



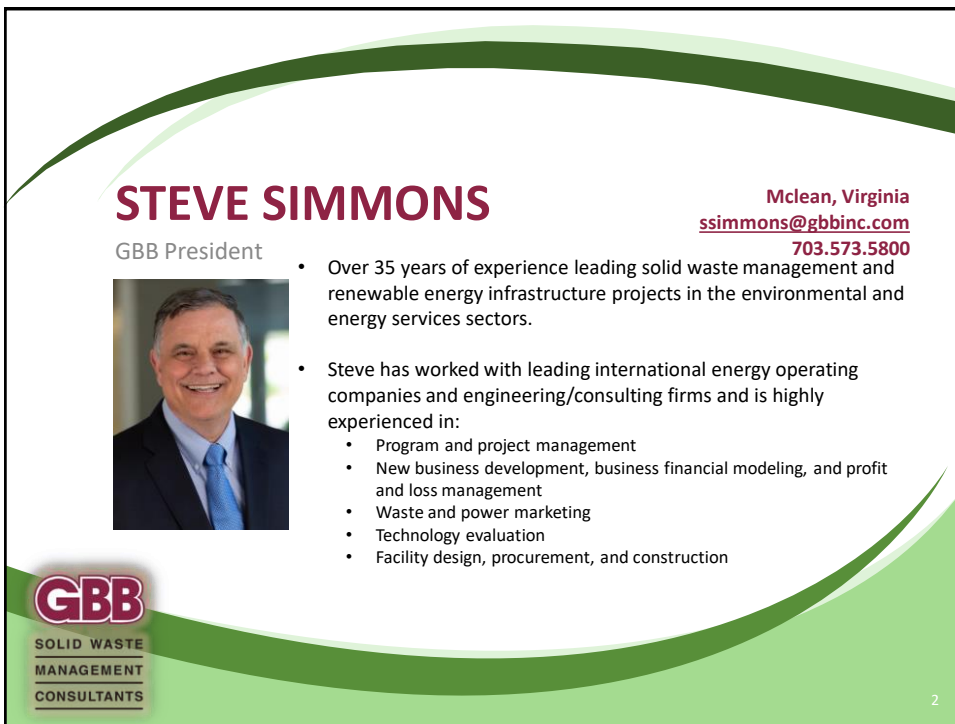
Opportunities for Florida: Zero Waste to Landfill and Creating a Circular Economy

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Presented by:
Steve Simmons
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SWANA Florida /
Recycle Florida Today Joint Summit
January 27, 2020

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STEVE SIMMONS

GBB President



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- Over 35 years of experience leading solid waste management and renewable energy infrastructure projects in the environmental and energy services sectors.
- Steve has worked with leading international energy operating companies and engineering/consulting firms and is highly experienced in:
 - Program and project management
 - New business development, business financial modeling, and profit and loss management
 - Waste and power marketing
 - Technology evaluation
 - Facility design, procurement, and construction



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Gershman, Brickner & Bratton, Inc.
Innovative, Sustainable Solutions for Solid Waste Management

GBB Vision

*A **world** where discarded materials are used as resources rather than wasted*



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We All Know Recycling is Challenging Now



Worldwide crisis in recycling markets hits Broward | Opinion

Challenges facing Florida's Recyclables Market:

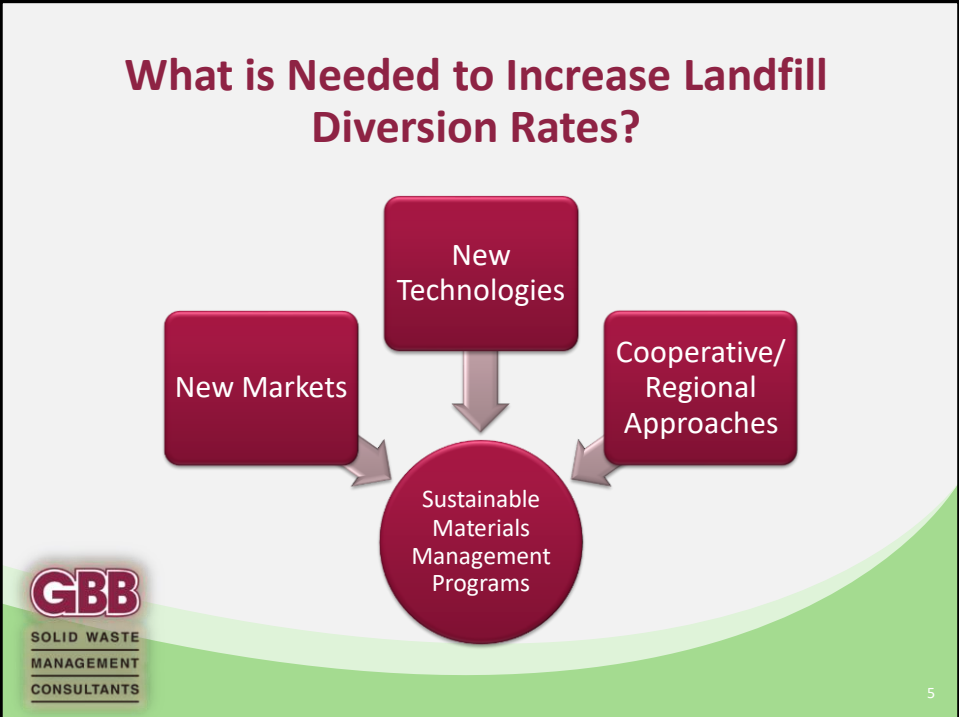
- Pressure on MRF Operators and Waste Haulers to increase quality of recyclables
- Downward pressure on recyclables Prices
- Oversupply of regional recyclables markets
- Higher Municipal Recycling Contracts



Source: www.sun-sentinel.com/opinion/commentary/fl-op-viewpoint-recycling-markets-crisis-hits-broward-20180506-story.html

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A New Class of Waste Conversion Facilities Started Commercial Operation in 2019

Entsorga West Virginia	<ul style="list-style-type: none"> • This facility began commercial operations in May 2019 in Martinsburg, WV. It is located on a closed landfill site and produces a solid fuel for a local cement manufacturing facility.
RePower South	<ul style="list-style-type: none"> • This facility is in Monks Corner, SC and began operations in 2019. Two facilities create renewable fuel products for use as a coal substitute.
Fiberight, LLC	<ul style="list-style-type: none"> • This facility is located outside of Bangor, ME. In 2019, they began operation of a facility to 180,000-ton per year recover and produce an array of products.

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Conversion Technology Overview: Mechanical-Biological Treatment

- Mechanical-Biological Treatment Technology (MBT) encompasses a **broad array of technologies which use mechanical and biological processes** to recover valuable recyclables, stabilize organic material, recover energy, and produce products for sale.
- MBT facilities are **widely adopted in the European Union** where they recover recyclables and produce **Solid Recovered Fuel (SRF)** which may be used as a substitute for coal.
- Large industrial firms, such as cement manufacturers, utilize SRF as a component of their corporate sustainability plans.



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Conversion Technology Overview: Entsorga West Virginia - Martinsburg, WV

Facility

- **Processing Capacity Max:** ~ 500 tpd of MSW
- **Recoveries:** Metals
- **Product:** Solid Refined Fuel (SRF)

Economics

- **Investment:** \$50 million
- **Tipping fees:** ~ \$50 per ton



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Conversion Technology Overview: RePower South - Moncks Corner, SC

Facility

- **Processing Capacity Max:** ~ 600 tpd of Mixed Waste
- **Recoveries:** Traditional Recyclables (Plastics, Metals, OCCs)
- **Product:** ReEngineered Feedstock Fuel (ReEF)

Economics

- **Investment:** ~ \$55 million project
- **Tipping fees:** \$38 per ton



Sources: Investor Webinar - "RePower South Berkeley LLC Berkeley County, South Carolina MRRF Facility"

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Conversion Technology Overview: Cement Kilns in Florida



	Florida		National
	Cement	Cement & Related	Cement
Employees	905	11,565	12,229
Payroll (\$)	58,802,495	480,496,452	\$1.1 billion
Contribution to State Taxes Revenues (\$)	14,934,396	190,901,340	270,813,634
Economic Contribution (\$)	1,153,519,292	10,270,738,193	15,444,948,970



Graphic adopted from Portland Cement Association

Sources: www.cement.org/docs/default-source/ga-pdfs/cement-industry-by-state-2015/florida.pdf?sfvrsn=2&sfvrsn=2

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Conversion Technology Overview: Coastal Resources of Maine /Fiberight- Bangor, ME

Facility

- **Processing Capacity Max:** ~ 600 tpd of MSW
- **Recoveries:** Traditional Recyclables (Plastics, Metals, OCCs)
- **Products:** Fiber Pulp, Renewable natural gas, Solid recovered fuel

Economics

- **Investment:** \$70 Million
- **Tipping fees:** ~ \$70 per ton



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Recovered Material End Market Examples: Georgia-Pacific (GP), LLC Toledo, OR (start up 2021)

Process

- Juno Technology

Application

- Recycling technology at GP mill that recovers fibers mixed waste to make paper-based products.

GP Paper Mills in Florida:

- Hasford- O5B
- Palalka - Paper
- Perry- Foley Cellulose



Image courtesy of Georgia Pacific (GP)



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Source: GP to install new recycling technology at Oregon mill, July 11, 2018, Recycling Today. Retrieved from: www.recyclingtoday.com/article/georgia-pacific-mixed-paper-pulpine-recycling-oregon/

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Recovered Material End Market Examples: AeroAggregates - Eddystone, PA

Feedstock

- MRF glass

Process

- Ultra-Lightweight Foamed Glass Aggregates (ULF)

Application

- Foaming waste glass used for durable construction material



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Recovered Material End Market Examples: Continuus Material Recovery, LLC – Philadelphia PA

Feedstock

- Mixed paper
- Non recyclable plastics

Process

- Continuus EVERBOARD™ Roof Cover Board

Application

- Building materials created from recovered mixed paper and plastic



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A Regional Approach: Sustainable Business Parks

- **Sustainable Business Parks**, known by several names:
 - Recovery Parks,
 - Eco-Industrial Parks (Eco Parks)
 - In academic circles: Industrial Symbiosis or Industrial Ecosystem
- **Key Characteristics:**
 - Business plan that creates a campus where companies/industries are next to solid waste processing facilities
 - Facilities use each other's by-products as inputs



Image courtesy of Kent County Department of Public Works

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Thank you!

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*40 years
of Service*
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