



Implementation Table

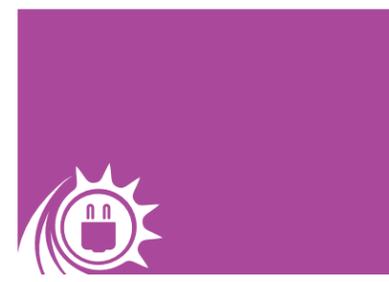
The Implementation Table contains actionable and measureable initiatives designed to achieve our 2015 sustainability goals. As *GreenPrint* is the umbrella for many existing plans, existing sustainability initiatives are included when deemed critical to accomplishing the goal area strategy. Other initiatives were developed through the planning process to address specific sustainability challenges or to expand on strengths. The Planning Process and Acknowledgements chapters highlight that our effort to identify and develop initiatives has been collaborative. It represents the culmination of work completed by the Mayor's Sustainability Advisory Board, the Interdepartmental Team, the Climate Change Advisory Task Force, community stakeholders, cities, the Southeast Florida Regional Climate Change Compact partners, and of course the core planning team. Miami-Dade County is the implementation lead on many initiatives and others are owned by community stakeholders.

The Implementation Table is organized by each *GreenPrint* Goal Area

The table presents information for each initiative such as the lead entity and partners (internal or external to Miami-Dade County government), funding scenarios, legislative action needed, key five-year milestones, impact on carbon emissions or the value of carbon storage, and performance indicators and targets. It is our action plan and will be used to monitor progress and determine success.

Mutually Beneficial and Inter-related Goals

The sustainability pillars are overlapping. Benefits in one goal area are often inter-related with benefits in another. Although there are seven different goal areas, the plan is holistic and the order of the goals is purposeful...starting with strong leadership, connections, and commitment to ultimately creating healthy communities. Each area contributes to a solid foundation for the Climate Change Action Plan to adapt and reduce our greenhouse gas emissions. Plans are important, but implementation is crucial for a sustainable Miami-Dade County.





Our Environment

Initiative	Lead & Partners	Funded and Unfunded Costs		Funding Sources	New Legislative Action	Milestones	Emissions Impacts	Performance Indicators and Targets
		Capital	Operating					
Strategy: Implement wastewater reuse to provide future water supply and benefit the environment								
31. Implement Wastewater Reuse Projects consistent with the 20-Year Water Use Permit and the Miami-Dade Water and Sewer Department Master Plans to recharge the Biscayne Aquifer	<p>Lead Water and Sewer Department (WASD)</p> <p>Partners Department of Environmental Resources Management (DERM), Office of Capital Improvements(OCI), Office of Strategic Business Management (OSBM) , Public Works Department, & General Services Administration (GSA)</p>	Total cost of all 3 projects is \$1.61billion	<p>Phase 1: \$17.74 million</p> <p>Phase 2: \$24.79 million</p> <p>Phase 3: \$18.83 million</p>	State of Florida Alternative Water Supply Grants State Revolving Fund (SRF) Loans Revenue Bonds Operating Revenues	New legislative action will be needed to approve construction projects and to raise rates	<p>Dec 31, 2014: South District Water Reclamation Plant (Phase 1)</p> <p>Dec 31, 2021: West District Water Reclamation Plant (Phase 2)</p> <p>Dec 31, 2025: North and Central District Water Reclamation Plants</p> <p>Dec 31, 2026: West District Water Reclamation Plant (Phase 3)</p>	<p>26,000 mt CO₂e increase within 5-years</p> <p>After all phases are on-line, increase of 93,000 annually in comparison to current energy use</p> <p>Although emissions will increase in comparison to current operations, they are less than the emissions associated with desalination</p>	<p>Achievement of milestones</p> <p>Gallons of potable/desalinated water displaced by reclaimed water</p>
32. Develop a water and wastewater utility and municipal working group to identify and implement wastewater reuse opportunities at both the utility and municipal levels	<p>Lead Water and Sewer Department (WASD)</p> <p>Partners Municipalities</p>	TBD through implementation	TBD through implementation	Working group within existing staff resources	Unidentified	<p>Year 1: Establish topic within current wholesale customer meetings.</p> <p>Year 2-5:Evaluate and implement opportunities</p>	TBD through implementation	Gallons of potable/desalinated water displaced by reclaimed water
33. Assess the feasibility of using highly treated wastewater to rehydrate wetlands and Biscayne Bay	<p>Lead Water and Sewer Department (WASD)</p> <p>Partners Department of Environmental Resources</p>	Pilot study: \$20 million. This includes all costs associated with the pilot, including constructing and operating the pilot plant, water quality testing and toxicity and ecological testing.		<p>Pilot study: WASD</p> <p>If the pilot is successful and there is agreement and regulatory approval to do a full-scale treatment plant to generate volumes</p>	Yes. If the pilot study is successful, funding and approval is	<p>Year 1: Complete the water quality data Phase 1</p> <p>Year 2-5: Complete the toxicity test Phase 2 and the ecological test Phase 3.</p>	Energy and GHG emissions will increase from the intense water treatment approaches and will be	<p>Achievement of milestones</p> <p>Pilot Study indicators will be related to water quality,</p>



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	Management (DERM)			of water needed for restoration in the Comprehensive Everglades Restoration Plan (CERP), then the County may seek partnership with the USACE.	required from USACE and U.S. Congress	Year 4: Complete pilot project (2015) At completion of each phase feasibility of project will be evaluated (could be cancelled at any phase). Year 5 and beyond: Will be based on Years 1-4 results	monitored through the pilot project.	and are likely to include nutrient concentrations, removal of micro contaminants, and some laboratory toxicity tests.
STRATEGY: Address salt intrusion that threatens drinking water wellfields and sensitive natural areas								
34. Formalize an interagency working group to evaluate and address issues associated with salt water intrusion	Lead South Florida Water Management District (SFWMD) Partners Water and Sewer Department (WASD), Department of Environmental Resources Management (DERM) Department of Planning & Zoning (DPZ)	Within existing resources Costs would be based on project(s) identified by the working group	Within existing resources Future periodic revision of the isochlor line will require funding	Within existing resources	No.	Year 1: Convene working group within 3-months of GreenPrint adoption	Not applicable	Projects identified and completed
35. Monitor the isochlor line and address spatial gaps in salt intrusion data gathering	Lead Water and Sewer Department (WASD) Partners WASD contract with United States Geological Survey(USGS), Department of Environmental Resources Management (DERM)	Funded: \$263,000 (Monitoring well installation)	Funded: \$1,825,724 (contract covers FY 08/11) Additional monitoring funding will be needed.	WASD	No	Completion of well installation by August 2010. Year 1: Publication of revised isochlor line March 2011	Not applicable	Completion of milestones Movement of the isochlor line
36. Construct a water control structure on/near the Florida City Canal to isolate this canal from South Florida	Lead Department of Environmental Resources Management (DERM) Partners South Florida Water	<\$900,000	Not applicable	Grant from the SFWMD and the County Stormwater Utility	Yes. Board of County Commissioners approval of cost sharing	Year 1: Project design Year 2-5: Permitting, bidding, award and construction	Not applicable	Completion of milestones Impact on the isochlor line



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Water Management District's dry season agricultural drawdown	Management District (SFWMD)				agreement.			
37. Construct an earthen plug at the Card Sound Road Canal	Lead Department of Environmental Resources Management (DERM) Partners None	\$3,000	Not applicable	Wetland Restoration Trust Fund	Yes. Board of County Commissioners approval of Class I Permit.	Year 1: Project design Year 2-5: Permitting, bidding, award and construction	Not applicable	Completion of milestones Impact on the isochlor line Wetlands function: Improvement of mangroves Native species planting
STRATEGY: Protect, enhance, and restore our natural resources								
38. Continue to minimize the impact of development on natural resources such as air, wetlands, Biscayne Bay and coastal habitats, natural forest communities, and trees through regulatory programs	Lead Department of Environmental Resources Management (DERM) Partners Florida Department of Environmental Protection (DEP), South Florida Water Management District (SFWMD), U.S. Environmental Protection Agency (EPA)	Not applicable	Funded within existing resources	DERM, FDEP, SFWMD, EPA	Yes. Board of County Commissioners approval of funded delegated contracts.	Continue operating programs Year 1: Determine appropriateness of programs to evaluate for CO ₂ impact. Year 2-5: Select programs, establish criteria and baselines. Explore determining the economic value of environmental resources.	Existing wetlands store an estimated >212 million metric tons of carbon, with and annual accumulation of >362,000 metric tons.	Air quality results Water Quality results # of Coastal habitats restored Estimated wetlands acreage Trees planted
39. Identify dedicated funding sources for beach renourishment projects to maintain quality beaches and minimize the negative	Lead Department of Environmental Resources Management (DERM) Partners County Executive Office(CEO), Office of Strategic Business Management (OSBM),	Current Government Obligation Bond funding available is estimated to be used completely in the next	Within existing resources. DERM staff manage capital projects. MDPR	Federal and State grants, Bond issues	Yes. Board of County Commissioners approval of construction.	Year 1-2: Identify funding source. Promote Miami-Dade best practice approach.	Not applicable	Completion of projects Impact on sea turtle nesting Beach renourishment activities are on-going,



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impacts of storm events	Park and Recreation (MDPR)	one- to two-year period. Funding will be needed for work beyond FY 2010-2011 FY 10-11 funded: \$7.4 million FY 11-15 unfunded: = \$ 7.8 million	maintains beaches.					correcting erosional areas caused by the dynamic system of coastal currents and the effects of frequent storm events
40. Continue to enhance and restore coastal habitats important for the health of Biscayne Bay	<p>Lead Department of Environmental Resources Management (DERM)</p> <p>Partners County Executive Office (CEO) Office of Strategic Business Management (OSBM) Park and Recreation (MDPR)</p>	<p>Funded: \$4,940,000</p> <p>Unfunded: \$5,400,000</p>	Within existing staff resources	<p>Florida Inland Navigation District (State Grants)</p> <p>Biscayne Bay Trust Fund</p>	Yes. Board of County Commissioners approval of construction contracts and potential future funding agreements.	<p>Year 1: Highland Oaks Wetlands Restoration Oleta River State Park Hammock Restoration Year 2: FIU/Oleta River State Park Wetlands Restoration Year 3: Matheson Hammock Wetlands Restoration Year 4-5: Oleta River Hammock Restoration</p>	Mangrove value impact TBD within Year 1	<p>Completion of milestones</p> <p>Cumulative acres of coastal habitats restored: 525 acres</p>
41. Develop appropriate indicators of the status and health of the resources of Biscayne Bay, through a collaborative approach with academic, governmental, nongovernmental organizations, and stakeholder entities	<p>Lead Marine and Estuarine Goal Setting for South Florida (MARES): University of Miami</p> <p>Algal bloom indicator update: Florida International University</p> <p>Partners National Oceanic and Atmospheric Administration (NOAA), National Park Service (NPS), South Florida Water Management District</p>	<p>\$493,000 as part of an anticipated three year, \$1.47 million grant.</p> <p>Project will assist in coordinating data collection and analysis among agencies to optimize cost-effectiveness and avoid duplication.</p>		<p>MARES funding is from by a grant to the University of Miami and some of its collaborators from the NOAA Center for Sponsored Coastal Ocean Research.</p> <p>Additional funding will be required to continue collection of underlying data upon which the indicators are based and to analyze the data.</p>	No.	<p>Chl a (algal bloom) indicator presently being updated through 2008. Year 1: MARES project will begin development of indicators for the southeast Florida Shelf Year 2: Integrate these indicators for a more comprehensive assessment of all coastal waters</p>	Not applicable	<p>Achievement of milestones</p> <p>Chl a: spatial indicator trends: Improvement</p> <p>Remaining indicators to be developed through the MARES initiative.</p>



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	(SFWMD), Department of Environmental Resource Management (DERM), Florida Fish and Wildlife Conservation Commission (FWC), Florida Department of Environmental Protection (FDEP), Audubon Society							
42. Continue to support the Comprehensive Everglades Restoration Plan (CERP)	<p>Lead US Army Corps of Engineers; South Florida Water Management District (SFWMD)</p> <p>Partners Federal, state, tribal, and local government agencies may participate in planning teams.</p>	The entire program has a 50-year time frame and is now expected to cost well in excess of \$10 billion.	<p>For the portion that is funded: 50:50 Federal: Non-Federal match required. Federal appropriations authorized by U.S. Congress and State appropriations from Florida legislature/SFWMD. If match is not available from both partners for a particular activity, the project cannot proceed.</p> <p>For the portion that is unfunded: Budget bills and authorizations, such as federal Water Resources Development Act at the federal level</p>		Approval of individual project implementation plans; authorization of plans by Congress; federal and state funding approvals; federal or state award of construction contracts; initiation of construction	Not applicable	Progress with projects will be monitored.	
43. Report the air quality benefits of mass transit use and reduced vehicle miles traveled	<p>Lead Department of Environmental Resources Management (DERM)</p> <p>Partners Miami-Dade Transit Department (MDT)</p>	Within existing resources	DERM MDT	No	<p>Year 1: Develop mechanism to calculate air quality impacts. Report.</p> <p>Year 2-5: Continue</p>	TBD through transit ridership	Reductions in CO, NOx, PM and CO ₂	
44. Continue to pursue funding for government and private diesel retrofit projects in partnership with the EPA Southeast Diesel Collaborative	<p>Lead Department of Environmental Resources Management (DERM)</p> <p>Partners U.S. Environmental Protection Agency (EPA), Southeast Diesel Collaborative (US SEDC)</p>	Funding will be determined by future EPA grant allocation	EPA	Yes. Board of County Commissioners approval based on grant	Determined by grant(s)	TBD through grant allocation	TBD through grant allocation	



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STRATEGY: Protect environmental and other lands that may be important for ecosystem and community resilience								
45. Continue to acquire important lands through the Environmentally Endangered Lands (EEL) program	<p>Lead Department of Environmental Resources Management (DERM)</p> <p>Partners Environmentally Endangered Lands Program (EEL)</p>	Funded: FY 10/11 – FY 14/15: \$28.173 million	Within existing staff resources funded by EEL Trust Fund	EEL Trust Fund	Yes. BCC approval of acquisitions .	Continue acquisition program	<p>Existing lands: Estimated Carbon Stored : 5,024,789</p> <p>Estimated Yearly Accumulation of Carbon on (metric tons): 11,335</p> <p>Lands remaining to be acquired have the potential to store an additional 4,004,352 metric tons of carbon and accumulate 8,216 tons of carbon annually.</p>	Year 1-5: Cumulative acquisition target: 24,000 acres
46. Explore alternative funding sources for the EEL program such as a carbon offset sequestration program	<p>Lead Department of Environmental Resources Management's (DERM) Environmentally Endangered Lands Program (EEL)</p> <p>Partners Office of Sustainability (OOS) Chicago Climate Exchange (CCX)</p>	Year 1 milestone within existing staff resources		Supplemental funding is being sought to support the EEL Program.	Year 1 milestone will evaluate whether legislative action is required.	<p>Year 1: Develop a Project Document with the CCX to determine value of existing EEL lands and revenue opportunities</p> <p>Year 2-5: Evaluate and implement</p>	<p>CO₂ sequestration</p> <p>TBD through implementation</p>	Achievement of milestones
STRATEGY: Develop a sustainable Solid Waste System and Master Plan, using waste to benefit our economy and environment								
47. Continue to develop a sustainable Solid Waste Master plan	<p>Lead Department of Solid Waste Management (DSWM)</p>	\$1.5 million for Phases 1 and 2		DSWM Disposal and Collection Fees	TBD through Master Plan recommen	<p>Year 1: Completion of Phase 1 (assessment of current system)</p> <p>Year 2: Completion of Phase 2: Development of</p>	TBD through Master Plan alternatives	Achievement of milestones



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	Partners Customers Community stakeholders				dations	alternatives and road map for implementation. Alternatives include a "Pay as You Throw" system, Rate structure changes, diversion through recycling, composting, mulching, increased waste to energy usage, and new technologies		
48. Use waste as energy at the WASD South District Wastewater Treatment facility	Lead Water and Sewer Department (WASD) Partners Department of Solid Waste Management (DSWM)	Funded: \$17.04 million	Costs are not yet in annual budget	Capitol: \$1.8M funded by federal EECBG grant, remaining through WASD Plan Expansion Funds and WASD Series 2010 Bond Funds Operations and Maintenance: WASD annual budget	Yes. BCC Approval of contracts.	Year 1: Award co-generation units contract Year 1-5: Co-generation construction schedule to be based on contract	440 mt CO ₂ e per year	Achievement of milestones Amount of CO ₂ e impact avoided
49. Explore a residential composting program	Lead UF IAFS Miami-Dade County Cooperative Extension Service (UF IFAS) Partners Department of Solid Waste Management (DSWM)	Funded: Workshops will be offered by UFAS existing staff resources resources Unfunded: Bulk purchase of compost units. Residents would purchase compost units, approximately \$50 each		UF IFAS	No	Year 1: Conduct educational workshops Year 2: Conduct surveys to determine program effectiveness Year 2-5: Continue/refine program based on Year 1-2 results	Not applicable	Number of workshop attendees: 450 annually Number of attendees composting (follow-up survey results)
50. Explore a private sector development of a local soil/compost industry	Lead MDC Agriculture Manager Partners Department of Solid Waste Management (DSWM)	Explored within existing staff resources in conjunction with the Solid Waste Master Plan		Within existing staff resources and Solid Waste Master Plan contract	TBD through Master Plan recommendations	Year 1: Evaluate the quantity of waste needed for SWM operations in comparison to agriculture/ landscaping industry demand. Evaluate potential distribution and operational models. Year 2-5: Based on Year 1 results	TBD through implementation	Achievement of milestones
51. Continue to increase	Lead Department of Solid		Funded: New single	DSWM residential collection fees	No	Year 1-5: Continue increase current	County residential	County residential



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participation in the residential recycling program	<p>Waste Management (DSWM)</p> <p>Partners Waste services Inc., Waste Management of Florida Inc., World Waste Recycling Inc.</p>		<p>stream program: Approximately \$8 million annually</p> <p>Savings of \$4.5 million in comparison to former dual stream program</p> <p>Unfunded: Year 1-5: Outreach</p>			<p>participation with existing customers and encourage municipalities to join.</p>	<p>collection program: Total emissions avoided = 839,449 mt CO₂e</p> <p>Community recycling: 1,645,000 mt CO₂e avoided</p>	<p>collection program: 4% tonnage increase in FY 2010-11 2% increase each year thereafter</p>
52. Partner with community leaders, and private entities to elevate commercial and multi-family recycling	<p>Lead Department of Solid Waste Management (DSWM)</p> <p>Partners Building Owners and Management Association (BOMA), Greater Miami Chamber of Commerce, Municipality Chambers Private Waste Hauling Companies League of Cities Municipalities</p>	Not applicable	<p>Unfunded: Outreach</p> <p>Staffing needs to be determined through development of work plan.</p>	TBD	<p>Possibly. Chapter 15 of Miami-Dade County Code may need to be updated based on development of the work plan.</p>	<p>Year 1: Identify and prioritize key industries. Establish partnerships and work plan, develop outreach program. Host recycling forum link with current enforcement program Year 2-5: Implement</p>	<p>TBD through implementation</p>	<p>Number of known establishment conducting recycling.</p> <p>Recycling tons collected by private haulers (Approach TBD)</p>
53. Mandate recycling in all local government buildings	<p>Lead County Executive Office (CEO), Office of Sustainability (OOS)</p> <p>Partners Miami-Dade County's Department of Solid Waste Management(DSWM), Department of</p>	TBD		<p>Already funded by current costs of waste disposal. Waste disposal costs will go down with a resulting increase in recycling costs/revenues.</p>	No	<p>Year 1: Advertise contract Year 2-5: Implement and encourage municipalities to join</p>		Tons recycled



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	Environmental Resource Management(DERM), Resource Conservation Committee							
54. Explore a pilot composting and mulching program for County operations such as Public Works and Park and Recreation departments	<p>Lead Public Works Department (PWD), Parks and Recreation (MDPR)</p> <p>Partners Department of Solid Waste Management(DSWM), Public School System, S. Dade South and Water Conservation District</p>	<p>Within existing staff resources (PWD)</p> <p>Unfunded Capital (MDPR): \$250,000</p> <p>No new operating costs due to potential revenue for compost (MDPR)</p>	<p>Within existing staff resources (PWD)</p> <p>Attempting to obtain Pepsi Refresh Grant, otherwise TBD (MDPR)</p>	No	<p>Year 1: Evaluate current mulching operations and ability to use in gardens and within own operations or to generate revenue. (PWD)</p> <p>Year 2-5: Implement and expand (PWD)</p> <p>TBD based on funding (MDPR)</p>	Indirect impacts	Achievement of milestones, % reduction to landfill (PWD), Lbs. of compost created (MDPR)	