



Lawrence Lecture 2019

Presented by
Harvey W. Gershman



Hello, I am Harvey Gershman



*I am a Garbage Consultant...
a Municipal Solid Waste Garbage
Consultant!*





- Mentors
- GBB Founders
 - Industry colleagues
 - GRCDA and SWANA
 - GBB Clients
 - GBB Team Past and Present
 - Family



My Story



Home Town – City of Pawtucket, RI (80,000 population in 1960)

*“Hahvee....
take out the gahbidge!”*



Slater Mill on the Blackstone River



The path that brought me here today



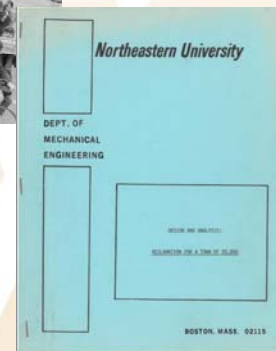
H.S. Senior Goals

- Get out of Pawtucket
- Pursue engineering (no language requirement!)
- Find a career helping people
- Be creative



Northeastern University, BSME 1971

- Earth Day 1970
- Senior design project: “Reclamation for a Town of 20,000”
- National Engineering Education Association Senior First Place Design Award



The path that brought me here today (cont'd)



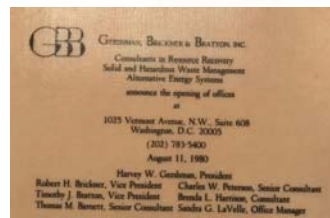
Career Foundations

- 1973 to 1976: National Center for Resource Recovery, Inc.
- 1976 to 1980: Urban Services Group and Gordian Associates
- 1977 to August 9, 1980: Gordian Associates



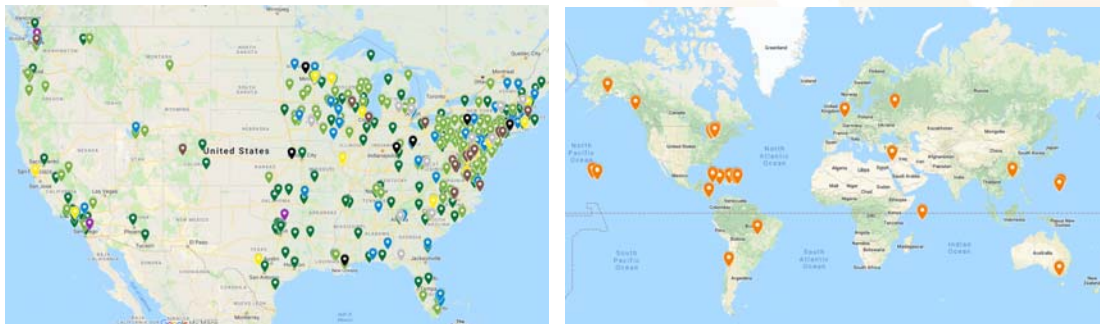
GBB: 1980 to today

- 1980 Gershman, Brickner & Bratton, Inc. (GBB) formed
- 2011 Tim Bratton retires
- 2015 Bob Brickner retires
- 2018 after 39 years as President, I “Retire” as GBB Founder Owner Associate
- 2019 GBB continues with new leadership
- www.gbbinc.com



Our Network of Clients Spans the Globe

48 states, 2 U.S. Territories, Washington, D.C., several island nations, and clients around the world





U.S. Territory of Guam Receivership: 180° Turnaround

- More than 12 years
- Island now has a great integrated SWM system
- Meets federal law and provides reliable services
- Closed WWII-era landfill
- Built new RCRA-compliant landfill



Waste (R)evolution since Earth Day 1970





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Earth Day 1970


Kicked-off Environmental Management

- 1970: First Earth Day
- 1970: US EPA formed
- 1970: Clean Air Act
- 1972: Clean Water Act
- 1976: RCRA

- Resource Conservation
 - Reduce
 - Reuse
 - Recycle/Compost
 - Recover (more materials, fuel and energy)
 - Dispose

- Solid Waste Management
 - Protect Public Health
 - Protect Environment
 - Function Conveniently and Dependably
 - Conserve Resources
 - Minimize Costs





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What has happened since?



1960s: Automated collection starts right here in Arizona!



1970s: Resource recovery projects, 1st Earth Day



1980s: Subtitle D, and open dumps become sanitary LFs



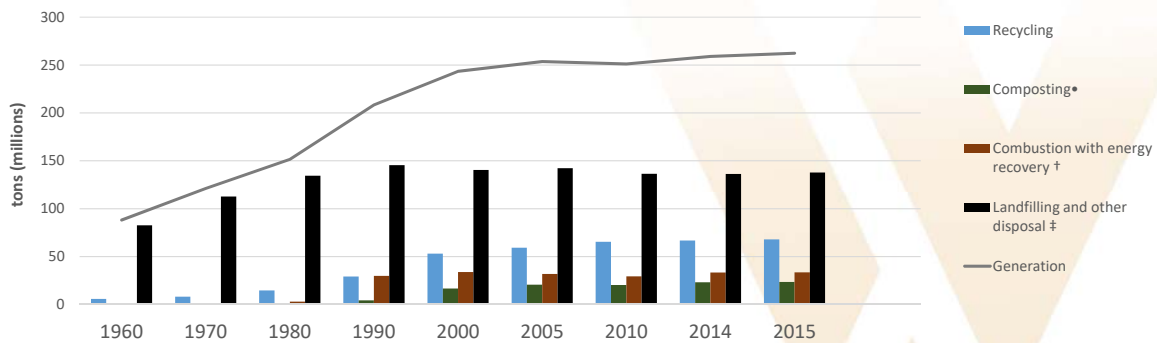
1990s: Earth Day turns 25, Curbside recycling goes mainstream



2000s: Single-stream MRFs, Bottled Water, Collapse of newsprint, China

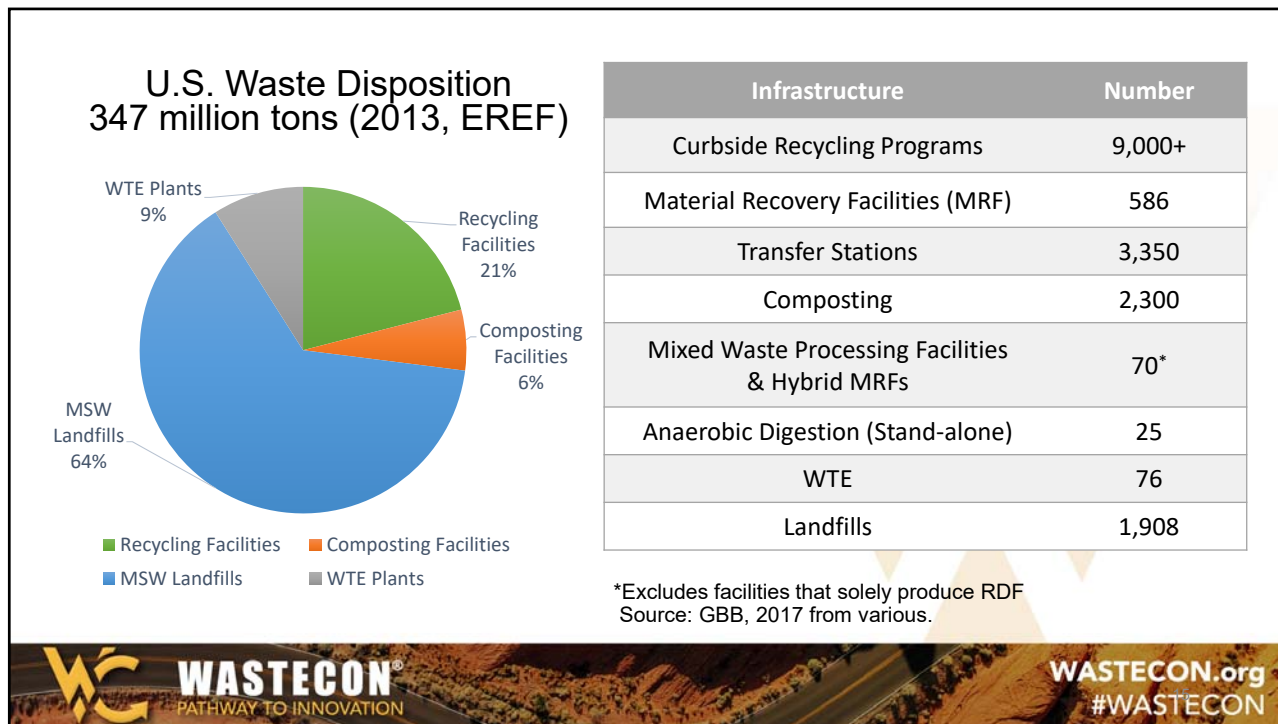


So, what has changed?



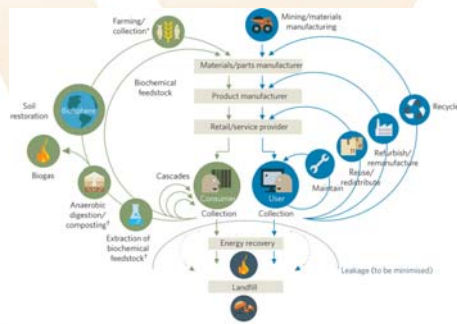
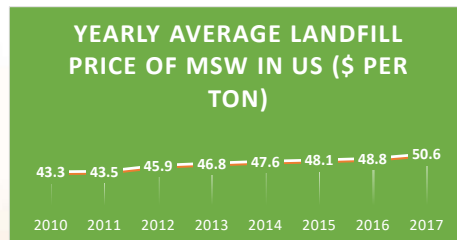
* Figure 1. Generation, Recycling Composting, Combustion with Energy Recovery and Landfilling of MSW. 1960 to 2015 (in millions of tons)
 * Composting of yard trimmings, food and other MSW organic material. Does not include backyard composting. Values not visible on chart are negligible, or less than 5,000 tons.
 † Includes combustion of MSW in mass burn or refuse- derived fuel form, and combustion with energy recovery of source separated materials in MSW (e.g., wood pallets, tire-derived fuel).
 ‡ Landfilling after recycling, composting and combustion with energy recovery. Includes combustion without energy recovery. Details might not add to totals due to rounding.





The Industry Today

- Significant focus on AD projects, especially in California
 - Wastewater treatment plants with excess AD capacity interested in adding food waste
- Several conversion technologies to watch carefully, including "One-Bin"
- Mixed waste processing key to 'Zero Waste To Landfill'
- Increased public sector involvement needed
- 'Zero Waste' proponents fight non-recycling only alternatives
- Charges for services need to increase
- Some focus on circular economy approaches



Project Building Blocks




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Project Development Time Spans

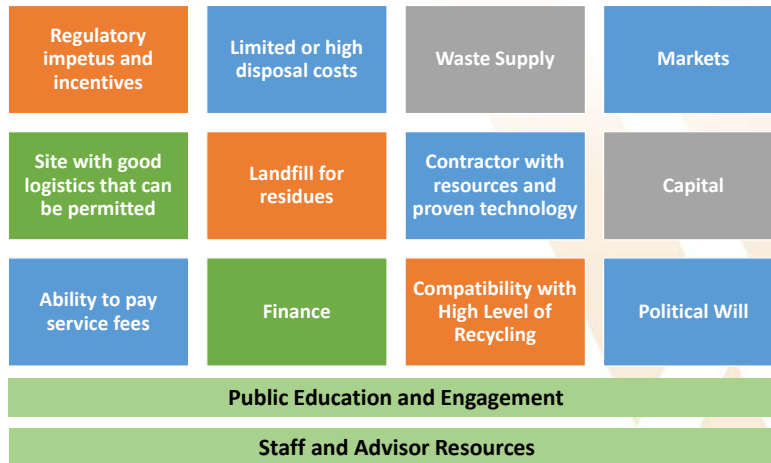
Type of Project	Time Span (months)
Drop-off Center	3 to 9
Curbside Collection	6 to 12
Full-scale MRF	24 to 36
Composting Facility	24 to 48
Waste-to-Energy	60 to 84
Landfill	24 to 60

Source: SWANA Paying Course Manual, 1999



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Project Building Blocks



Regulatory Impetus and Incentives

Town of Babylon, NY

Babylon Resource Recovery Facility



- Long Island Landfilling Ban
- Solid Waste Collection District
- 15% Recycling Requirement
- State tax-exempt bonding capacity



Waste Supply

- Residential waste
 - Generally under control
- Commercial waste
- Waste service/supply agreements for regional projects
- Longer term contracts

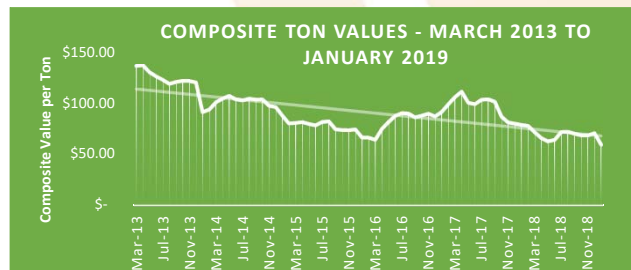


City of Fort Worth, TX



Markets

- At time of contracting/project financing:
- Power contract in place
- Steam purchase agreement
- Estimating value of recyclables



Source: GBB 2019



Site with Good Logistics that can be Permitted

- Existing solid waste site
- Elected officials input to site selection
- Community acceptance



Source: Solid Waste Authority of Palm Beach County



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Contractor with Resources and Proven Technology

- Von Roll technology, European experience, and track record
- Experienced full service team
- Parent company guarantee



Northeast Maryland Waste
Disposal Authority
Baltimore "BRESKO"
Facility



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Ability to Pay Service Fees

Public Revenue Sources

- Tipping Fees
- Differential Tipping Fees
- Improved Lot or Special Assessments
- User Charges, when collection provided, is charged per: month, quarter, year, bag, yard, pull, can, pound/ton, square foot
- Generator Assessments
- System Management Fee
- Local Contributions and Reduced Tipping Fees
- Franchise or License Fees
- Taxes; property or special

Contractor Service Fee Formula

$$SF = DS^* + OM + PT - RPC + OPB$$

where

SF = Service Fee

DS = Debt Service

OM = Operation and Maintenance Expense (including Equipment Replacement Fund contribution)

PT = Pass Through Costs

RPC = Recovered Products Credit (sharing of revenue often applied)

OPB = Other Payments Balance

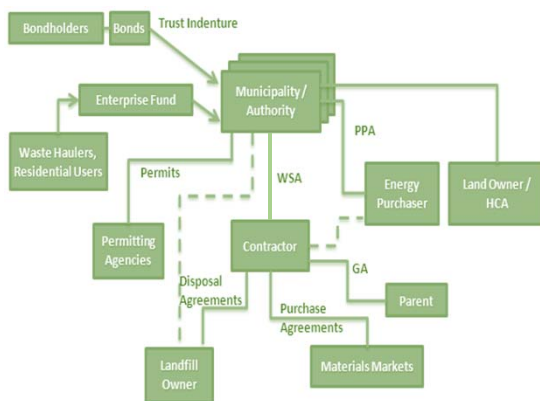
OM = Labor + Benefits + Parts and Supplies + Equipment Replacement + Office Supplies + Communications + Delivery + Outside Contractors + Leased Equipment + Disposal Charges + Insurance/Bonding + Management Fee + Return on Equity *+ Risk Factor

* If privately owned/operated

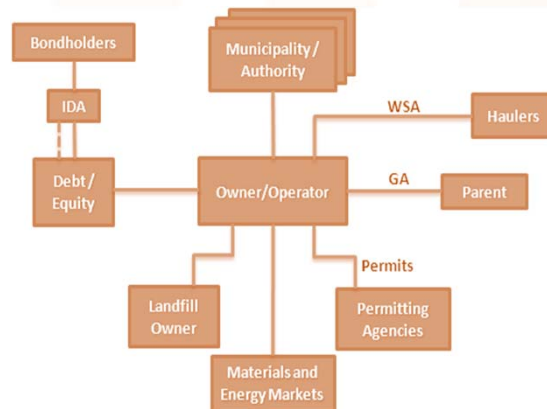


Finance

Public Ownership



Private Ownership



Political Will

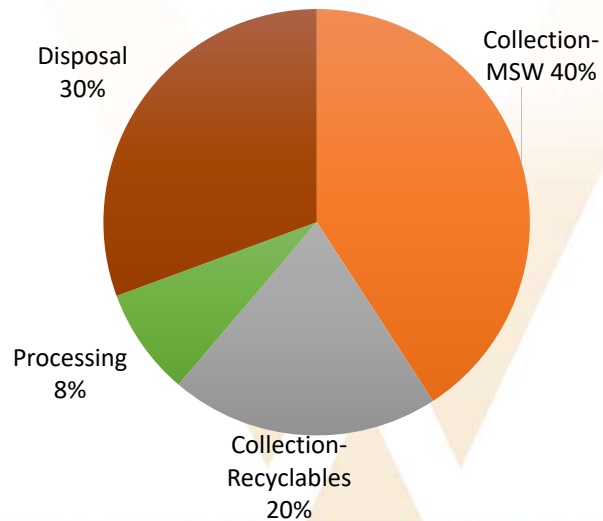
- Educate the citizenry to create consensus for change
- Incremental decision making during the planning and development process
- Approvals for contracting and financing support



Best Practices and Lessons Learned

- Have a plan
- Granular understanding of services and costs
- Identify collection efficiencies
- Markets first
- Available assets owned by others
- Know how the changes will affect costs
- Building blocks management

Solid Waste Management Cost:
\$100-400 per ton



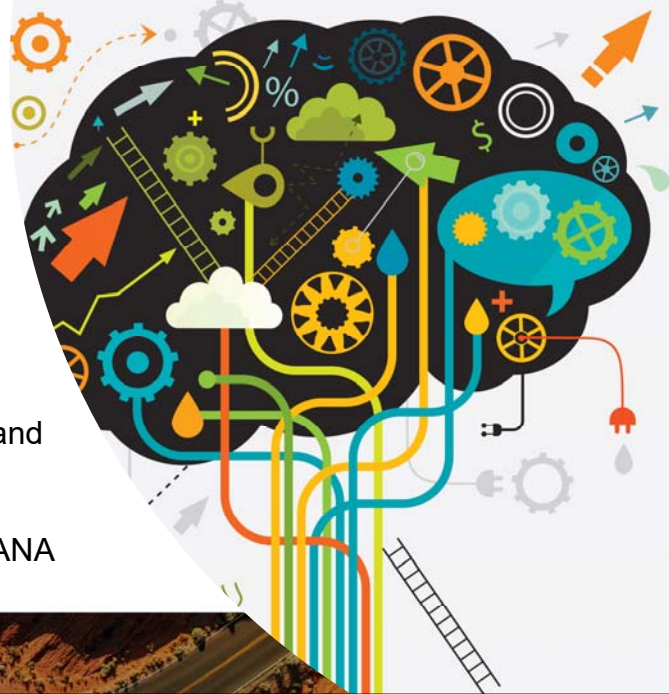
Advice to YPs



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Advice to YPs

- Read everything
- Track social media
- See it all
 - Understand all aspects
 - Eyes on elected officials and constituents
 - Needs vs. Wants
 - Get involved with SWANA



The Customer Wants:

- Predictable/acceptable economics
 - Low risk
 - Opportunity to become 'greener'
 - Proven technologies that meet environmental standards
 - Contractors with deep and financeable pockets
 - Compatibility with recycling and diversion goals
 - Community acceptance



Interactive Strategic Planning



And one more thing:

Pick your battles

Don't get fired

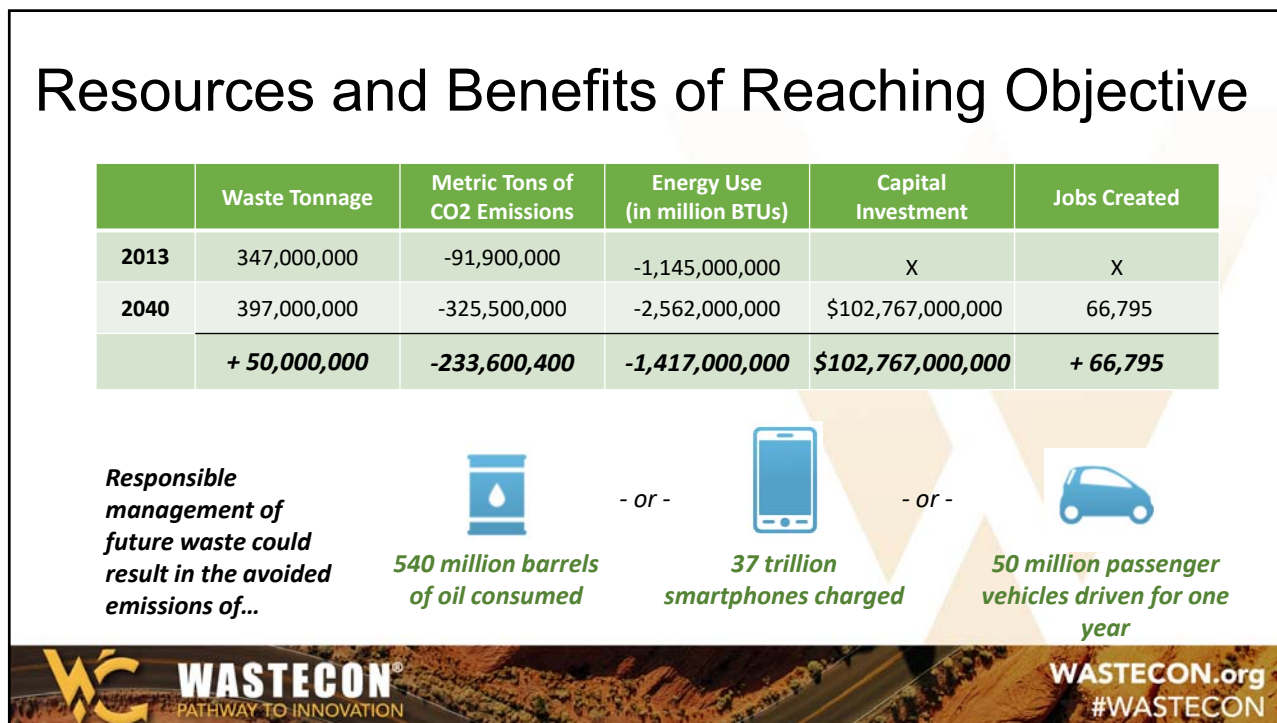
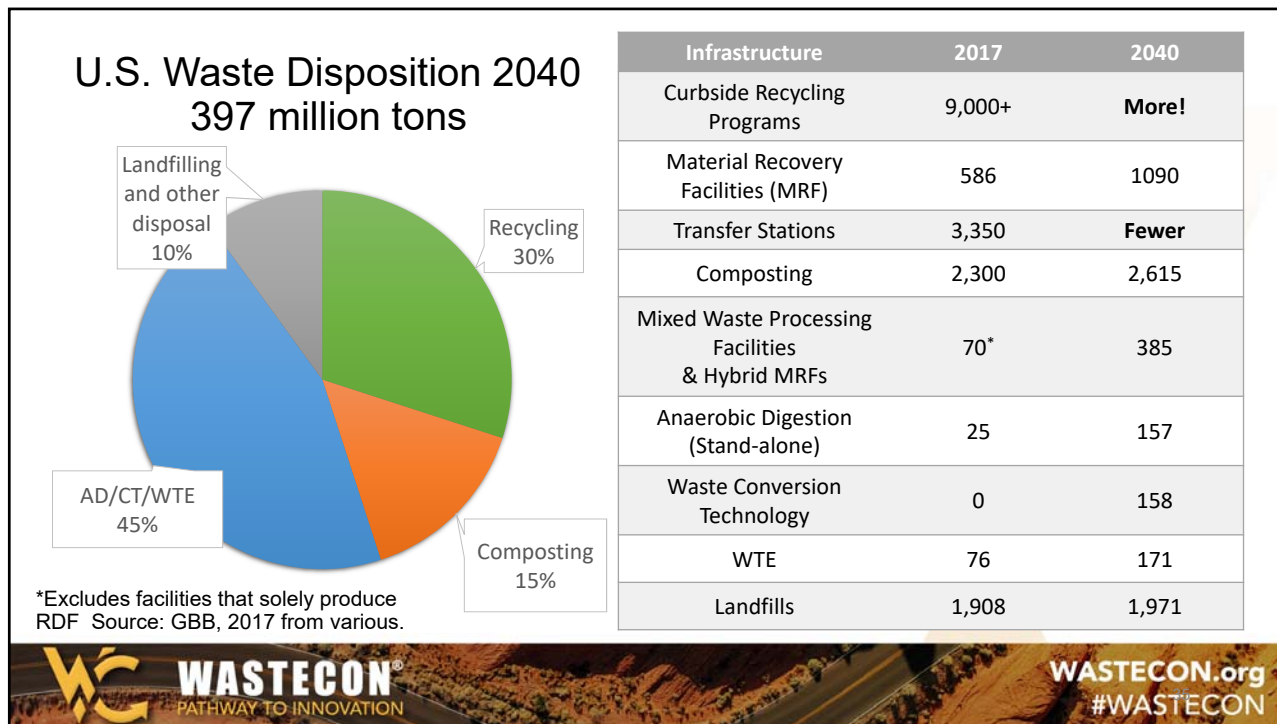
Or, do get fired

And, sleep well at night!



Where are we trying to get to?





Legislation Needed

Nationwide 60% recycling goal and < 10% by weight to landfill

Tax benefits for manufacturing products with > 50% post consumer recycled content

Personal and business tax credits for living in a jurisdiction that meets the 60% goal and < 5% MSW to landfill

Tax on waste to landfills to fund tax benefits

Nationwide deposit legislation; MRFs can claim deposits; unclaimed deposits fund tax credits

WTE Facilities termed 50% renewable energy facilities eligible for 50% of renewable credits as long as jurisdiction meeting 60% goal



When we were facing the Green Fence, we thought, *“How do you get over a fence?”*

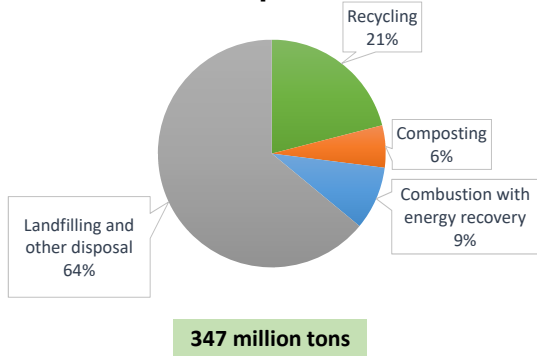
You build green gates in the US. !

...to convert recyclables into consumer products!

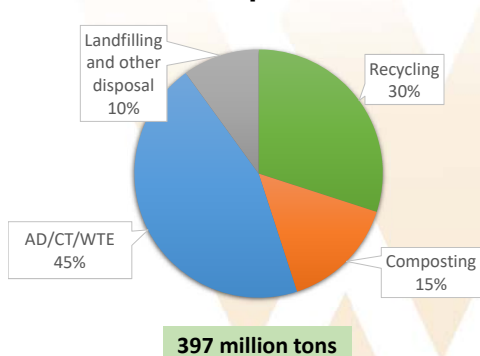


US Waste Disposition 2013 to 2040

U.S. Waste Disposition 2013



U.S. Waste Disposition 2040



Thank you!!

and

**LET'S GO
NATS!**

