

Current State of Recycling in Florida

State of Florida 75% Recycling Goal
Technical Advisory Group (TAG) Meeting
October 11, 2017
Tampa, Florida

Florida's 2016 Solid Waste Stream

- 37,401,392 Tons Collected
 - 10.2 pounds/person-day
 - 7.1 pounds/person-day

US EPA
National Estimate
2014

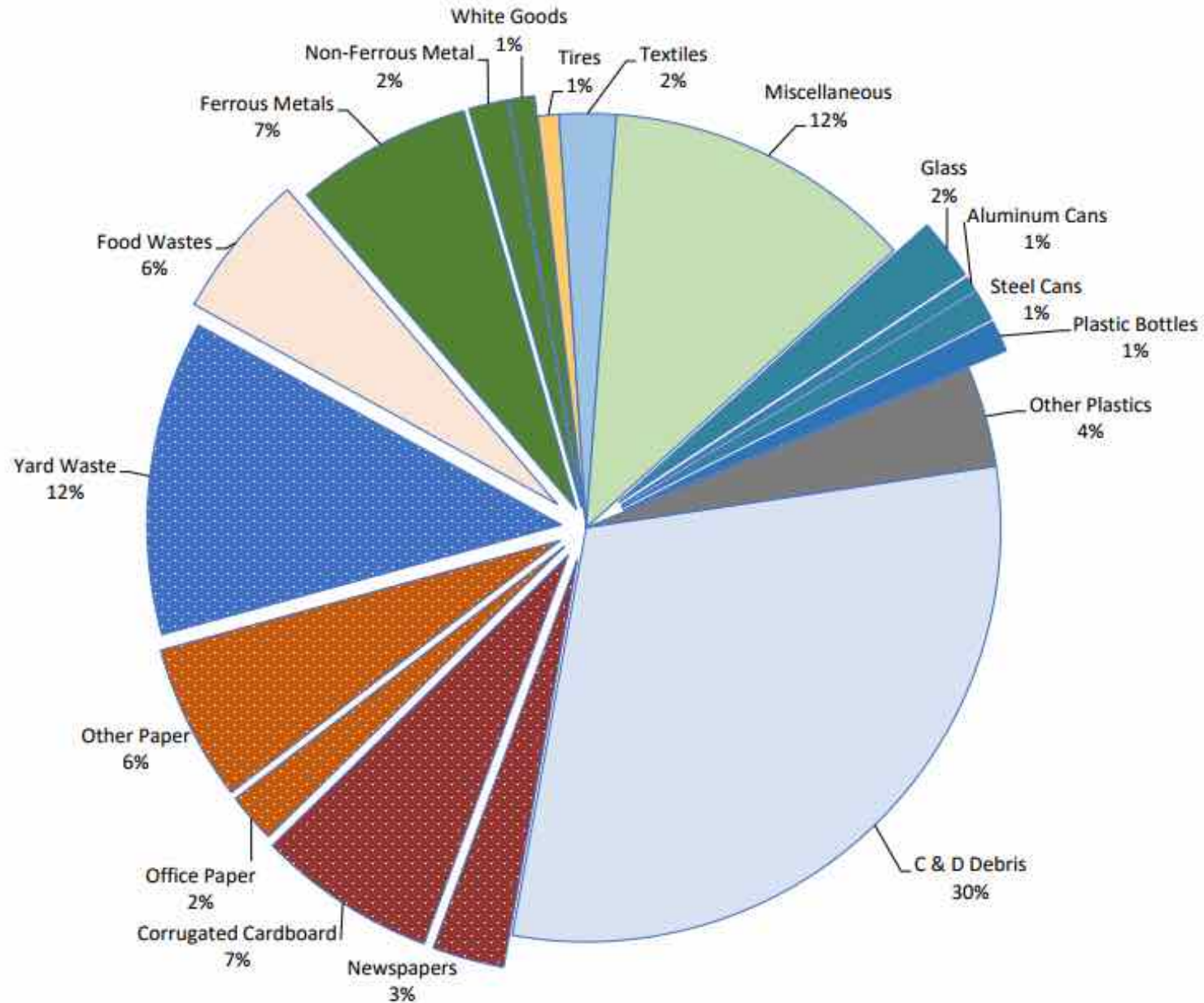
4.44 pounds/person-day

- Recycling Rate = 55.8%

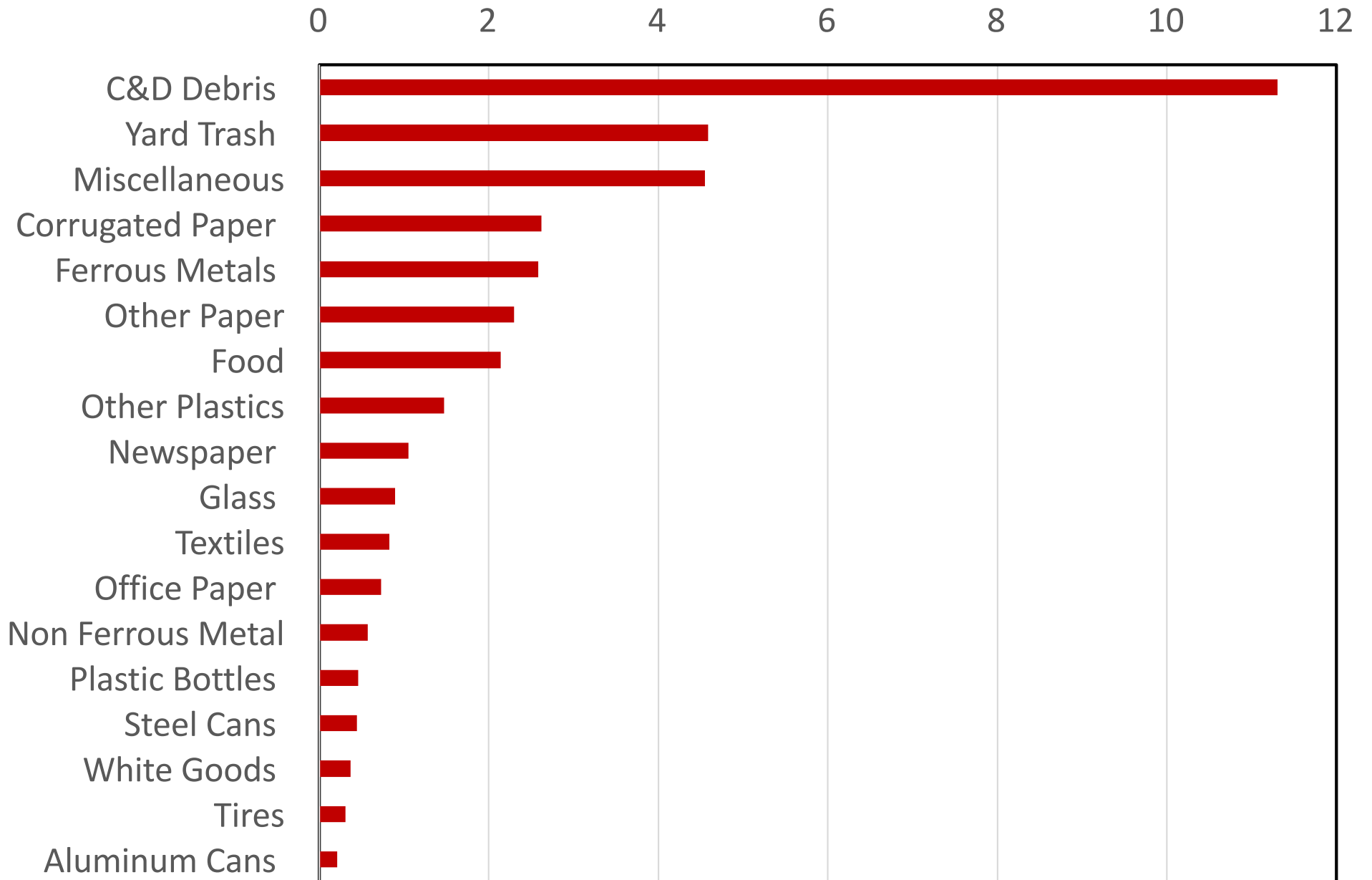
US EPA
National Estimate
2014

34.6%

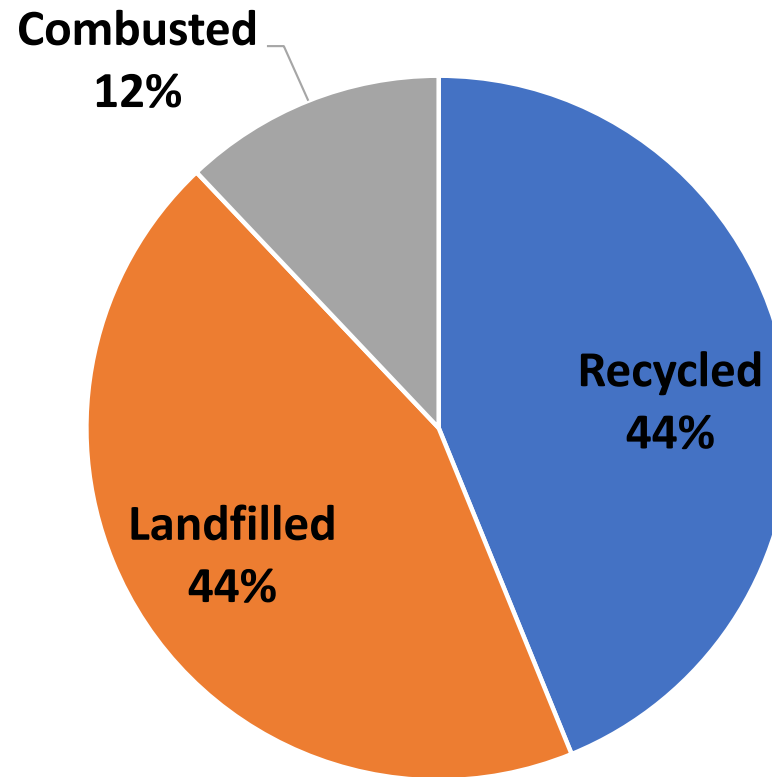
Florida Municipal Solid Waste Collected (2016) (37.4 million tons)



2016 Florida Waste Collected (million tons)



2016 Florida Solid Waste Disposition



Collected: 37,401,392 Tons
Recycled: 16,396,396 Tons

Collected: 1.856 Tons/Person
Recycled: 0.814 Tons/Person

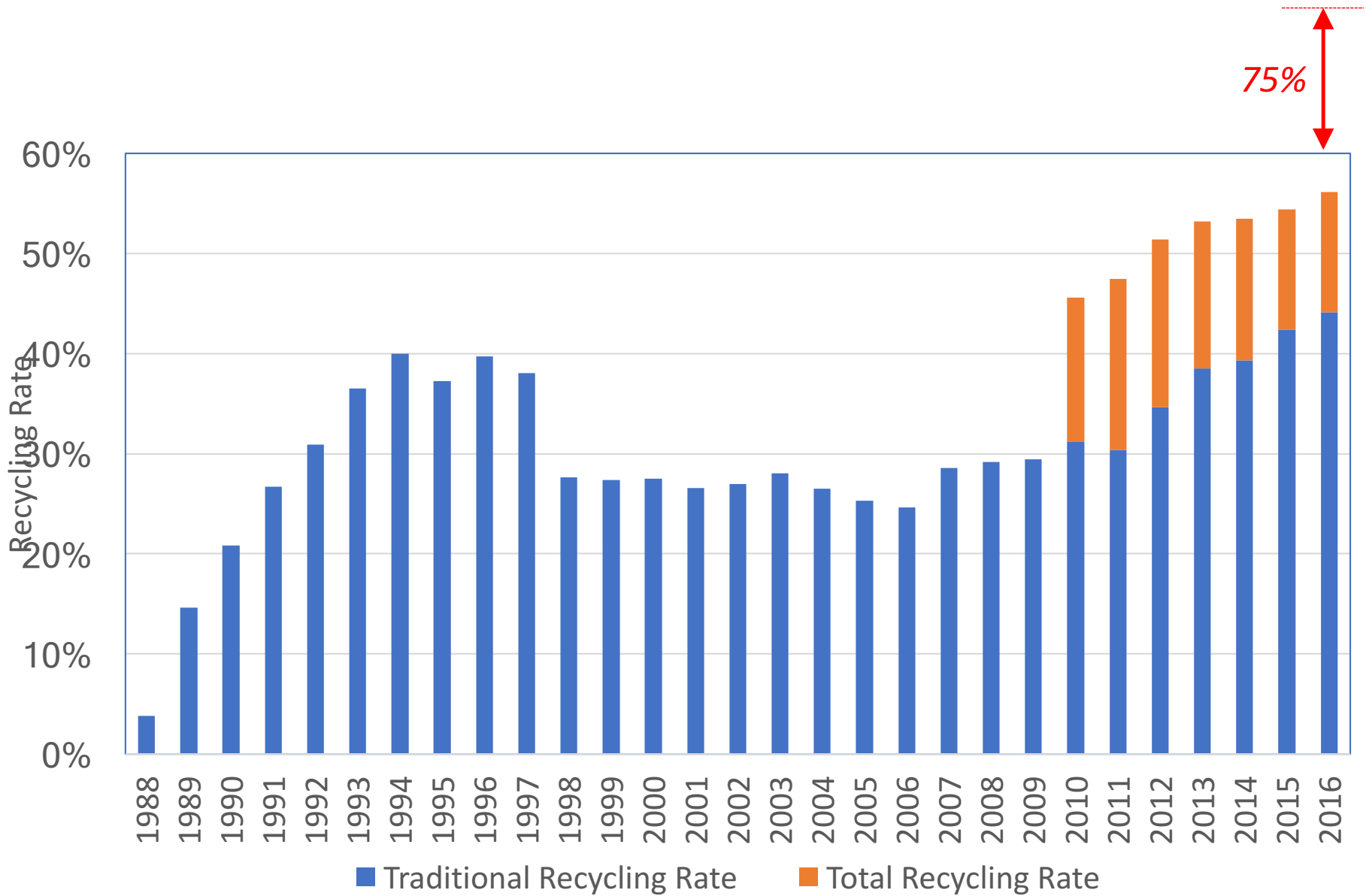
Traditional Recycling Rate: 44.7%
Total Recycling Rate: 55.8%

Florida's Recycling Rates

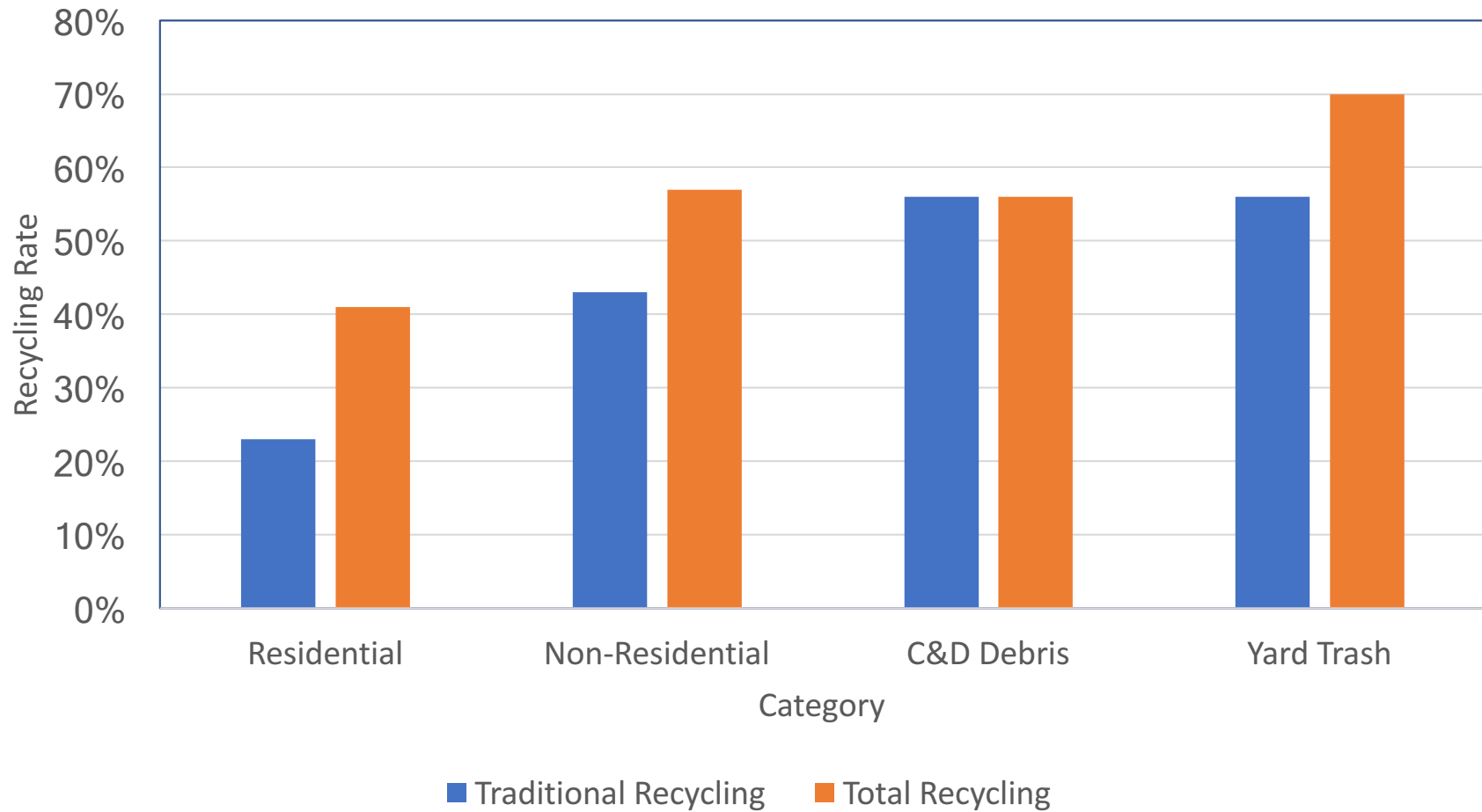
- Total → Includes energy from MSW combustion and energy from landfill gas
- Traditional → Measured from recycling programs as well as materials used as landfill cover



Florida Historic Recycling Rates

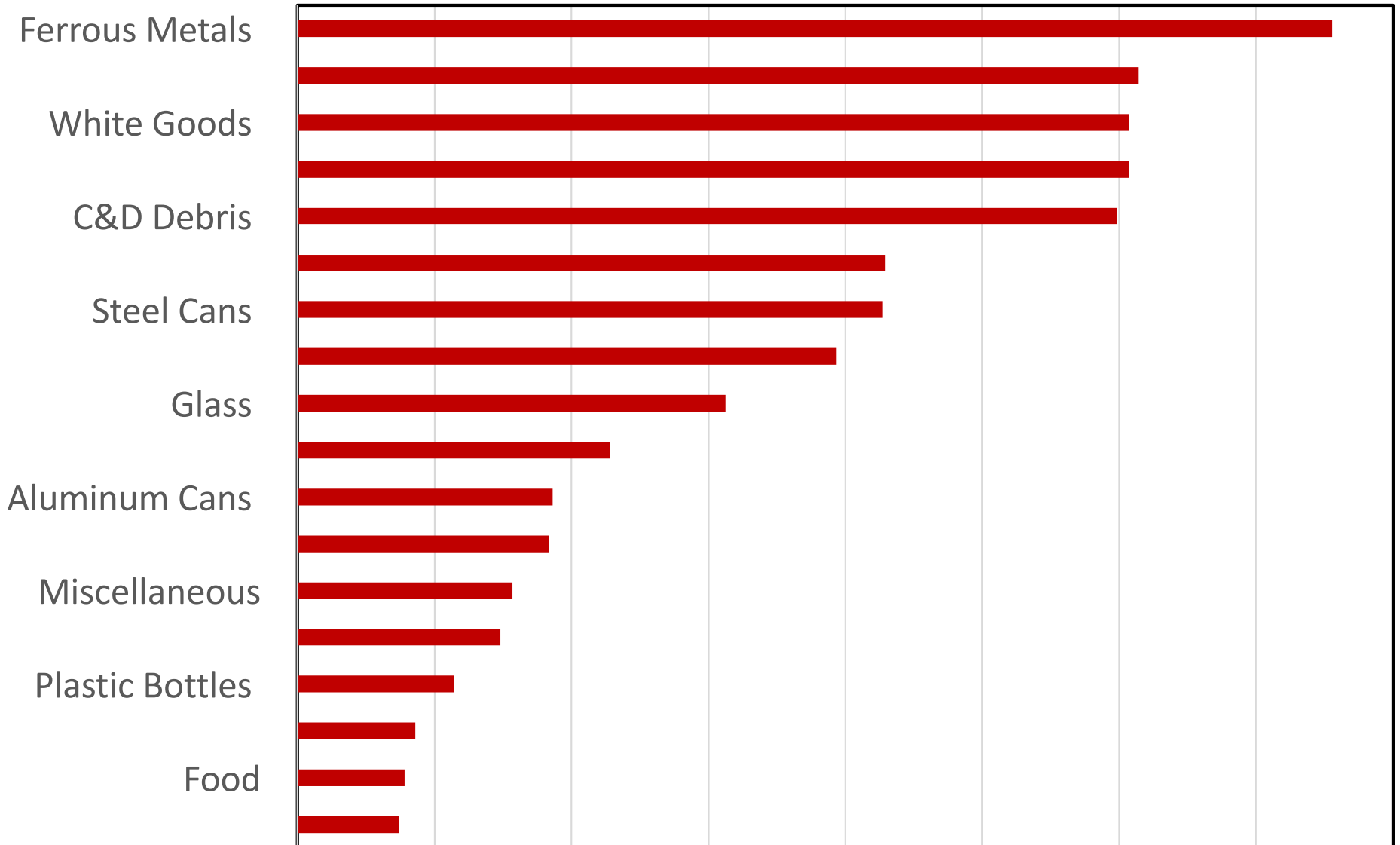


Florida Recycling Rates by Source *(Estimated for 2015)*



2016 Florida Recycling Rate by Component

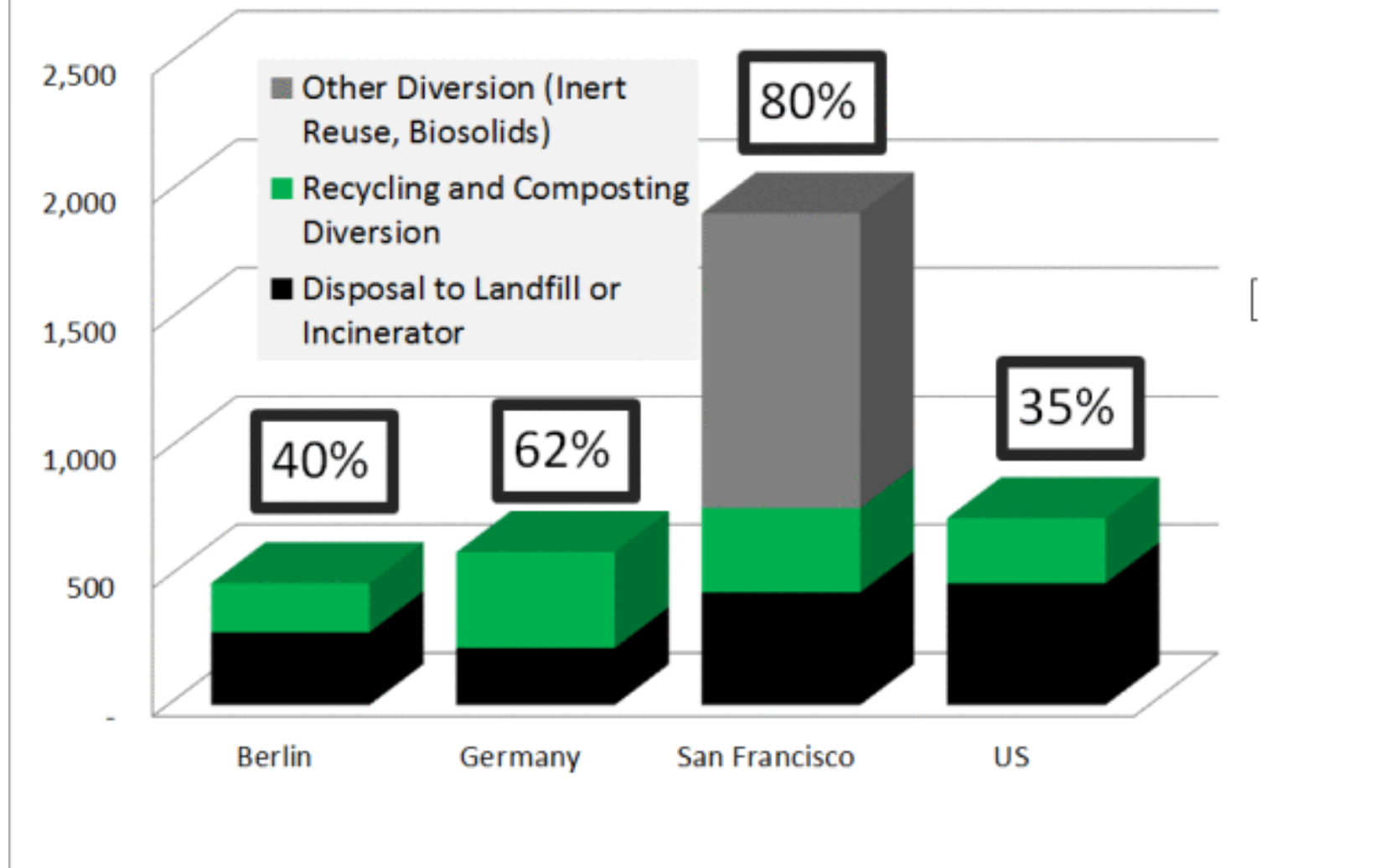
0% 10% 20% 30% 40% 50% 60% 70% 80%



Recycling Rates Across the US

Location	Recycling Rate	Comment
San Francisco, CA	80%	Zero Waste Policies, ban on disposable plastic bas, mandatory recycling and composting
Los Angeles, CA	76%	Planning and implementation of programs to achieve the 2025 zero waste to landfill goal
Portland, OR	70%	Aggressive recycling and waste diversion program that requires more labor which increases the cost per ton of collecting MSW
San Antonio, TX	29%	Pilot Program for organic waste that focuses on composting
NYC, NY	19%	Low rate due to inefficiencies related to the performance of private companies
Atlanta, GA	12.5%	New residential recycling programs, “Cartlanta Program”
Chicago, IL	9%	Lack of recycling interest and public participation

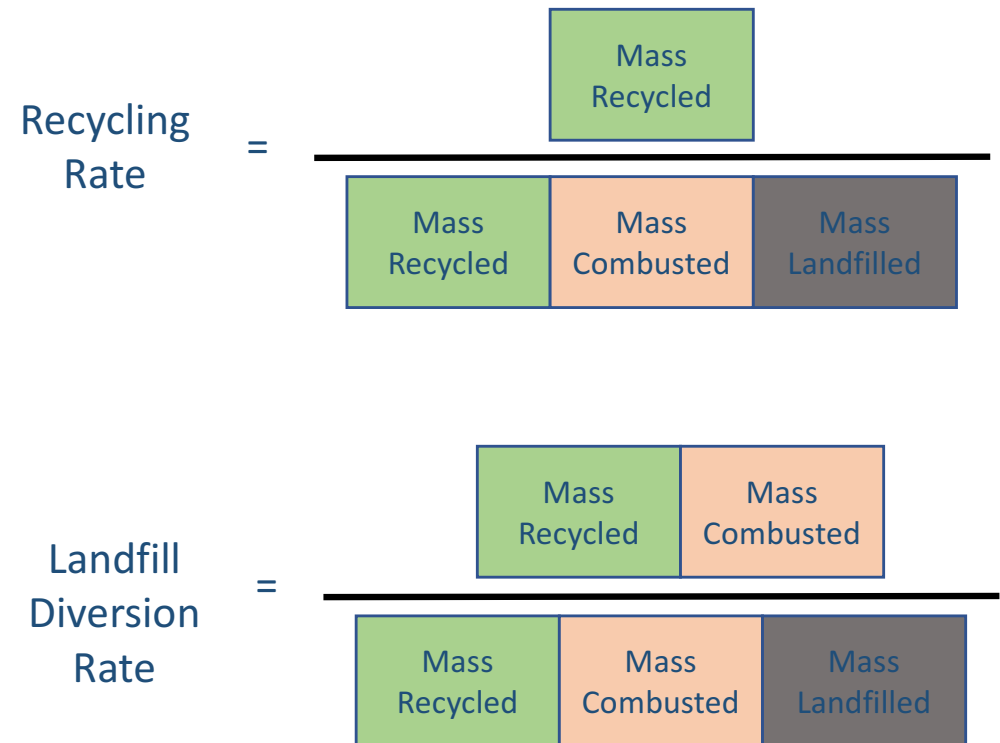
Discards in Context: Kilograms Per Person Per Year and officially reported diversion rates



Challenges with Mass-Based Recycling Rates

Accounting

- What counts?
 - Alternative daily cover (ADC) at landfills
 - WTE
 - Landfill gas to energy
 - Concrete and asphalt recycling
 - Biosolids recycling
 - Industrial waste recycling
- Creative Accounting
 - How good are the numbers?
 - How do you avoid cherry picking or double-counting?



Issues with Mass-Based Recycling Rates

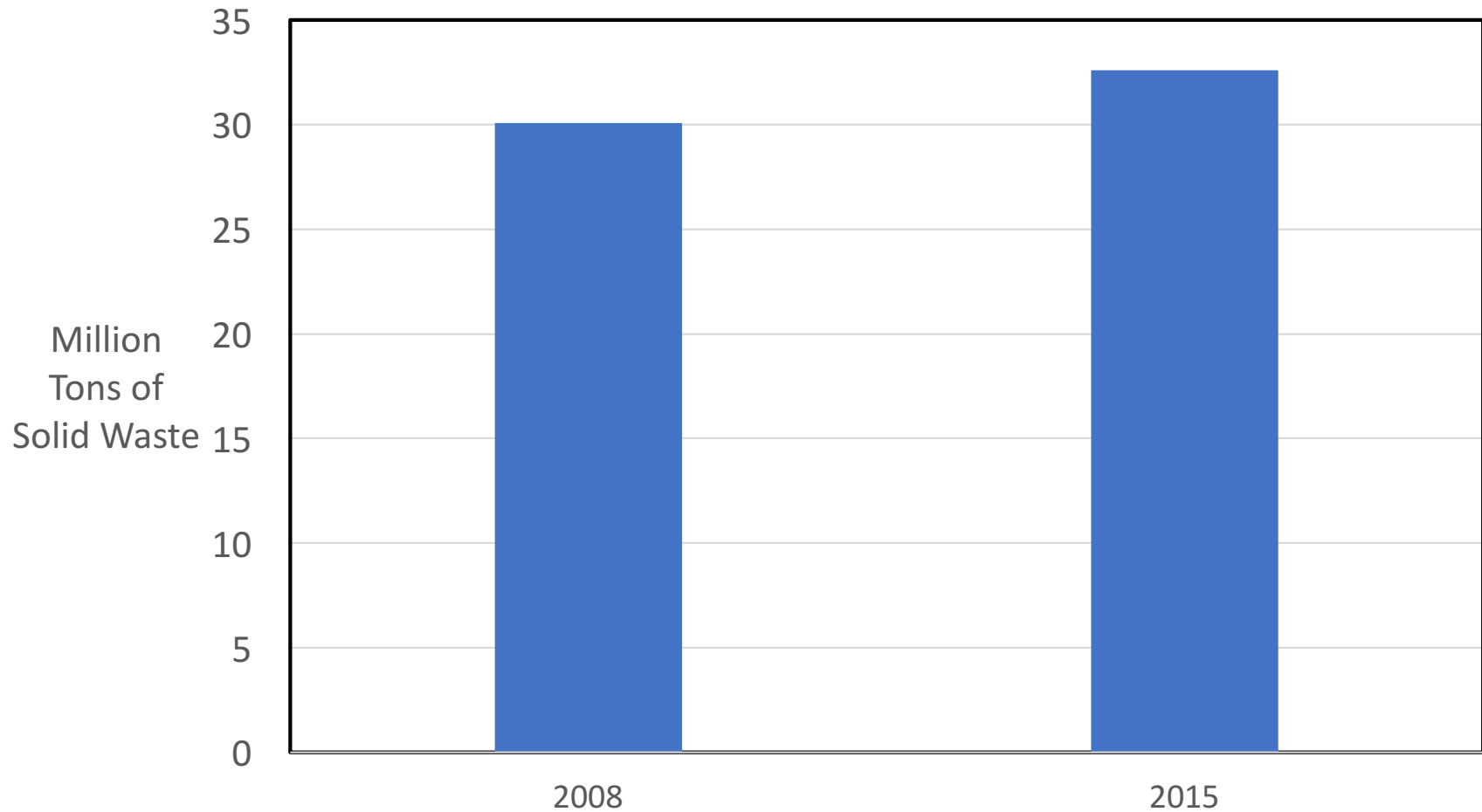
Accounting

- What counts?
 - Alternative daily cover (ADC) at landfills
 - WTE
 - Landfill gas to energy
 - Concrete and asphalt recycling
 - Utility and industrial waste recycling
- Creative Accounting
 - How good are the numbers?
 - How do you avoid cherry picking or double-counting?
- Total or per capita?

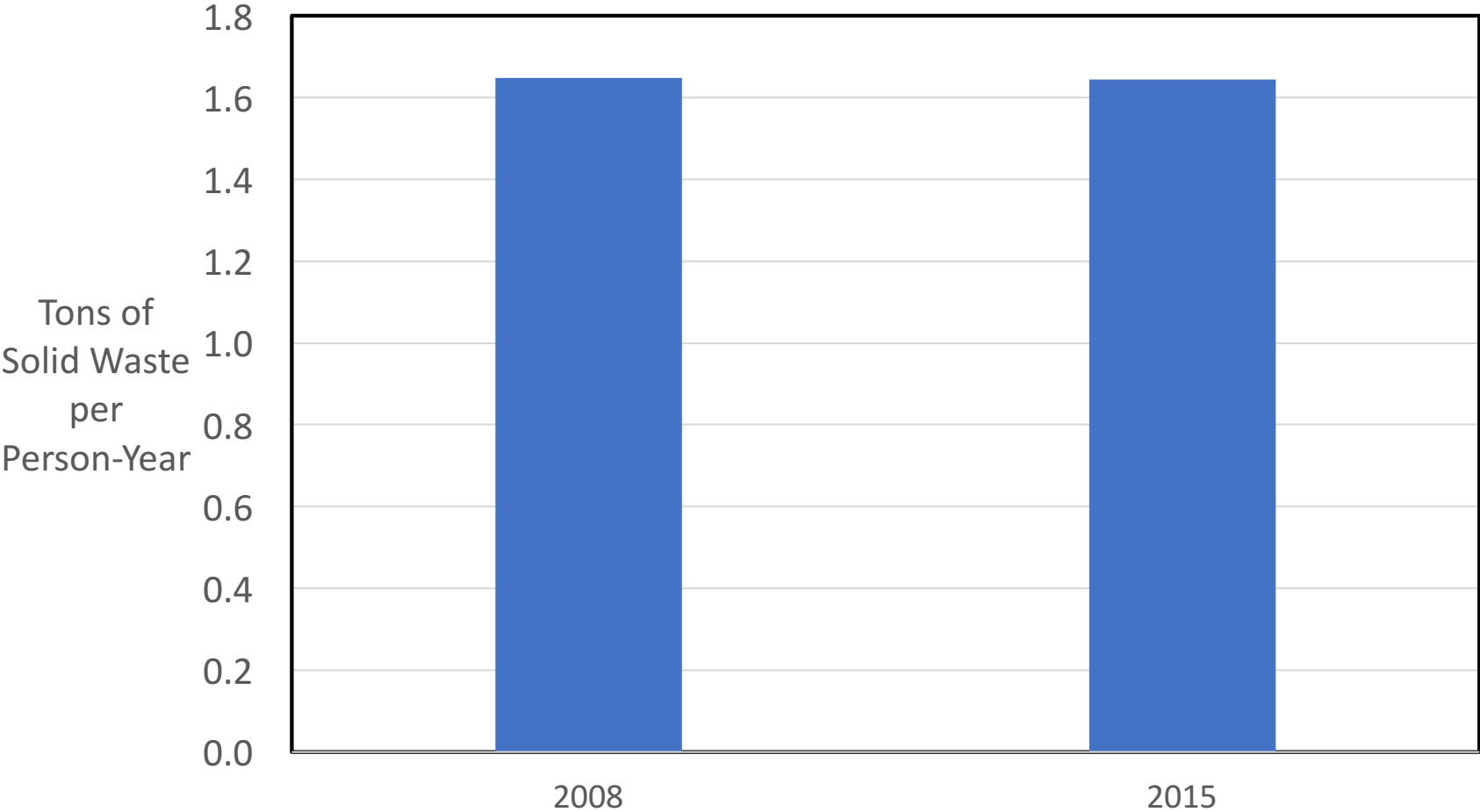
Substance

- Does not reflect source reduction (if you reduce the numerator, you also reduce the denominator)
- Treats all materials the same. We know materials have differing impacts with regard to environmental burdens, economics and landfill capacity consumption.

Florida Solid Waste Generation in 2008 and 2015



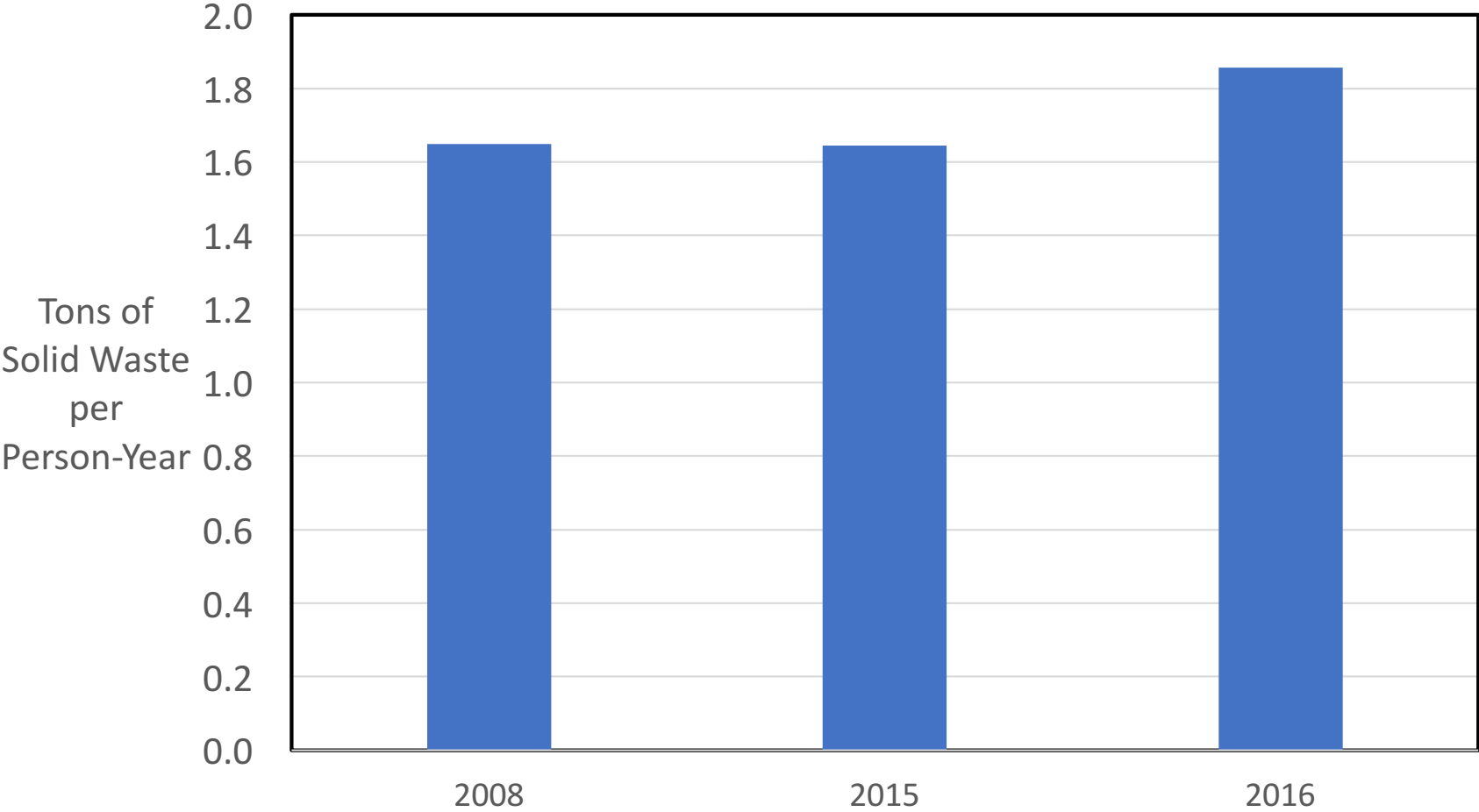
Per-Capita Florida Solid Waste Generation in 2008 and 2015



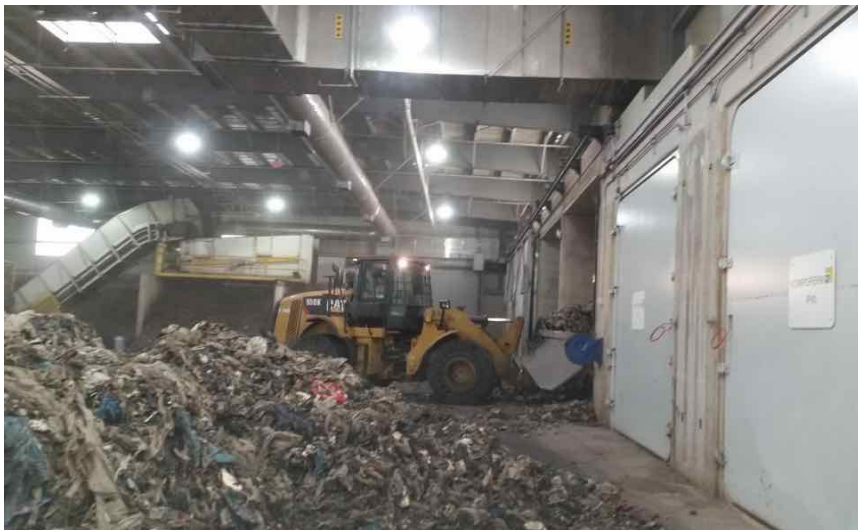
Florida's Per-Capita Waste Component Increase/Decrease
2008 → 2015

Material	Per Capita Generation (ton/person-year)		
	2008	2015	Difference
Aluminum Cans	0.012	0.010	-0.002
C&D Debris	0.400	0.487	0.087
Corrugated Paper	0.137	0.128	-0.009
Ferrous Metals	0.148	0.122	-0.026
Food	0.092	0.100	0.008
Glass	0.042	0.043	0.001
Newspaper	0.077	0.051	-0.026
Non Ferrous Metal	0.038	0.025	-0.013
Office Paper	0.043	0.031	-0.012
Other Paper	0.109	0.110	0.001
Other Plastics	0.061	0.073	0.012
Plastic Bottles	0.024	0.023	-0.001
Steel Cans	0.017	0.015	-0.002
Textiles	0.048	0.038	-0.010
Tires	0.020	0.012	-0.008
White Goods	0.029	0.018	-0.011
Miscellaneous	0.149	0.156	0.007
Process Fuel	0.032	0.027	-0.005
Yard Trash	0.170	0.177	0.007
Total	1.648	1.645	-0.004

Per-Capita Florida Solid Waste Generation in 2008, 2015 and 2016



Getting to 75%





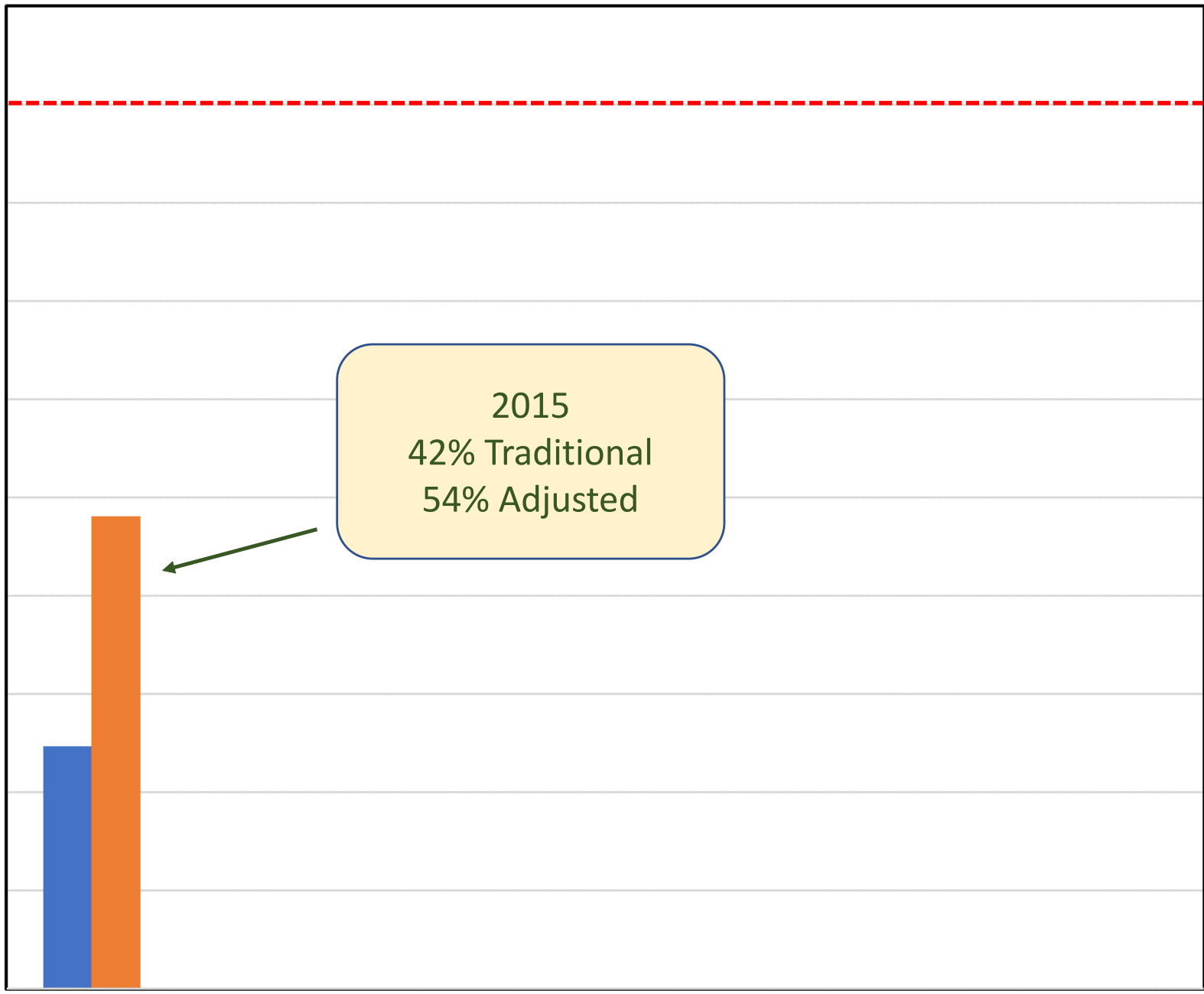
Traditional



Adjusted

Recycling
Rate

80%
75%
70%
65%
60%
55%
50%
45%
40%
35%
30%



2015
42% Traditional
54% Adjusted



A

B

C

D

E

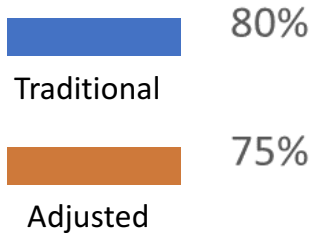
F

G

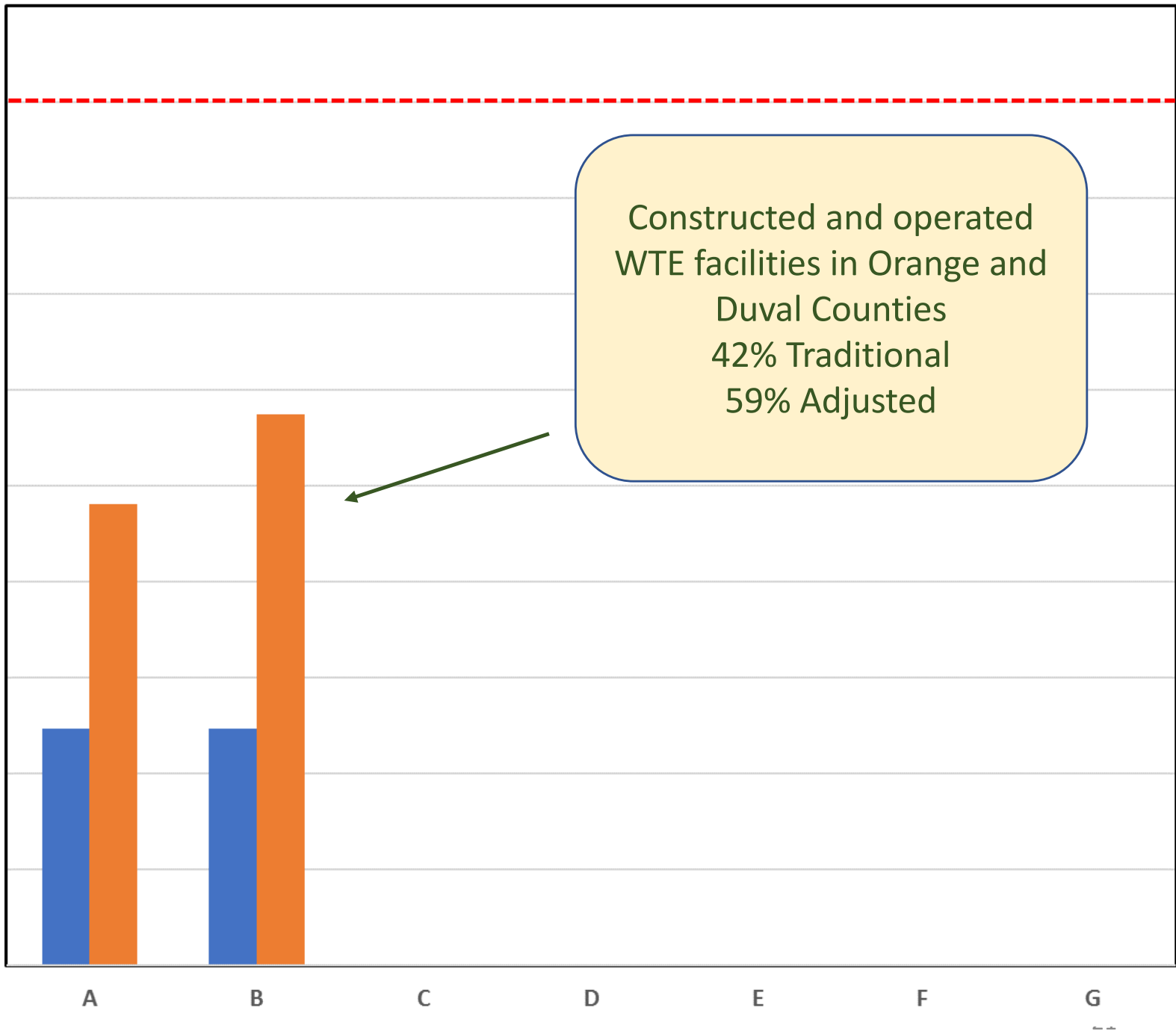
4/10/2017

Construct More WTE Facilities





Recycling Rate

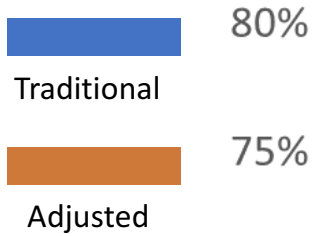


Constructed and operated
WTE facilities in Orange and
Duval Counties
42% Traditional
59% Adjusted

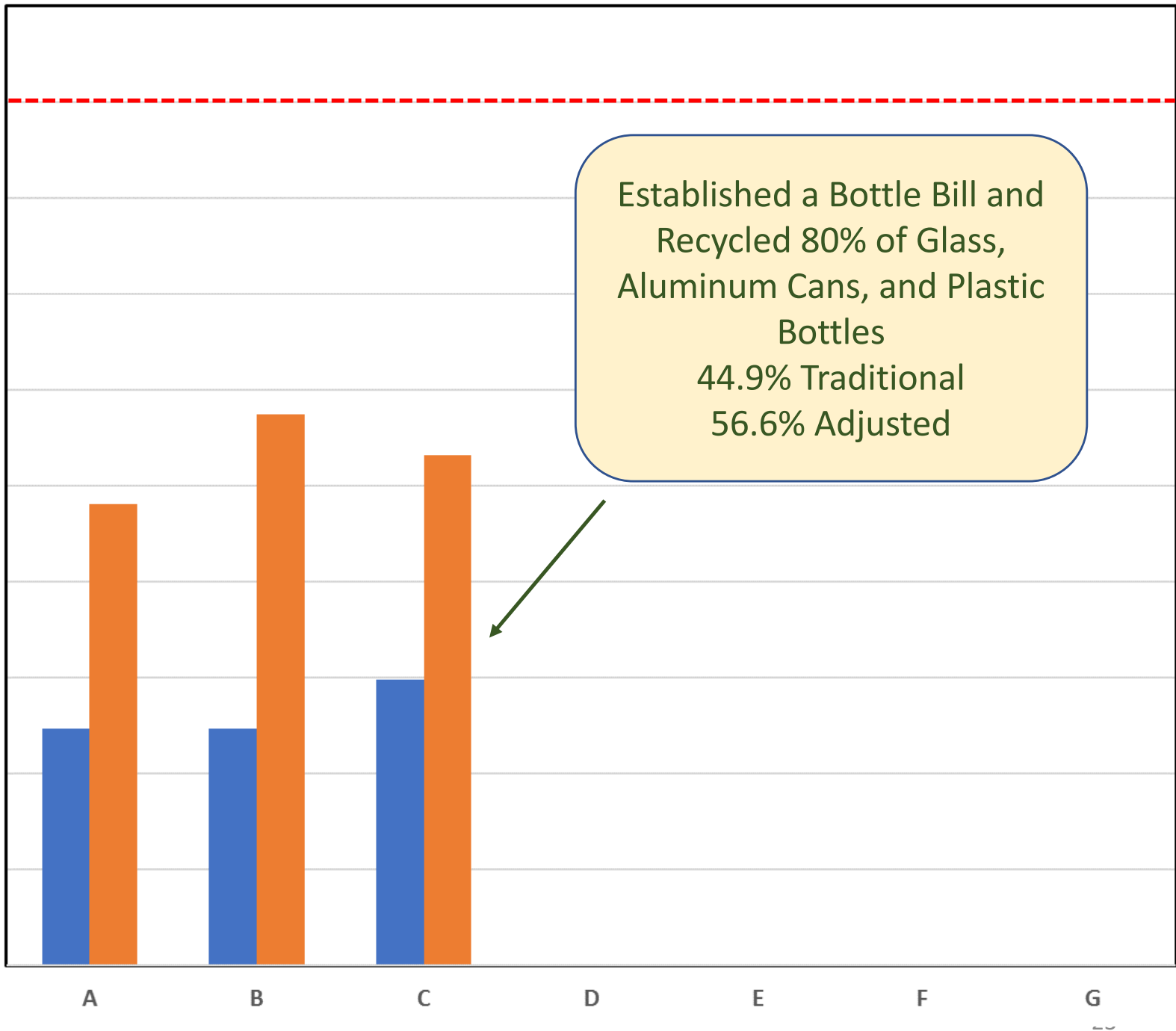


Increase Recycling of Containers



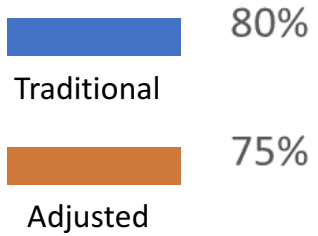


Recycling Rate

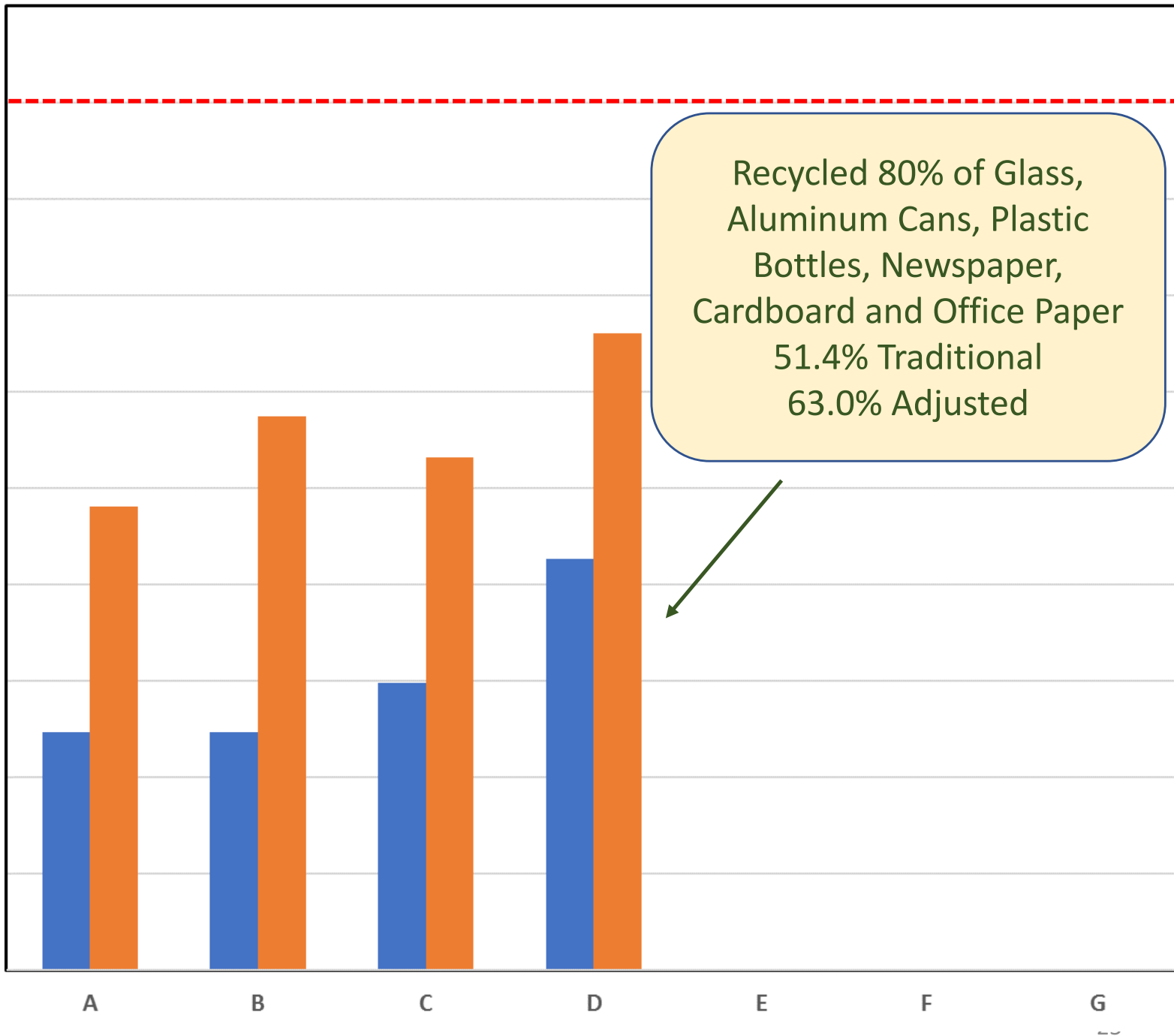


Increase Recycling of Containers and Paper Products



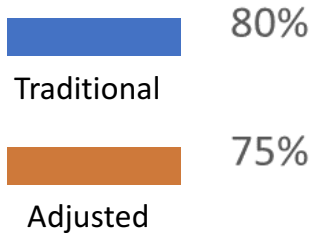


Recycling Rate

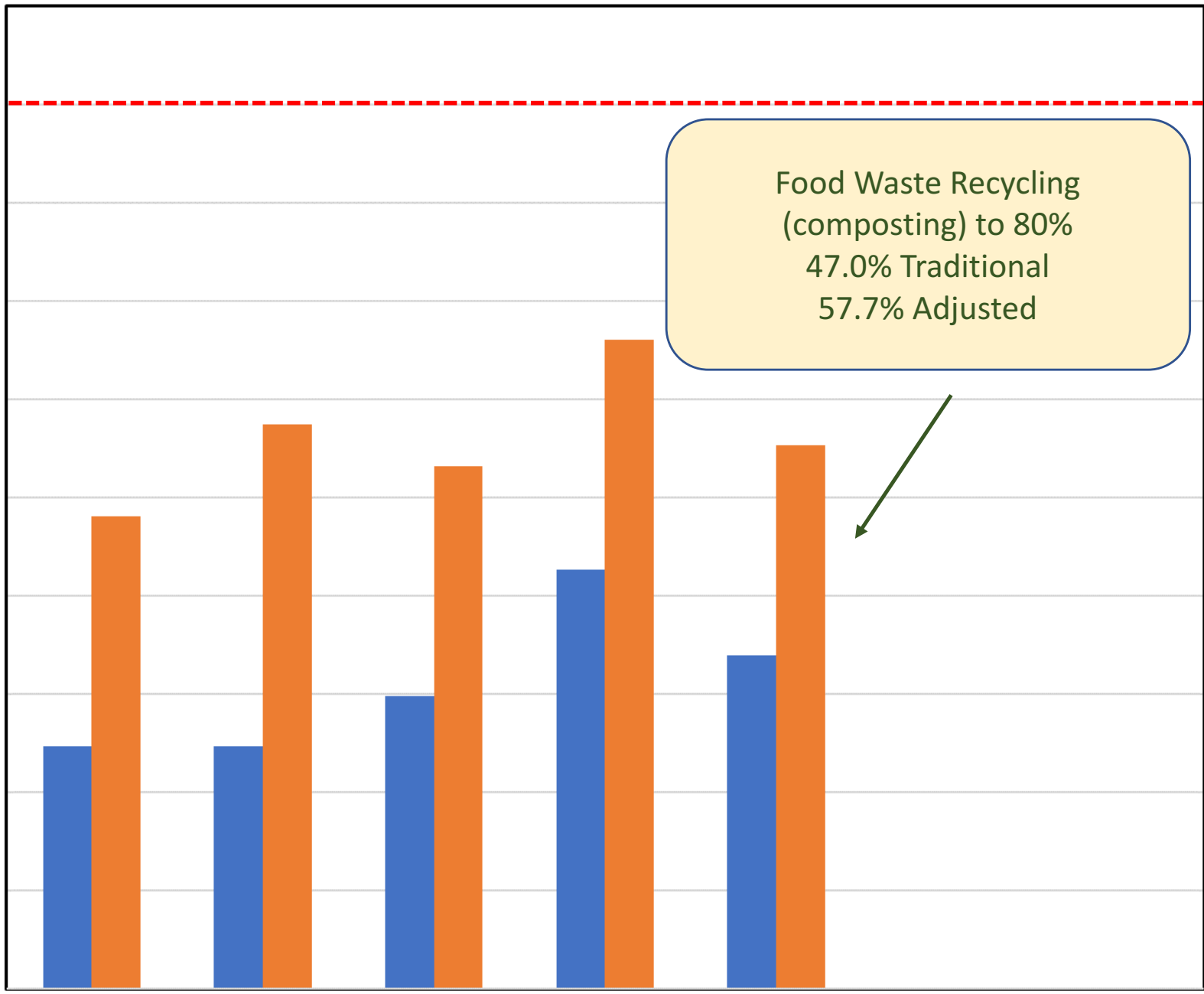


Increase Recycling of Food Waste





Recycling Rate

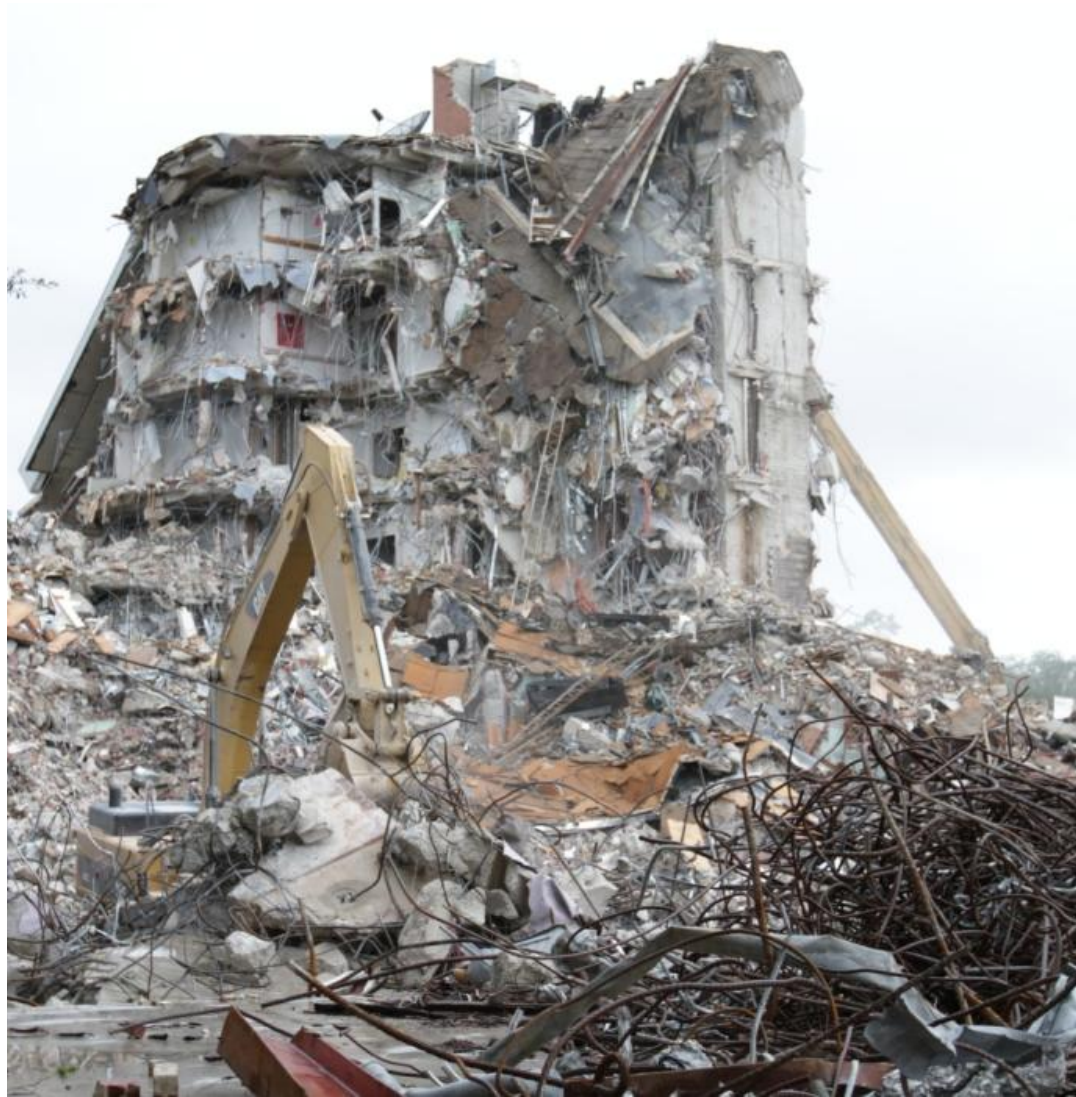


Food Waste Recycling
 (composting) to 80%
 47.0% Traditional
 57.7% Adjusted



A B C D E F G

Increase Recycling of C&D and Yard Trash





80%

75%

70%

65%

60%

55%

50%

45%

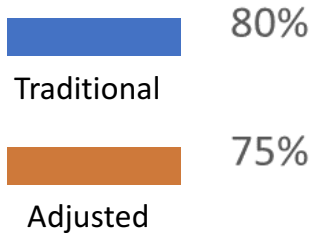
40%

35%

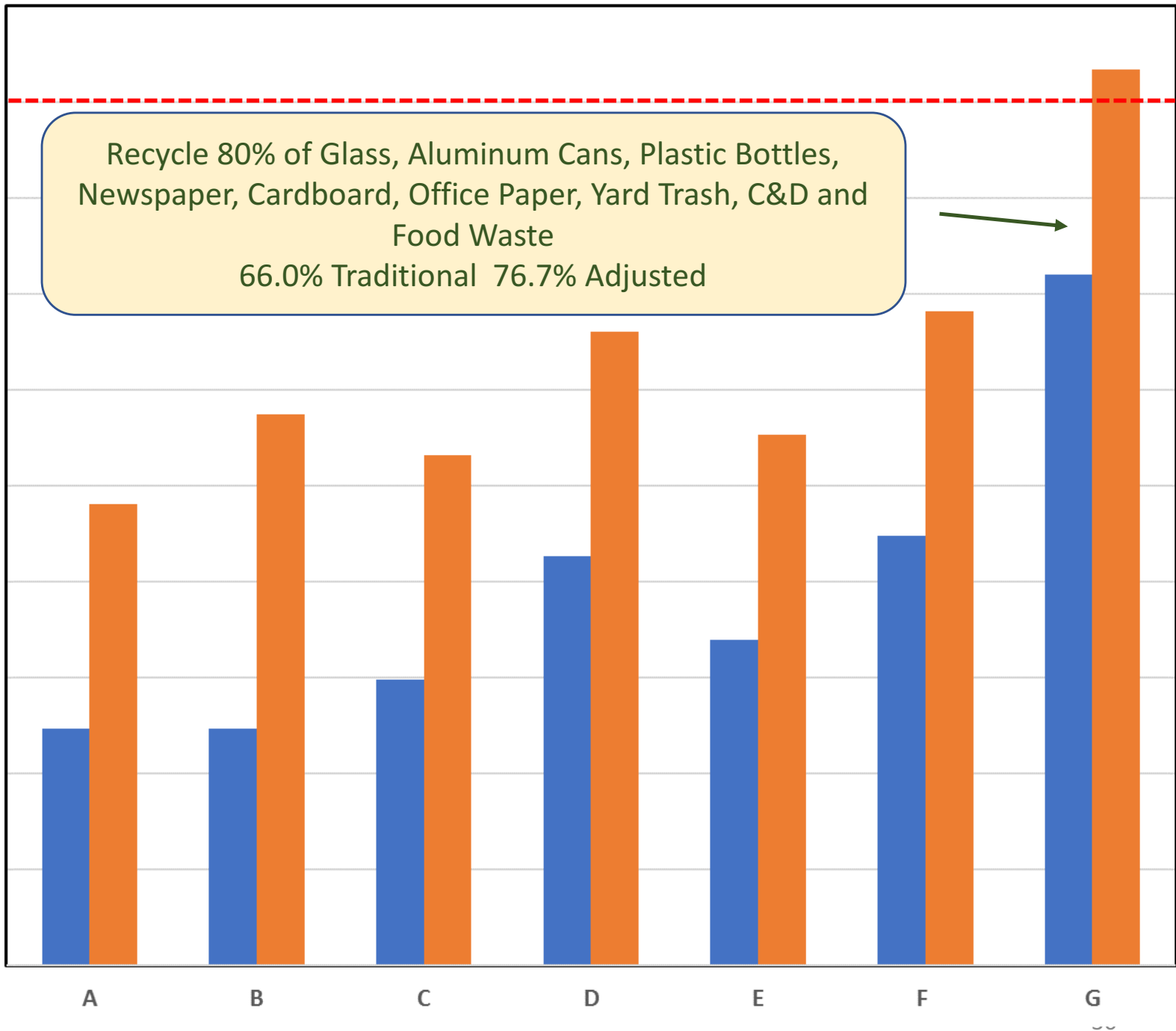
30%

Recycling Rate





Recycling Rate



Summary

- Florida current recycling rate = 56%
- Most room for improvement → Residential waste
- Florida's per capita waste generation has increased slightly from 2008 to 2016
- Getting to 75% would require a multi-strategy approach
- Using a weight-based target has inherent limitations