

Memorandum



Date: July 8, 2020

To: Honorable Chairwoman Audrey M. Edmonson
and Members, Board of County Commissioners

From: Carlos A. Gimenez
Mayor

A handwritten signature in blue ink, likely belonging to Carlos A. Gimenez, the Mayor.

Agenda Item No. 8(M)(1)

Resolution No. R-656-20

Subject: Resolution Authorizing Execution Research Service Agreement Between Miami-Dade County and the University of Florida to Study the Waste Disposed in the County and the Cost and Market Potential for Yard Trash Waste Management Practices

Recommendation

It is recommended that the Board of County Commissioners (Board) approve the attached Research Service Agreement (Agreement) with the University of Florida (UF) to assess the current mass of municipal solid waste (MSW or Waste) disposed in the Miami-Dade County (County) and the cost and market potential for yard trash waste composting or mulching.

Scope

The scope of work for the Agreement includes all sampling, testing, analyses of waste and reporting services necessary to determine the cost and marketability of yard waste in Miami-Dade County. The impact is countywide.

Fiscal Impact/Funding Source

The proposed amount for the Agreement is \$149,663.00, which is comprised of a Yard Trash Study for \$97,616.00 and a Comprehensive Waste Composition Study for \$52,047.00.

The funding source for this project is the Department of Solid Waste Management (DSWM) proprietary funds. By utilizing UF for this much-needed research, DSWM will be saving significantly, as other private consultants stated that the cost for the Waste Composition Study alone would cost more than \$150,000.00.

Track Record/Monitor

This research Agreement will be managed by Achaya Kelapanda, Assistant Director for Technical Services, DSWM.

Background

This item will allow the University of Florida (UF), through its Department of Environmental Engineering Sciences and the Hinkley Center for Solid and Hazardous Waste, which is a statewide solid waste research center hosted by UF, to conduct research on the current mass of municipal solid waste disposed of in the County and the feasibility of instituting a yard trash composting or mulching facility.

The waste study will determine how much paper, glass, food waste, etc. is discarded in the County's waste stream. The trash study will also determine the percentage of contamination found in green waste that is taken to the County's neighborhood Trash and Recycling Centers (TRCs). The studies will assist the Department in planning how to reduce waste, better improve recycling efforts and conserve natural resources and money. The research studies should take approximately 12 months to complete.

The research studies will be accomplished by performing the following tasks: Yard Trash Estimation Study from the County's neighborhood TRCs; Map and Estimate the Flows of Yard Trash; Conduct a Market Study Analysis; Complete a Technical Engineering Analysis; and Conduct a Comprehensive Waste Composition Study.

TASK	DESCRIPTION	BUDGET	TOTALS
Task 1	Yard Trash Estimation Study for Trash and Recycling Centers	\$29,285	
Task 2	Map and Estimate the Flows of Yard Trash	\$19,523	
Task 3	Market Analysis	\$24,404	
Task 4	Technical Engineering Analysis	\$24,404	
	<i>Total Option 1</i>		\$97,616
Task 5	Comprehensive Waste Composition Study	\$52,047	
	<i>Total for Options 1 & 2</i>		\$149,663



Jennifer Moon
Deputy Mayor

Scope of Work

State of Practice Review to Assess the Cost and Market Potential for Yard Trash Waste Management Practices in Miami-Dade County

Prepared for:
Miami-Dade Department of Solid Waste Management

Prepared by:
Department of Environmental Engineering Sciences
Engineering School of Sustainable Infrastructure and Environment
and the Bill Hinkley Center for Solid and Hazardous Waste Management
University of Florida

Scope:

The University of Florida's Department of Environmental Engineering Sciences (UF) and the Hinkley Center for Solid and Hazard Waste (a statewide solid waste research center hosted by the UF College of Engineering) proposes to assist Miami-Dade County by conducting research on the current mass of municipal solid waste (MSW) disposed of and the feasibility of instituting a yard trash composting or mulching facility. The research will be conducted by a UF student under the supervision of a UF faculty member. The student will visit facilities within Miami-Dade County as needed to collect data, tour facilities, and interview solid waste system experts; all other research will be conducted at the University campus. The UF team will present the results of the work to County staff.

A total of five tasks have been identified. Tasks 1-4 are presented as part of an "Option 1" study that would focus on yard trash present (and potentially recoverable) from the County's trash and recycling centers. Tasks 1-5 are presented as part of an "Option 2" study that would include a waste composition study of the curbside and commercial waste stream in the County (not collected at the trash and recycling centers). These two research options are discussed in more detail below:

Option 1

Task 1: Yard Trash Estimation Study for Trash and Recycling Centers

Aim: Identify the mass of potentially recoverable yard trash disposed of at three of the County's trash and recycling centers.

Description:

- The research team will develop a methodology to estimate the amount of yard trash (e.g., branches, leaves, etc.) being disposed of at each of the centers. Preliminary visits and meetings with the County will be used to develop the methodology. For example, one strategy will be to place roll-off boxes at multiple centers that are labeled only for yard trash. Such data, along with other data collected at the centers and composition estimates by the research team members

stationed at the centers, could be used to estimate the amount of yard potentially recoverable.

- The research team will not initiate the on-the-ground work until the County has agreed to the methodology.

Task 2: Map and Estimate the Flows of Yard Trash

Aim: Using existing County data on waste collection amounts and the trash and recycling center yard trash estimation study, the amount of yard trash generated, collected, recycled, and disposed of in the County will be estimated. In Option 1, the focus will be on the yard trash from the centers. If Option 2 is exercised, the estimation will also include the amount of yard trash collected as curbside waste.

Description:

- Historical records of waste from all the trash and recycling centers, as well as data from the trash and recycling center estimation study will be compiled.
- Other potential sources and generators of yard trash will also be compiled as appropriate.
- Estimates of potentially recoverable yard trash will be developed for the County as a whole, and by region.

Task 3: Conduct a Market Analysis

Aim: Complete an evaluation of the conditions that affect the markets for products resulting from yard trash mulching or composting.

Description:

- Gather data from other local governments in Florida that process yard trash through mulching or composting and the markets their products are sold to.
- Contact local agriculture industries, landscapers, and construction stores to evaluate the viability of marketing finished yard trash which has either been mulched or composted.
- Compile data on the size of the market available in locally in the county and in Florida.
- Estimate the projected market price of mulched or composted yard trash from various viable industries or business.
- Report on any state or local regulations relating to mulching or composting yard trash.

Task 4: Complete a Technical Engineering Analysis

Aim: Using the data collected from Tasks 1-3, complete a technical memorandum summarizing the types of technology, size, and costs associated with both mulching and composting yard trash.

Description:

- Provide a report that includes the following calculations and assessment:
 1. Provide an assessment for both composting and mulching, which will include estimating the mass of yard trash that is potentially available to be processed that is currently disposed of at the landfill and at the drop-off collection centers.
 2. Estimate the capital and operating costs associated with each type of facility that would be borne by the county. This would include the costs associated with the type of processing equipment, labor, energy consumption, etc.
 3. Provide a recommendation to the County on whether it is cost effective to mulch or compost the yard trash or any other potential treatment options.

Option 2

Includes Tasks 1-4 with the addition of Task 5 below.

Task 5: Conducting a Waste Composition Study

Aim: Conduct a two-season waste composition study at the resource recovery facility to produce a waste composition estimate for the entire County.

Description:

- Produce a waste composition study plan and present this to the County for feedback. The waste composition study will be conducted following standardized sampling methodologies accepted by the FDEP for waste composition estimates. The waste composition study will only be conducted after the County has agreed to the methodology and target waste sectors and components.
- The waste composition study will be conducted over 5-6 days each in two different seasons. The research team will work with the County or other designated party to randomly select waste loads from targeted sectors (e.g., residential, commercial). Representative sub-samples of loads (~300 lb) will be sorted by hand on a sorting table and target categories of materials will be weighed.
- A report documenting the results of the waste composition study, including all sampling data and statistical analysis will be included in the report.
- One of the waste components targeted in the work will be yard trash. Yard trash composition data will be integrated into the Task 4 analysis and other relevant tasks.

Proposed Budget

Task	Budget
1. Yard Trash Estimation Study for Trash and Recycling Centers	\$29,285
2. Map and Estimate the Flows of Yard Trash	\$19,523
3. Market Analysis	\$24,404
4. Technical Engineering Analysis	\$24,404
<i>Option 1 Total</i>	<i>\$97,616</i>
5. Comprehensive Waste Composition Study	\$52,047
<i>Option 2 Total</i>	<i>\$149,663</i>

Note: Detailed budget breakdowns on the following pages.

Option 1 Budget

**PROPOSED BUDGET
UNIVERSITY OF FLORIDA
ESSIE**

23-Sep-19

**PRINCIPAL INVESTIGATOR:
Dr. Timothy Townsend**

SPONSOR: Miami-Dade County

CONTRACT/GRANT NO:

**DATES: 12 months
Est Start Date: 10/1/19**

TITLE: Yard Trash Study

	% Time	Period Covered	Req. Amount
A. SALARIES:			
Faculty (Name):			
T. Townsend	100%	2 weeks	\$8,776
J. Schert	100%	2 weeks	\$5,505
		TOTAL SALARIES	\$14,281
B. OTHER PERSONNEL SERVICES (OPS):			
Graduate Student	50%	12 months	\$25,000
Undergraduate Student			\$10,000
		TOTAL OPS	\$35,000
C. FRINGE BENEFITS:			
26.8% Faculty			\$3,827
12.1% Graduate Student			\$3,025
1.6% Student OPS			\$160
		TOTAL FRINGE BENEFITS	\$7,012
		TOTAL SALARIES, OPS & FRINGE BENEFITS	\$56,293
D. TOTAL PERMANENT EQUIPMENT:			
		OCO	\$0
E. TOTAL OPERATING EXPENSES:			
Travel	\$2,000		
Materials	\$2,000		
Tuition	\$17,800		
		EXPENSES	\$21,800
F. TOTAL DIRECT COSTS:			
			\$78,093
G. TOTAL INDIRECT COSTS:			
	25.0%	Total Direct Costs	\$19,523
H. TOTAL BUDGET:			
			\$97,616

Option 2 Budget

**PROPOSED BUDGET
UNIVERSITY OF FLORIDA
ESSIE**

23-Sep-19

**PRINCIPAL INVESTIGATOR:
Dr. Timothy Townsend**

SPONSOR: Miami-Dade County

CONTRACT/GRANT NO:

**DATES: 12 months
Est Start Date: 10/1/19**

TITLE: Yard Trash Study

	% Time	Period Covered	Req. Amount
A. SALARIES:			
Faculty (Name):			
T. Townsend	100%	2 weeks	\$8,776
J. Schert	100%	5 weeks	\$13,762
S. Laux	100%	2 weeks	\$5,325
		TOTAL SALARIES	\$27,863
B. OTHER PERSONNEL SERVICES (OPS):			
Graduate Student	50%	12 months	\$25,000
Undergraduate Student			\$19,021
		TOTAL OPS	\$44,021
C. FRINGE BENEFITS:			
26.8% Faculty			\$7,467
12.1% Graduate Student			\$3,025
1.6% Student OPS			\$304
		TOTAL FRINGE BENEFITS	\$10,796
		TOTAL SALARIES, OPS & FRINGE BENEFITS	\$82,680
D. TOTAL PERMANENT EQUIPMENT:		OCO	\$0
E. TOTAL OPERATING EXPENSES:			
Travel	\$16,000		
Materials	\$3,250		
Tuition	\$17,800		
		EXPENSES	\$37,050
F. TOTAL DIRECT COSTS:			\$119,730
G. TOTAL INDIRECT COSTS:	25.0%	Total Direct Costs	\$29,933
H. TOTAL BUDGET:			\$149,663



MEMORANDUM (Revised)

TO: Honorable Chairwoman Audrey M. Edmonson
and Members, Board of County Commissioners

DATE: July 8, 2020

FROM: Abigail Price-Williams
County Attorney

SUBJECT: Agenda Item No. 8(M)(1)

Please note any items checked.

- ☐ "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
- ☐ Statement of social equity required
- ☐ Ordinance creating a new board requires detailed County Mayor's report for public hearing
- ☐ No committee review
- ☐ Applicable legislation requires more than a majority vote (i.e., 2/3's present ____, 2/3 membership ____, 3/5's ____, unanimous ____, CDMP 7 vote requirement per 2-116.1(3)(h) or (4)(c) ____, CDMP 2/3 vote requirement per 2-116.1(3)(h) or (4)(c) ____, or CDMP 9 vote requirement per 2-116.1(4)(c)(2) ____ to approve
- ☐ Current information regarding funding source, index code and available balance, and available capacity (if debt is contemplated) required

Approved _____ Mayor
Veto _____
Override _____

Agenda Item No. 8(M)(1)
7-8-20

RESOLUTION NO. R-656-20

RESOLUTION AUTHORIZING EXECUTION OF A RESEARCH SERVICE AGREEMENT BETWEEN MIAMI-DADE COUNTY AND THE UNIVERSITY OF FLORIDA IN THE AMOUNT OF \$149,663.00 TO STUDY THE WASTE DISPOSED OF IN THE COUNTY AND THE COST AND MARKET POTENTIAL FOR YARD TRASH WASTE MANAGEMENT PRACTICES

WHEREAS, the County owns the Resources Recovery Facility (RRF) located at 6990 N.W 97th Avenue, Doral, Florida, which processes about 1.1 million tons of post-recycled waste annually; and

WHEREAS, the Department of Solid Waste Management (Department) has thirteen neighborhood Trash and Recycling Centers that process approximately 121,000 tons of yard waste annually; and

WHEREAS, the Department wishes to enter into a research agreement (Attachment 1) with the University of Florida's Hinkley Center (UF) to identify the composition of the waste and yard waste streams in the County; and

WHEREAS, the Hinkley Center was specifically created by the Florida Legislature to provide leadership in waste management research with the goal of preserving and protecting the state's natural resources; and

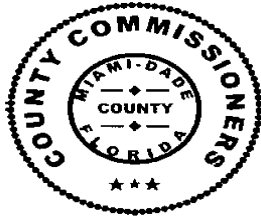
WHEREAS, this Board desires to accomplish the purposes outlined in the accompanying memorandum, a copy of which is incorporated herein by reference,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA, that this Board authorizes the County Mayor or County Mayor’s Designee to execute the attached Research Service Agreement between Miami-Dade County and the University of Florida in the amount of \$149,663.00 to study the waste disposed of in the County and the cost and market potential for yard trash waste management practices in substantially the form attached hereto. The County Mayor or County Mayor’s Designee is authorized to exercise any and all powers within the Research Service Agreement including termination and extensions.

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

Audrey M. Edmonson, Chairwoman	aye		
Rebeca Sosa, Vice Chairwoman	aye		
Esteban L. Bovo, Jr.	aye	Daniella Levine Cava	aye
Jose “Pepe” Diaz	aye	Sally A. Heyman	aye
Eileen Higgins	aye	Barbara J. Jordan	aye
Joe A. Martinez	aye	Jean Monestime	aye
Dennis C. Moss	aye	Sen. Javier D. Souto	aye
Xavier L. Suarez	aye		

The Chairperson thereupon declared this resolution duly passed and adopted this 8th day of July, 2020. This resolution shall become effective upon the earlier of (1) 10 days after the date of its adoption unless vetoed by the County Mayor, and if vetoed, shall become effective only upon an override by this Board, or (2) approval by the County Mayor of this resolution and the filing of this approval with the Clerk of the Board.



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

HARVEY RUVIN, CLERK

Melissa Adames

By: _____
Deputy Clerk

Approved by County Attorney as
to form and legal sufficiency.

A handwritten signature in blue ink, appearing to read "dsh", is written over a horizontal line.

David Stephen Hope

Research Service Agreement

Between

Miami-Dade County

and the

University of Florida Board of Trustees

THIS AGREEMENT is made by and between the University of Florida, ("UF"), whose address is 207 Grinter Hall, University of Florida, Box 115500, Gainesville, FL 32611 and Miami-Dade County (hereafter referred to as "SPONSOR"), whose address is 111 NW 1st Street, Miami, Florida 33128.

WHEREAS, SPONSOR is a local government and political subdivision of the State of Florida;

WHEREAS, SPONSOR desires to retain the services of UF, upon the terms and conditions hereinafter set forth;

WHEREAS, SPONSOR owns the South Dade Landfill, a municipal solid waste ("MSW") disposal facility;

WHEREAS, yard waste constitutes a portion of disposed solid waste;

WHEREAS, yard waste may be a potentially reusable commodity;

WHEREAS, inbound yard waste to the MSW disposal facility is incinerated for electric generation or may be landfilled and not otherwise reused;

WHEREAS, if yard waste from SPONSOR is suitable for composting or mulching, it could be reused;

WHEREAS, SPONSOR desires to (i) determine if the yard waste is suitable as a soil amendment for recycling, (ii) study the feasibility of converting yard waste into useful products, and (iii) conduct market research to determine market demand for these products in order to help advance its own legislated sustainability objectives to help meet the 75 percent recycling goal established by the State of Florida; and

NOW THEREFORE, in consideration of the mutual covenants and agreements contained herein, SPONSOR and UF agree as follows:

- 1. Scope of Service to be Performed:** UF agrees to undertake and conduct the work entitled "**State of the Practice Review to Assess the Cost and Market Potential for Yard Trash Management practices in Miami-Dade County**" for SPONSOR as outlined in attached scope of work (the "Services").
- 2. Period of Service:** The research services called for by Article 1 may begin after approval by the Board of County Commissioners with activities ending one (1) year thereafter on _____, 2021, unless extended by written amendment of the parties (the "Parties") or terminated early following the termination provisions set forth below (the "Contract End Date"). Such commencement of the Services shall be tolled during any period that the research services envisaged in Article 1 cannot be performed due to restrictions or regulations enacted or an inability to undertake and conduct the work due to the Covid-19 pandemic, and the Contract End Date shall be extended automatically to include such period of time that the contract is tolled.

3. **Fixed Fee and Payment:** SPONSOR agrees to pay UF a total not-to-exceed fee in the amount \$149,663 for research services to be provided under this agreement in accordance with the following schedule and receipt of UF invoice based on the percent completion of each task:

- Task 1 – Yard Trash Estimation Study for Trash and Recycling Centers - **\$29,285**
- Task 2 –Map and Estimate the Flows of Yard Trash - **\$19,523**
- Task 3 –Market Analysis - **\$24,404**
- Task 4 –Technical Engineering Analysis - **\$24,404**
- Task 5 - Comprehensive Waste Composition Study – **\$52,047**

The Payment shall be made to “University of Florida” and remitted to the following address:

University of Florida
Accounts Receivable Manager
Office of Contracts and Grants – Accounting Services
33 Tigert Hall
PO Box 113001
Gainesville, FL 32611-3001

Sponsor shall pay interest at the lesser of 1.5% above the prime interest rate and the maximum amount allowed by law for failure to make payments when due. The prime interest rate is calculated as published in Wall Street Journal on the first business day of default. Sponsor shall pay University for collection fees and legal fees that it incurs to collect outstanding balances.

4. **Points of Contact:** The following are designated as Investigators and Administrative contacts for the purposes of this Agreement. The Investigators will be responsible for the technical matters of the research services outlined in Exhibit A. The UF Investigator is essential to the work being performed and no change to the UF Investigator is allowed without the SPONSOR’s written approval.

Investigators:

For UF: Timothy Townsend, Professor
Engineering School of Sustainable Infrastructure & Environment
333 ENG, PO Box 116450
Gainesville, FL 32611
352-392-0846
ttown@ufl.edu

For SPONSOR: Michael Fernandez, Director
2525 NW 62nd Street
Miami, FL, 33147
305-514-6666
Michael.Fernandez@miamidade.gov

Administrative:

For UF: UF Division of Sponsored Research

207 Grinter Hall
PO Box 115500
Gainesville, FL 32611-5500
(352) 392-9267
ufawards@ufl.edu

For SPONSOR: Achaya Kelapanda – Engineering & Technical Services Assistant Director
2525 NW 62nd Street
Miami, FL, 33147
305-514-6689
Achaya.Kelapanda@miamidade.gov

5. **Reporting Requirements:** In addition to research services as described by Article 1, UF Investigator shall deliver the following reports to the SPONSOR's Investigator:

<u>Report Type</u>	<u>Due</u>
Quarterly Status Report	Every three (3) Months until Contract End Date
Draft Final Report	No later than 1 Month from Contract End Date
Final Signed & Sealed Report	Fifteen (15) days before Contract End Date

These narrative reports should provide an assessment of what has been accomplished during the reporting period with the final report covering the entire Subcontract period.

6. **Confidential Information:** Any confidential or proprietary information provided by one Party to the other in connection with this Agreement (the "Confidential Information"), as defined below, is confidential and/or proprietary to the Disclosing Party, and the Receiving Party shall not publish or disclose Confidential Information to a third-party or use Confidential Information for any purpose unrelated to this Agreement, without the prior written consent of the Disclosing Party. The Party receiving Confidential Information from the other party is referred to as the "Receiving Party", and the Party disclosing Confidential Information to the other party is referred to as the "Disclosing Party". Confidential Information shall mean: (a) if the Confidential Information is in written form when disclosed, the Disclosing Party must indicate the proprietary nature of such information by an appropriate legend, marking, stamp or other positive identification on the writing delivered to the Receiving Party; and (b) if the Confidential Information is disclosed orally or visually, the Disclosing Party must, within thirty (30) days after disclosure to the Receiving Party, deliver to the Receiving Party a writing containing an adequate description of the oral or visual information which shall indicate the proprietary nature of such information by an appropriate legend, marking, stamp or other positive identification.

The obligations of non-use and non-disclosure shall not apply to:

- (a) Information that the Receiving Party can show by written record that it possessed prior to its receipt from the Disclosing Party;
- (b) information that was available to the public prior to its receipt by the Receiving Party or later became so through no fault of the Receiving Party;
- (c) information that is subsequently disclosed to the Receiving Party by a third party free of any obligations of confidentiality;
- (d) information that is independently known, developed, or discovered without use of the Disclosing Party's Confidential Information; or
- (e) information that is required to be disclosed by law.

In the event of clause (e) above, the Receiving Party is required to give the Disclosing Party prompt notice thereof. The Disclosing Party may seek an appropriate protective order, and the Receiving Party will reasonably cooperate with the Disclosing Party in its efforts to seek such a protective order.

The obligations of this Article pertaining to confidentiality shall apply for three (3) years after disclosure.

- 7. Publications:** SPONSOR recognizes that UF Investigators must have the ability to publish study findings, results or other information gained in the course of the Services in scholarly journals, student dissertations, or other professional forums not so mentioned.

In order to give the SPONSOR an opportunity to review and advise regarding loss of intellectual property rights and/or to identify any inadvertent disclosure of SPONSOR Confidential Information, UF will submit to SPONSOR copies of any proposed publication or presentation material involving the results of the Services at least thirty (30) days in advance of the submission date for publication or planned presentation date.

SPONSOR recognizes that timing is of the essence and the review of such materials shall be completed within thirty (30) days from the receipt of the planned publication or presentation. UF agrees to delete SPONSOR's Confidential Information from any such proposed publication or presentation material unless SPONSOR agrees in writing to allow its release. If SPONSOR does not respond within the thirty (30) days, UF Investigators will have the right to publish the results without further notification or obligation to SPONSOR.

At the request of the SPONSOR, UF will delay publication or presentation of materials submitted by up to another thirty (30) days (or longer if mutually agreed upon) to allow for preparation and filing of a patent application which SPONSOR has the right to file or to have UF file at SPONSOR's request.

8. Inventions and Patents:

- a) "Background Intellectual Property" means any intellectual property owned or controlled by a Party as of the effective date of the Research Service Agreement or conceived outside of the Services.
- b) Neither Party shall have any claims to or rights in Background Intellectual Property of the other Party.
- c) No license to the other Party under any patents is granted or implied by conveying proprietary or other Confidential Information to that Party.
- d) If an invention is conceived exclusively by the employees of one Party in the performance of the Services ("Sole Invention"), title to said Sole Invention and to any patent issuing thereon shall be in the inventing Party's name.
- e) In the case of a joint invention, that is an invention made jointly by one or more employees of both Parties hereto in the performance of the Services ("Joint Invention"), each Party shall have an equal, undivided interest in and to such Joint Invention(s).
- f) UF grants SPONSOR a first right to negotiate a worldwide, royalty-bearing exclusive license to UF's Sole Inventions or to UF's rights in Joint Inventions (the "Option Right"). The Option Right shall extend for ninety (90) days from the date of disclosure to SPONSOR (the "Option Period"). If SPONSOR exercises the Option Right, UF and SPONSOR shall negotiate in good faith a license agreement with commercially reasonable terms. If the Parties fail to execute a license within six (6) months after SPONSOR's exercise of the Option Right, UF has no further obligation to SPONSOR for that Invention.

9. **Use of Name for Publicity:** Neither Party shall use the name of the other Party or of any Investigator in any advertising or promotional material without the prior written approval of the other. Notwithstanding any other provision of this Agreement, both Parties acknowledge that under Section 1004.22, Florida Statutes, UF shall be free to release the title and short description of the Services, the name of the UF Investigator, and the amount and source of funding provided for the Services, without prior approval of SPONSOR.
10. **Compliance with Law:** The Parties shall comply with all applicable federal, state, local laws, and regulations and nothing in this Agreement shall be construed to require either Party to violate such provisions of law or subject either Party to liability for adhering to such provisions of law.
11. **Independent Contractor:** UF shall be deemed to be and shall be an independent contractor and, as such, UF shall not be entitled to any benefits applicable to employees of SPONSOR; Neither Party is authorized or empowered to act as agent for the other for any purpose and shall not on behalf of the other enter into any contract, warranty, or representation as to any matter. Neither shall be bound by the acts or conduct of the other.
12. **Insurance:** In the performance of all services hereunder:
- a) UF warrants and represents that UF has adequate liability insurance, such protection being applicable to officers, employees, and agents while acting within the scope of their employment by UF, and UF has no liability insurance policy as such that can extend protection to any other person.
 - b) Each Party hereby assumes any and all risks of personal injury and property damage attributable to the negligent acts or omissions of that Party and the officers, employees, and agents thereof to the extent permitted by Section 768.28, Florida Statutes.
13. **Termination:** Either Party may terminate this agreement without cause upon thirty (30) days prior written notice to the other.
- Termination for Breach.** If either Party commits a material breach of this Agreement and fails to remedy that breach within thirty (30) days after receipt of written notice from the other Party, the Party giving notice may terminate this Agreement by written notice to the other Party, effective upon receipt (the "Termination Date").
- Upon any termination of this Agreement by either Party, UF will cease further obligation of funds for Services and will take all reasonable steps to cancel or otherwise reduce outstanding obligations. SPONSOR will pay UF for either (a) percent of completion or (b) deliverable completed to the Termination Date, and (c) any non-cancellable obligations on or before the Termination Date pursuant to Article 3 of the Agreement. UF will refund any portion of SPONSOR advance payments not obligated pursuant to (a) or (b) above.
14. **Dispute Resolution:** The Parties shall attempt to cooperatively resolve any and all disputes and/or claims that arise under this Agreement by first engaging the highest appropriate administrative officials of each Party who shall negotiate in good faith to seek a cooperative resolution. In event that any disputes or claims arising from this Agreement cannot be resolved as provided for above, the Parties hereby agree to first participate in good faith in non-binding mediation in an attempt to resolve and settle all disputes.
15. **Force Majeure:** Neither Party is responsible for delays resulting from causes reasonably beyond its control, including fire, explosion, flood, tropical storm, hurricane, war, strike, or riot, provided that the

nonperforming Party uses commercially reasonable efforts to avoid or remove causes of nonperformance and continues performance under this Agreement with reasonable dispatch after the causes are removed.

- 16. Miscellaneous:** This Agreement (a) may not be assigned or transferred by either Party without the other Party's prior written consent, (b) constitutes the entire understanding of the Parties with respect to the subject matter hereof, and (c) may be modified or amended only in a writing signed by duly authorized representatives of both Parties.
- 17. Export Control:** SPONSOR shall notify UF in writing before providing UF any export controlled information or materials. SPONSOR shall include, if known, the Export Control Classification Number, United States Munitions List Category or EAR99 designation as appropriate.
- 18. Execution:** Delivery of a signed Agreement by reliable electronic means, including facsimile or email, shall be an effective method of delivering the executed Agreement. This Agreement may be stored by electronic means and either an original or an electronically stored copy of this Agreement can be used for all purposes, including in any proceeding to enforce the rights and/or obligations of the Parties to this Agreement.
- 19. Agreement Modification:** The Parties may only modify this Agreement by a written instrument signed by both Parties. A purchase order may be used for billing purposes only and may not modify the terms and conditions of this Agreement.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their duly authorized representatives.

SPONSOR

Signature (authorized representative)

Title

Date

UNIVERSITY OF FLORIDA

 Digitally signed by Amber Hardie
Date: 2020.04.10 16:28:16 -04'00'

Signature (authorized representative)

Sponsored Programs Manager

Title

4/10/2020

Date

I have read and approve this Agreement, and I hereby assign to University all my right, title, and interest in any Intellectual Property.

Timothy Townsend
TIMOTHY TOWNSEND
Principal Investigator

Scope of Work

State of Practice Review to Assess the Cost and Market Potential for Yard Trash Waste Management Practices in Miami-Dade County

Prepared for:

Miami-Dade Department of Solid Waste Management

Prepared by:

Department of Environmental Engineering Sciences
Engineering School of Sustainable Infrastructure and Environment
and the Bill Hinkley Center for Solid and Hazardous Waste Management
University of Florida

Scope:

The University of Florida's Department of Environmental Engineering Sciences (UF) and the Hinkley Center for Solid and Hazard Waste (a statewide solid waste research center hosted by the UF College of Engineering) proposes to assist Miami-Dade County by conducting research on the current mass of municipal solid waste (MSW) disposed of and the feasibility of instituting a yard trash composting or mulching facility. The research will be conducted by a UF student under the supervision of a UF faculty member. The student will visit facilities within Miami-Dade County as needed to collect data, tour facilities, and interview solid waste system experts; all other research will be conducted at the University campus. The UF team will present the results of the work to County staff.

A total of five tasks have been identified. Tasks 1-4 are presented as part of an "Option 1" study that would focus on yard trash present (and potentially recoverable) from the County's trash and recycling centers. Tasks 1-5 are presented as part of an "Option 2" study that would include a waste composition study of the curbside and commercial waste stream in the County (not collected at the trash and recycling centers). These two research options are discussed in more detail below:

Option 1

Task 1: Yard Trash Estimation Study for Trash and Recycling Centers

Aim: Identify the mass of potentially recoverable yard trash disposed of at three of the County's trash and recycling centers.

Description:

- The research team will develop a methodology to estimate the amount of yard trash (e.g., branches, leaves, etc.) being disposed of at each of the centers. Preliminary visits

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and meetings with the County will be used to develop the methodology. For example, one strategy will be to place roll-off boxes at multiple centers that are labeled only for yard trash. Such data, along with other data collected at the centers and composition estimates by the research team members stationed at the centers, could be used to estimate the amount of yard potentially recoverable.

- The research team will not initiate the on-the-ground work until the County has agreed to the methodology.

Task 2: Map and Estimate the Flows of Yard Trash

Aim: Using existing County data on waste collection amounts and the trash and recycling center yard trash estimation study, the amount of yard trash generated, collected, recycled, and disposed of in the County will be estimated. In Option 1, the focus will be on the yard trash from the centers. If Option 2 is exercised, the estimation will also include the amount of yard trash collected as curbside waste.

Description:

- Historical records of waste from all the trash and recycling centers, as well as data from the trash and recycling center estimation study will be compiled.
- Other potential sources and generators of yard trash will also be compiled as appropriate.
- Estimates of potentially recoverable yard trash will be developed for the County as a whole, and by region.

Task 3: Conduct a Market Analysis

Aim: Complete an evaluation of the conditions that affect the markets for products resulting from yard trash mulching or composting.

Description:

- Gather data from other local governments in Florida that process yard trash through mulching or composting and the markets their products are sold to.
- Contact local agriculture industries, landscapers, and construction stores to evaluate the viability of marketing finished yard trash which has either been mulched or composted.
- Compile data on the size of the market available in locally in the county and in Florida.
- Estimate the projected market price of mulched or composted yard trash from various viable industries or business.
- Report on any state or local regulations relating to mulching or composting yard trash.

Task 4: Complete a Technical Engineering Analysis

Aim: Using the data collected from Tasks 1-3, complete a technical memorandum summarizing the types of technology, size, and costs associated with both mulching and composting yard trash.

Description:

- Provide a report that includes the following calculations and assessment:

1. Provide an assessment for both composting and mulching, which will include estimating the mass of yard trash that is potentially available to be processed that is currently disposed of at the landfill and at the drop-off collection centers.
2. Estimate the capital and operating costs associated with each type of facility that would be borne by the county. This would include the costs associated with the type of processing equipment, labor, energy consumption, etc.
3. Provide a recommendation to the County on whether it is cost effective to mulch or compost the yard trash or any other potential treatment options.

Option 2

Includes Tasks 1-4 with the addition of Task 5 below.

Task 5: Conducting a Waste Composition Study

Aim: Conduct a two-season waste composition study at the resource recovery facility to produce a waste composition estimate for the entire County.

Description:

- Produce a waste composition study plan and present this to the County for feedback. The waste composition study will be conducted following standardized sampling methodologies accepted by the FDEP for waste composition estimates. The waste composition study will only be conducted after the County has agreed to the methodology and target waste sectors and components.
- The waste composition study will be conducted over 5-6 days each in two different seasons. The research team will work with the County or other designated party to randomly select waste loads from targeted sectors (e.g., residential, commercial). Representative sub-samples of loads (~300 lb) will be sorted by hand on a sorting table and target categories of materials will be weighed.
- A report documenting the results of the waste composition study, including all sampling data and statistical analysis will be included in the report.
- One of the waste components targeted in the work will be yard trash. Yard trash composition data will be integrated into the Task 4 analysis and other relevant tasks.

Proposed Budget

Task	Budget
1. Yard Trash Estimation Study for Trash and Recycling Centers	\$29,285
2. Map and Estimate the Flows of Yard Trash	\$19,523
3. Market Analysis	\$24,404
4. Technical Engineering Analysis	\$24,404
<i>Option 1 Total</i>	<i>\$97,616</i>
5. Comprehensive Waste Composition Study	\$52,047
<i>Option 2 Total</i>	<i>\$149,663</i>

Note: Detailed budget breakdowns on the following pages.

Option 1 Budget
PROPOSED BUDGET
UNIVERSITY OF FLORIDA
ESSIE

23-Sep-19

PRINCIPAL INVESTIGATOR:
Dr. Timothy Townsend

SPONSOR: Miami-Dade County

CONTRACT/GRANT NO:

DATES: 12 months
Est Start Date: 10/1/19

TITLE: Yard Trash Study

	% Time	Period Covered	Req. Amount
A. SALARIES:			
Faculty (Name):			
T. Townsend	100%	2 weeks	\$8,776
J. Schert	100%	2 weeks	\$5,505
		TOTAL SALARIES	\$14,281
B. OTHER PERSONNEL SERVICES (OPS):			
Graduate Student	50%	12 months	\$25,000
Undergraduate Student			\$10,000
		TOTAL OPS	\$35,000
C. FRINGE BENEFITS:			
26.8% Faculty			\$3,827
12.1% Graduate Student			\$3,025
1.6% Student OPS			\$160
		TOTAL FRINGE BENEFITS	\$7,012
		TOTAL SALARIES, OPS & FRINGE BENEFITS	\$56,293
D. TOTAL PERMANENT EQUIPMENT:			
		OCO	\$0
E. TOTAL OPERATING EXPENSES:			
Travel		\$2,000	
Materials		\$2,000	
Tuition		\$17,800	
		EXPENSES	\$21,800
F. TOTAL DIRECT COSTS:			
			\$78,093
G. TOTAL INDIRECT COSTS:			
	25.0%	Total Direct Costs	\$19,523
H. TOTAL BUDGET:			
			\$97,616

Option 2 Budget
PROPOSED BUDGET
UNIVERSITY OF FLORIDA
ESSIE

23-Sep-19

PRINCIPAL INVESTIGATOR:
Dr. Timothy Townsend

SPONSOR: Miami-Dade County

CONTRACT/GRANT NO:

DATES: 12 months
Est Start Date: 10/1/19

TITLE: Yard Trash Study

	% Time	Period Covered	Req. Amount
A. SALARIES:			
Faculty (Name):			
T. Townsend	100%	2 weeks	\$8,776
J. Schert	100%	5 weeks	\$13,762
S. Laux	100%	2 weeks	\$5,325
		TOTAL SALARIES	\$27,863
B. OTHER PERSONNEL SERVICES (OPS):			
Graduate Student	50%	12 months	\$25,000
Undergraduate Student			\$19,021
		TOTAL OPS	\$44,021
C. FRINGE BENEFITS:			
26.8% Faculty			\$7,467
12.1% Graduate Student			\$3,025
1.6% Student OPS			\$304
		TOTAL FRINGE BENEFITS	\$10,796
		TOTAL SALARIES, OPS & FRINGE BENEFITS	\$82,680
D. TOTAL PERMANENT EQUIPMENT:			
		OCO	\$0
E. TOTAL OPERATING EXPENSES:			
Travel	\$16,000		
Materials	\$3,250		
Tuition	\$17,800		
		EXPENSES	\$37,050
F. TOTAL DIRECT COSTS:			
			\$119,730
G. TOTAL INDIRECT COSTS:			
	25.0%	Total Direct Costs	\$29,933
H. TOTAL BUDGET:			
			\$149,663