



SOLID WASTE AND RECYCLING ISSUES STUDY

INTERIM FINAL SOLID WASTE AND RECYCLING STUDY REPORT

October 16, 2018



Meeting Goals



1. Summarize Interim Final Solid Waste and Recycling Issues Study Report – Findings and Recommendations
2. Q&A
3. Discussion of Next Steps

Solid Waste and Recycling Issues Study Overview



- ▶ How can the County attain a 75% recycling goal?
- ▶ What are the construction costs associated with the needed Facilities?
- ▶ Will retaining public ownership of Alpha 250 facilitate the County's meeting the recycling goal or provide other benefits for solid waste disposal?
- ▶ Investigate solid waste disposal issues and options such as flow control, governance and contractual structures for collaborative solid waste management.

Solid Waste and Recycling Issues Study Project Details

- ✓ Task 1 – Project Kickoff Meeting
- ✓ Task 2 – Review Existing Documentation
- ✓ Task 3 – Establish Solid Waste Composition
- ✓ Task 4 – Estimate Solid Waste Quantity
- ✓ Task 5 – Identify Alternatives / Options for Improvement to Achieve Recycling Goals
- ✓ Task 6 – Evaluate Site Requirements
- ✓ INTERIM GOVERNANCE WORKSHOP
- ✓ Task 7 – Identify Alternatives / Options for the Future of Solid Waste Management in Broward County
- ✓ Task 8 – Prepare Conceptual Level Cost Estimate
- ✓ Task 9 – Prepare Technical Memorandum
- ✓ Task 10 – Prepare Draft Solid Waste and Recycling Issues Study Report
- ✓ **Task 11 – Working Group, Mayor’s Group and Broward League of Cities Workshops**
- ✓ Task 12 – Prepare Final Report



Results and Recommendations

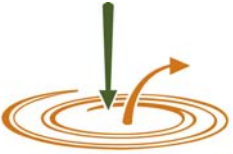
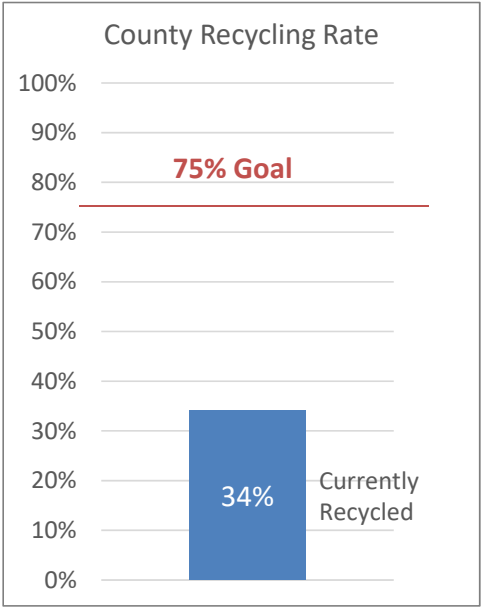
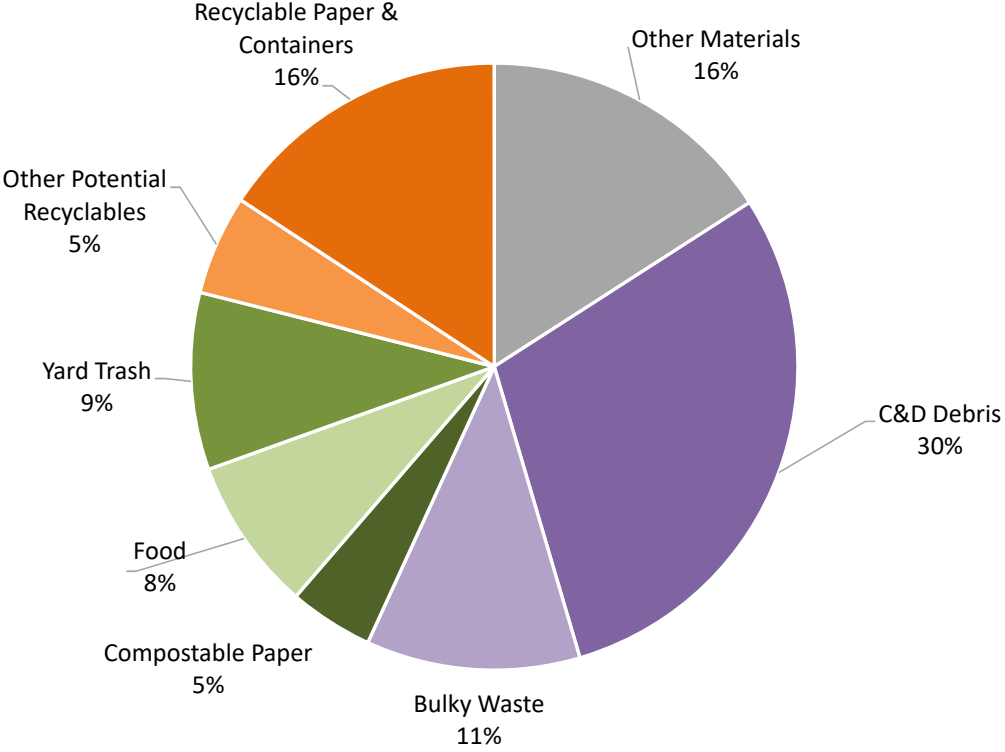


-  County and Working Group should retain public ownership of the North Alpha 250 Site.
-  Cities should extend existing solid waste contracts or negotiate termination for convenience clauses.
-  Implement an Independent District Governance Structure. Attain consensus amongst all parties.
-  Implement policies mandating recycling to achieve the 75% Recycling Goal.
-  Select a scenario, or portion of a scenario, that moves toward achieving the 75% Recycling Goal.
-  Perform a detailed NPV analysis, siting and feasibility study for the selected scenario, including a detailed construction cost estimate.

How to Achieve the 75% Recycling Goal

Identifying Recycling Opportunities

Estimated
Composition
of Waste
Disposed in
Broward
County



Policies Required to Meet 75% Recycling Goal



Enact
mandatory C&D
debris, bulky
waste and yard
trash processing
prior to disposal

Enact
mandatory
multi-family and
commercial
recycling

Require
minimum recycling
standards for solid
waste processing
facilities

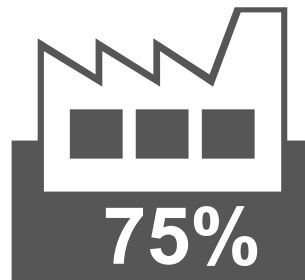
Facilities Required to Meet 75% Recycling Goal

Assuming mandatory recycling policies are implemented, the implementation of some combination of six types of solid waste processing facilities are recommended to meet the 75% Recycling Goal:

1. **Materials Recycling Facility**

2. **Combined Bulky Waste / Yard Trash / C&D Facility**

3. **Yard Trash Facility (stand alone)**



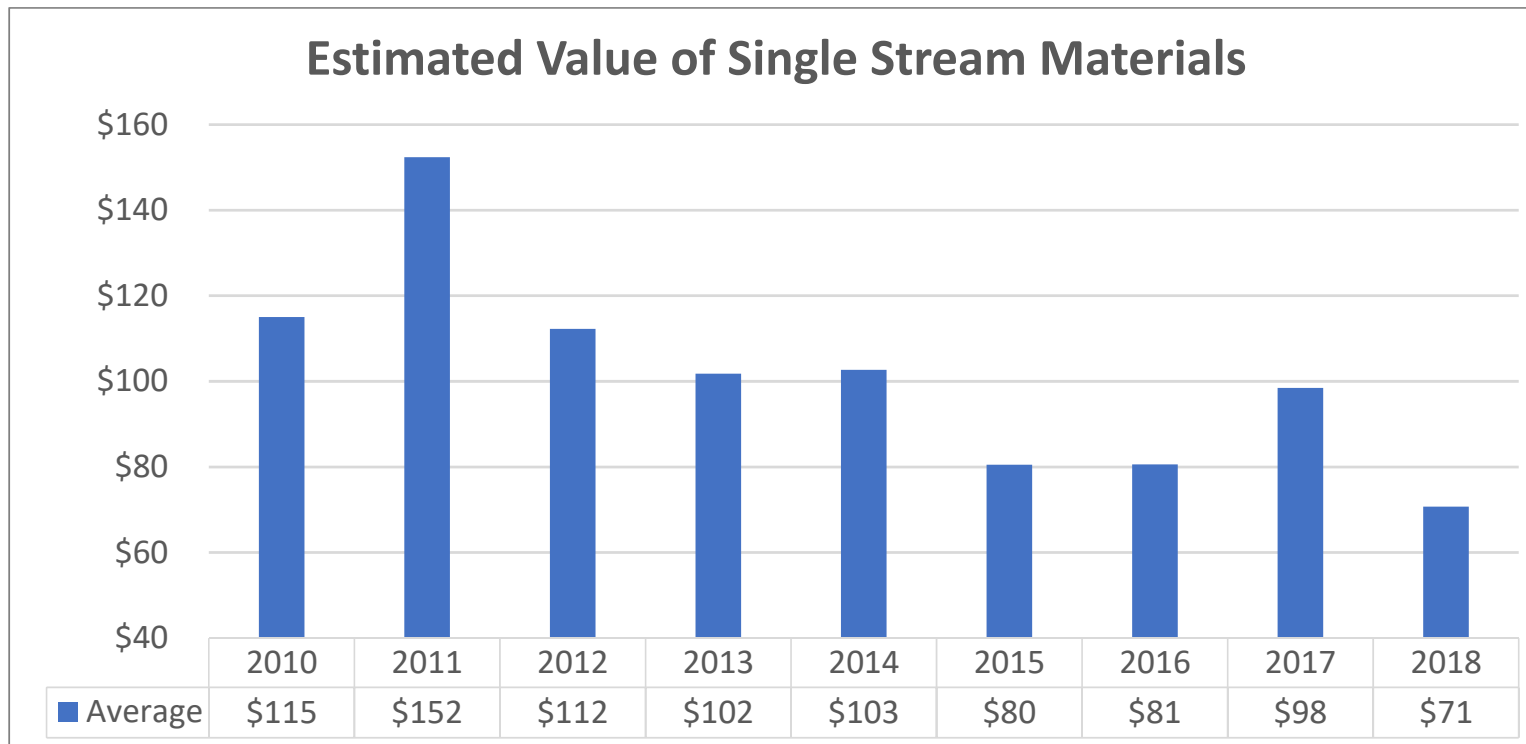
4. **Mixed Waste Processing Facility**

5. **Organics Processing Facility (excludes yard trash)**

6. **Waste-to-Energy Facility (expanding WSB or construct new facility)**



Recyclables are a Commodity



Source: Based on SS recyclables composition studies conducted by KCI and commodity pricing as published by RecyclingMarkets.net.

Recycling Scenarios

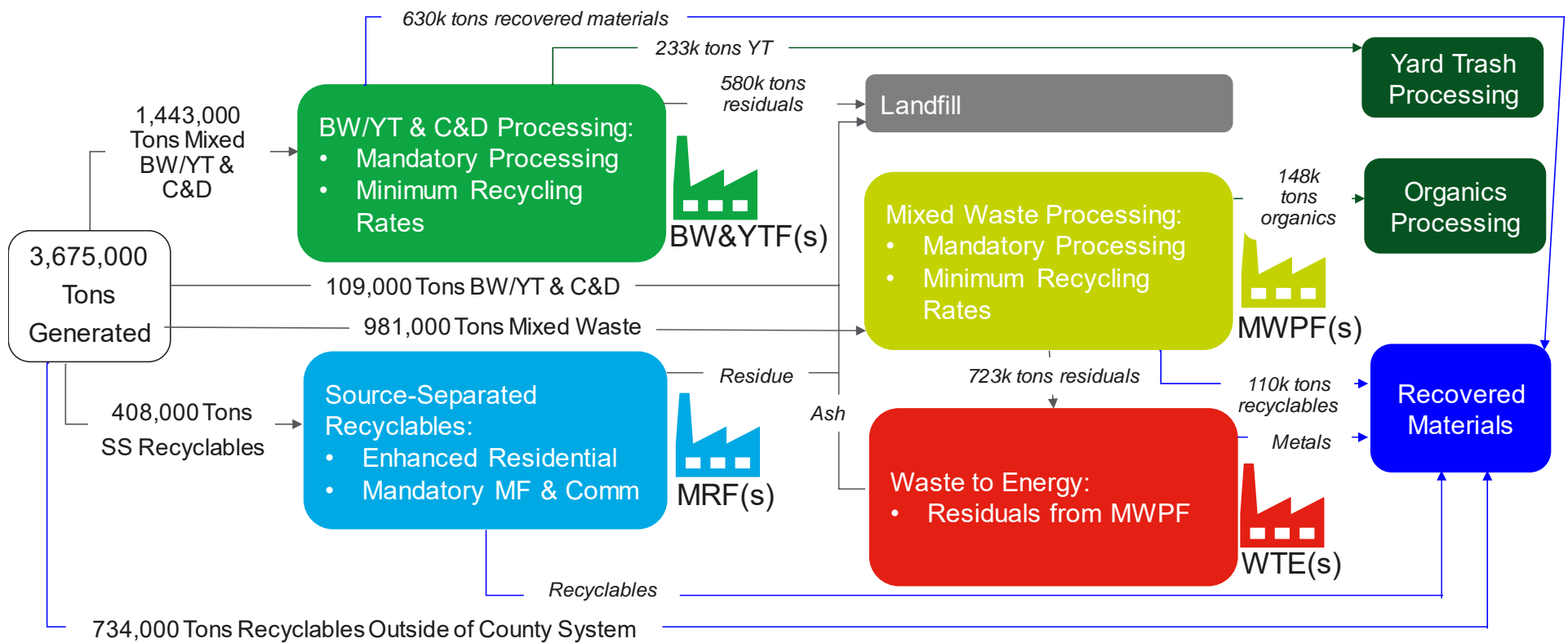
Three scenarios were developed noting the different strategies needed to process the mixed residential and commercial waste that is **not** source-separated and processed by the Common Element Facilities.

Scenario A - Mixed waste would be processed at a MWP Facility. Recyclables would be recovered and marketed and wet organics would be recovered and processed. Residuals would go to WTE.

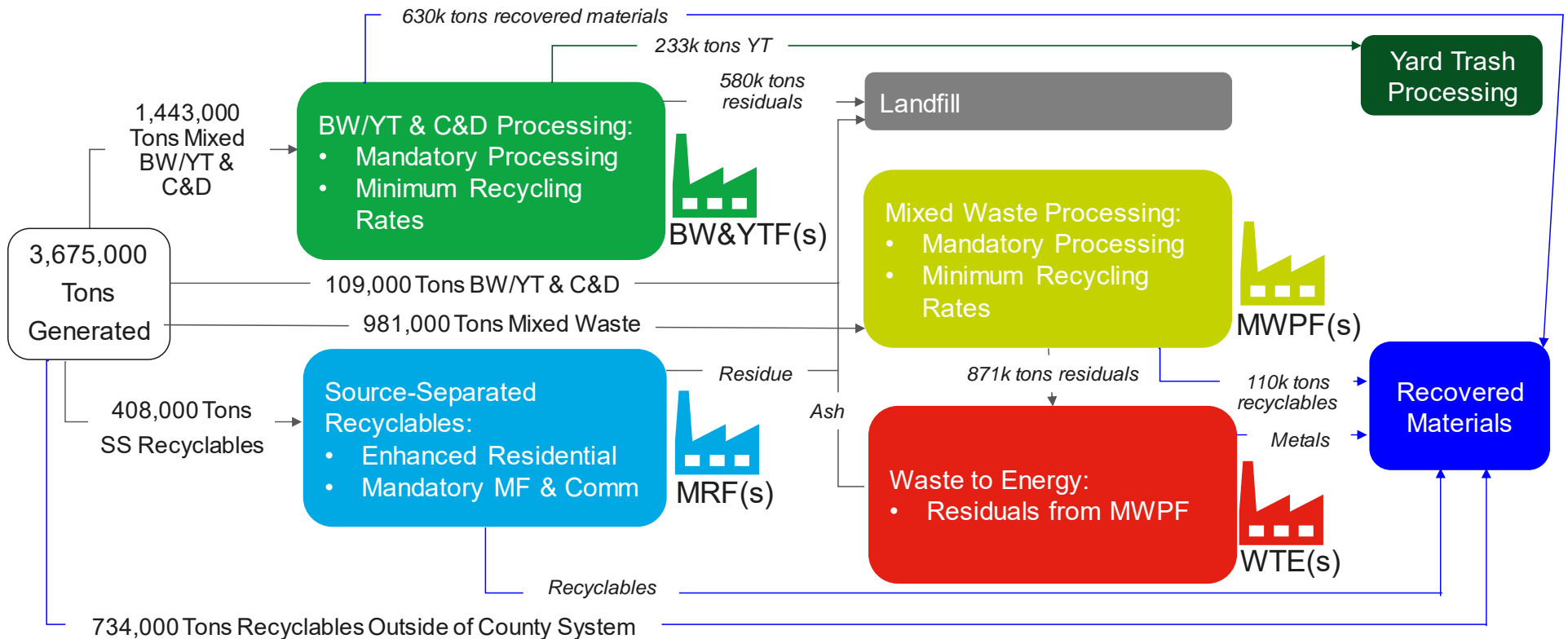
Scenario B - Mixed waste would be processed at a MWP Facility. Recyclables would be recovered and marketed; residuals would go to WTE.

Scenario C - Mixed waste would go to WTE.

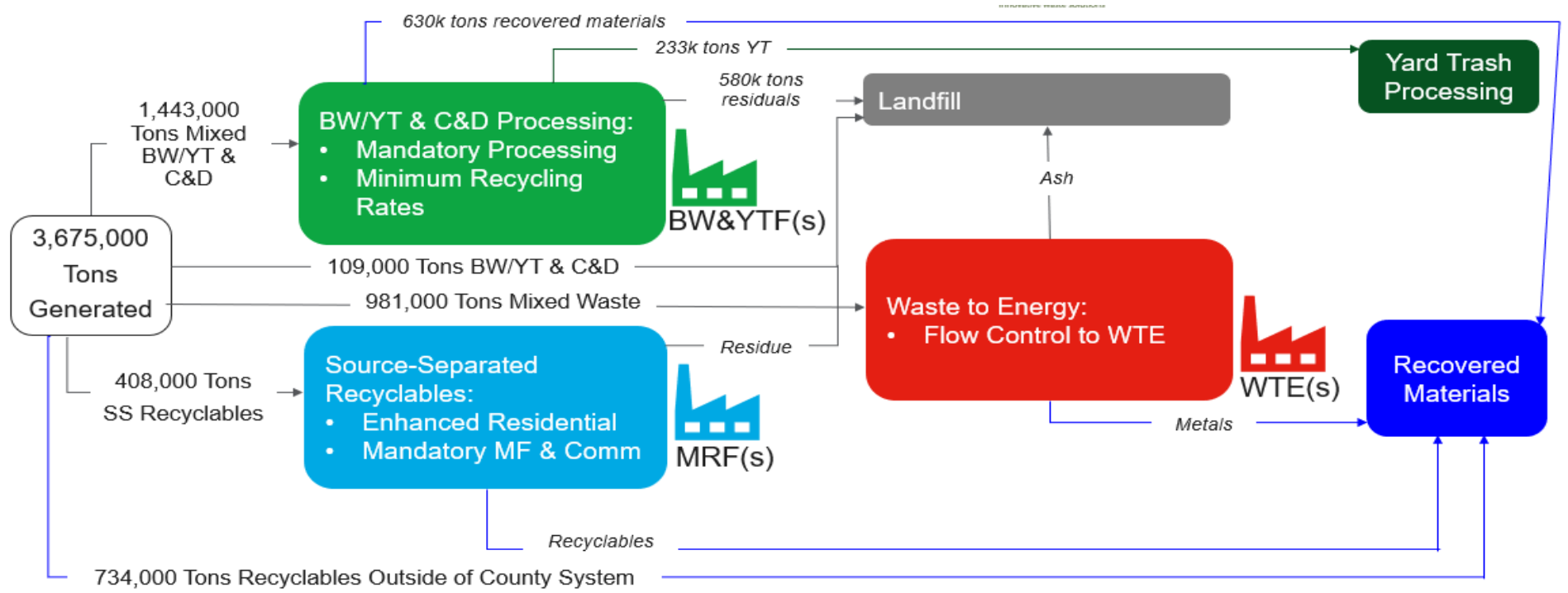
Scenario A Schematic



Scenario B Schematic



Scenario C Schematic



Conceptual Level Cost Estimate

Estimated Facility Construction Cost Per-Ton Per-Day Throughput

Facility	Cost per Ton/Day (2020 dollars)
Single Stream MRF	\$60,000
Mixed Bulky Waste/Yard Trash/C&D	\$22,000
Yard Trash	\$11,000
Mixed Waste Processing Facility	\$41,000
Waste-to-Energy Expansion (Wheelabrator Owned Facility)	\$240,000
Implementation of New System-Owned Waste-to-Energy Facility	\$300,000

Estimated System Scenario Construction Costs

Scenario	2025 Est. Facility Cost (2020 dollars)
SCENARIO A	
Assuming 4th WTE Unit @ South Broward OR	\$329,000,000
Assuming New WTE Facility	\$1,004,000,000
SCENARIO B	
Assuming 4th WTE Unit @ South Broward OR	\$457,000,000
Assuming New WTE Facility	\$1,222,000,000
SCENARIO C	
Assuming 4th WTE Unit @ South Broward OR	\$285,000,000
Assuming New WTE Facility	\$1,050,000,000

Conceptual Level Cost Estimate



Conceptual Construction Cost Estimates *Do Not Include:*

- Annual Operating Fees
- Operations and Maintenance
- Pass-Through Costs
- Residue Transport and Disposal
- Metals Recovered Transport
- Purchase of Land
- Financing, Engineering, Legal
- Permitting and Procurement
- Revenue Generation Opportunities

Construction Cost

Recommended Next Steps



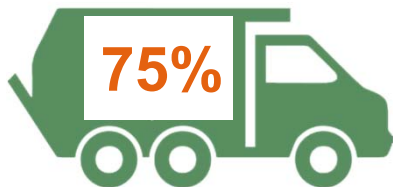
Review and evaluate the financial impact of the different alternatives proposed and decide which scenario, or portion of a scenario, should be selected.

Once a scenario is selected, it is recommended that a detailed NPV analysis, siting and feasibility study for the selected scenario, including a detailed construction cost estimate, is developed.

Retain North Alpha 250 Site In Public Ownership

North Alpha 250 Site Evaluation

To Meet the 75% Recycling Goal, the Implementation of Six Facilities were Recommended:



- Materials Recycling Facility
- Combined Bulky Waste / Yard trash / C&D Facility
- Yard Trash Facility (Stand Alone)
- Mixed Waste Processing Facility
- Organics Processing Facility (Excludes Yard Trash)
- Waste-to-Energy Facility (Expanding WSB or Construct New Facility)

North Alpha 250 Site Evaluation

The Alpha 250 Site was evaluated to determine if any of the six facilities required to meet the 75% Recycling Goal could be constructed on the Site.



The following criteria were reviewed:

- Current zoning and land use
- Available buildable area and site shape
- Utilities
 - Electrical
 - Water and Wastewater
- Traffic impacts
- Social and political acceptance

North Alpha 250 Site Evaluation



County and Working Group should retain public ownership of the North Alpha 250 Site as it could be developed for solid waste processing use.

Recommend conducting a detailed siting analysis to confirm preliminary findings based upon selected scenario.

Alternatives and Options for the Future Structure of Solid Waste Management in Broward County

Alternatives and Options for the Future Structure of Solid Waste Management in Broward County

In collaboration with the Working Group, key regulatory requirements, frameworks, and policy issues associated with solid waste management in Broward County were reviewed.



Alternatives and Options for the Future of Solid Waste Management in Broward County



The Arcadis Team recommends the implementation of an **Independent Special District** form of Governance.

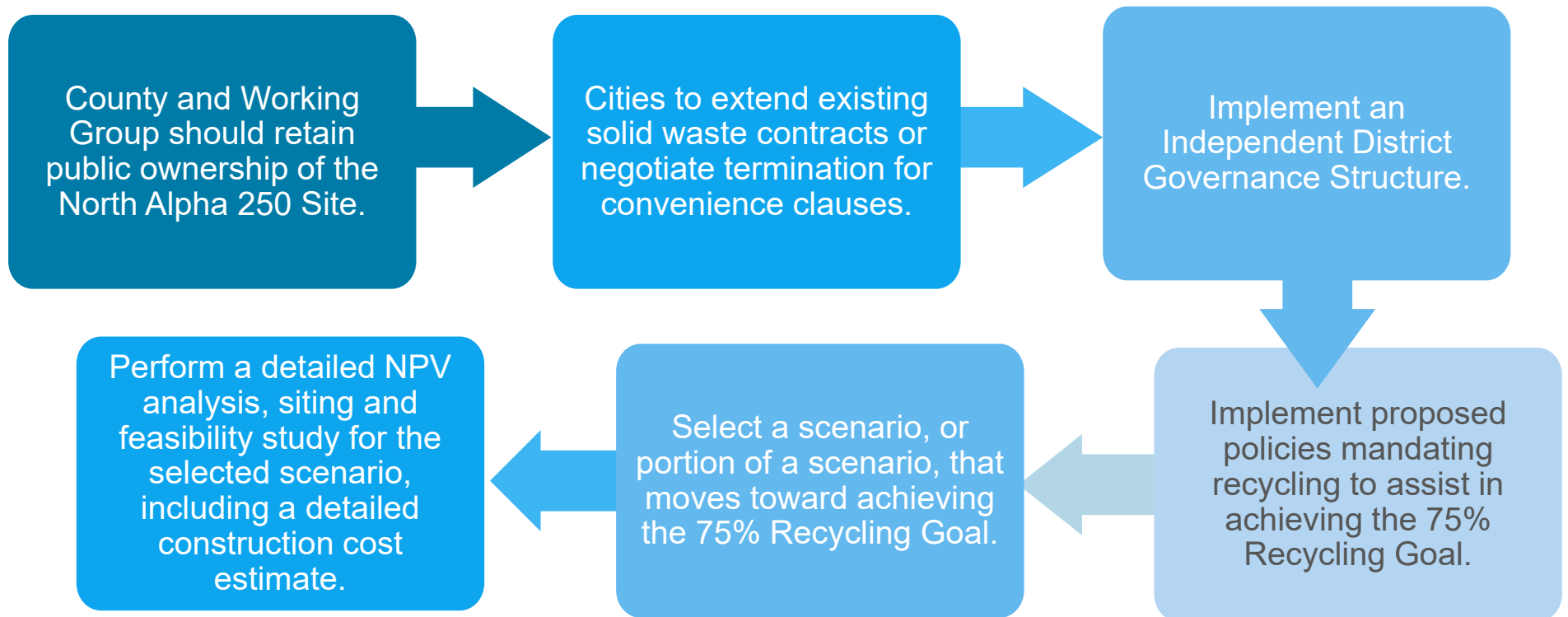


The Arcadis Team recommends the implementation of policies to achieve:

- Legal and Economic Flow Control
- Increased Recycling Rates



Summary and Recommended Next Steps



Open Discussion



75%
Recycling
Goal



Construction
Cost
Estimate



Alpha 250



Governance
and
Ownership

