

# MULTI-FAMILY RECYCLING REPORT

City of Norcross



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Thank you to those who contributed to this report.

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# EXECUTIVE SUMMARY

Nearly one-third of housing stock in the City of Norcross is concentrated in multi-family apartment complexes, where recycling is not offered to residents. As the City considers modifying the scope of its residential recycling program, better intelligence on this large segment of the community and waste stream is critical to increasing diversion rates. This report is an effort to explore multi-family apartment complex recycling opportunities in Norcross through evaluation, stakeholder engagement and research-driven concepts, as well as regional practice reviews. The analysis includes an assessment that considers a variety of tools such as incentive programs, regulatory schemes and more, to understand the value and impact such a program would have on the community and its sustainability efforts.

This report finds that not only do multi-family residents have a desire to participate in a program if implemented, but they also have natural propensity for recycling. If the City is prepared to divert material from the waste stream of the multi-family properties it must seek out a resolution soon while interest from tenants and City Officials is high. Implementing an initiative alongside a proper education and awareness program is critical to reaching the target of reducing multi-family waste by any measure.



# GOALS

By understanding and removing barriers to recycling among multi-family apartment owners and tenants, Norcross would take significant steps forward in engaging lower-wealth and non-native English-speaking residents around sustainability issues. Successful development and implementation of a multi-family recycling initiative could significantly reduce the tonnage of waste flowing to local landfills, reduce litter and stream pollution in communities, and result in new relationships in the community to build on other sustainability efforts.

The City of Norcross should consider establishing target goals for reducing waste. This activity would first require a baseline measurement. An example of a multi-family baseline measurement is provided below, though this target would not capture total trash and recycling outputs for the entire city. Some suggested target goals are listed below:

- 1. Reduce amount of waste going directly to landfills from multi-family residences**
  - a. 2020 goal to reduce 15% of multi-family waste to landfill
  - b. 2025 goal to reduce 40% of multi-family waste to landfill
- 2. Develop an awareness and education program that encourages multi-family residents to utilize alternative disposal sources**
  - a. Such a program would require a multi-lingual approach given the diversity of the City
- 3. Promote and cultivate environmental stewardship mindset and behavior in residents and owners**
  - a. Partner with local non-profits to establish community-driven programs
  - b. Collaborate with local schools to integrate waste diversion and sustainability into K-12 curriculum
- 4. Build on current efforts in the City that foster sustainability**

The Mayor, City Manager, Director of Public Works, and Parks and Utilities are all in favor of exploring the expansion of recycling in the City and the integration of equity measures in the City's overall sustainability efforts. They support assessment of the opportunities to create a robust multi-family recycling initiative with local partners such as Gwinnett Clean and Beautiful, Gwinnett Recycles, the Sustainable Norcross Commission, the Latin American Association, and others.



# WHY RECYCLE

## WHY RECYCLING MATTERS

There are numerous benefits to recycling, all of which promote environmental stewardship, community sustainability and even economic opportunities. According to the most recent Environmental Protection Agency (EPA) estimates, Americans are sending nearly 254 million tons of waste to landfills annually, but much of this waste could be put to greater use.<sup>1</sup> Though collection practices vary across the country, there is ample opportunity to implement recycling efforts at a community level to divert unnecessary waste from ending up in local landfills. Materials used to produce the products we dispose of often come from raw materials extracted from natural and finite resources. A significant amount of product material used by consumers—up to 75% per the EPA<sup>2</sup>—has the ability to be recycled and used again for other products, which can limit the extraction of those raw materials. This reduces the amount of emissions and pollutants released during resource extraction, slows the rate of climate change, and conserves valuable resources for future generations.

Furthermore, landfills have a lifespan that is greatly determined by how much waste they can hold. Keeping recyclable material out of the waste streams headed for landfills supports longer lifespans for these sites and reduces the number of new landfills in the future. With the U.S. population expected to grow to nearly 400 million people by 2051,<sup>3</sup> and Gwinnett County expected to be the state's most populous region a decade before that date,<sup>4</sup> the amount of trash will increase. The opportunity to proactively expand recycling operations should be seriously considered to temper the environmental effects of this drastic increase in waste.



<sup>1</sup> EPA. (2017). Municipal Solid Waste. <https://archive.epa.gov/epawaste/nonhaz/municipal/web/html/>

<sup>2</sup> Dosomething.org. "11 Facts about Recycling" <https://www.dosomething.org/us/facts/11-facts-about-recycling>

<sup>3</sup> Colby, S. L., & Ortman, J. M. (2015). Projections of the size and composition of the US population: 2014 to 2060. *US Census Bureau*, 9.

<sup>4</sup> Estep, T. (2016). *The Atlanta Journal Constitution*. <https://www.ajc.com/news/local/what-georgia-county-will-have-the-most-people-2040-hint-not-fulton/CokXMmMP8nK6Qf7B7MhXpO/>

## REFRAMING “RECYCLING”

A unique and novel concept around the labeling of recycling has been widely adopted across the country in several successful programs and this is the idea of “Resource Renewal”. This concept has been adopted by states like California and Wisconsin, organizations like GreenCare<sup>5</sup> and even Apple Inc., among many more. This closed-loop concept first arose around the globe with a shift in mindsets around water treatment and management and natural resource conservation, and has since been slowly integrated into recycling programs as all the products that we consume come from natural resources. In fact, professionals have been identifying opportunities for resource renewal for decades,<sup>6,7</sup> in the waste stream that can be used for future products. This frame of thought can further embed a sustainable mindset at a community level, encouraging continued and further actions towards environmental stewardship. The City of Norcross should consider this or a similar label (e.g., Keep Norcross Beautiful”) when implementing recycling programs. Logos and images could be developed through a local contest of Norcross residents, or through the local school system so that children are involved in the process, establishing ownership among younger generations.

# REGIONAL PRACTICES

## CITY OF ATLANTA

The City of Atlanta has had several waste reduction programs over the years that cater to single-family residential, multi-family, and businesses. CARTLANTA (an organization that ensures residents have the means and information to effectively participate in recycling) provides a 96-gallon cart for curbside service pickup for single-family and multi-family (no more than 5 units) homes. This program has been successful in both participation and education of the city residents. The City also has implemented recycling contamination reduction programs such as “Feet on the Street,” a pilot campaign last summer funded by a non-profit organization known as The

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<sup>5</sup> GreenCare Community (2018). <https://bcgreencare.ca/program/recycling-renewal-program>

<sup>6</sup> Leshner, R. (1974). Resource Recovery from Solid Waste in the Future. *Ambio*, 156-160.

<sup>7</sup> Wilson, D. C. (1979). The efficiency of resource recovery from solid waste. *Resource Recovery and Conservation*, 4(2), 161-188.

Recycling Partnership that reduced recycling contamination rates by 57%.<sup>8,9</sup> The City also provides a tri-weekly recycling day, where residents can come to drop-off materials. Another city drop-off is known as CHaRM (Center for Hard to Recycle Materials), which provides an opportunity for residents to not only drop off traditional recyclable materials but also those that are considered difficult, such as paint, carpets, and varieties of large metals (e.g., bed springs, bike frames, etc.).

The City of Atlanta offers numerous opportunities for its residents to recycle, even when it comes to major multi-family residential areas. Just as other local municipalities have adopted, in 2008 Atlanta implemented a mandatory ordinance (City of Atlanta Code Section 130-38) that directs property owners and managers of multi-family residences with more than 6 units, to provide recycling containers for their tenants. The capacity requirement was determined to be a minimum of three-gallons per number of living units. The properties are given freedom to contract with haulers that meet their price standards; however, they must at least provide recycling options for the following: paper, containers, newspapers, cardboard, and aluminum cans. As a means for tracking, the property owners are required to report their recycling tonnage to the City via an online database.<sup>10</sup>

#### Takeaways:

Through positive encouragement and facilitation, the City of Atlanta's ordinance has been successful in its attempts to provide recycling opportunities for all communities. This required building interest in the community through education, awareness programs, partnerships, and collaborations.

## **CITY OF DECATUR**

The City of Decatur has had an ordinance (Ch. 82-1) in place which mandates multi-family recycling since December of 2007.<sup>11</sup> The Sanitation Department in the City is unique, as it is deemed an enterprise, allowing commercial and industrial spaces to shop around for preferred prices in trash and recycling services. Furthermore, the ordinance established indicates that multi-family recycling *must* provide options for a minimum of four (4) materials (listed in Table 1) and that any other items will be considered by the City on case-by-case basis, and that separation of materials must be agreed upon with hauler services.

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<sup>8</sup> City of Atlanta (2018). <https://www.atlantaga.gov/Home/Components/News/News/6056/1338>

<sup>9</sup> Rosengren, C. (2018). Waste Dive. <https://www.wastedive.com/news/recycling-partnership-results-pilot-cities-denver-atlanta-chicago/518303/>

<sup>10</sup> City of Atlanta (2018). <https://www.atlantaga.gov/government/departments/public-works/recycling-program/multi-family-recycling>

<sup>11</sup> Decatur, Georgia, Municipal Code § 82-1.

[https://library.municode.com/ga/decaturn/codes/code\\_of\\_ordinances?nodeId=PTIIIICOOOR\\_CH82SOWA](https://library.municode.com/ga/decaturn/codes/code_of_ordinances?nodeId=PTIIIICOOOR_CH82SOWA)



<b>Types of acceptable recycling materials for City of Decatur Multi-Family Residences (owners must provide minimum of 4 materials)</b>
Steel cans (vegetable, soup, beans, cat food, etc.)
Aluminum cans
Glass bottles (any color)
Newspapers
Magazines
Cardboard
Junk mails and catalogs
White milk jugs
Clear and green plastic soda and water bottles
Chipboard (cereal boxes, six pack containers, shoe boxes, etc.)
All PET or No. 1 plastic containers
All HDPE or No. 1 plastic containers (black planting trays, black plastic flower pots, bleach bottles, yellow plastic milk cartons, etc.)

*Table 1: Acceptable Recycling Materials (City of Decatur)*

Primary providers for recycling services in the City are Lantham Home Sanitation and Green Waste Management, though other service providers may be utilized. Lantham accepts co-mingled materials, and then transports them to separate locations after retrieved, an activity which is not common place amongst recycling services in the state of Georgia. Co-mingled recycling is taken to Pratt Industries Recycling in Conyers, Georgia, and glass is then taken to Strategic Materials in Atlanta.

Takeaways:

The City of Decatur has indicated that the ordinance has been widely successful since its inception in 2007 and has been able to divert significant portions of waste from multi-family residences once going to landfills to resource recovery centers for second-life generation and use.

# BARRIERS

## Open bins

Having open container bins can allow for illegal dumping, or contamination of the recyclable contents. It is important that property managers provide not only adequate, accessible and marked recycling containers, but ensure that they are secured and not available for random items to be discarded. Such a measure would be to place behind an enclosed fence. This would require working with the contracted hauler to understand their concerns and limitations (locking mechanisms versus latched doors, etc.), as well as the size of the container. Should a dumpster be provided over carts, this would require a different approach.

## No Space in Homes/Properties

Apartment residences often have very limited or no outdoor storage access to store extra materials, such as recyclables. It is often a concern that tenants will not recycle due to this factor. However, this report has found evidence from many actors that this is an easily overcome issue.

- 1) *The survey (see page 20) asked the opinion of tenants if they have space in their homes for recyclable materials. Over 50% of the tenants indicated that they do have space.*
- 2) *Athens-Clarke County addresses this barrier by providing ‘Green Bags’ to residents of multi-family properties. These reusable tote bags provide instructions about recycling and are designed to store recycling items that can then easily be transported to a container or to a drop-off location.<sup>12</sup>*

## Language

Language barriers can impede the effectiveness of any program, which is why it is critical to ensure that communications and educational materials are translated into languages spoken by residents. The survey (see page 22) assessed the primary language spoken in the households of the respondents, to learn that nearly 70% of the apartment complex households primarily speak Spanish. To this end, communications in Spanish should be considered a high priority.

## Management Burdens

Management will need to allocate time to organizing hauler logistics. This will require communicating with the hauler on pickup procedures,

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<sup>12</sup> Athens-Clarke County, Recycling & Waste Reduction  
<https://www.athensclarkecounty.com/209/Recycling-Waste-Reduction>

container type and location, as well as tenant education and communication. This task should be relatively easy, but will depend on how the City chooses to implement a program, i.e., single- or multi-hauler networks.

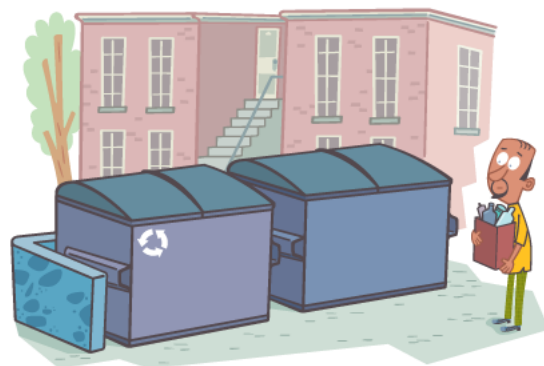
### Education

Though for some, recycling can seem like a very natural task, many others may not be familiar with it and may need some early guidance and information on how to best participate. Though over 56% of local tenants claimed familiarity with recycling, it would be wise for the City to build on current educational efforts at the apartment level, if not across the entire community, on best recycling practices, as well as initially assist property managers with distributing educational materials.

### Contamination

An item of major concern is that of contamination, the mixing of trash and recycling, or other materials not appropriate for a given recycling program which can interfere with the recycling process, being discarded in recycling bins. Mechanisms for stopping this action can include:

- 1) *Education: have property managers distribute flyers about contamination an acceptable versus non-acceptable items*
- 2) *Volunteers: properties can enlist community volunteers to help spread the word and keeping recycling containers free of contamination*
- 3) *Access: Keeping recycling and waste bins near each other provides greater convenience for tenants to dispose of materials properly*



# COMMUNITY

## APARTMENT COMPLEXES

The City of Norcross has seven apartment complexes within its incorporated limits (detailed to the right), with a total of 1,502 units. Preliminary estimates (only considering August 2017 waste invoices) demonstrate that in aggregate these apartments send nearly 224 tons of waste to landfills each month; this averages to more than 447,000 pounds of waste per month from each complex. Though these apartments do not equally contribute to this total, as the number of units and tenants varies greatly, these numbers illustrate a significant opportunity to divert recyclable refuse out of the Norcross waste stream.

Below, Table 2 demonstrates the invoice details for each apartment's waste costs. These figures vary by apartment due to the number of tenants, containers, pick-ups, weights, and more. Apartments may pay anywhere from a few hundred dollars to more than \$10,000 for garbage-only services. Additionally, it is not always the larger communities that have more waste. In the City, the third largest multi-family complex produces one-third more than the largest community. On the next page Figure 1 depicts each individual apartment by waste tonnage totals (in blue) and also the per unit waste totals (in orange).

### KRC Hilltops

- 395 Units
- Built in 1973

### Spring Lake

- 380 Units
- Built in 1987

### Bella

- 318 Units
- Built in 1972

### Stanford Village

- 135 Units
- Built in 1985

### Meadowood

- 113 Units
- Built in 1982

### Audubon Creek

- 100 Units
- Built in 1981

### Waverly Manor

- 61 Units
- Built in 1973

Apartment Name	Number of Units	Open Top Tonnage	Compactors Tonnage	Front Load Dumpster Tonnage <sup>13</sup>	Total Tonnage
KRC Hill Tops	395	13.8	59.4		73.2
Spring Lake Apartments	380	36.61			36.61
Bella Apartments	318	19.65	75.83	4.8	100.28
Stanford Village Apartments	135			3.2	3.2
Meadowood Apartments	113			4.8	4.8
Audubon Creek Apartments	100	1		3.2	4.2
Waverly Manor Townhomes	61			1.6	1.6

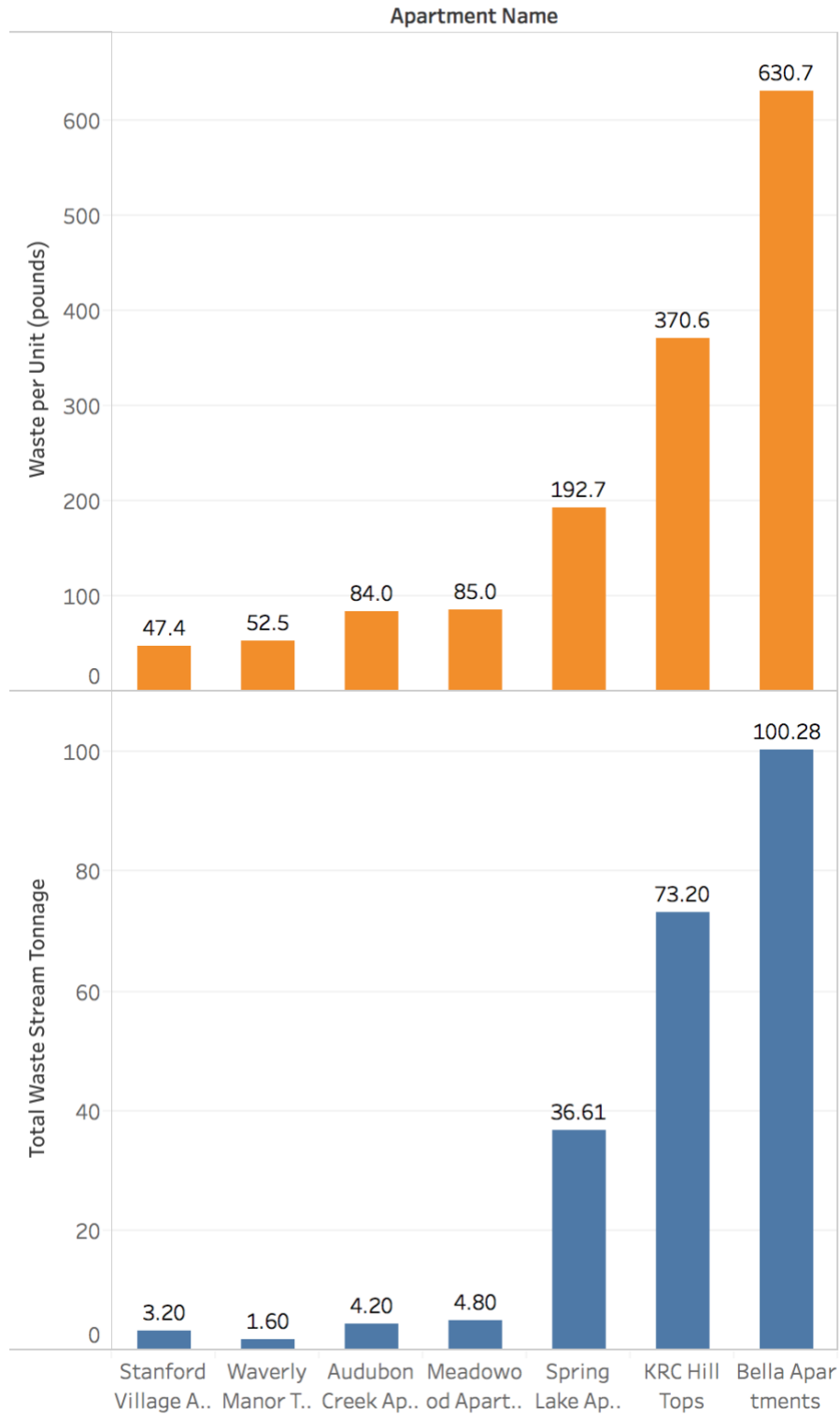
Table 2: Estimated Average Monthly Trash<sup>14</sup>

<sup>13</sup> Estimates for front load dumpsters assumes max capacity: 8 yard = 800lbs; 6 yard = 600lbs

<sup>14</sup> Estimates derived from single month, August 2017

Figure 1: Norcross Apartment Waste Totals

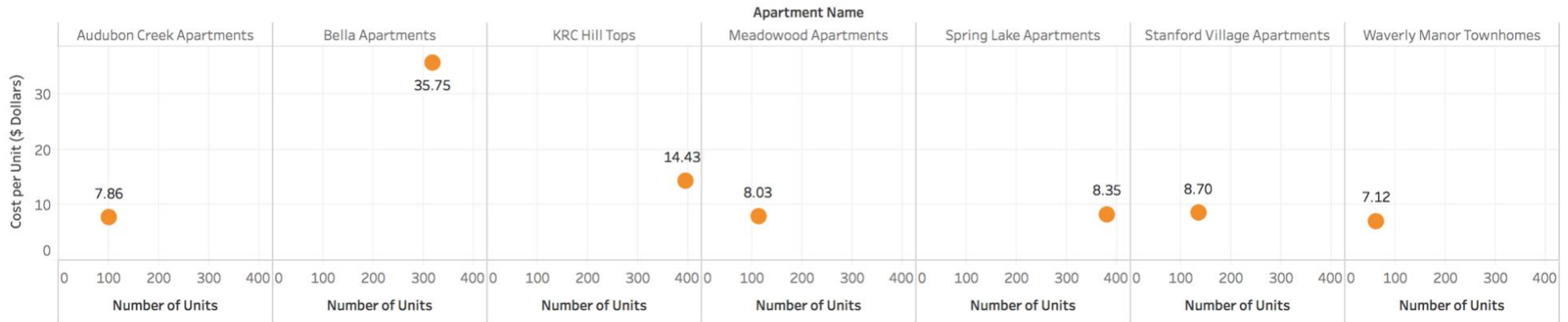
### City of Norcross Apartment Waste Totals (August 2017)



Data points represent single month observations from August 2017

Figure 2: Norcross Apartment per Unit Cost of Waste

City of Norcross Apartment per Unit Cost of Waste Disposal



Data points represent single month observations from August 2017

Figure 2, above, shows the cost per unit for each multi-family complex. The burden of cost is higher for some tenants than it is for others, regardless of number of units. It should be noted that unit costs do not account for unfilled living spaces, so costs may be higher if tenant rates are lower at any of the given apartment properties.

If the City of Norcross does not act by implementing any recycling program at these multi-family locations, their citizens will continue to be unfairly charged for waste disposal, a situation that is not present in single-family residences that already enjoy the benefits of having a recycling program. It is the responsibility of the City to ensure that members of the community are given fair and equal opportunities.



## DIVERSITY, LANGUAGE, AND REPRESENTATION

Current estimates from the U.S. Census Bureau indicate that there are 16,787 residents in the City of Norcross, of which 46.7% are of Hispanic origin.<sup>15</sup> The number of black or African American is 18.8%, while white, Asian, and other populations make up the remaining population. In 2015, researchers from the Georgia Institute of Technology conducted a collaborative research report specifically for the City of Norcross, “Planning for Immigrant Integration” and learned that of the population in Norcross, 47% were foreign born and come from distinctively different places around the globe: Mexico 38%; Guatemala 12%; Vietnam 11%; India 8%; Bangladesh 5%.<sup>16</sup> This demonstrates the significant heterogeneous makeup of the community. Though a highly diverse community, there exists a gap of representation and community relationship fostering. Both are frameworks which City officials are working to advance.

As often found in any ethnically diverse community, language barriers can often impede processes and make access to basic services challenging, thus leading to a lesser quality of life. In the Planning for Immigrant Integration report it is indicated that 63% of the residents in the city speak a foreign language and that survey respondents desired more government officials who could speak alternative languages. More so, the City of Norcross recognized these language barriers in the 2017-2019 Sustainability Plan and have identified it as a recommended action item in the City of Norcross 2030 Comprehensive Plan to address code enforcement issues via the role of Community Engagement Coordinator.<sup>17</sup> As indicated in the Planning for Immigrant Immigration report, immigrant communities suffer disparities in government representation, entrepreneurship, and education.

Serving as a preface for the number complex assortments that challenges the City, it can be better understood how a multi-family recycling program may be valued. Given the number of factors that may hinder communication and desires for an opportunity to recycle refuse materials at these locations, it becomes the responsibility of the City to seek out and gather input on the values that residents place on recycling. From some introductory conversations with community members residing in these multi-family complexes, it was conveyed that it is very desirable to recycle, as this practice is an un-mandated standard in their cultures back home. Further, survey results demonstrate that 51% of those who have a country of origin other than the United States commonly practiced recycling in that country.

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<sup>15</sup> U.S. Census Bureau. (2017). American Fact Finder, City of Norcross, Georgia. [https://factfinder.census.gov/faces/nav/jsf/pages/community\\_facts.xhtml?src=bkmk](https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmk)

<sup>16</sup> Kim, Anna Joo, Katie O’Connell, Jessica Doyle, Kate Wilson, Jessica Plante, Ryan Bowman, Madi Shields, Eileen Chang, Kristin Byars, John Eric Schleicher, Nathan Coursey. *Imagine Our Norcross: Planning for Immigrant Integration*. Atlanta: School of City and Regional Planning, Georgia Institute of Technology, 2015. [https://planning.gatech.edu/sites/default/files/images/kim\\_norcross\\_immigration\\_studio\\_pub.pdf](https://planning.gatech.edu/sites/default/files/images/kim_norcross_immigration_studio_pub.pdf)

<sup>17</sup> City of Norcross, 2030 Comprehensive Plan. <http://www.norcrossga.net/DocumentCenter/View/211>



# SURVEY

As part of this project, a bilingual survey was conducted from November 2017 to January 2018 to understand various factors such as demographics, language barriers, recycling knowledge and propensity to recycle at home. Initially, two surveys were designed with nearly identical questions. The first was developed for City of Norcross students to take home, coordinated with respective Language Liaisons, where parents would fill out and the students would return them. This activity yielded no responses. The second was a door-to-door survey where team members, with the assistance of local volunteers, contacted tenants at 5 of the 7 apartment complexes. The results of the survey are discussed below.

## Respondents:

	APARTMENTS	PERCENTAGE	COUNT
1	KRC Hilltops	21.95	18
2	Spring Lake Apartments	12.20	10
3	Bella Apartments	26.83	22
4	Stanford Village Apartments	17.07	14
5	Meadowood Apartments	21.95	18
6	Audubon Creek Apartments	0.00	0
7	Waverly Manor Townhomes	0.00	0
	<b>TOTAL</b>	<b>100.00</b>	<b>82</b>

Table 3: Survey Respondent Count

## Recycling Knowledge:

Tenants were asked the following question (Q3 of the survey) to determine whether or not they were familiar with the practice of recycling. Some tenants (14%) claimed no knowledge at all, while 56% of tenants declared that they were very familiar with the practice. Figure 3, Tenant Familiarity with Recycling by Apartment, provides a breakdown of familiarity by apartment, while Figure 4, Distribution of Tenant Familiarity with Recycling, shows tenant familiarity breakdown by apartment complex. As shown, a significant portion of the tenants at Bella Apartments and Meadowood Apartments show familiarity.

**“Recycling is the practice of separating materials like paper, plastic, cardboard, and metal from your household’s trash. On a scale from 1 to 4, how familiar are you with recycling? One means not familiar at all and 4 means very familiar.”**

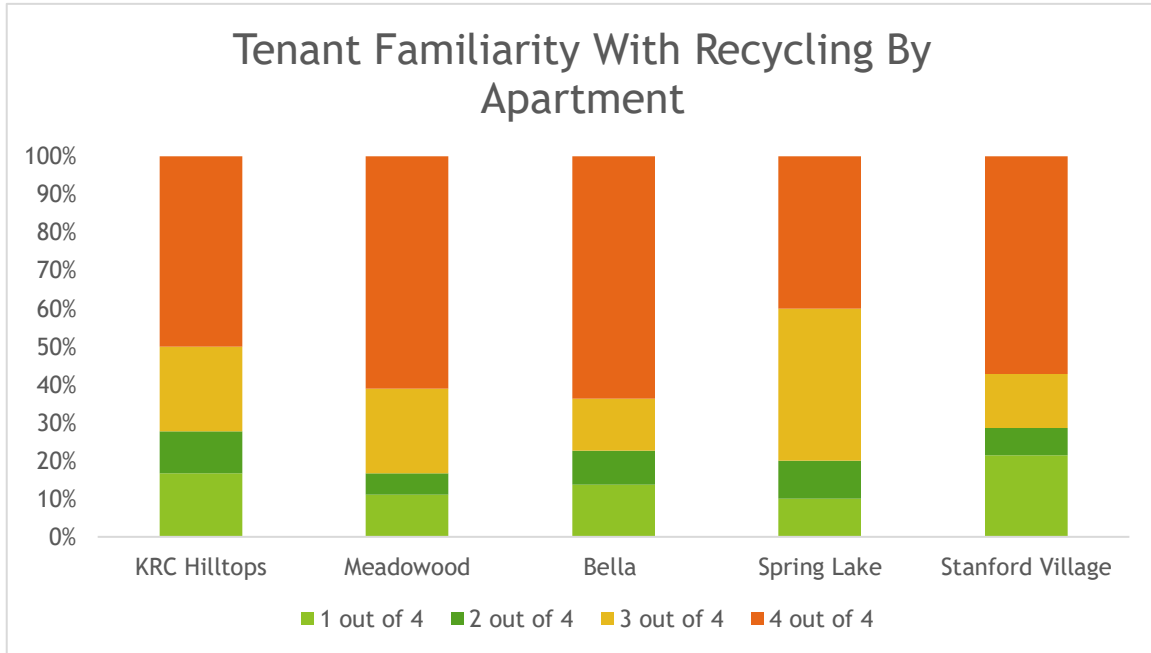


Figure 3: Tenant Familiarity with Recycling by Apartment

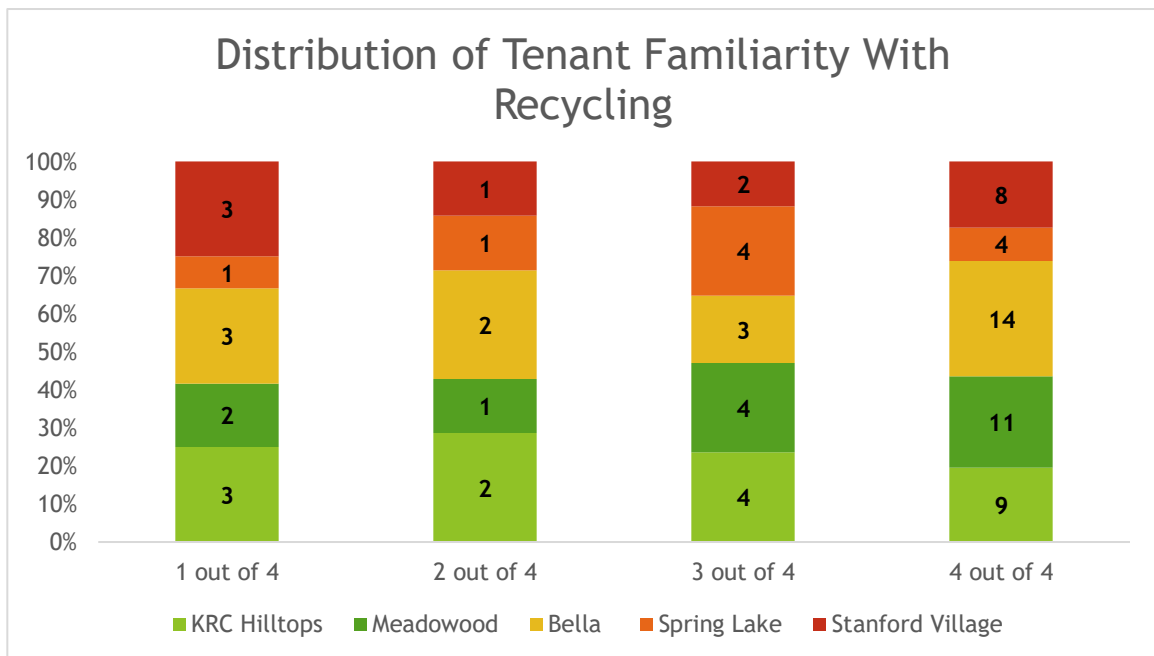


Figure 4: Distribution of Tenant Familiarity with Recycling

## Recycling Activity:

Gauging whether or not tenants have a propensity for recycling, they were asked the following question (Q4 in the survey).

***“At any time within the past year, have you recycled at home?”***

Of the 82 responses, nearly 31% stated that they did in fact recycle at their current residence. Though their apartment complexes do not offer any recycling services, these tenants still make the effort to collect and transport their recyclable materials to containers provided elsewhere (e.g., City Works locations, grocery store drop-offs, or local businesses). The other nearly 70% do not currently recycle.

The respondents were then asked the following question (Q5 of the survey) to understand whether, if provided the opportunity, they would recycle.

***“If your apartment complex provided recycling containers and gave you information on which items can be recycled, on a scale from 1 to 4, how likely would you be to recycle at home? One is ‘I would not recycle,’ and 4 is ‘I would definitely recycle.’”***

An overwhelming 80% of the tenants surveyed stated that they “would definitely recycle” if their apartment provided recycling containers. Less than 5% indicated that they would not recycle. Figure 5, Tenant Likelihood of Recycling if Offered by Apartment, demonstrates the tenants by communities that would take advantage of recycling opportunities if given the containers to dispose of materials. Figure 6, Distribution of Tenant Likelihood of Recycling if Offered, depicts the likelihood of adoption, if provided the opportunity, by apartment complex. Nearly all apartments showcase a willingness to recycle if given the convenient opportunity to do so.

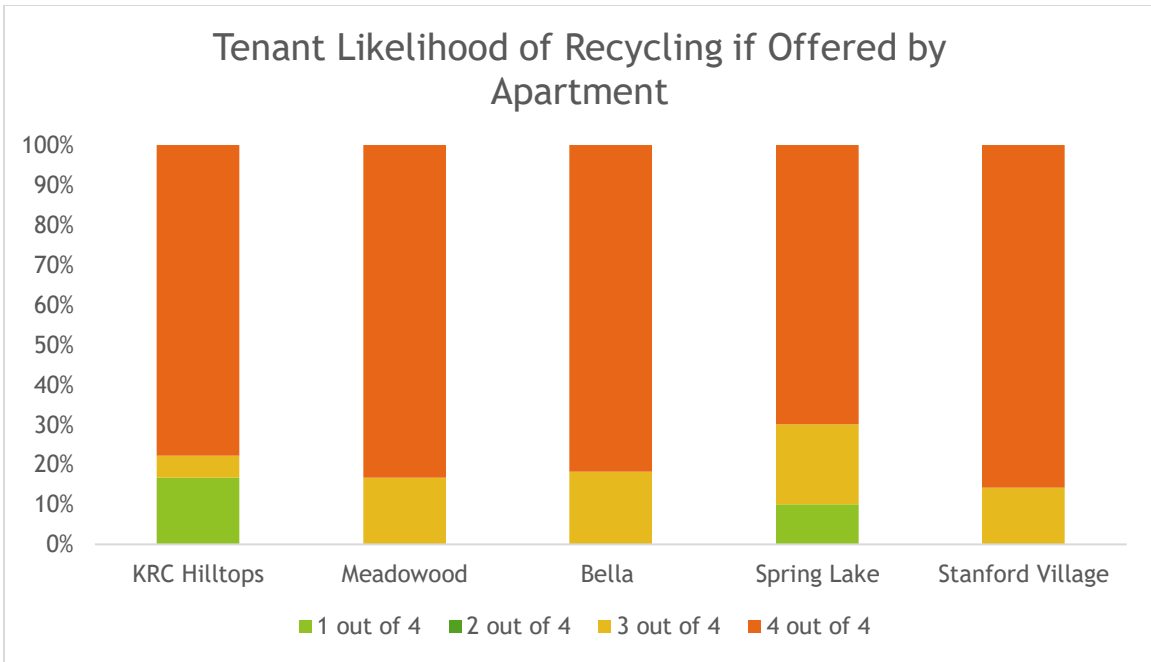


Figure 5: Tenant Likelihood of Recycling if Offered by Apartment

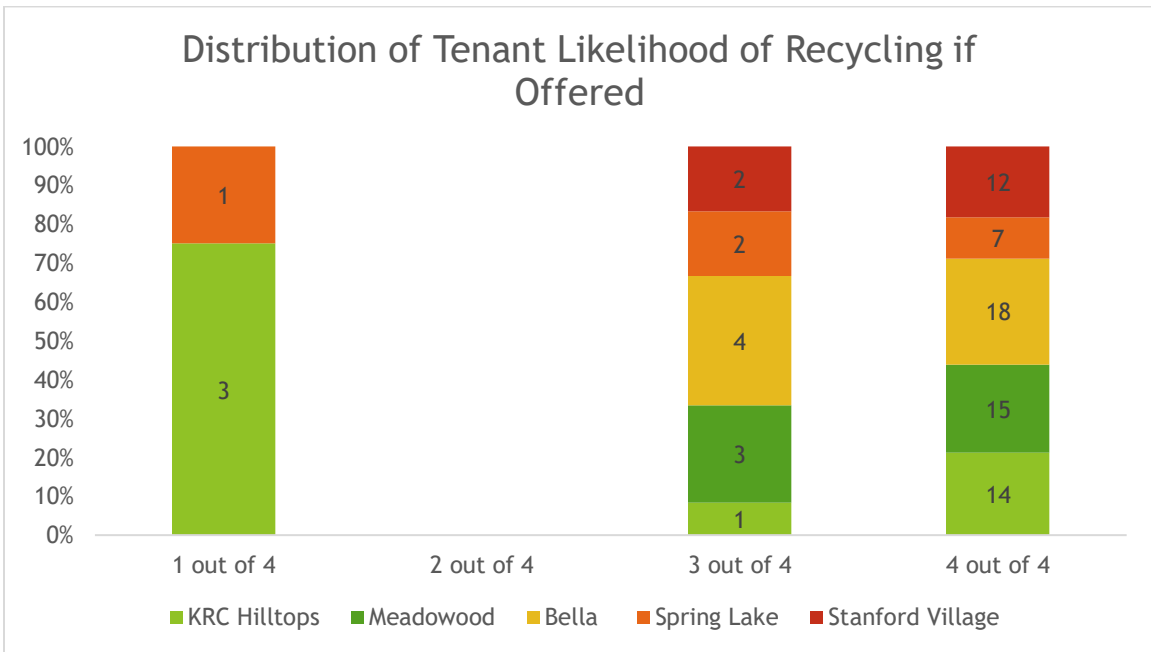


Figure 6: Distribution of Tenant Likelihood of Recycling if Offered

**“Hopefully they add recycling here. I would love it if they did.”**  
 ~ Stanford Village Resident

Further questions (Q8 in the survey) were posed to the tenants about their current recycling practices, if any. Table 4 shows that most tenants do not take items to drop-off locations or attend City recycling events. However, nearly all tenants make an effort to donate clothing or household items. When asked, tenants state that they bring to thrift stores, Goodwill locations, or even directly to other community members that may need the items. This demonstrates a strong sense of community and willingness to assist others, as well as an understanding that their household materials have reuse value.



#	Question	Yes (%)	Yes (#)	No (%)	No (#)	Total
1	Recycle items like magazines, water bottles, cardboard boxes, or cans at a drop-off location	29.63	24	70.37	57	81
2	Recycle plastic bags at the store	40.24	33	59.76	49	82
3	Recycle electronic items like computers, televisions, or cell phones at events	26.83	22	73.17	60	82
4	Shred paper at recycling events	31.71	26	68.29	56	82
5	Reduce the amount of waste in your household by buying items with less packaging, buying in bulk, or buying used items instead of new	53.09	43	46.91	38	81
6	Donate used clothing, furniture, or household items instead of throwing them away	91.46	75	8.54	7	82

Table 4: Survey Question #8 Response Breakdown

## Recycling Attribute Questions:

The following set of sub-questions (Q6 in the survey) seek to understand basic behaviors and values of the tenants for recycling. Tenants were asked yes or no questions to understand capacity, time, value and more. See Table 5 for result breakdown.

The results of the first question are concerning and affirm the need for apartment-level education on recycling, as 47% of tenants indicated that they can currently recycle in their community. Upon further discussion, it was learned that while some tenants do in fact take their recycling to drop-off locations (also learned by Q4), many tenants assumed that their apartment complex offered recycling opportunities (even though they do not). To this end, it will be imperative that any program that is put into place provide educational material on recycling practices to ensure that tenants are aware of what, where and how to recycle materials.

Another question of high importance is number four, “I have space in my home to store items for recycling.” This question assesses the degree to which storage would be a barrier to recycling participation. Forty seven percent of residents stated that they do not have space to store items for recycling. This answer may depend on the type of unit they live in (square footage, row-style, floor). Also, tenants indicated that even though they do not have the space, if recycling containers were placed nearby they would not hesitate to remove items from their household more often. Lastly, practices of distributing recycling bags, such as those found in Athens-Clarke County, may encourage tenants to behave differently. This structural barrier must be considered when implementing any program.

“Recycling is very important to me. I think about the ocean, the lakes and the lands. We all need to come together to protect them.”  
~ Spring Lake Apartments Resident

Other questions saw an overwhelming yes response, indicating that tenants are confident in how to recycle, they have the time, they find it to be good example setting for children and even value the environmental impacts.

#	Question	Yes (%)	Yes (#)	No (%)	No (#)	Total
1	I am currently able to recycle in my community	47.56	39	52.44	43	82
2	I am confident that I know which items can be recycled and which are trash	92.59	75	7.41	6	81
3	I have time to recycle	95.12	78	4.88	4	82
4	I have space in my home to store items for recycling	52.44	43	47.56	39	82
5	I believe recycling is worthwhile	100.00	82	0.00	0	82
6	It is important to me that recycling preserves natural resources	100.00	82	0.00	0	82
7	It is important to me that recycling reduces litter	100.00	82	0.00	0	82
8	It is important to me that recycling saves space in landfills	97.56	80	2.44	2	82
9	It is important to me that recycling helps the economy	96.34	79	3.66	3	82
10	It is important to me that by recycling, I can be a good example for children	100.00	81	0.00	0	81

Table 5: Survey Question #6 Response Breakdown

**“I don’t do these things because I don’t know about them. I never hear about City recycling events but would like to participate.”**

**~ Spanish-speaking Meadowoods Apartment Resident**

**Ethnicity:**

The final questions of the survey (Q10, Q11, Q14, & Q15 in the survey) ask which ethnicity the tenants identify with, the primary language spoken in

their household, and whether or not recycling is a common practice in their country of origin. These questions were posed in order to understand whether or not an ethnic group has a propensity for recycling or not and if language barriers are to be a concern. More importantly though, is that it may be a common misconception that those who originate from another country do not have knowledge of, or interest in, recycling.

*“What ethnic group do you identify with? Are you Caucasian, Hispanic/Latino, Black/African American, Asian, or of some other ethnic or racial background?”*

While Table 6 shows the numeric breakdown, in Figures 7 and 8 the breakdown of tenants by ethnic group and by apartment is viewable, as well as the distribution of ethnic groups across apartments. This question allows insight into what types of ethnic groups are living in the apartment complexes.

<b>Ethnicity</b>	<b>%</b>	<b>Count</b>
Caucasian	10.13	8
Hispanic/Latino	72.15	57
Black/African American	15.19	12
Asian	0.00	0
Other	2.53	2
<b>Total</b>	<b>100.00</b>	<b>79</b>

Table 6: Ethnicity Breakdown per Survey Results

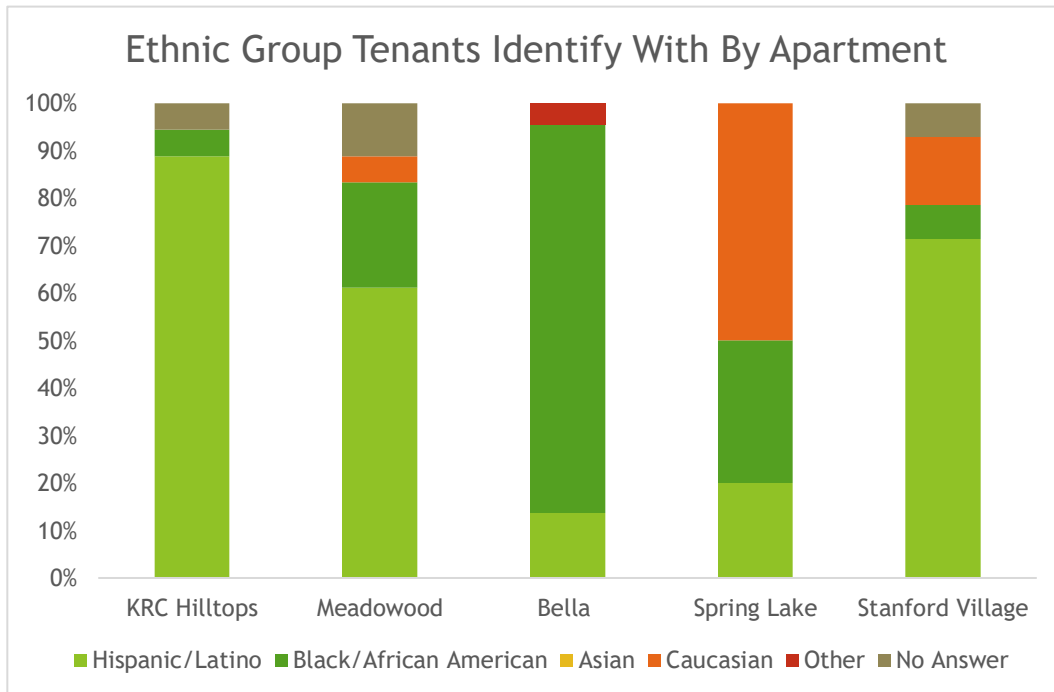


Figure 7: Ethnic Group Tenants Identify with by Apartment



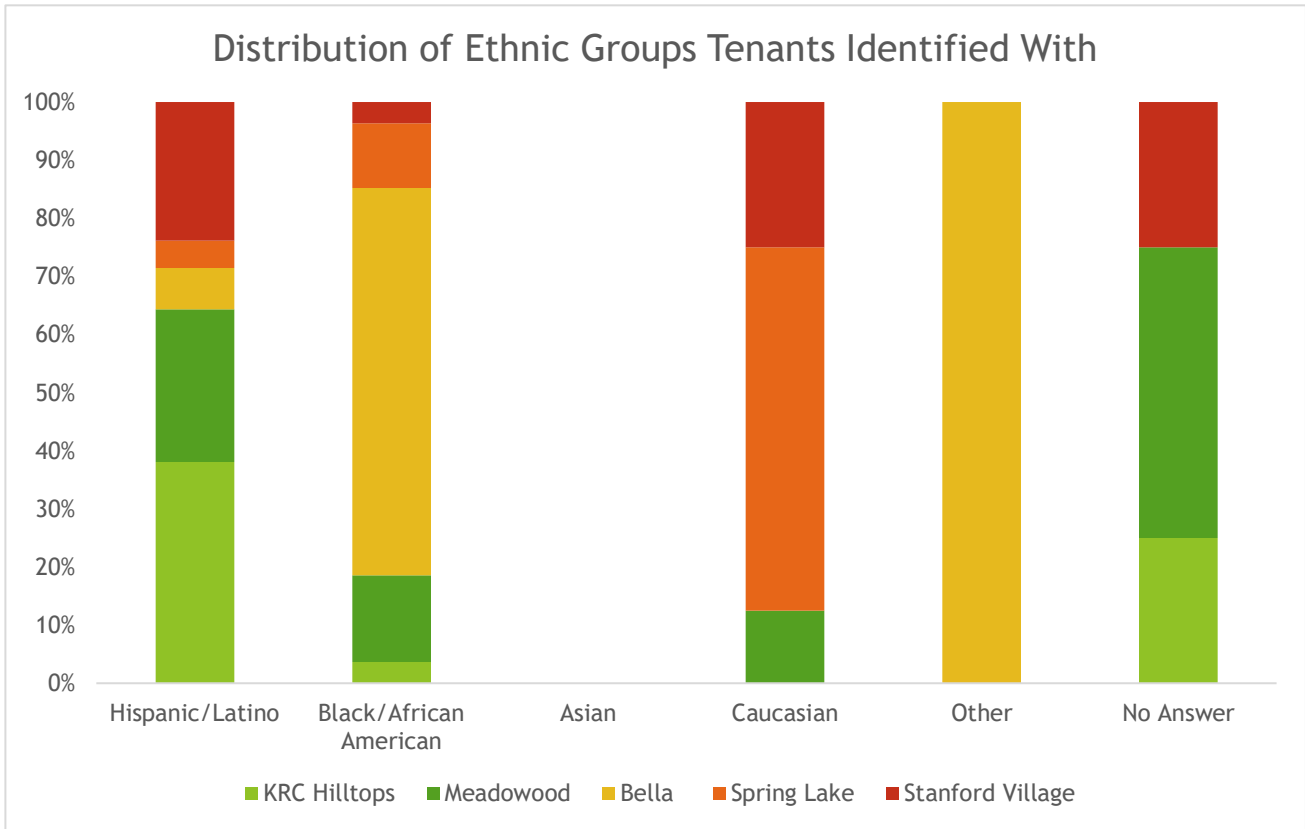


Figure 8: Distribution of Ethnic Groups Tenants Identified With

Tenants were also asked about the primary language spoken in their household. Given that over 72% of respondents identified as Hispanic/Latino, the responses for Q11 favor Spanish as the primary language by nearly 70%. This must be considered when addressing any educational material related not just to a recycling initiative. Tenants must be able to understand the costs and benefits of any City program, as well as how to properly participate.

Language	%	Count
English	30.38	24
Spanish	69.62	55
Korean	0.00	0
Chinese	0.00	0
Other	0.00	0
<b>Total</b>	<b>100.00</b>	<b>79</b>

Table 7: Primary Language Spoken in Household

Lastly, tenants were asked if the United States was their country of origin (Q14 in the survey) as a qualifying question (Q15 in the survey) to understand whether or not recycling is a common practice where they are from. 61.54% of the respondents indicated that the United States is not their country of origin, and of that group nearly 51% stated that recycling is in fact a common practice in their home country. See Figure 9 below for the breakdown.

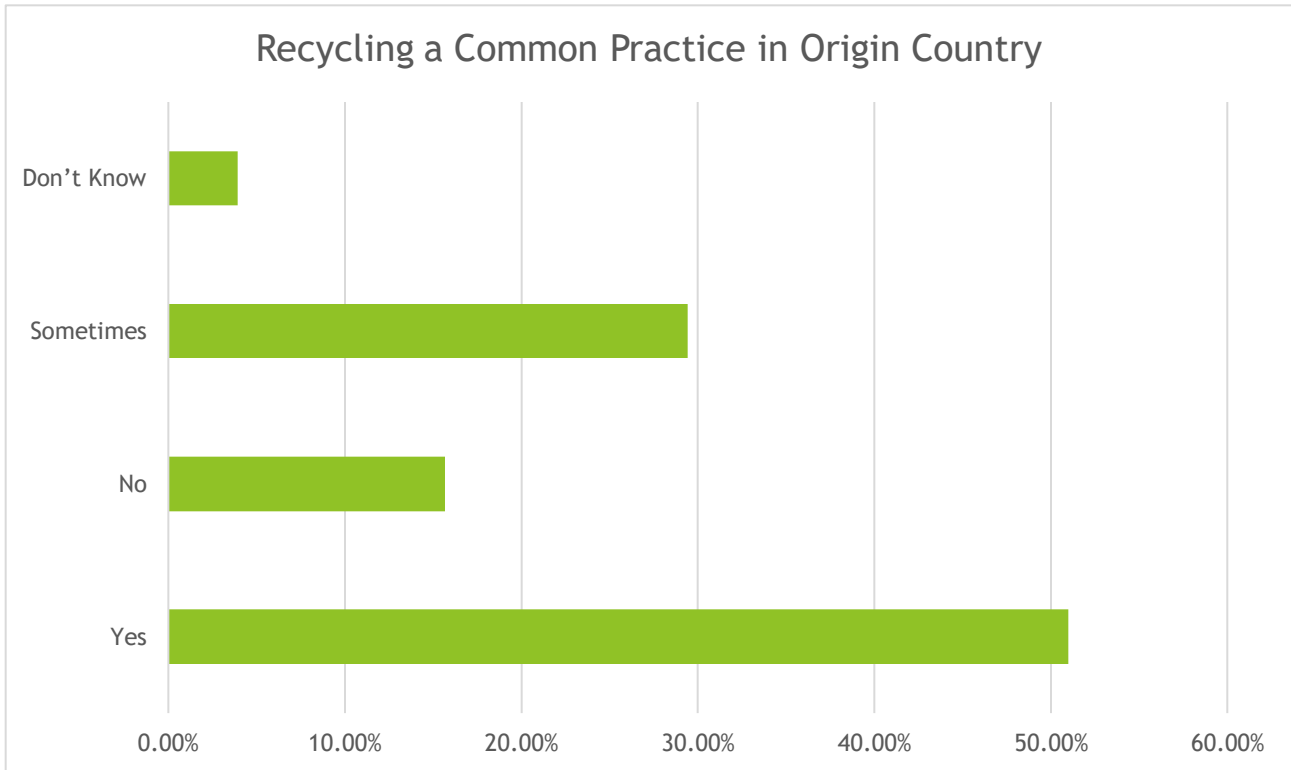


Figure 9: Recycling a Common Practice in Origin Country

\*Raw data and survey results can be provided upon request

# RECOMMENDED ACTIONS

This report recommends two options to be considered for implementing a multi-family recycling program. The first is to implement a pilot program at one of the apartment properties, while the other is to implement an ordinance, as other municipalities have done, requiring property managers to provide recycling opportunities.

## PILOT PROGRAM AT BELLA APARTMENTS

Bella Apartment complex provides a unique opportunity for a pilot program as it is the second largest apartment complex in the city limits with 318 units and has received five trash related code enforcement citations within the last three years. This location produces the most waste of any of the others, and has several waste containers: one compactor, one open top, and four 8-yard front loaders. Table 8 below was extracted from Table 2 on page eight and provides basic waste information. The estimate provided here indicates that Bella Apartments average up to 630 pounds of waste per unit, and the burden of cost is nearly threefold for each unit when compared to other apartment complexes. A pilot program at this location would not only divert a significant amount of waste from going directly to landfills, but reduce costs on management and essentially the tenants.

Apartment Name	Number of Units	Open Top Tonnage	Compactors Tonnage	Front Load Dumpster Tonnage <sup>18</sup>	Total Tonnage
Bella Apartments	318	19.65	75.83	4.8	100.28

Table 8: Estimated Monthly Trash for Bella Apartments<sup>19</sup>

To effectively implement a pilot program at this location, the City will need to identify and contact the new owners of the property, not yet confirmed at the time of this report. Initial contact was made to four of the apartment property owners, with no response. Type of ownership plays a role in ease of communication, as some may be individually owned while others are held under larger umbrella companies, such as Spring Lake Apartments. Though these apartment owners may not be readily accessible, they do employ

<sup>18</sup> Estimates for front load dumpsters assumes max capacity: 8 yard = 800lbs; 6 yard = 600lbs

<sup>19</sup> Estimates derived from single month, August 2017

property management staff that see to the daily operations. The next best step would be to communicate with the administrative staff to discuss any piloting or other programs.

Working with the selected hauler, this pilot program can be incentivized to fit the demands of Bella. Determining how many recycling containers are needed can be learned over the course of time. If the pilot program were to allow for a loose contract that encourages shifts in container number, placement and initial pricing, this may ensure long term enrollment into the recycling program and create a mutual relationship between the property management and the hauler.

According to the survey, respondents at Bella Apartments showed that they are already knowledgeable about recycling practices, and also overwhelmingly indicated that they would be very likely to recycle if given the opportunity on the premises (see survey results on pages 16 & 17). To expand on educational material, Public Works Department can assist with the creation of educational materials that property management can distribute among the tenants so as to reduce the burden on the property management staff.

In order to understand whether this pilot program is successful, a monitoring program will be necessary. Currently, the City does not have any immediate reason to track the exact weight amounts of waste from the apartments. However, the contracted hauler does provide waste receipt tickets for billing purposes. The City will need to determine how best to allocate resources to track and evaluate weights both before and after the pilot program has been initiated. The former so that proper historical models can be viewed, and the latter so to have a comparison to gauge effectiveness of the pilot program. The City of Atlanta has a requirement for the property managers to report their tonnage through an online database, so it is foreseeable that there may be a method for doing. Whether through the hauler directly, or a City of Norcross staff member, one will need to sift through the raw data and make calculations based on billing receipts. This step is critically important to the evaluation of any program put in place.

Bella Apartments would make an excellent first candidate for a pilot program out of all the communities if chosen. But other communities should not be discounted based on this alone. It is encouraged that communication with each of the apartment properties be sought out to discuss future programs.

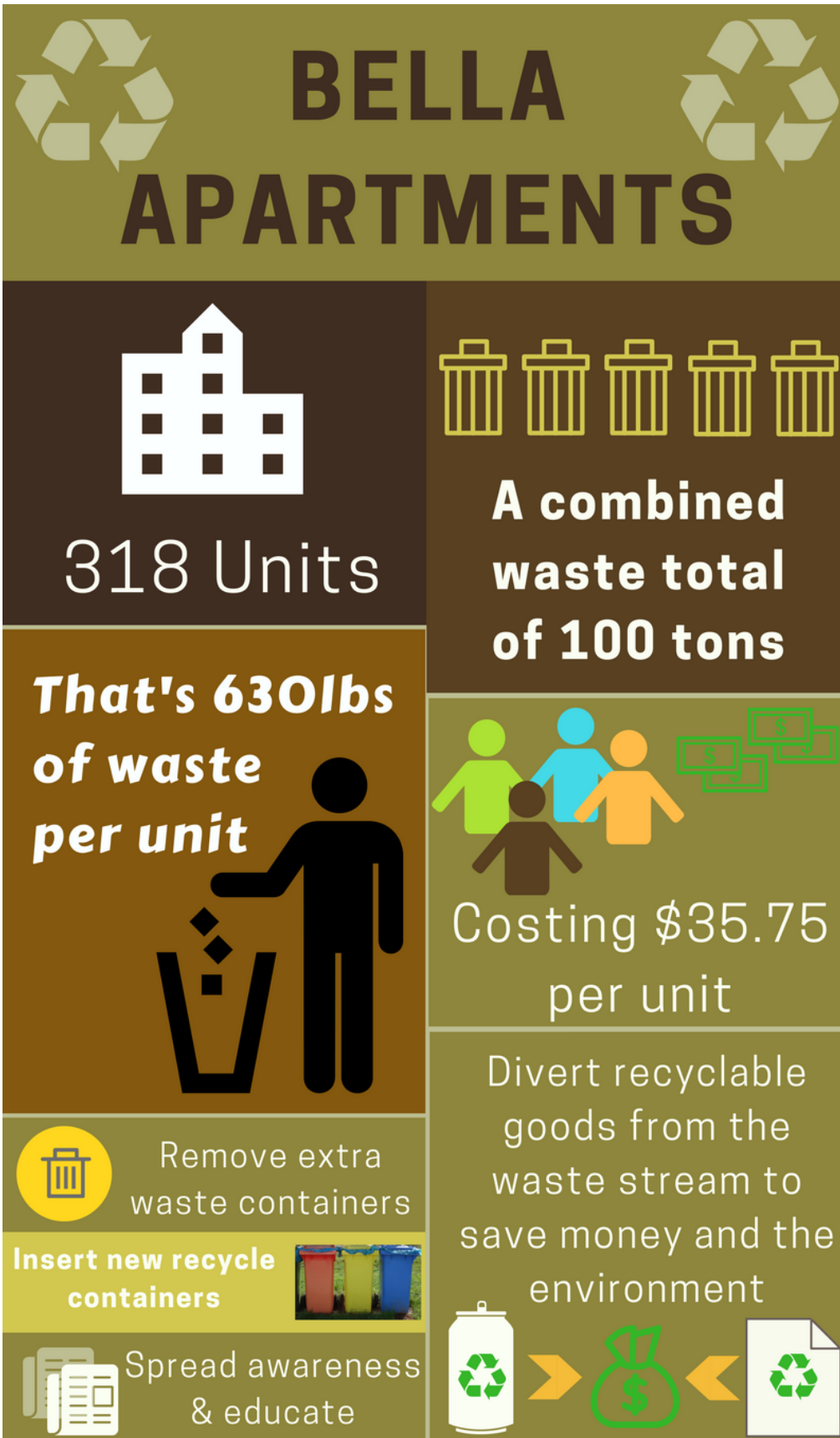


Figure 10: Opportunity Infographic for Bella Apartments

## ORDINANCE

As aforementioned, many of the local municipalities have had an ordinance in place that requires multi-family properties to provide recycling opportunities. If the City of Norcross were to adopt an ordinance it will need to develop proper parameters that encourage cooperation. The cases discussed earlier are designed to allow property managers to contract with any recycling hauler that covers their area. This encourages price competition, ultimately guaranteeing that the property is getting the most utility for the cost. The City of Norcross has an active hauler contract with Advanced Disposal Inc., and may need to consult with this organization about potential opportunities and conflicts that could arise from implementing an ordinance.

If Norcross were to mimic Atlanta's multi-family ordinance, a property such as Bella Apartments would only need to provide a total 950-gallon capacity for materials. This figure reflects the required minimum of three-gallons per living unit. Considering some of the traits from the Decatur multi-family ordinance, it would require property managers to contract with a hauler that provides a minimum of four types of recyclable material. Most haulers allow comingled materials, but may be restrictive of specific materials, this will need to be distinguished before an ordinance is developed to ensure that the task is achievable.

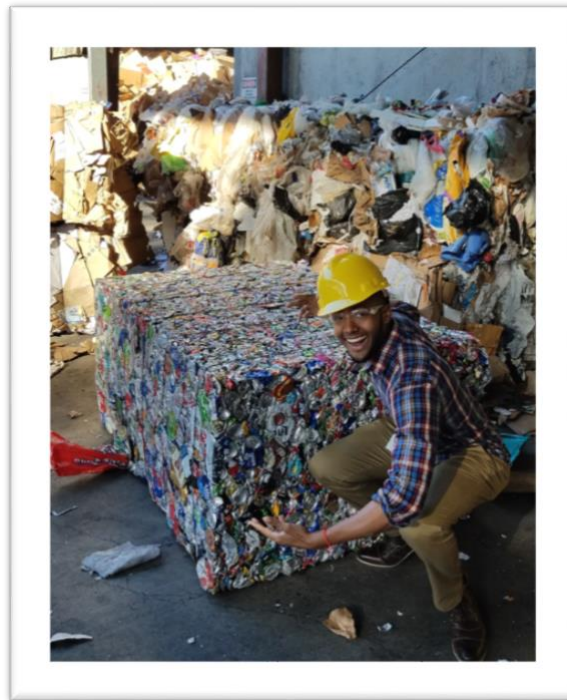
An ordinance should also require that recycling bins are clearly marked, placed within a reasonable distance of trash bins (if not directly next to them) so to prevent contamination, and should meet the reasonable requirements of the hauler. The ordinance should allow for an initial grace period for property managers to adopt, lasting less than six to nine months to avoid an unnecessary delay in waste diversion efforts.

Developing an ordinance may be the option to choose if properties are not amicable to implementing recycling options for their tenants. They may disinclined due to costs, space on property, or another reason. This is why it will be important to discuss the price points for implementation with the respective haulers.

# CONCLUSION

The City of Norcross has the opportunity to implement a multi-family recycling program that is effective, valued and long-lasting. The community members at the multi-family properties demonstrate knowledge on how to recycle, and a likelihood of participation if given the opportunity. If the City plans to demonstrate continued steps towards environmental stewardship and sustainability this program should be implemented. It may be wise to allow the Sustainable Norcross Commission to set target goals for waste diversion, as the figures depicted in this report are arbitrary. A 15% diversion rate may be too low, but the timeframe for achieving the objective will determine the target goal. This timeframe is dependent on how quickly the City and its decision makers can act in implementation.

Regardless, the City's efforts to maintain its Platinum Status<sup>20</sup> with the ARC Green Community program will only be bolstered by adopting a multi-family recycling program. The City of Norcross could be the first municipality in the county to mandate multi-family recycling, as no others have attempted to do this yet. Norcross can lead the way!



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<sup>20</sup> Yeomans, C. (2017). *Gwinnett Daily Post*. [http://www.gwinnettdaily.com/local/norcross-hits-platinum-status-in-arc-s-green-community-program/article\\_9d329ecb-b8e8-5ec2-8815-5f22c2bde5c0.html](http://www.gwinnettdaily.com/local/norcross-hits-platinum-status-in-arc-s-green-community-program/article_9d329ecb-b8e8-5ec2-8815-5f22c2bde5c0.html)