

# Cleaning up the Recycling Stream

Moving beyond the average education and outreach campaign.

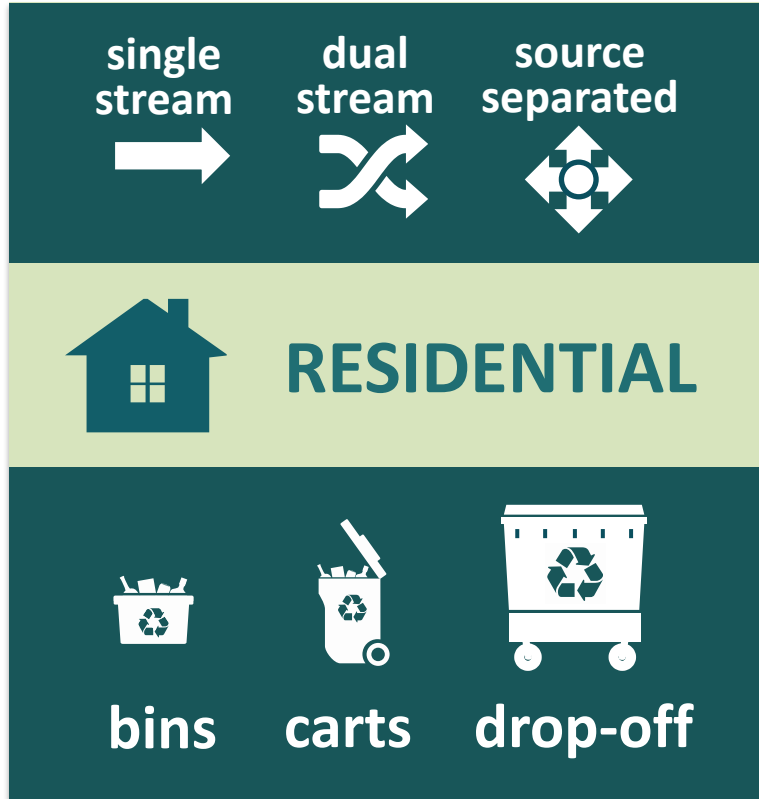


NERC Spring Conference  
March 15, 2017  
Burlington, VT

# The Issue

## contamination

1. The wrong materials in the system.
2. The right materials prepared the wrong way.





# What We Know

We  
can't  
only  
educate.

Awareness and knowledge  
do not change behavior.



# Thus We Do

We  
can't  
only  
educate.

Awareness and knowledge  
do not change behavior.

Operations  
+  
education.



## What We Know

**Enforcement without education is** frustrating  
and **disenfranchising.**



# Case in Point

**NON – COMPLIANT  
RECYCLABLE MATERIAL**

**THIS IS TRASH**

*Ex: Plastic Bags, Food Waste,  
Wood, Textiles, Garden Hoses, Etc.*

**NOT ACCEPTED IN RECYCLING**



## Thus We Do

Coupling awareness messaging  
and triggers with

**very specific resident feedback at the curb.**

**Enforcement without education is** frustrating  
and **disenfranchising.**





# Goals



Improve Material  
Quality



Increase  
Participation



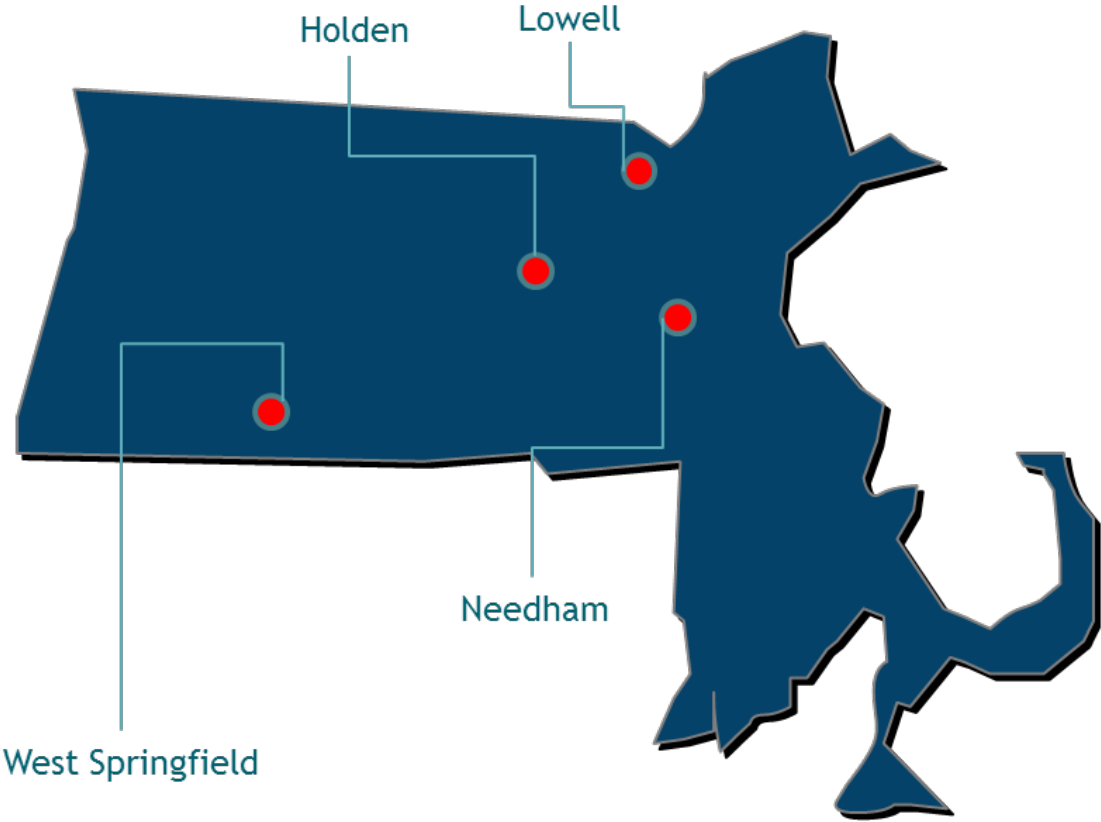
One Common Voice  
for Recycling



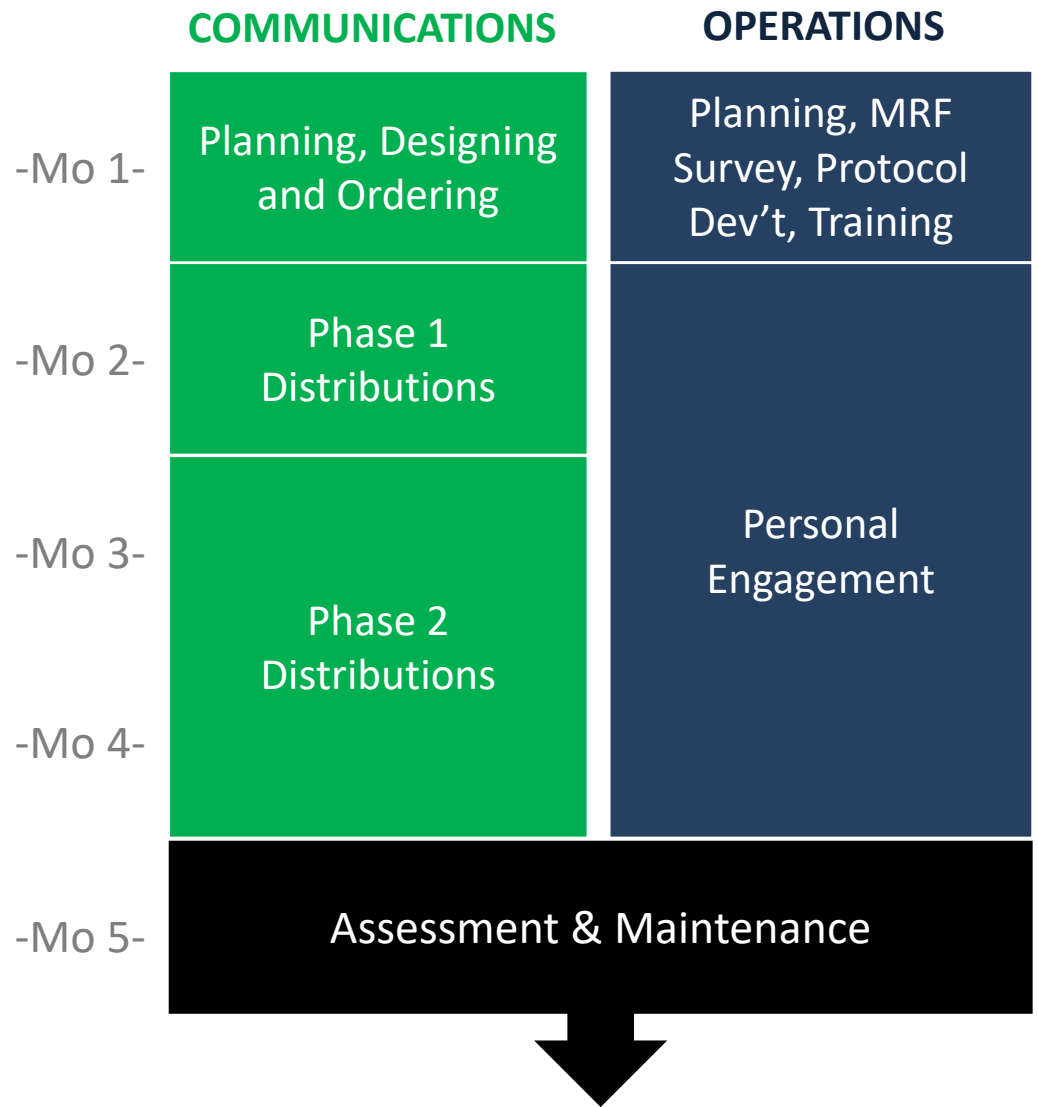
# Our Approach



# Pilot & Test



# timing





## CURBSIDE: Tools

### INFORM – BASIC DO'S AND DON'TS



POSTCARD/MAGNET

### PERSONALIZED FEEDBACK



CART TAGS

### ISSUE SPECIFIC COMMUNICATIONS



MAILERS + MEDIA



# RECYCLE

THANK YOU FOR RECYCLING THESE:

[www.SampleUrl.org](http://www.SampleUrl.org)

## Cans



### Aluminum and Steel Cans

empty and rinse

## Cartons



### Food and Beverage Cartons

empty and replace cap

## Glass



### Bottles and Jars

empty and rinse

## Paper



### Mixed Paper, Newspaper, Magazines, and Flattened Cardboard

## Plastic



### Kitchen, Laundry, Bath: Bottles and Containers

empty and replace cap

**NO!**



Do Not Bag Recyclables  
No Garbage



No Plastic Bags  
(return to retail)



No Food or Liquid  
(empty all containers)



No Clothing or Linens  
(use donation programs)



No Tanglers  
(no hoses, wires, chains, or electronics)

**123.456.789X**

City Department Name





**NO PLASTIC BAGS IN THE CART**

# DO NOT BAG Recyclables

Collecting recyclables in a bag? Empty the contents into the cart.

 Return plastic bags to retailers.



This project is funded in part by a grant from the Massachusetts Department of Environmental Protection. Min. 30% recycled paper.





drop-off



# PERSONALIZED FEEDBACK

## STAFF WITH HANDOUTS



# SITE SIGNAGE

CLEAR & SIMPLE



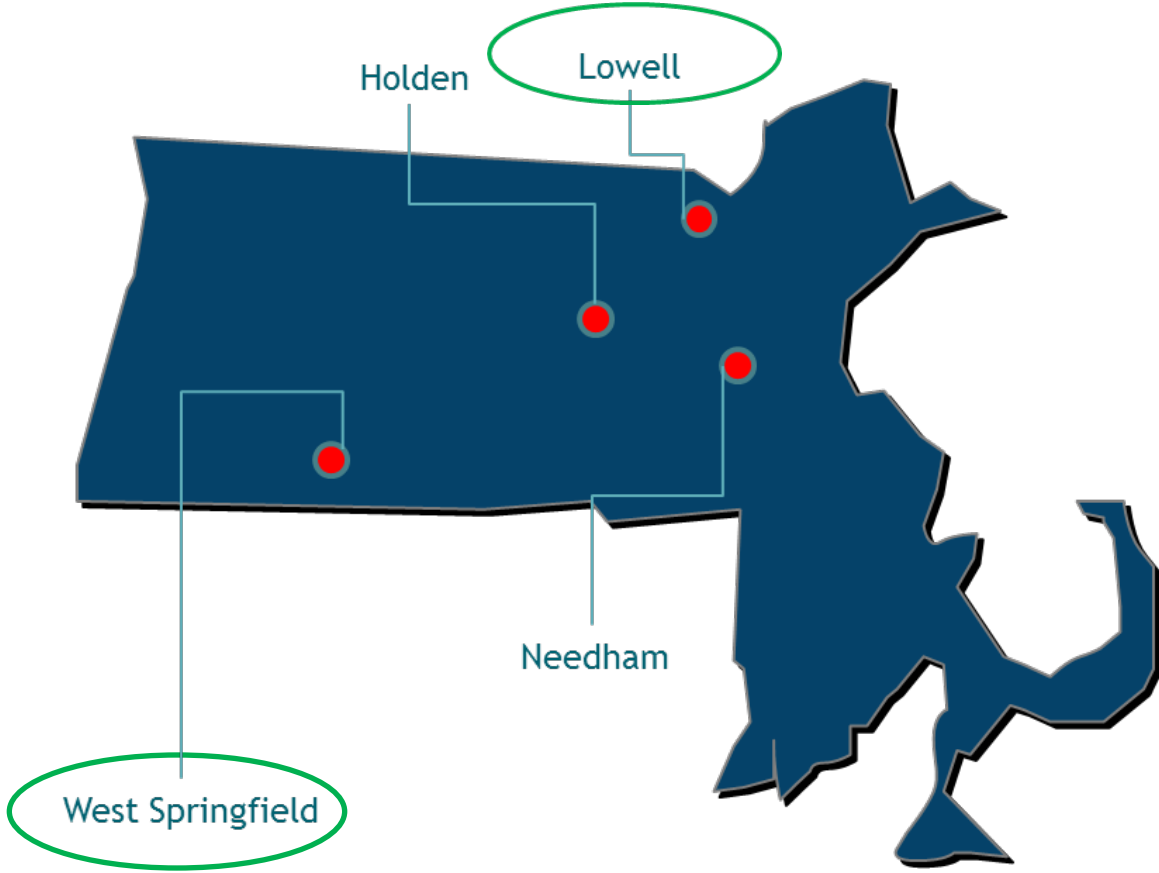
# Results



**Number of contaminated carts**  
**Overall contamination**  
**Most problematic contaminant (targeted)**

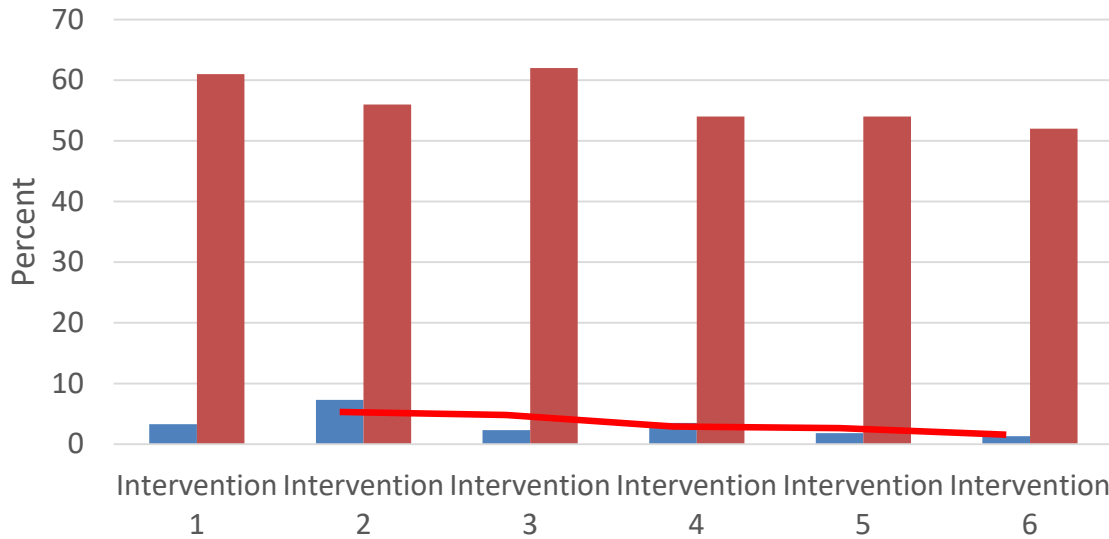
Set-out rates remained steady



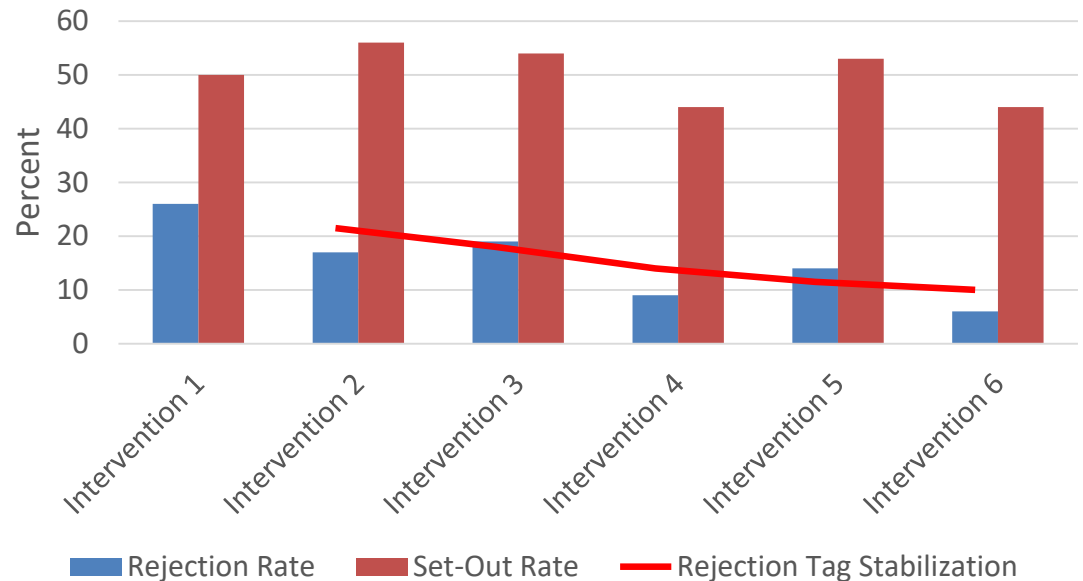


# Rejection and Set-Out Rates for W. Springfield Pilot

## Average Quality Route



## Poor Quality Route



■ Rejection Rate    
 ■ Set-Out Rate    
 — Rejection Tag Stabilization

# Overall Contamination Trended Downward

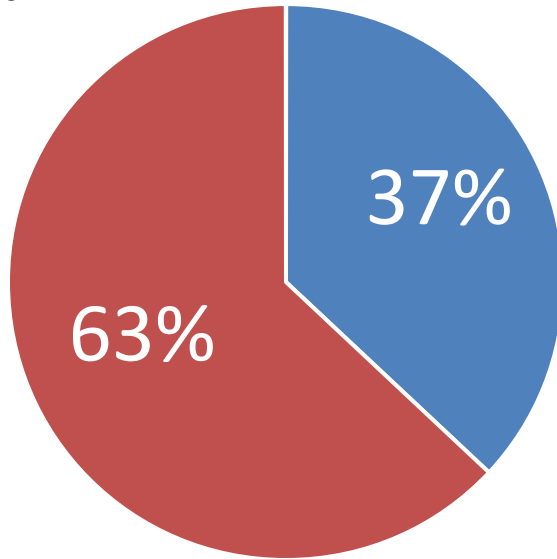
Total contamination dropped from 37 to 26 percent (by weight).

## LOWELL and W SPRINGFIELD

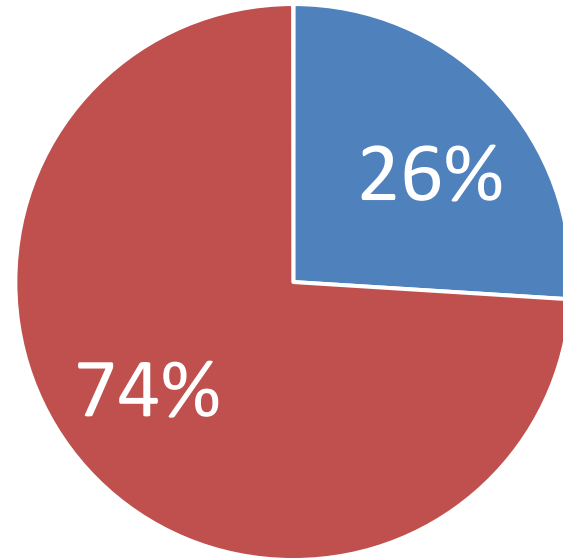
Curbside  
Entire toolkit was used

- Each of the four pilot routes behaved slightly different.
- Single family routes seemed to have less contamination and better recovery rates than the multi-family routes.

- Contamination
- Recyclables



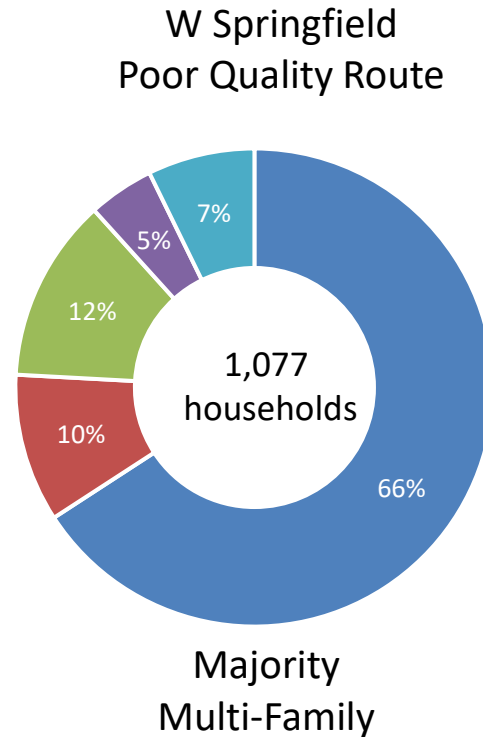
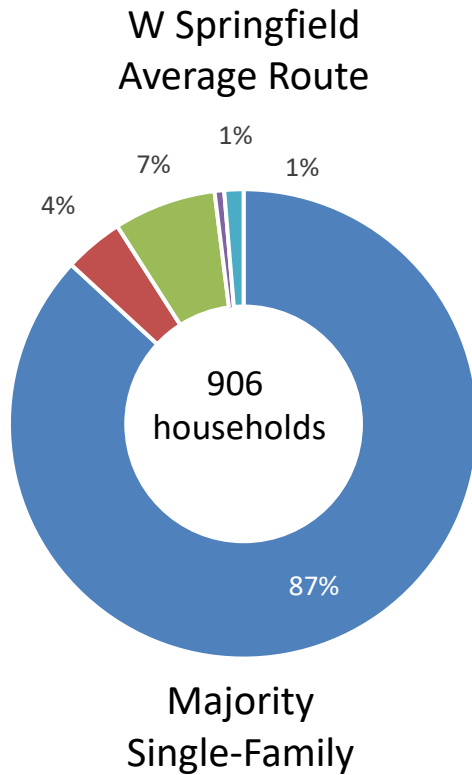
BEFORE



AFTER



# Tagging and Fix Rates for W. Springfield Pilot



- No Tag
- Single Tag – Then Fixed on Next Recycling Day
- Single Tag – Inconclusive
- Repeat Tag – Fixed
- Repeat Tag – Not Fixed





# Targeted Material Trended Downward

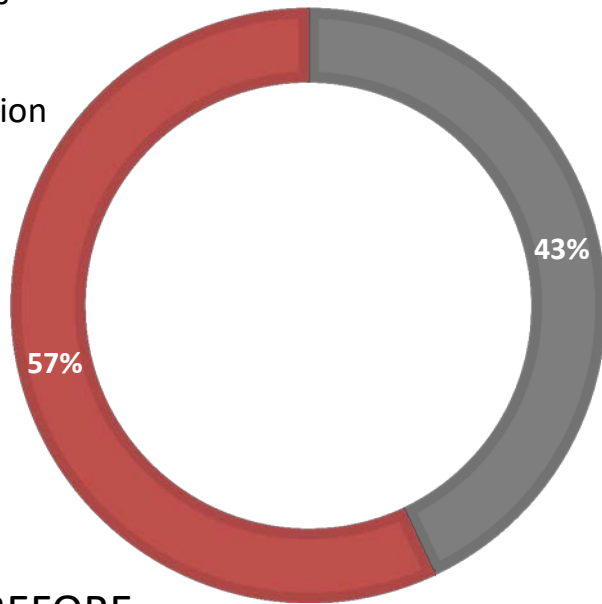
“Stuff in Bags” dropped from 43 to 15 percent contamination by weight.

## LOWELL and W SPRINGFIELD

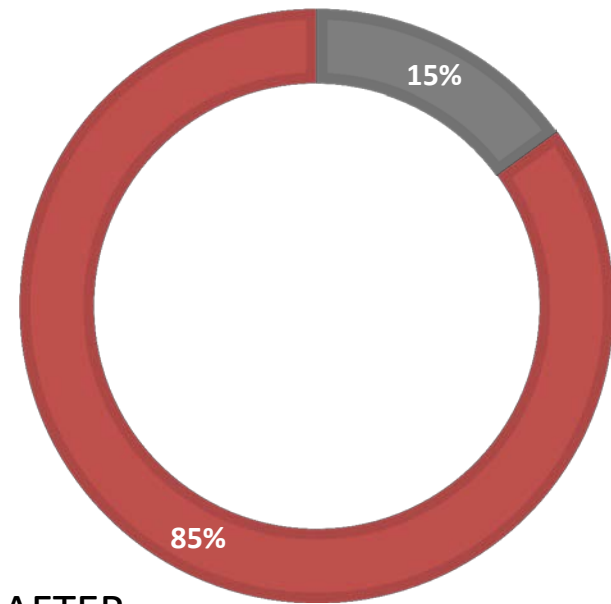
Curbside  
Entire toolkit was used

- Recyclables in bags and trash in bags were identified as the most problematic contaminant.
- That material was specifically targeted.

- Stuff in Bags
- All Other Contamination

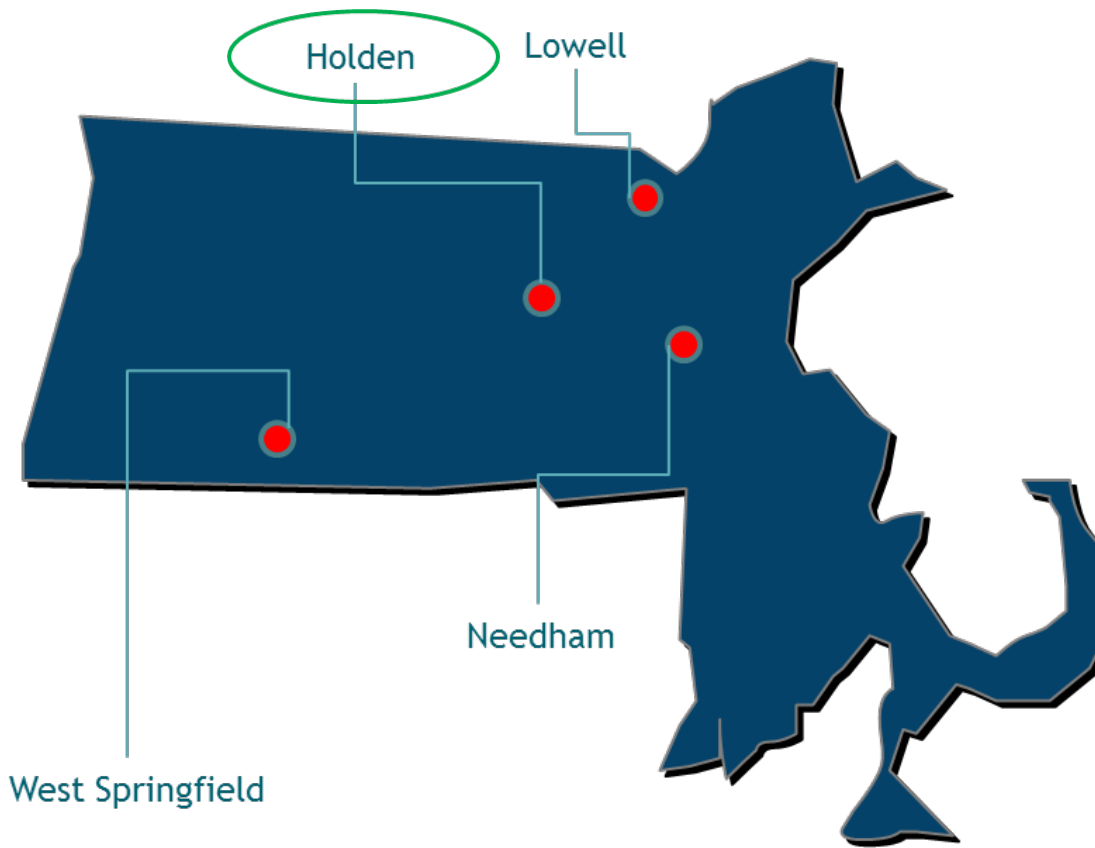


BEFORE



AFTER





# Overall Contamination Stayed Roughly the Same

Education without curbside feedback may be less effective. (Figures by weight.)

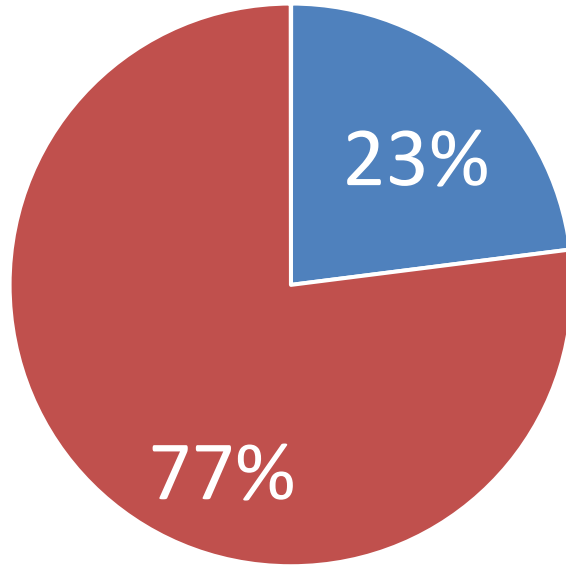
## HOLDEN

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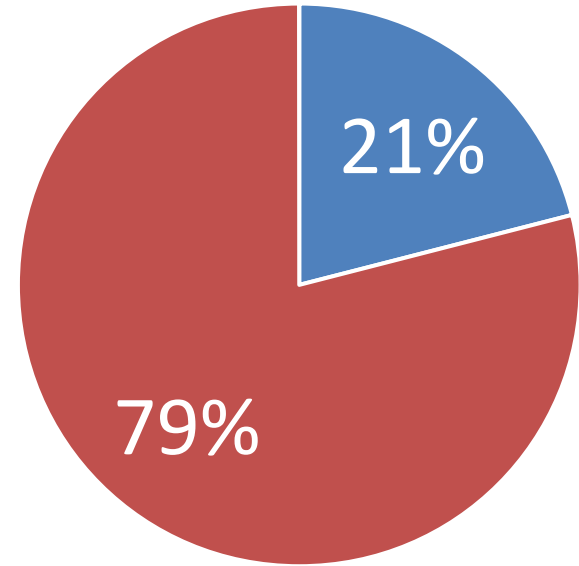
Curbside  
No curbside feedback was used

- Contamination
- Recyclables

- Holden started out with a higher level of recovery and a lower level of contamination than the other pilots.



BEFORE



AFTER



# Targeted Material Decreased Less Than Other Pilots

“Stuff in Bags” dropped from 40 to 23 percent (by weight).

## HOLDEN

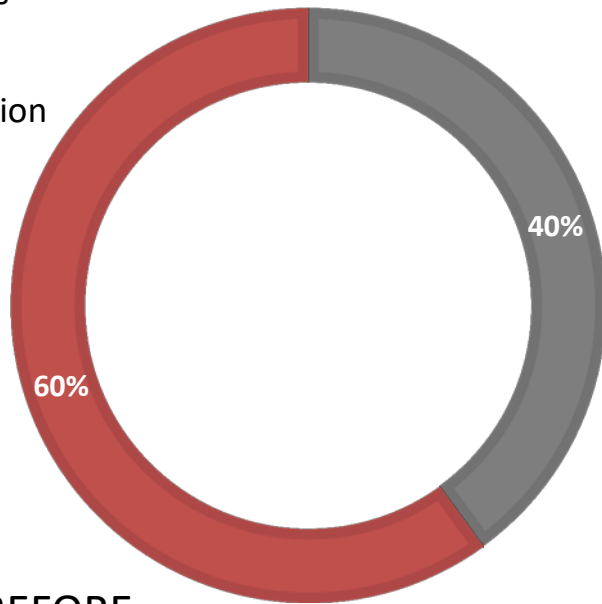
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Curbside

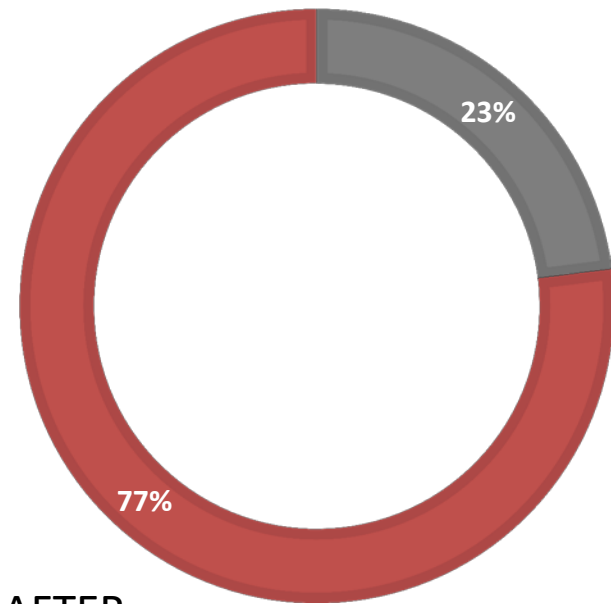
No curbside feedback was used

- Stuff in Bags
- All Other Contamination

- Recyclables in bags did not decrease much but refuse in bags did.

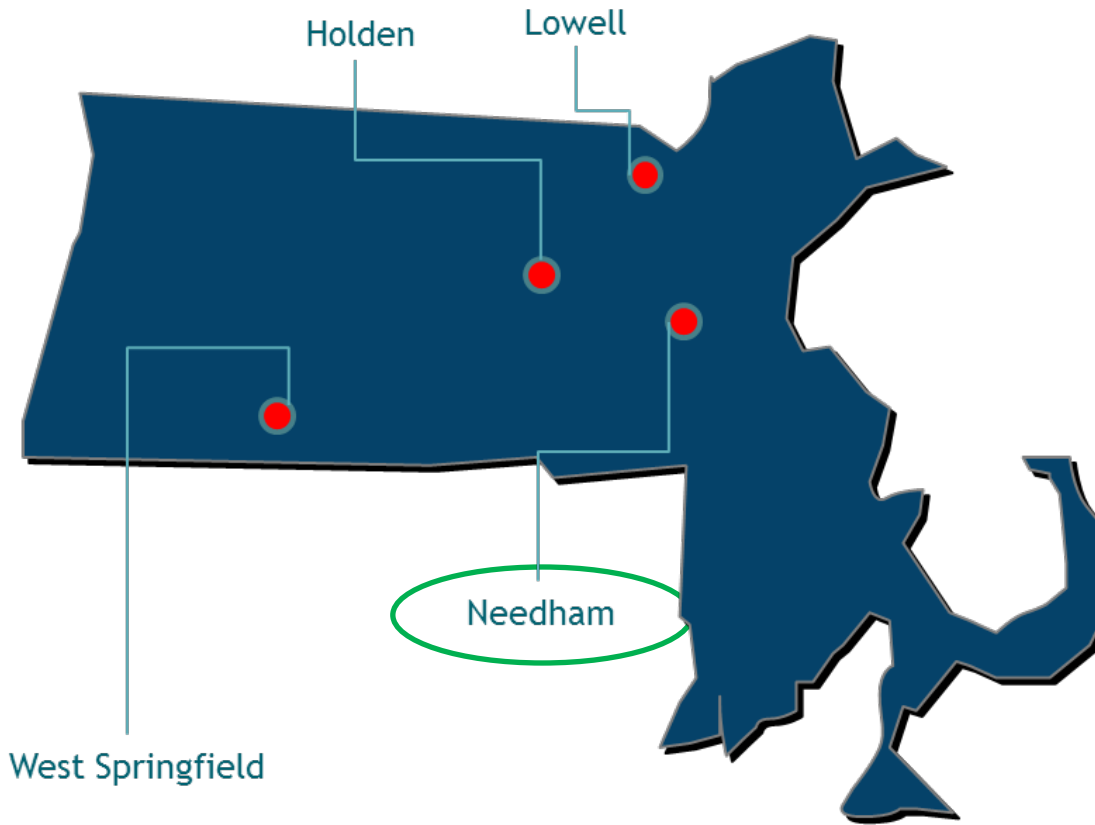


BEFORE



AFTER





# Overall Contamination Trended Downward

Total contamination dropped from 28 to 14 percent by weight, due to reduction in targeted materials.

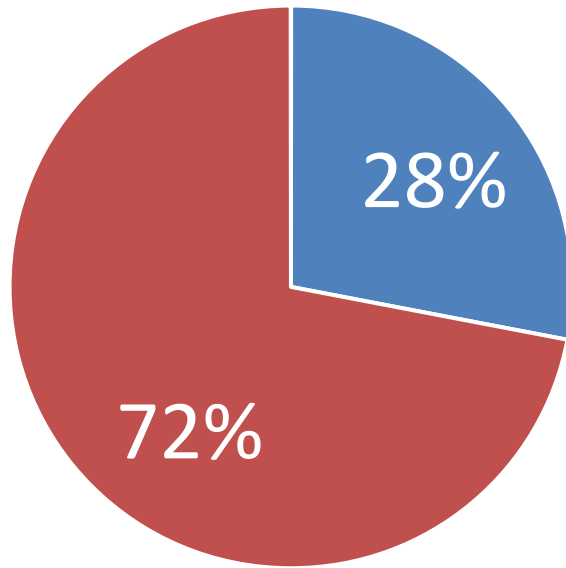
## NEEDHAM

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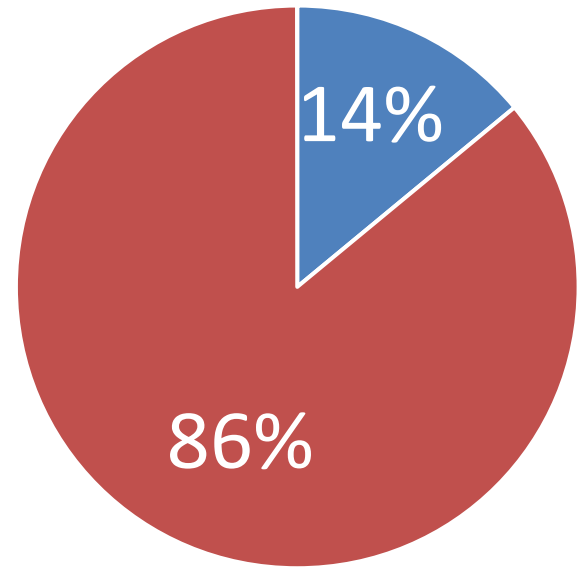
Drop-off  
Entire toolkit was used

- Contamination
- Recyclables

- Recovery of recyclables, (what was found in trash vs. the correct recycling container) basically did not change.



BEFORE



AFTER



# Targeted Material Trended Downward

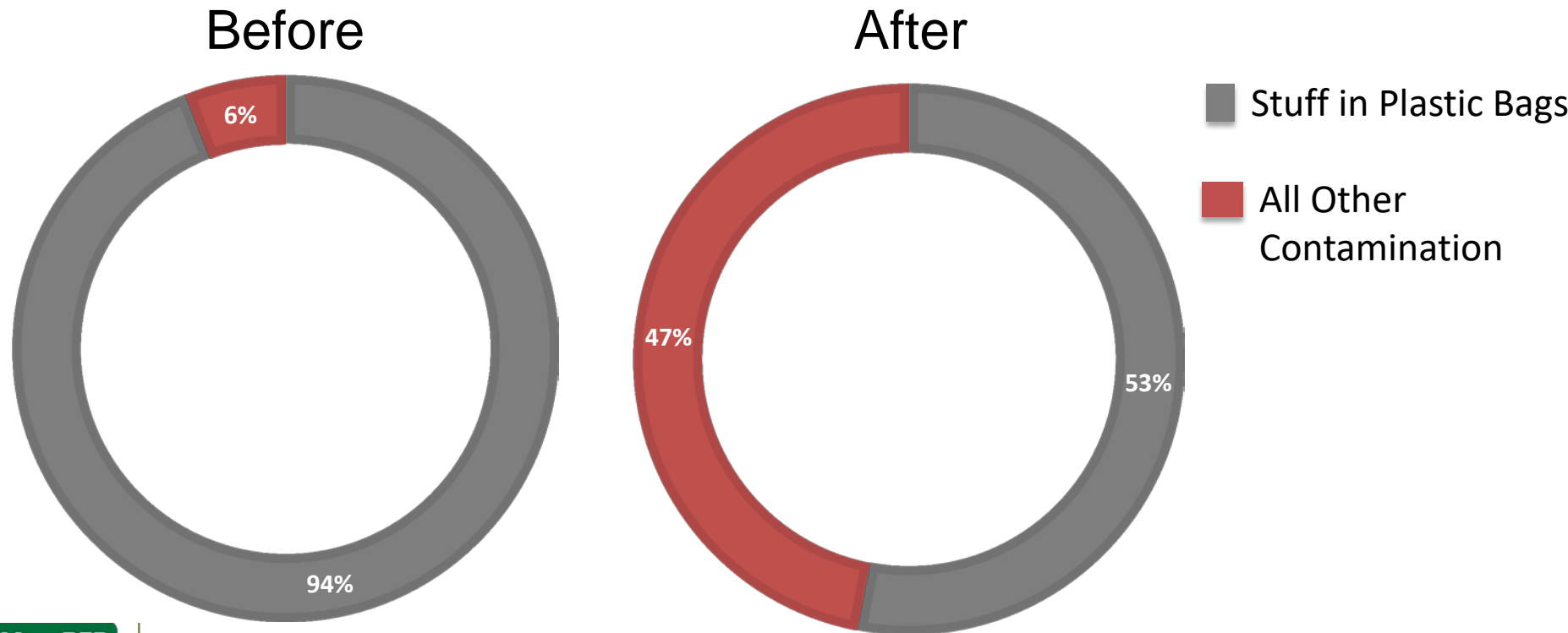
“Stuff in Bags” dropped from 94 to 53 percent contamination by weight.

## NEEDHAM

Drop-Off

Entire toolkit was used

- Recyclables in bags and trash in bags were identified as the most problematic contaminant.
- That material was specifically targeted.



# Recycling IQ Kit

## Improving Your Recycling Program

A Step-By-Step Guide



*This is not your average education and outreach campaign.*

<https://goo.gl/hGdPtN>





# Questions?

Janice Paré  
Municipal Waste Reduction Branch  
[janice.pare@state.ma.us](mailto:janice.pare@state.ma.us)

Recycling IQ Kit: <https://goo.gl/hGdPtN>



# Auxiliary Slides



# Rejection and Set-Out Rates for Lowell Pilot

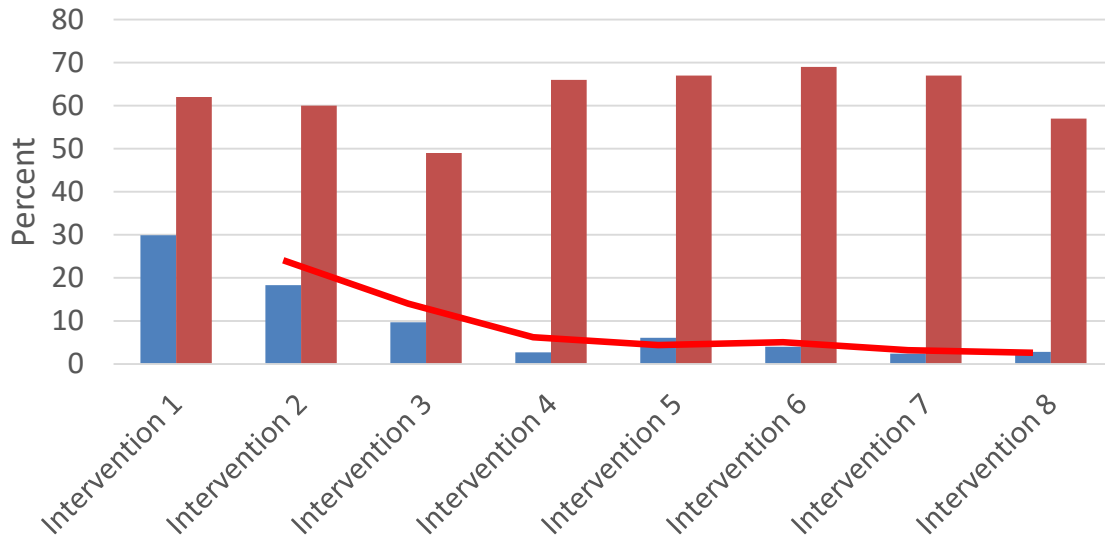
		Intervention 1	Intervention 2	Intervention 3	Intervention 4	Intervention 5	Intervention 6	Intervention 7	Intervention 8
Average Quality Route	Rejection Rate	29.9%	18.3%	9.7%	2.7%	6.1%	4.0%	2.4%	2.8%
	Set-out	62%	60%	49%	66%	67%	69%	67%	57%
Poor Quality Route	Rejection Rate	52.27%	29.38%	15.94%	14.60%	9.30%	7.41%	5.45%	11.98%
	Set-out	48.35%	46.37%	45.49%	49.67%	47.25%	47.47%	53.02%	47.69%

Note: Routes are single stream, every other week cart-based collection

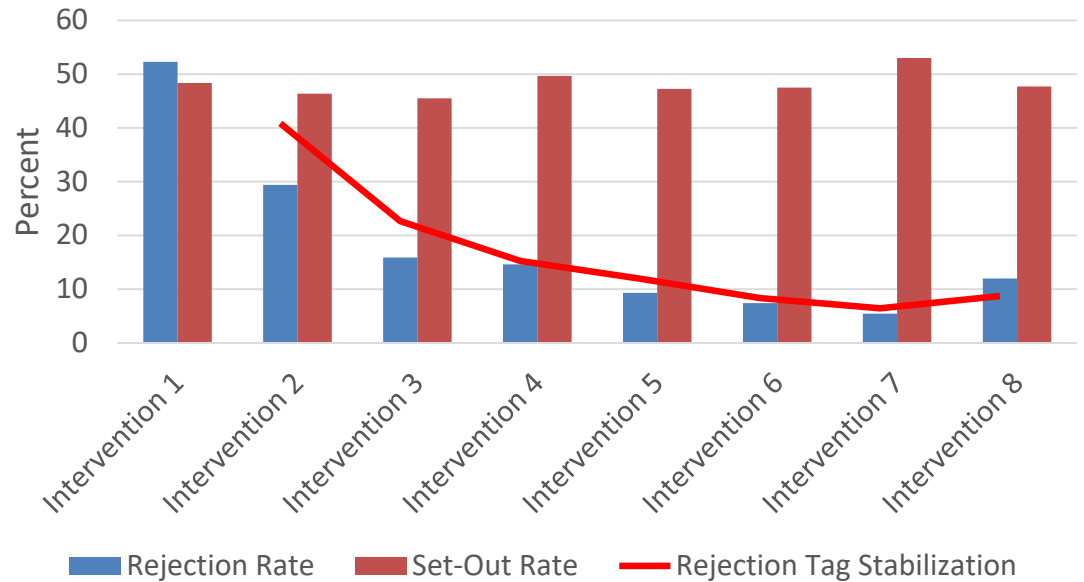


# Rejection and Set-Out Rates for Lowell Pilot

## Average Quality Route



## Poor Quality Route

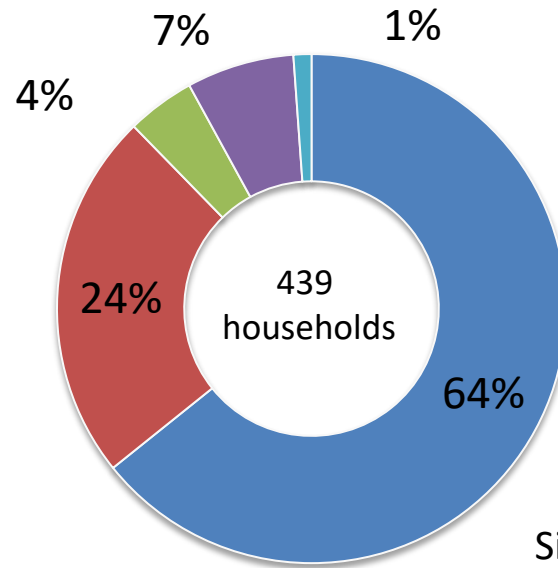


■ Rejection Rate   ■ Set-Out Rate   — Rejection Tag Stabilization

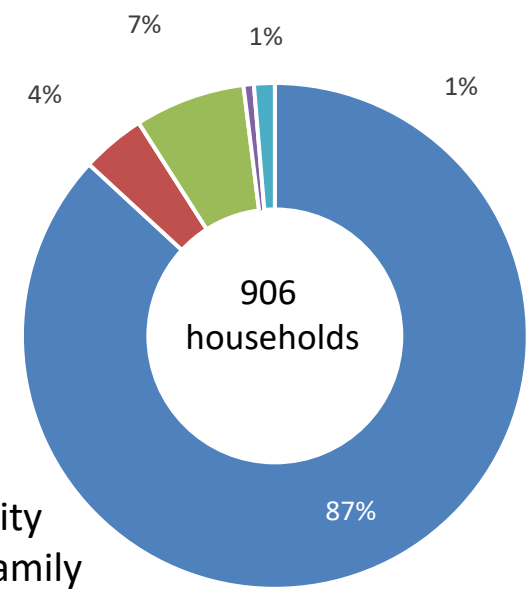
# Number of Contaminated Carts Notably Decreased.

Multi-Family homes were tagged more times before fixing the problem.

- No Tag
- Single Tag – Fixed Next Recycling Day
- Single Tag – Inconclusive
- Repeat Tag – Fixed
- Repeat Tag – Not Fixed

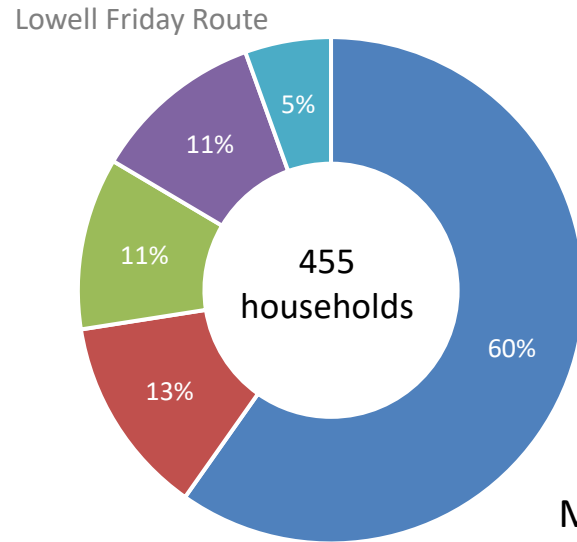


Lowell Tuesday Route



Majority Single-Family

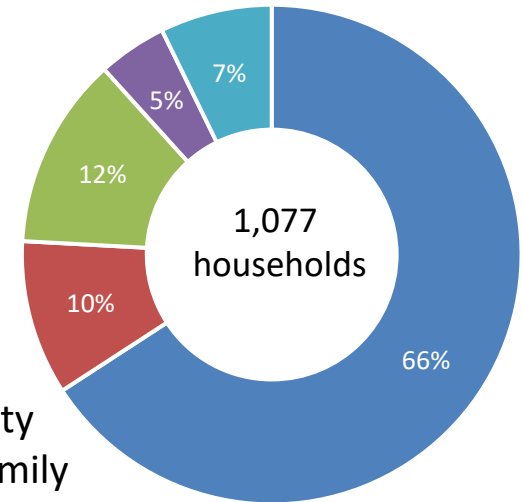
W Springfield Monday Route



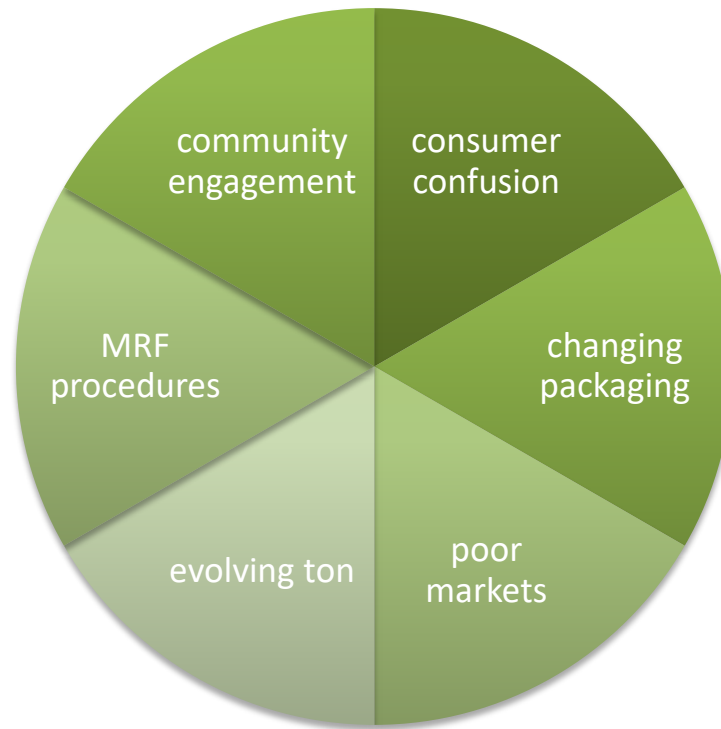
Lowell Friday Route

W Springfield Tuesday Route

Majority Multi-Family



# The Causes



# Intentionally left blank

