

# SOLID WASTE FORUM

## Florida Section A&WMA 55th Annual Conference & Exhibition



October 30, 2019

Nandra Weeks, PE, Moderator

Speakers Include

Liz Foeller, PE | Rebecca Rodriguez, PE | Cory Dilmore, PE | Kimberly Jackson, GISP | Tim Townsend, PhD, PE

# Presenting Today:



**Nandra Weeks, PE**  
Senior Principal Engineer  
Geosyntec Consultants



**Liz Foeller, PE**  
Area Manager –  
Environmental Protection  
Waste Management



**Rebecca Rodriguez, PE**  
Engineering Manager  
Lee County Public Utilities



**Cory Dilmore, PE**  
Environmental Administrator  
FDEP



**Kimberly Jackson, GISP**  
Geographic Information  
Officer  
Florida GIO



**Tim Townsend, PhD, PE**  
Professor of Environmental  
Engineering Sciences  
ESSIE - UF

WTE  
Recycling  
Efforts

Emerging  
Issues in  
Leachate  
Treatment

What is  
SMM?

Worker  
Safety

How can  
I get on  
Cory's  
list?

**PFAS**  
The new  
four letter  
word

What's up  
with CCRs?

Climate  
change and  
waste  
management

Proper  
Disposal  
of PFAS  
Wastes

Workforce  
Development

Beneficial  
Reuse

Next steps for  
reaching 75%  
recycling goal?

Blue-Green  
Algae and  
Red Tide

The background of the slide is a dark brown wood-grain texture. The entire scene is framed by a border of bright, intense orange and yellow flames that appear to be burning rapidly. The flames are most prominent at the top and bottom edges, with some reaching inward from the sides.

# RAPID FIRE

# FDEP UPDATE

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- Groundwater monitoring changes for C&D facilities and Class III unlined facilities
- CCRs – Adopt by reference
- 709 cleanup and definitional changes
- 711 waste tire changes
- Recycling rates go down
- How to get on Cory's list



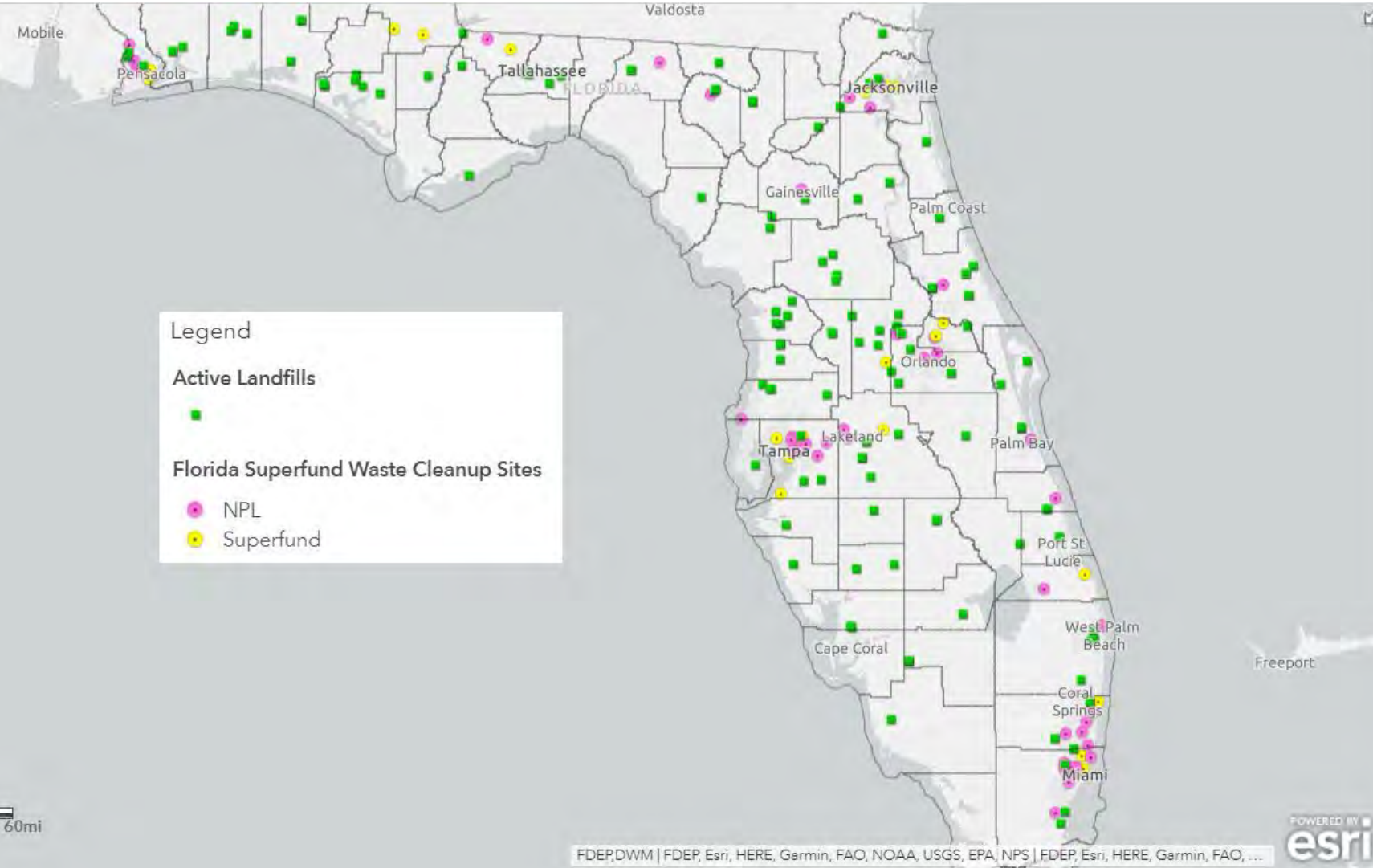
# Climate Change – Creating Resilient Waste Management Systems

## Stresses and Shocks to the Florida Waste Management Community

- Extreme Natural Events
- Increasing Storm Frequency
- Sea Level Rise







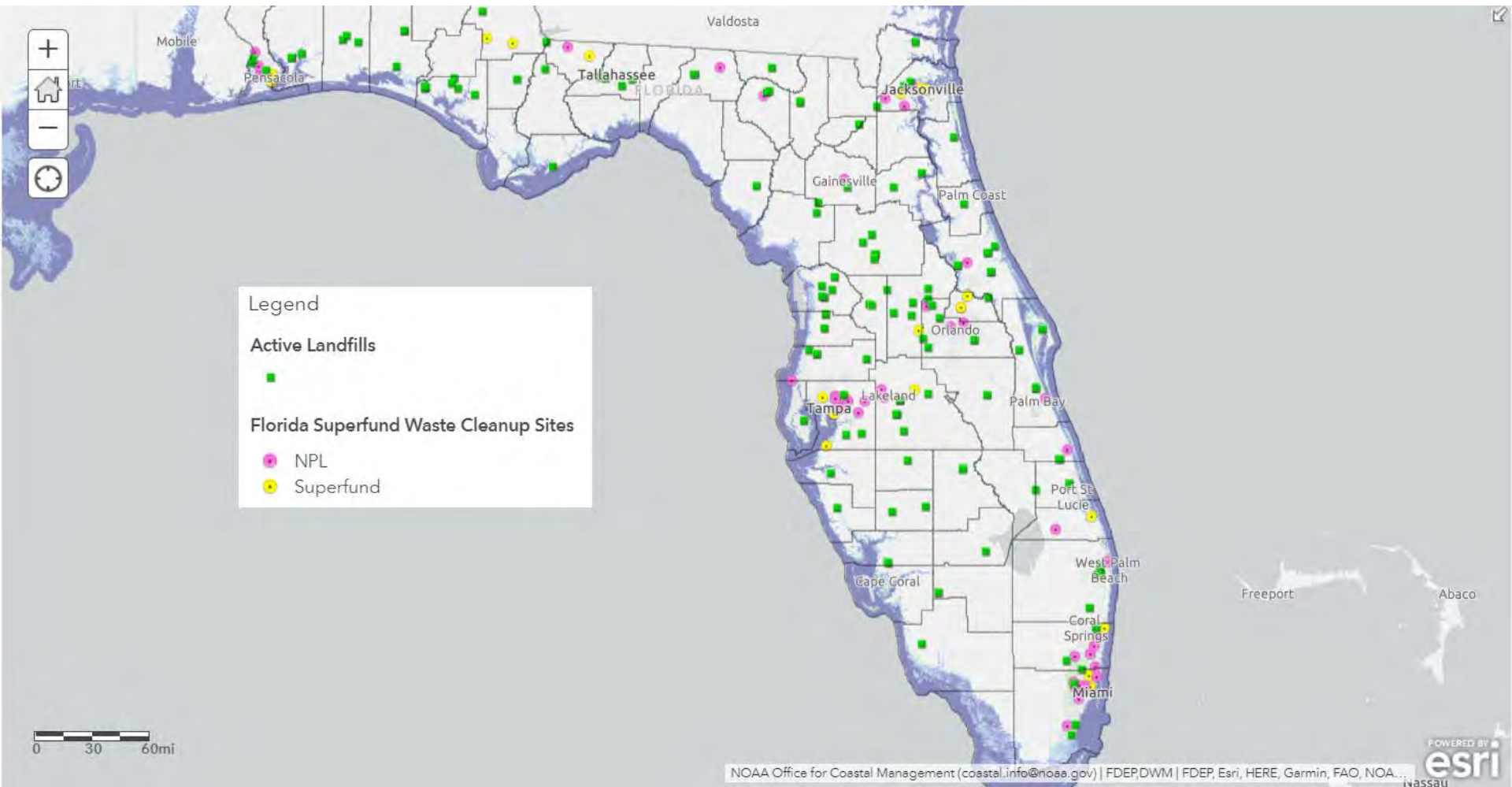
Legend

Active Landfills

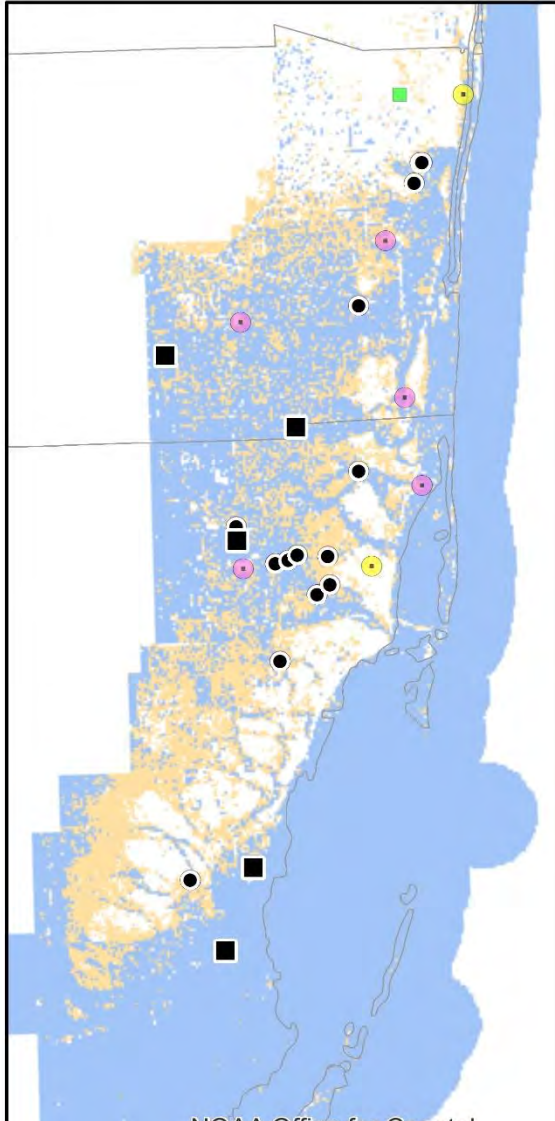
Florida Superfund Waste Cleanup Sites

- NPL
- Superfund





## Projected 2100 Sea Level Rise



■ Active Landfills (132)

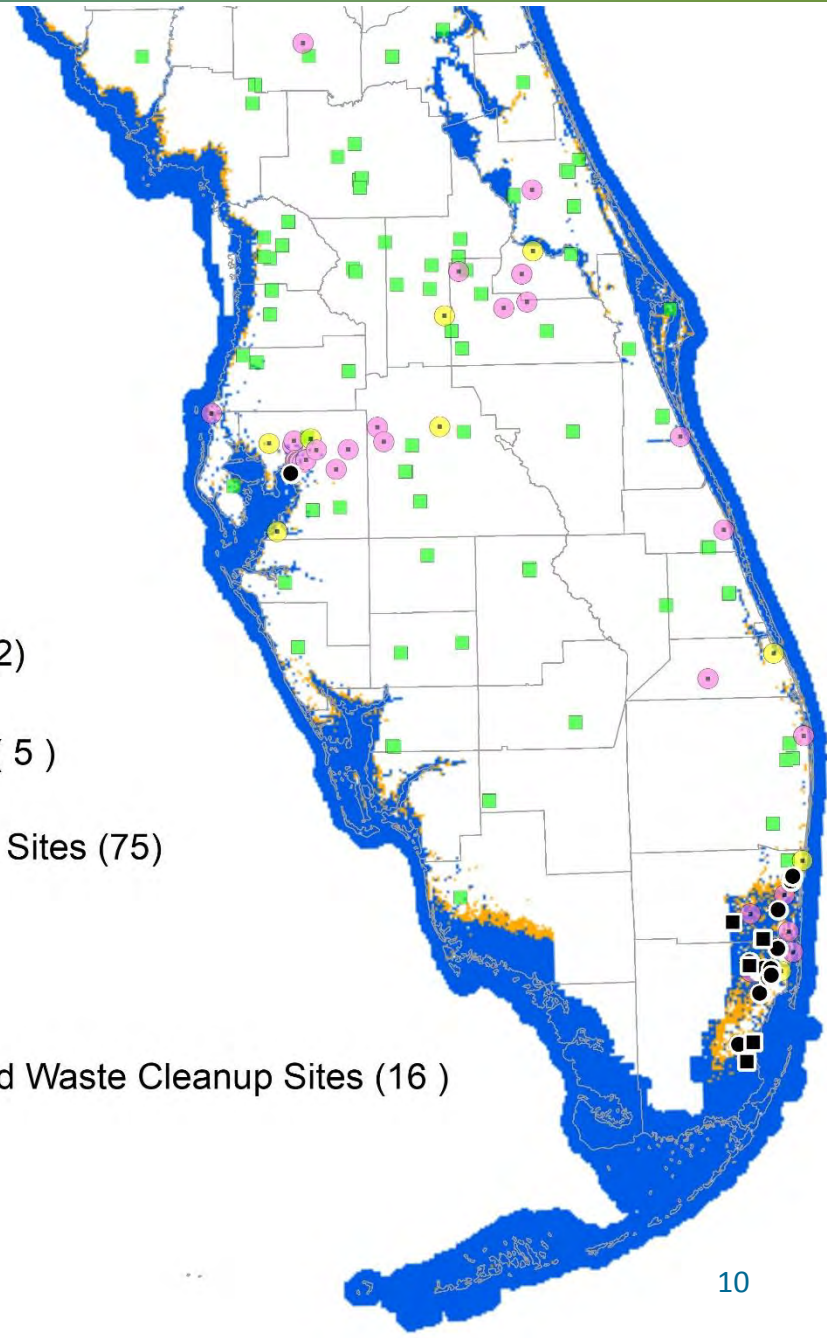
■ Impacted Landfills ( 5 )

Superfund Waste Cleanup Sites (75)

● NPL

● Superfund

● Impacted Superfund Waste Cleanup Sites (16 )



# Recycling in the news

## American Consumers Might Save Paper Recycling

China also... the market when it stopped buying U.S. waste, but... are shoppers are coming to the rescue.

... updated on October 11, 2019 7:32 AM

## Lee, Charlotte counties lead Florida in recycling rates

Gabe Stern, Fort Myers News-Press  
Published 4:52 p.m. ET Aug. 1, 2019 | Updated 1:55 p.m. ET Aug. 2, 2019

## Investments contradict 'end of recycling' headlines

Posted on March 27, 2019

## As Costs Skyrocket, More U.S. Cities Stop Recycling

With China no longer accepting used plastic and paper, cities are facing steep collection bills, forcing programs or burn or bury more waste.

## Recycling trash: growing problem for Jacksonville

Roughly one-fourth of items receive at area's largest recycling center are trash

## As Stuart prepared to impose the area's first ban on plastic straws, here's what you need to know

Joshua Solomon, Treasure Coast Newspapers  
Published 5:16 p.m. ET Oct. 11, 2019

## Trash to treasure: Everest garbage given new lease of life

## Hilton Marks Global Handwashing Day by Expanding Soap Recycling Effort Around the World

October 10, 2019

PLASTIC

IS **NOT SO**

FANTASTIC!

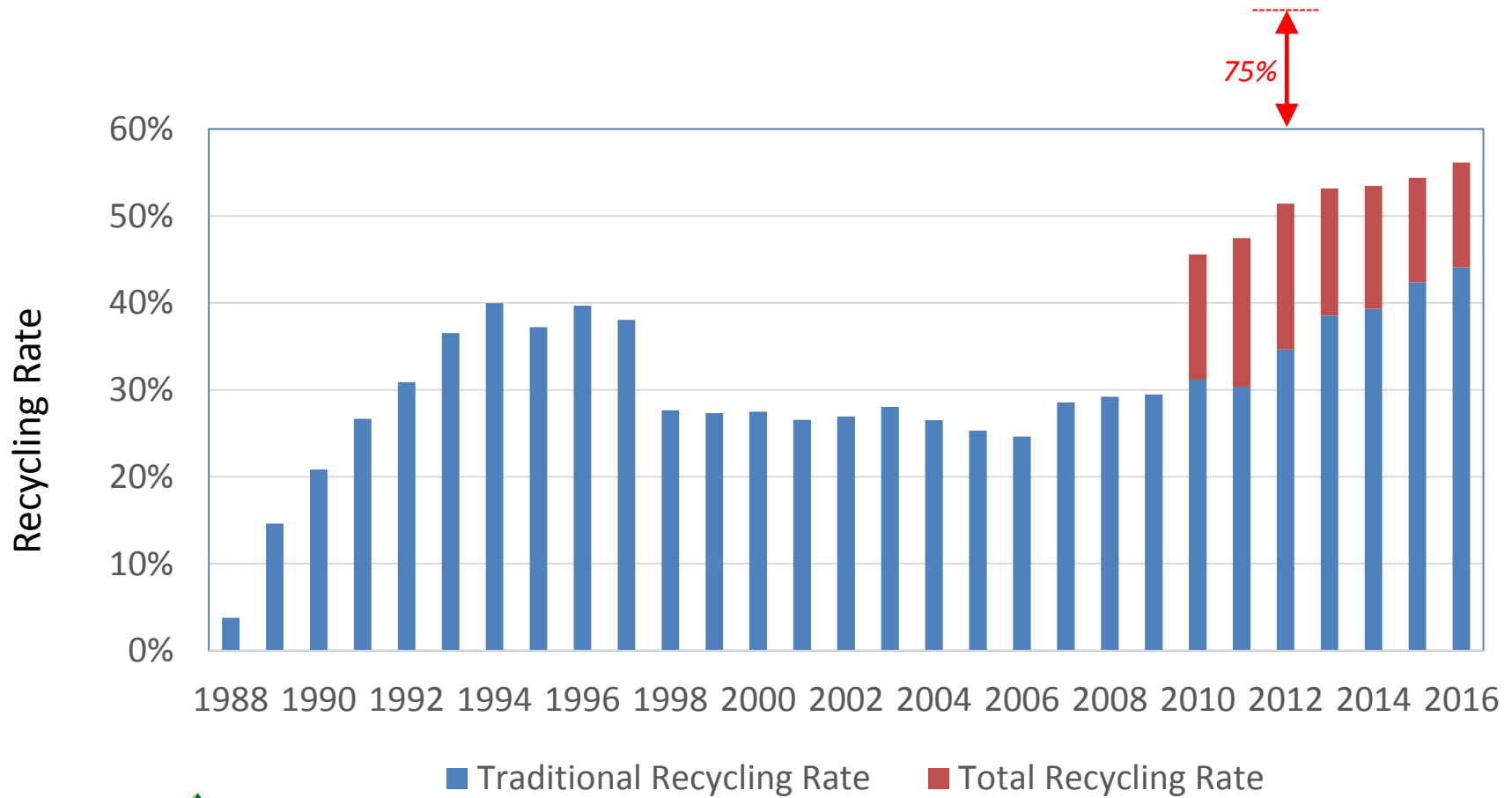


# Sustainable Materials Management

Are we managing our waste materials in the most efficient manner possible?

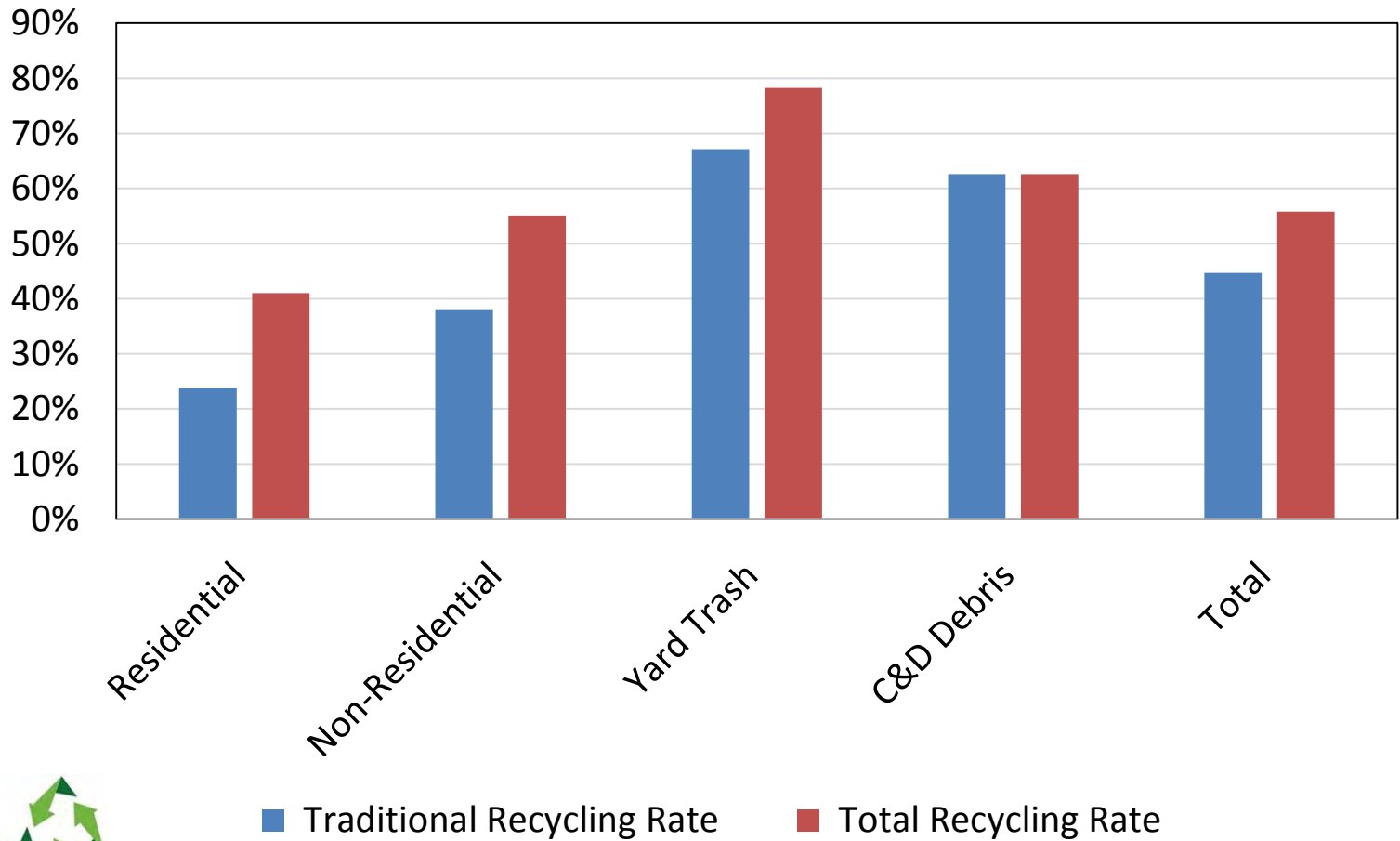
- Florida will not meet the statutory recycling goal of 75% by 2020.
- Recycling markets are the most challenged they have ever been.
  - International market shutdown
  - Contamination in recycling systems
- Some local governments are dropping materials from their recycling programs, or the programs altogether.

# Florida Historic Recycling Rates



# Florida Recycling Rates by Source

*(Estimated for 2016)*

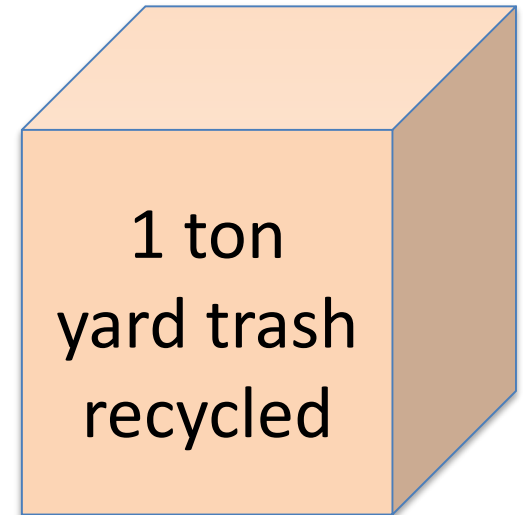
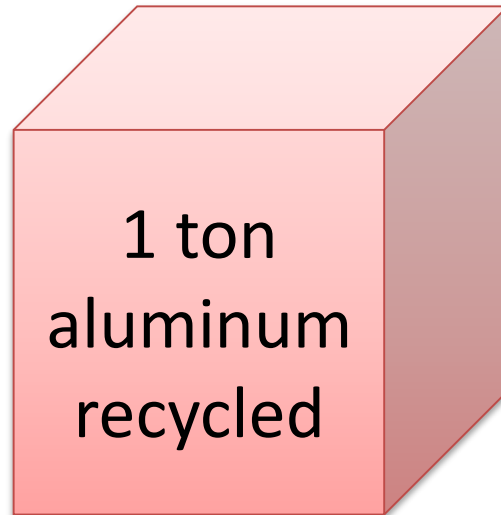
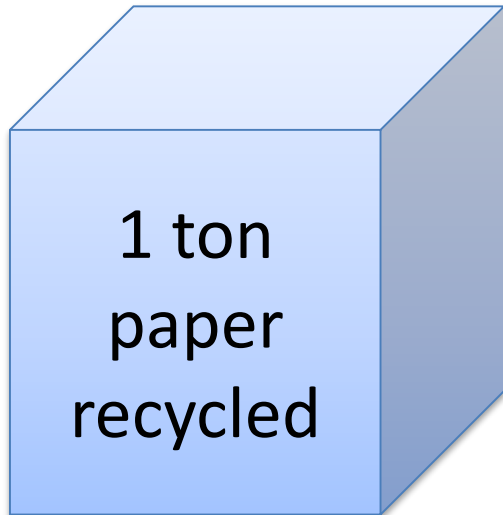


■ Traditional Recycling Rate

■ Total Recycling Rate

# Current Approach

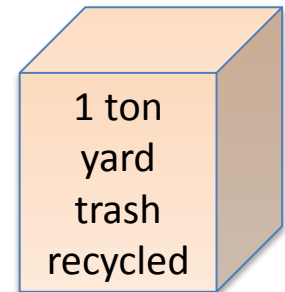
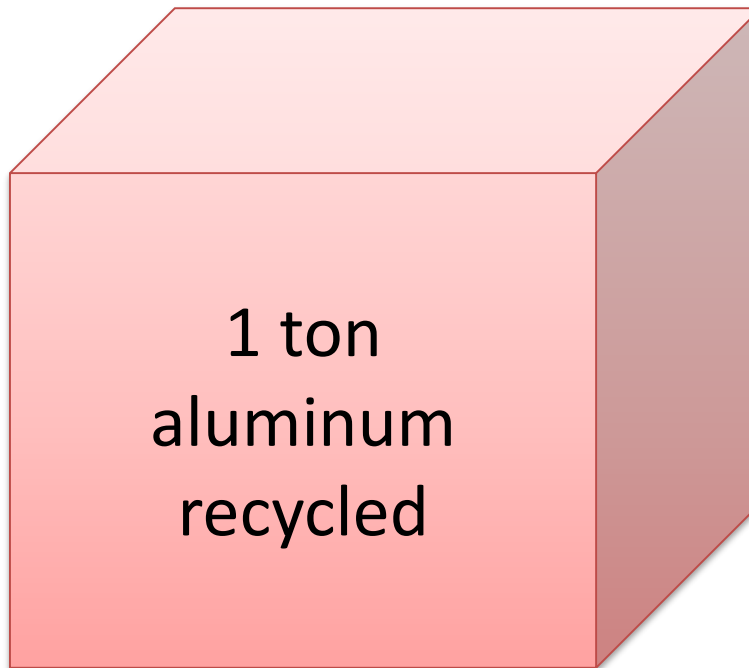
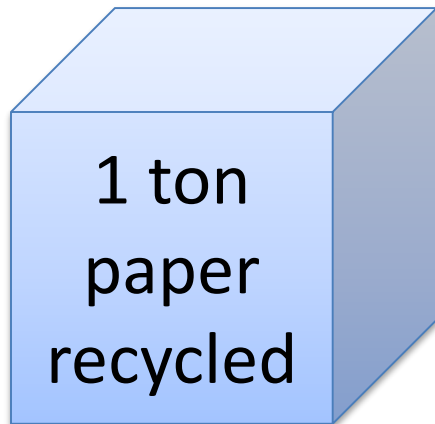
*All materials are treated the same*



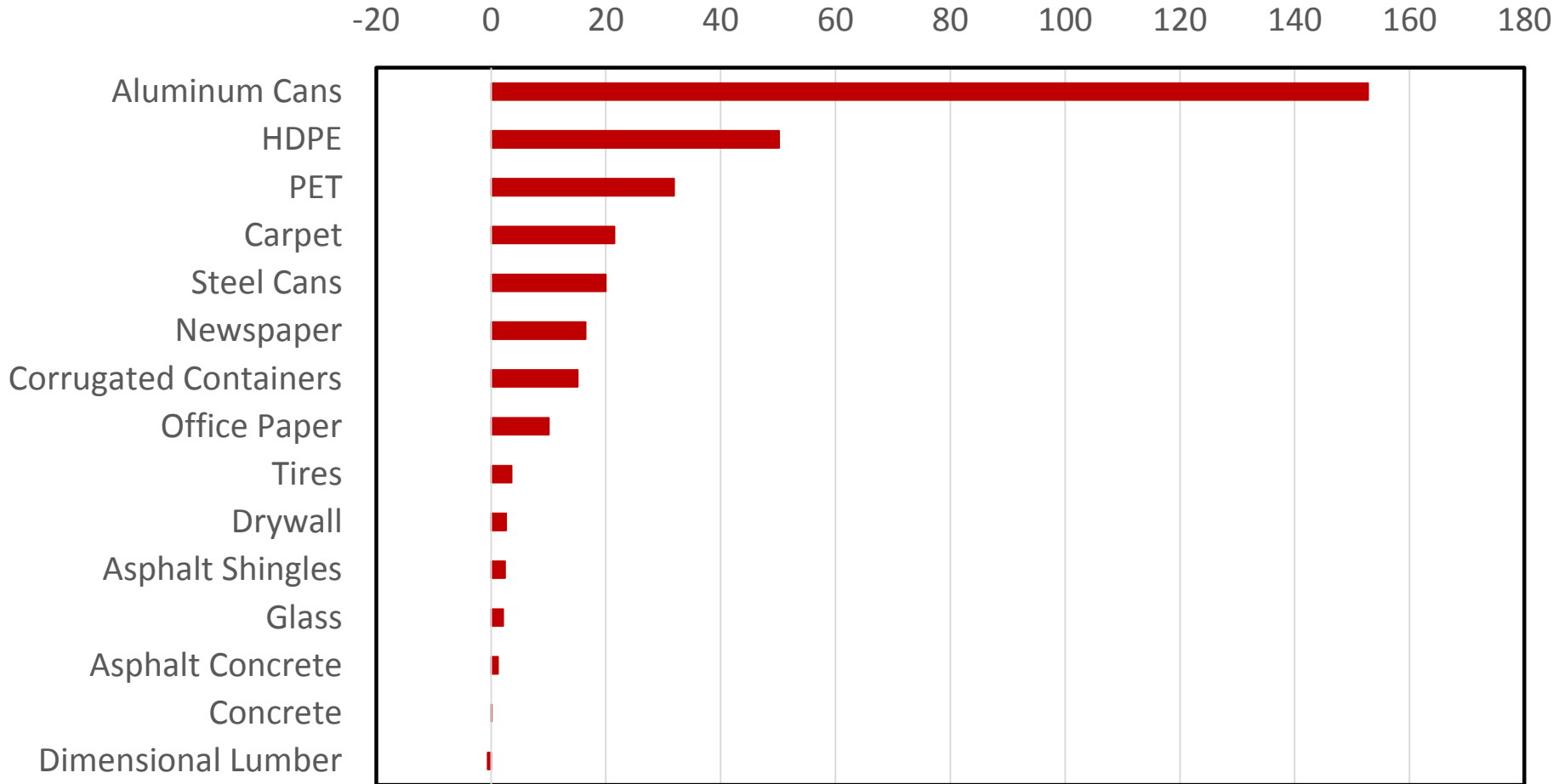


# The SMM Approach

*Different materials result in different outcomes*

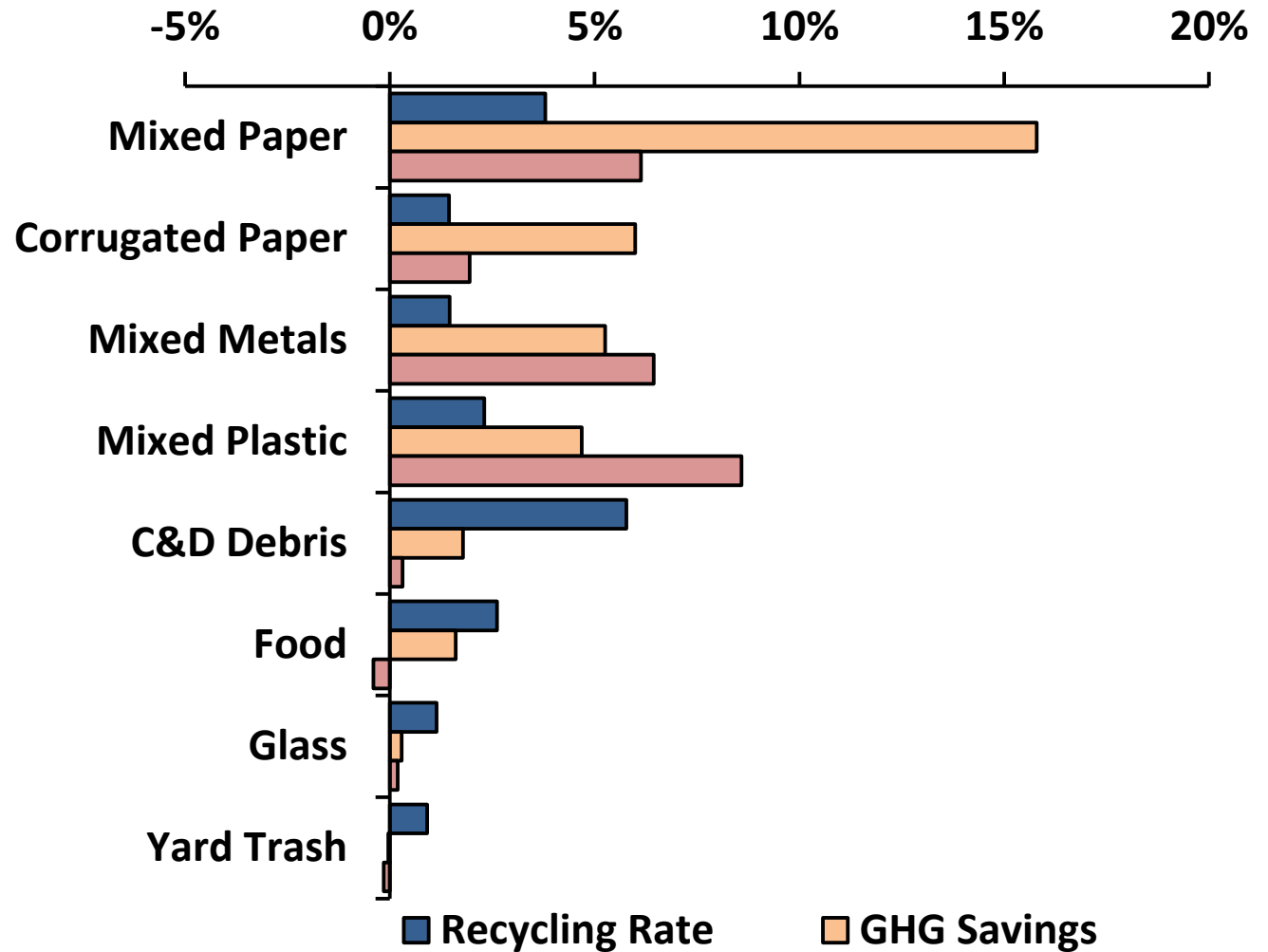


# WARM Energy Factor for Recycling (MMBTU/ton)



## Incremental Increase Relative to the Baseline

Material Increased to 75% Recycling Rate



# Sustainable Materials Management

Are we managing our waste materials in the most efficient manner possible?

- Not all materials provide the same benefit with respect to recycling or other forms of waste management.
- Source reduction and reuse can play a very large role.
- How best should the State (and local governments) plan/invest to address the very real issues associated with waste management?

# 5 CONCEPTS OF ZERO WASTE

## REDUCE

Adopt minimalist tendencies



## REFUSE

Know how to say no to whatever's not essential



## REUSE

Give items a second life



## RECYCLE

Prioritize recyclable packaging



## ROT

Compost all organic waste

# Beneficial Use of Waste Materials

Many byproducts have the potential be to used instead of natural resources in construction products or similar activities.

- Many waste materials have the potential to be recycled in construction projects or as construction materials; this can save natural resource consumption.
- Some risks may increase as these are waste products.
- How do we balance the risk versus the benefits?

# Landfill Leachate

Landfill owners are having more difficulty finding cost-effective treatment options for their leachate

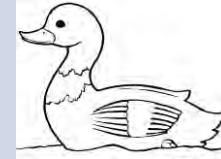


# Do You Recognize the New Four Letter Word?

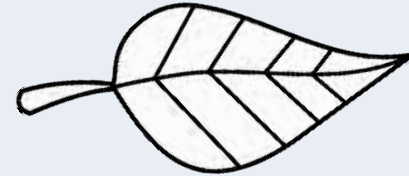
*"We are moving forward with several important actions, including the maximum contaminant level process, that will help affected communities better monitor, detect, and address PFAS."*

**-- EPA Administrator,  
Andrew Wheeler**

DUCK



LEAF



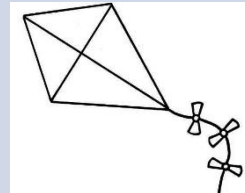
FROG



PFAS



KITE








## Research on PFAS and Landfills

- Hinkley Center for Solid and Hazardous Waste: Characterization of Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) in Landfill Leachate and Preliminary Evaluation of Leachate Treatment Processes
  - Dr. Helena Solo-Gabriele, University of Miami, PI
- EPA STAR Grant: A Systems-Based Approach to Understand the Role of Waste Type, Management Strategies and Treatment Methods on the Occurrence, Source, and Fate of PFAS in Landfills



What about PFAS in IDW  
– how do we properly  
dispose of PFAS-  
contaminated materials?

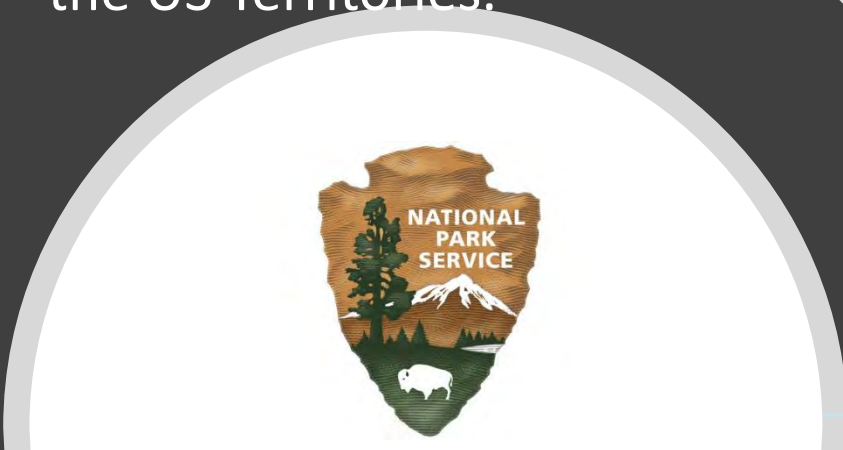
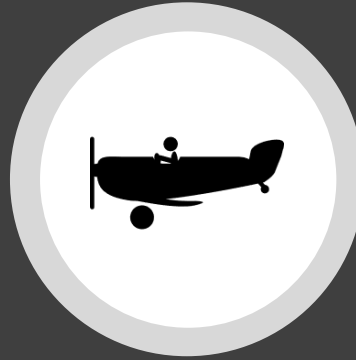
# PFAS-Contaminated IDW



- Cradle-to-grave liabilities
  - Landfill leachate
  - Biosolids
- Landfills and water treatment facilities beginning to refuse waste derived from PFAS/AFFF sources
- Waste haulers have started taking IDW to hazardous waste landfills

# Can you guess who?

1. earned a pilot's license and flew from Iowa to California and back.
2. Thinks that attending three world series in a decade was normal.
3. won a football signed by Coach Bobby Bowden.
4. is a local beekeeper.
5. visited all of the US National Park Units in the US Territories.



# Worker Safety

OSHA Alliance with the NWRA and the SWANA to protect the safety and health of workers in the solid waste industry (Sept 2019)

- transportation hazards;
- slips, trips, and falls;
- musculoskeletal injuries;
- heat and cold stress; and
- needle stick and other hazards.



**Solid Waste Industry Experienced Unprecedented Increase in Fatal Incidents in January 2019**

*"The surge in fatal incidents involving solid waste personnel and vehicles in January is unprecedented in my 20-plus years in the industry and is unacceptable," said David Biderman, executive director and CEO of*

**SWANA**

# What are we doing to develop the **SOLID WASTE WORKFORCE** of tomorrow?



**WWM**  
WASTE MANAGEMENT  
**HIRING NOW**  
*Vacancies in Various Categories*  
Accounting, Purchasing, Supply Chain, Business Development, Sales, Marketing, Design Project Engineers & QC  
**Apply Now**

BECOME A  
**DRIVING FORCE**  
IN CLEAN COMMUNITIES

Join the Trash Team



A big thanks to all of you who attended – we hope you found that this session was not a **WASTE** of your time.