

Using Data to Simplify Plastics Messaging

Alex Arnett
Waste Reduction Supervisor
City of Greensboro, NC

Origin of Messaging Overhaul

- ▶ Department Objective: Recycling Rebrand
- ▶ Challenges specific to Greensboro:
 - ▶ High contamination
 - ▶ Wide variation across socioeconomic groups
 - ▶ “Legacy” issues with 20+ year old single-stream program
- ▶ Where to begin?

Data-Driven Program

- ▶ Understanding recycling behavior at a deeper level
- ▶ Identifying more impactful improvement strategies
- ▶ Confident decision making
- ▶ Ability to measure impacts
- ▶ Improved dialogue and communication

Recycling Survey



Please complete our survey for a CHANCE TO WIN \$50!

The City of Greensboro would like to learn more about your thoughts and behaviors about recycling because we want to improve our recycling program. The purpose of this survey is to identify why people don't recycle so that we can work together to overcome those things.

For the following, please indicate whether you perform the specified action on the following scale:

Statement	Always	Frequently	Sometimes	Seldom	Never
I recycle at home	<input type="checkbox"/>				
I recycle at work	<input type="checkbox"/>				
I try to recycle when away from home and work- shopping, at sporting events, etc	<input type="checkbox"/>				
I encourage my friends, neighbors, or coworkers to recycle	<input type="checkbox"/>				
I remember to recycle	<input type="checkbox"/>				

For the following, please indicate the degree to which you agree with the following statements:

Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
My household is not properly organized for recycling	<input type="checkbox"/>				
Recycling is dirty, gross, or smells bad	<input type="checkbox"/>				
Recycling takes too much time	<input type="checkbox"/>				
Items that I recycle will just end up in the landfill anyway	<input type="checkbox"/>				
Recycling is not worth the extra effort	<input type="checkbox"/>				
The recycling program is too expensive for the City	<input type="checkbox"/>				
I never think about recycling when it is time to throw something out	<input type="checkbox"/>				
I don't know what items can be recycled	<input type="checkbox"/>				
Protecting the environment just isn't important to me	<input type="checkbox"/>				
Recycling doesn't have any real impact on the environment	<input type="checkbox"/>				
What happens to my garbage is not my responsibility	<input type="checkbox"/>				
I don't have enough space to store my recycling	<input type="checkbox"/>				

Please indicate your level of satisfaction with the following services:

Service	Highly Satisfied	Moderately Satisfied	Neutral	Moderately Dissatisfied	Highly Dissatisfied
Trash Collection	<input type="checkbox"/>				
Recycling Program	<input type="checkbox"/>				
Every Other Week Recycling Service	<input type="checkbox"/>				
Yard Waste Collection	<input type="checkbox"/>				
Overall Service	<input type="checkbox"/>				

Please indicate the best response below:

	Heavy Recycler	Moderate Recycler	Light Recycler	Never recycle
My household would be BEST classified as	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TO THE BEST OF YOUR KNOWLEDGE, which of the following materials are ACCEPTABLE to be placed in your recycling container? (Check all that apply)

Glass bottles	<input type="checkbox"/>	Styrofoam	<input type="checkbox"/>	Milk & Juice Cartons	<input type="checkbox"/>
Clothes	<input type="checkbox"/>	Yard Waste	<input type="checkbox"/>	Paper towels, tissues	<input type="checkbox"/>
Cardboard	<input type="checkbox"/>	Plastic Bags	<input type="checkbox"/>	Steel/ tin cans	<input type="checkbox"/>
Pizza Boxes	<input type="checkbox"/>	Plastics #1-2	<input type="checkbox"/>	Aluminum cans	<input type="checkbox"/>
Plastics #3-7	<input type="checkbox"/>	Food Waste	<input type="checkbox"/>	Tires, Rubber	<input type="checkbox"/>
Chipboard (cereal boxes, etc)	<input type="checkbox"/>	Office and school paper, junk mail	<input type="checkbox"/>	Newspaper, magazines, catalogs	<input type="checkbox"/>
Aluminum foil & pie pans	<input type="checkbox"/>	Aerosol Cans (empty)	<input type="checkbox"/>	Empty motor oil bottles	<input type="checkbox"/>

On my service day, my recycling can is usually:

Overflowing; some recyclable items had to be put in trash	<input type="checkbox"/>	Less than 1/2 full, but I still put it out	<input type="checkbox"/>
Between 3/4 and completely full	<input type="checkbox"/>	Very little in the can; I don't put it out every service day	<input type="checkbox"/>
Between 1/2 and 3/4 full	<input type="checkbox"/>	I don't recycle	<input type="checkbox"/>

A. What information sources do you use regularly for news about the City of Greensboro and its services? CHECK ALL THAT APPLY

B. Thinking about the information sources you use, which ONE source do you consider to be the most reliable? CHECK ONE ONLY

	USE	MOST RELIABLE
Television	<input type="checkbox"/>	<input type="checkbox"/>
Radio	<input type="checkbox"/>	<input type="checkbox"/>
Newspaper	<input type="checkbox"/>	<input type="checkbox"/>
Social media (Facebook, Twitter, etc)	<input type="checkbox"/>	<input type="checkbox"/>
City of Greensboro Website	<input type="checkbox"/>	<input type="checkbox"/>
Internet (other than above)	<input type="checkbox"/>	<input type="checkbox"/>
Channel 13 (GTV)	<input type="checkbox"/>	<input type="checkbox"/>

Personal information (optional, but needed to award gift card)

Name	
Street Address:	
Apt/Unit #	
City:	
State:	
Zip:	

This location is a:

Residence	<input type="checkbox"/>	Business	<input type="checkbox"/>
<i>if residence, please indicate what type:</i>			
Single-family home (detached)	<input type="checkbox"/>	Semi-detached/Duplex	<input type="checkbox"/>
Apartment/condo	<input type="checkbox"/>	Townhome	<input type="checkbox"/>

If you have any comments or suggestions regarding the City's recycling program, please write them below:

Thank you for completing this survey. Completed surveys can be mailed in with your current water bill payment, OR mailed separately to:

Recycling Survey
PO Box 3136
Greensboro, NC 27402-3136

All completed surveys postmarked by 2/28/2014 will be entered into a random drawing for one of five Visa® gift cards valued at \$50.

Process

- ▶ Created survey in-house
- ▶ Printed 90,000 copies in-house
- ▶ Mailed via water bill
- ▶ Received responses:
 - ▶ Direct mail
 - ▶ Returned with water bill payment
 - ▶ Survey available online



Survey Response

- ▶ Overwhelming response- around 10% return rate
- ▶ Most popular response method: with water bill payment



Data Entry

- ▶ Used Survey Monkey to enter data
- ▶ Over 8,000 paper responses- needed help
- ▶ Hired temps, enlisted light-duty employees
- ▶ About 10 weeks to enter all data



 **Nancy Barakat Vaughan**
January 13 · Twitter · 21

Recycling saves \$. Pls take the survey to help us improve our program.
Landfill COSTS \$44/ton Recycling PAYS \$30/ton <http://t.co/sNPIWvA0bB>

City of Greensboro, NC : City News : City Invites Residents to Take Recycling Survey

The City of Greensboro invites residents and businesses to complete a survey about recycling to help improve its recycling program. The 25-question survey seeks to learn why people do or don't recycle, if they know what items are recyclable in the City's program, and identify ways to encourage every...

GREENSBORO-NC.GOV

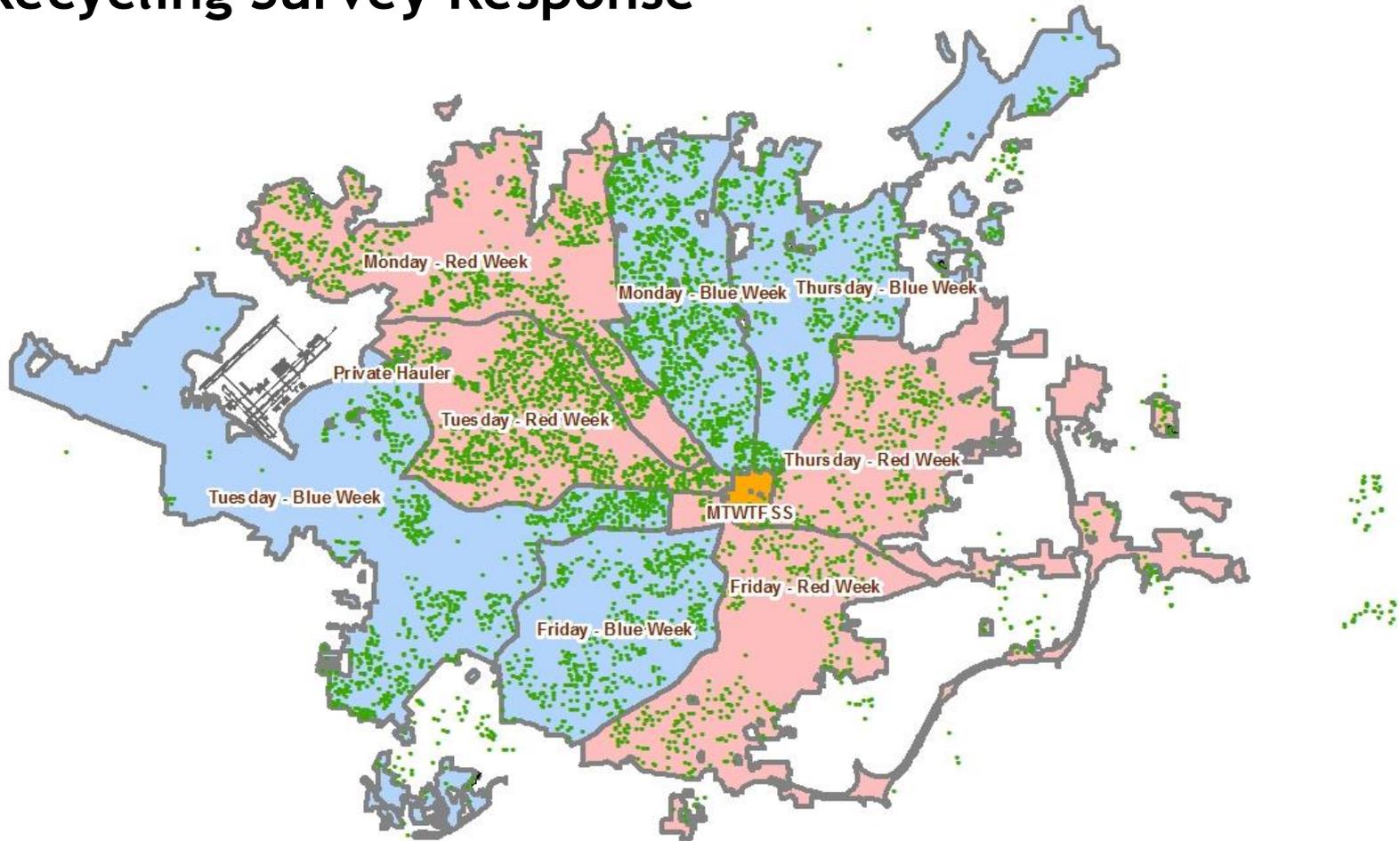
Like · Comment · Share · [@VaughanNancy on Twitter](#)

 31 people like this.

 [View 11 more comments](#)

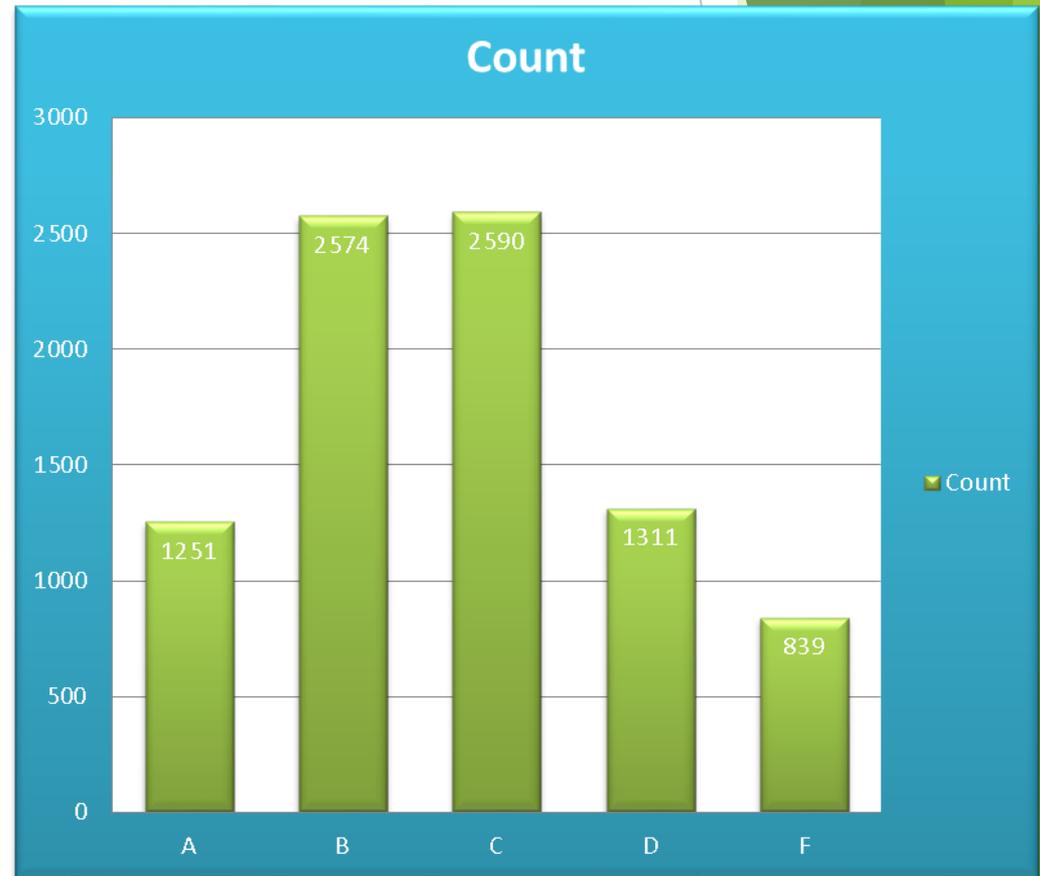
Response Map

Recycling Survey Response



Survey Results

- ▶ What's Acceptable "Quiz" Portion
- ▶ "C" Average Score
- ▶ Very few 100% correct



Material	Percent	Percent Correct	Grade
Cardboard	95.56%	95.56%	A
Glass Bottles	94.60%	94.60%	A
Newspaper, Magazines, Catalogs	94.54%	94.54%	A
Aluminum Cans	93.23%	93.23%	A
Chipboard (Cereal Boxes, etc)	86.57%	86.57%	B
Office and School Paper, Junk Mail	80.61%	80.61%	C
Steel/ Tin Cans	78.61%	78.61%	C
Milk & Juice Cartons	75.23%	75.23%	C
Plastics #3-7	72.73%	72.73%	D
Plastics #1-2	63.59%	63.59%	F
Pizza Boxes	59.94%	59.94%	F
Aluminum Foil & Pie Pans	52.93%	52.93%	F
Aerosol Cans (empty)	45.41%	45.41%	F
Plastic Bags	26.11%	73.89%	D
Paper Towels, Tissues	25.02%	74.98%	C
Styrofoam	20.23%	79.77%	C
Empty Motor Oil Bottles	8.92%	91.08%	B
Yard Waste	4.39%	95.61%	A
Tires, Rubber	3.54%	96.46%	A
Clothes	3.12%	96.88%	A
Food Waste	1.26%	98.74%	A
OVERALL		81.00%	C

Write-In Responses: Plastics

- ▶ “I continue to have problems deciding what plastic items are recyclable”
- ▶ “Maybe send out more info on the exact type of plastics that can be recycled”
- ▶ “What are plastics #1-7?”
- ▶ “Can we recycle 3-7 plastics? That would be awesome!”
- ▶ “...it gets confusing, first it was no yogurt containers, then they were permissible.”
- ▶ “I read conflicting recycling requirements with regards to plastics #3 and over”
- ▶ “Styrofoam isn’t recyclable, however egg cartons have a recycle symbol?”
- ▶ “The Coke [incentive program] promotion and my Mother-in-Law confused me about plastics #3-7.”

Old Guide



City of Greensboro **RECYCLING GUIDE**

IT'S EASY TO RECYCLE IN GREENSBORO! Recycle the items shown below in your brown recycling container. Items should be clean, empty and dry.



<p>ALL PLASTICS #1-7 (No plastic bags or foam cups/containers)</p>	<p>GLASS FOOD & BEVERAGE CONTAINERS</p>	<p>ALL CANS Aluminum, tin, steel & aerosol</p>	<p>MILK & JUICE CARTONS</p>	<p>RIGID PLASTICS Buckets, milk crates, laundry baskets, litter boxes, and plastic pallets</p>
				
<p>NEWSPAPERS, MAGAZINES & CATALOGS</p>	<p>OFFICE & SCHOOL PAPER AND JUNK MAIL</p>	<p>CARDBOARD (No waxed boxes)</p>	<p>CHIPBOARD</p>	<p>METAL POTS & PANS Aluminum foil & pie pans</p>
				

FOR MORE INFORMATION ON RECYCLING, **CALL 373-CITY (2489)** www.greensboro-nc.gov

New Guide



Greensboro Recycling Guide

Recycle the items below. They should be clean and dry. Rinse only if needed.

Recycle First. It Matters.



PAPER	PLASTIC	METAL	GLASS
<p>All Paper</p>	<p>All Bottles</p>	<p>Aluminum, Steel, Tin Cans, Aerosol Cans</p>	<p>All Jars</p>
<p>All Cardboard All Cartons</p>	<p>All Containers</p>	<p>Pots and Pans</p>	<p>All Bottles</p>
<p>Chipboard</p>	<p>All Jugs Large Plastic Items</p>	<p>Aluminum Foil, Pans, Trays</p>	<p>All Bottles</p>
<p>NO</p> <p>Paper Towels, Tissues, Diapers</p>	<p>NO</p> <p>Bags, Sheets, Styrofoam, Hoses</p>	<p>NO</p> <p>Cords, Auto Parts, Electronics</p>	<p>NO</p> <p>Mirrors, Windows, Dishware</p>

FOR MORE INFORMATION: 373-CITY (2489) • recycle@greensboro-nc.gov • www.greensboro-nc.gov/recycle

New Guide- Plastics Messaging

- “Plastic” Header
- All Bottles
 - “Top On” note
- All Jugs
- All Containers
- Large Plastic Items
- “NO” Items
 - Bags, Sheets, Styrofoam, Hoses

Greensboro Recycling Guide | Recycle First. It Matters. 

Recycle the items below. They should be clean and dry. Rinse only if needed.

PAPER	PLASTIC	METAL	GLASS
 All Paper	 TOP ON All Bottles	 TOP OFF Aluminum, Steel, Tin Cans, Aerosol Cans	 LID OFF All Jars
 All Cardboard All Cartons	 All Containers	 Pots and Pans	 All Bottles
 Chipboard	 All Jugs Large Plastic Items	 Aluminum Foil, Pans, Trays	 All Bottles
 NO Paper Towels, Tissues, Diapers	 NO Bags, Sheets, Styrofoam, Hoses	 NO Cords, Auto Parts, Electronics	 NO Mirrors, Windows, Dishware

FOR MORE INFORMATION: 373-CITY (2489) • recycle@greensboro-nc.gov • www.greensboro-nc.gov/recycle

Direct Mail

RECYCLING DROP-OFF LOCATIONS

Fire Station #2	5107 North Church St.
Fire Station #7	1064 Gatewood Ave.
Fire Station #14	3633 Summit Ave.
Fire Station #17	6405 Old Oak Ridge Rd.
Fire Station #19	6900 Downwind Rd.
Fire Station #20	8404 West Market St.
Fire Station #21	2870 Horse Pen Creek Rd.
Fire Station #41	4504 Lake Brandt Rd.
Fire Station #43	4854 Lake Jeanette Rd.
Fire Station #48	1400 West Vandalla Rd.
Fire Station #61	105 West Vandalla Rd.
Costco	4201 West Wendover Ave.
Gillespie Golf Course	306 East Florida St.
Grimsley High School	801 Westover Terrace
Guilford County Cooperative Extension Services	3309 Burlington Rd.
Hester Park	3615 Deutzia Street
Jaycee Park	3110 Forest Lawn Dr., off Pogah Church Rd.
Lindley Elementary School	2700 Camden Rd.
Smith High School	2407 South Holden Rd.
Windsor Community Center	1601 East Lee St.

CITY OF GREENSBORO FIELD OPERATIONS
401 FATTON AVENUE
GREENSBORO NC, 27406

PSRT STD
US POSTAGE
PAID
GREENSBORO NC
PERMIT NO. 72

<<OWNER>>
<<ADDRESS>>
<<MAILCITY>> <<MAILSTATE>> <<ZIP>>



Greensboro Recycling Guide



BLUE RECYCLING SCHEDULE

Your recycling and bulk items are collected every other week as shown below in BLUE.

During holiday weeks, collection days may change:

THURSDAY, JANUARY 1 - NEW YEAR'S DAY
Thursday collection is on Wednesday, December 31
Friday collection remains the same

MONDAY, JANUARY 19 - MLK JR. DAY
Monday collection is on Tuesday, January 20
Tuesday collection is on Wednesday, January 21

FRIDAY, APRIL 3 - GOOD FRIDAY
Thursday collection is on Wednesday, April 1
Friday collection is on Thursday, April 2

MONDAY, MAY 25 - MEMORIAL DAY
Monday collection is on Tuesday, May 26
Tuesday collection is on Wednesday, May 27

FRIDAY, JULY 3 - INDEPENDENCE DAY
Thursday collection is on Wednesday, July 1
Friday collection is on Thursday, July 2

MONDAY, SEPTEMBER 7 - LABOR DAY
Monday collection is on Tuesday, September 8
Tuesday collection is on Wednesday, September 9

THURSDAY, NOVEMBER 26 - THANKSGIVING
Thursday collection is on Wednesday, November 25
Friday collection remains the same

FRIDAY, DECEMBER 25 - CHRISTMAS
Thursday collection is on Wednesday, December 23
Friday collection is on Thursday, December 24

City of Greensboro Holidays

JANUARY 2015	FEBRUARY 2015	MARCH 2015	APRIL 2015
S M T W T F S 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
MAY 2015	JUNE 2015	JULY 2015	AUGUST 2015
S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
SEPTEMBER 2015	OCTOBER 2015	NOVEMBER 2015	DECEMBER 2015
S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Recycle First. It Matters.

FOR MORE INFORMATION:
373-CITY (2489) • recycle@greensboro-nc.gov
www.greensboro-nc.gov/recycle

PAPER	PLASTIC	METAL	GLASS
 All Paper	 All Bottles	 Aluminum, Steel, Tin Cans, Aerosol Cans	 All Jars
 All Cardboard All Cartons	 All Containers	 Pots and Pans	 All Bottles
 Chipboard	 All Jugs Large Plastic Items	 Aluminum Foil, Pans, Trays	 All Bottles
 Paper Towels, Tissues, Diapers	 Bags, Sheets, Styrofoam, Hoses	 Cords, Auto Parts, Electronics	 Mirrors, Windows, Dishware

Items should be empty and dry. Give a quick rinse only if needed, then put in your brown recycling container.

www.greensboro-nc.gov/recycle

Recycle First. It Matters.

GLASS METAL PLASTIC PAPER

Questions?

Alex Arnett

Alex.arnett@greensboro-nc.gov

336-373-2342 (office)

336-937-2565 (cell)

Twitter: @gsogogreen