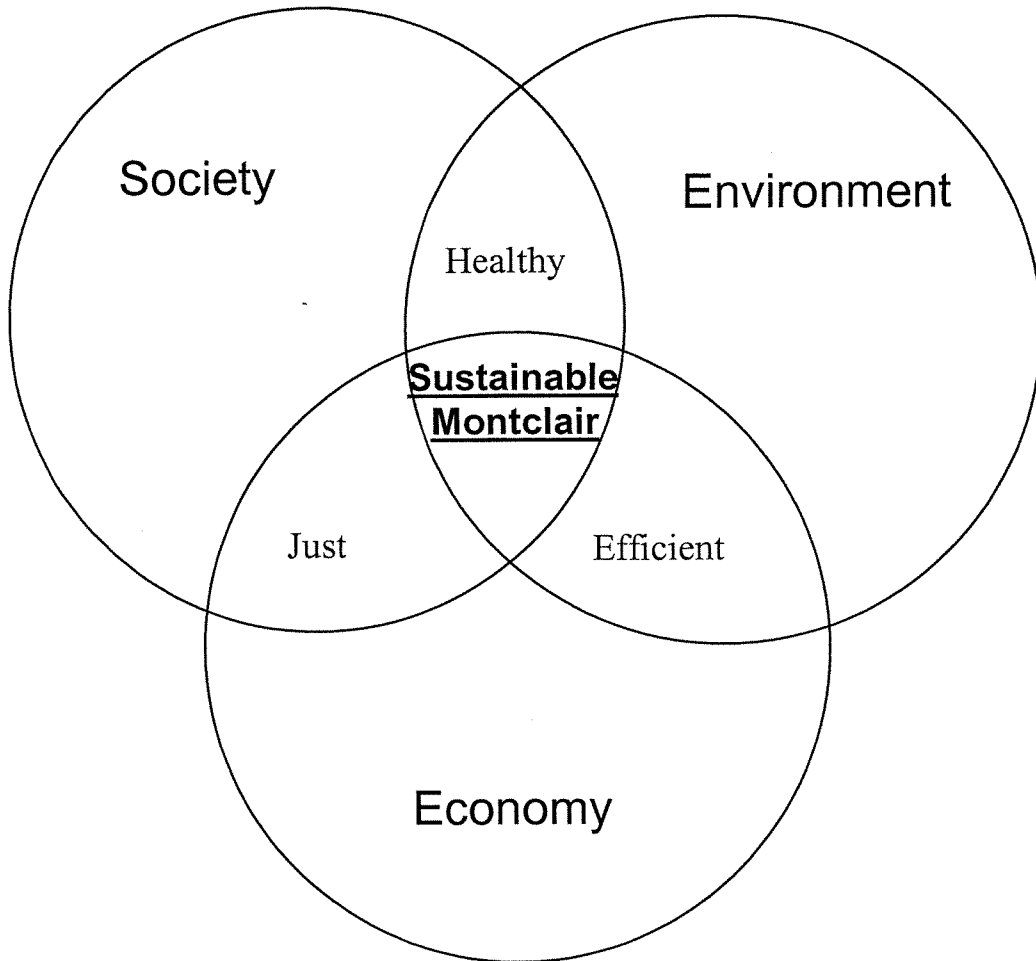


Township of Montclair
Sustainable Montclair Planning Guide



Montclair Environmental Commission
April 28th, 2003 Working Draft

TOWNSHIP OF MONTCLAIR SUSTAINABLE MONTCLAIR PLANNING GUIDE

Executive Summary

Why Sustainability at the Municipal Government Level?

The Montclair Environmental Commission offers this Sustainable Montclair Planning Guide to the Township Council as a tool for decisionmaking about the procurement and delivery of public goods and services now and into the future. “Sustainability” is a set of ideas about the present and the future in which environmental stewardship, economic growth, and social equity are all pursued in self-sustaining ways. The needs of the present do not compromise the ability of future generations to meet their needs.

The Plan consists of a collection of cost-effective, “no regrets” strategies, some of which the Township has already begun to implement. Some Planning Guide “highlights” include the following recommendations:

- Performance of an energy audit of all Township buildings and operations;
- Changing-over the motor vehicle fleet to electric/hybrid and other alternative fuels;
- Supporting the conversion of private and public buses to compressed natural gas (“CNG”) and other alternative fuels;
- Purchasing recycled products whenever possible, paying up to a 10% premium;
- Conversion to a “Pay as you Throw” (“PAYT”) municipal solid waste billing and collection system;
- Integrating pesticides management in the schools and on playing fields;
- Performing a study of the Township’s long-term water supply options;
- Designating and maintain a north-south bicycle lane through Town and install covered bicycle storage sheds at all train stations;
- Creating a Township Brownfields’ inventory; and
- Improving the coordination between the Planning Board and the Environmental Commission.

Montclair has already started down the road to sustainability with the purchase of its first four CNG cars and the expansion of the mixed-paper recycling program. Besides being the right thing to do, sustainable development should produce many tangible benefits for the community including improved environmental and public health, lower capital and operating costs, coordinated governmental decisionmaking, improved quality of life for residents, and preservation of property values. By choosing to support and implement sustainable development goals and decisionmaking, Montclair can take its place as a leader in the worldwide community of towns and cities that are pioneering the way to a sustainable future for ourselves and generations to come.

SUSTAINABLE MONTCLAIR PLANNING GUIDE

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I. Montclair and the World at the Millenium

The World

While political leaders continue to debate whether global environmental changes are the result of human activity, the scientific community has reached a consensus that man's agency on earth is the cause of the nearly 30% increase in atmospheric carbon dioxide levels since the start of the industrial revolution (c. 1850).

National governments, industries, and citizens have been slow to react to the threats of global climate change. In August, 2000 scientists encountered open water at the North Pole, apparently for the first time in recorded history. The threats of climate change are not limited to just hotter summers. Scientists have predicted that climate change will cause increased hydrological activity in the form of more intense weather events and shifting weather patterns resulting in droughts. The decade of the 1990s recorded three of the hottest years on record; tornadoes east of the Appalachians are considered a rarity but an F5 tornado devastated La Plata, Maryland in the spring of 2002.

But more severe weather and droughts are not the only effects of climate change. From a public health perspective, climate change poses the real risk that tropical diseases will be able to "winter over" in formerly temperate climates. Equally ominous are reports that carefully balanced mature ecosystems and food chains are beginning to break down. These are not just mere predictions; we are witnessing these effects in our lifetime.

Montclair – A Snapshot in Time

From a sustainability point of view, Montclair in 2002 is a mixed picture. The Township generated approximately 43,000 tons of municipal solid waste ("MSW") in 2000. The Township diverts 60% of its MSW. That rate includes yard trimmings and the composting of leaves. Without yard trimmings and leaves, the real "commodities" recycling rate is closer to 30%. 35% of the total goes to the ECUA incinerator. According to numbers calculated by the National Recycling Association, the 17,252 tons that went to the incinerator in 2000 was responsible for the emission of 8,691 tons of carbon dioxide (CO₂) (the principal greenhouse gas), 16 tons of hydrocarbons (ground level ozone precursor), 23 tons of oxides of nitrogen (ground level ozone precursor), 23 tons of particulates (asthma and lung cancer), and 13 tons of sulfur dioxide (acid rain). On the positive side of the ledger, the 6,000 tons of commodities recycled by the Township's recycling program saved an estimated 68.8 billion BTUs of energy which would have otherwise been required to extract virgin raw materials,

manufacture the goods, and dispose of the waste. In addition, Township managers are now moving to take advantage of a great sustainable development opportunity by expanding mixed paper collection. The Township receives \$30/ton for its mixed paper while at the same time foregoes the approximate \$62/ton tipping fee at the Essex County incinerator. That's a \$92/ton benefit for doing the right thing.

Our drinking water comes primarily from the Wanaque Reservoir system operated by the North Jersey District Water Supply Commission ("NJDWSC"). About 20%-30% comes from three groundwater wells located in the Township. Montclair has an interdependent water supply relationship with Newark and all the other NJDWSC customers and is equally subject to hardships imposed by droughts, mechanical failure, or terrorism. The three in-town wells provide some measure of self-sufficiency and flexibility but additional groundwater resources could be developed. With increasing population and finite water resources, it is incumbent upon residents of northern New Jersey to find ways to reduce water consumption and use water more wisely.

In terms of energy consumption, Montclair pays almost \$2 million a year for natural gas and fuel oil to heat Township buildings (not including Board of Education Buildings). The Township operates a fleet of over 200 cars and trucks which only recently saw the introduction of the first four alternatively fueled vehicles. Clearly, Montclair is having and will continue to have a sizable impact on the local and global environments.

II. The Sustainable Development Solution

Against this backdrop, communities around the United States and around the world are beginning to formulate plans that allow for continued growth, but in ways that preserve the earth's natural systems and the humans who depend on them. Starting with the first Earth Day in 1970, the watchwords of the environmental movement have been "think globally, act locally." These words are more important today than ever as communities around the world are recognizing their vulnerability to global and local environmental changes and are gearing up to do something about it. Leading countries, multinationals, non-governmental organizations, communities, and individuals around the world are embracing "sustainable development."

Sustainable development recognizes that existing "linear" patterns of production and consumption have to be converted to "circular" systems of production and consumption. Raw materials and energy have to come from renewable resources. There are good reasons to implement sustainable development techniques. The benefits include improved environmental and public health, reduced municipal

capital and operating costs, coordinated governmental decisionmaking, and quality of life benefits.

Together, the following series of initiatives will put Montclair in the vanguard of communities leading the way to sustainable development, should result in a large reduction in Township operating costs, and will keep making Montclair the place that people from all over the world choose to live.

III. The Benefits of Sustainable Development for the Montclair Community

Environmental and Public Health Benefits

On reflection, it seems self-evident that if we build a sustainable community, reducing our use of natural and man-made resources, there would be important environmental and health benefits. Less vehicle traffic means less air pollution means less lung disease; less garbage generated means less garbage transported means less garbage burned means less air pollution; less electric and natural gas energy consumed means less air and water pollution means less lung and kidney disease. But in our everyday lives, we often aren't aware of these cause and effect chains, and we don't see how they affect our children and us.

One of the goals of Sustainable Development at the local level is to raise the awareness level in our community of the causes and effects of living in and operating in an unsustainable way.

Cost Savings

By implementing the Plan's recommendations the Township will experience net cost savings. Certain programs will save money while others will involve incremental costs. As already mentioned, sustainable practices like expanded mixed paper collection saves the Township the approximate \$62/ton tipping fee at the ECUA incinerator while at the same time generating \$32/ton in revenue. Likewise, we expect that the recommended energy audit of Township buildings and operations will also result in operating cost savings. Other Plan recommendations will require incremental costs like the recommendation to pay up to a 10% premium for the purchase of recycled goods, e.g., office paper, cleaning solutions, motor oil, etc.... Overall, the Township can expect to realize substantial cost savings by adopting sustainable development practices.

Coordinated Government Decisionmaking

Local government plays a pivotal leading role in the drive to sustainability. It is the unit of government where the “rubber meets the road,” having responsibility for basic public health in the form of delivering potable drinking water and disposing of solid waste. On another and equally important level, local government is, or should be, a reflection of the best hopes and aspirations of its citizens. Montclair has long enjoyed a popular reputation as a progressive community with a responsive town government. That is due in large part to the kind of people who live in town, people who care about Montclair and the world they live in. Communities around the world are committing themselves to a sustainable way of operating and we believe Township officials already understand the merits of operating in a sustainable mode. The coordinated planning and decisionmaking that is one of the hallmarks of sustainable development will result in operating efficiencies, time savings, cost savings, and will provide Township officials with a wealth of data to better analyze, manage, and deliver municipal government goods and services.

Quality of Life

At the end of the day, nothing beats a nice, quiet Sunday afternoon in the backyard at home in Montclair. With less air and water pollution, less traffic, less solid waste, less pesticide use, less noise -- wouldn't the quality of life be better? We believe all that can be accomplished without major inconvenience to Montclair citizens if we operate in a sustainable fashion.

Property Values

Property values are directly related to the quality of life in a municipality and the municipality's effectiveness in keeping operating costs down. A sustainable community can do that; we can do that in Montclair.

Right Thing To Do

Finally, sustainable development is the right thing to do, ethically and morally. The UN Commission on Environment and Development defined “sustainability” as meeting the needs of the present without compromising the ability of future generations to meet their own needs.” We must understand what we are leaving for our children and grandchildren: we have not inherited the earth; we are borrowing it from our children.

IV. Sustainable Development Opportunities in Municipal Government

A. Energy Efficiency and Green Energy

1. Goals:

- a. Take the State of New Jersey's "Covenant of Sustainability" to reduce Township greenhouse gas emissions 3.5% below 1990 baseline by 2005;¹
- b. Reduce Township greenhouse gas emissions 10% below 1990 level by 2010;²
- c. Increase energy efficiency of all Township buildings by 25% by 2010;³ (NJ Governing with the Future in Mind)
- d. Shift Township energy supply to 15% "green energy," from renewable energy sources such as hydroelectric, photovoltaic, and wind by 2010

2. Overview

Understanding, and ultimately changing, current patterns of energy production and consumption is at the heart of any sustainable development planning effort. Current patterns of energy production and consumption, with its near 100% reliance on non-renewable fossil fuels, is directly linked to the production of greenhouse gases that are the cause of global climate change.

According to Township records, the Township's energy bill for the period May 2001 through April 2002 was \$1,130,000 million for electricity and another \$78,000 for natural gas. These amounts do not include the energy bill for the schools nor the cost of gasoline and diesel for the motor vehicle fleet.

The starting point for the drive to increased energy efficiency will be an "energy audit" of the Township's buildings, operations, and motor vehicle fleet. In the short run, the goal is to increase the township's energy efficiency and at the same time reduce the township's energy costs. Energy efficiency techniques may include "fuel switching"

¹ New Jersey Sustainability Greenhouse Gas Action Plan, New Jersey Department of Environmental Protection (April, 2000).

² City of Portland and Multnomah County, Oregon Local Action Plan on Global Warming (April, 2001).

³ "Governing with the Future in Mind: Working Together to Enhance New Jersey's Sustainability and Quality of Life," New Jersey Interagency Sustainability Working Group (December, 2001) at page 96.

(fuel oil to natural gas), the installation of energy efficient equipment (variable speed drives, LED traffic lights), weatherization, and the expansion of the Township's alternatively fueled motor vehicle fleet (CNG, electric, gas/electric hybrid).

The long-term goal is diversify the township's energy sources away from a complete reliance on non-renewable fossil fuels to renewable sources of energy such as wind, solar, hydroelectric, and biomass. In September 2002, Jersey Central Power & Light, the state's second largest utility, made an application to the Board of Public Utilities to purchase "green energy" and sell it inside New Jersey. While it is expected that there will be an incremental cost for green power in the short run, some of the expected savings from increased energy efficiency may offset the cost difference. The bigger picture is that the electricity markets have been deregulated and the Township has the power to "shop around" for green energy suppliers.

Finally, as a symbolic first step, the Commission recommends that Montclair take the State of New Jersey's voluntary Greenhouse Gas Action Plan "Covenant of Sustainability" to reduce the Township's greenhouse gas emissions 3.5% below 1990 baseline emissions level by 2005.⁴ In so doing, the Township will be joining Perth Amboy, Wildwood, Bayonne, Lambertville, Quinton, Byram Township, Manchester, Lakehurst, Liberty Township, Glen Gardner, Medford, Hawthorne, Woodland Township, Borough of Lodi, Hazlet Township, Chester Township, Allendale, and Fredon Townships which have all made the pledge.

3. Implementing Recommendations:

- a. Perform an "Energy Audit" of Township buildings and operations within 2 years
- b. Authorize the payment of up to a 10% premium for "Green Energy"
- c. Perform an annual pre-season tune-up of all Township boilers starting immediately

4. Lead Implementing Department:

⁴ New Jersey Sustainability Greenhouse Gas Action Plan, New Jersey Department of Environmental Protection (April, 2000).

B. Transportation

1. Goals

- a. Diversify Township fleet to 15% alternatively-fueled vehicles (“AFVs”) by 2008
- b. Increase Township motor vehicle fleet average fleet fuel efficiency to 35 mpg by 2010;⁵
- c. Support conversion of New Jersey Transit No. 28, DeCamp No. 66, and school buses to CNG, electric, or hybrid power systems by, inter alia, supporting the location of a centralized CNG refueling facility in the Township
- d. Designate, mark, and maintain a north-south bicycle route and install bicycle storage areas at all train stations

2. Overview

Cars are the single largest source of just about every kind of air pollution imaginable. Particulate matter and air toxics from cars and trucks cause asthma and other lung problems here in town. Still other pollutants emitted from cars and trucks mix together in sunlight to make ground level ozone or smog. Smog is both a local and regional air pollution problem. Cars are also the single largest source of greenhouse gases, surpassing even the electric utility industry. California recently enacted the first law in the nation designed to reduce the greenhouse emissions from cars.

The Township owns and operates over 200 motor vehicles including garbage trucks, fire trucks, police cars, passenger cars, and sports utility vehicles. According to Township data, the township’s gasoline powered motor vehicles consumed 88,000 gallons of gasoline per year. Recently the Township made a strong move toward sustainability with the acquisition of four compressed natural gas (“CNG”) cars.

Besides their overwhelming air pollution and climate change effects, cars and township transportation patterns present safety and quality of life issues. Several persons, many elderly, have been killed trying to cross streets in town. With the increase in the number of cars generally and the localized influx of cars related to the Montclair Connection, many residents cannot pull out of their driveways safely because of cars whizzing by at high speeds. The sheer volume of cars (and related parking problems) negatively impacts the quality of life in Montclair.

⁵ City of Portland and Multnomah County, Oregon Local Action Plan on Global Warming (April, 2001).

One of Montclair's unique features is its "walkability" and "bicyclability." There are several low-cost measures the Township can take to make walking and bicycling around town safer and easier for those residents who want to. With the startup of the Montclair Connection train service, there is more traffic to the train stations. Walking and bicycling to the train stations should be encouraged by designating, striping, and maintaining a north-south bicycle lane through town and the installation of covered bicycle storage racks at all train stations. With so much of the Township's resources within walking distance of many residents, pedestrian right-of-ways in Watchung Plaza, Upper Montclair, and other locations should also be installed and maintained to create a walker friendly environment.

The Township should realize substantial capital and operating cost savings by accelerating the shift away from sport utility vehicles to alternatively-fueled vehicles. The Township should quantify the capital and cost savings from AFVs and should adopt a policy requiring the acquisition of AFVs (including CNG, electric, and gas/electric hybrid vehicles such as the Toyota Prius and Honda Accord hybrid) whenever possible.

Finally, several large bus companies, including New Jersey Transit, DeCamp, and school bus companies, operate diesel buses throughout the town. In May of 2002, the USEPA concluded that chronic exposure to diesel exhaust is likely to pose a lung cancer hazard to humans and short-term exposure to diesel exhaust exacerbates existing allergies and asthma. The township should strongly support the construction of a centralized CNG re-fueling station on the Montclair State University campus and encourage New Jersey Transit, DeCamp, and other bus operators to begin to operate CNG buses in town. This is already being done in several parts of the country, including in New York City and its suburbs, and it could be implemented here in Montclair.

3. Implementing Recommendations:
 - a. Increase purchasing of alternatively-fueled motor vehicles ("AFVs"), reaching 15% of the fleet within 5 years
 - b. Actively support construction of a regional CNG refueling station;
 - c. Actively support conversion of New Jersey Transit No. 28, DeCamp No. 66 and school buses to CNG within 5 years
 - d. Mark and maintain a designated north-south bicycle lane and install covered bicycle racks at the train stations;
 - e. Implement EPA's "Best Environmental Practices for Fleet Maintenance" in DPW and Police maintenance shops
4. Lead Implementing Department:

C. Building Construction

1. Goals

- a. Require that all Municipal and Joint Capital Improvement Committee (School Board) building projects comply with “Green Building” LEED standards whenever capital cost recovery time is 10 years or less (immediately)

2. Overview

The Commission recommends that all Township and Joint Capital Improvement Committee (School Board) building projects be required to incorporate the green building rating system known as Leadership in Energy & Environmental Design (“LEED”). This standard was developed by the United States Green Building Council membership. Green building design offers the advantages of reduced energy and operating costs while at the same time using less materials.

There is also believed to be a positive correlation between green building design and student performance. Green buildings are designed to enhance the classroom learning environment by the use of copious amounts of glass to allow increased daylight into the classroom. The planned construction of a new school in Montclair should comply with LEED standards.

A recent example of green building and schools took place in Kearny. Kearny installed a photovoltaic (“PV”) solar array on the high school roof. The PV solar array generates electricity. According to reports, the costs and benefits of the Kearny High School PV array are as follows:

\$280,000	Capital Cost
- \$190,000	Board of Public Utilities rebate
- <u>\$ 60,000</u>	Grant
\$ 30,000	Net Initial Capital Cost to Kearny
\$12,000/year	Decreased O & M Costs
=	less than 3 year capital cost recovery time

3. Implementing Recommendations

a. Modify the RFP Process to Include Requirement that all bidders incorporate LEED design principles and sustainable development designs and clean energy financial incentives in all Township and Joint Capital Improvement Committee construction

4. Lead Implementing Department

D. Purchasing

1. Goals

a. Purchase recycled products with a cost premium of 10% or less⁶

2. Overview

The Township's purchasing power can be one of the most important engines in the drive to sustainability. From stationary supplies to park benches to paving materials to janitorial supplies to motor vehicles, the Township has the power to require the purchase of recycled goods whenever possible and cost-effective. The purchasing power of the township, together with that of other townships, the state, and private parties can literally help to create profitable markets in recycled goods. This will have the dual salutary effect of reducing the township's disposal costs while increasing the amount companies pay for the township's recycled materials stream.

The starting point for incorporating sustainability into the Township's purchasing decisions is to modify the purchasing process to require that recycled products be purchased whenever available and cost-efficient. At present, some recycled products, such as stationary, are marginally more expensive than virgin paper. The Commission recommends that the Township follow New Jersey State policy and authorize the payment of a 10% cost premium for recycled products.⁷ In addition, standard language should be inserted into all requests for proposals

⁶ "Governing with the Future in Mind: Working Together to Enhance New Jersey's Sustainability and Quality of Life," New Jersey Interagency Sustainability Working Group (December, 2001) at page 98.

⁷ Id.

("RFPs") requiring bidders to investigate and report on the availability and cost of buying recycled materials versus using virgin materials.

Finally, and with specific regard to motor vehicles, with the sole exception of emergency four wheel drive vehicles, the Commission recommends that the township adopt a policy of purchasing only energy efficient alternatively fueled motor vehicles.

3. Implementing Recommendations

a. Authorize Township officials to pay up to a 10% premium for recycled products;

b. Modify RFP Process to Include Requirement that bidder investigate applicability of LEED and sustainable development designs and clean energy financial incentives in all Township and Joint Capital Improvement Committee construction

c. Immediately start purchasing of equipment qualifying for New Jersey Clean Energy Program or federal EnergyStar rebates including:

- i. electric chillers
- ii. natural gas cooling
- iii. geothermal heat pumps
- iv. variable frequency drives
- v. water heating
- vi. Prescriptive Lighting
- vii. LED traffic signal lamps
- viii. Lighting controls

d. Set all Township photocopiers to double-sided copying

4. Lead Implementing Department:

E. Solid Waste and Recycling

1. Goals

- a. Implement a “Pay as You Throw” (“PAYT”) municipal solid waste collection and billing system

2. Overview

Municipalities play a central role in the generation and markets for the disposal of municipal solid waste (“MSW”). Cities and towns, through their combined practices, can literally make or break markets for recycled goods. As an example, Montclair is now realizing the benefits of its recycling program in the current mixed-paper market. The Township now receives approximately \$30/ton for its mixed paper while at the same time avoiding the approximately \$62/ton tipping fee charged at the Essex County Utilities Authority incinerator. That’s sustainable development to the tune of a net positive \$92/ton position because of the Township’s mixed-paper recycling program.

Montclair has been a leader in MSW recycling programs, recycling four MSW waste streams when other communities only recycled three. Montclair now has the opportunity to once again lead communities across New Jersey by implementing proven and innovative MSW management systems. The Environmental Commission recommends that the Township introduce the “pay as you throw” (“PAYT”) system that is now being implemented in 4,000 communities across the United States including the New Jersey towns of Mountain Lakes, Readington Township, Midland Park, Whitehouse Station, and Woodstown.

PAYT systems are the best form of MSW collection and disposal from the environmental, economic, and equity perspectives. Under PAYT systems, the cost of MSW collection and disposal can be part of the undifferentiated bundle of municipal services provided by the Township or MSW costs can be separately billed like other utilities such as gas, electric, and water. Either way, individuals, households, and businesses are sent a price signal to reduce unnecessary consumption and to find ways to reuse things. Think of it as the same as a lower gas or electric or water bill because you turned off the lights or fixed the faucet. On an environmental basis, the Township’s tonnage to the ECUA incinerator is reduced resulting in air quality benefits. Finally, from an equity point of view, you pay only for what you dispose. An elderly couple that only throws out one bag per week will no longer be subsidizing a family that throws out three bags per week.

PAYT systems have been found to reduce the generation of MSW by 14-27% while at the same time increasing the recycling rate from 32-59% (USEPA Aug. 1998). In 2002, Montclair is sending approx. 17,000 tons per year to the ECUA incinerator. A 10% reduction in the Township's MSW load to the ECUA incinerator of 1,700 tons would equate to a Township savings of approx. \$105,000 (assuming \$62/ton tipping fee). There are a variety of pricing systems (proportional, variable rate, two tier) and methods (pre-approved bags, stickers, or cans). Adjustments can be made for welfare and hardship cases. Overall, there should be little impact to Township residents whom already are accustomed to recycling their household waste.

Finally, the Environmental Commission strongly believes that the Council should support increased outreach and education, especially in the Township's schools, about the importance of household MSW reduction and recycling.

3. Implementing Recommendations:

- a. Implement a "Pay As You Throw" PAYT system
- b. Increase funding for educational outreach about PAYT and recycling, especially in conjunction with Township schools

4. Lead Implementing Department: DPW

F. Water Resources - Conservation and Long-Term Supply Planning

1. Goals

- a. Study and devise a long-term water resources alternative plan for 2020;
- b. Reduce Township water consumption by ___% by 20__.

2. Overview

The Township consumes approximately ___ million gallons of water per year (mgy). About 70 to 80%(?) of this water comes from the Wanaque Reservoir and other water sources operated by the North Jersey District Water Supply Commission (NJDWSC). The surface water in the reservoir system is treated to remove suspended sediment and other parameters, and disinfected before it is distributed through the NJDWSC piping system, which has connections to many townships, including Montclair, and the City of Newark. Through State mandates, all of New Jersey's townships have interconnections to share water in times of drought and other causes of supply interruption, and participate in regional water supply plans.

The remaining 20 to 30%(?) of the Township's water supply comes from three wells operated by the Department of Public Works ("DPW"). The wells are in excess of 200 feet deep, and derive water from fractured sandstone and shale bedrock of the geologic unit named the Brunswick Group, which is a major aquifer tapped for water supply through much of northeastern and central New Jersey. The Township's three wells, located at the Upper Montclair train station, the High School, and Glenfield Park have all experienced contamination with low concentrations of volatile organic compounds (VOCs), and each of the wells is equipped with an air stripping system to remove the VOCs prior to disinfection. After treatment, the water from both the surface water and ground water sources complies with New Jersey's stringent drinking water standards.

In general, ground water sources are less prone than surface water reservoirs to the impacts of prolonged drought, particularly in the short term. Parts of Montclair lie in a belt of the Brunswick Group that has higher than average well yields and appears to be a more productive aquifer. The DPW has identified testing sites for potential future supply wells, if it is determined they could be needed in the future. DPW apparently has no immediate plans to drill test wells or evaluate those sites further.

The Township has an ongoing relation with NJDWSC that has insured that the Township's water needs have been met with high quality drinking water. The DPW is currently upgrading and rehabilitating the distribution system and the connections with the NJDWSC system to ensure the reliability of the supply. However, should the surface water supply be interrupted for any period of time for any reason (e.g., mechanical failure, prolonged drought, natural disaster, sabotage), the Township and neighboring towns could be hard pressed to meet the population's water demands. Increased ground water extraction capacity, even in a back-up mode, could provide Montclair with increased flexibility to respond to interruptions of service from NJDWSC of any duration. The process of drilling test wells, determining their safe yield, building the needed connections, and obtaining the necessary permits can take more than 1 year.

The drought of summer 2002 prompted water restrictions and calls from State leaders for conservation and reduction in demand. This drought, which is a continuation of a 3-year period of below-average rainfall in New Jersey, reminds us of the finite nature of our water resources, of the increasing pressure that will be put on those resources as the State's population increases, and the need for the citizens of Montclair and all of northern New Jersey to implement common sense water conservation measures and reduce water waste.

One of the most obvious and controllable causes of water waste is overwatering of lawns and fields. Many residential lawns and other fields are equipped with automatic sprinkler systems, some of which are set to operate daily, regardless of need. Many operate during rain storms. Not only is this practice an unnecessary drain on our limited water resources, but it is not even good for lawns to be watered daily; it is better for their maintenance if they dry out for a few days between watering events. Montclair should seek ways to conserve water at public buildings and schools, and encourage private citizens to reduce water demand.

3. Implementing Recommendations

- a. Determine the desirability of expanding Montclair's groundwater extraction capacity, and if positive, drill additional wells
- b. Fund a study the Township's water consumption patterns and long-term water resource supply and conservation alternatives
- c. Implement permanent odd-even residential lawn watering

4. Lead Implementing Department:

G. Natural Resources and Stormwater – Pesticides - Chemical Management

1. Goals

- a. Reduce the Township's use of organophosphate pesticides in the public schools and on the playing fields;
- b. Timely implement the proposed NJDEP stormwater regulations;
- c. Sponsor public events to cleanup Township streams, especially at public access points, to make them a desirable feature of the landscape.
- d. Encourage property owners to clean up the streams adjacent to their properties to improve stormwater flow, oxygen content, and temperature so as to encourage desirable species.

2. Overview

In December, 2002 the New Jersey Department of Environmental Protection ("NJDEP") proposed two regulations to improve water quality by controlling pollution carried in stormwater runoff. One of the rules applies directly to Montclair's municipal separate stormwater sewer system ("MS4"). The MS4 rule will require Montclair to apply for and operate under the "Tier A" General Permit. Under the rules and the General Permit, Montclair will have to study, develop, and implement, *inter alia*, the following:

- A municipal stormwater management plan;
- A municipal stormwater pollution prevention plan;
- A regular schedule for stormwater facility e.g., catch-basins, maintenance;
- A series of "best management practices" or BMPs;
- Adopt a set of municipal ordinances related to illegal stormwater system hookups, pet waste, wildlife feeding;
- Conduct public education;
- Conduct employee training

The request for authorization to operate under the Tier A General Permit will be due in or around July 1, 2003 and Montclair's municipal stormwater management plan, the adoption of local ordinances, and the start of stormwater facilities maintenance will be due on or around August 1, 2004. The Montclair Environmental Commission expects that the proposed stormwater management rules will require a major inter-departmental coordinating effort and will have a

sizeable impact on the Township's operating budget. In an effort to assist the Township with timely compliance with the proposed stormwater regulations, the Montclair Environmental Commission has met with DPW officials and has offered to assist the DPW in any way it can.

As part of its statutory duties, the Montclair Environmental Commission is now in the process of compiling a Natural Resources Inventory ("NRI") of the Township. In addition to the Bonsal Park Nature Preserve, the Township has other valuable natural resources including two major streams known as Toney's Brook and Nishuane Brook. Besides their inherent value as a natural feature in an otherwise built-out environment, the streams perform important functions. Chief among these is stormwater management. During storm events, the streams receive loadings of lawn care chemicals, silt, gasoline and other fuel oils, animal excrement, road salt, and solid waste that enter the streams untreated. The chemical loadings to the streams are heightened by the large amount of impervious cover (asphalt) in Town. While no studies have been performed, it is apparent that the streams do not support a wide variety of flora and fauna. Moreover, Montclair's stormwater runoff affects downstream resources such as the Third River and the Passaic River estuary system. It is also apparent that, for the most part, they are not valued by property owners or the Township. Besides their stormwater management function, clean streams can be a veritable living laboratories for Montclair school children on aquatic environments. Natural resources, even in Montclair, need to be protected and conserved.

One of the new techniques to begin to reduce the chemical loadings to streams and other natural resources is to implement what is known as "Integrated Pesticides Management" or "IPM." The central feature of IPM is getting a handle on the Township's overall use of toxic pesticides, insecticides, herbicides, and other toxic chemicals that are being introduced to the environment at the schools and playing fields and figuring out ways to reduce the amount of toxic chemicals and replace it, wherever possible, with natural, organic substitutes.

3. Implementing Recommendations:

- a. Implement Integrated Pest Management ("IPM") control measures on Township properties within 2 years;
- b. Investigate ways of reducing the amount of road salt use in Town by shifting to sand and/or chemicals that do not have the same deleterious impact on streams and other natural resources.
- c. Require all public and private road salt storage areas to have stormwater containment berms within 1 year

- d. Develop educational outreach programs for town residents and school children about the value of streams and other natural resources;
- e. Recruit high school biology students to conduct periodic bioassays of streams to measure and track water quality

4. Lead Implementing Department: DPW

H. Brownfields Inventory and Redevelopment

“Brownfields” are typically unused or underused properties that have real or perceived soil and/or groundwater pollution. Examples of Brownfields include former or current gasoline stations, drycleaners, or industrial buildings. There are 46 properties in Montclair that are on the New Jersey Department of Environmental Protection (“NJDEP”) “Known Contaminated Sites” listing. Many of these sites are being used while others may be ready for redevelopment. The Township should support brownfields redevelopment by applying for an NJDEP grant and assistance to compile a basic brownfields inventory. The inventory can be used to determine whether there are any sites of particular concern, for example ones that may threaten the Township’s groundwater supply wells. The inventory can also be used to identify and market abandoned or unused sites for return to productive use.

I. Environmental Commission – Planning Board Coordination

A. Overview

The State of NJ enacted legislation in 1968, amended in 1972, permitting every municipality to create a quasi-autonomous environmental commission to engage in a variety of environmental activities, including advocacy. The legislation stated

The governing body of any municipality may by ordinance establish an environmental commission for the protection, development or use of natural resources, including water resources, located within its territorial limits.. [N.J.S.A. 40:56A-1, *et seq.*]

The enabling legislation stipulates that one of the members of the E.C. “shall be a member of the municipal planning board...” The Municipal Land Use Law [N.J.S.A.

40:55D *et seq*] specifies that one member of the municipal planning board must be from the environmental commission if there is one.

B. Power and Duties

N.J.S.A. 40:56A-2 authorizes an EC “to conduct research into the use and possible use of the open land areas of the municipality: and further permits it to coordinate the activities of unofficial bodies organized for similar purposes.” An EC may “advertise, prepare, print and disburse books, maps, charts, plans and pamphlets which in its judgment it deems necessary for its purposes.” And it may do so even if any EC findings and recommendations are in opposition to the views of the governing body. Commissioners can be removed only “for cause, on written charges served upon the member and after a hearing thereon at which the member shall be entitled to be heard in person or by counsel.”)

An EC “**shall** keep an index of all open areas, publicly or privately owned, including open marshland, swamps and other wetlands, in order to obtain information on the proper use of such areas, and may, from time to time recommend to the planning board or . . . to the mayor and governing body . . . plans and programs for inclusion in a municipal master plan and the development and use of such areas.” [emphasis added]

An EC **may**, Subject to the approval of the governing body, acquire property, both real and personal, in the name of the municipality by gift, purchase, grant, bequest, devise or lease for any of its purposes and shall administer the same for such purposes . . . Such acquisition may be acquire the fee or any lesser interest, development right, easement (including conservation easement) . . . as may be necessary to acquire, maintain, improve, protect, limit the future use of, or otherwise conserve and properly utilize open spaces and other land and water areas in the municipality.” [N.J.S.A. 40:56A-3] and Zoning Boards, Boards of Health, and citizen groups. ECs have the power of review and comment for all local applications and for many state permits. ECs review and comment on the actions of state agencies and neighboring municipalities that can affect local environment but fall outside local review.

C. Montclair Environmental Commission

Originally adopted by the Montclair Environmental Advisory Committee, 1991;
Redefined by Resolution of the Township Council, June 15, 1993:

The Mission of the Montclair Environment Advisory Committee is to continually observe and study the environment of Montclair. The Committee:

- Investigates environmental concerns referred by Township Council;
- Advises the Township Council, Municipal agencies and citizen groups on matters related to the environment of Montclair;

- Provides a forum through periodic meetings wherein Township residents may voice concerns about Montclair’s environment; and
- Educates township residents about Montclair’s environment through media, presentations, and programs on specific environmental concerns

The Environment Advisory Committee contributes to the Township Council by researching topics of environmental concern, and, as requested by the Council, conducting hearings and forums on local environmental issues and investigating matters related to the local environment. The Committee contributes to the community by presenting educational programs on local environmental topics, providing a forum for Township residents’ concerns on local environmental issues and promoting activities such as household hazardous waste recycling, lawn and garden care programs, environment awareness programs and reviewing and commenting on the Master Plan of the Township.

The Environment Advisory Committee functions by meeting regularly, reporting to the Township Council, appointing subcommittees to deal with specific environmental issues, researching government agency and professional organization documents and drawing on the expertise of members and citizens.

D. Goals

- a. Improve communication and coordination between the Planning Board, the Environmental Commission, the Township Council, Township officials, and Township employees.
- b. Recruit and screen applicants for appointment to Environmental Commission.
- c. Conduct periodic seminars on relevant environmental topics, such as pesticide-free lawn and garden care, asbestos and mold in homes, mosquito control, underground heating oil tanks, stream beautification, noise, techniques for reduction of solid waste, etc....
- d. Engage Township employees in a continuous dialogue of “bottoms-up” sustainability discussions and reward Township employees whose suggestions lead to Township sustainability practices.

4. Lead Implementing Department: Environmental Commission

APPENDIX 1

Sustainable Development Metrics – Performance Indicators

A. Energy Efficiency and Green Energy

1. Electricity: total cost and year-to-year percentage change adjusted in kW hrs consumed \$1.13MM (5/01-4/02)
2. Natural Gas: same in therms (\$78K 5/01-4/02)
3. Heating Oil; same in gallons
4. Gasoline: same in gallons;
5. Diesel: same in gallons
6. Estimated savings from energy efficiency measures (\$/year)
7. 1990 Greenhouse Gas (“GHG”) emissions inventory (tons/year); total and year-to-year percentage change in tons/year
8. Carbon intensity/GMP (tons/\$ municipal budget)
9. Green Energy: percent of total and year to year percentage change

B. Transportation

1. Percentage alternatively-fueled vehicles (“AFVs”)
2. Average fleet fuel efficiency
3. Vehicle miles traveled (“VMT”) per vehicle: percent change
4. Number of diesel bus conversions per year (diesel to CNG, electric, or hybrid)

C. Building Construction

1. Total dollar and percentage of LEED compliant construction
2. Estimated savings from energy efficiency design and equipment
3. Percentage change in operation & maintenance costs

D. Purchasing

1. Total amount and year-to-year change in purchase of recycled products

E. Solid Waste and Recycling

1. Progress of Implementation of “Pay As You Throw” (“PAYT”)
2. Total tonnage and year to year percentage change in amount of municipal solid waste (“MSW”) to ECUA incinerator
3. Percentage change in MSW diversion and commodities recycling rates

4. Total and year to year percentage change in GHG emissions (corollary = tons avoided/year) due to recycling program

F. Water Resource Conservation and Long-Term Supply Planning

1. Total and year to year percentage change in Township consumption (MMgallons/year)
2. Estimated Savings from Water Conservation: (percentage and Mmgallons reduced/year)
3. Source Differentiation Capacity (status of long-term groundwater supply)

G. Stormwater – Pesticides - Chemical Management

1. Total and year to year percentage change in amount of Pesticides applied (tons/year)
 - a. Application Method
 - b. Locations
2. Total and year to year change in the amount of road salt applied (tons/year)
3. Total and percentage change in organic cleaning products usage
4. Progress in reducing non-point source runoff

G. Natural Resources

1. Status of Natural Resources Inventory (“NRI”) study;
2. Carbon Sink value of Shade Tree Planting Program (tons/year)
3. Open Space Preserved (acres/year)
4. Brownfields redeveloped (no. of sites and acres/year)

APPENDIX 2

Township PSEG Electric & Gas Expense Analysis (5/01 – 4/02)

APPENDIX 3

Township Municipal Solid Waste ("MSW") Analysis

APPENDIX 4

Recycled Products List for Purchasing

a. Recycled Products

Aggregate for street resurfacing (% rubber content)
Business cards
Janitorial paper products
Laser printer cartridges
Office paper, e.g., stationery, envelopes, computer and photocopier
Recycled paint
Trash can liners

b. Cleaning Products

All-purpose cleaner
Bathroom cleaner
Brass polish/cleaner
Carpet shampoo
Degreaser/cleaner
Deodorizer
Disinfectant
Enzymatic cleaner/digester
Furniture polish
Glass and window cleaner
Graffiti remover
Liquid hand soap
Solvent spotter

c. Fleet Maintenance

Antifreeze
Brake cleaners
Parts washers
Re-refined motor oil
Retread tires

d. Non-VOC paints

APPENDIX 5

New Jersey Department of Environmental Protection's
"Known Contaminated Sites" listing for
Montclair