Approved _____ Mayor
Veto _____
Override _____

Agenda Item No. 12(A)(1)

03-06-07

OFFICIAL FILE COPY
CLERK OF THE BOARD
OF COUNTY COMMISSIONERS
MIAMI-DADE COUNTY, FLORIDA

RESOLUTION NO. R-306-07

RESOLUTION AUTHORIZING A MEMORANDUM OF UNDERSTANDING BETWEEN THE CITY OF MIAMI AND MIAMI-DADE COUNTY TO FACILITATE AN ECOSYSTEM ANALYSIS BY AMERICAN FORESTS AS A FRAMEWORK TO INCORPORATE GREEN INFRASTRUCTURE INTO FUTURE PLANNING

WHEREAS, Board desires to accomplish the purposes outlined in the accompanying memorandum, a copy of which is incorporated herein by reference,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA, that this Board hereby approves the attached Memorandum of Agreement between Miami-Dade County and the City of Miami for funding of up to $158,000 to develop a series of green infrastructure data layers that will take the form of a GIS data set and serve as the fundamental framework to conduct an ecological study of changes in the community's green infrastructure assets and provide decision support tools and data for the City and County to incorporate green infrastructure into future planning in substantially the form attached hereto; authorizing the County Mayor or his designee to execute amendments to this agreement and to accept additional funds that may become available for this agreement; and authorizing the County Mayor or his designee to exercise the provisions contained therein.

The foregoing resolution was offered by Commissioner Rebeca Sosa, who moved its adoption. The motion was seconded by Commissioner Dennis C. Moss and upon being put to a vote, the vote was as follows:

Bruno A. Barreiro, Chairman aye
Barbara J. Jordan, Vice-Chairwoman aye

Jose "Pepe" Diaz	aye	Audrey M. Edmonson	aye
Carlos A. Gimenez	aye	Sally A. Heyman	aye
Joe A. Martinez	aye	Dennis C. Moss	aye
Dorrin D. Rolle	aye	Natacha Seijas	aye
Katy Sorenson	aye	Rebeca Sosa	aye
Sen. Javier D. Souto	aye		

The Chairperson thereupon declared the resolution duly passed and adopted this 6th day of March, 2007. This resolution shall become effective ten (10) days after the date of its adoption unless vetoed by the Mayor, and if vetoed, shall become effective only upon an override by this Board.

MIAMI-DADE COUNTY, FLORIDA
BY ITS BOARD OF
COUNTY COMMISSIONERS

HARVEY RUVIN, CLERK

By: KAY SULLIVAN
Deputy Clerk

Approved by County Attorney as
to form and legal sufficiency.

Robert A. Duvall

Memorandum

MIAMI-DADE COUNTY

Date: March 6, 2007

To: Honorable Chairman Bruno A. Barreiro and Members, Board of County Commissioners

Agenda Item No. 12(A)(1)

From: George M. Burgess
County Manager

Subject: Resolution Authorizing the Execution of a Memorandum of Agreement with the City of Miami to Collaborate on an Urban Ecosystems Analysis with American Forests and Sanborn.

RECOMMENDATION

It is recommended that the Board approve the attached resolution authorizing the execution of a Memorandum of Agreement with the City of Miami (City) to partner on funding an Urban Ecosystems Analysis project to be performed by American Forests (Attachment A, Memorandum of Agreement). The total cost of the project is estimated at $217,317. Through this agreement, the Miami-Dade County Community Image Advisory Board will fund up to $142,000 of the project cost. The City will provide the remainder of the funding through a $60,000 grant award by the Florida Department of Agriculture and up to $16,000 in City funds. The project will provide the County with a decision tool using an analysis conducted on the changes in impervious surfaces, tree canopy, non-tree vegetation, bare soil, and water that have occurred within the County during the last decade. The analysis will also help determine the economic value that these changes have had on storm water runoff, and air and water quality.

The contract approval for the Urban Ecosystems Analysis project is being presented to the Board under separate cover.

BACKGROUND

Recent losses in tree canopy cover in Miami-Dade County and the City of Miami due to hurricanes, citrus canker, and urban development have had a negative impact on green infrastructure. The importance of green infrastructure is its ability to mitigate pollution and enhance air and water quality. This project will analyze satellite images and aerial photography to develop a series of data layers that will serve as the fundamental framework for a decision support tool that will allow the County and City to: 1) conduct ecological analyses of changes in the community's green infrastructure assets and 2) provide a benchmark for the County and City to incorporate green infrastructure into future planning.

The underlying GIS dataset of the area's green infrastructure will be developed for different time periods over the last decade and at different resolutions to quantify damage corresponding to land cover changes from storms, disease, and development and their ecological and economic impacts on stormwater management and air and water quality. American Forests will provide an Urban Ecosystem Analysis using a tool called CITYgreen for ArcGIS software. This assessment calculates the values of the trees based on the air and water quality, storm water runoff reduction, and carbon sequestration benefits they provide for the County and City. Up to 498 square miles of property within the Urban Development Boundary will be included as part of this analysis.

Assistant County Manager

MEMORANDUM

(Revised)

TO: Honorable Chairman Bruno A. Barreiro and Members, Board of County Commissioners

DATE: March 6, 2007

FROM: Murray A. Greenberg County Attorney

SUBJECT: Agenda Item No. 12(A)(1)

Please note any items checked.

_____ **"4-Day Rule" ("3-Day Rule" for committees) applicable if raised**

_____ **6 weeks required between first reading and public hearing**

_____ **4 weeks notification to municipal officials required prior to public hearing**

_____ **Decreases revenues or increases expenditures without balancing budget**

_____ **Budget required**

_____ **Statement of fiscal impact required**

_____ **Bid waiver requiring County Manager's written recommendation**

_____ **Ordinance creating a new board requires detailed County Manager's report for public hearing**

_____ **Housekeeping item (no policy decision required)**

_____ **No committee review**

Attachment A

MEMORANDUM OF AGREEMENT

This **AGREEMENT** made and entered into this ____ day of_____, 2007, by and between the **CITY OF MIAMI, FLORIDA,** a political subdivision of the STATE OF FLORIDA, hereinafter referred to as the "**CITY**", and **MIAMI-DADE COUNTY**, a political subdivision of the STATE OF FLORIDA, hereinafter referred to as the "**COUNTY**".

WITNESSETH

WHEREAS, the **CITY** and **COUNTY** are concerned that recent losses in tree cover due to hurricanes, citrus canker, and urban development have had a negative impact on the green infrastructure and its ability to mitigate pollution and enhance air and water quality, and

WHEREAS, both parties herein wish to facilitate an ecosystem analysis, hereinafter referred to as the "Analysis", to develop a series of green infrastructure data layers to serve as the fundamental framework for: 1) conducting ecological analyses of changes in the community's green infrastructure assets and 2) providing decision support tools and data for the **CITY** and **COUNTY** to incorporate green infrastructure into future planning and;

WHEREAS, by presenting the larger framework of green infrastructure and sharing existing data, the **CITY** and **COUNTY** can achieve economies through a joint project plan and;

WHEREAS, American Forests has provided a project proposal based on previous analyses in other urban areas and has been determined to be a sole source provider of the Analysis described in attachment "1" to this agreement and;

WHEREAS, the State of Florida Department of Agriculture and Consumer Services Division of Forestry wishes to also participate in the Analysis and is providing $60,000 to assist in funding the analysis and;

WHEREAS, the **CITY** Commission has by proper resolution attached hereto as attachment "B" and by reference made a part thereof, authorized its **CITY** Manager or his designee to enter into this **AGREEMENT**.

Attachment A

NOW, THEREFORE, in consideration of the promises and the covenants contained herein, the parties agree:

1. The **COUNTY** shall contract with American Forests for an amount not to exceed $158,000, manage the contract, and provide American Forests with the imagery and data described in attachment "A", where applicable.
2. The **COUNTY** shall provide up to $142,000.00 for the Analysis, based on 447 square miles located within the Urban Development Boundary (UDB).
3. The **CITY** shall provide up to $16,000.00 upon execution of this **AGREEMENT** for the Analysis, based on 48 square miles within the municipal boundaries of the **CITY**.
4. The **CITY** and the **COUNTY** shall jointly coordinate the Analysis and the deliverables by American Forests pertaining to their respective areas of interest, jointly participate in press conferences and presentations of the Analysis, and share licenses of the City Green software prorated to the funding formula.
5. The **CITY** and the **COUNTY** agree to utilize the logos of the **CITY**, **COUNTY**, and the Community Image Advisory Board, and the Florida State Seal on publications and advertisements of the Analysis report. Printing and distribution costs will be borne by each entity for its own purposes.
6. The **COUNTY** project contact will be Alyce Robertson, or her designee, County Manager's Office, 111 NW 1st Avenue, Miami, Florida 33128, (305) 375-2103.
7. The **CITY** project contact will be Robert Ruano, or his designee, Office of Grants Administration, 444 SW 2nd Avenue, 5th floor, Miami, Florida, 33130, 305-416-1532.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed the day and year first above written.

CITY OF MIAMI	**MIAMI-DADE COUNTY, FLORIDA BY ITS BOARD OF COUNTY COMMISSIONERS**
By:_____	**By:**_____

Attachment A

City Manager

County Manager

ATTEST:_____(SEAL)
City Clerk

ATTEST:_____(SEAL)
County Clerk

APPROVED AS TO LEGAL FORM

By:_____
CITY Attorney

By:_____
County Attorney

ATTACHMENT "B"
CITY RESOLUTION

CITY Resolution No._____dated_____, 20_____,
attached hereto and incorporated herein.

Attachment 1

URBAN ECOSYSTEM ANALYSIS FOR CITY OF MIAMI and MIAMI – DADE COUNTY Scope of Work

Prepared by: American Forests

Rev. November 9, 2006

Overview
The City of Miami and Miami-Dade County are concerned that recent losses in their tree cover due to hurricanes, citrus canker, and urban development have had a negative impact on their green infrastructure and its ability to mitigate pollution and enhance air and water quality. This project will develop a series of green infrastructure data layers that will take the form of a GIS data set and serve as the fundamental framework for: 1) conducting ecological analyses of changes in the community's green infrastructure assets and 2) providing decision support tools and data for the city and county to incorporate green infrastructure into future planning. The underlying GIS dataset of the area's green infrastructure will be developed for different time periods over the last decade and at different resolutions to quantify damage to corresponding to landcover changes from storms, disease, and development and their ecological and economic impacts on stormwater management and air and water quality. By presenting the larger framework of green infrastructure and sharing existing data, each of the issues raised by the City and County can be addressed at the appropriate scale for the best project value.

Issue 1: Land cover change and its impact on green infrastructure
Question: How has the County's landcover changed over the last ten years and how have these changes affected the urban ecosystem's ability to provide ecosystem services such as clean water, erosion control, clean air, and flood protection?

Approach: Use Landsat imagery (only available at 30m) to provide a historic landcover change trend. We are fortunate that as part of the NOAA Coastal Services Center Coastal Change Analysis Program (C-CAP), we are able to use two publicly available datasets that will be completed by September 2006 for this analysis. For this project we propose adding a third date to this sequence taken from 2006 Landsat imagery. This dataset will be created to meet the C-CAP classification scheme and quality. These datasets will be converted to the standard green infrastructure data sets one from 1995, a second from 2001, and a third from 2006. Using these data we can provide trend changes in impervious surfaces, tree canopy, non-tree vegetation, bare soil and water that have occurred over the County during the last decade. We can determine the economic value these trend changes have had on stormwater runoff, and air and water quality. Once these data layers have been developed, American Forests' staff will teach the City and County staff how to use CITYgreen for ArcGIS so that they can use the prepared data to integrate green infrastructure into future planning.

Data source: Landsat 5 or 7 captured in 2006. C-CAP datasets, imagery and training sites developed by NOAA CSC.

Geographic extent: For whole county including everglades (1,946 sq. miles).

Spatial resolution: 30 meter

Issue 2: Tree Loss Due to Hurricane Damage

Question: The City of Miami and Miami-Dade County has sustained tree loss due to several hurricanes in 2004 and 2005. What is the extent of the loss and how has this affected ecosystem services previously provided by the canopy? How can the City of Miami and Miami-Dade County incorporate green infrastructure into future planning to recover from the tree canopy loss and to enhance ecosystem services with future development?

Approach: By comparing high resolution (<1 m) datasets collected in Nov 04 - Feb 05 to those from March 2006. Storm damage can be evaluated for its impact on green infrastructure and thus on air and water quality and stormwater runoff.

Data source:

For City of Miami: Pre-hurricane conditions will be quantified with 1 meter color infrared imagery taken Nov. 2004 to Feb 2005. This imagery is available from the South Florida Water Management District and was taken with ADS 40 digital camera. Post-hurricane conditions will be quantified using Miami-Dade County data from March 2006 CIR imagery collect resampled to 1 m, to match the pre-hurricane data resolution to do the comparative analysis.

For Miami-Dade County: Pre-hurricane conditions will be quantified with 1 meter color infrared imagery taken Nov. 2004 to Feb 2005. This imagery is available from the South Florida Water Management District and was taken with ADS 40 digital camera. Post-hurricane conditions will be quantified using the Miami-Dade County data from March 2006 CIR imagery collect resampled to 1 m to match the pre-hurricane data resolution.

Geographical Extent: City of Miami and the Miami-Dade County Urban Development Boundary (UDB).

Spatial Resolution: 1 meter

PROJECT DELIVERABLES

American Forests will provide an Urban Ecosystem Analysis using CITYgreen for ArcGIS software. This assessment calculates the values of the trees based on the air and water quality, stormwater runoff reduction, and carbon sequestration benefits they provide for the area of interest. The analysis uses widely accepted scientific and engineering formulas to make these ecological value calculations. The data delivered will be geo-referenced, and formatted to be used with the client's GIS database. Deliverables for the approach above include:

- CD of digital, value added classified Landsat data of Miami-Dade County using Landsat Satellite imagery from 1995, 2001, and 2006. Urban Ecosystem Analysis summary and digital data provided on CD.
- CD of digital, value added classified data of pre and post hurricane land cover analysis of Area(s) of Interest using recent high-resolution, multispectral imagery. Urban Ecosystem Analysis summary and classified digital data provided for each area selected on CD
    - The data can also be subdivided by geo-political or ecological boundary, such as council district or watershed. City and County staff may select up to10 total areas of interest and provide corresponding shape files for analysis. Additional areas of interest may be analyzed for $500 per shape file.
- Forty licenses of CITYgreen for GIS software for City and County's use
- All GIS data layers will be provided in the following coordinate system: Florida State Plane NAD_1983 _East FIPS_0901; Units: feet

Deliverables (see price list)

- American Forests conducts two (1) day CITYgreen training for up to 20 people each day at a City or County arranged facility. The training will use ArcGIS and CITYgreen for ArcGIS software and raster data to teach students how to run analyses on air and water quality, stormwater management, carbon storage and sequestration.
- Project Report- an 8-12 page color report summarizing the findings of the analysis within the context of local issues. PDF on CD only (printed reports are extra). (see examples of reports at: http://www.americanforests.org/resources/urbanforests/analysis.php
- Written press release of the major findings of the analyses within the context of local issues and recommendations. City/County would place the press release with media and conduct follow up.
- Press conference/presentation: The press conference may be combined with a presentation to local officials or community members as appropriate, or held as separate events during our stay. Typically, a presentation is longer and provides more detail than at a press conference. American Forests will:
    - Frame stories for reporters for feature articles, typically putting local issues and findings into the context of a national perspective. Often this involves providing information on our other projects and multiple phone calls with the press
    - Consult with client on appropriate presenters for press conference; brief presenters on context and pertinent issues for the press event
    - Create a powerpoint presentation using data in report and additional work conducted for analysis. This presentation is given to client for their future use.
    - Present at press conference (10-15 minute presentation) and/or at an elected official or public presentation (30 minute) and answer questions.
    - Interviews with media pre-event, day of, and post event

- Make images and other data or graphics to media as requested in the formats that are requested

The city and county will organize the event, cultivate the press, invite local officials to speak about the project, field press calls and follow up with inquiries after the event.

- Additional consulting- American Forests can work with local staff one-on-one on using the analysis technique, tools, and data to address local planning issues or provide additional presentations. This would be an add on to the current contract.

The City and County will provide:

- Imagery (including metadata) as described above for options selected
- Data needed in analysis such as: shape files of area(s) of interest and metadata of project, information on local conditions such as hydrologic soils and cost of stormwater retention facilities
- Organize and provide location for CITYgreen training.
- Place press release with identified media and conduct follow up.
- Organize press conference and cultivate media. Identify and provide local speakers for press conference. Follow up with press post event.
- Print and distribute written report as desired.

American Forests will serve as Project Manager
Contacts:
Gary Moll, Senior Vice President, Urban Ecosystem Center
202-737-1944x220; gmoll@amfor.org

Cheryl Kollin, Vice President, Urban Ecosystem Center
202-737-1944x221; ckollin@amfor.org

1. Conduct Urban Ecosystem Analyses on the data at the scales selected.
2. Provide written documentation of analyses to include summary report and accompanying maps.
3. Provide CITYgreen software training for up to 40 staff from participating agencies
4. Deliver value-added GIS data and CITYgreen software to all Florida agencies participating in the project for continued use of the data and software.
5. Write press release, participate in press conference, and/or presentation and interviews, provide report graphics as requested

Sanborn (subconsultant)
Contact:
David Youngblood, Regional Sales Manager- Florida, 904-287-9178;
dyoungblood@sanborn.com

1. Collect required imagery from local and state sources

2. Perform image classification and change detection of imagery for delivery to American Forests as described through the different options.

PROJECT TIMELINE

Timeline will begin once contract has been signed and all imagery has been received. High resolution, multispectral imagery can only be collected while trees are in full green foliage with less than 10% cloud cover. If there is a delay in receiving imagery, timeline will be adjusted accordingly.

Month 1	Client sends to American Forests all project imagery, boundary shape files, and Metadata to begin classification.
~~Month 1~~	Client sends to American Forests documents pertinent to putting this analysis into the context of local environmental and planning issues for written report
Month 1	American Forests sends specifications for organizing
Month 3	Client plans CITYgreen training (training to be held after classified high res data is complete, so that it can be used in training)
Month 3	American Forests receives Landsat data and conducts CITYgreen analysis for air quality, water quality, carbon sequestration and stormwater. American Forests submits 2 page summary of analysis to client.
Month 7	American Forests receives classified high res. data and conducts CITYgreen analysis for air quality, water quality, carbon sequestration and stormwater. American Forests submits 2 page summary of analysis to client.
Month 8	American Forests writes draft report for review by Client
Month 8	American Forests prepares press release
Month 8	American Forests provides the Client with a CD of data in suitable format
Month 8	American Forests conducts (two) 1-day CITYgreen trainings using local data layer (includes copies of CG software and manuals).
Month 8	American Forests prepares press release; and together with client hold press Conference/presentation
Month 9	American Forests finalizes and delivers pdf of report to client

Recommended Budget

Miami and Miami-Dade County, Florida*										
Prepared:	January 30, 2007									
Task	**Description**	**Unit (sq. miles**	**Sanborn**	**American Fo**	**AF Project Mgt.**	**Sum Total**	**Selected**	**City**	**County**	**State**
Issue 1. Landcover Change Impacts	Measures landcover changes over 10 yrs. and its ecosystem changes									**State**
Landsat 5/7	2006 Coverage									
Countywide 3 dates	To CCAP Classification Scheme	1946	$18,549.00	$5,565	$1,391	**$25,505**	$25,505			
						Issue 1: Selected Subtotal	**$25,505**	**$ 1,846.35**	**$ 16,616.80**	**$ 7,041.76**
Issue 2. Pre and Post Hurricane Analysis	Measure loss of tree canopy and ecosystem services due to hurricanes by comparing Nov 2004-Feb 2005 to those from March 2006.									
Pre-hurricane data from SFWMD data 11/04-2/05	1 m color infrared	UDB-447	$55,902.28	$19,368.00	$4,842	**$80,112**	$80,112			
Post-hurricane data from County data 3/06	1m color infrared	UDB-447	$33,306.28	$9,992	$2,498	**$45,796**	$45,796			
Pre-hurricane City of Miami from SFWMD data 11/04-2/05	1m color infrared**	48	$8,658.72	$4,329	$1,082	**$14,070**	$14,070			
Post-hurricane data from County data 3/06	1m color infrared**	48	$8,658.72	$4,329	$1,082	$14,070	$14,070			
Footnote**	City of Miami classification of imagery cost can be subtracted from County cost for this 1m data, since it is the same data									
						Issue 2: Selected Subtotal	**$154,049**	**$ 11,151.94**	**$ 100,365.37**	**$ 42,532.20**
Deliverables										
Project Report	8-12 page PDF only (no printed copies)	1		$4,750	$1,188	$5,938	$5,938			
Press release	American Forests provides release and requested interviews only; city/county provides press placement and follow-up	1		$1,500	$375	$1,875	$1,875			
Press conference Option 1	American Forests organizes event and all press contacts	1		$10,000	$2,500	$12,500				
Press conference Option 2	City/County organzes event and all press; American Forests presents and offers interviews	1		$4,000	$1,000	$5,000	$5,000			
Additional Consulting	per day	1		$1,000	$250	$1,250				
Press conference travel	Airfare, 2 nights hotel, meals (per person)	1		$1,200		$1,200	$1,200			
CITYgreen training	(2) 1-day training for up to 20 people/day; 2 days at user facility, includes manuals.	1		$4,200	$1,050	$5,250	$5,250			
CITYgreen training travel	Airfare, 3 nights hotel, meals (2 instructors)	1		$2,700		$2,700	$2,700			
CITYgreen software	21+ copies bulk discount, users manual, 1yr. phone tech support	40		$395		$15,800	$15,800			
CITYgreen software	11-20 copies bulk discount, users manual, 1yr. Phone tech support			$695						
						Deliverable Subtotal	**$37,763**	**$ 2,733.71**	**$ 24,602.83**	**$ 10,426.03**
GRAND TOTAL							**$217,317**	**$ 15,732**	**$141,585**	**$ 60,000**