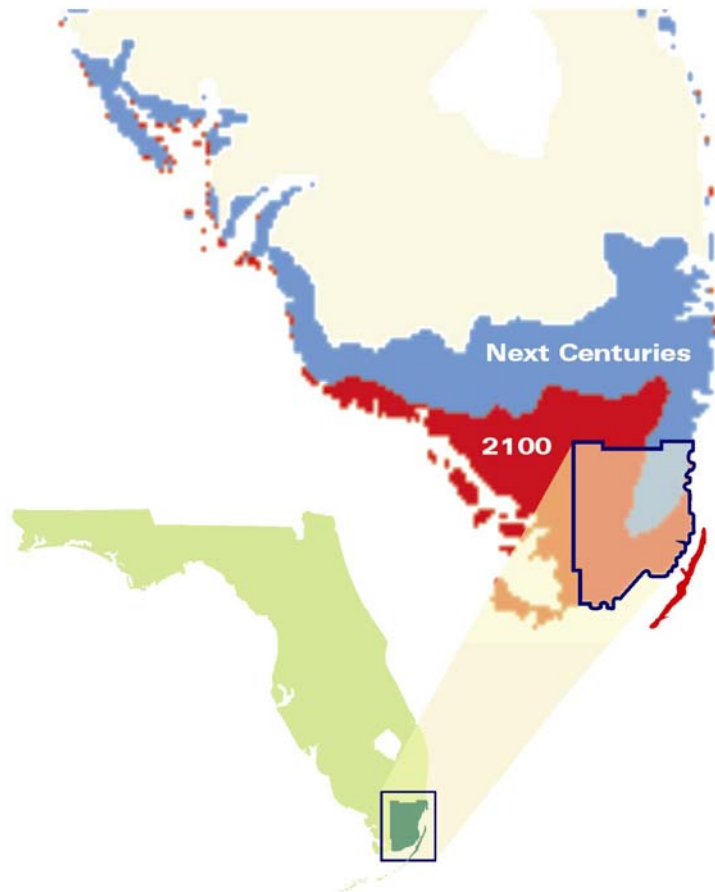


A Long Term CO₂ Reduction Plan for



**Progress Report
2001**

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Mayor

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EXECUTIVE SUMMARY

The atmospheric concentrations of greenhouse gases have increased since the pre-industrial era. Every time a light, a computer, or a motor is turned on, a power plant consumes fuel to generate energy. When fossil fuels are burned to produce energy, pollutants are released into the atmosphere, increasing pollution and affecting climate change. These activities, along with natural forces, have contributed to changes in the Earth's climate over the 20th century. On December 14, 1993, Miami-Dade County's Board of County Commissioners approved a plan entitled "A Long Term CO₂ Emission Reduction Plan for Miami-Dade County," recognizing the threat of global warming and providing a venue for the County in general to reduce greenhouse gas emissions.

During the past nine years the County's efforts to reduce greenhouse gas emissions have achieved some positive results. For an even more effective plan, all county sectors such as commercial, industrial, residential and transportation should be fully involved. In addition and beyond our direct control, auto and SUV gasoline efficiencies need to be increased substantially.

Miami-Dade County's greenhouse gas emissions have increased a total of 4.7 million tons in the last 11 years (1988 vs. 1999), equivalent to an increase of 20.2%. Although this is mostly due to an increase in electrical usage and the advent of the perpetuation of SUV's, the County's population has also increased 16.4% during the same period of time. As a result, our per capita emissions have increased a total of 3.5%, from 12.5 tons to 12.9 tons of CO₂ per person during the same period of time. Nonetheless, the inventory also shows a decrease in the greenhouse gas emissions for the residential and commercial sectors. It is important to note that the methodology used to calculate greenhouse gas emissions per year during these nine years is different from the methodology used to calculate the baseline in 1988. Therefore, the results presented should be used to establish a trend over this period of time, rather than for an exact comparison.

Additionally, some of the measures proposed and implemented are not quantifiable, resulting in reported emissions reductions that are lower than the reductions actually achieved by the County. Furthermore, new projects aimed to reduce greenhouse gas emissions have been implemented since the publication of the first report. These new projects are diverse and include planting of trees, incorporation of green building recommendations, the use of alternative fuel vehicles, the use of technology to reduce the trips of county citizens to the courts facilities, and other energy efficiency projects. The cumulative reductions achieved by these projects will have an additional positive impact on lowering CO₂ emissions during the next few years.

The World Summit on Sustainable Development was held from August 26, 2002, to September 4, 2002. The United States participated in the Summit even though it had announced early during the year that it did not want to negotiate the implementation of the Kyoto Protocol. During the Summit the participating Nations reaffirmed the commitment of “achieving its ultimate objective of stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner, in accordance with our common but differentiated responsibilities and respective capabilities.” In recent years various regions of the world have experienced a number of climatic disasters such as the droughts in India and the United States, and the floods throughout Europe, which seem to follow regional climate change scenarios and have served as reminders of the consequences that climate change is likely to bring. In response to this, participants in the Summit recommended an Adaptation Fund be established from phasing out current perverse subsidies given to carbon.

It is proposed that a task force comprised of public and private sector representatives be convened to develop an adaptation plan that recommends implementation of specific adaptive measures to lessen the vulnerability of the South Florida Community to climatic extremes, and promote the conservation and sustainable use of the natural resources in order to reduce the impact of changes in climate. The goal of these measures will be to design adaptation strategies and build adaptive capacities as they pertain to changes in processes, practices, and structures to moderate potential damages, or to benefit from opportunities, associated with climate change. The effectiveness of adaptation and mitigation activities can be enhanced when they are integrated with broader strategies designed to make development paths more sustainable. It is proposed that such a plan should be completed in the next two years.

MIAMI-DADE'S CO₂ REDUCTION PLAN

PROGRESS REPORT 2001

In 1993, Miami-Dade County's Board of County Commissioners approved a plan entitled "A Long Term CO₂ Emission Reduction Plan for Miami-Dade County" recognizing the threat of global warming. The plan was developed as part of an international effort to reduce carbon dioxide (CO₂) emissions through the implementation of local actions and encouragement of needed state and federal actions. The International Council for Local Environmental Initiatives (ICLEI), comprised of local governments, of which Miami-Dade County is a founding member, initiated a worldwide campaign called Cities for Climate Protection, which provided the format for local action plans such as ours. The council seeks to address international environmental problems such as global warming through local actions. In 1995, the Department of Environmental Resources Management Office of Sustainable Environment and Education (OSEE) was established to oversee this project. Project funding was provided in part by PTI's Urban Consortium Energy Task Force.

The goal of the project is to reduce countywide CO₂ emissions to 80% of 1988 levels by the year 2005. Miami-Dade has initiated CO₂ reduction measures, such as energy efficiency measures, conservation in transportation by improving urban design and promoting mass transit and providing for recycling programs, to reach this goal. The development of this plan was guided by a broad-based steering committee, chaired by County Clerk, Harvey Ruvlin, who is an elected member and Vice-Chair of ICLEI's executive committee and serves as President of ICLEI-USA, Inc.

Project analysis showed that in 1988, Miami-Dade County's CO₂ emissions totaled over 23 million tons. The largest sources of emissions came equally from transportation (45%) and electricity production (45%). Miami-Dade County's plan includes measures in the following sectors: transportation, electrical production/use, solid waste management and land use patterns/urban design.

INTRODUCTION

The atmosphere that surrounds the Earth is composed of many types of gases including “greenhouse gases”. Some greenhouse gases such as water vapor, carbon dioxide, methane, nitrous oxide and ozone, are naturally occurring. However, since the beginning of the industrial revolution, human activities have been slowly adding to the natural background levels. The burning of fossil fuels for energy, increased agriculture and deforestation, landfills and industrial processes contribute a significant share of emissions.

Carbon dioxide is considered the primary greenhouse gas because it accounts for approximately 50% of the greenhouse gases. Concentrations of this gas have increased by nearly 30% since the pre-industrial era. These increases intensify the heat trapping capability of the earth’s atmosphere. As these gases accumulate in the atmosphere they absorb infrared radiation (heat) and radiate it back to the earth’s surface, trapping it much like a greenhouse, causing a general warming of the environment.

The United Nations Environment Programme and the World Meteorological Organization convened the Intergovernmental Panel on Climate Change (IPCC) in 1988, which is today’s primary international authority on global climate change. The IPCC third report published in 2001 concluded that the global average surface temperature increased by about $0.6 \pm 0.2^{\circ}\text{C}^{5,6}$ (approximately 1°F) during the 20th century, and that most of the warming of the past 50 years is probably due to increases in greenhouse gas concentrations in the atmosphere. At the same time the report found that a business-as-usual scenario is expected to lead to a temperature rise of between 2.5 and 10.4° F by 2100. The temperature gradients may seem small to some, but the devastating effect is to energize Earth’s hydrologic systems so that extreme weather conditions prevail causing more tropical storms as well as more droughts and floods.

The report also concludes that human-generated emissions “have contributed substantially to the observed warming over the last 50 years”. Scientific data show that globally the 1990s was the warmest decade, and 1998 the warmest year in the instrumental record, since 1861. The report presents a summary of satellite data indicating a decline in winter sea-ice thickness and a decrease of about 10% in the extent of snow cover since the late 1960s. In fact, Arctic sea-ice thickness has declined 40% during late summer to early autumn in recent decades. In addition, ocean heat content has increased and the global average sea level has risen between 0.1 and 0.2 meters. Changes have also occurred in other important aspects of climate. For example, precipitation has increased by 0.5 to 1% per decade in the 20th century over most mid-and high latitudes of the Northern Hemisphere continents, and it appears that rainfall has increased by 0.2 to 0.3% per decade over the tropical (10°N to 10°S) land areas.

All these facts are evidence that there have been significant changes in the global climate and that emissions of greenhouse gases and aerosols due to human activities continue to

alter the atmosphere in ways that can be expected to continue to radicalize the climate in the years ahead.

Miami-Dade County is a low-lying coastal community that would be particularly vulnerable to the impacts of global warming. Temperature increases such as the ones reported would lead to many serious local impacts such as flooding and destruction of beaches and natural areas, saltwater intrusion into our drinking water supply, increased threat of tropical diseases and other infrastructure damage.

ICLEI and Cities for Climate Protection Campaign◆

In 1990, the International Council for Local Environmental Initiatives (ICLEI) was established through a partnership with the United Nations Environment Programme and the International Union of Local Authorities (IULA).

ICLEI's mission is to build and support a worldwide movement of local governments whose collective actions can have a tangible impact on global environmental and sustainability concerns.

Today ICLEI has offices all over the world and its 400+ members come from 50 countries and represent some 300 million people. Miami-Dade is proud to be a founding member.

In addition to serving as a clearinghouse of best practices, ICLEI runs major campaigns dealing with water and climate change.

In 1993, Miami-Dade County developed an action plan to help protect the global climate and a resolution was passed by the Board of County Commissioners to approve the plan. It was then that the County became a leader in ICLEI's Cities for Climate Protection (CCP) Campaign and has since been recognized internationally as a community in the forefront of environmental protection.

Cities for Climate Protection is a performance-oriented campaign that offers a framework for local governments to develop a strategic agenda to reduce global warming and air pollution emissions, with the benefit of improving community livability. In the United States, there are 130 Cities and Counties representing nearly 50 million people that are participating in the campaign by adopting and implementing (GHG) reduction plans along the ICLEI/Miami-Dade County format. Collectively, they are now avoiding 11 million metric tons of carbon annually through these actions.

As part of the campaign a participating local government agrees to undertake and complete the five performance milestones: conduct an energy and emissions inventory and forecast, establish an emissions target, develop and obtain approval for the Local Action Plan, implement policies and measures, and monitor and verify results. Miami-Dade County has completed all these steps and is moving forward to find new projects to reduce greenhouse gases emissions to include in its Local Action Plan.

In addition to continuing the efforts to reduce greenhouse gas emissions ICLEI has been working on a strategy to diminish the impacts of greenhouse gases already released into the atmosphere. During the year 2002 ICLEI's Executive Committee, on motion by its Vice-Chair, Clerk Ruvin, amended the CCP 2002 Work Plan to include an adaptation/protective plan regarding the impending impacts of climate change. Adaptation focuses on the adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts.

Kyoto Protocol and Beyond

In December 1997, delegates from 160 nations met in Kyoto, Japan in what is known as the Conference of Parties 3 (the Parties are the signatories to the Climate Change Protocol in Rio five years earlier). The purpose of this meeting was to negotiate an agreement between the industrialized nations to reduce greenhouse gas emissions within the next fifteen years. Up to that point, the southern developing Nations resisted being dictated to by the northern industrial Nations. So Kyoto was a way to break the deadlock by the North putting its commitment where its mouth was. Under the agreement reached at the Conference, the European Nations would cut its emissions by 8%, the United States by 7% and Japan by 6%. These reductions, measured against 1990 emission levels, are to be achieved by the period 2008-2012.

In November 1998, delegates from around the world met at COP 4 in Buenos Aires, Argentina to continue negotiations involving greenhouse gas emissions and to try and involve the developing countries in the implementation of policies that will lead to emissions reductions of greenhouse gases. Some of the policies suggested for implementation in developed and developing countries included Clean Development Mechanism (CDM) and Joint Implementation and Emission Trading. Although many barriers still exist with these concepts, solutions are being worked out and there are success stories on international cooperation through jointly implemented projects and other international ventures. Conditional Emission Trading offers the potential for flexibility to be used among industrialized countries, focusing on countries with economies in transition. Countries were urged to look at the Kyoto Protocol and ways that they could begin its implementation through various options. It is estimated that if post-Kyoto policies are not implemented, worldwide energy-related CO₂ emissions could increase by 45% between 1990 and 2110.

The 5th Conference of Parties (COP-5) to the U.N. Framework Convention on Climate Change (FCCC) met in Bonn, Germany between October 25 and November 2, 1999, and included work of the Subsidiary Bodies on Implementation and Science and Technology. Major themes of the conference involved developing criteria for project eligibility and devising the technical and political mechanisms that would allow developed and developing nations to meet their respective responsibilities under the 1997 Kyoto Protocol. Also under consideration were the development of a COP-certified national

inventorying system for greenhouse gas emissions and their reduction, as well as legally binding consequences for non-compliance of parties under FCCC, an action that, in and of itself, would require an amendment to the Kyoto Protocol. A decision for a second round of national communications for developed Nations was adopted at COP-5; and interested parties, including the Association of Small Island States (AOSIS), have encouraged the COP to use this new data and information to inform ongoing negotiations.

On March 28, 2001 the Bush administration announced that the United States would not negotiate implementation of the Kyoto Protocol partly because of its potential economic effects. “Negotiating an International treaty to reduce global greenhouse gas emissions could compromise the administration’s priorities of recharging the economy and addressing the nation’s energy needs,” President Bush told reporters March 29, 2001.

On February 14, 2002 President Bush proposed a voluntary plan to slow down the growth of greenhouse gases blamed for global warming instead of the mandatory limits sought by the Kyoto Protocol. The goal is to lower the U.S. rate of greenhouse gas emissions from an estimated 183 metric tons per million dollars of gross domestic product (GDP) in 2002 to 151 metric tons per million dollars of GDP in 2012, cutting greenhouse gas intensity by 18% over the next 10 years. “This goal is comparable to the average progress that nations participating in the Kyoto Protocol are required to achieve,” a White House fact sheet said.

The recent United Nations Summit on Sustainable Development, held in Johannesburg, S.A., called upon all nations to phase out perverse subsidies given to carbon and phase in subsidies to help commercialize renewable energy alternatives.

We at the local level, where basic decisions on land use, transportation, building codes, waste management, etc., determine the County’s future energy usage and urban efficiencies, will continue to do our share and more.

PLAN UPDATE

Most of the plan's recommendations fall under the jurisdiction of eight county departments, including DERM. This annual report reviews the progress made in terms of implementing the plan's recommendations during the year. It is important to remember that although a number of measures can be directly implemented by Miami-Dade agencies, there are a number of recommendations that fall under the jurisdiction of either the state or federal government or involve changing the attitudes and behaviors of individuals. Therefore, it will be difficult to guarantee the full implementation of those measures. Also, many recommendations in this plan are concepts or measures that will evolve and improve continuously in order to meet the needs of the County's growing population. For example, the recommendation to increase traffic demand management programs will not have a final date of completion because it is a continuing effort.

During the period before this update the County and Federal Authorities undertook some projects directly related to the emissions/reductions of urban CO₂. For example, The County Commissioners approved resolution R-554-94 on April 19, 1994, which urged the Congress and the President to sign legislation increasing the CAFE (Corporate Average Fuel Economy) standards to 45 miles per gallon to significantly reduce carbon dioxide emissions, a major contributor to global warming. Furthermore, on June 22, 1999, Miami-Dade County Commissioners adopted an ordinance to ask voters to cast ballots in a special election July 29 to increase the local 6.5 cent sales tax by one cent to pay for transit projects. In exchange, tolls on four highways (State Roads 836, 112 and 874 and Gratigny Parkway) would be eliminated.

The new one-cent sales tax was intended to ease congestion through the expansion of the Metrorail system, the enlargement of the County's bus fleet and some local roadway improvement projects not funded by the federal government. However, the voters did not approve the increase, which left the county without a dedicated source of money for upgrading the transportation system.

In 2002, after numerous meetings with concerned citizens throughout the County the Miami-Dade Transit Agency and the community of Miami-Dade County produced a transportation plan, which has been named "People's Transportation Plan" that focuses on alleviating the county transportation problems. On the November 5th, 2002 elections, the voters approved a half percent sales surtax. The proceeds from this surtax will be overseen by a Citizen's Independent Transportation Trust and will be used for the following: 1) To build up to 88.9 miles of rapid transit lines to west Miami-Dade, Kendall, Florida City, Miami Beach and north Miami-Dade, 2) to expand the bus service, increasing the bus fleet by 635 buses and hour of operation, 3) to improve traffic signal system to reduce traffic backups, 4) to improve major and neighborhood roads and highways, and 5) to fund various municipalities' transportation projects.

Implementation of the plan started on November 6th, 2002 when the Metromover became free and everyone 65 and older could ride buses and trains for free. On Saturday November 9th, 2002 the county will roll out new circulators bus routes in Little Haiti and Coconut Grove and improve service on a dozen existing bus lines. After that, improvements in service will come every two or three months. The new sales tax, which will raise the local rate to 7 percent, will not go into effect until January 1st, 2003 even though some benefits are being implemented immediately.

Additionally, The County Commissioners approved resolution R-966-00 on September 19, 2000, which advocates for the conception of a Florida Global Warming Action Plan, urges the Federal Congress to begin phasing the 20 billion dollars in incentives/subsidies currently given to carbon-based fuels over to the development/commercialization of renewable energy sources, and finally, reiterates Miami-Dade County's prior resolution urging congress to raise CAFE standards.

At the Federal Level the CAFE standard requiring auto makers to increase fuel economy standards of both passenger vehicles and light trucks by about 50% to an average of 36 mpg by 2015 was not approved. Instead they mandated that the National Highway Transportation Safety Administration (NHTSA) propose an increase in CAFE standards in the next two years, however, the increase could be as little as 1 mpg. This decision will maintain the CAFE standards for model year 2004 light trucks at 20.7 miles per gallon, and for passenger vehicles at 27.5, unchanged since 1979 and 1985, respectively.

1999 CO2 Emissions Inventory

This section presents a comparison of CO₂ emissions inventories between 1988, the baseline year, and 1999. The emissions inventory in 1988 was carried out using the TEMIS software developed by the OKO Institute and the University of Kassel Environmental Systems Analysis Group. This computer model calculated the direct emissions associated with the combustion of various fuel types plus upstream emissions from the transportation, processing, and extraction of primary fuels. The software that was utilized to develop the 1999 inventory was created by Torrie Smith Associates Inc. and designed specifically for members of ICLEI's Cities for Climate Protection (CCP). This software has made it possible for many local governments to quantify their greenhouse gas emissions and develop local climate action plans. The CCP software tracks measures that are implemented by County agencies as well as community projects, calculates greenhouse gas emissions from energy use and solid waste, and quantifies air pollutant reductions and other co-benefits of greenhouse gas reduction strategies. It also automates energy conversions, and embeds emission coefficients.

Both of the methodologies that were utilized are different and for this reason, extreme care needs to be taken when comparing emissions from year to year. Much has been learned since the beginning of the Cities for Climate Protection Campaign and therefore the CCP software that has been developed can be considered more accurate and allows the use of a greater number of variables in the calculation of greenhouse gas emissions.

The TEMIS software is a full cycle model, and therefore includes upstream emissions associated with the production, refining, and transport of the fuels to the end user, as well as the emissions that actually occur at the point of end use when the fuel is burned. As a result the CO₂ emissions calculated using the TEMIS software might be 10% to 15% higher when compared with the results of the CCP software, which does not include upstream emissions in the calculations. For example, the CCP software does not include emissions from the electrical usage due to production and transport of the fuels (such as coal, natural gas and oil) used at the Power Plants to produce electricity.

SECTOR	1988 U.S. Millions Tons of CO ₂	1999 Equivalent Million Tons of CO ₂	Difference Million Tons of CO ₂
Residential	0.196	0.192	-0.004
Commercial	1.022	0.472	-0.550
Industrial	1.297	2.146	0.849
Transportation	10.449	10.889	0.440
Electrical usage	10.459	14.251	3.792
Others	0	0.197	0.197
Total	23.423	28.148	4.725

Figures do not include fuel inputs from aircraft, ships, barges, and other potential sources.

Miami-Dade County's population has experienced an increase of 16.4% since 1988 resulting in an estimated 2,175,634 residents in 1999. Total greenhouse gas emissions have increased a total of 4.7 million tons, an increase that can be mostly attributed to electrical use.

Florida Power and Light (FPL) delivers all electricity used in Miami-Dade County. The main fuel used for electrical generation throughout the state of Florida is coal, however in south Florida, FPL primarily uses nuclear power. Since the CCP software default emission factor for electricity corresponds to the State of Florida we decided to use the emission factor calculated by FPL in order to replicate what was done in the 1988 report.

FUEL MIX	STATE	FPL
Gas	23%	25%
Nuclear**	17%	27%
Oil	19.9%	25%
Coal	36.3%	23%*
Others	3.8%	0%
Emission Factor	1.51 lbs CO ₂ /kWh	1.22 lbs CO ₂ /kWh

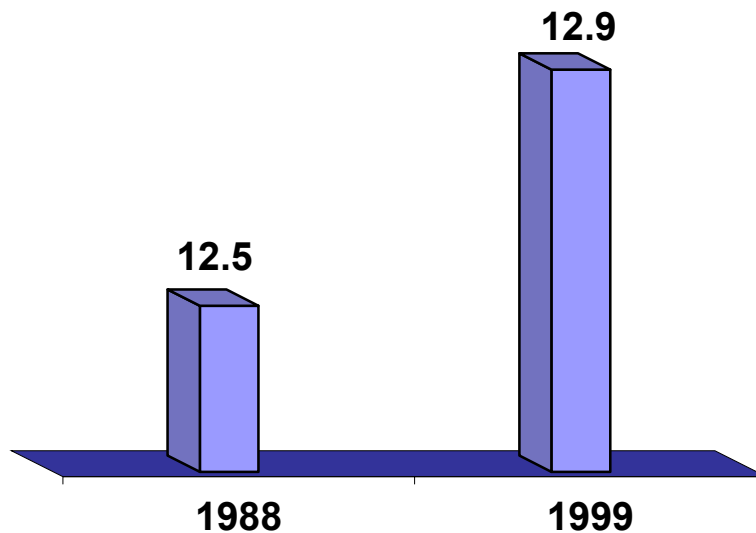
*Includes purchased power, which is mostly produced from coal.

** Includes hydropower, which also produces zero emissions.

The energy consumption in Miami-Dade County has increased 36.4% over the last eleven years. This increase in energy consumption can be attributed to an increase in the use of appliances such as air-conditioning, computers, pool pumps, faxes, etc., an increase on the average size of homes (15 percent larger in last 5 years), and the growth of the county towards the west, which experiences hotter temperatures during summer. These trends indicate that more measures to promote energy efficiency and conservation between the county citizens will be an important factor in trying to reduce energy consumption and greenhouse gases emissions.

The inventory also shows a decrease in use of natural gas in the residential and commercial sectors. Locally, we have also seen a sharp decline in the use of coal in the industrial sector, which is reflected in a 50% reduction in the CO₂ emissions from this fuel.

The transportation sector, which includes the movement of people and goods within the County, shows a small increase in fuel consumption and therefore in CO₂ emissions. However, a more detailed analysis may indicate that fuel sales data is of limited applicability in urban areas where a significant amount of fuel that is burned in the County is not being purchased in the County.



Miami-Dade County per capita greenhouse gas emissions (Tons of CO₂)

Some of the measures that were identified in the 1988 report have not been implemented for various reasons. However, the yearly update always identified new opportunities that fall within the realm of the CO₂ reduction plan. In 1988, the plan relied heavily on the reduction of a maximum of 8.2 million tons of CO₂ emissions that would be achieved by increasing the CAFE (Corporate Average Fuel Efficiency) standards. From 1995 through

2000, Congress included restrictions in the annual Transportation Department funding law that effectively prevented changes to the CAFE standard. These restrictions were eliminated in 2001. Measures to substantially increase CAFE standards as part of an energy policy bill, however, were defeated overwhelmingly in both the House and the Senate during the 107th Congress. The U.S. Senate voted against tougher fuel economy standards March 13th, 2002, in debate over legislation (S.517, H.R. 4) to set a comprehensive national energy policy. As a result the bipartisan coalition replaced the provision with an amendment mandating the National Highway Transportation Safety Administration propose an increase in CAFE standards in the next two years. The County is now working towards implementing a transportation initiative that would bring about considerable reductions in the transportation sector but these reductions would still fall short had a new CAFE standard been adopted.

The table below summarizes the reductions in metric tons of CO₂ that were forecasted in each of the major sectors in 1988 and also includes the actual reductions that have been achieved through the implementation of the original measures, as well as new projects.

	CO₂ EMISSION REDUCTIONS (Tons of CO₂/year)	
	1988 FORECAST	1999 ACTUAL⁽¹⁾
TRANSPORTATION		
1. Mass transit and road improvements	818,000	
❖ Expansion of Metromover to Brickell and Omni		1,741
❖ South Dade Busway Ridership		1,453
2. Traffic demand management	62,000	
❖ Electrowave		885
❖ Vanpool Program		360
3. Promote increased use of bicycles	151,000	
❖ Expand bikes on trains		172
4. Increase fuel efficiency	8,200,000	0
LAND USE		
1. Reduce vehicle miles traveled by 5%	172,000	
❖ Voice Response System		708
ELECTRICAL PRODUCTION/USE		
1. Increase efficiencies of Miami-Dade facilities/operations	145,000	
❖ Green Lights/Energy Star		3,200
2. Decrease residential sector energy use	159,000	
❖ Installation of Solar Water Heaters		110
3. Expand the use of alternative fuels	51,000	0
4. Expand the use of landscaping and white surfaces	137,000	

	CO₂ EMISSION REDUCTIONS (Tons of CO₂/year)	
	1988 FORECAST	1999 ACTUAL⁽¹⁾
❖ Cool Communities		2
❖ Landscape Ordinance		234
5. Promote and expand participation in energy conservation	610	
❖ FPL's DSM Programs		465.43
❖ Climate Wise		224,619
SOLID WASTE		
1. Recycle between 30 and 50% of Dade County's waste stream	1,188,000	1,181,380
2. Recover and utilize landfill methane gas	177,000	48,727
3. Reduce generated solid waste by up to 5%	388,000	-26,324 ⁽³⁾
TOTAL GHG REDUCTIONS	11,346,610	1,437,732

(1) Average emissions reductions per year for quantifiable measures.

(2) Information not available at the time of report writing.

(3) While tons of solid waste per capita decline the total amount of solid waste shows an increase, which reflects higher CO₂ emissions.

NEW OPPORTUNITIES

Since the beginning of the Long Term CO₂ Emission Reduction Plan for Miami-Dade County, new opportunities for the reduction of CO₂ have become available. The following describes some opportunities that were implemented prior to the completion of the progress report:

Adopt-A-Tree

Miami-Dade County, long known for its famous beaches and warm winters, is surprisingly lacking in any significant tree cover. Trees can be an effective tool for sequestering carbon dioxide and also have important benefits for stormwater management, urban temperature control, and water quality. A 1996 tree cover analysis by the non-profit group American Forests showed that Miami-Dade's urban areas averaged only 10% tree cover; considerably lower than the 25 to 33% average for an American city, and the 40% canopy considered ideal by American Forest. Additionally, the County has been losing shade trees by the removal of citrus canker impacted trees. The Department of Environmental Resources Management (DERM) petitioned the State Department of Agriculture for money to begin restoring the communal loss of additional shade.

With this money the County implemented a program called Adopt-a-Tree, which is designed to help bolster the condition of our community's tree canopy. Trees selected for the program are native "ornamental" shade trees and a variety of non-citrus fruit, which make good shade trees in their adulthood. The program is eager to give away 150,000 trees by June 2008. In 2001 Miami-Dade County through its Adopt-a-tree program gave out 6,000 trees to residents and hope to give 20,000 this year. **Assuming that only two of every three trees donated and planted reach maturity and that every tree reduces 25 pounds of CO₂/year at maturity the potential reductions are 1250 tons of CO₂/year for the entire program.**

Shade for Dade – Plant a Tree for the Millennium

The County has provided \$100,000 to fund the Shade for Dade- Plant a Tree for the Millennium Program. These funds were awarded to Fairchild Tropical Garden and Operation Green Leaves. The funding provided will go towards a total of 26 tree plantings (2 in each Commission district) and an accompanying educational program on how to plant and care for trees as well as their benefits. The intention of the program is to increase the County's tree canopy, which is well below the national average, using native trees (at least 50% of all trees planted must be native). To date, Fairchild Tropical Garden had received 40 applications from Community Organizations for tree planting projects from which they accepted 22 projects that comply with the grant requirements. **As of May 2002 they have finished 5 projects planting an average of 45 to 50 trees**

per project and spending approximately \$3,000 per project. The potential for CO₂ reductions is 3 tons of CO₂/year when the trees reach maturity.

Miami Beach “Electric Wave” Shuttle

The Miami Beach Transportation Management Association has been working closely with the City of Miami Beach, researching and developing a plan for the implementation of an electric shuttle system. The system is composed of eleven electric powered shuttles with seating on each shuttle for 22 passengers. Four of these are new vehicles that were introduced recently to help expand the routes to other parts of the city.

The system serves the South Beach area of Miami Beach, helping increase the mobility of residents and visitors, and alleviating parking problems in the area. In addition, the shuttle supports a park-and-ride program and links existing transportation services provided in the referred area, thus, resulting in a transportation project that is clean, safe, cost efficient and dependable.

The Miami Beach Transportation Management Association was developed as a recommended plan of action under the “Long Term CO₂ Emission Reduction Plan for Metropolitan Dade County”. The Traffic Demand Management (TDM) measure is a systematic approach to reducing single occupancy vehicles and the number of cars on the roads, especially during peak hours. This will reduce traffic congestion, enhance air quality, and promote energy conservation. **From January 1998 to April 2002 the shuttle vehicles have transported over 3.5 million passengers, translating into a reduction of 4,451 Vehicle Miles Traveled removed per day and an avoidance of 3,836 tons of CO₂ emissions.**

Eastward Ho! Brownfields Partnership

As part of a Brownfield Coalition, Miami-Dade County was one recipient of the designation as a National Brownfields Showcase Community on March 17, 1998. In order to promote the benefits of the Eastward Ho! movement and to make Brownfields and urban revitalization a reality, a partnership was created that allows for the integration of resources and efforts to ensure its implementation and success. The Partnership brings together local, state, regional, and federal agencies with private sector, non-profit and community organizations to improve the quality of life for residents of Southeast Florida’s historic urban core. This is being done as an effort to lessen development pressure and urban sprawl in sensitive lands to the west, which are needed to restore the Everglades ecosystem and ensure future regional water supplies.

The South Florida Regional Planning Council (SFRPC) is the coordinator for the Partnership and has applied, received, and administers several grants. The Partnership has received funding from the Environmental Protection Agency (EPA) to perform site assessments (total \$600,000) on selected properties, as well as an EPA Brownfield Cleanup Revolving Loan Fund (total \$2 million) which is available in the form of a low

interest loan for remediation of contaminated properties. Applications are currently being received from local governments for both the assessment and remediation funds.

Miami-Dade County was chosen to participate in an EPA exercise to determine if preliminary field assessments (Phase I) performed mainly by local residents, with assistance from local, state, and federal agencies, would be beneficial for developers and community planners. These first two field assessments were performed along the Miami River Corridor (1998) and in the Model City area (2000). Over three days, designated sites were photographed and a survey was filled out regarding potential environmental concerns. The information was then organized into a report with other historical information (i.e. permits, cleanup issues from local, state, and federal databases, etc.) to be provided to the public as a one-stop overview for developers. The SFRPC maintains this information. The Partnership will continue to work on various projects, including demonstration projects featuring sustainable reuse of rehabilitated sites.

Clerk of the Courts

A Voice Response System was established in 1995 under the direction of Harvey Ruvin, Clerk of the Courts. The system is constructed to provide an avenue of information to Dade County citizens in regards to the court system, without having to leave their homes. Citizens can pay for traffic and parking tickets, make court dates (civil and criminal), or make inquiries on child support payments.

The system received approximately 10,813 calls per month in 2001 from individuals paying for traffic and parking tickets and setting court dates. This concept coincides with our CO₂ reduction strategy since it reduces Vehicles Miles Travel (VMT) and all of the pollution associated with it. **The annual reduction of CO₂ is estimated to be 708 tons, for individuals making payments over the phone. Since the inception of this system a total of 2,797 tons of CO₂ emissions have been avoided.**

Additionally, in 1998 the Clerk of Courts started using the SPIRIT (Simultaneous Paperless Image Retrieval Information Technology) imaging technology. SPIRIT is a collection of several programs, databases and computers that help the entire traffic court system of Miami-Dade County do their day-to-day work by converting paper-based documents into an electronic digitized format. SPIRIT currently handles up to 3,600 cases a day. At this time, the SPIRIT system is only used for traffic cases, but by 2003 will also be used for misdemeanor cases.

Since the inception of the program, the Clerk's Traffic Division has returned 15 full-time and 15 part-time positions to the budget office and transferred many vacant positions to be used in other areas of the Clerk's Office, for a total reduction of 40.25 full time (equivalent) positions, to date from the Traffic Division. The SPIRIT Program has resulted in more efficient caseload management overall, as well as other associated benefits such as: 1) The maximization of the utilization of calendar and existing courtroom space, 2) Efficient and timely setting of more than 15,000 cases per week within the "Speedy" trial rules, 3) A significant reduction in police officer overtime due

to the reduction in necessary court appearances, and 4) Increased officers' hours on the street through improved scheduling and other efficiencies. . Additionally, other non-quantifiable benefits include: improved quality of life, expanded access to court facilities, and more efficient public service counter activities.

Environmental Advisory Task Force Subcommittees

“Dade Green Coalition”

The EATF has recommended that the County take a proactive role to encourage the development of more environmental friendly buildings commonly referred to as “Green Buildings” and the Dade Green Coalition was established to address this need. The concept of green buildings begins with the reuse of buildings and building materials as well as the specification and product approval of building products made from recycled and energy efficient materials. Efficient building design and operation are essential to fulfill the concept of sustainable development.

The Miami-Dade Green Coalition met monthly throughout the year to advance the “Green Action Agenda” developed at the 1997 Sustainable Development and Green Building Conference. The Coalition sponsored participation of a number of agencies and non-profit organizations in the Greater Miami Home Show at the Miami Beach Convention Center. This was an effort to highlight the concepts of sustainable development and green materials to developers, suppliers, and the public. A short video was commissioned for the purpose of educating elected officials, development associations, and citizen groups concerning sustainable urban design and green buildings. It is now ready for use. Green building guidelines were developed for both residential and commercial/institutional buildings. These are simple lists of design features and materials that are critical to the energy efficiency and sustainability of buildings. The guidelines have been provided to the Housing Agency for inclusion in their specifications for low and moderate-income housing developments. Specifications for use as design criteria for County buildings were substantially completed. An ordinance requiring that County buildings be constructed using the commissioning process was drafted and is undergoing review. The Coalition heard several presentations regarding various sustainable development proposals and cited the need to revisit the Action Agenda to update the issues and establish priorities. More effective engagement of the development industry and design professionals is an important aspect of achieving the Coalition’s goals.

In addition, it is important to mention The Florida Green Building Coalition (FGBC), which is a nonprofit Corporation dedicated to providing a statewide Green Building Program with environmental and economic benefits. The FGBC published the Florida Green Building Standard for homes in July, 2001, which is intended to establish a voluntary, state-wide standard for Green Home Designation. This standard applies to Green Home Designations for all Florida homes. This year the FGBC is proposing changes to the Florida Green Home Designation Standard, Version 1.0. All changes are proposed to be incorporated in Version 2.0, with a release date of January 2003.

Community Action Agency

Community Action Agency (CAA) is a department of the Miami-Dade County government and is considered a community-based organization whose goal is to provide quality service that is efficient and customer driven. The agency implements programs such as Weatherization Assistance (WAP), Ultra-Low Flow Toilet and Showerheads, and Solar Water heating systems. These programs are geared towards making households energy efficient and allowing the homeowner to save valuable energy dollars in utility bills. In the last few years, 301 homes were weatherized and 307 solar systems were installed in Miami-Dade County. The agency has installed an additional 50 solar systems with funds originally earmarked for the Habitat for Humanity Jordan Commons project. As part of this initiative, CAA's Energy Programs have been previously awarded money from Florida's Department of Community Affairs (DCA), Miami-Dade Department of Water & Sewer, and more recently from the Department of Environmental Resources Management (through DCA) to continue the efforts in providing services to reduce poverty and help low-income individuals become self-sufficient. **The installation of the 50 solar water heating systems will represent a reduction of 72 tons of CO₂ emissions along with a reduction of 441 tons of CO₂ that is currently being achieved by the existing 307 solar units.**

Miami-Dade Parks & Recreation

The Department is responsible for the management of more than 500 park properties consisting of approximately 11,500 acres. The Department received the National Gold Medal for excellence in park and recreation administration on three separate occasions and is the largest metropolitan park and recreation department to receive accreditation from the Commission for Accreditation of Park and Recreation Agencies. In recent years the Department has installed solar lighting in two of its parks as a way of finding economical, renewable energy systems that will aid in conserving financial resources as well as our natural resources. **Currently there are 27 solar light fixtures representing an estimated emissions reduction of 8.6 tons of CO₂ per year.**

In addition to the existing lights, Florida's Department of Community Affairs agreed to give the Department 40 photovoltaic light fixtures that were originally to be installed at the Habitat for Humanity Jordan Commons Project. These lights were installed at Lago Mar Park, located in West Kendall. An additional 10 fixtures were purchased by Parks & Recreation to complete the walkway project at the park. **It is estimated that the 50 photovoltaic light fixtures at this park will avoid an additional 8 tons of CO₂ emissions per year.**

Hope VI

Miami-Dade Housing Authority (MDHA), residents, local businesses and other stakeholder institutions joined together to create the Miami-Dade County HOPE VI Revitalization Program (MDHRP), with a vision to create an affordable and economically diverse community to replace the Carver and Scott Homes. The Scott/Carver housing development was built in 1954 and was considered the largest public housing development in the State of Florida. Site and infrastructure defects have rendered the living conditions in both projects unacceptable.

The new community will offer affordable rent-to-own and public housing opportunities to low and very low-income families, while also creating a mixed income neighborhood. In addition to the MDHA goals of providing affordable housing, the EPA, DOE, and the Department of Environmental Resources Management (DERM), have collaborated to promote an environmentally sustainable, healthy, comfortable, and safe housing development through environmentally sound planning and construction practices. A design charrette took place in December 2001, which brought together a host of experts in various fields with the overall intention of creating and integrating a design program that minimizes the environmental footprint of this housing development. It is expected that the recommendations of the charrette participants will maximize energy and resource efficiency during the construction and operation of the housing units. A total of 382 housing units are projected for the development and includes a mixture of town homes and single-family dwellings ranging in size from one to four bedrooms. Provided that the recommendations for energy efficiency are implemented in the three bedroom single-family homes, a 20% reduction in energy consumption can be achieved. **This represents a total savings of 190,082 kWh/year or 144 tons of CO₂ emissions avoidance. This number was based on 371 homes as the original plans stated and may change, as the project is built.**

Alternative Fuels Advisory Committee

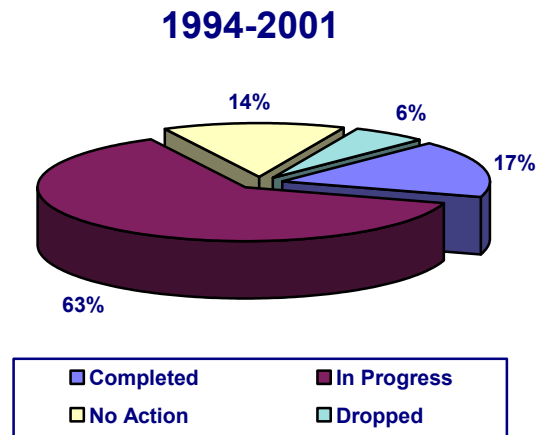
The County Manager appointed the Alternative Fuels Advisory Committee on January 18, 2002, pursuant to Board of County Commissioners (BCC) Resolution No. R-378-01. The Committee's mission, as stated in the Manger's appointment memo, is "to develop and implement a program to enhance the utilization of alternative fuels in Miami-Dade County." The Committee is comprised of representatives from different County agencies that deal with fleets or transportation issues.

The Committee prepared a report that includes a plan addressing both short-term and long-term recommendations and actions regarding alternative fuel use. The Committee recommended that Fleet Management procure 5 to 10 hybrids vehicles over the next year, including 2 hybrids that have already been delivered. The mix of vehicles should reflect a range of vehicles types (as manufacturers make them available) so that the performance of the County Fleet can be evaluated. **This project could achieve reductions of up to 20 tons of CO₂/year.** In addition, it was recommended that the Transit Agency carefully monitor the development of hybrid buses and, at the appropriate time; procure on a pilot project basis, a small number of diesel electric hybrid buses to test under normal use conditions. **One hybrid bus will reduce 67 tons of CO₂/year when compared with a**

regular diesel bus. Moreover, it was recommended that the aviation Department continue with the project that will replace the gasoline or diesel powered tugs used to haul luggage carts and other equipment with electric tugs, which will reduce up to **330 tons of CO₂ per year.**

STATUS OF THE PLAN'S RECOMMENDATIONS

ACTIVITY	1994-2001
Measures Completed	6
Measures in Progress	22
No Action	5
Dropped	2



The following list of recommendations has been organized according to departmental authority over the plan’s recommended actions. Next to the action is the corresponding sector, section and number of the action as it is listed in the December 1993, approved plan.

ENVIRONMENTAL RESOURCES MANAGEMENT◆

MEASURES IN PROGRESS

1) Integrate “Cool Communities” with community-wide tree planting program.
(Electrical, Section D, #1)

Dade County Urban Canopy Analysis Completed

Status: In 1996 American Forest completed a study of the value of Dade County's urban forest, commissioned by DERM, with funding from a grant for the Florida Division of Forestry. Dade's trees were found to save millions for County residents - \$5.3 million/year in reduced air conditioning costs and \$4.8 million in removing carbon dioxide from the air. The urban canopy, covering 10% of Dade's surface, is well below the national average of 25-33%. The canopy is estimated to reduce storm water run-off by 15%. The study also finds that savings could be increased two and half times - to \$14.4 million/year - if every homeowner would plant just one shade tree to shield the sun from their home. **(The annual reduction of CO₂ was estimated to be 42,948 tons/85,896,000 lbs, depending on the size, age, and rate of planting vs. removal of trees).**

Demonstration Projects

Status: The total number of trees planted as part of the Cool Communities/TREEmendous Miami demonstration projects in 1998-99 was 237. Tree planting events took place in West Little River (Christmas in April event), Hialeah (West 4th Lane), Little Haiti, City of Miami Beach, City of South Miami and Liberty Square. An additional 198 trees were planted in 1999-2000 in Leisure City,

Robert King High Park, Pine Tree Park and West Little River. **Assuming a 33% survival rate to 40 years, the 302 surviving trees will capture 3,588 lbs of CO₂ or 1.8 tons of CO₂.**

☑ **Florida Power & Light (FP&L) Research Completed**

Status: Findings on the energy conservation effectiveness of surface color lightening were announced by FP&L in February of 2001. The four-month study evaluated six different roofing materials on identical residences during realistic weather conditions. Study findings indicate energy savings are most strongly influenced by the solar reflectance of roof materials. The study proves dark gray roofs reflect only 8% of the heat associated with sunlight, while white shingle and terracotta tile roofs reflect 25 and 34 percent, respectively. White metal and cement tile roofs provide the best results, reflecting 66 to 77 percent of the sun's energy. This dramatic savings has lead FPL to state that choosing lighter colors for a new roof clearly indicates that energy consumption and cooling costs will be reduced in the home.

2) **Promote the Energy Conservation & Assistance Program**
(Electrical, Section E, #3)

☑ **Climate Wise**

Status: The Office of Sustainable Education & Environment was awarded funding from ICLEI from 1995 to 2001 to implement the Climate Wise Program, sponsored by the EPA, in Miami-Dade County. DERM successfully recruited 31 private companies to the Climate Wise program within that timeframe, working with several partners (Florida Power & Light, Florida International University's Civil & Environmental Engineering Department, and the Small Business Development Center located at Florida International University), to provide complimentary energy audits for those participating companies. In early 2001, EPA merged the Climate Wise Program with EPA's Energy Star Program for Businesses. As a result of this change grant funding was limited to the local governments already participating in Climate Wise. Miami-Dade County was fortunate to receive a small grant of \$5,000 to promote the Energy Star Program to local businesses by hosting a workshop at the University of Miami's School of Business in September 2001. **To date, actual CO₂ emission reductions from the Climate Wise partners are estimated to be close to 1,347,714 metric tons.**

☑ **FPL's Demand Side Management (DSM) Program**

Status: FPL's DSM program helps individual customers reduce their demand for electricity. FPL's approved DSM program include the following projects:

- Programs for the residential sector: conservation service, building envelope, duct system testing and repair, air conditioning, load management (on call), built smart.
- Programs for the Industrial and commercial sectors: business energy evaluation, heating, ventilating and air conditioning, efficient lighting, off-peak battery charging, business custom incentive, load control (closed to new participants), building envelope, general service load management (business on call).

Additionally FPL has research and development programs such as residential thermal energy storage project, cool communities research project, residential heat pump water heating research project, Commercial/Industrial (C/I) dehumidification research and development project, natural gas end-use technology research and development projects, C/I daylight dimming research project, C/I new construction research project, green pricing research project, C/I solar desiccant research project and real-time pricing. **During the year 2001 FPL's approved MW reduction goals for DSM were 1,206 cumulative Summer MW and 818 cumulative Winter MW.** In the last two decades, this partnership between FPL and Miami-Dade County customers has reduced demand for energy by 800 plus megawatts, helping avoid building more than two power plants.

MEASURES DROPPED

- 1) **Reduce annual electricity consumption by 5,359 kWh in 35,000 rebuilt homes in South Dade through promotion of energy efficient measures.**
(Electrical, Section B, #1)

- ☑ **Jordan Commons**

Status: The Board of Directors of Miami Habitat for Humanity decided not to pursue some of the energy efficient features of the project such as the solar water heaters and solar street lighting. The Florida Department of Community Affairs, which had provided the funding for both of these projects, approved the transfer of the lights for installation at a Miami-Dade Park location. The money for the solar water heaters was awarded to the Community Action Agency for the installation of 50 solar water-heating systems in low-income single-family homes. **Reductions for these measures are accounted for in the "Community Action Agency" and "Miami-Dade Parks & Recreation" Sections, respectively.**

SOLID WASTE MANAGEMENT

MEASURES IN PROGRESS

- 1) **Continue to implement and promote the following recycling programs:**
 - ☑ **Single Family residential**
 - ☑ **Multi-family residential**
 - ☑ **Commercial**
 - ☑ **Yard waste**
 - ☑ **Disposal facilities**
 - ☑ **Miami-Dade government facilities.**

Status: Miami-Dade County is currently recycling 25% of the municipal solid waste stream. During the year 2000 the Solid Waste Department and Miami-Dade Government Facilities recycled 164,764 tons of Mixed Solid Waste, The Municipalities and other Municipal Programs recycled 45,211 tons of Mixed Solid

Waste, and the private sector recycled 806,650 tons of Mixed Solid Waste for a total of 1,016,625 tons of Mixed Solid Waste recycled in the County. **Mixed Solid Waste includes newspaper, glass, aluminum cans, plastic bottles, steel cans, and others equivalent to a reduction of 670,961 tons of CO₂.**

Next Step and Date:

- Mail curbside recycling educational brochure to 300,000 households in unincorporated Miami-Dade and 15 participating municipalities.
- Continue multi-family/commercial recycling program including monitoring over 32,000 waste locations for recycling compliance, providing information and technical assistance and enforcement.
- Collect and mulch Christmas trees for distribution to residents of unincorporated Miami-Dade County.
- Continue separating metals from garbage delivered to the Resources Recovery Facility.
- Continue limited operation of the Recyclable Trash Improvement Program at the Resources Recovery Facility.
- Continue the processing of trash at the Resources Recovery Facility to include the extraction of soil for recycling.
- Continue to promote recycling in Miami-Dade government facilities.
- The Department of Environmental Resources Management, the Department of Solid Waste Management, and the Information Technology Department are working together to create an interactive Internet database-driven web site called "ReduceYourWaste.org." This website will aid businesses in determining how to reduce and recycle their solid wastes more efficiently. By visiting the website, a business can determine a profile of their solid wastes, learn what waste reduction options are available for those wastes, and determine which vendors are available for recycling specific types of waste. The website is was introduced at this year's "RecycleFlorida Today, Inc. Annual Conference and Exhibition," June 3 - 6, 2002, and should be available for public use by September 2002.

2) Recover and process methane gas to generate electricity for the South District Waste Water Treatment Facility.

(Solid Waste, Section A, #2)

Status: Department of Solid Waste Management (DSWM) entered into a contract with the EcoGas Corporation on December 31, 1996 to operate the methane recovery and clean-up units. The gas collection system was installed in 1998. EcoGas reimbursed the County \$500,000 for the County's portion of the installation. The Company unilaterally breached the contract and left the job in March 2002. The County has been seeking other developers and is flaring the Landfill Gas (LFG) until another developer can be retained. The County has also completed a study to assess the feasibility of recovering methane at the closed 58th Street Landfill. The study concluded that there is insufficient landfill gas to warrant initiating a recovery program at this time. **(Upon completion of the methane recovery process, it is estimated to have a potential reduction of up to 177,000 tons of CO₂ over the life of the landfill).**

Next Step: The County is seeking another company to operate the methane recovery unit.

3) Implement community-wide waste reduction programs.

Status: Continuing to educate and promote waste reduction measures. Activities in 2000 included:

- Information on waste reduction has been expanded in DSWM's Website
- Distributed waste reduction information at community events and via mail.
- Brochures promoting environmentally sound buying and home composting.

Next Step and Date: In 2002, continue the current level of education and promotion efforts. The "Innovative Recycling/Waste Reduction Grant" will help businesses determine how to reduce and recycle their solid wastes more efficiently through the use of the "ReduceYourWaste.org" web site.

DEPARTMENT OF PLANNING AND ZONING

MEASURES COMPLETED

(Note: Measure may have been completed, however additional tasks may still be on going)

1) Revise Dade County's landscape code to require strategic tree planting, street trees, and parking lot trees.

Completion Date: January 1998 and ongoing

Status: In January 1998, the Board of County Commissioners adopted changes to Chapter 18A, Landscape Ordinance, of the Code of Miami-Dade County. The revised ordinance included, among other things, provisions for a faster and more comprehensive landscape plan review, tree survey requirement, and additional street tree requirements, to define the hierarchy of roadways and provide shade and visual edge along roadways. The Landscape Manual that was prepared by the Department to accompany the 1995 Landscape Ordinance was also updated and expanded in 1998. The Manual provides illustrative examples of how to apply the new landscape criteria to enhance the appearance and comfort of commercial, industrial, and residential developments. The ordinance is currently being applied in both the incorporated and unincorporated areas of Miami-Dade County. The municipalities are responsible for implementing and enforcing the code. A total of 6,091 new single-family units were built in 2001 in Miami-Dade County. **Assuming compliance of these units with the landscape ordinance, it is assumed that 18,273 trees were planted during the same period of time, with a potential reduction of 228 tons of CO₂ once the trees reach maturity. In addition, if the trees were planted strategically as ordered by the ordinance, an additional reduction of 6,091 tons of CO₂ may be possible** (For a typical three bedroom single-family home

strategically planted shade trees can achieve a 30% reduction in air conditioning energy consumption).

Next Step and Date: The Department will continue the implementation and enforcement of the Landscape Code and if warranted, draft additional code changes.

MEASURES IN PROGRESS

- 1) Review and amend regulations to encourage the implementation of transit and pedestrian oriented development (TOD) principles in new development.**
(Land Use, Section A, #1)

Completion Date: October 2000 and ongoing

Status: Since adoption of amendments to the Comprehensive Development Master Plan (CDMP) in 1996, a considerable effort has been devoted to the review and amendment of existing land development regulations in order to further the principles of transit and pedestrian oriented (TOD) development. The following are some of the activities on-going or completed:

☑ Traditional Neighborhood Developments

Since the adoption of the Traditional Neighborhood Development (TND) Ordinance in 1991, only one application for the development of a TND (the “Salamanca” project) was filed by a private party. The application was denied by the local Zoning Appeals Board due to concerns over density and service deficiencies in that fringe location. Another application for TND Zoning on certain property in south Miami-Dade County (the Naranja Lakes property) was filed by the Director of the Department of Planning and Zoning (DP&Z) at the request of the Board of County Commissioners. Based on the lessons learned from the “Salamanca” project and the recommendations of a study prepared for Naranja Lakes, staff recognized the need to review the existing TND Ordinance in an effort to identify provisions that may be needed to improve the ordinance, and make it more appealing to developers while maintaining the integrity of this development concept. As a result of this review, an ordinance proposing amendments to the TND District was placed on the February 24, 2000 agenda of the Board of County Commissioners for the first reading. The proposed amendments include additional accessibility provisions for people with disabilities, the option of a green space as an alternative to the mandatory square, residential dwellings as permitted in the Workplace land use category, and a modification to allow two workplace areas in a TND of 100 acres or more where only one is currently allowed. A public hearing on the revised ordinance has been deferred pending resolution of some of the issues raised by the Builders Association of South Florida regarding some of the proposed amendments to the Ordinance.

☑ Revision of the County’s Zoning Code

On December 1, 1998, the Board of County Commissioners adopted resolution No. R-1360-98, endorsing the County’s Urban Design Manual. This directed County staff to be guided by the Manual and directed the County Manager to present to the

Commission amendments to the Code necessary to help implement the design principles. In September 1999, the Board of County Commissioners allocated \$1,000,000 to revise the Zoning Code (Chapter 33 of the Code of Miami-Dade County) to implement the policies of the CDMP including the Land Use Plan Map, and the guidelines in the Urban Design Manual. Review of existing development regulations, drafting of code changes and, if necessary, CDMP amendments would be accomplished during a two-year process.

The Zoning Code Re-Write Project started in February 2000, and aims to simplify, rationalize, and modernize the County's Zoning Code. "New Urbanism" concepts are being incorporated into many of the zoning district revisions, which will have the effect of deterring sprawl, encouraging a compact development pattern, reducing trip length, and facilitating multi-purpose trips. Many of these proposals would allow greater density (dwelling units per acre), higher intensity (floor area ratio), increased height and a mix of different uses as incentives to improve currently developed sites. Public hearings before the Board of County Commissioners to adopt a new Zoning Code are likely in late 2002.

☑ **Comprehensive Development Master Plan Amendments**

- *October 1999 Comprehensive Development Master Plan (CDMP) Amendment Application No. 6: Revisions to Adopted Population Estimates and Projections.*

Population projections are fundamental to the planning/analyses of land needs and urban services, both for the entire County and for sub-areas. The adopted population projection changes reflect new estimates of residential capacity made in 1998 and recently strengthened CDMP policy changes to encourage higher densities in rapid transit corridors and to discourage amendments to the Urban Development Boundary. The Board of County Commissioners adopted this CDMP amendment on October 19, 2000.

- *April 2000 CDMP Amendment Application No. 7*

The Board of County Commissioners adopted the Ordinance No. 01-75 on April 12, 2001. This Ordinance extends the radius of planned "Community Urban Centers" from the previously prescribed 1,300 feet from transit or Busway stops to 1,800 feet. The previous limitation is equivalent to the length of two standard County blocks. This amendment added a half-block length. This amendment also eliminates an inconsistency relating to parking structures between the CDMP and Zoning Code, and within the CDMP itself. The floor area ratio (FAR) standards for the other sections of the CDMP and the Zoning Code prescribe the amount of floor area that may be devoted to the permitted primary land uses, not including the area contained in the associated parking structure. This CDMP amendment also excludes the parking structure floor area from the FAR in urban centers.

Next Step: Continue with the review of existing land development regulations, drafting of code changes, and amendments to the Comprehensive Development Master Plan. Adoption of Code changes and CDMP amendments will require Commission action.

☑ **Downtown Kendall Urban Center District**

On December 16, 1999, the Board of County Commissioners adopted Ordinance No. 99-166 creating Article XXIII (I) of the Code of Miami-Dade County, the Downtown Kendall Urban Center District. The new zoning district implements Land Use Element Policies 1A, 7A, 7B, 9F and 10A of the County's Comprehensive Development Master Plan (CDMP), the concepts of the "Downtown Kendall Master Plan", and the principles of Transit Oriented Development (TOD). The adopted ordinance addresses such issues as mixed-uses, human scale, open space, and street patterns, among others. These issues are considered to be cornerstones of the County's efforts to improve its urban fabric and promote the use of various modes of transportation.

Currently, the Downtown Kendall Urban Center District is beginning to take shape through plans submitted by private developers and approved by DP&Z. Furthermore, the Department will encourage the refinement of the Ordinance and continue to encourage the implementation of the Downtown Kendall Urban Center District Plan.

2) Encourage infill development by requiring utilization of TOD principles within activity centers and along major corridors.

Completion Date: Ongoing.

Status: The County's Comprehensive Development Master Plan (CDMP) promotes an urban form comprised of three scales of "Urban Centers" (Regional, Metropolitan and Community) linked by effectively and rationally planned roadway and transit systems. In addition, the CDMP also promotes TOD principles and the balanced provision of convenience retail, personal services and various types of residences in appropriate locations such as urban centers and those described in its "Guidelines for Urban Form".

These issues have been and/or are also being addressed by the following ongoing or recently completed activities:

- The South Dade U.S. 1 Corridor Comprehensive Planning Design Strategy
- The Goulds Community Urban Center Plan and Ordinance.
- The Naranja Community Center and Ordinance.

In addition, these issues will also be addressed through four charrettes, which the department is currently planning. Three of these upcoming charrettes will be in south Miami-Dade and one will be in the north central area of Miami-Dade County.

☑ **South Dade U.S. Highway 1 Corridor Comprehensive Planning and Design**

Beginning in 1995, representatives of the South Dade community developed a vision and a set of goals to revitalize the area devastated by Hurricane Andrew. The vision is a livable community where people have more choices in transportation, housing,

jobs, shopping, neighborhood services, and recreational opportunities. Together, the Florida Atlantic University/Florida International University Joint Center for Environmental and Urban Problems, the DP & Z, and a Work Group established by the Joint Center determined which areas along the U.S. 1 and planned busway extension would be the areas designated as “community urban centers” (CUCs). These are areas where more compact and efficient urban structures will evolve. Four community urban centers were designated in the County’s CDMP: Gould’s at SW 216 Street; Princeton at SW 248 Street; Naranja at SW 264 Street; and Naranja Lakes at SW 280 Street.

The purpose of the South Dade U.S. 1 Corridor Project is to coordinate nearby land uses and development patterns with the transportation opportunity provided by the busway investment. The DP&Z, with the affected communities, will formulate specific area plans and ordinances to produce mixed-use, transit-oriented developments at the four CDMP-designated community urban centers. The development of detailed community plans and the drafting of the implementation ordinance is currently under way. A model ordinance and draft plans for one pilot area were prepared by the Joint Center. The work is now being completed by the DP&Z as described below:

- *Goulds Community Urban Center at SW 216th Street*

The Goulds community has been involved in the South Dade Project since the beginning, and in March 1999 the community held a charrette to develop a vision and plan for their community. In November 2000, the DP&Z took over the project and is currently working with the Goulds Community Development Corporation (CDC), in consultation with a steering committee established by the CDC, to refine the community’s vision and plan and finalize the implementing ordinance. The plan is complete and completion of the ordinance is anticipated in the spring of 2002 with adoption of both in the summer of 2002.

- *Naranja Community Urban Center at SW 264th Street*

The DP&Z is in the process of contracting with Chamber SOUTH to begin working with property owners, local government agencies, and the neighboring community to build consensus on the future of the Naranja community. It is anticipated that final action on the plan and implementing ordinance by the Board of County Commissioners will occur in 2002.

- *Other South Miami-Dade Community Urban Centers*

The DP&Z has solicited funding to prepare area plans and implementing regulations for the two remaining CUCs planned along the U.S. 1 and planned exclusive Busway extension. These two processes will be accomplished during the next two fiscal years. To facilitate this process, a section of the Planning Department has been dedicated to conducting Charrettes and preparing area plans.

Next Step: Continue to conduct charrettes, develop area plans and work to implement those plans through necessary comprehensive plan and regulatory amendments, and capitol improvement projects.

☑ **A Planning Study for the Ojus Community**

This planning study of the Ojus area in northeastern Miami-Dade grew out of Resolution No. CC2-03-98 adopted by the Northeast Community Council (2) in the summer of 1998. In July 1998, the Board of County Commissioners adopted Resolution No. R-914-98 petitioning the County Manager to commence a study of the area. Since January 1999, the DP&Z has been working with members of the Ojus community to prepare a vision and master plan for the area. This process culminated in a charrette held on October 29, 2000, and a preliminary plan prepared on November 5, 2000. The charrette proposes new mixed uses, pedestrian facilities, and aesthetic improvements to encourage a more livable and walkable environment in the Ojus community of the future, while preserving the natural qualities of the Oleta River and enhancing the tree canopy.

The Ojus Master Plan, the result of the charrette, has been adopted by Community Council. The recommendations of the charrette and the master plan will be presented for approval to the Board of County Commissioners in 2002. Subsequent to the Board's action, the Department may prepare amendments to the County's CDMP, zoning regulations, or capital improvement programs as required to implement the plan.

- 3) **Continue to promote the evolution of sub-centered urban form, comprised of major, intermediate, and local activity centers; activity corridors; enterprise/employment centers and transit network. In appropriate locations in intervening areas, promote applicable TOD principles and the balanced provision of convenience retail, personal services, and various types of residences.**

Completion date: Ongoing

Status: The DP&Z continues to work on the preparation of several new ordinances addressing commercial, residential, and urban center zoning districts, which embody TOD urban design principles.

☑ **Metrorail Station Area Planning**

The Department is assisting Miami-Dade Transit Agency and local municipalities to promote sound TOD principles in numerous joint development proposals for Metrorail areas, and reviewing development guidelines to promote transit supportive land use and design in the station areas. This is accomplished through the inclusion of CDMP TOD guidelines in the published requests for proposals (RFPs) and through participation on the County's Development Impact Committee to ensure that proposed site plans conform with the CDMP TOD guidelines.

Next Step: Continue to partner with Miami-Dade Transit in the review of RFPs and the creation of standards for joint development.

☑ **2003 Evaluation and Appraisal Report (EAR)**

The CDPM has objective and policies that provide guidelines for land use that promote the concepts of traditional neighborhood design, promote mixed use activities and direct new development and housing to activity centers and corridors strategically located along mass transit corridors. The Land Use element of the CDMP provides guidelines towards compact growth management by adopting appropriate policies and through defining and Urban Development Boundary.

Pursuant to Section 163.3191, Florida Statutes, the DP&Z is in the process of preparing an Evaluation and Appraisal Report (EAR) and updating the CDMP. The EAR will contain an assessment and evaluation of successes and failures in accomplishing the stated objectives of the CDMP, and will recommend updated objectives, policies, and implementation strategies. The first four of the five CO₂ plan recommendations for which the Planning Department is responsible will be addressed during preparation of the EAR and update of the CDMP culminating in 2003.

☑ **The Residential Density Feasibility Study**

The Residential Density Feasibility Study was prepared pursuant to Resolution No. R-1063-00, which directed the DP&Z to: “study the feasibility of establishing high density development zones throughout the County including consideration of incentives, where appropriate, which will make the cost of development within these high density development areas comparable to the cost of developing the outlying areas of the UDB”.

The study reviewed the central factors affecting the ability of property throughout the County to be developed at a range of densities. These factors were evaluated, findings and conclusions were drawn, and recommendations were issued which suggest how the County could facilitate an increase of densities at appropriate locations throughout the County.

Next Step: Implement the recommendations of the study.

☑ **Public Education and Outreach Activities**

The Department of Planning and Zoning, during preparation of the EAR and update of the CDMP, has budgeted for two planners to help educate the public about interrelated issues related to growth and growth management and to elicit input from the citizens of Miami-Dade County with regard to the CDMP. The participatory program developed to achieve this consists of both education about planning and the tradeoffs between various development decisions, their effect our daily lives and gathering citizens ideas of what they would like to see in the Miami-Dade of the future. Workshops, surveys, scenarios, direct mailings, press releases, contests, and community meetings will all be utilized to help reach the citizens of Miami-Dade County.

- 4) **Encourage provision of civic buildings within urban neighborhoods through site planning and capital improvements programming.**

Completion Date: Ongoing

Status: Please see Zoning Code RE-Write Project. Some of the changes to the Zoning Code will include modification of the design criteria for town centers and will include provision for location of civic buildings.

Next Step and Date: All these activities will be complemented when the existing land development regulations are revised to implement the principles and concepts contained in the County's Urban Design Manual.

☑ Education Element Update in Coordination with the Dade County School Board

The Department of Planning and Zoning will work with the Dade County School Board (DCSB) to coordinate the location of future public schools into areas that will become community focal points. As part of the CDPM review and update process, the EAR report addressing the Education Element will be prepared by October 2002. Officials from DP&Z will meet and coordinate with officials from DCSB on the element update. Commission approval is required on policy changes.

Completion Date: Late 2003.

Next Step: Work with the DCSB on the implementation of policies in the Education Element of the CDMP.

TRANSIT AGENCY

MEASURES COMPLETED

(Note: Measure may have been completed, however additional task may still be on-going)

1) Extend Transit

(Transportation, Section A, #2)

☑ Cutler Ridge Mall Busway Project

Status: On February 3, 1997, the new Cutler Ridge Mall Busway was opened for Metro Dade citizens. The two-lane busway runs for 8.3 mi. along U.S. 1 (South Dixie Highway) to the west, between Cutler Ridge and the Dadeland South Metrorail station. The project was established to entice commuters out of their vehicles onto the Miami-Dade Transit System (Buses and Train). This would aid in reducing traffic congestion on South Dixie Highway. Other features of the project include a bike path along the west side of the busway road and bike racks on the front of the bus.

After nearly three years of operation and unprecedented ridership (12,500 daily) gains, the Department launched plans in spring of 1999 to expand the exclusive bus-only lanes south to Homestead and Florida City. Florida DOT transferred all project responsibility for Busway II to Miami-Dade Transit, including engineering and construction.

Busway II will span 11.5 miles and add 22 stations to the exclusive lanes. The extension will include 12 bus bays and bus shelters and five Park & Ride lots. The completed busway will play an integral part in increasing access to jobs, services, and housing for South Miami Dade residents, and in transporting former welfare recipients to work sites throughout the county and into upper Monroe County (the Florida Keys). Design being finalized for segments I-S and I-N. Design for segment II in progress. The project was advertised for bids in April 2002. Total investment for this project is an estimated \$85.5 million. **Estimated CO₂ emission reductions are 897 tons per year for the current Busway ridership.**

Next Step: Secure Funding

Completion Date: October 2004

MEASURES IN PROGRESS

1) Extend Transit

(Transportation, Section A, #2)

☑ North Corridor extension

Status: This elevated guideway rail system extends 9.5 miles northward from the existing Metrorail line, with seven passenger stations. The corridor runs along NW 27th Avenue to the Broward County line. This project is expected to relieve congestion along the corridor. Preliminary Engineering and Design and the advanced right-of-way acquisition efforts have partially begun. This station is projected to generate approximately 11,250 new transit riders. Preparation of a Final Environmental Impact Statement (FEIS) is in progress and should be completed by March 2003.

Next Step: Project construction pending funding availability.

Action Date: January 2006

☑ Metrorail extension to the Palmetto Expressway

Status: This 1.4 mile extension is the first to the County's heavy rail system since its inception in 1984. The passenger station, the 22nd on the system, will be located on the west side of the heavily congested Palmetto Expressway. It will occupy an existing railroad right-of-way and will include an at-grade parking facility with approximately 700 spaces. This project will benefit commuters from fast-growing southwest Broward County and northwest Miami-Dade County and reduce traffic congestion on the Palmetto Expressway. This station is expected to generate 2000 new transit riders. Station construction is more than 85% completed. Construction of the 1.4-mile transit way is approximately 55% completed. Track and systems installations are progressing.

Action Date: Late 2002

☑ **East-West Multimodal Corridor**

Status: The East-West project is a multimodal solution for severe traffic congestion along State Road 836. Through an integrated system of highway improvements, HOV lanes, a new rail transit line, bus system enhancements, and pedestrian and bicycle facilities, the East-West project will provide a dramatic increase in capacity and mobility options in the corridor. New riders are projected to be 13,300.

Next Step: MDTA is now in the process of completing the transitional consulting Project Management Program (PMP) and acquiring right-of-way under a Letter of No Prejudice (LONP). MDTA is prepared to proceed into final design and advance right-of-way acquisition. The project is on hold pending dedicated funding source.

Action Date: 2009

☑ **Kendall Corridor**

Status: The Kendall Corridor consists of approximately 15 miles of extremely congested roadways. During 1998, MDTA conducted a Major Investment Study (MIS) in this corridor. The MIS covers the Kendall Corridor from SW 147th Avenue east to the Dadeland Metrorail station area and north to the vicinity of the proposed Miami International Center (MIC), which is immediately adjacent to Miami International Airport. The MIS was completed and contains a description of the preferred alternative, including alignment, mode, and the operating plan. Once a locally preferred alternative is selected, the project will be ready and eligible to proceed into the Draft Environmental Impact Statement (DEIS) phase and, subsequently, Preliminary Engineering (RE).

Next Step: Next phase of project (Final Design) pending availability of funds.

☑ **Northeast Corridor**

Status: A Major Investment Study (MIS) for the Northeast Corridor is planned to cover major transit capital improvements along the 13.6-mile corridor that parallels the Florida East Coast Rail Corridor and Biscayne Boulevard from Downtown Miami to the Broward County line. The consultant selection process was started. The Selection Committee has been provided to the Department of Procurement Management for approval.

Next Step: Secure funding

Action Date: Pending funding

☑ **Miami Intermodal Center (MIC)**

Status: The heavy volume of traffic in the Miami International Airport has led to congestion that exceeds acceptable levels. Though Miami-Dade is served by several local, regional, and inter-transportation modes, no central intermodal transfer facility

exists to provide easy connections between them. In addition, only Metrobus provides direct access to the Miami International Airport.

The MIC, therefore, is proposed to serve as a regional hub for public transportation modes. It will serve other transportation modes as well, providing access to taxi, private autos, pedestrians, and bicyclists. As a significant component of the region's transportation network, strategically located near, and integrated with the Miami International Airport, it will solve the mobility problems in the congested and growing South Florida area.

Next Step: Completion date of the first phase of the MIC is scheduled for 2006.

☑ **Earlington Heights-Airport Connector**

Status: An environmental study (Draft Environmental Impact Statement - DEIS/Final Environmental Impact Statement - FEIS) is under way to examine alternatives to connect Metrorail in the vicinity of Earlington Heights to the future Miami Intermodal Center. Funding has yet to be identified to advance this project.

Next Step: The DEIS will be completed late April 2002.

GENERAL SERVICES ADMINISTRATION (GSA)



MEASURES COMPLETED

(Note: Measure may have been completed, however additional task may still be on-going)

1) Institute waste reduction purchasing practices in Metro-Dade.

Completion Date: February 18, 1992 through the Waste Reduction Resolution R-214-92 and ongoing

Status: The Recycling Management Committee was established in 1992 through resolution 214-92. It is made up of 20 County employees that represent major County departments. This committee is charged with the responsibility of overseeing all internal County recycling programs and the procurement of products containing recycled and recyclable materials. Other areas of responsibility charged to this Committee include educating County employees in waste reduction, implementing new recycling programs and sponsoring and marketing environmental events and projects. Specific accomplishments since inception include the following:

- Recycling collection services continue to be provided at no charge to many departments.
- The Rechargeable Battery Pilot Project was completed with the findings that rechargeable batteries do not last as long as conventional batteries. However, the double A battery showed better results than the triple A's.
- The possibility of "recycled note pads" for the employees was investigated and found not to be cost effective.

- Co-sponsorship of the Mercury Thermometer Exchange implemented by DERM as part of their National Pollution Prevention Week activities in September 2000. The goal of the thermometer exchange is to reduce the amount of mercury contaminating our environment from household use by exchanging traditional mercury thermometers for newer, less toxic alternatives, such as digital and gallinstan thermometers.
- Manned displays 1999 promoting recycling and waste reduction on America Recycles Day and during National P2 week.
- The Committee researched commercial building materials that were produced using recycled products with the goal of adding them to the Green Building Guidelines.
- Mugs and pencils were acquired to use as educational incentives to encourage employees to recycle.
- An intranet web site for County employees that introduces the goals and purposes of the Recycling Management Committee, offers information on recycling and waste reduction, and provides an e-mail address for employees with inquires specifically related to recycling and waste reduction issues.
- A new multi-year educational campaign design to heighten awareness of the importance of office paper recycling among County employees. The campaign includes two high-end, custom designed posters, the first of which was distributed during Earth Week in April of 2001. The second poster will be distributed in Fall of 2002.
- A policy statement encouraging the development of a countywide procedure to insure reduction of scrap computers by establishing optimal reuse, recycling and disposal practices of computers and electronics.
- Execution of a new bid proposal for office paper recycling. The proposal was issued in June of 2001, and the Committee is working with the Department of Procurement Management to complete the process of award.
- Reestablishment of recycling at the Miami International Airport.
- Sponsorship of two representatives form the Recycling Management Committee to the September 2000 National Recycling Coalition Conference in Charlotte, North Carolina.
- Support of guidelines developed by DERM for use of non-toxic cleaning chemicals to be included in most the recent Department of Procurement Management Bid for Janitorial Services.

The following materials are being recycled as part of the County's recycling programs: aluminum and steel cans, plastic bottles, wood pallets, corrugated boxes, office paper, toner cartridges, transparencies, office equipment, scrap metal, video tapes, anti-freeze, used oil filters, refrigerant gas, fluorescent bulbs, tire retreading, petroleum based products, furniture reupholstery and refurbishing.

Next Step: The Recycling Management Committee will be addressing the following issues during upcoming years:

- The Recycling Management Committee, operating for several years under Department of GSA/Procurement, is seeking to re-establish itself under the

Environmental Advisory Task Force in much the same way, as the Miami-Dade Green Coalition exists. The Committee is interested in expanding its current set of goals, objectives, and activities to include broader aspects of environmental education and protection pertinent to Miami-Dade County employees. Specific objectives for a newly formed Committee are currently under discussion.

Date of Action: Complete by January 2003.

MEASURES IN PROGRESS

1) Utilize more fuel-efficient cars in the Metro-Dade fleet.

Completion Date: Ongoing

Requires Commission Action: Commission approval needed for vehicle purchases.

Status: GSA will purchase 68 additional and 983 replacement vehicles in 2002 which includes the following vehicle types: 185 mid-size sedans; 17 full size sedans; 311 police patrol; 85 minivans and compact pickups; and 253 other vans and pickups. Miami-Dade County fleet has 168 Ford Taurus flexible fuel vehicles that are capable of using alcohol/gasoline fuel. All 2002 model year vehicles being purchased have a higher fuel economy rating than earlier model year vehicles. In fact, five more miles per gallon have been gained in the last five years on a typical police patrol unit. In addition, GSA Fleet Management is planning to purchase three Toyota Prius Hybrid Electric Vehicles as a pilot project to evaluate the performance and practicality of this type of vehicle for County use. The 2002 Toyota Prius runs on both gas and electricity systematically to provide fuel economy rates of 52/45-mpg city/highway. **The use of the three hybrid vehicles will eliminate 14,988 lbs of CO₂ emissions per year equivalent to 6 tons of CO₂ emissions per year.**

Next Action and Date: Approved by the Board of County Commissioners on early 2002. Vehicles have been purchased and are to be delivered by mid 2002.

2) Develop a team of local public/private representatives to identify and promote the most practical and cost-effective alternative fueled vehicles.

Completion Date: Ongoing

Requires Commission Action: Commission approval required for vehicle purchases.

Status: GSA Fleet Management is partnering with local public/private representatives through membership in the Gold Coast Clean Cities Coalition to research the practicality of using alternate fuel vehicles. The use of Compressed Natural Gas (CNG) at the Miami International Airport fuel site has decreased from 500 gallons dispensed in fiscal year 1999-2000 to only 30 gallons of CNG dispensed in fiscal year 2000-2001. This is mainly due to the unfavorable response to fueling

with CNG. The alternate fuels vehicles previously in the fleet have since been retired due to age and users have declined to replace them with alternative fuel vehicles preferring regular gas powered equipment as the most practical approach. GSA Fleet Management is continuing to research other fuel-efficient vehicles for County use. To this end, it will begin a Hybrid Electric Vehicle Pilot Project with the purchase of three hybrid electric 2002 Toyota Prius vehicles to evaluate their feasibility for County Operations.

3) Initiate the "Green Lights" programs and integrate with other County building retrofits for a 20% increase in energy efficiency.

Status: Through a Request for Proposals (RFQ-25), the County contracted four companies to provide energy performance services for all County buildings. The companies, through audits, will identify energy and water saving opportunities, report on them to the County, and if acceptable, perform any necessary design and construction services. In order for the conservation measures to be acceptable, all expenses associated with this program must pay for themselves through utility savings and/or maintenance expenditure avoidance within a maximum of twenty years of the implementation of the measures. The program also offers the advantage of reducing equipment maintenance expenses and an opportunity to avoid some capital expenditures. By reducing its energy and water consumption Miami-Dade County not only lowers its operating costs, but also contributes to the preservation of the environment. A total of nine work Orders have been issued to retrofit twenty-one County buildings, an equivalent of 20% of the County's facilities square footage, with energy efficient equipment. As of June 2002, a total of \$2,888,000 worth of Capital Improvement Projects had been completed under RFQ 25. **As of June 2002 these projects are saving 9,600,000 kWh a year and avoiding 7,200 tons of CO₂ emissions per year.**

Next Step: Continue to work with Energy Conservation Contractors on this project and issue additional work orders in order to meet the 2004 project completion goal.

4) Investigate cost effective energy efficient HVAC systems for Metro-Dade facilities.

Status: This is also being addressed as part of the RFQ-25 project.

5) Determine feasibility of purchasing a combined cycle cogeneration plant and wheel the current excess capacity to County owned facilities and promote use of cogeneration for other appropriate commercial applications.

Status: County opportunities and actions related to the re-activation of the Downtown plant, as well as to the broader issues of wheeling excess power, are primarily contingent upon the outcome of pending issues associated with the existing settlement agreement for the Central Cogeneration Plant.

Next Step: Key decision points affecting the settlement agreement will be occurring over the next six months to one year.

Completion Date: December 2006.

MEASURES DROPPED

- 1) **Adequately staff a utility management section within Miami-Dade's Division of Facilities and Utilities Management in order to investigate various rate structures that encourage and reward utilities and departments for energy conservation.**
- 2) **Determine the viability of using County cars for a prototype in conjunction with the Department of Energy, the Electric Power Research Institute, and the local power company.**

Status: The use of County vehicles for an electric vehicle prototype study was researched and rejected because of short mileage range of a charged battery and the length of the recharging process. Electric hybrid vehicles might be more effective for County operations and are being studied. See measure 1 and 2.

PUBLIC WORKS

MEASURES IN PROGRESS

- 1) **Convert traffic signals to LED technologies.**

Status: The Public Works Department is replacing red and green traffic signals with lamps, which use Light Emitting Diodes (LED) technology that consumes less energy than regular incandescent bulbs. As of June 2002 the Public Works Department has retrofitted about 25 signal head sections and is observing a 90% cost reduction due to electricity consumption decrease. **Retrofitted lights as of June 2002 will save a total of 26,608 kWh/year and avoid 20 tons of CO₂ emissions per year. The entire project has the potential to save approximately 21,286,800 kWh/year equivalent to 16,124 tons of CO₂ emissions per year.**

Next Step: Prepare and publish an RFP for consultants who will manage the program to switch all the remaining signals to LEDs.

Completion Date: End of 2003.

- 2) **Integrate "Cool Communities" with Community-wide tree planting program.** (Electrical, Section D, #1)

Status: No report on this measure provided.

METROPOLITAN PLANNING ORGANIZATION



MEASURES COMPLETED

1) Implement Bikes-on-Tri-Rail.

Completion Date: October 1996

Status: Tri-Rail's Bikes-on-Trains Program has been expanded to allow bicyclists with a valid permit to board any train at any time. Up to four bicycles are allowed on Tri-Rail trains with a valid Tri-Rail bicycle permit.

Next Step: The MDTA Marketing Department is exploring the feasibility of a unified Tri-Rail/MDTA bike and ride permit.

MEASURES IN PROGRESS

1) Construct all road improvements listed in the Long Range Transportation Plan (LRTP) 2010 that are consistent with the other transportation and land use measures in this plan.

Completion date: Ongoing

Requires Commission Action: Annual approval of Transportation Improvement Program and Miami-Dade Public Works Department budget are needed in order to advance the projects listed in the Long Range Transportation Plan.

Status: The current 2002 TIP and Public Works Department budget were approved during 2001.

On December 7, 1995, the update to the LRTP (to the year 2015) was adopted by the Governing Board of the MPO. The Plan was amended in March of 1997 to exclude the widening of SR-112 due to community opposition. It was amended once again in December 1997 to include the following projects to the Homestead Extension of Florida's Turnpike (HEFT): (a) adding ramps to and from the south on the HEFT at Campbell Drive (SW 312 Street) thereby creating a full interchange, and (b) adding ramps to and from east and west on the HEFT at its junction with Interstate 75 to create a full interchange. Within the Year 2015 Plan, the twenty-year transportation "Needs" proposals identified nearly one hundred major capacity improvements with a price tag of approximately \$6.1 billion (1995 dollars).

The Year 2020 Transportation Plan was originally intended to be a minor update to the Year 2015 Plan. However, as the development of the Plan progressed, it became apparent that two alternative Plan proposals would be needed. These proposals outlined (1) a Needs Plan, which assumed that a local dedicated funding source for transportation would be in place by 2005, and (2) a Minimum Revenue Plan, which

assumed a conservative outlook on transportation funding over the 20-year Plan period. The Governing Board of the MPO adopted the Needs Plan on December 15, 1998, with the provision that the local dedicated funding source would be pursued and that the Minimum Revenue Plan would become the Cost Feasible Plan if the local funding source did not come to fruition. The adopted Needs Plan contained basically the same list of transportation improvement proposals as the 2015 Plan. In addition, the program of the new Miami-Dade Expressway Authority was included in the Plan. The highway projects included in the Needs Plan totaled \$4.6 billion while the transit capital projects would cost \$5.4 billion (1998 dollars).

The County did in fact pursue the local dedicated funding source to finance the Needs Plan. A countywide vote was held to decide whether an additional penny, dedicated to transportation, should be added to the existing 6-cent sales tax. The referendum failed, and the MPO Board was forced to “un-adopt” the Needs Plan and adopt the Minimum Revenue Plan as the County’s officially recognized Cost-Feasible Transportation Plan. Some amendments to the Plan were approved on December 9, 1999 and other amendments were subsequently approved on in May 2000 and October 2000.

The current LRTP to the year 2025 was adopted December 6, 2001. One of the major emphases of the year 2025 Plan has been on increasing the efficiency of the current infrastructure, particularly in light of the recent local experience in pursuing a dedicated funding source. This emphasis includes more in-depth consideration of intermodal improvement opportunities, Intelligent Transportation System technologies, and Transportation Demand Management and Congestion Management techniques than in previous plans. An alternative “Minimum Revenue Plan” was developed, based on a more conservative outlook for funding sources for transportation projects. The Minimum Revenue Plan contains new low-technology transit corridor projects, and postpones important highway improvements.

During the period from 1995 through 2001, several highways and arterial roadways were improved. Examples include:

- The HEFT was widened to 8 lanes and interchanges were placed at NW 41 Street, SW 120 Street, and NW 106 Street
- Interstate 95 underwent significant reconstruction. Improvements were completed between NE 54 Street and NW 186 Street, including a High Occupancy Vehicle (HOV) flyover at Golden Glades interchange. Between late 1996 and 1997, construction was completed to widen the Interstate from 8 to 10 lanes from NW 58 Street to Golden Glades Interchange.
- Biscayne Boulevard underwent significant reconstruction. Six-laning from NW 123 Street to NE 135 Street was completed during 1995 and the six-laning from NE 135 Street north to NE 163 Street was completed in 1996.
- NW 107 Avenue from West Flagler Street to Fountainbleu Boulevard was completed in November 2001.
- Biscayne Boulevard underwent additional significant reconstruction. The section from NE 199 Street to NE 209 Street was eight-laned during 2000. Noteworthy

- of this project was the completion of the flyover (from Biscayne Boulevard to Ives Dairy Road/NE 199 Street).
- NW 96 Street from Indian Creek Bridge at Collins Avenue was completed in October 2001.
 - Palmetto Expressway from NW 47 Street to NW 62 Street was completed in December 2001.
 - In addition, the following projects are further examples of the work completed during this same period:
 - New Busway facility from Datan Boulevard to SW 112 Avenue (1997)
 - SW 26 Street: 4 lanes from SW 137 Avenue to SW 147 Avenue (1996)
 - Miami Lakes Drive: 4 lanes from SR-826 to NW 57 Avenue (1997)
 - SW 127 Avenue: 4 lanes from SW 88 Street to SW 42 Street (1997)
 - SW 117 Avenue: 4 lanes from SW 152 Street to SW 104 Street (1997)
 - NW 62 Avenue: 4 lanes from NW 91 Street to NW 105 Street (1997)
 - NW 27 Avenue: widened to 6 lanes from NW 42 Street to NW 11 Street (1998)
 - SW 152 Street: widened to 6 lanes from HEFT to SW 137 Avenue (1996,1997)
 - NW 57 Avenue: widened to 6 lanes from NW 138 Street to NW 183 Street (1998)
 - NW 135 Street: widened to 6 lanes from NW 27 Avenue to I-95 (1997)
 - NW 79 Avenue: widened to 4 lanes from NW 25 Street to NW 58 Street (1995)
 - NW 87 Avenue: widened to 4 lanes from NW 122 Street to NW 138 Street (1995)
 - SW 117 Avenue: widened to 4 lanes form SW 56 Street to SW 72 Street (1995)
 - NW 151 Street: widened to 4 lanes from US-1 to Main Road (1995)
 - NW 2 Avenue: widened to 4 lanes from NW 159 Street to NW 167 Street (1998)
 - NE 18/19 Avenue: widened to 4 lanes from NE 163 St. to Miami Gardens Dr. (1998)
 - West 60 Street: widened to 4 lanes from SR-826 to W 12 Street (1999)
 - SW 137 Avenue: widened to 4 lanes from HEFT to SW 336 Street (1999)
 - SW 184 Street: widened to 5 lanes from US-1 to Franjo Road (1999)
 - NW 47 Avenue: widened to 5 lanes from SR-826 to NW 183 Street (1999)
 - NW 74 Street: widened to 4 lanes from NW 84 Avenue to SR-826
 - NW 79 Street: widened to 5 lanes from NW 74 Street to Okeechobee Road (1999)
 - NW 12 Street: widened to 4 lanes from NW 97 Avenue to NW 86 Avenue (1999)
 - NW 41 Street: widened to 6 lanes from HEFT to NW 107 Avenue (1999)
 - NW 62 Street: widened to 6 lanes from Okeechobee Road to NW 47 Avenue (2000)

2) Increase traffic demand management programs.

Status:

- The Miami Beach Transportation Management Association (MB TMA) continues the operation of the “ELECTROWAVE”. Ridership has passed over 3.5 million passengers, and a fare of 25 cents has been established. Extension of the service to North Miami Beach is under consideration.
- The Civic Center Transportation Management organization (CCTMO) continues promoting transit by selling monthly passes (Tri-Rail and Metrorail) at a special rate to CCTMO member’s employees.

- The South Florida Vanpool Program (SFVP) started January 1998. Effective March 1, 2002, the program has a total of forty-one vanpools groups active within the South Florida Region. During 2001, the program has eliminated over 149,650 person-trips as well as over 4.9 M passenger-miles from our roadways. Additionally, a monthly average of 257 parking spaces have been saved. The current SFVP service contract will expire on May 14, 2002. A new Request for Proposal (RFP) process was initiated. The new contract will be for three years and needs approval by the MPO Board.
- The South Florida Commuter Services (SFCS) is a program under the Florida Department of Transportation (FDOT) for Districts four and six. An RFP was issued last year and a new firm was selected to provide the requested services. Parsons Brinckerhoff was awarded a three-year contract. During 2001, 316 “Vehicle Miles Traveled” (VMT) were reduced per person as a result of people carpooling. During the same period 6,875 people who work in Miami-Dade applied for the program. **If all applicants carpool, a total of 1,086 tons of CO₂ may be eliminated.**
- The Emergency Ride Home Program (EHRP), which provides free taxi service in emergency situations for registered commuters under the SFCS, continues in operation in Miami-Dade County.

3) Adopt policy incorporating bicycle facilities in the County's plan for new road construction or reconstruction projects.

Completion Date: July 1995

Status: The MPO Governing Board adopted the Bicycle Facilities Plan in July 1995. The Miami-Dade County Comprehensive Plan Traffic Circulation Element Policy 7C, requires the consideration of incorporating bicycle needs into the County plans for any new road construction, widening or reconstruction project, where designated by the Bicycle Plan. The Miami-Dade Public Works Department and FDOT consult with the MPO’s Bicycle/Pedestrian Coordinator’s office for information on the bicycle facilities plan as part of the development process.

In a bold new step to support non-motorized modes of transportation during the development of the Year 2015 Plan, the MPO had expressed a commitment to fund bicycle/pedestrian/greenway projects in the Long Range Transportation Plan. This commitment has been maintained in the subsequent updates to the Transportation Plan. The Year 2025 Transportation Plan carries this policy recommendation in the form of budgeted line items in each of the four priority categories throughout the Plan period (the set-aside totaling over \$60 million).

The 1.5% funding set-aside for Bicycle/Pedestrian/Greenway Projects is a policy recommendation from the Long Range Transportation Plan Steering Committee. It represents a commitment from this urbanized area toward non-motorized uses, such as bicycle, pedestrian and greenway projects. The set-aside is intended for stand-alone projects of this nature. Sidewalks and bikelanes should be incorporated into typical sections during preliminary engineering work phases of roadway projects. Sidewalks not a part of a typical section or roadway project can continue to be funded

through secondary programs such as the Road Impact Fee. The set-aside could be used to fund bikelanes that would fill in “missing links” in existing bikelane projects. The set-aside would be derived by taking 1.5% of all eligible surface transportation capital expenditures, except Interstate, airport and seaport. This set-aside is separate from, and not to be confused with, the Transportation Enhancement Program.

The actual programming of funds to implement bicycle/pedestrian projects had traditionally been on a project-by-project basis. Under the subject policy, it was proposed that a categorical “box item” be created to hold funds in the Florida Department of Transportation Work Program. However, the concept of reserving such funds indefinitely was not acceptable, particularly for those projects, which were not ready for implementation. Therefore, a determination was made that the ranking of projects by the Bicycle/Pedestrian Advisory Committee and documented through the Bicycle/Pedestrian Plan would serve as the first step and that projects could be funded on a case-by-case basis as they became construction ready.

Several new greenway projects and trail projects are being developed in Miami-Dade County and will be open in the next few years. They include:

- Snake Creek Trail- Trail being developed along the northeast bank of the Snake Creek Canal between NE 22 Avenue and Miami Gardens Drive. This 2-mile long trail was constructed by the City of North Miami during the spring of 2000 and it was opened in early 2002.
- South Dade Trail Extension-The next segment of the South Dade Trail will be a 4.9-mile extension that connects to the existing Black Creek Canal Trail. This trail will run between the Cutler Ridge Mall and SW 264 Street. The South Dade Trail Extension Phase II will add six more miles of trail, ending in Florida City.
- South Dade Greenways Network – Two trails in this network are already open. The Southern Glades Trail and part of the Everglades Trail were dedicated in 1999.
- FIU/Oleta River Trail- The City of North Miami is working with the Florida Department of Transportation to design and construct a trail connecting NE 135 Street to the Oleta River State Recreation Area through Florida International University’s North Miami Campus.
- Beach Walk Corridor-The City of Miami Beach will fill in the gap between the existing path in Lummus Park along Ocean Drive and the boardwalk that runs from 23rd to 48th street thus creating a 4-mile continuous beachfront facility.
- North and South Dade Greenway Network Master Plans completed. Results incorporated into Bicycle Facilities Plan.

Next Step: An updated bicycle facilities plan and new pedestrian facilities plan have been developed by the MPO. Concept planning of new projects will begin in 2002.

4) Expand Bikes-on-Train program to include counter-flow and first hour service.

Completion Date: October 1999

Status: The Miami-Dade Transit Agency has shortened the time restriction on bringing bicycles on Metrorail. Bicycles are now not allowed on Metrorail from 6:30

am to 9:00 am and from 4:00 pm to 6:00 pm. MDTA is in the process of equipping all buses with racks that can carry up to two bicycles. Bicycles are now allowed on all rack-equipped buses at all times and many routes have been identified as bicycle assessable. In 2001, MDTA will receive a grant through the MPO that will provide for bike racks for the entire bus fleet. MDTA is implementing new measures to make the Bike & Ride permit easier to obtain. A new Bike & Ride Program brochure has been developed that includes a mail-in application. The charge for permits and replacement permits has been eliminated. **The number of bike and ride permits awarded during the year of 2001 was 447 with a potential of avoiding 121 tons of CO₂/year.**

Next Step: A study of needed improvements to bicycle parking at transit stations has been completed through the 2002 Urban Planning Work Program. Expand to counter-flow bike service. MPO has applied for a Transportation Enhancement Program Grant to pay for the recommended improvements.

- 5) **Adopt a shower facility ordinance for professional office buildings and require that and non-residential and non-retail developments provide bicycle racks at a minimum rate of five bike parking spaces for every 100 automobile parking spaces as stated in the Bicycle Facilities Plan.**

Completion Date: July 13, 1999

Status: On July 13, 1999, the Miami-Dade County Commission passed Ordinance No. 99-81 requiring bike racks or other means of storage for all park, shopping center, office, and restaurant uses with parking lots located within the unincorporated part of Miami-Dade County. Provisions for shower facilities will be addressed at a later date.

Total Parking Spaces in Lot	Required # of Parking Spaces
25 to 50	4
51 to 100	8
101 to 500	12
501 to 1000	16
Over 1000	4 additional spaces for each 500 spaces over 1000

CODE COMPLIANCE

MEASURES IN PROGRESS

- 1) **Develop outreach program for contractors/builders on Florida's Energy Code.**

Status: The Building Code Compliance Office sponsors several seminars throughout the year for inspectors as well as contractors. For the upcoming year they will be focusing on the implementation of the Florida Building Code.

2) Develop strategy with Florida's Department of Community Affairs to improve enforcement of the Florida Energy Code.

Status: Mr. Pete Quintela, Code Compliance Specialist (Mechanical), a member of our staff has been involved in seeking compliance through the municipalities on the use of the Energy Code. He has actively participated in code changes of the local and State Building Codes.

Next Step: Continue to provide assistance to all building departments in the enforcement of the Florida Energy Code.

CONCLUSION

The scientific consensus on global warming is strong. We are experiencing changes in climate attributable to greenhouse gas emissions over past decades supported by the fact

that the 1990s were the hottest decade of the century and the 20th century was the hottest century in a thousand years. This underscores the importance of maintaining a focus on this global issue. Through local action, the county will continue to emphasize sustainable development, implementation of our long range transportation plan, investment in energy efficiency in our facilities, reforestation and strategic landscaping, and providing information to citizens, businesses, and other governments to encourage their active support of these goals. Miami-Dade County is in the forefront of local governments in addressing climate change, and it will be in the long-term interest of Miami-Dade County citizens to maintain this effort.

Conversely, to reach a significant greenhouse gas emissions reduction requires a considerable effort not only by the County but also by other governments, the commercial, industrial, and transportation sectors and individual residents. As it is documented in this report, county activities alone are not enough to produce the decrease in greenhouse gas emissions needed to reach the reduction targets proposed in the original Miami-Dade county long term CO₂ reduction plan. It requires a collaborative County-wide effort by all sectors of the community.

Climate change is a problem with unique characteristics: It is global, long-term, and involves complex interactions between climatic, environmental, economic, political, institutional, social, and technological processes. Therefore, Miami-Dade County should work, as it has done in the past, with the State in designing a statewide program aimed to reduce greenhouse gases emissions. It is also important to plan for adaptation to, and mitigation of, the potential impacts of climate change. Consequently, there is a need for initiatives to begin designing adaptation strategies and building adaptive capacities as it pertains to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change.

A task force should be convened, similar to the original committee that developed the CO₂ plan, to identify the areas in which adaptive measures can limit the impacts of climate change on the lives of south Florida residents and to evaluate and recommend specific adaptive measures for consideration by the Board of County Commissioners and other responsible entities. The task force should be comprised of public and private sector representatives with the requisite technical and policy insights to develop practical measures to address the probable climate change issues. Included in these issues will be the consequences of sea level rise such as more rapid beach erosion, salt water intrusion, flooding, and habitat loss; the adequacy of building codes in relation to more frequent or more powerful tropical storms; the potential for tropical diseases to spread more fully and rapidly than has previously been experienced; emergency response capabilities; and the economic implications of climate change consequences. Other issues will assuredly emerge as such a task force deliberates. An adaptation plan should not substitute for continued efforts to reduce greenhouse gas emissions locally, nationally, and internationally. Rather, it should be a bridge to a sustainable future. Such a plan may have very significant infrastructure implications that will require long term planning, investment, and support. Completing such a plan over the next two years should be a priority.

