

April 10, 2024  
File No. 090338224

**MEMORANDUM**

**TO:** Solid Waste Disposal and Recyclable Materials Processing Authority of Broward County

**FROM:** The SCS Team

**SUBJECT:** Consulting Services for the Preparation of a Regional Solid Waste and Recycling Master Plan (Bid Number: 5942001)

This memorandum presents the proposed scope of services for the Preparation of a Regional Solid Waste and Recycling Master Plan (Master Plan) that reflects the Basic and Additional Services identified in the subject Request for Proposals and the associated assumptions and limitations. Also enclosed is the SCS Team Organizational Chart (Attachment 1), Scope of Services Task Leads (Attachment 2), and the proposed Project Schedule (Attachment 3). Following confirmation of the scope of services, project pricing will be developed and negotiated.

**BASIC SERVICES****TASK 1 – PROJECT INTRODUCTION**

The SCS Team will provide a summary outlining our understanding of the following topics necessary for inclusion in the draft Master Plan and other task topics to align the project activities and expectations:

- Overview;
- Outcome of the Studies;
- The SCS Team’s approach to developing the Master Plan;
- Sources of data the SCS Team intends to utilize;
- Authority’s intended use for the Master Plan;
- Resources necessary to operate the System;
- Regulatory requirements for managing and reducing waste across the County; and
- Public engagement process.

**DELIVERABLES**

- Client Service Planner
- Draft and final project framework summary



## **TASK 2 – PROJECT KICK-OFF MEETING**

Immediately following the Notice-to-Proceed, the SCS Team will coordinate and schedule a properly noticed kick-off meeting with the Solid Waste Disposal and Recyclable Materials Processing Authority of Broward County (Authority) to be held within two (2) weeks following the issuance of the Notice-to-Proceed. The public kick-off meeting attendees are assumed to include the Executive Director and members of the Executive Committee and Technical Advisory Committee (TAC), and the public. We understand that no quorum of the Executive Committee nor the TAC need to be present for such a meeting. The SCS Team will prepare a meeting agenda with items to be discussed, including, but not limited to:

- Roles and expectations of the Authority and the SCS Team;
- Confirm the Authority's mission and objective to create an integrated and sustainable System that is environmentally sustainable, transparent, innovative, and economically efficient;
- Confirm the Master Planning time horizon (i.e., 20 years);
- Identify if the Authority has any limitations that should be considered (e.g., waste export/import); and
- Project Schedule, including status briefings.

Following the project kick-off meeting, the SCS Team will prepare a schedule for the completion of this Scope of Services within the agreed-upon schedule.

## **DELIVERABLES**

- Draft and final meeting agenda, meeting minutes, and project management plan, including the project schedule.

## **TASK 3 – EVALUATE EXISTING SOLID WASTE DISPOSAL AND RECYCLING PROCESSES AND RESOURCES IN BROWARD COUNTY**

The SCS Team will prepare a planning baseline that starts with evaluating the existing collection, solid waste disposal, and recycling processes and resources in the County and region, including the modes of collection, transport, and processing, disposal, and developing a policy and institutional framework that are aligned with the goals of the Authority. Initially, the SCS Team will build upon the Arcadis Study and the recent Broward Waste Composition and Generation Studies performed by our team members to:

- Describe the study area in terms of:
  - Topography
  - Physical and climatological
  - Geology and hydrogeology
  - Climate
  - Wildlife and vegetation
  - Land use characteristics
  - Major transportation networks

- Environmental sensitivities and trends
- Economic/demographic characteristics and Community concerns and priorities
- Identify the applicable solid waste management regulations;
- Examine current services and facilities utilized for collecting, transporting, recycling, and disposal of solid waste generated in the County and identify any facilities that should be excluded from further consideration;
- Provide synopsis on various services and facilities currently utilized by the County and its municipalities, including provisions for member cities to direct solid waste and recyclable materials to specific facilities for processing;
- Draw from key sources including, without limitation, the Studies, other studies, or information provided to municipalities and County, surveys, information submitted by the County to the Florida Department of Environmental Protection for its annual reporting, and other sources of data identified or approved by Contract Administrator;
- Summarize how solid waste and recyclable materials are managed and flow through various infrastructures from generation point to final disposition. Information will be categorized by composition including municipal solid waste, household hazardous waste, electronics, compositable materials, disaster debris, recovered materials, construction and demolition debris, bulky waste, and by sectors where possible. This information will include key findings from the current waste composition and waste generation studies;
- Work with and obtain the Contract Administrator's prior written approval regarding the specific categories of waste to be considered;
- Document historic and future population and the associated quantities of municipal solid waste over the planning horizon;
- Evaluate existing solid waste infrastructure and current estimated volumes, including, without limitation, current collection methodologies, public and private waste landfills, processing facilities, waste-to-energy, transfer stations, and recycling facilities utilized to process Broward waste; and
- Identify potential impediments to addressing solid waste and recycling efforts including, among other things, facility capacity, limitation in processing throughput, funding, availability of suitable land, commercial recycling flow control, and transportation logistics, and their likely affordability and risk assessment.

#### **DELIVERABLE**

- Draft and final existing resources white paper.

#### **TASK 4 – FINANCIAL OVERVIEW**

Utilizing existing information from the Studies, other studies, information, and data from the County and municipalities, the SCS Team will provide an overview of the local economic environment affecting solid waste disposal and recycling. The overview will include current financial obligations to provide waste processing and disposal by the County and municipalities, including franchise agreements, funds needed to set up the System, annual operation and staffing costs, and any other relevant cost figures. We will work with the Contract Administrator to define the specific research question(s) to be answered in this subtask. Additional elements of this task will include the following:

- Comparison of local tipping fees, processing fees, market prices for recovered materials, and additional pertinent information in relation to the overall economic landscape;
- System mass balance, including estimated tonnages and market shares;
- Matrix of regional pricing against other counties of similar size;
- Review of budgets attributed to solid waste and recycling; and
- Examination of opportunities for economies of scale and collaboration to minimize processing, transportation, disposal, and other pricing equivalences.

#### **DELIVERABLE**

- Draft and final financial overview white paper.

#### **TASK 5 - FUTURE NEEDS ASSESSMENT**

The SCS Team will examine the projected growth of the County population and waste generation to provide population and solid waste material generation estimates at 5, 10, 20, 30, 40, and 50-year intervals. Based on this information, we will offer up to five scenarios that effectively provide for future solid waste and recovered materials processing capacity and needs. Each scenario will identify the number and types of facilities needed to effectively process future waste volumes, including recycling and diversion processing facilities (e.g., public drop-off locations, MRFs, composting, and organic anaerobic digestions), transfer stations, landfills, and thermal, mechanical, and biological conversion. Each will be fully vetted to ensure state-of-the-art best practices and technologies are considered and included, with flexibility to manage the evolving waste stream. The SCS Team will also assess the future needs through an environmental justice lens to assess the potential impacts associated with each solid waste management technology. Other elements of this subtask include:

- Developing recommendations for each of the following;
  - Number of transfer stations (or other facilities) needed to ensure the most efficient long-term transportation of materials for each waste treatment and disposal option; and ensure other costs are comparable across Broward County;

- Where such facilities are best located relative to various population and commercial centers to ensure transportation and other costs are optimized across Broward County; and
- Strategies to ensure all waste stream components are either reduced, reused, recycled, recovered, composted, processed to capture useable transformed offtake, or combusted.
- Comparing Single Stream and Dual Stream Recycling, taking into consideration the constraints of nearby recycling and materials processing facilities vs. the impact to collection system truck usage and other efficiencies, and whether there will be impacts to diversion rates from less participation. The SCS Team will also screen current acceptable recyclables by community and emerging technologies for residential and commercial mixed stream recycling programs for all affected communities and engineer choices to consider harmonization for best scalability of process in options and ensuring the flexibility to accommodate the greatest quantity of materials are recycled through this service as the waste streams continue to evolve.
- Examining the feasibility and costs including and without limitation of replacement carts, specialized collection trucks, and educational programs if being considered.
- Providing conceptual-level construction costs, cost per ton, and implementation timeline estimates based on the various scenarios to effectuate future solid waste and recovered materials processing.
- Estimated timelines to fund, construct, and make operational. Include options that integrate technologies that align with recycling and sustainability goals. Facility evaluation will include, but not be limited to the following:
  - Single Stream Recycling Facility;
  - Dual Stream Recycling Facility;
  - Public Drop-off Recycling Facility;
  - Mixed Bulky Waste/Yard Trash/Construction, Household hazardous materials, electronics, and Demolition Debris;
  - Yard Trash Mixed Waste Processing Facility;
  - Organics Processing Facility, including and excluding Yard Trash components;
  - Transfer Stations (short and long haul, and related technologies); and
  - New Thermal, Biological, and Mechanical Recovery and/or Conversion Facility Options (e.g., mass-burn, pre-disposal treatment recovery systems (shredding, sorting, densifying), large-scale waste and separated food waste anaerobic digestion, pyrolysis, gasification, plasma arc).
- Projecting costs and the revenues necessary to operate the System, including the amount of, and methodology to calculate, reserve funds to cover any and all applicable costs for closure, long-term care, perpetual maintenance, and potential remediation related to all facilities.
- Providing policies and strategies reuse and reduction, diversion, composting, and true recycling of waste materials to enhance sustainability efforts. Strategies may include educational uniformity and materials harmonization, recommendations for

acceptable local community enforcement and community-based social marketing and advertising campaigns to ensure better material compliance and less contamination of recyclables and compostables, scaled public zero-waste strategies, composting, anaerobic digestion and utilization of alternative technologies.

- Research and identification opportunities, strategies, and available resources to increase recycling, organic recovery, and landfill diversion for commercial, industrial, construction, and multifamily sectors and yard waste.
- Reviewing existing and emerging waste diversion programs for proof points, track records, and proven results, and recommending procurement strategies for available alternatives, options, or improvements to meet the State of Florida's 75% recycling goal.
- Developing financial evaluations for future capacity needs including information on current available resources as well as providing:
  - Financial forecasts of future rates needed to fund the System;
  - Implementation timelines for special assessments, rates, or charges;
  - Debt service;
  - Available grants or federal funding; and
  - Return on Investment projections.
- Comparing costs and revenue projections with Miami-Dade and Palm Beach counties, highlighting differences from owning assets, public/private partnerships, or through contracted arrangements. Land acquisition, facility construction, and operational costs will be included in this projection.
- Providing a risk assessment matrix of both current and plan-prioritized infrastructure strategies and their likely long-term impacts and success potential. This will include identifying cost, cultural, political or geographic barriers and an opinion on likelihood of success or failure.

In terms of developing different solid waste management system options, the SCS Team will work collaboratively with the Authority to identify the universe of technology alternatives, develop non-monetary screening criteria to create a shortlist of technologies for further consideration. Then capital and operating costs will be considered as well as ongoing maintenance costs, which comprise the life-cycle costs for each scenario.

#### **DELIVERABLE**

- Draft and final future needs assessment white paper.

#### **TASK 6 – REGULATORY REQUIREMENTS AND POLICY REVIEW**

Based on the existing system evaluation, financial review, and future needs assessments performed above, the SCS Team will review regulatory requirements and policies by performing the following activities:

- General review local, state and national solid waste, zero waste, recycling and organic regulatory trends for best practices, growth in popularity and adoption, and

provide a current and future opinion on the likelihood of application in Broward County;

- Specific review of current ordinances, statutes, rules, regulations, and goals at the federal, state, and local levels related to the implementation of solid waste processing and recycling efforts. Identify any regulatory actions or expected regulatory changes affecting the manner in which the System will need to dispose, process, or divert particular waste types;
- Review and provide impacts of implementing economic or regulatory flow control. Compare and contrast the two options including, without limitation, the benefits with implementing either one or both in view of constructing, operating, and funding specific facility types; and
- Provide an overview of effectively siting new facilities to meet future processing and disposal needs. Examine and identify possible community, political, logistical, or regulatory constraints based on size and type of proposed facility.

#### **DELIVERABLE**

- Draft and final regulatory requirements and policy review white paper.

#### **TASK 7 – RECOMMENDATIONS AND FINDINGS**

One of the fundamental questions associated with this project will be the siting and location of the existing and future facilities and determining if the Alpha 250 site can be used for these facilities. Building from the work conducted by key members of the SCS Team in the Studies, this task will perform the following to summarize the recommendations and findings for the effort:

- Review feasibility of potential sites for future solid waste, recycling and diversion facilities that provide sufficient capacity and are economically located for all County stakeholders;
- Include utilization options for the Alpha 250 parcel of land. We will work with the Contract Administrator to obtain any additional materials containing the history of the Alpha 250 parcel of land beyond what our team is already intimately familiar with from prior studies and evaluations;
- Provide recommendations for maintaining and optimizing existing infrastructure, expanding operations to support a countywide System, and examine potential collaboration with neighboring counties;
- Provide recommendations on future materials to be managed or harvested from the waste stream for further landfill reduction, including more accepted curbside materials, textiles, food waste, batteries and other electronic waste which enters the System, storm debris flows, land clearing, and shore waste flows (e.g., sargassum, fish kills);
- Rank scenarios developed in Task 5 based on the factors such as cost impacts on goals such as recycling, reuse, diversion from landfills, zero-waste strategies, market

risks, environmental impacts, safety, and most efficient processing of solid waste and increasing recycling;

- Examine opportunities for regional partnerships to realize economies of scale advantages; and
- Review feasibility, advantages, and disadvantages of expanding the WIN Waste Innovations/Wheelabrator South Broward facility to include a 4<sup>th</sup> boiler. Compare and contrast findings against the lifetime costs and benefits of constructing a new waste-to-energy facility at the same location or other reasonable alternatives.

#### **DELIVERABLE**

- Draft and final findings and recommendations white paper.

#### **TASK 8 – IMPLEMENTATION PLAN AND TIMELINES**

The SCS Team will issue the proposed contents of an implementation plan and after obtaining written approval from the Contract Administrator regarding the proposed contents proceed with the following subtasks:

- Establish a timeline of available solid waste facilities and the phasing in of various municipal waste streams based on the termination dates of franchise agreements.
- Review potential opportunities to include spot market waste as part of the phasing schedule relative to capacity until all System waste is available.
- Provide recommendations for the flow of municipal waste to various solid waste facilities and transfer station locations.

#### **DELIVERABLE**

- Draft and final implementation plan.

#### **TASK 9 – EDUCATION AND OUTREACH**

In order for this Master Plan to work effectively by all Authority participants, education and outreach that affects user behavior will be critical. This task will include the following efforts related to education and outreach:

- Provide best practices for encouraging recycling, waste reduction, and waste diversion. Outline objectives that support the U.S. Environmental Protection Agency's waste management hierarchy (reduce, reuse, recycle/compost, recover/energy from waste, dispose/landfill). This subtask shall include recommendations for strategies, services, and programs to address waste reduction as well as recyclable materials and recovered materials processing, and appropriate public education regarding same.
- Identify best practices for use of multi-lingual communications delivering unified message to the public on sustainability, recycling best practices, and the System.



- Explore opportunities to partner with all schools located in Broward County to provide unified messages on the importance of waste hierarchy behaviors (reduce, reuse, recycle) that will drive conscious decisions to use the System and maximize its outputs before disposal.
- Explore and prioritize the best practice opportunities to effectively communicate, encourage, and increase access for recycling and organics recovery for commercial businesses and multifamily residences, using multi-lingual communication.

#### **DELIVERABLE**

- Draft and final education and outreach plan.

#### **TASK 10 – PREPARATION OF DRAFT MASTER PLAN**

Based on the results of the previous subtasks, the SCS Team will prepare and issue an initial draft of the Master Plan to the Authority and TAC for review that incorporates the analyses and white papers developed under prior tasks. A meeting will be scheduled with the Authority and TAC to review the findings and provide direction to the SCS Team regarding the incorporation of comments from the Authority and TAC into a Draft Master Plan. The Draft Master Plan will be made available electronically to the Authority to be posted on a public website to enable the public to digitally provide comments.

#### **DELIVERABLE**

- Draft Master Plan.

#### **TASK 11 – CONDUCT WORKSHOPS**

The SCS Team will prepare for a minimum of five (5) workshop public meetings. An initial public workshop is recommended as part of assessing the future needs. This approach is intended to foster transparency in the master planning process. By engaging the public early in the process and prior to developing the draft master plan, the Authority will be provided with an opportunity to share the history of solid waste and recyclable materials management in the County, present options and practical considerations related to collection, processing, and disposal. Hearing from the “voice of the customer” can provide valuable insights into public preferences and allow for a conversation around trade-off’s of different options that will be addressed in the draft Master Plan.

Following the preparation of the Draft Master Plan, the first workshop will be held with members of the Authority, TAC, and relevant County and municipal staff, at which a quorum is not necessary. A second workshop will be held with the Broward League of Cities, consisting of all municipal elected officials in Broward County, at which a quorum of elected official is not required. The last two workshops with the general public, the date, time, and location of that will be determined by the Chair, with at least one such workshop being held in the evening, with the availability of the public to participate virtually and with multi-lingual capabilities, if requested.

## **DELIVERABLES**

- Draft and final workshop presentations.
- Plan for and facilitate public workshops.

## **TASK 12 – PREPARATION OF FINAL MASTER PLAN**

The SCS Team will review and discuss the comments from the public workshops with the Authority, which will be incorporated into the final Master Plan, as appropriate. The final Master Plan will include an outline of implementation steps for the recommended alternative(s). The Master Plan will be finalized within 30 working days after the final workshop.

## **DELIVERABLE**

- Final Master Plan.

## **ADDITIONAL SERVICES**

The SCS Team will undertake the following tasks if authorized. Each such Work Authorization will contain a specific scope, budget, and deadline(s) for the relevant services.

## **TASK 13 – DEVELOP PLAN OF OPERATIONS**

To develop the plan of operations the SCS Team will identify participants for the System, including the operation and roles including for municipal partners, private industry, and specific facilities. Activities under this task include:

- Provide the latest safety procedures for the operation and maintenance of equipment for each proposed facility;
- Identify the most effective and efficient hours of operations for the facilities, downtime, maintenance periods, and flow of traffic;
- Establish a billing structure for all participants (including haulers). Provide a uniform method for all participants to be identified and recorded at all disposal facilities; and
- Provide a basis for regularly scheduled inspection of solid waste and recycling facilities to ensure compliance and efficiency.

## **DELIVERABLE**

- Draft and final Operations Plan.

## **TASK 14 – FACILITY MAINTENANCE**

The SCS Team will identify the cost and time associated with maintaining proposed facilities, including, among other things, purchase costs for land, equipment, and rolling stock for ongoing maintenance and closure of potential facilities to be included in the System as publicly owned assets. Many solid waste facilities, with the proper operations and

maintenance and revenue and financing streams, are capable of extending operations well past initial equipment life through a maintain, repair, replace maintenance philosophy.

#### **DELIVERABLE**

- Draft and final Facility Maintenance Plan.

#### **TASK 15 – IDENTIFY INNOVATIVE AND FUTURE TECHNOLOGIES (Software & Hardware)**

System operators and equipment and recycling system suppliers constantly are enhancing and optimizing performance to recover more recyclable material or energy from mixed and separated solid waste components (e.g., the use of artificial intelligence combined with materials sorting technologies), reducing or identifying new and emerging beneficial reuse opportunities for process residue, new and emerging battery management practices and e-waste recovery, textile recovery optimization, advanced recovery systems for gasses, ash output, biological digestion, etc. The SCS Team is thoroughly familiar with existing state-of-the-art equipment on both the software and hardware for these facilities. We will identify each the latest supply chain technologies for methods of collection and sorting required, recycling facility and disposal options, footprints required, CAPEX and cost/per ton processed ranges, and include details required for consideration and prioritization. A risk assessment of each will include existing proof points on each scalable choice for meeting Authority requirements, recovery output and emissions ranges. reporting required, automation potential, and staffing need, and job creation. From these assessments of the local conditions and options, the Plan will provide stakeholders prioritized, alternative options for collection, processing, recovery, and disposal.

#### **DELIVERABLE**

- The SCS Team will work with the Authority to identify the specific facilities and operations and tailor the scope to identify those innovative and future technologies. Alternatively, the SCS Team could develop a request for information from the vendor community to identify and provide information related to such technologies.

#### **TASK 16 – HIGHLIGHT NATURAL AREAS NEAR FACILITIES**

Frequent and consistent public education and outreach is critical for reducing, reusing, and recycling or composting waste prior to the need for disposal at a waste-to-energy facility for energy recovery or landfill. Under this task, the SCS Team will identify natural areas in proximity to proposed facilities to expand on educational opportunities. The SCS Team will utilize geographic information system (GIS) to initially conduct a desktop review of potential sites using exclusionary criteria (e.g., conservation areas, distance to airports, natural resource protection areas, distance to Class 1 surface water, existing land use, distance to community water system, Areas of Critical State Concern, Historical/Archaeological/Cultural areas). The identification of such areas will also include an overview on how wetlands, trails, and parks can be integrated with solid waste and recycling facilities as passive learning centers.

**DELIVERABLE**

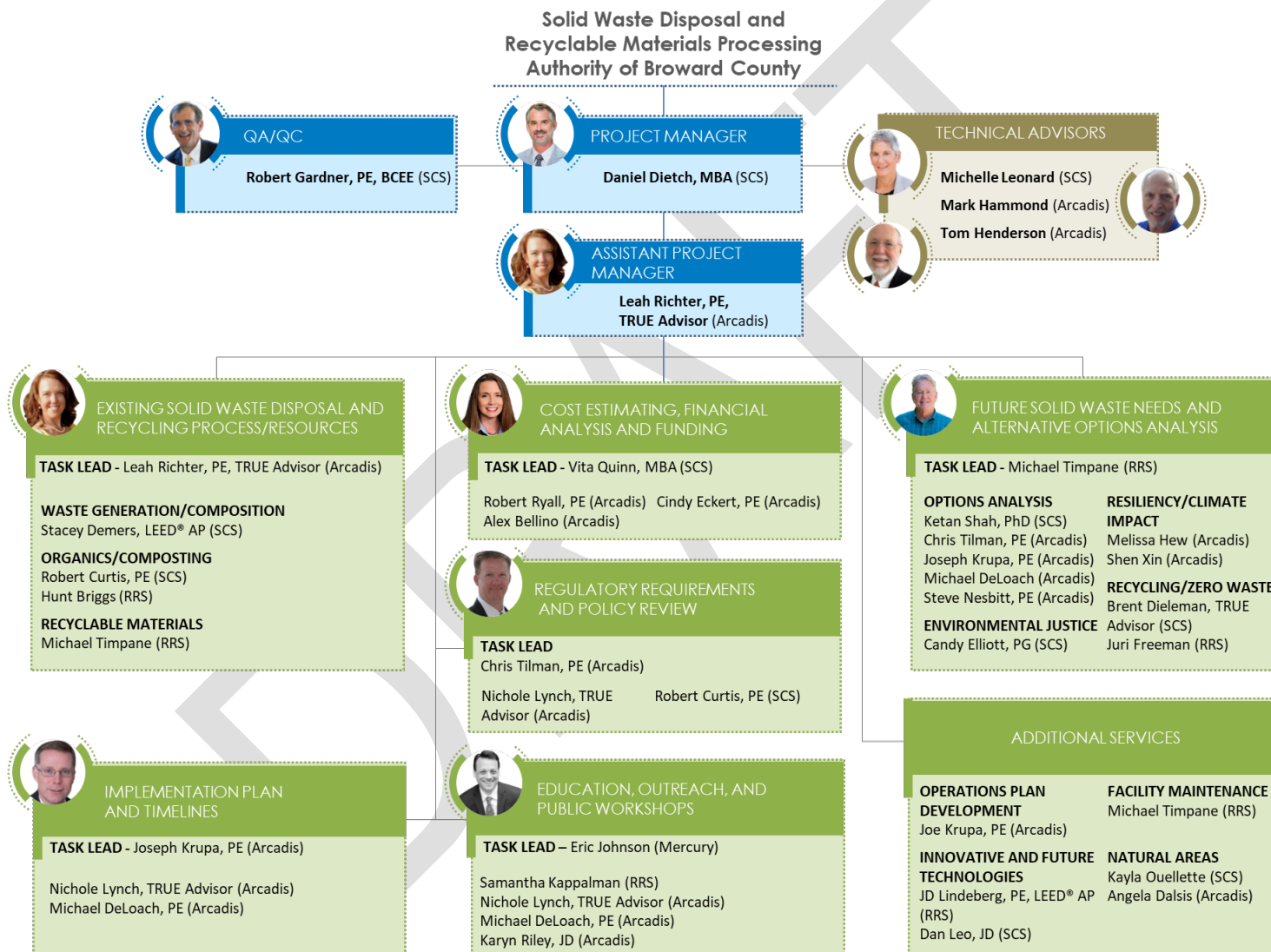
- Draft and final Natural Areas Educational Opportunities Report.

**ASSUMPTIONS AND LIMITATIONS**

The scope of services exclude any work not explicitly stated herein.

1. The SCS Team is not responsible for project delays outside of our control.
2. The Authority will provide all requested data within five (5) business days.
3. The Authority will provide consolidated comments on all draft deliverables within five (5) business days.
4. The Authority is responsible for hosting meeting space and advertising all public meetings and workshops.
5. The SCS Team is not responsible for legal opinions.
6. Additional tasks will not be performed by the SCS Team without approval from the Authority, and if directed by the Authority, such services will be performed in accordance with Contract [SPECIFY].

# Attachment 1 SCS Team Organization Chart



## Attachment 2 Scope of Services Tasks Leads

Key Firm	Basic Services												Additional Services			
	Task 1 – Project Introduction	Task 2 – Project Kick-off Meeting	Task 3 – Evaluate Existing Solid Waste Disposal And Recycling Processes And Resources In Broward County	Task 4 – Financial Overview	Task 5 - Future Needs Assessment	Task 6 – Regulatory Requirements and Policy Review	Task 7 – Recommendations and Findings	Task 8 – Implementation Plan and Timelines	Task 9 – Education and Outreach	Task 10 – Preparation of Draft Master Plan	Task 11 – Conduct Workshops	Task 12 – Preparation of Final Master Plan	Task 13 – Develop Plan of Operations	Task 14 – Facility Maintenance	Task 15 – Identify Innovative and Future Technologies (Software & Future Technologies)	Task 16 – Highlight Natural Areas Near Facilities
SCS	★	★	■	★	■	■	■	■	■	■	★	■	■	■	■	★
Arcadis	■	■	★	■	■	★	★	★	■	■	■	■	★	■	■	■
RRS	■	■	■	■	★	■	■	■	★	■	■	■	■	★	★	■
Mercury									■		★					

★ Lead Firm   ■ Support Firm

### Attachment 3 Proposed Project Schedule

