SUSTAINABILITY PLAN

ENERGY ECONOMIC ZONE WORK PLAN

BLUE SKIES WHITE SANDS GREEN CITY

MIAMIBEACH

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EXECUTIVE SUMMARY

Sustainability is a term that refers to the extent that a system in its current state will be able to meet the economic, environmental, and social needs of future generations. Sustainability plans for municipalities are guiding documents designed to help a community plan and act more sustainably by providing structure to its long-term and short-term resource management and policy decisions. Many municipalities throughout the country and the world have developed sustainability plans for their communities. Other communities have developed a specific component of a sustainability plan that is focused primarily on lowering greenhouse gas (GHG) emissions, often called climate action plans.

The purpose of the Miami Beach Sustainability Plan is to improve resources, prevent harm to the natural environment, protect human health, and benefit the social, economic, and environmental well-being of the community for present and future generations. In addition, the plan also functions as the work plan for the city's participation in the Energy Economic Zone (EEZ) Pilot Program, which is an economic development program administered by the Florida Department of Community Affairs.

The plan fuses **guiding principles, program areas, goals, indicators, targets and initiatives** into a cohesive living document. The plan assists the City administration to accomplish its Key Intended Outcome (KIO) of enhancing environmental sustainability and also guides the Sustainability Committee in its mission. The plan's development process will include the establishment of baselines for indicators and targets in order to measure change over time.

The adoption and implementation of a sustainability plan will provide both short-term and long-term benefits to government operations and the community. Short-term benefits include decreased energy costs; improved alternative transportation and mobility; increased diverted solid waste diverted from the landfill; improved urban forest and local air quality; and increased environmental awareness and stewardship. Long-term benefits are numerous and include reducing the city's carbon footprint; reducing potential risks and costs from environmental impacts; preserving natural resources and maintaining a high quality of life for residents and visitors; and reinforcing the City of Miami Beach as a world-class city by preserving its resources for the future.

BACKGROUND

The physical, economic, environmental and social aspects of our communities are in a constant state of change. Recent research points to scientific consensus on potential changes to our local environment related to global climate change. The changes may affect the following: sea-level, temperature and precipitation, salt water intrusion, risk of flooding, beach erosion, storm frequency and/or intensity, urban heat waves, and human health impacts. Federal, state and local governments have already begun planning for these potential changes. The City of Miami Beach may be especially vulnerable to some of these changes given its location, elevation, and strong economic and social ties to a healthy environment.

The United States Global Change Research Program (USGCRP) coordinates and integrates federal research on changes in the global environment and their implications for society. The Global Change Research Act (GCRA) of 1990 mandates that every four years an assessment of the impacts of global change in the U.S. be conducted by the USGCRP. Between 2004 and 2009, the Climate Change Science Program (CCSP), which incorporated the USGCRP, produced a series of 21 Synthesis and Assessment Products (SAPs). The Synthesis and Assessment Product 4.1: Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region, details how sea-level change will affect coastal zones and recommends methods to protect the environment and sustain economic growth.

In light of this research, the Federal government is modifying its current policy to address the potential impacts of sea-level rise. In July 2008, the U.S. Army Corps of Engineers (USACE) published circular No. 1165-2-211, "Water Resource Policies and Authorities Incorporating Sea-Level Change Considerations in Civil Work Programs," that provides guidance for incorporating the direct and indirect physical aspects of projected future sea-level change in managing, planning, engineering, designing, constructing, operating, and maintaining USACE projects. All civil work programs performed by the USACE impacting coastal and estuarine zones will now consider sensitivity to sea-level change relative to human health and safety, economic costs and benefits, environmental impacts, and other social effects.

At the state level, House Bill 697 requires the reduction of greenhouse gas (GHG) emissions through energy-efficient land use and local comprehensive planning. The Florida Department of Community Affairs has held workshops regarding revisions to the Florida Administrative Code that would implement new requirements established by House Bill 697. Also in 2009, the Florida Legislature established the Energy Economic Zone (EcoZone) Pilot Program to address and create a model for sustainable economic development. The EcoZone Pilot Program is intended to further implement Chapter 2008-191, Laws of Florida, relative to discouraging sprawl, reducing reliance on automobiles, developing energy-efficient land use patterns, and creating GHG reduction strategies. The City of Miami Beach was selected as one of two participating communities in the EcoZone Pilot Program.

The city has developed a work plan for EcoZone Pilot Program, which has been incorporated into its Sustainability Plan, primarily as economic development initiatives. The work plan seeks to identify opportunities for economic development and redevelopment that maximize the potential for economic benefit to the community. The work plan also identifies resource use that enhances opportunities to improve wealth creation for the citizens

and community needs while preserving the natural environment. As a participant in the EcoZone Pilot Program, the city seeks to become an urban community model for the establishment and maintenance of long-term economic and quality of life needs.

Regionally, Miami-Dade County has also begun taking steps toward addressing the potential impacts of climate change. In July 2006, the Miami-Dade County Board of Commissioners passed an ordinance that established the Miami-Dade Climate Change Advisory Task Force (CCATF). The Task Force's 25 appointed members are a diverse, multidisciplinary and highly knowledgeable group of individuals representing various sectors of the community. The task force is charged with identifying potential future climate change impacts to Miami-Dade County and providing on-going recommendations to the Board of Commissioners regarding mitigation and adaptation measures to respond to climate change.

In addition, Miami-Dade County is developing its own plan for a sustainable future called "GreenPrint: Our Design for a Sustainable Future." This document will be the framework to evaluate and integrate environmental, social and economic benefits into county policies and initiatives. The city is working in concert with the county's plan to develop its goals and initiatives.

The City of Miami Beach has also begun taking steps to address growing concerns regarding environmental impacts and change in the community. The City's Ad-hoc Green Committee was formed in July 2007, which provided a community forum to discuss environmental issues within the city. In 2008, the City Commission added a new Key Intended Outcome (KIO) to the City's Strategic Plan – to enhance the environmental sustainability of the community. Then in the spring of 2009, the city formalized the Ad-Hoc Green Committee by permanently establishing the Sustainability Committee and codifying Chapter 100: Sustainability in the City Code, which is dedicated to sustainable initiatives.

In addition, the city recently began developing a comprehensive Stormwater Master Plan (SWMP) in response to climate change and flooding impacts. One of the major findings of the Miami-Dade Climate Change Task Force is a predicted three (3) to five (5) foot rise in sea-level over the next century. The SWMP will explore adaptation strategies aimed at addressing these anticipated impacts of sea-level rise and the associated flooding; for example, the prospect of creating injection wells, using pumps and storage facilities, raising sea wall elevations, and changing building code for new structures are currently being assessed.

SUSTAINABILITY PLAN DEVELOPMENT PROCESS

At the July 2009 Sustainability Committee, staff made a presentation regarding the concept of planning for community sustainability, which included suggested program areas and example goals and objectives for the committee's consideration. Staff then conducted additional research into sustainability planning at the local, state, national and international levels to obtain examples and insight into the development process. A draft plan was developed based on this research and was presented to the committee on September 22, 2009. On the November 12, 2009, Neighborhoods and Community Affairs Committee unanimously moved to accept the plan.

In the following months, staff elicited feedback from Sustainability Committee, other City departments, local universities, the Miami-Dade County Office of Sustainability, Florida Department of Community Affairs, advisory committees and community organizations such as the Miami Beach Community Development Corporation. On May 25, 2010, the Sustainability Committee passed a resolution to present the Plan to the City Commission for adoption. On December 16, 2010, the Finance and Citywide Projects Committee moved the Sustainability Plan to the City Commission for approval and adoption.

GUIDING PRINCIPLES

The Sustainability Plan provides structure and focus to policies and initiatives in order to successfully enhance community sustainability. The following principles are intended to serve as an overarching theme and basis for the plan and provide a framework within which to execute sustainability planning:

- The City of Miami Beach will lead by example.
- Interdependence exists among the ecological, economic and social factors that contribute toward the sustainability of our community.
- Healthy natural systems are the basis for sustainable communities and economies.
- Local decisions and policies have regional and global impacts.
- Policies and programs that enhance, protect and restore our natural resources, such as our airshed, waterways, shorelines, vegetation, wildlife, and greenspaces, support the sustainability of our community.
- Policies and programs that reduce natural resource consumption and increase efficiency in resource and material use support the sustainability of our community.
- Policies and programs that improve environmental regulatory compliance support the sustainability of our community.
- Policies and programs that improve economic and social stability support the sustainability of our community.
- An educated community acting as a steward of the environment supports the sustainability of our community.
- The use of the city's emergency management operations to support community resilience to natural and man-made disasters supports the sustainability of our community.

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CITY PLAN: PROGRAM AREAS, INDICATORS, TARGET, INITIATIVES

The plan is comprised of program areas, goals, indicators, targets and initiatives.

Program areas are those topics within which to concentrate economic, environmental and social improvement efforts. Program areas include:

1. Green Building & Housing
2. Solid Waste Management
3. Water Conservation & Quality
4. Energy Conservation
5. Alternative Transportation
6. Natural Resources & Ecosystem Management
7. Community Outreach & Participation
8. Green Procurement
9. Economic Development & Planning
10. Air Quality & Climate Change

The city's vision statement guides the focal areas of its Strategic Plan. Every year the City of Miami Beach produces an environmental scan and a summary of performance results, which document the status of the city's performance objectives within the priority areas identified by its vision. Together with information obtained from the community through community surveys, focus groups, and community meeting, the commission reviews and refines the City's Strategic Plan, as appropriate. The city's vision is to be:

- Cleaner and Safer
- Beautiful and Vibrant
- A Unique and Historic Environment
- A Mature, Stable Residential Community with Well Improved Infrastructure
- A Cultural Entertainment Tourism Capital and an International Center for Innovation and Business, While Maximizing Value to our Community for the Tax Dollars Paid

At the same time, the City's Key Intended Outcomes (KIOs), or outcome-focused strategic priorities, are aligned to support the vision statement. They are identified through the strategic planning process in support of five key elements of the city's vision to ensure the long-term sustainability of its government. As a result, one of the KIOs in the City's Strategic Plan is to enhance the environmental sustainability of the community. Current indicators in the Strategic Plan that are used to measure how well the city is doing in achieving this outcome are percent participation in recycling programs, tons of waste recycled, percent of city facility energy use supplied by renewable sources, and percent of major buildings with Silver LEED certification. Initiatives that help drive the performance of these measures are updated annually by the City Commission and City departments.

In order to ensure that the Sustainability Plan aligns with the City's Strategic Plan, the goals, indicators, targets, and initiatives have been developed based on KIOs and associated performance indicators identified in the City's Strategic Plan. However, development of the City's Sustainability Plan has allowed for a more comprehensive review of potential indicators, targets and initiatives, many of which may be incorporated in the next update of the City's Strategic Plan.

The goals set forth in the plan provide direction for each program area. The indicators help measure the effectiveness of programs and activities as they relate to the goals. The targets are currently broad statements that call for either an upward or downward trend; however, these will be refined as baseline information becomes available. Together, these elements give the document flexibility as the city moves forward with the initiatives, which are those activities aimed at reaching the goals.

Currently, there are numerous federal and state agency grants that can fund projects promoting the ten different program areas outlined by the plan. When applying for state and federal grant funds, it is important to demonstrate that the funds will contribute toward an overall plan or goal. The Sustainability Plan places the City of Miami Beach in a more formidable position when justifying grant funding requests.

The City of Miami Beach recognizes the responsibility to lead by example at the organizational level, working proactively to reduce the environmental footprint of government operations and encouraging residents and visitors to do the same. The goals, indicators, targets, and initiatives that comprise the plan have been developed for both community and government activities, as applicable.

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ASSESSING & REPORTING PROGRESS

The Sustainability Plan was developed as a first step in creating a comprehensive sustainability master plan for the city. Following the adoption of the plan by the City Commission, the intent is to develop a baseline report and an implementation plan. Baseline data is the point from which all future measurable outcomes will be compared and ultimately assessed. The baseline report will provide an understanding of the current status of the city's sustainability-related initiatives, including current rates of natural resources consumption (e.g. water and energy usage) and current carbon (environmental) footprint. Establishing baseline data for the city's sustainability programs will aid in setting future benchmarks and will allow the city to further refine targets for each program area.

The implementation plan will lay out a detailed guide to introduce the concepts of sustainability both to City employees and the community, identifying necessary policies and procedures to support the plan, and building the consensus among the various departments to execute sustainable initiatives successfully. In addition, the implementation plan will outline the required coordination between the city and the community, and also identify the required data in order to assess the plan effectively.

Subsequent to the establishment of a baseline report, annual status reports will be conducted every year by the Environmental Division and presented the Sustainability Committee. The report is intended to provide useful information to the City Commission, City staff and community members on progress being made toward meeting goals and targets of the plan. In addition, annual status reports will provide a foundation for informed decision-making about future policies and actions that may influence the city's ability to meet the goals and targets. If any significant changes to the plan are proposed, such as those potentially having considerable financial impacts to the city, the changes will be reviewed by the Finance Committee before changes are incorporated into the plan.

The Sustainability Plan is a living, flexible document that can be updated over time. This allows the city to make adjustments to the plan as progress is made on sustainability goals, advancements are made in technology and environmental changes occur. It is anticipated that there may be a need to make changes to the plan's program areas, goals, indicators, targets and initiatives over time in order to adapt to evolving policies, funding opportunities, as well as to introduce new initiatives.

GREEN BUILDING & HOUSING

Buildings consume a large portion of water, wood, energy, and other natural resources. Green buildings are designed to reduce environmental impacts to land, water, energy and material resources, while creating healthy indoor environments. Encouraging green building and housing practices in Miami Beach will help preserve its natural resources by reducing construction impacts to the environment and reducing greenhouse gases emitted through energy/water/material resource extraction, transportation, and disposal.

In addition, the implementation of green building and housing practices will:

- Improve building performance such as energy and water cost savings.
- Improve indoor environment, which is linked with enhanced occupant performance, health and productivity.
- Support green job development within Miami Beach, local industries, and sustainable growth.
- Increase community resilience and diversity by providing a mixture of housing opportunities for the city's diverse socio-economic groups.

GOALS:

- Decrease resource consumption and waste during building construction and operation.
- Achieve responsible growth management objectives including protecting, retrofitting and recycling existing and historic buildings, rather than demolishing and replacing.
- Improve availability and accessibility of decent housing opportunities in the city in an effort to maintain/improve housing stock conditions.
- Achieve and maintain a mix of affordable, livable, and green housing types throughout the city.

INDICATORS	BASELINE	TARGETS	EXISTING INITIATIVES	FUTURE INITIATIVES
CITY BUILDINGS – # of certified LEED buildings		Upward Trend	Green Building Ordinance, Florida Energy Conservation & Sustainable Buildings Act (255.251 F.S.)	
PRIVATE BUILDINGS (Residential & Commercial) # of participants in the Green Building Program # of certified LEED buildings		Upward Trend	Green Building Ordinance	
PRESERVATION OF HISTORICALLY SIGNIFICANT STRUCTURES, SITES, AND DISTRICTS # of site structures & districts # of protected historic buildings		Maintain or Upward Trend	Historic Preservation Board review Single-family home designation process	
AFFORDABLE & WORKFORCE HOUSING – # of units available # units rehabilitated & # units purchased # Persons counseled # Rental units rehabilitated # of Trainings		Maintain or Upward Trend	Housing Rehabilitation Scattered Site Home Counseling Multi-Family Housing Rehabilitation Program Private Investment	

SOLID WASTE MANAGEMENT

Nearly everything we produce, use or consume leaves behind some kind of waste. The treatment and disposal of waste can be a source of water, land, and air pollution. By managing solid waste and conserving resources through reduction, reuse, and recycling, the city will help minimize impacts to the quality and safety of the local environment, reduce costs of waste disposal and pollution mitigation, and decrease the carbon foot print associated with the production, use and disposal of materials.

GOALS:

- Reduce volume of solid waste citywide, moving toward a zero waste community.
- Increase volume of recyclables diverted from landfill citywide.

INDICATORS	BASELINE	TARGETS	EXISTING INITIATIVES	FUTURE INITIATIVES
PUBLIC AREAS # of public area recycling locations Beach Entrances Parks Commercial Streets Residential Streets		Upward Trend	Recycling Program in the ROW (beaches, parks, Collins, Lincoln, Ocean etc.)	
CITY SERVICE Tons of solid waste land-filled Tons of waste recycled Tons of waste composted		Upward Trend	Haulers servicing recycling in ROW at no additional cost	Explore Composting Program
HAZARDOUS WASTE # of community collection events		Upward Trend	America Recycles Day Wasteful Weekends (electronics, bulk, single-stream) Household Hazardous Waste	
CITY FACILITIES % of city owned facilities with recycling		Upward Trend	Implementation of single-stream recycling program at city facilities	
COMMUNITY RECYCLING # of residential and commercial establishments with recycling Tons of green waste disposed annually citywide		Upward Trend	Community Recycling Drop-off Points Green Waste Facility	Develop Recycling Ordinance

WATER CONSERVATION & QUALITY

Miami-Dade County's main source of drinking water is the Biscayne Aquifer, which is a finite source that must be protected and managed sustainably in order to meet the county's needs over the long-term. By reducing our consumption of water, we contribute to the preservation of groundwater as our sole-source of drinking water and potentially off-set the costs of developing infrastructure for new drinking water sources in the future. Conserving water also helps avoid, or at least lessen, the likelihood of future water shortages and salt water intrusion.

By protecting and enhancing water quality of our waters, the city will:

- Avoid economic costs of pollution mitigation and remediation of impaired waters.
- Preserve quality of life and values of waterfront properties.
- Preserve the safety and viability of water-related recreational activities that support the local economy such as boating, diving, fishing, swimming, jet skiing, & kayaking.
- Preserve the habitat of the aquatic ecosystem including fish, birds, marine mammals, invertebrates, corals, sea grasses, which includes threatened and/or endangered species protected by federal and state law.

GOALS:

- Decrease water consumption at the community and municipal levels.
- Maintain or improve water quality of discharges entering Biscayne Bay and surrounding water waterways.
- Maintain or improve the capacity of the city's stormwater system to reduce the risks of flooding on public and private property.

INDICATORS	BASELINE	TARGETS	EXISTING INITIATIVES	FUTURE INITIATIVES
ATLANTIC OCEAN # of days the Miami-Dade County Health Department issues health advisories annually.		No Downward Trend	Monitor beach closings	
WATERWAYS % of city waterway assessment areas rated as clean or very clean.		No Downward Trend	Waterway Cleanliness Contractor	
MARINAS # of participants in FDEP Clean Marina Program		Upward Trend	Educate marinas	
URBAN RUNOFF TBD* * At this time, Biscayne Bay, which receives all of the city's stormwater runoff, is not listed by the state as an "Impaired Waterway" that requires additional pre-treatment of runoff. DERM is responsible for monthly water quality monitoring of the bay. It is not currently required that the City begin funding a separate and additional monitoring program. Therefore, the existing initiatives under this indicator are specifically intended to enhance and prevent the degradation of Biscayne Bay water quality.		No Downward Trend	Green Alleys, Green Parking Lots & Pocket Parks Stormwater Pollution Prevention Education NPDES Curb Marker Program MS4 Maintenance Stormwater Master Plan Stormwater infrastructure improvements Engineering infrastructure design & plan review	
WATER CONSERVATION ***COMMUNITY*** Per capita daily use		Downward Trend	***COMMUNITY*** Proclamation of Water Conservation Month (April) Low-flow Fixture Replacement Program County Irrigation Restriction enforcement Water rate schedule adjustments	
MUNICIPAL OPERATIONS Volume of water consumed by municipal operations Volume of water delivery system loss		Downward Trend	***MUNICIPAL OPERATIONS*** Ameresco retrofit of municipal facilities & water reclamation plant Xeriscaping of public spaces	

ENERGY CONSERVATION

The energy sources upon which we largely depend – nuclear, coal, natural gas and oil – impact the social, economic, and environmental facets of our communities. Air pollution and GHGs, primarily from fossil fuel power plants, cars, and buildings, are linked to respiratory diseases and contribute to climate change.

By reducing energy consumption and increasing energy performance at the municipal, commercial and residential levels, the City of Miami Beach can increase economic performance, decrease dependence on nonrenewable resources, and reduce GHG emissions.

GOALS:

- Encourage the use of local, non-polluting, renewable energy sources (e.g. wind, solar, and geothermal), wherever applicable.
- Reduce energy consumption community-wide.
- Increase energy performance of municipal, commercial and residential buildings.

INDICATORS	BASELINE	TARGETS	EXISTING INITIATIVES	FUTURE INITIATIVES
COMMERCIAL # of participants in the city's voluntary Green Building Program		Upward Trend	Green Building Voluntary Program	
GREEN LODGING #of hotels participating in FDEP's Green Lodging Program		Upward Trend	Florida Green Lodging Program Seminar & Mayor's Green Conference	
GOVERNMENT BUILDINGS # of KWh consumed annually % of municipal facility energy use supplied by renewable sources		Increasing Efficiencies	AMERESCO: Lighting retrofits Power Transformer Replacements Integration of HVAC controls Geothermal Cooling Reclamation Plant	
CITY ROW % of high-efficiency fixtures		Upward Trend	Green Parking Lots & Alleys Program LED demonstration projects	

ALTERNATIVE TRANSPORTATION

Most of our modern means of transportation are powered by fossil fuels, which contribute to local air pollution and greenhouse gas production. A safe, multi-modal transportation system that reduces reliance on motorized vehicles serves to increase mobility and economic accessibility throughout the community. The improvement of the City of Miami Beach alternative transportation network also reduces the production of GHG emissions and supports healthy modes of transport such as walking and bicycling.

Additional benefits of a safe, alternative transportation system include:

- Improved air quality and overall community health.
- Greater opportunities for residents to engage in social interaction and exercise, which may result in healthier neighborhoods.
- Increased accessibility of transportation services for all residents, including those most reliant on efficient public transit, such as people that are economically disadvantaged, non-drivers, senior citizens, and/or disabled.

GOALS:

- Create community incentives for residential and commercial use of alternative modes of transportation and fuels.
- Create a multi-modal transportation system that minimizes, and where possible, eliminates pollution and motor vehicle congestion while ensuring safe mobility and access.

INDICATORS	BASELINE	TARGETS	EXISTING INITIATIVES	FUTURE INITIATIVES
BICYCLE AND PEDESTRIAN FACILITIES:- Length of facilities created/ improved annually Bicycle lanes Beachwalks Baywalks Bike Path Bike Routes (designated signage) Bike Racks & Bike Parking		Upward Trend	Pursue federal earmarks & project authorizations for Atlantic Greenway Network (AGN) Municipal Mobility Plan AGN Master Plan Comprehensive Plan- Transportation Element	
PEDESTRIAN SAFETY # of signalized intersections upgraded # of upgraded, maintained or newly installed crosswalks # of ADA curb ramps installed # pedestrian enhancer flashers installed		Upward Trend	Capital Projects AGN Plan Comprehensive Plan- Transportation Element	
ALTERNATIVE VEHICLES/FUELS ***GOVERNMENT*** % of non-emergency Fleet vehicles using alternative fuels, Low Emissions Vehicles (LEV), and hybrids ***COMMUNITY*** Participation in incentive programs Participation in Bike Share and Car Share Program # of fuel or charging stations # of bicycle racks		Upward Trend Upward Trend	***GOVERNMENT*** Fleet purchasing policy ***COMMUNITY*** Parking programs that encourage alternative vehicles Shared Bike Rental Program Bicycle Rack Installation Program Shared Car Program Installation of electric car plug-in stations	
QUALITY OF TRANSIT SERVICE Annual ridership on South Beach Local (SBL) and Route115 Mid-North Beach Circulator SBL frequency of peak & off-peak headways Maintain hours of operation Maintain SBL bus fare amount Maintain bus routes (% dense residential within ¼ mile area) # of Intermodal Centers		Upward Trend	South Beach Local Circulator Bus Route Airport Flyer Express Coordinate with County to improve Transit Service Installation of Bus Amenities Design and construction of North and South Beach Intermodal Centers	Implement a Middle Beach Circulator and a North Beach Circulator with frequent headways and low fares

NATURAL RESOURCE & ECOSYSTEM MANAGEMENT

The City of Miami Beach boasts great natural capital, such as waterways, coastal dunes, natural mangrove shorelines, 26 parks and green spaces, and just over seven miles of white, sandy beaches. The city is also the nesting habitat for endangered sea turtles, butterflies, and several plant species including the Biscayne Prickly Ash, Beach Cluster Vine and the Beach Star. The protection and enhancement of our natural resources is closely linked to the preservation of quality of life and the stability of our tourism-based economy.

Implementing natural resource and ecosystem management will also:

- Restore, enhance and protect natural resources, which increases the biodiversity and resiliency the city's ecosystems.
- Increase canopy coverage and reduce stormwater runoff, improve air quality, beautify neighborhoods and provide shade for pedestrians.
- Decrease heat island effect, which reduces energy costs.

GOALS:

- Enhance, restore and protect natural resources and ecosystems.
- Increase compliance with regulations governing natural resources.

INDICATORS	BASELINE	TARGETS	EXISTING INITIATIVES	FUTURE INITIATIVES
BIODIVERSITY # sea turtle nests per year # of programs promoting species protection		No Downward Trend	MDC Sea Turtle Program support Sea turtle education Bird sanctuary designation Manatee and seagrass signage	
DUNE SYSTEM # of city blocks receiving enhancement annually		Upward Trend	Dune System Enhancement Program Beachwalk Project Mitigation	
BEACH SYSTEM Length of shoreline re-nourished/ maintained		Maintain as needed	MDC Restoration Projects USACE Projects Participation in Beach Cleanliness Task Force	
WATERWAY AND SHORELINE RESTORATION Length of shoreline improved/reinforced annually Natural (mangrove) shoreline restored Tons of submerged marine debris removed		Upward Trend	Water Contractor Service Capital shoreline restoration projects Reinforcing bulkheads Remove submerged marine debris Promote living shoreline design	
COMPLIANCE # of city environmental/ permit violations		Downward Trend	NPDES compliance Fuel Storage Tank Program to reduce soil & water contamination Turtle Lighting Ordinance	
URBAN REFORESTATION % of ROW designated as fully planted status Attrition rate (planting more than is removed)		Upward Trend	Urban Reforestation Program Community gardens Tree City U.S.A. Xeriscaping Landscaping Code City Tree Ordinance development	

COMMUNITY OUTREACH & PARTICIPATION

The success of a sustainability plan is dependent on community awareness and the support of the goals and targets of each initiative. Well-developed education and outreach strategies will promote an understanding of sustainable growth and development; foster an educated community; and a forge connection between the community and its natural resources.

Implementing education and outreach programs will also:

- Heighten community stewardship by facilitating resident participation in civic affairs.
- Encourage new resident recruitment and current resident retention through an improved public education system.

GOALS:

- Increase awareness and stewardship of sustainable concepts through community outreach and educational programming.
- Increase participation of community members in civic affairs and improve access to community amenities and quality public education.

INDICATORS	BASELINE	TARGETS	EXISTING INITIATIVES	FUTURE INITIATIVES
MB MAGAZINE & MBTV # of media pieces per year covering a range of sustainability issues		Upward trend	MB magazine – Green Space MBTV and CityVision	
COMMUNITY EVENTS/ INVOLVEMENT # of events & programs Beach/Waterway Clean-ups Community Education Events Adopt-a-Beach Pilot Program Parks & Recreation Outreach Programs Farmers Markets Community Gardens		Upward trend	Florida Green Lodging Program Seminar America Recycles Day Event MIA Green EXPO Earth Day Beach/waterway clean-ups Local farmers markets Community gardens Mayor's Green Conference	
GREEN WEBSITE		Maintain	Development of Green Webpage City website linked with MDC's GreenPrint	
VOTER PARTICIPATION % of registered Miami Beach voters who vote in scheduled elections.		Target to be based on off- 2010 year election and 2008 for Presidential election years.		
EDUCATION Florida Department of Education School Ranking		Upward Trend	International Baccalaureate (IB) Program (K-12)	

GREEN PROCUREMENT

Almost everything created or purchased has a life cycle that impacts the environment from the moment of production to the final disposal stage. By practicing and encouraging the purchasing of environmentally-friendly or non-toxic products, the city will reduce the amount of toxic or hazardous material introduced into neighborhoods, waterways, and landfills. In addition, the increased use of products derived from renewable or local sources decreases pressure on finite resources and stimulates the growth of a greener economy.

GOALS:

- Increase use of non-hazardous and environmentally-friendly products in government maintenance, operations, permitted concessionaires/vendors and special events.
- Promote decreased use of hazardous, toxic, non-recyclables or renewable goods community-wide.

INDICATORS	BASELINE	TARGETS	EXISTING INITIATIVES	FUTURE INITIATIVES
GOVERNMENT CONTRACTS % of eligible contracts that specify green products or incorporate sustainable initiatives Construction ITB's Janitorial ITB's Paper Products ITB's		Upward Trend	Inclusion of green product, energy reduction, and waste prevention requirements in ITB/ RFP/RFQ processes	
CITY PROPERTY MANAGEMENT # of bids that specify green products or recycled alternatives		Upward Trend	Inventory all chemicals & products used in municipal operations Work with City departments to increase use of green products	
CITY PERMITTED SPECIAL EVENTS # of events that incorporate green products or recycled alternatives		Upward Trend	Encourage productions to hold greener events	
LANDSCAPING # of bids that specify green products or recycled alternatives		Upward Trend	Integrated Pest Management (IPM) strategies Xeriscape	

ECONOMIC DEVELOPMENT & PLANNING

The resilience of a community in large part depends on a diverse economic base that is supportive of emerging technologies. The developing green business sector and smart growth initiatives are economic opportunities for which communities must plan in order to reap the social, environmental and economic benefits. Also, encouraging environmental and social stewardship within the local business sectors, including the tourism, entertainment, real estate, and construction industries, promotes long-term stability and competitiveness of our local economy.

GOALS:

- Improve the city's overall economic health and maintain economic bond rating.
- Diversify the city's business base and use sustainable initiatives to improve coordination between economic development and workforce development.
- Maintain neighborhood character and satisfaction with quality of life.
- Maximize Miami Beach as a destination brand.

INDICATORS	BASELINE	TARGETS	EXISTING INITIATIVES	FUTURE INITIATIVES
ECONOMIC STABILITY # of green economy business in Miami Beach % of those green business interviewed # at Business Academy sessions with sustainability topics		TBD 10% 2	Implement EEZ Identify the city's green-economy & diversity-related businesses & identify growth barriers Enhance environment for businesses to implement sustainability measures	
LEGISLATIVE INITIATIVES # EEZ recommendations filed for legislative approval # EEZ recommendations receiving legislative approval # at sustainability workshops/events held # of sustainability projects requests submitted to Congress		T.B.D	Pursue federal sustainability resources Identify State incentives to facilitate industry diversification & support sustainability	
GROWTH MANAGEMENT & PLANNING # of City Code changes or land use policies that support sustainable initiatives % of the community rating the pace of new construction in the city as about the right amount		Upward Trend	Incorporate sustainable economic development into the comp planning process Review of Code to support sustainable initiatives	

AIR QUALITY & CLIMATE CHANGE

We utilize use fossil fuels every day for almost every modern convenience, including electricity and transportation. The use of fossil fuel emits GHG's that contribute to climate change, reduce air quality and affect the health of residents. Future impacts of climate change, such as sea-level rise, may affect quality of life and property within the city as well. By reducing GHG emissions where possible, the City of Miami Beach can meaningfully contribute to local air quality and the avoidance or reduction of anticipated climate change impacts.

Initiatives directed at maintaining and/or improving air quality will:

- Reduce the city's carbon footprint and GHG emissions, while improving local air and contributing to the reduction of global GHG and associated climate change impacts.
- Decrease the risk or severity of climate change impacts, such as storm-related flooding, sea-level rise, and frequency of extreme weather events such as hurricanes, and extreme temperatures and/or precipitation.

GOALS:

- Support initiatives to maintain and/or improve local air quality.
- Reduce the production of GHG associated with municipal operations and reduce the community carbon footprint.

INDICATORS	BASELINE	TARGETS	EXISTING INITIATIVES	FUTURE INITIATIVES
AIR QUALITY INDEX (EPA) # of days of good rated air quality		No Downward Trend	AGN & Alternative Transportation Initiatives	
CLIMATE ACTION PLAN Tons of carbon mitigated or avoided *Indicators to be developed as part of the Climate Action Plan.*		Reduction of carbon dioxide and other GHGs		Develop a Climate Action Plan to support the Climate Protection Agreement, (signed by CMB in 2005).
FLOOD PROTECTION National Flood Insurance Program (NFIP) Community Rating System (CRS) Rating		No Downward Trend	City's Stormwater Master Plan CRS Program	

SUSTAINABILITY COMMITTEE WORK PLAN

The sustainability work plan lists topic areas in which Sustainability Committee has expressed interest in investigating further. The work plan will be updated throughout the year as the committee explores new topics and initiatives. The work plan will be formally incorporated into the Sustainability Plan annually as an appendix to provide overview of the Sustainability Committee's activities.

SUSTAINABILITY PLAN FUTURE INITIATIVES - SUSTAINABILITY COMMITTEE WORK PLAN	
GREEN BUILDING & HOUSING	
SOLID WASTE MANAGEMENT	1. Explore Composting Program 2. Develop Recycling Ordinance
WATER CONSERVATION & QUALITY	1. Stormwater Master Plan
ENERGY CONSERVATION	1. Reclamation plant 2. Cool roofs 3. Energy Star Portfolio Manager 4. Explore Dark Sky light fixture application & LED retrofits

SUSTAINABILITY PLAN FUTURE INITIATIVES - SUSTAINABILITY COMMITTEE WORK PLAN	
ALTERNATIVE TRANSPORTATION	1. Implement a Middle Beach Circulator and a North Beach Circulator with frequent headways and low fares 2. Baylink, Streetcar, and Rail Service
NATURAL RESOURCES & ECOSYSTEM MANAGEMENT	1. Categorize and remove submerged marine debris 2. Promote living shoreline design 3. Near-shore coral patch reef protection and restoration 4. Grease Trap Program 5. Adopt-a-Tree Program to promote private reforestation
COMMUNITY OUTREACH & PARTICIPATION	1. MB 77 TV – Programs/Clips covering sustainability issues 2. Green building systems seminars aimed at building owners & condominiums. 3. Identify opportunities to incorporate sustainability into the Educational Compact
GREEN PROCUREMENT	1. Adoption of green product standards (Green Seal Standard, South Coast Air Quality Management District (SCAQMD), etc) 2. Inventory of all chemicals and products used in municipal operations 3. Work with City departments to develop an action plan to use green products in daily operations 4. Encourage productions to hold greener events 5. Develop Green Event Guidelines
ECONOMIC DEVELOPMENT & PLANNING	1. Enhance the environment for existing businesses to implement sustainability measures 2. Incorporate energy and sustainability topics into the Business Academy curriculum 3. Explore implementation of PACE financing 4. Pursue federal sustainability resources 5. Identify potential State incentives that may facilitate industry diversification and support sustainability 6. Incorporate sustainable economic development into the comp planning process 7. City Code Planning Review to incorporate necessary modifications to support of sustainable initiatives
AIR QUALITY & CLIMATE CHANGE	1. Develop a Climate Action Plan to support the city's commitment to the Climate Protection Agreement, which CMB signed in 2005. 2. Building Code adaptivity to sea-level change

GLOSSARY

Affordable Housing – as defined by Sec. 58-31 of Miami Beach Code of Ordinances, affordable means that the occupants pay no more than 30 percent of gross income for gross housing costs, including utility costs. However, it is not the intent to limit an individual household's ability to devote more than 30 percent of their income for housing.

Airshed – a geographic boundary for air quality standards.

Alternative Transportation – a means of travel other than through the use of a private motor vehicle that reduces traffic congestion and an individual's carbon footprint and GHG emissions, i.e. walking, cycling, carpooling, or mass transit.

Bike Lane/Path/Route – A bike lane is a signed and striped lane along a roadway for use by bicycles. A bike path is a dedicated, off-road, paved bicycle way with minimal cross flow by motor vehicles. Bike routes are un-striped, signed routes which bicyclists share with motor vehicles. Bike routes differ from bike lanes in that routes do not include any striping on the roadway. They are only designated by signage.

Carbon footprint – a measure of the amount of carbon dioxide produced by a person, organization, or location at a given time.

Clean Marina Program – The Florida Clean Marina Program is a voluntary designation program with a proactive approach to environmental stewardship that aims to maintain water quality.

Climate Action Plan – lays out a strategy, including specific policy recommendations that a government may use to address climate change and reduce GHG emissions.

Cool Roofs – reflective white or light-colored surfaces off which sunlight will bounce, reduce heat absorption, and, due to their high emissivity, will also easily release heat.

Dark Sky – reduction of light pollution in order to improve night sky visibility, to reduce the adverse effects of unnatural lighting to the environment, and to reduce energy usage.

Dunes – hills of sand, built through the interaction between wind, sand and coastal vegetation, that stabilize beaches and provide a buffer against storm surges for coastal cities.

Environmental footprint - a measure of the amount of environmental impact produced by a person, organization, or location at a given time.

Florida Green Lodging Program – a voluntary initiative of the FDEP that designates and recognizes lodging facilities that make a commitment to conserve and protect Florida's natural resources. The program's environmental guidelines allow the hospitality industry to evaluate its operations, set goals and take specific actions to continuously improve environmental performance.

Fully Planted – means that trees occupy all available tree planting spaces in the right-of-way that can be filled, and that the tree cover in parks and other city properties is maintained at an optimal level based on each property's uses and priorities.

Geothermal Cooling – the use of power extracted from heat stored in the earth (geothermal energy) as a source of energy for cooling processes, such as air-conditioning.

Green – for the purposes of this document, green is used as shorthand to refer to any environmentally preferable product, activity, service or process.

Green Building – a building that is designed and constructed to reduce the overall impact of the built environment on human health and the natural environment. Green buildings efficiently use energy, water, and other natural resources, protect occupant health, improve employee productivity, and reduce pollution.

Green Seal Standard – a certification that indicates compliance with the rigorous environmental, toxicity and safety standards of the Green Seal program.

Greenhouse Gas (GHG) – Greenhouse gases are natural and manmade gases in the earth's atmosphere that absorb and emit radiation within the thermal infrared range, acting as a warming mechanism that raises temperatures on the Earth's surface and lower atmosphere. The four primary greenhouse gases are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O) and chlorofluorocarbons (CFCs).

GreenPrint – Miami-Dade County's plan for sustainability that reaffirms, establishes and synchronizes the government and community goals, initiatives and measures.

Hazardous Waste – a waste or combination of wastes which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may cause or significantly contribute to an increase in serious, irreversible, or incapacitating reversible illness or pose a substantial present or potential hazard to human health, safety, welfare or to the environment when improperly treated, stored, transported, used or disposed of, or otherwise managed.

Household Hazardous Waste – hazardous waste that is generated by residents through the use of hazardous or potentially hazardous products in the home. Typical household hazardous wastes include spent batteries, cleaning products, pesticides, paints and solvents.

Headway – a measurement of the distance between vehicles in a transit system – a "shorter" headway signifies a more frequent service.

Heating, Ventilation, and Air Conditioning (HVAC) – technological systems whose purpose is to help maintain good air quality through adequate ventilation with filtration and provide thermal comfort.

Heat Island Effect – a process where the substitution of open land and vegetation for urban infrastructure causes a rise in the surface and atmospheric temperatures of urban regions compared to those of their rural surroundings, forming an "island" of higher temperatures within the landscape.

Indicators – measurable programs or activities that are used for quantifying progress toward a goal or objective.

Integrated Pest Management (IPM) – an ecological approach of managing pest populations, while significantly reducing or eliminating the use of pesticides.

LEED certification (Leadership in Energy and Environmental Design) – A rating system developed by the U.S. Green Building Council (USGBC) that focuses on improving performance across five key areas of environmental and human health: energy efficiency, indoor environmental quality, materials selection, sustainable site development, and water savings. LEED certifications are awarded at various levels (certified, silver, gold, and platinum) according to a point-based scoring system.

Living Shorelines – shoreline management option that provides erosion control benefits, while also enhancing the natural shoreline habitat.

Marine Debris – human-created waste or litter that has deliberately or accidentally entered into the marine environment.

Municipal Separate Storm Sewer System (MS4) – a system of conveyances through which untreated stormwater runoff transported and discharged into local water bodies.

National Pollutant Discharge Elimination System (NPDES) – a permit program, authorized by the Clean Water Act of 1972, that controls water pollution by regulating point sources that discharge pollutants into the waters of the United States.

Native Species – for purposes of this document, plant or animal species native to south Florida.

Property Assessed Clean Energy (PACE) Bond – is a tool to finance energy-efficient improvements that are part of a commercial or residential building's structure.

Pervious Pavement – surface coverings that duplicate the structural and functional features of traditional pavement, but are designed to allow infiltration of stormwater through the surface to the soil below where water can be naturally filtered and pollutants removed.

Reclamation Plant – a facility that treats wastewater through a series of treatments and purifying steps to supplement a region's water supply.

Retrofitting – the addition of new technology or features to older systems.

Right-of-way (ROW) – every way set apart for public travel in motor vehicles, including but not limited to streets, roadways, alleys, swales, highways, and portions of driveways that cross a public sidewalk.

Single-Stream Recycling – recycling program that allows customers to mix recyclable paper, plastic and glass (all recyclable material) into the same bin.

Stewardship – is an ethic or responsibility to protect and maintain a common good.

Sustainability – policies and strategies that meet society's present needs without compromising the ability of future generations to meet their own needs.

Sustainability Plan – a document that addresses shot and long-term environmental, economic, and social goals that will improve community sustainability.

Workforce Housing – apartments and houses that are affordable for workers in low and moderately paid jobs.

Xeriscaping – landscaping and gardening methods that reduce or eliminate the need for supplemental water from irrigation.

Zero Waste – recycling or reuse of all natural and manmade materials back into nature or the marketplace rather than sending those materials to landfills or similar disposal options.

ACRONYMS

ADA – American's with Disabilities Act of 1990

AGN – Atlantic Greenway Network

CCATF – Miami-Dade Climate Change Advisory Task Force

CCSP – Climate Change Science Program

CMB - City of Miami Beach

CRS – Community Rating System

EMS – Emergency Management System

EPA – Environmental Protection Agency

FDEP – Florida Department of Environmental Protection

FDOT – Florida Department of Transportation

FIND – Florida Inland Navigation District

GCRA – Global Change Research Act of 1990

GHG – Greenhouse Gas

HVAC – Heating, Ventilating, and Air Conditioning

IB – International Baccalaureate

IPM – Integrated Pest Management

KIO – Key Intended Outcome

KWh – Kilowatt-hour

LEED – Leadership in Energy and Environmental Design

LOS – Level of Service

MDC – Miami-Dade County

MS4 – Municipal Separate Storm Sewer System

NFIP – National Flood Insurance Program

NOAA – National Oceanic and Atmospheric Administration

NPDES – National Pollution Discharge Elimination System

OGT – Florida Department of Environmental Protection's Office of Greenways & Trails

OOS – Miami Dade County Office of Sustainability

PACE – Property Assessed Clean Energy

RFQ – Request of Qualifications

ROW – Right of Way

SAP – Synthesis & Assessment Products

SCAQMD – South Coast Air Quality Management District

SFWMD – South Florida Water Management District

USACE – United States Army Corps of Engineers

REFERENCES

City of Miami, Climate Action Plan (MiaPlan).

City of Miami Beach, Atlantic Greenway Network Master Plan. (December 2008)

City of Miami Beach, City Code Chapter 100: Sustainability.

City of Miami Beach, Parks & Recreation Department – Green Space Management Reforestation Plan (2007).

City of Miami Beach, Resolution 2007-26699 Endorsement of the U.S. Conference of Mayors Climate Protection Agreement.

City of Miami Beach, Strategic Plan.

City of Miami Beach, Transportation Element of the City's Comprehensive Plan. (November 2009).

City of Santa Monica Sustainability Plan.

Florida Energy, Conservation and Sustainable Buildings Act.

Florida State House Bill 697.

Global Change Research Act of 1990.

Miami-Dade County Climate Action Task Force, "Second Report and Initial Recommendations".

National Pollutant Discharge Elimination System Permit FL-000003.

Synthesis and Assessment Product 4.1: Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region.

Toward a Sustainable Community: A Toolkit for Local Government, University of Wisconsin.

US Army Corps of Engineers, No. 1165-2-211, Water Resource Policies and Authorities Incorporating Sea-Level Change Considerations in Civil Work Programs.

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