppliers to insert green purchasing flyers and information about the product shipped inside the package or on the packing slip and/or invoice.
Develop a Rutgers University awards program for faculty, staff and students who contribute successful ideas on green purchasing projects. Make sure Rutgers rewards faculty, staff and students who contribute to continuous improvement or have solutions to problems they have pointed out, but wait until the review period for pilots to ensure that the awarded idea actually works.

APPENDIX C
(Hamilton Township Building Energy Conservation Program)

Building Energy Conservation Program

Township of Hamilton

Township Of Hamilton
Mercer County, New Jersey
2090 Greenwood Avenue
Hamilton, New Jersey 08609

09/27/2005

INTRODUCTION

In the mid 1990's, the Township of Hamilton, in Mercer County New Jersey, began implementing new technologies and procedures to improve the energy efficiency in township buildings. This included installing more efficient lighting (or lighting components), heating and air conditioning, installing occupancy sensors, installing water saving devices and insulation, etc. Although this initiative was implemented, and the effort continues, the township's program was never formally presented in any type of document. This document outlines the township's Energy Conservation Program and explains the efforts and progress that have been made to date.

Township Of Hamilton
Building Energy Conservation Program

LIGHTING

Fluorescent lighting
In township buildings, where existing fluorescent lighting is substandard (e.g. not efficient), lighting will be upgraded. Lighting in township buildings currently consists of T12 lamps with magnetic ballasts, standard magnetic ballasts (older buildings) and energy-efficient magnetic ballasts in newer buildings or buildings that have received upgrades.

The plan is to upgrade T12 fixtures to new T8 lamps and electronic ballasts, upgrade exit signs, lighting controls and installing occupancy sensors where economical. In areas with long burn hours, the fixture retrofit may also include reflectors to increase fixture efficiency.

Incandescent Lighting
Where incandescent lighting still exists, and has more than "occasional" burn hours, this lighting will be upgraded by either replacing the incandescent lamp with a compact fluorescent lamp, or installing a new light fixture with either a compact or linear fluorescent lamp.

Occupancy Sensors
Occupancy sensors will be installed in township buildings (e.g., offices, lavatories, etc.) and other areas where lights may be left on while the area is unoccupied. In small rooms, wall switch occupancy sensors may be adequate. In larger rooms, it may be necessary to use ceiling or corner mounting locations.

Install new and/or retrofit exit light fixtures
All existing incandescent and fluorescent lamp exit signs will be upgraded to state of the art lamp technology (e.g., Light Emitting Diodes). This can be accomplished by installing new exit signs or retrofitting the existing exit signs with upgrade kits as applicable.

Replace existing HID lighting with high intensity fluorescent technology
Assessments will be made of large areas with high ceilings to determine if they are candidates for new high-bay light fixtures that use more efficient high output fluorescent lamp technology (e.g., T-5 fluorescents). This could apply to warehouse space and high bay workshops, etc. Interior spaces,

such as libraries and atrium areas, could also be good candidates for this upgrade. In addition to the energy savings with this technology (about 50% vs. metal halide), the new lighting is "instant on" and can be controlled with occupancy sensors and dimming controls to produce even more savings.

Replace existing Parking-lot lighting with high intensity fluorescent technology
This would involve utilizing the latest technology in outdoor florescent lighting fixtures and controls in parking lot areas.

CONTROLS
Install/activate outdoor reset controls

This involves the installation of improved controls which measure the temperature of outside air. They adjust the boiler water temperature to optimize heating system efficiency by reducing water temperature to the minimum required to provide heat satisfactorily. The upgraded controls also turn off the circulating pumps when the building requires no heat. Where equipment exists in buildings, that is designed to perform this function but is found to be inoperable or unreliable, controls will be upgraded to the current technology.

Install/activate night setback controls
In township buildings, new temperature controls will be installed that lower temperatures during unoccupied periods in the heating season (e.g., nights, weekends, etc.). The same setback controls will be applied to air conditioning during the cooling season. Where equipment exists in buildings, that is designed to perform this function but is found to be inoperable or unreliable, controls will be upgraded to the current technology.

Install premium efficiency motor(s) and/or variable speed drives
Standard efficiency motors will be replaced with premium efficiency motors. Also, variable speed drives will be installed on pumps and/or fans, which run at constant speed but have variable loads. The will generally apply to motors larger than 2 HP and with run times greater than 2500 hours per year.

Install/activate economizer cooling
In facilities that have air-conditioning systems that lack the capability to cool the facility using outside air, economizer controls will be added that measure the temperature and humidity of outside air and use it for cooling whenever possible. Where equipment exists in buildings, that is designed to perform this function but is found to be inoperable or unreliable, controls will be upgraded to the current technology.

Install demand controlled ventilation
Equipment will be installed to control the outside air brought into a building (or a particular area within a building) according to its occupancy. Spaces without demand control ventilation are generally designed to provide ventilation based on the maximum possible occupancy for the space. During periods of lower occupancy, the space may be significantly over ventilated and use unnecessary energy. This would involve the installation of an indoor air quality (IAQ) sensor, a variable damper on the outside air inlet and a control system that varies the damper opening according to the real time IAQ. Large areas, that have widely varying occupancy, are good candidates for this technology.

Install intelligent fan controls on kitchen and lab ventilation hoods
Specialized fan controls or exhaust hoods will be installed to regulate kitchen hood exhaust fan

speed according to the actual cooking or occupancy activity being performed under the hood. The systems often use variable speed drives on the exhaust fan motors.

Install small energy management system (EMS) with remote access

This consists of the installation of a small, microprocessor-based energy- management system (EMS), or the upgrade of an existing EMS system, which will schedule and control the main energy consuming equipment in the building. In addition to optimizing the building's control functions, the system will be capable of remote access so its conditions can be monitored from anywhere using a phone or Internet link. The system can provide remote monitoring of space temperatures and the status of boilers, furnaces, pumps, fans and AC units. The EMS system will be capable of interfacing with existing EMS equipment and controls unless a completely new system is more economical.

HVAC & PLUMBING MEASURES

Install more efficient heating equipment

Most of the township's building heating systems utilize either a warm air furnace or a hot water boiler. Existing furnaces or boilers will be replaced with new, more efficient units (based on AFUE) and/or replacing rooftop units. Where applicable, multiple modular boilers will be installed instead of large single units. Also, in any facility using natural gas or propane for fuel, high efficiency condensing boilers will be considered.

Install more efficient Air Conditioning

Many buildings have areas with air conditioning to ensure staff comfort during the summer months. These small AC systems vary in age, size and efficiency. These units will be replaced with more efficient (higher SEER) air conditioning units. Many of these new units have dual stage compressors so they operate at lower power (and higher efficiency) for all but the peak summer days.

Install new higher efficiency water heater

Old water heaters will be replaced with new, higher efficiency units. This could include heat pump water heaters. Heat pump water heaters are particularly effective in buildings that use a boiler to produce domestic hot water during the heating months. With a heat pump water heater the main boiler can then be shut down. Other improvements in water heaters include units with pilot-less ignition, a flue-gas damper, thick exterior insulation and a high efficiency heat exchanger. The most efficient units use a burner with a forced-draft fan. The installation of instantaneous water heaters, which may be more applicable for areas that only need hot water for hand-washing type activities, etc., will also be considered.

Install water conserving plumbing fixtures and devices

Steps will be taken to replace or retrofit existing inefficient water-consuming plumbing fixtures such as toilets, urinals and faucet aerators with new water conserving lower-flow fixtures, devices and controls. Also, technology reviews will be conducted to determine more efficient means to control costs and usage of outside watering for landscaping purposes.

BUILDING ENVELOPE

Add additional glazing panel and/or retrofit existing glazing system

This measure consists of adding an interior or exterior glazing panel to the existing window system to boost energy efficiency and reduce air infiltration. Alternatively, a retrofit of the entire existing glazing system should be considered where economically feasible.

Increase ceiling/roof insulation
Additional insulating material will be added to the ceiling or roof areas of buildings that presently have little or no ceiling/roof insulation. In most cases it will consist of additional fiberglass bats, rigid panel insulation or blown-in insulation.

ALTERNATIVE WORK ITEMS
Install small high efficient boiler for summer use
The Township will investigate the feasibility of installing small "pony" boilers for use during the spring, summer and fall periods. When possible, the unit should be a condensing boiler, which operates at very high efficiency when at low load.

Replace existing rooftop heating/ac units
The township will investigate the feasibility of replacing existing roof top heating and cooling equipment with higher efficiency units.

Weather-stripping, sealing and caulking
Steps will be taken to minimize the air infiltration rate in buildings. This will be accomplished by adding weather-stripping materials, caulking and sealants around exterior fenestrations.

IMPLEMENTATION PLAN
To date, much as already been accomplished (see next section) with regards to energy conservation in township buildings. This process will continue. The magnitude of this effort is contingent upon available funding.

Township Of Hamilton
Building Energy Conservation Program
Accomplishments to Date

For at least the past 10 years, we have made conscious efforts to save energy in several areas.

Lighting: In the early to mid 1990's we had an energy savings program applied to some township buildings. A study was done and it was determined to retrofit the lighting fixtures in the Library, Police Station, and Public Works Office with T-8 lamps and electronic ballasts. This was completed and also included exit signs as well.

In most light replacements we have done since that time, we have used electronic ballasts and T-8 lamps. The Municipal Building Engineering Drafting room and hallways were renovated with electronic ballasts. This was done to several other offices in that building also. We have relamped the boiler room with compact fluorescents.

In the parks, we have changed the security lights on the comfort stations from 100W incandescent to high-pressure sodium 35W. We have also installed occupancy sensors on the inside lights which stay on for 15 minutes after motion is detected. In other buildings, we have time clocks which automatically turn on/off the lights according to the season. In April and October (when the time changes), the time clocks are checked for proper operation and adjusted accordingly.

Exit Lights: In our first attempt to upgrade exit lights, we replaced incandescent with fluorescent components, retrofit kits, etc. In the process LED fixtures became readily available and cost effective. To date, we only use LED's as a replacement. As a result, fire violations (from unlit exit signs) have been reduced dramatically in recent years. We have a policy that requires our custodial staff to check and monitor exit/emergency lighting in their buildings on a monthly basis. The electrical crew is responsible for an annual inspection and two (2) one hour tests as requested by the Fire Marshall. Any repairs needed at the time of the monthly test are to be reported to supervision and directed to the electric crew for remediation.

HID Lighting / High intensity fluorescent technology: A few years ago, we replaced the lighting in the Public Works Garage. It was originally designed as a warehouse and only had about ten (10) foot-candles per sq. ft. avg. of light. At the time, the best solution appeared to be 400W Metal Halide fixtures (low bay). This was done and increased the lighting levels to about 45-50 foot-candles. At that time, the T-5 technology was not readily available. In the future, we will be upgrading using T-5 technology.

Controls: In our Police Station, Municipal Building, and Kuser Mansion we have gas-heating systems with outdoor temperature controls to monitor the boiler temperature. We try to address any heating failures promptly in an effort to keep the systems working properly. In min-temperature days, 50 degrees a.m., and 65 degrees p.m., (spring and fall) there are some issues with equal heating throughout all buildings. HVAC controls installed since the late 1980's have programmable thermostats that allow us to set for night/weekend setbacks. We have divided some A/C units into separate zone controls, like the Municipal Building Mayor's unit and 2nd floor Inspections / Legal unit so that it can be used as needed and maintain even temperature control.

Economizer Cooling: This year we have been following up on the Bromley Service Center building (new units) and have worked extensively with CORE Mechanical in an effort to get the economizer

functions working properly and humidity controlled throughout the center. We try our best to maintain all the economizer and energy savings functions on our air conditioning units as it was designed.

HVAC: Most heating units have switched over from oil to gas and are fairly new. (Dwier Center, Neighborhood Service Center, Police Station, Veterans Park Greenhouses, Public Works, Municipal Building, and other locations). One of our goals, which is submitted annually with our Capital Budget, is to bring natural gas to the Veterans Park Maintenance Building and replace the electric heaters that are in use now. Also submitted as a Capital Budget item, is the replacement of several older, inefficient units at the Police Station and Municipal Building. The newer units will be more reliable, efficient, and zoned to the existing conditions that exist in each location. We have tried to eliminate the individual window A/C units and replace with central A/C units where practical.

Plumbing: We have installed automatic flush devices on lavatory fixtures randomly. They work well; however, the initial upgrade costs limit us in making the replacements on a special request basis. We replace all new toilets with the newer limited water usage design. We are constantly working with the plumbing supervisor on new products and ways to conserve water and reduce maintenance. One item we have discussed is the removal of water meters throughout the winter months. Another is the proper sizing of services to meet the demands.

Building Envelope: With regards to roofing, we have had the roofs replaced at the Dwier Center, Police Station, Library, Public Works Office, and Municipal Building during the last couple of years. The Public Works Garage, Building 18, and McManimon Hall are slated for the next few years. The ceilings and roof on the Building & Grounds Supervisor office have been replaced in the last year. With our current staff and workload we address the insulation levels on an as needed basis.

Alternative Work Items: Replacement of rooftop heating and A/C has been previously discussed in this report; however, this is a significant concern. Weather-stripping and caulking is done as required. We are constantly addressing ways in which we can reduce our energy usage and costs. Some of the more recent types of proposals in the works are 1) temperature controls for truck heater outlets in the Public Works complex and 2) solar panels to provide small amounts of electricity needed in remote locations. Irrigation systems are using well water as opposed to water from filtration plants and water suppliers.

APPENDIX D
(Anti-Idling Policy)

Township of Hamilton

Anti Idling Policy

01/04/2007

A vehicle idling gets zero miles per gallon. Unnecessary idling wastes fuel and pollutes. Running an engine at low speed (Idling) also causes twice the wear on internal parts compared to driving at regular speeds. The breakeven point for shutting off and restarting gasoline engines or leaving it to idle is 30 seconds – from the point of view of both emissions and fuel consumption. Idling of vehicles consumes @ 17% of the fuel that a vehicle has on board.
Air pollution problems are caused in large part by emissions from automobiles and trucks. Exhaust from vehicles (both on and off road) is a substantial source of carbon monoxide, toxic air contaminants and greenhouse gases.

Effective immediately, unless exempted in the following section, NO Township vehicle or piece of equipment owned or leased by Hamilton Township is to be idled in a non emergency situation. The operator of the vehicle/equipment is to turn off the unit and the keys are to be removed from the ignition.

EXEMPTIONS

This policy does not apply to a vehicle or piece of equipment for the period or periods during which:

1. Emergency vehicles at scenes where lights, PTO's and/or other accessories are needed to accomplish the mission;
2. Division of Police vehicles working traffic enforcement details;
3. Department of Public Works, Department of Water Pollution Control, Department of Engineering, Planning and Inspections vehicles at job sites requiring the use of emergency or safety lights, PTO's and /or other accessories to accomplish their assignment; and
4. Inclement weather situations and the supervisor authorizes the use of the vehicle/equipment heater-defroster for the work crews comfort according to the guidelines listed below;
   If the outside temperature is: Above 32 degrees F: 5 minute maximum.
   Between -10 and 32 degrees F 15 minute maximum
   Below -10 degrees F: as necessary
5. Idling necessary for testing, maintenance, and repair or diagnostic purposes;
6. The vehicle is not expected to restart due to mechanical or electrical problems;
7. Idling is necessary to ascertain that the vehicle and/or off - road piece of equipment is in safe operating condition and is equipped as required by all provisions of law and established safety policies;
8. Idling is necessary to cool down a turbo-charged heavy duty vehicle in accordance with the manufacturer's recommendation

Furthermore, operators of vehicle/equipment and supervisors will be judicious in the idling of units at emergency scenes and job sites. If not all units at the scene/site need to be idling, those units must be turned off and the keys removed from the ignition.

Each vehicle/equipment operator will be responsible for the idling operation of their unit and will have the unit keys in their possession to ensure that crewmembers do not arbitrarily violate the policy without the operator's knowledge.

Supervisors will be responsible for the adherence and enforcement of the idling policy.

Violations of the policy will be documented as to the vehicle/equipment operator, vehicle #, location, date and time, weather conditions, and circumstances of the alleged violation.

The vehicle/equipment operator will be informed of the violation by the supervisor at the time of the infraction.

Discipline will be per Township of Hamilton disciplinary procedures, and union contracts.

APPENDIX E
(Green Fleet Policy)

TOWNSHIP OF HAMILTON

"Green Fleet's Policy"

Township of Hamilton
2090 Greenwood Avenue
Hamilton, New Jersey 08610
08/28/2007

TOWNSHIP OF HAMILTON – GREEN FLEET'S POLICY

Green Fleets Policy Background

The Township of Hamilton is adopting this Green Fleet's Policy to facilitate a reduction in fuel usage and emissions that result from municipal operations. The objective of this policy is to reduce both energy use and emissions by incorporating practical decision making in the operation of the township's fleet and through the purchasing of clean and energy efficient vehicles. Hamilton Township has been a leader in environmental stewardship in New Jersey. It received the coveted Green Town USA designation in 2006 and a Tree City USA designation in 2007. It owns and operates one of the finest Ecological Facilities in the state taking millions of dollars of products out of the waste stream by both reclamation and recycling. The Ecological Facility is a true reclamation center. Its function allows Hamilton to avoid over five (5) million dollars in land filling costs every year. Reclaimed products such as trees/brush and leaves, are converted into mulch and compost respectively and made available to township residents free of charge. Other items such as concrete, used motor oil, cardboard, metal, glass, car batteries, etc. are also taken and either recycled or reclaimed.

The township also implemented a Building Energy Conservation Plan. In compliance with the plan, the township has already replaced many incandescent light bulbs with compact florescent bulbs. The township has installed occupancy sensors in township building conference and rest rooms. When replacing HVAC systems, lighting, windows, roofs, etc., all high energy efficient systems are utilized.

The township will also be installing new underground fuel storage tanks this year (2007). These tanks will allow for the storage of E85 (85% ethanol, 15% gasoline). This will allow us to fuel our existing E85 capable vehicles as well as all new vehicles purchased that are E85 capable. E85 is a considered a much cleaner burning fuel than gasoline. The township already uses biodiesel for all of its diesel fueled vehicles.

I. BASIS FOR ORDINANCE

(a) The total energy bill in 2003 for Municipal Government in the Township of Hamilton was $2,803,897 and is projected to increase by about 10 percent per year to about $5,000,000 by 2013. This forecast is based on a review of billing records from Public Service Electric and Gas from 2003 through 2006 and projecting the billing trend through 2013. The above noted costs include utility and fuel costs for all of the municipal government buildings and vehicles. It does not presently include township schools.

(b) Departments in the Township of Hamilton operate vehicle fleets that account for about 22 percent of the Township's total energy bill in 2006. In 2003, the vehicle fleets accounted for about 12% of the total energy bill.

(c) The Township of Hamilton recognizes that energy use associated with the operation of its motor vehicle fleets exacerbates local air quality problems and results in greenhouse gas emissions that contribute to global climate change.

(d) The Township of Hamilton recognizes that its departments have a significant role to play in improving local air quality and reducing greenhouse gas emissions by improving the energy efficiency of its fleets and reducing emissions from fleet operations.

(e) The Township of Hamilton recognizes that, by improving the energy efficiency of its fleet, significant monetary savings will result in the long term.

(f) The Township of Hamilton wishes to exercise its power as a participant in the marketplace to ensure that purchases and expenditures of public monies are made in a manner consistent with the policy of improving local air quality and reducing greenhouse gas emissions.

(g) The Township of Hamilton wishes to establish a "Green Fleets" policy addressing the management, operation, and procurement of fleet vehicles under the control of the Township of Hamilton in order to improve the energy efficiency of its fleets and reduce emissions from its fleets.

II. DEFINITIONS

(a) "Passenger Vehicle" means any motor vehicle designed primarily for the transportation of persons and having a design capacity of twelve persons or less.

(b) "Light Duty Truck" means any motor vehicle, with a manufacturer's gross vehicle weight rating of 6,000 pounds or less, which is designed primarily for purposes of transportation of property or is a derivative of such a vehicle, or is available with special features enabling off-street or off-highway operation and use.

(c) "Medium Duty Vehicle" means any vehicle having a manufacturer's gross vehicle weight rating of 14,000 pounds or less and which is not a light-duty truck or passenger vehicle.

(d) "Heavy Duty Vehicle" means any motor vehicle, licensed for use on roadways, having a manufacturer's gross vehicle weight rating greater than 14,000 pounds.

(e) "Zero-Emission Vehicle" means any motor vehicle that produces zero exhaust emissions of all criteria pollutants, as defined by 17 California Code of Regulations §90701(b), (or precursors thereof) under any and all possible operational modes and conditions or any vehicle that has been certified by the California Air Resources Board as a zero-emission vehicle.

(f) "Super Ultra-Low Emission Vehicle" means any motor vehicle that meets or exceeds the standards set forth in 13 California Code of Regulations § 1960.1 for Super Ultra-Low Emission Vehicles (SULEV).

(g) "Ultra-Low Emission Vehicle" means any motor vehicle that meets or exceeds the standards set forth in 13 California Code of Regulations § 1960.1 for Ultra-Low Emission Vehicles (ULEV).

(h) "Low Emission Vehicle" means any motor vehicle that meets or exceeds the standards set forth in 13 California Code of Regulations § 1960.1 for Low Emission Vehicles (LEV).

(I) "Electric Drive train Vehicle" means any vehicle that employs an electric drive train and motor as its primary means of motive force. The vehicle can be powered by fuel cells, electric batteries, petroleum- or alternatively-fueled electric generators, or any combination thereof.

(j) "Alternative Fuel" means any fuel that is substantially non-petroleum in nature, is not gasoline or diesel, and is defined as an alternative fuel by the U.S. Department of Energy through the authority granted it by the Energy Policy Act of 1992.

(k) "Bi-Fuel Vehicle" means any motor vehicle designed to operate on two (2) fuels, one of which is an alternative fuel, but not on a mixture of fuels.

(I) "Flex-Fuel Vehicle" means any motor vehicle that is designed to operate on a mixture of fuels. For example, an E85 vehicle can run on up to 85% ethanol and 15% gasoline or any combination of the fuels including 100% gasoline.

III. FLEET INVENTORY

(a) In order to establish a baseline of data, so that the "Green Fleets" policy can be established, implemented, and monitored by the designated Township Fleet Manager (Public Works) and the Green Fleets Review Committee, an inventory and analysis of the fleet vehicles within that department or agency as of the close of fiscal year 2003 shall be conducted and documented. This inventory shall include:

1) Number of vehicles classified by the model year, make, model, engine size, vehicle identification number (VIN), and drive train type (2-wheel drive or 4-wheel drive), and the rated vehicle weight and classification (light-duty, medium-duty, heavy-duty);
2) Miles per gallon (or gallon equivalent) per vehicle;
3) Type of fuel (or power source, e.g., electricity) used;
4) Average cost per gallon (or gallon equivalent) of fuel;
5) Average fuel cost per mile;
6) Annual miles driven per vehicle;
7) Total fuel (or power) consumption per vehicle;
8) Vehicle function (i.e., the tasks associated with the vehicle's use);
9) Estimated emissions per mile for each pollutant by vehicle type/class based on EPA tailpipe standards for the following: Carbon Monoxide (CO), Nitrogen Oxides (NOX), and Particulate Matter (PM).
10) Carbon Dioxide (CO2) calculations based on gallons (or gallon equivalent) of fuel consumed.

(b) The Fleet Manager from township's Department of Public Works shall be responsible for providing this baseline data in a reliable and verifiable manner.

The data will be submitted to the "Green Fleets" Committee established in Section VI for use in measuring progress toward the goals outlined in Section IV below.

IV. THE "GREEN FLEETS" POLICY

(a) It shall be the policy of the Township of Hamilton to purchase, lease, or otherwise obtain the most energy efficient vehicles possible that meet the operational needs of the department or agency for which the vehicles are intended.

(b) It shall be the policy of the Township of Hamilton to manage and operate its fleets in a manner that is energy efficient and minimizes emissions.

(c) The Township of Hamilton shall decrease energy expenditures for its vehicle fleets by a total of 20 percent by the year 2013, adjusted for inflation and relative to the baseline data established for year 2003 through the fleet inventory taken in compliance with Section III above. This goal is based on the township's commitment to purchase energy efficient vehicles and is attainable based on past purchasing practices.

(d) The Township of Hamilton shall reduce the emission of green house gases from its fleet by a total of 25 percent by the year 2013, relative to the baseline data established for year 2003 in the fleet inventory taken in compliance with Section III above. This number is attainable based on the township's commitment to using more energy efficient vehicles, utilizing clean fuel technology vehicles, and accomplishments already realized.

V. "GREEN FLEETS" POLICY STRATEGIES

(a) In order to accomplish the goals stated in Section IV above, the Township of Hamilton shall modify procurement procedures, implement policies, conduct reviews, and take other actions as outlined in sub-sections (b) through (n) below.

(b) Include a minimum efficiency standard in miles per gallon (or gallon equivalent) for each vehicle class for which the Township has a procurement

specification for and include such a standard in any new vehicle procurement specification.

(c) Include a minimum emissions standard for each vehicle class for which the Township has a procurement specification for and include such a standard in any new vehicle procurement specifications. This emission standard shall be based on the California Air Resources Board (CARB) designations of LEV, ULEV, SULEV, and ZEV.

(d) Ensure that a minimum of 75 percent of the passenger vehicles purchased, leased, or otherwise obtained within a fiscal year by the Township of Hamilton are low, ultra low or zero-emission vehicles. Zero-emission vehicles purchased, leased, or otherwise obtained, that qualifies in another vehicle weight class may, for the purposes of this requirement, qualify as a passenger vehicle ZEV on a one vehicle for one vehicle basis.

(e) Review all vehicle procurement specifications and modify them as necessary to ensure that the specifications are written in a manner flexible enough to allow the purchase or lease of alternatively fueled or electric drive train vehicles.

(f) Review every new vehicle purchase request and modify them as necessary to ensure that the vehicle class to which the requesting vehicle belongs is appropriate for the duty requirements that the vehicle will be called upon to perform.

(g) Review the fleet inventory taken in Section III above to identify older vehicles that are used infrequently (or not at all), as well as those vehicles that are disproportionately inefficient, and schedule their elimination or replacement.

(h) Implement an anti-idling policy prohibiting Township employees from idling Township-owned or operated vehicles for an excessive period of time. This has been accomplished and is attached to this document as appendix A.

(I) Implement an incentive program for Township employees to drive efficiently and utilize efficient vehicle operating techniques.

(j) Prohibit the use of non-alternative fuels in bi-fuel vehicles for more than 10 percent of the time that they are operated within the Township.

(k) Maintain vehicles at optimal efficiency by reviewing current maintenance schedule for all fleet vehicles and increasing maintenance wherever cost-effective benefits will accrue as a result.

(l) Township employees are to be advised to utilize route optimization computer software (e.g., MapQuest) when planning a driving route to various locations. This should assure that the shortest and most efficient route(s) is taken.

(m) Each Department shall designate an employee to act as the Department's Fleet Manager.

VI. MONITORING OF THE "GREEN FLEETS" POLICY

(a) In order to ensure compliance with the goals outlined in Section IV above, as well as to monitor the actions outlined in Section V above, a "Green Fleets" Review Committee is to be formed. The Office of the Mayor, or his designee, will appoint the members of this review committee using any combination of representatives from each of the following Departments and/or Agencies:

1) Office of the Mayor
2) Department of Public Works
3) Department of Engineering, Planning and Inspections
4) Department of Health and Senior Services
5) Police Department
6) Department of Water Pollution Control
7) Hamilton Township Environmental Commission
8) Township Business Administrator

(b) On an annual basis, Departmental Fleet Managers shall submit a draft "Green Fleets" plan to the Green Fleets Review Committee detailing how vehicle procurement, fleet operations, and employee travel activity are intended to conform to the "Green Fleets" policy and the "Green Fleets" strategies outlined in Section V. This can easily be accomplished as part of the annual budget process involving Capital expenditures for equipment. The "Green Fleets" plan will also include, as an appendix or addendum, an updated fleet vehicle inventory list in the same format as the fleet vehicle inventory completed in Section III.

(c) Each "Green Fleets" plan shall be reviewed by the Review Committee for overall conformity with the "Green Fleets" policy and for completeness in addressing the "Green Fleets" strategies outlined in Section V. Inadequate plans shall be returned to the submitting Department or Agency for revisal and discussion with the Review Committee.

(d) Any appeal of the Review Committee's decisions must be made in writing to the Committee accompanied by appropriate documentation. Valid reasons for an appeal include unavailability of appropriate fleet vehicles, incremental costs in excess of the full life-cycle savings that would accrue from the acquisition of a given vehicle and the primacy of a given vehicle's mission to public safety or a similar area judged to be applicable by the Review Committee.

(e) Approval of vehicle procurement requests for each Department is contingent upon a satisfactory recommendation from the "Green Fleets" committee as to the merit of the Departments or Agency's "Green Fleets" plan.

(f) The most innovative "Green Fleets" plan implemented shall receive recognition in an annual award to the Department submitting the winning plan. The "Green Fleets" review committee shall determine the recipient of the award during the annual "Green Fleets" plan review process.

(The construction of this model is inspired by fleet policies or initiatives in Denver, CO, San Francisco, CA, Sacramento, CA, Fort Collins, CO, Santa Monica, CA, and Miami-Dade County, FL.)