

Current Issues & Opportunities

- > Recycling Markets: From Boom to Bust
 - > Curbside Collection: Advantages to Regionalize & Automate
-



Kevin Roche
ecomaine

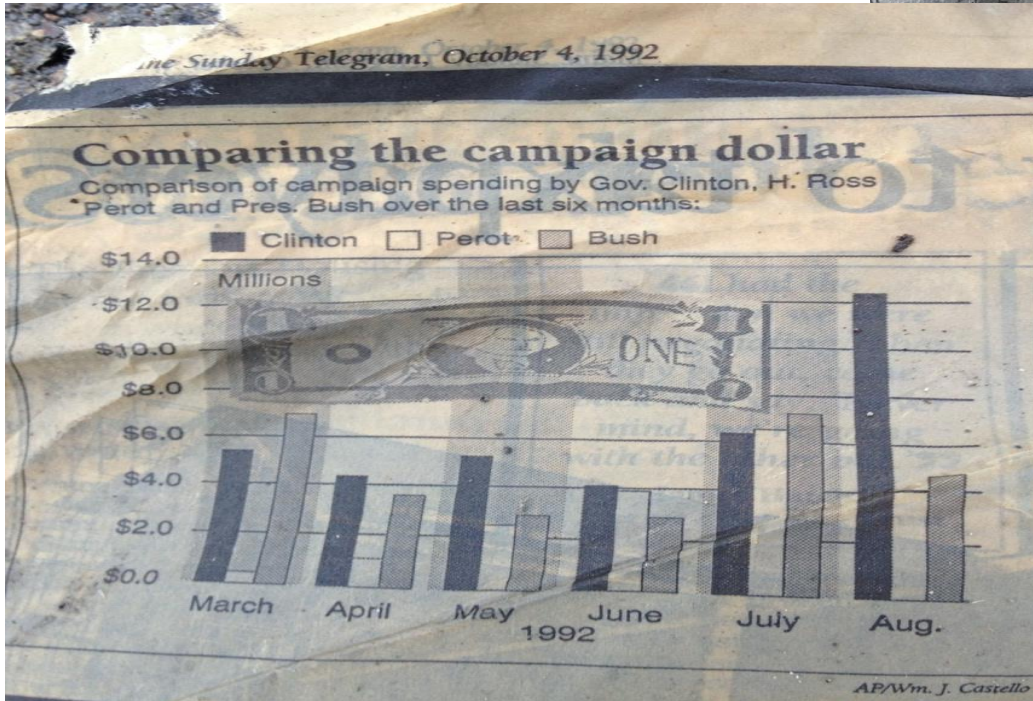


Landfilled Newspapers from long ago...

1974



1992



Mining the Landfill



Prince And The New Power Generation / Music From
Motion Picture *Purple Rain*

WHEN DOVES CRY I WOULD DIE 4 U BABY I'M A STAR PURPLE

Landfill Storage is FOREVER



Landfill Diversion





Mobro... The Garbarge

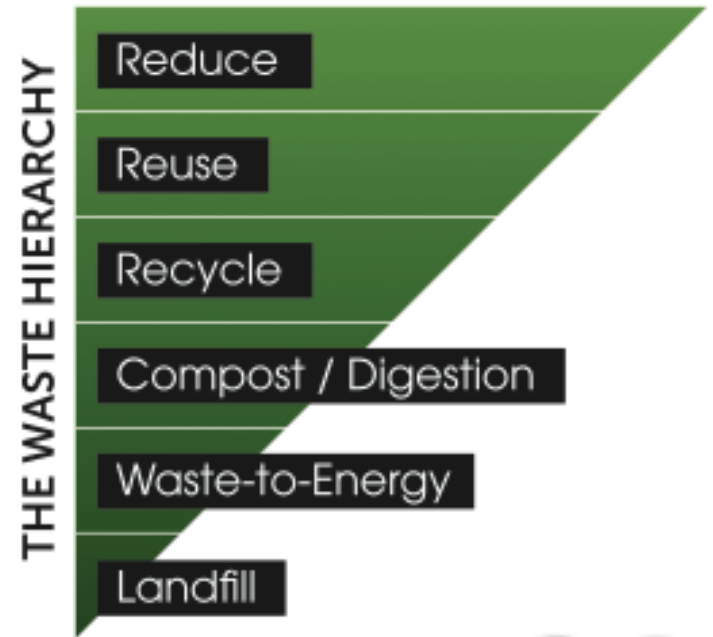




ecomaine

Our Mission

ecomaine provides comprehensive long-term solid waste solutions in a safe, environmentally responsible, economically sound manner, and is a leader in raising public awareness of sustainable waste management strategies.



The ecomaine Facilities & Programs

Facilities:

- **Single-Sort Recycling**
- **Food Waste Recovery**
- **Waste-To-Energy**
- **Landfill**

Programs:

- **Tours & School Presentations**
- **Earned Media**
- **School Grants**
- **Social Media**
- **Fairs and Events**
- **TV, Radio, and Print**

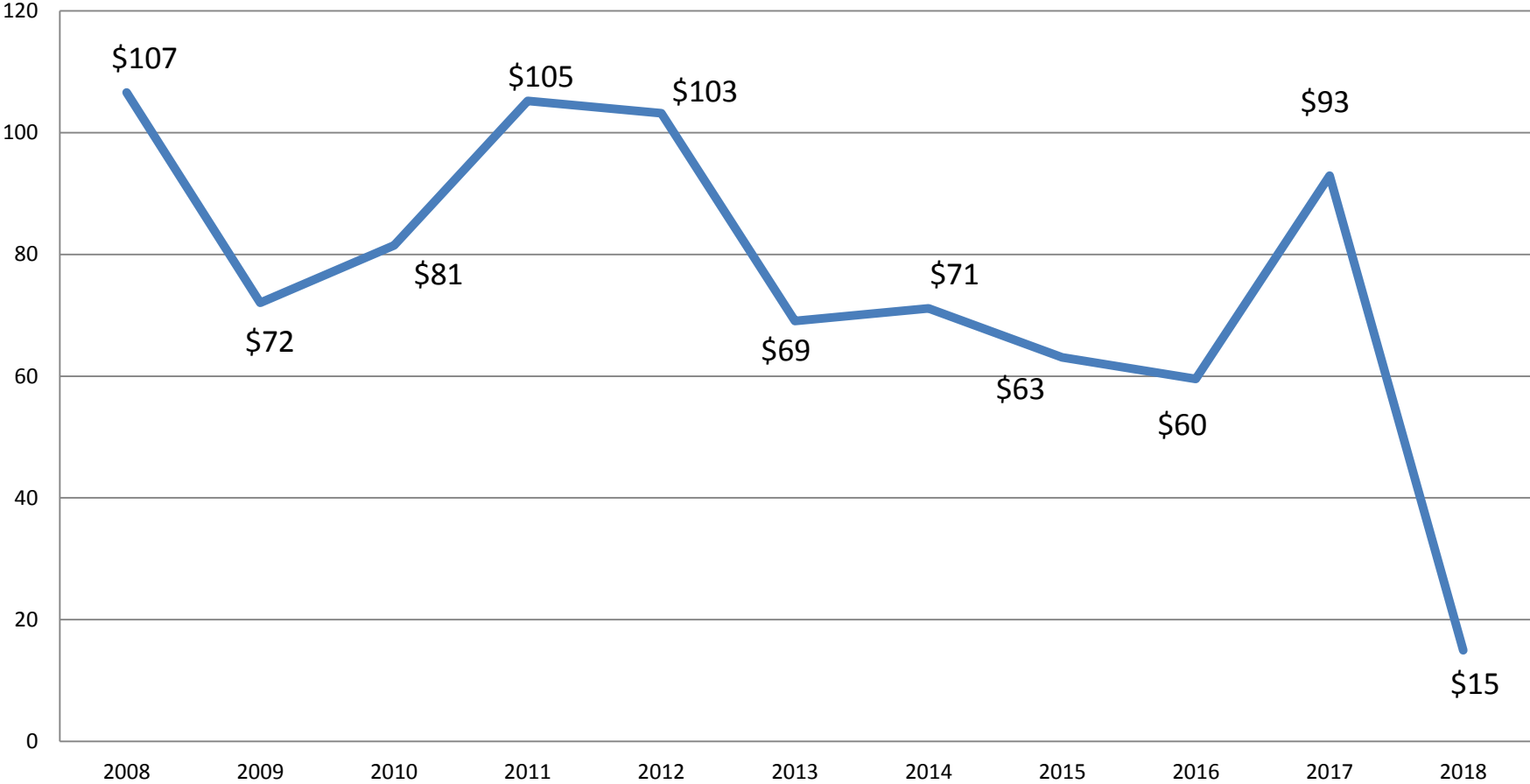


Got Paper?



Markets Crash for Recyclables

\$/ton

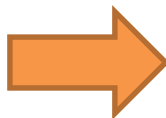


Why Did the Recycling Market Crash?

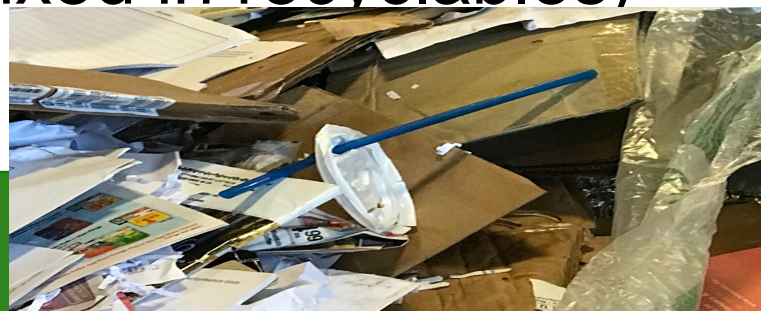
- **Supply & Demand:** China's ban on imports has left the market out of balance



- **Newspapers:** They've disappeared leaving behind a much different grade of paper



- **Contamination:** (trash mixed in recyclables) = No Tolerance



The Transition from Maine Markets to China



National Sword – Ban on Scrap Imports

“It may (the ban) result in chaos in society ... some voices that have been critical of the Chinese policies are downplaying their own culpability or responsibility to adjust accordingly.”

Li Ganjie

China's Minister of Environmental Protection

March 17, 2018




Photo credit: DC Environmental

ISRI specifications vs China

Material	ISRI Prohibitives and Outthrows	China
Sorted Residential Papers (56)	2% Prohibitives & 3% Outthrows	0.5%
Mixed Paper (54)	2% Prohibitives & 3% Outthrows	0.5%


SCRAP SPECIFICATIONS CIRCULAR



2

GUIDELINES FOR NONFERROUS SCRAP • FERROUS SCRAP • GLASS CULLET
PAPER STOCK • PLASTIC SCRAP • ELECTRONICS SCRAP • TIRE SCRAP

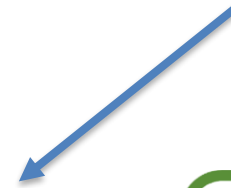
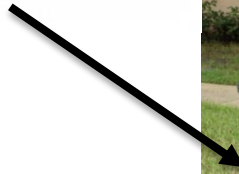
EFFECTIVE 2/1/2018




Contamination



Which Bin Should I Put It In?





**Matt Grondin
Katrina Venhuizen
Vanessa Berry**

Managing Contamination With Outreach & Education

- Earned Media to get the story out there
- Paid media to reinforce
- Tabling at events
- Town Council presentations
- Open House to see for yourself
- School Presentations
- Recyclopedia
- Social media
- Leadership - Champions



Facility Improvements



- New Technologies – Optical Separation & Robotics
- Better Efficiencies
- Managing Contamination
- Screen Cleaning



The Future... Is China comin back?



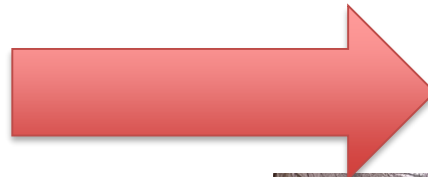
Safety

- Waste & Recycling collection workers have the 5th highest fatality rate... higher than police/firefighters
- 138 fatalities in 2017
- Labor shortage contributes to higher risks
- Safety incidents will increase costs to Municipalities, residents, and businesses.



Automation...

- Automation will improve safety & reduces costs
- Address Labor Shortage
- Carts and trucks may have more capacity going forward
- Paper is down 10%
- Transition to more flexible packaging will impact both recycling and solid waste



From Bins and Bags...

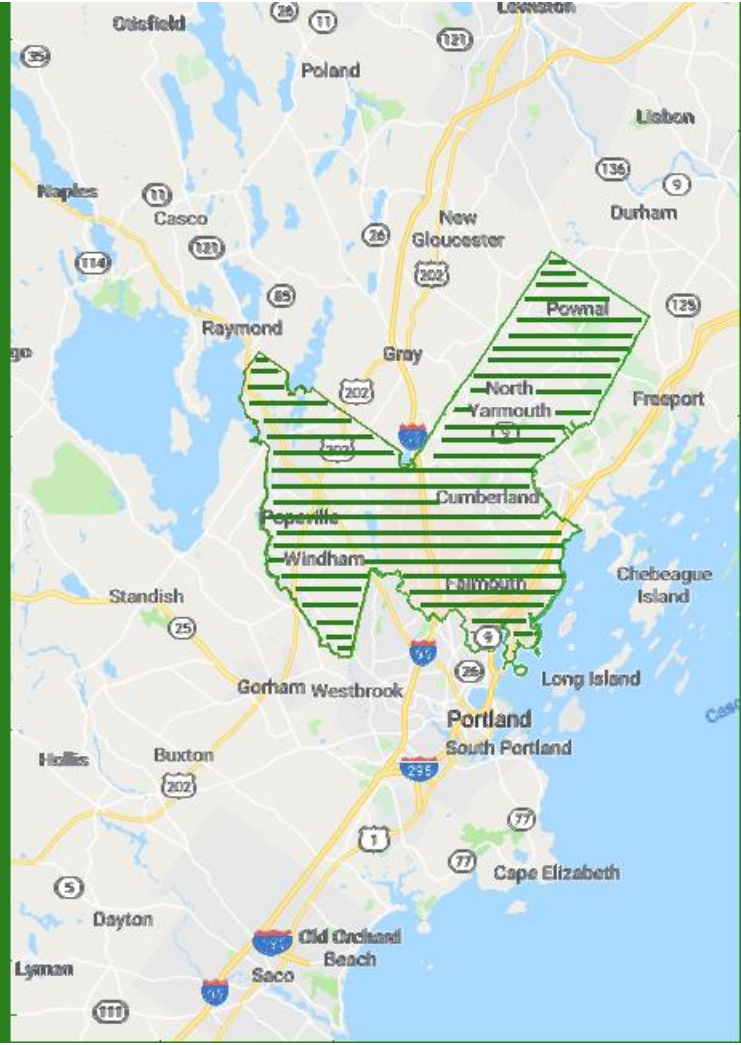
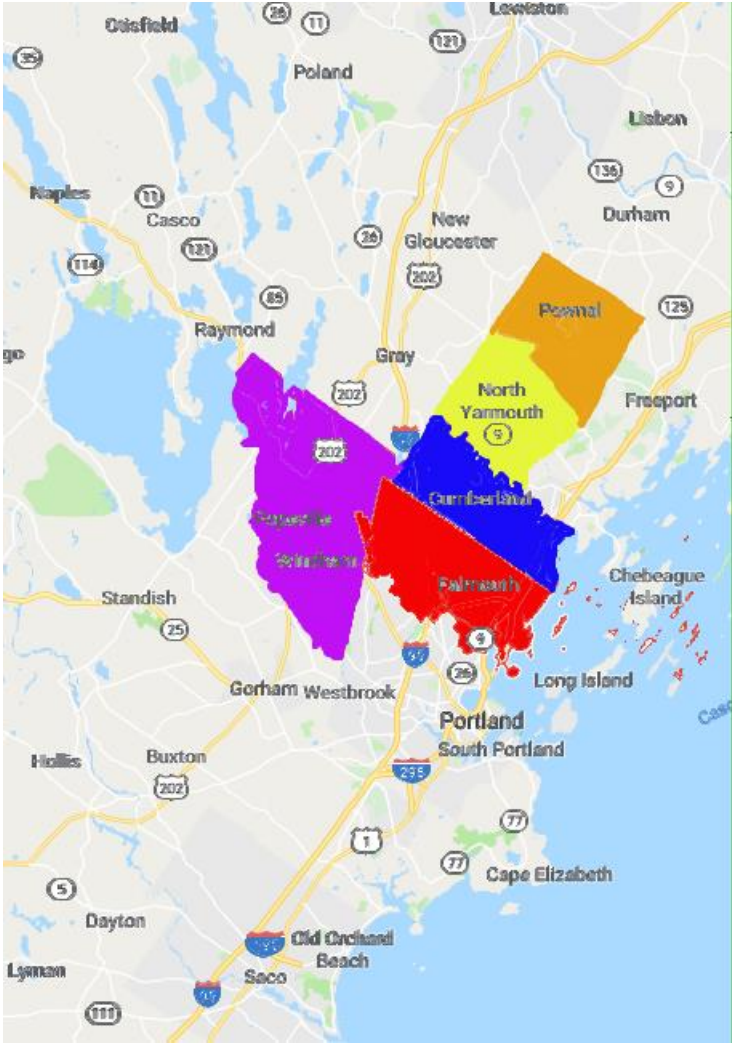


To Automated Collection With Carts...

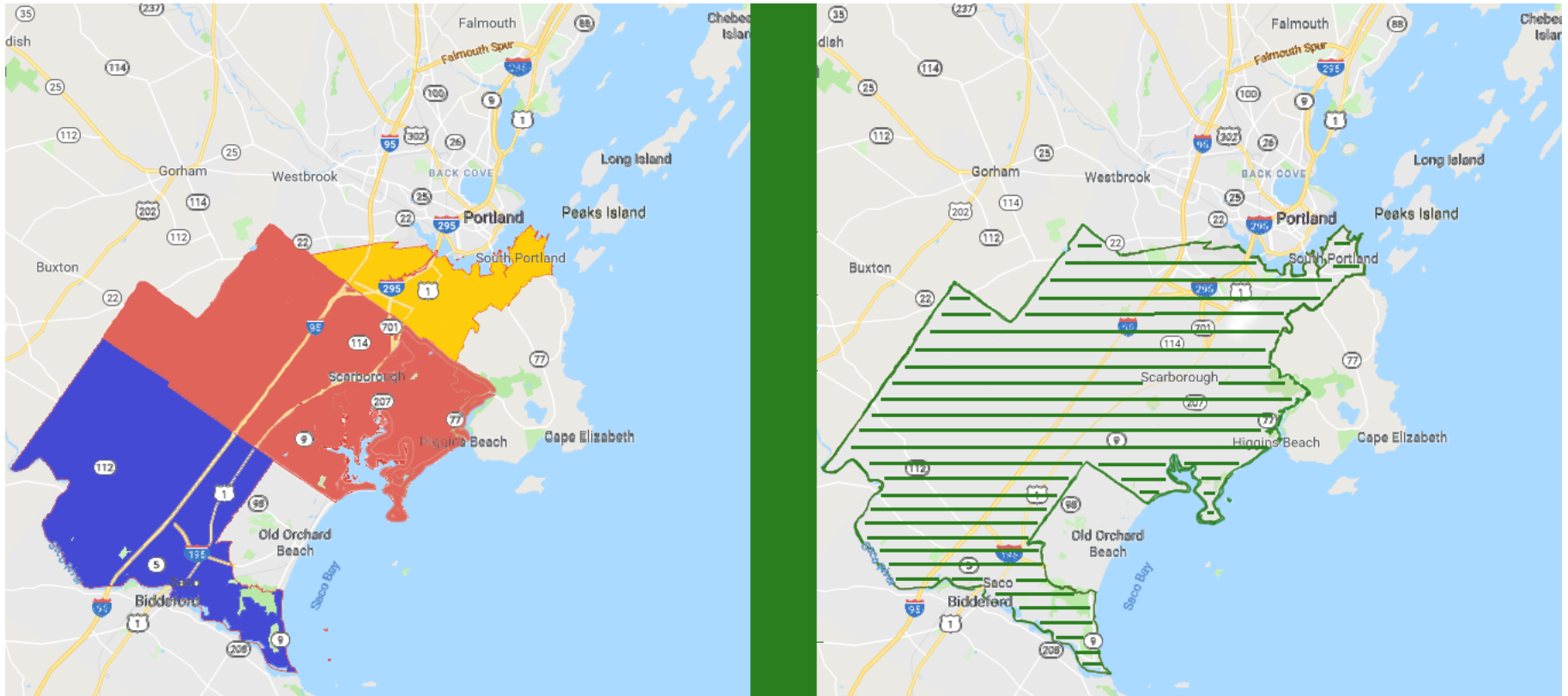
Regionalization of Collection: Addressing Inefficiencies and Economies of Scale



By regionalizing collection, you add the stops from 5 communities:
 $5300 + 3700 + 3000 + 1400 + 650 = 14,050$ Stops



By Regionalizing Collection, you add the stops from 3 Communities:
 $8933 + 6300 + 7485 = 22,718$ Stops



Food scraps feed Maine



Food Waste Pilot Programs



Future Opportunities...





Turning challenges into opportunities...

- We need to clean up the recycling stream and keep the trash out!
- We need to improve collection efficiency and safety through automated collection.
- We need to stabilize future collection costs through regionalization.

Thank You! Questions?



Data Used to Estimate Number of Trucks

Municipality	Centerline Miles	Stops	Density, HH's/Mile	Stops/Week Single Cart	Trucks Required	Stops/Week Two Carts	Trucks Required
Cumberland	80	3,000	37	3000	1.0	2429	1.2
Falmouth	102	3,700	36	3000	1.3	2429	1.4
Freeport	98	3,580	37	3000	1.2	2429	1.4
Gorham	156	5,447	39	3000	1.8	2429	2.1
Gray	104	3,044	29	2250	1.3	1929	1.5
Hollis	75	1,592	21	2250	0.7	1929	0.8
Limington	72	1,354	19	1750	0.8	1556	0.8
North Yarmouth	41	1,400	38	3000	0.5	2429	0.5
Portland	241	17,000	71	4000	4.8	2984	5.4
Pownal	44	650	15	1750	0.4	1556	0.4
Saco	127	7,485	59	3500	2.6	2722	2.6
Scarborough	169	6,300	37	3000	3.1	2429	2.9
South Portland	117	8,933	76	4000	2.8	2984	3.2
Windham	150	5,300	35	3000	1.5	2429	2.1
Yarmouth	68	3,544	52	3500	1.1	2722	1.3



Regionalizing Collection

- We estimate that ecomaine communities might save 10 to 20 percent in total collection costs associated with regionalization of the collection system
- And reduce collection GHG emissions by 10 percent

Collection	Option 1	Option 2	Option 3	Option 4
High	\$1,582,394	\$1,718,371	\$2,384,565	\$1,519,172
Low	\$791,197	\$859,186	\$1,192,283	\$759,586
Administrative	\$250,000	\$250,000	\$250,000	\$250,000
Net Savings				
High	\$1,332,394	\$1,468,371	\$2,134,565	\$1,269,172
Low	\$541,197	\$609,186	\$942,283	\$509,586
Carbon Savings (MTCE)	158	163	268	144