SOLID WASTE PUBLIC WORKSHOP
ALTERNATIVE WASTE MANAGEMENT SOLUTIONS

SEPTEMBER 4, 2024

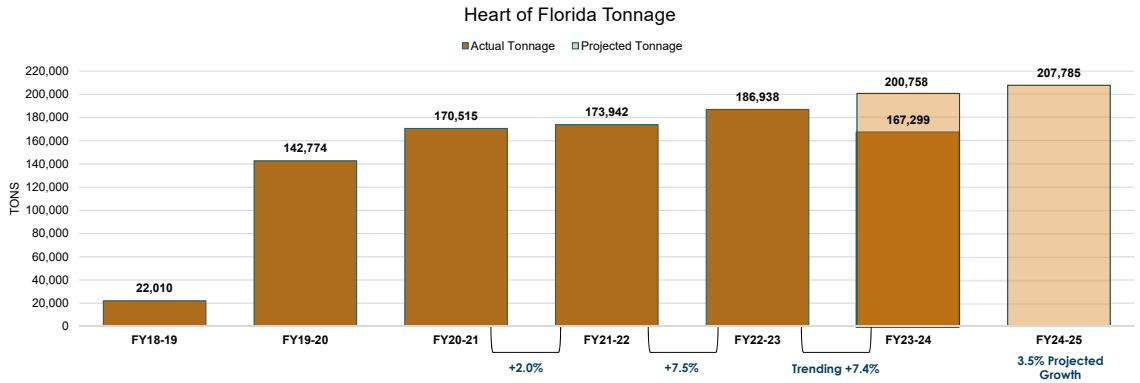
Objectives

- Discuss future disposal options
- Share financial impacts
- Determine path forward related to long term disposal

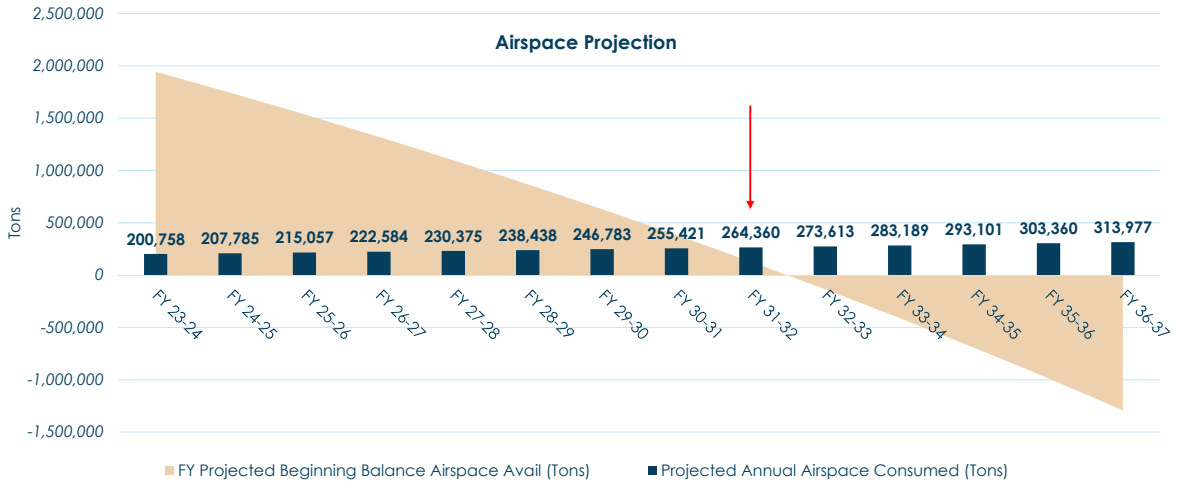
Historical Airspace Consumption

Original Airspace Purchased (Tons):	2,500,000
Additional Airspace Purchased (Tons):	140,000
Total Airspace Purchased (Tons):	2,640,000

Lifetime Consumed Airspace (Tons):	863,477	32.71%
Remaining Available Airspace (Tons):	1,776,523	67.29%



Projection- Airspace Availability at Heart of Florida



Tonnage Projections

Year	0.94-Percent Growth (Tons)	*1.56-Percent Growth (Tons)	3.5-Percent Growth (Tons)
2025	202,644	**203,890**	207,785
2026	204,549	**207,071**	215,057
2027	206,472	**210,301**	222,584
2028	208,413	**213,581**	230,374
2029	210,372	**216,913**	238,438
2030	212,349	**220,297**	246,783
2031	214,345	**223,734**	255,420
2032	216,360	**227,224**	264,360
2033	218,394	**230,769**	273,613
2034	220,447	**234,369**	283,189
2035	222,519	**238,025**	293,101

…by the year 2050

Year	0.94-Percent Growth (Tons)	*1.56-Percent Growth (Tons)	3.5-Percent Growth (Tons)
2050	**256,045**	**300,236**	**491,046**

What does Marion County need to do to prepare for the future?

Waste Management Options

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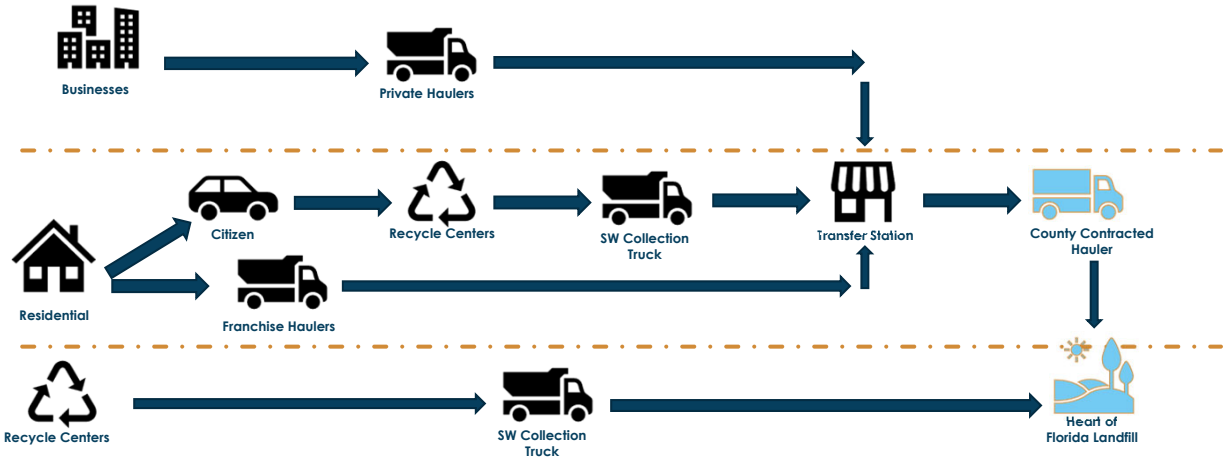
- Transfer Station & 3rd Party Airspace
- Emerging Technology
- Landfilling

TRANSFER STATION & 3RD PARTY AIRSPACE

What Is The Process?



Transfer Station Pros & Cons

Pros

- Moves waste to an alternate jurisdiction
- Reduced environmental risk
- Flexible disposal options
- Convenient for customers
- Current and familiar operation

Cons

- More expensive
- Additional truck traffic and wear and tear on roads
- Additional vehicle emissions
- Limited capacity
- Operational control via contracts
- When a new/larger transfer station is needed to accommodate volume:
  - Land use permits
  - DEP permitting requirements

Transfer Station Considerations & Solutions

Considerations

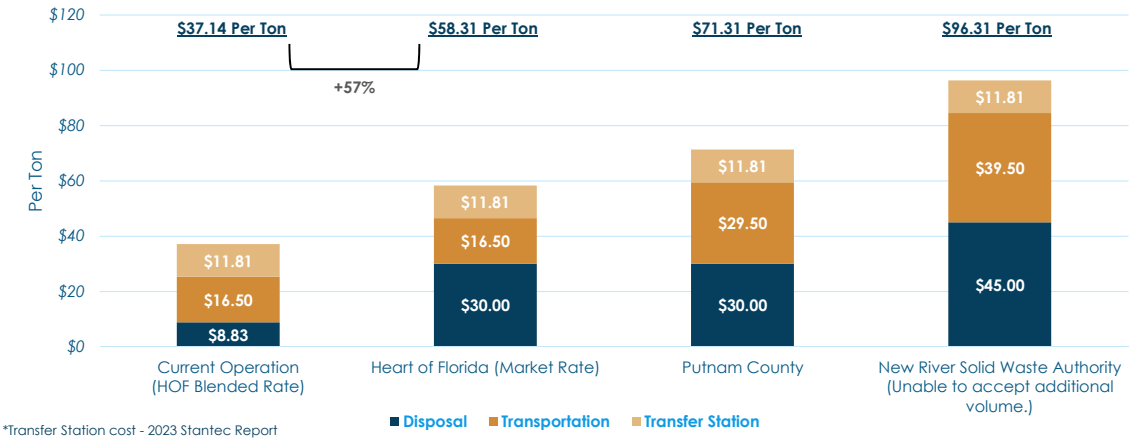
- Current volume at Baseline is 700 tons per day
- Facility capacity ~900 tons per day
- Need for additional volume capacity by 2031
  - Assumes a growth rate of 3.5%

Solutions

- Short Term
  - Enhancements to current transfer station
  - Additional direct hauls to Heart of Florida by Marion County
- Long Term
  - Additional transfer station
    - West of I-75
    - Locate near the waste
    - Cost of new facility is expected to be $15,000,000

Other 3rd Party Disposal Locations

Total Disposal Costs for Other Locations



*Transfer Station cost - 2023 Stantec Report

EMERGING TECHNOLOGY

Waste Streams = Processed Engineered Fuels

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Hazardous Waste

- Oil & Gas
- Chemicals
- Pharma
- Automotive
- Electronics

Non-Hazardous Waste

- Trade rejects
- Packaging
- Tires
- Industrial

Municipal Solid Waste

- Sorted municipal residuals processed into engineered fuel

Biomass Residues

- Construction demo debris
- Wood by-products
- Argi & food processing by-products/residuals
- Wastewater treatment residuals

Alternative Raw Materials

- Iron, aluminum, calcium materials
- Silica, clay, gypsum
- Fly ash, slag, mill scale
- Recycled concrete, rubber and shingles

Processed Engineered Fuels Proposal

- Reviewed the project for more than a year.
- Marion County conveniently located between two large industrial plants wanting Processed Engineered Fuel (PEF)
- Proposed building and operating an MSW processing facility at Marion County's transfer station.
- Required ~6-7 acres of land, access to utilities, and the ability to dispose residuals under the current Heart of Florida contract
- Would produce PEF for industrial manufacturing and created renewable natural gas
- Contract term: 20-30 years
- Annual volume of MSW: 140,000 tons processed
- Estimated total investment $65-70M in Marion County
- Project needed to break ground with substantial construction before Dec 2024 to quality for Federal Tax Incentive (30-40% of total capital)

The Outcome

- After significant due diligence:
  - The company put the project on indefinite hold.
  - Project feasibility required federal subsidy to financially make sense.
    - Timeline could not meet grant requirements.
  - Final cost estimates greatly exceeded original expectations.
  - Project would only handle a portion of our solid waste – disposal solution still needed.
  - Discussions continue on select materials which may be acceptable – single stream, tires, etc.

LANDFILLING

What Is The Process?

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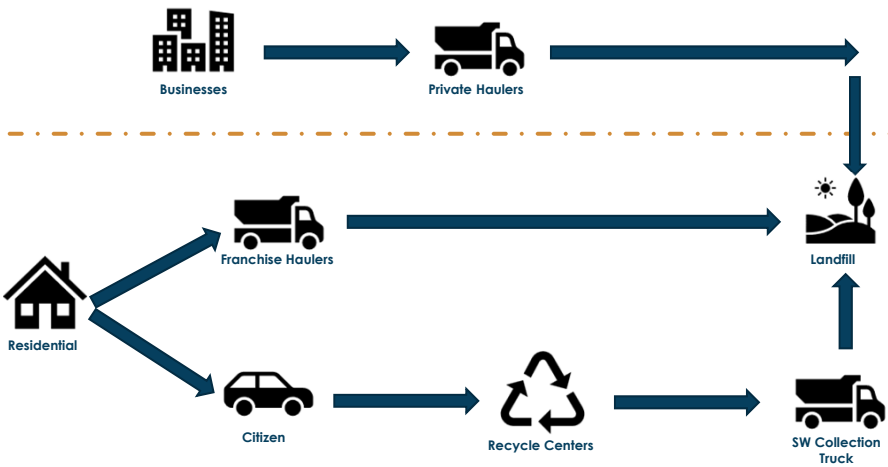


Landfill Pros & Cons

Pros

- Efficient waste disposal
- Energy production
- Economical
- Control over waste solutions
- Long term solution
- Land use is grandfathered for potential expansion of Phase 1 and Phase 2
- Sand mine purchase allows for airspace flexibility

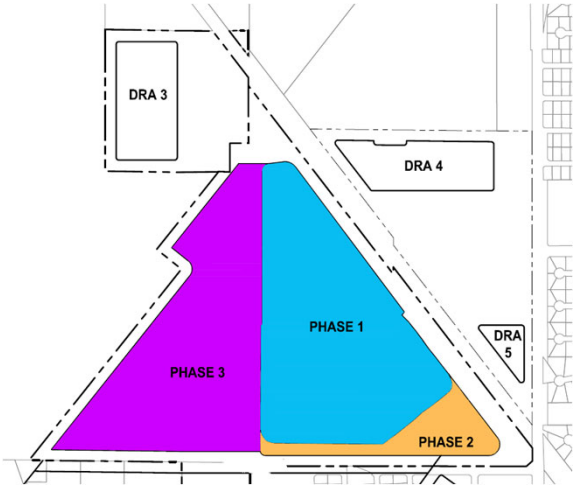
Cons

- Existing
  - Social pushback - NIMBY
  - Localized environmental concerns
  - Takes up a lot of space
  - Cosmetic impacts
  - Potential to pollute
- Future
  - Permitting – Karst
  - Capital intensive - $ needed to develop and equip
  - Land Use for Phase 3

On-Site Available Capacity- Additional Years

Utilizing What We Already Have

Phase	.94% Growth	*1.56% Growth	3.5% Growth
1	6.9	6.6	5.8
2	5.9	5.4	4.4
3	42.8	35.9	24.0
Additional Years	**55.6**	**47.9**	**34.2**

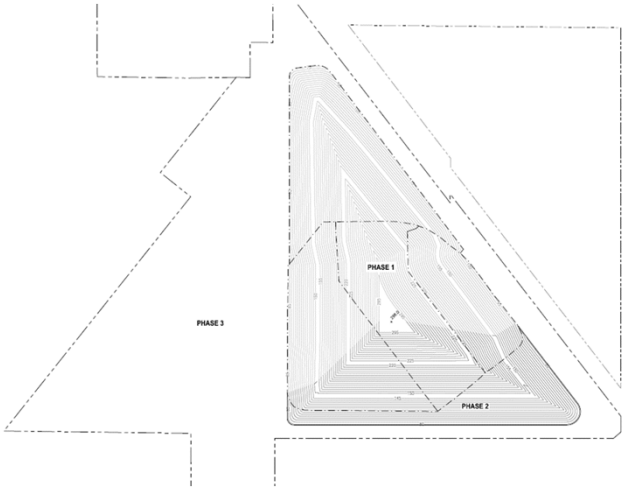


Phase 1

- New waste capacity – 1.4 million tons
- Lifespan – 6.6 years @ 1.56% growth
- Total cost - expansion/operations – ($67,400,000)
- Value - $84,000,000 ($60/ton)
- Takes elevation from current 248' to permitted 298'

Phase 2

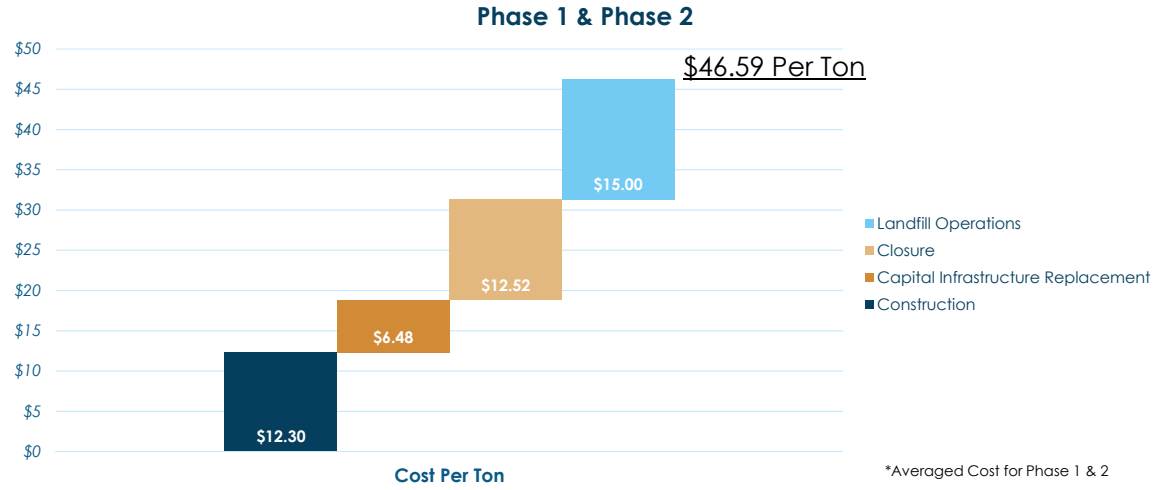
- New waste capacity – 1.3 million tons
- Lifespan – 5.4 years @ 1.56% growth
- Total cost - expansion/operations – ($60,900,000)
- Value - $78,000,000 ($60/ton)



Benefits of On-Site Capacity

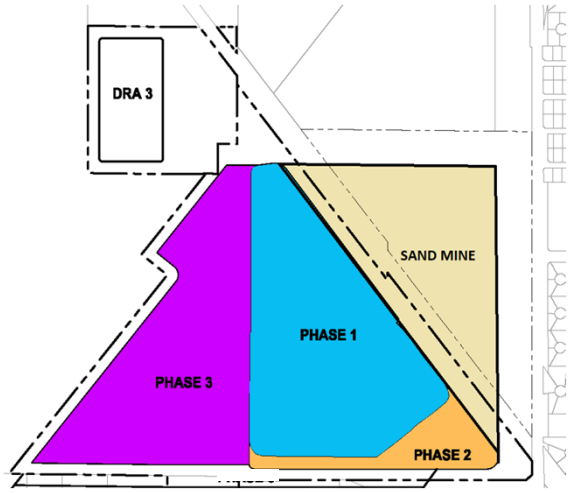
Benefit	Phase 1 Only	Phase 1 & Phase 2
Lowers operating costs	✓	✓
Maximizes available airspace	✓	✓
Prepares the slopes for closure	✓	✓
Limits permitting cost	✓	✓
Limits permitting risk	✓	✓
Land use already approved	✓	✓
Enhances gas collection system	✓	✓
Reduces amount of off-site dirt needed for closure		✓
Allows flexibility of installation of improved infrastructure		✓
Maximizes equipment life		✓
Resolves karst permit question		✓
Limits Geotech work to ~12 acres		✓
Modernizes leachate system		✓

Landfill Expansion Costs

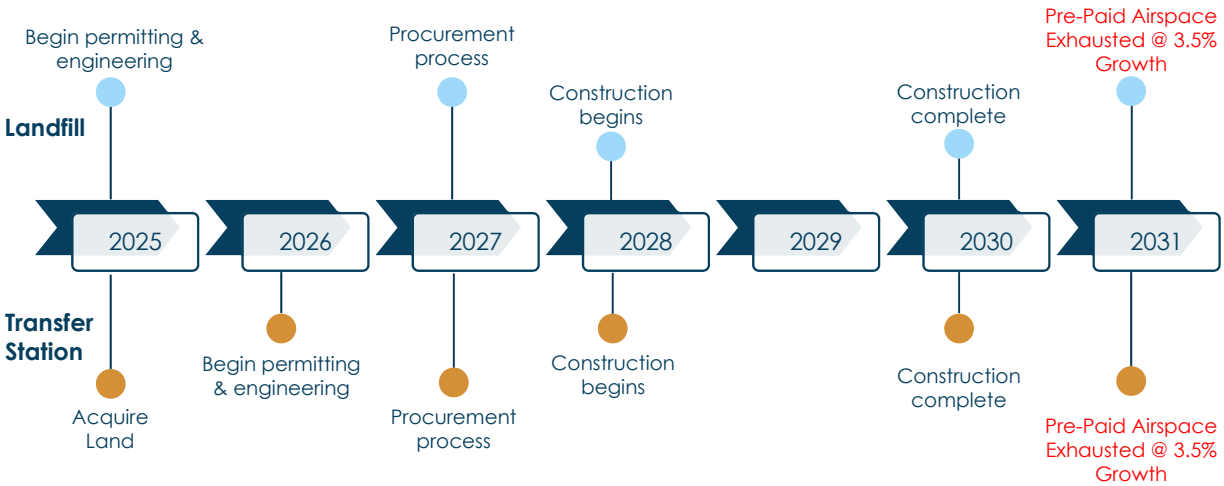


Hypothetical- On-Site Capacity + Sand-Mine Property

Phase	*1.56% Growth
1	6.6
2	5.4
3	35.9
On-Site Capacity Additional Years	**47.9**
+ Sand-Mine	41.0
Total Additional Years	**88.9**



Timeline



Picking A Path

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