

Navigating Rough Waters

October 24, 2017

Will Sagar



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Coalition***



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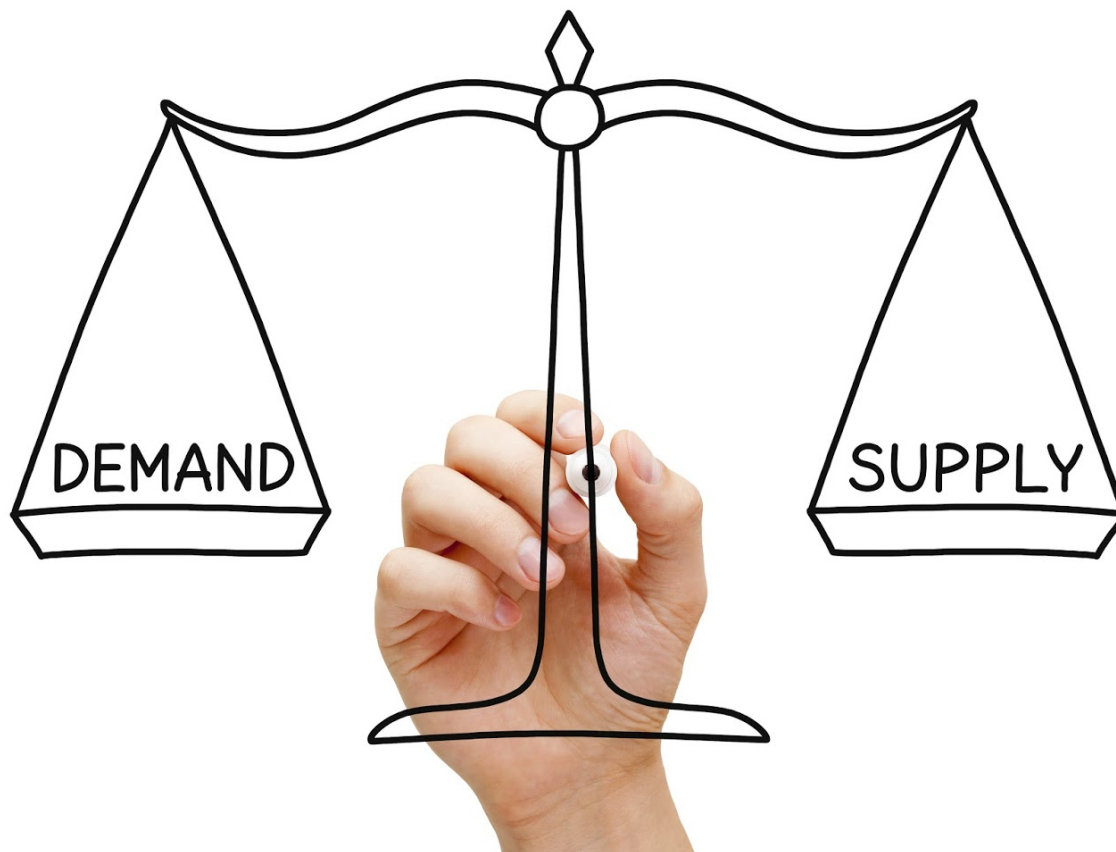
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2017

THE SKY IS
FALLING!!





Markets are Supply and Demand

SERDC.org

Current Concerns

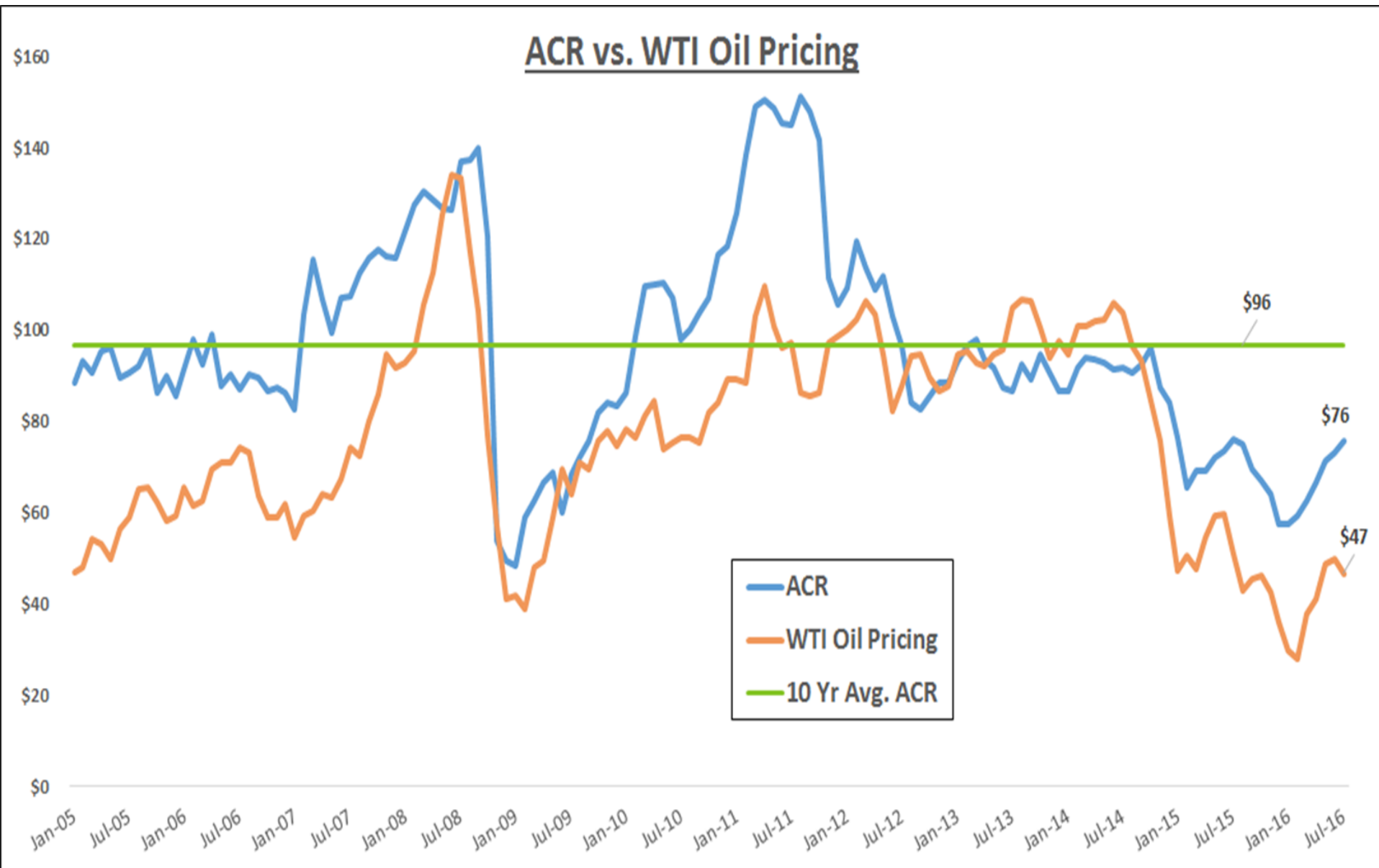
Trends

- Cheap oil = low material prices
- Contamination growing
- China actions
- Glass issues

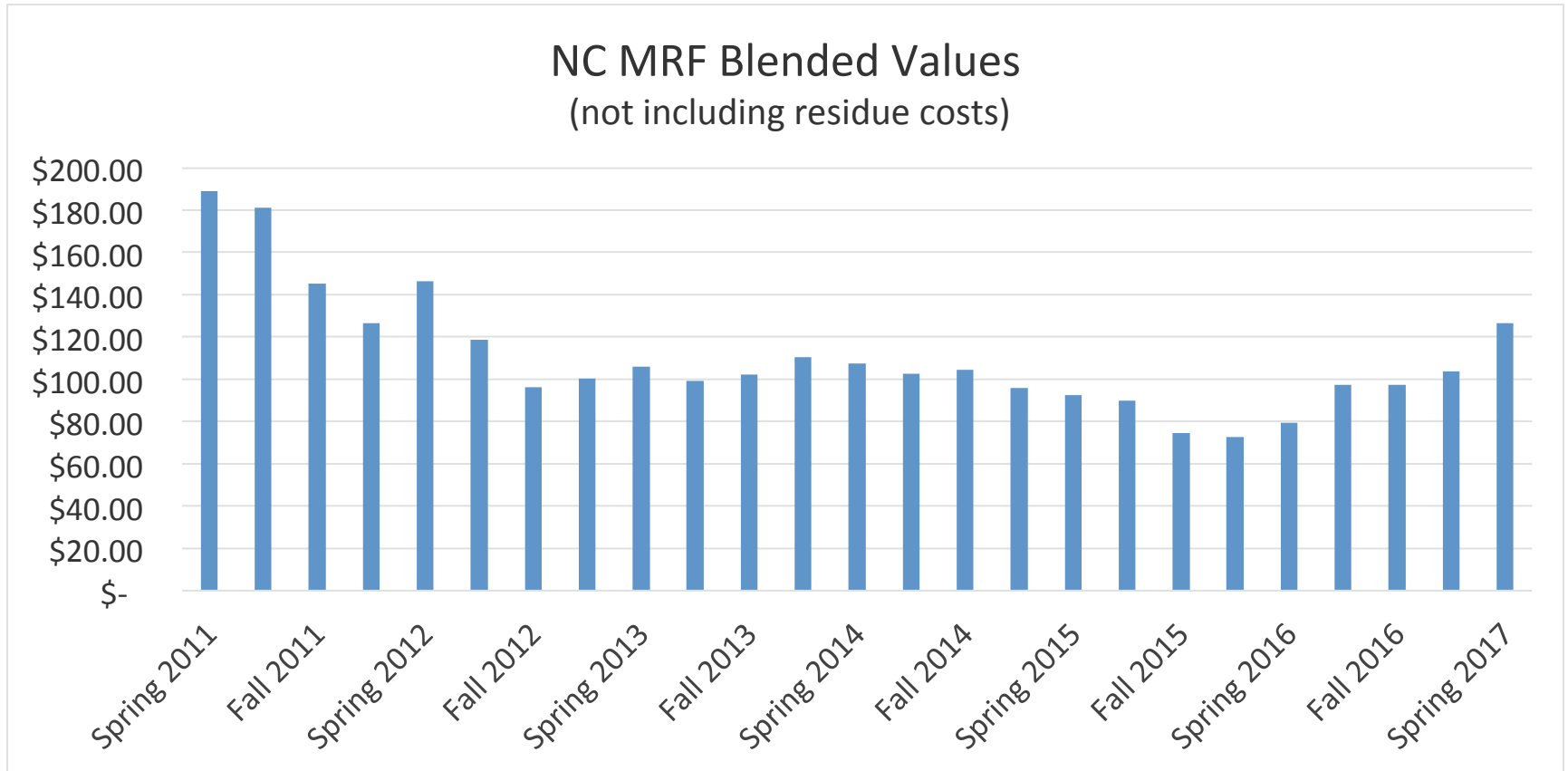
Demand is strong

- Manufacturing
- Supply is inelastic, leading to big price swings.
 - You can't turn it off, citizens want service

Prices Follow Energy

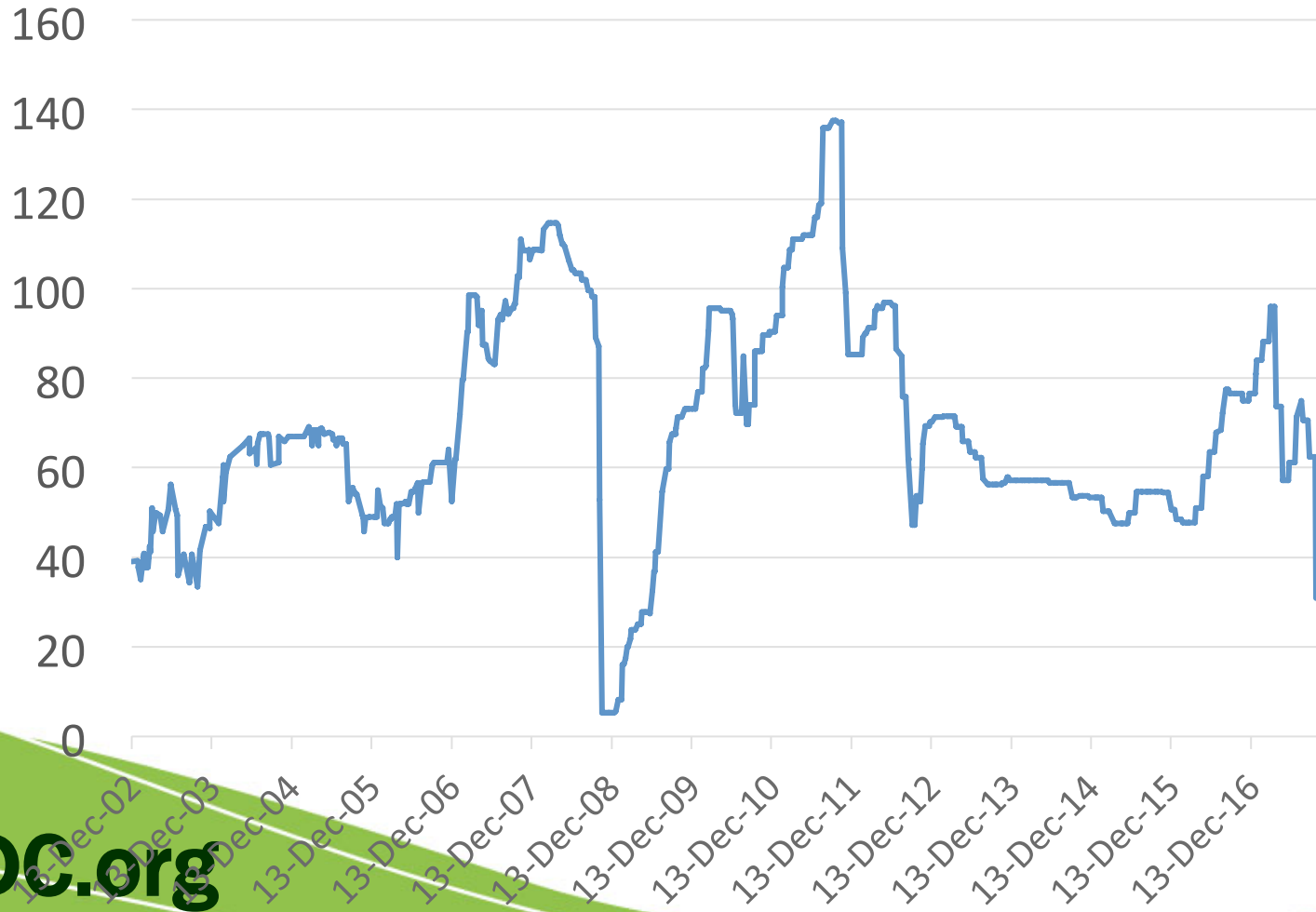


Gross Value of a Commingled Ton



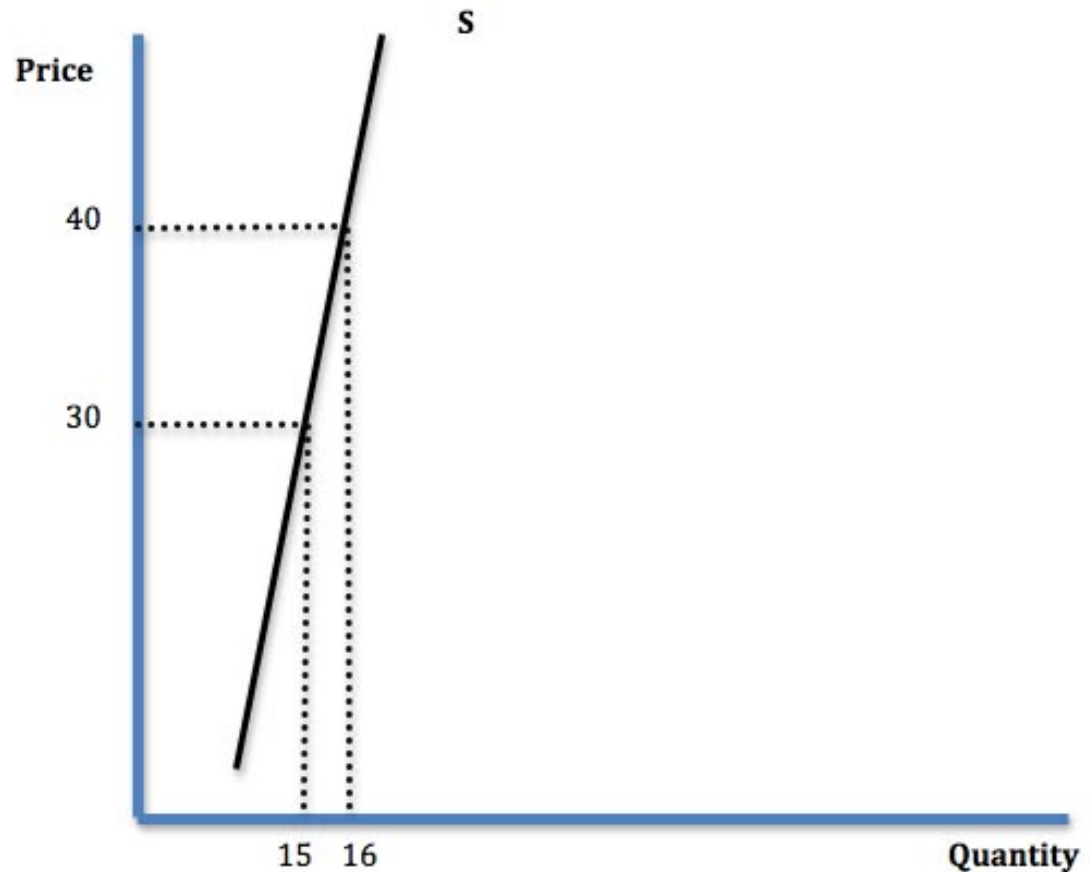


Mixed Paper \$/ton



Inelastic Supply

A small change in quantity can result in a large change in price. A small drop in demand, can result in a large price drop.

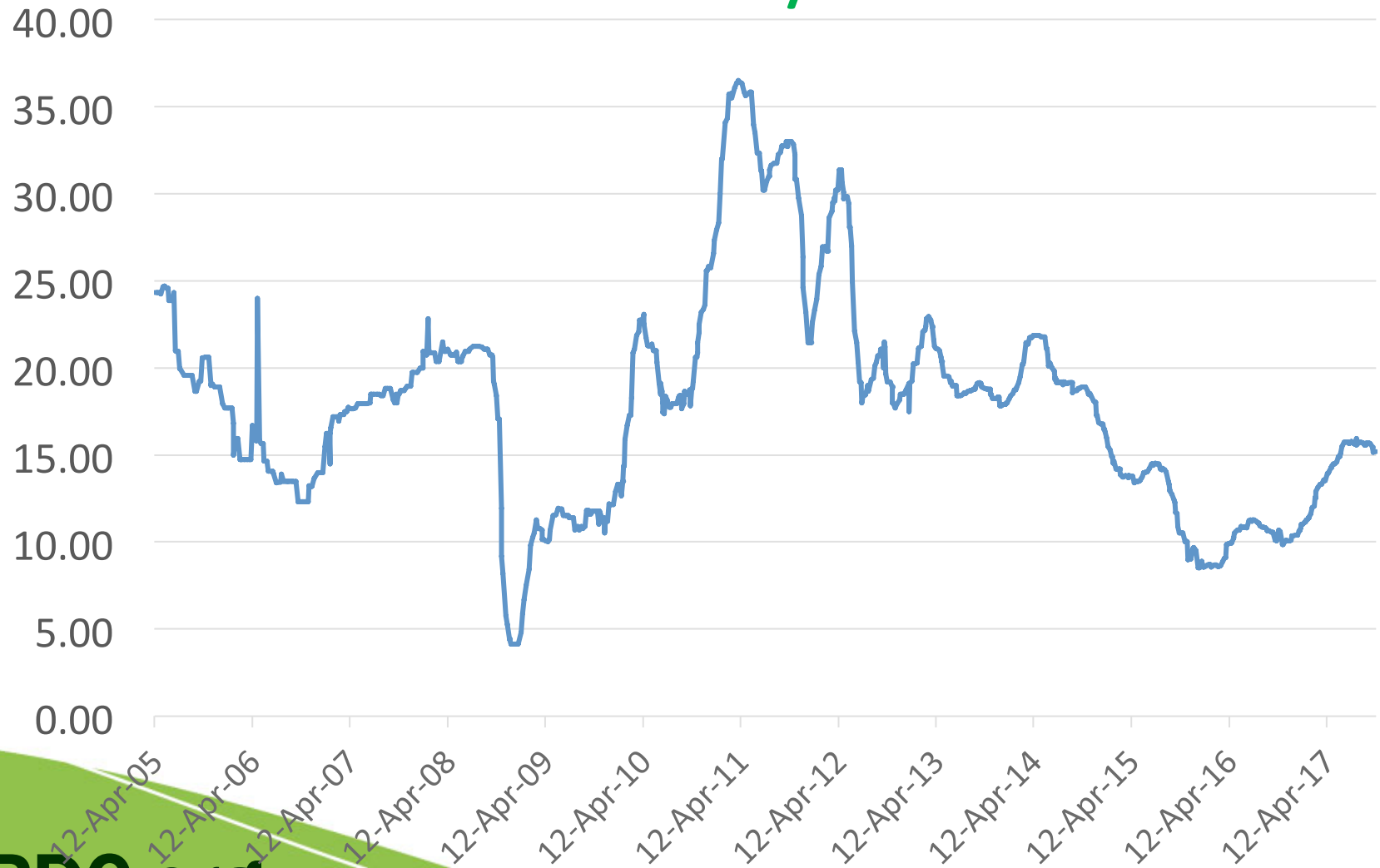


www.economicshelp.org

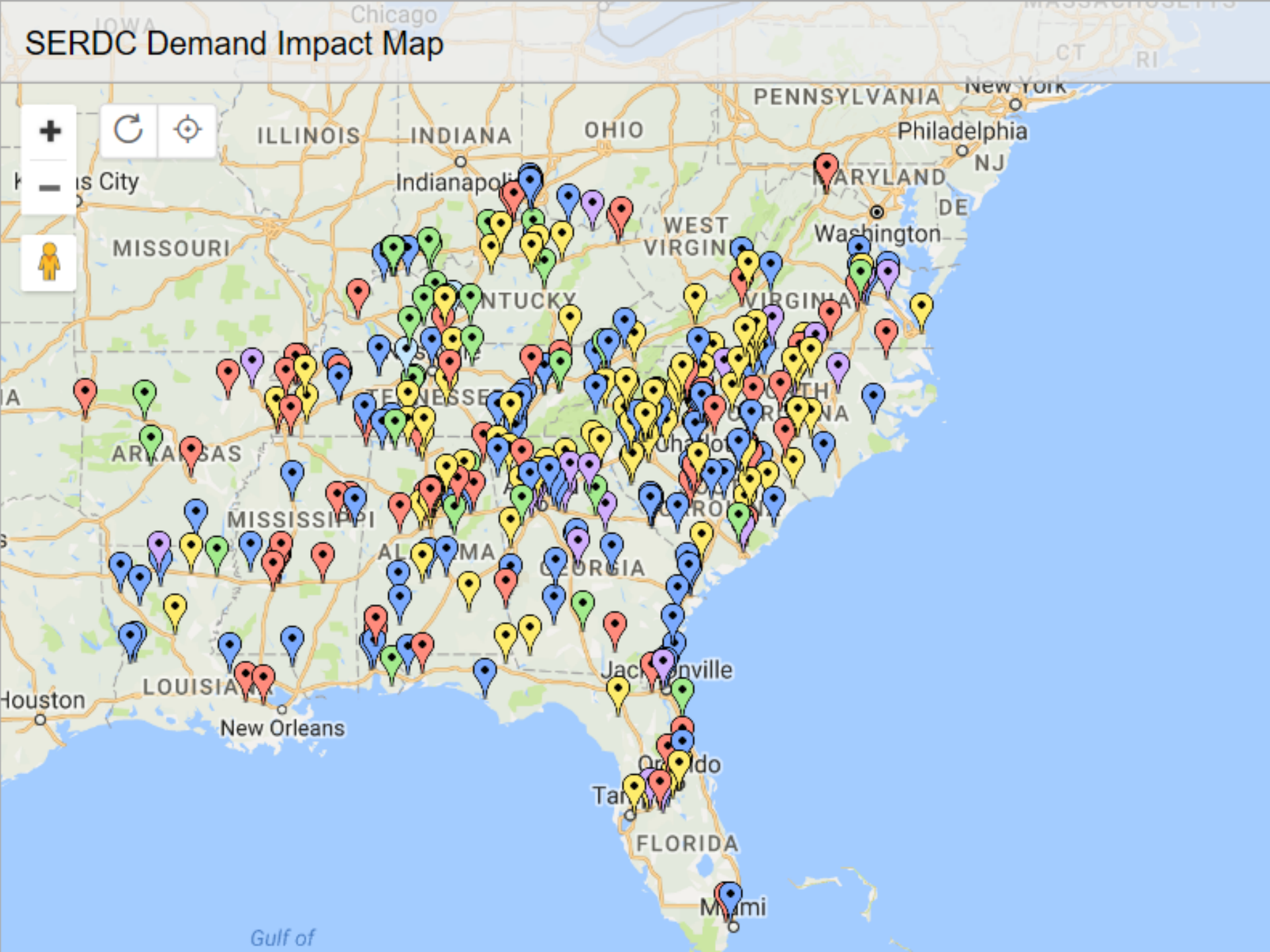
OCC \$/ton



PET Bales Cents/Pound



SERDC Demand Impact Map



Weather the storm

Contracts

- Risk vs reward. Where to place it?

Operations, lower the cost

- Efficient infrastructure, lower cost at manufacturer's dock
- Hub and spoke
- Increase participation
- Carts, automate
- RFID, measure what you are doing

Clean up the material

- Slow line speed
- Add staff
- Invest in education

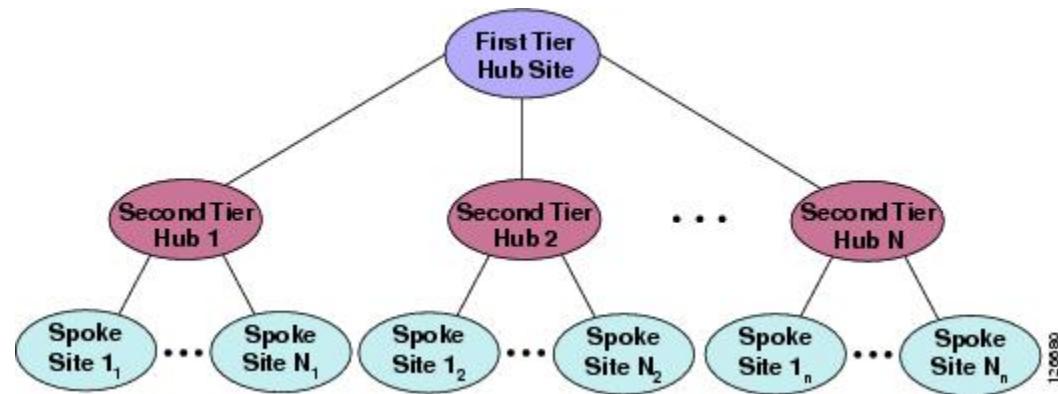
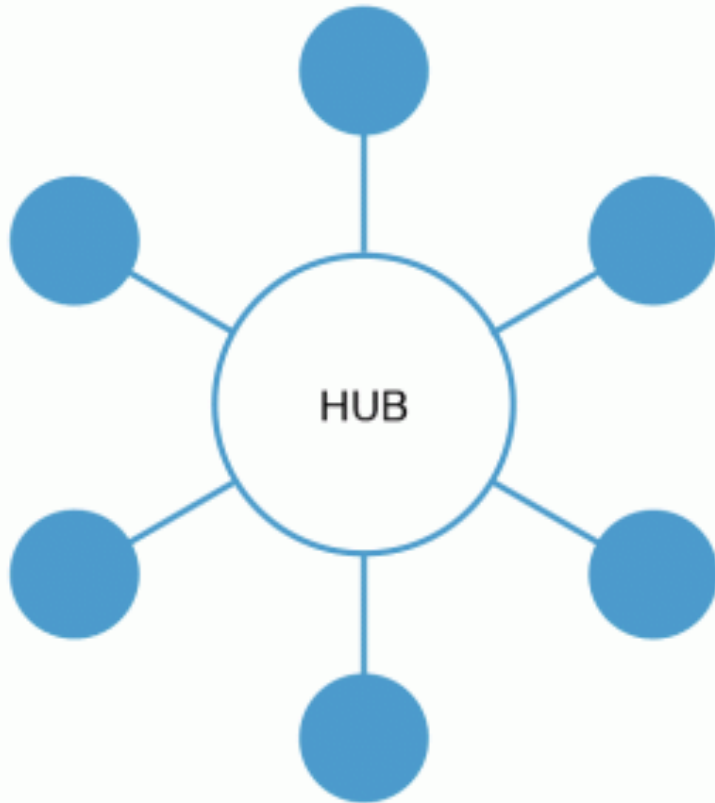
Best Management Practices

- Cart based single stream
- Common suite of materials
- Standardize outreach
- Hub and spoke system



SERDC.org

Collection by Spokes



Get Rid of Bad Practices

- Subscription service
- Material separation a collection, including convenience centers
- Free market hauling, move to exclusive franchise collection and permitting
- Examine MRF contracts
- Ensure the front line knows what and why
- Fix messaging!!!! GET THE MESSAGE

Cleaner Bales

- Slow belt speed
 - Review contract
 - Share risk

Two Tools

- One tool will assist in examining the costs and benefits of providing new materials management services, or expanding existing services.
- The second tool was an introduction to full cost accounting and system funding.

ISWM Model

- Input of community profile
- Cost and benefits of different collection options
- Evaluation of role in a hub and spoke system



INPUTS (You must answer all eleven questions)

1. Enter community name.

Henderson County

2. Choose your state from this drop down list.

North Carolina

3. Enter the number of households in your community served by your solid waste program.

(See "[Instruction Page](#)" for more information.)

46,079

4. Estimate the level of participation in your recycling program. (See "[Instruction Page](#)" for more information.)

Medium high participation

5. Select your community type. (See "[Instruction Page](#)" for more information.)

Rural / Suburban

6. Will glass be included in single stream recycling?

No

7. How "much" do you think people will recycle in your community? (See "[Instruction Page](#)" for more information)

Medium high (Containers more than half full, Communities with strong recycling programs)

8. Do you know your landfill tip fee per ton?

Yes

If 'Yes' enter your Landfill tip fee, per ton here --> \$ 60.00

9. Do you know your recycling processor gate fee or revenue per ton?

No (model will use default)

Be sure that you entered in a dollar amount (i.e. \$15.75) for the tip fee

If 'Yes', enter Recycling processor fee (negative) or revenue per ton (positive) here -->

10. How far is it from your municipality to the Transfer Station, MRF, or other end destination for a direct haul by your curbside recycling collection trucks?

15 miles or less (one way) (default)

11. Do you know the distance to the Materials Recovery Facility you use or would use to process recyclable materials if you built a Transfer Station?

Yes

If 'Yes' enter the One way distance to the MRF here --> 20

A value of 75 miles will be used as the default.

Inputs (Cont.)

7. How "much" do you think people will recycle in your community? (See "[Instruction Page](#)" for more information)

Medium high (Containers more than half full, Communities with strong recycling programs)

8. Do you know your landfill tip fee per ton?

Yes

If 'Yes' enter your Landfill tip fee, per ton here --> \$ 52.00

9. Do you know your recycling processor gate fee or revenue per ton?

Yes

Be sure that you entered in a dollar amount (i.e. \$15.75) for the tip fee

If 'Yes', enter Recycling processor fee (negative) or revenue per ton (positive) here --> \$ 10

10. How far is it from your municipality to the Transfer Station, MRF, or other end destination for a direct haul by your curbside recycling collection trucks?

15 miles or less (one way) (default)

11. Do you know the distance to the Materials Recovery Facility you use or would use to process recyclable materials if you built a Transfer Station?

Yes

If 'Yes' enter the One way distance to the MRF here --> 30

A value of 75 miles will be used as the default.

Results - Impacts

1. Tons of Recycling per Year
2. Pounds of Recycling per Household per Year
- TOTAL COLLECTION COST
3. Annual Net Cost (Total)
4. Annual Net Cost (O&M Only)
5. Cost per Household per Year
6. Cost per Ton Recycled
7. Capital Cost (Total)

Results - Details

- 8. Total Number of Vehicles (Including back-up and support)
- 9. Total Number of Staff
- 10. Total Number of Drop-Offs
- 11. Capital Cost Vehicles (Including back-up and support)
- 12. Capital Cost Containers
- 14. Annual Cost for Drop-Off Sites (Total)

ISWM COLLECTION OUTPUT FOR: *Henderson County*

		Implementing a Dual Stream Program Using Bins		Implementing a Dual Stream Program Using Carts		Implementing a Single Stream Residential Curbside Program	
IMPACTS	Recycling Drop-Off Program	Dual Stream, Bins, Every Other Week Collection	Dual Stream, Bins, Weekly Collection	Dual Stream, Carts, Every Other Week Collection	Dual Stream, Carts, Weekly Collection	Single Stream, Carts, Every Other Week Collection	Single Stream, Carts, Weekly Collection
1. Tons of Recycling per Year	3,546	3,538	5,984	5,813	9,234	5,980	8,180
2. Pounds of Recycling per Household per Year	154	154	260	252	401	260	355
TOTAL COLLECTION COST							
3. Annual Net Cost (Total)	\$ (221,000)	\$ (2,084,000)	\$ (4,371,000)	\$ (2,203,000)	\$ (4,099,000)	\$ (1,214,000)	\$ (2,058,000)
4. Annual Net Cost (O&M Only)	\$ (313,000)	\$ (1,766,600)	\$ (3,929,700)	\$ (1,161,000)	\$ (2,697,700)	\$ (641,700)	\$ (1,340,600)
5. Cost per Household per Year	\$ (5)	\$ (45)	\$ (95)	\$ (48)	\$ (89)	\$ (26)	\$ (45)
6. Cost per Ton Recycled	\$ (62)	\$ (589)	\$ (731)	\$ (379)	\$ (444)	\$ (203)	\$ (252)
7. Capital Cost (Total)	\$ (1,817,000)	\$ (4,619,000)	\$ (8,338,000)	\$ (10,234,000)	\$ (16,379,000)	\$ (6,044,000)	\$ (8,594,000)
DETAILS							
8. Total Number of Vehicles (Including back-up and support)	4	12	27	15	33	10	18
9. Total Number of Staff	4	23	49	16	32	11	19
10. Total Number of Drop-Offs	10	-	-	-	-	-	-
11. Capital Cost Vehicles (Including back-up and support)	\$ (719,100)	\$ (2,988,600)	\$ (6,707,600)	\$ (4,797,500)	\$ (10,943,300)	\$ (3,325,700)	\$ (5,876,100)
12. Capital Cost Containers	Included below	\$ (1,630,800)	\$ (1,630,800)	\$ (5,436,000)	\$ (5,436,000)	\$ (2,718,000)	\$ (2,718,000)
14. Annual Cost for Drop-Off Sites (Total)	\$ (137,700)	-	-	-	-	-	- 25

ISWM HUB & SPOKE OUTPUT FOR: Henderson County

INPUTS	
Choose Your Program Type (From Collection Model) →	Recycling Drop-Off Center
Tons Diverted per Year (from Model)	3,546

IMPACTS	Additional Curbside Collection Cost for Direct Haul	Build Transfer Station (Spoke)	Build MRF (Hub)
1. Cost per Ton including Revenue	\$0	\$ (46)	NOT FEASIBLE
2. Cost per Household per Year	\$ -	\$ (4)	NOT FEASIBLE
3. Annual Cost (Capital + Operating) without Revenue	\$ -	\$ (162,270)	NOT FEASIBLE
DETAILS			
4. Additional Tons to Make Next Level Efficient	NA	20,000	10,500

AN INTRODUCTION TO FUNDING AND ACCOUNTING FOR INTEGRATED SOLID WASTE MANAGEMENT PLANNING

April 2017



Interactive Tool

- Asset inventory
- Wages and benefits
- Operations and maintenance
- Capital outlays
- Future outlays
- Indirect costs



Results

- Cost allocation
 - Collection, disposal, recycling, composting
- Unit costs
 - Residential
 - \$/ton
 - \$/household
 - Commercial
 - \$/ton
 - \$/Customer

Ready for Download

www.serdc.org/iswm

Reasons to Invest

- Recycling is an economic driver
 - Connect the impact with the infrastructure investment
 - It's just another community investment
- Citizens want it
- Environmental benefit



ALUMINUM CANS
RECYCLE

PLASTIC

RECYCLE
HERE

ALUMINUM CANS
ALUMINUM
RECYCLE

RECYCLE
PETE
PLASTIC
BOTTLES
HERE.
Look on the bottom for

DU PONT

WORKING FOR TOMORROW

BY RECYCLING TODAY

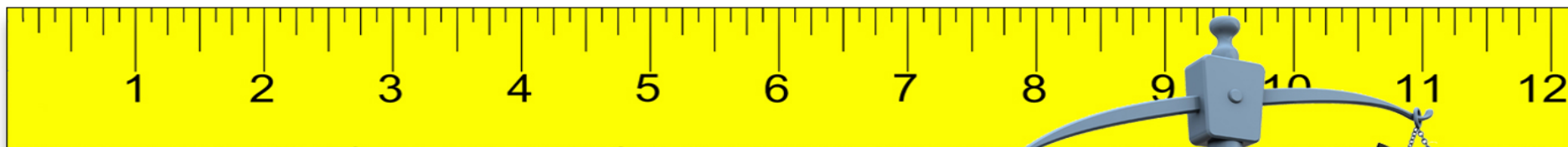


Overcoming Obstacles: Strategies for Success

RECYCLING FORUM

ASHEVILLE, NORTH CAROLINA • NOVEMBER 8-9, 2017

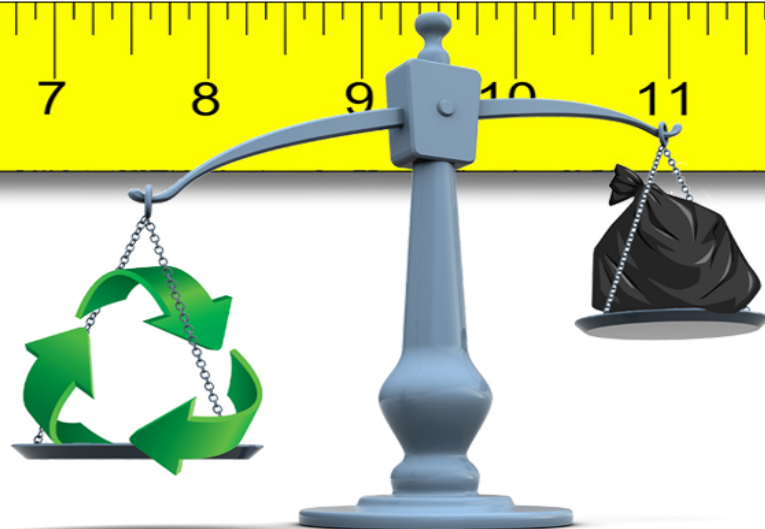
Measurement Matters



Summit

Feb 27-March 1, 2018

Chattanooga, TN



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