



Prepared for:

The University of Texas at Austin

LBJ School of Public Affairs

Issues in Urban Management

Professor Brenda Eivens

City of Austin

Curbside Organics Collection

Policy Analysis Report

May 3, 2016

Author:

Brent W. Perdue

TABLE OF CONTENTS

EXECUTIVE SUMMARY 3

PROBLEM STATEMENT 4

POLICY BACKGROUND 4

 City of Austin Landfill Diversion Policy Development 4

 Curbside Organics Collection Pilot Program..... 5

 Curbside Organics Collection Pilot Results..... 6

IMPACT TO CITY 7

 Programmatic 7

 Fiscal..... 7

 Environmental..... 8

IMPACT TO COMMUNITY 8

 Programmatic 8

 Fiscal..... 9

 Environmental..... 10

POLICY FINDINGS 10

POLICY RECOMMENDATIONS..... 11

CONCLUSION..... 13

REFERENCES 14

Contact Information 15

EXECUTIVE SUMMARY

This report analyzes the Austin Resource Recovery's (ARR) curbside organics collection pilot program and proposed citywide service provision. The report provides policy background, program analysis, program findings, and recommendations for Austin City Council and City Management consideration.

In 2005, the City of Austin signed the U.N. Environmental Accords and committed to a 20 percent reduction of per capita waste sent to landfills (COA, 2005). In 2011, the City of Austin committed to 50 percent reduction of waste sent to landfills by 2015, 75 percent by 2020, and 90 by 2040. Charged with solid waste management, the Austin Resource Recovery department adopted a master plan with a multitude of programs and policies designed to meet these zero waste goals (HDR, 2011).

Austin Resource Recovery provides solid waste services to single family residential properties, as well as some multi-family and commercial properties—representing approximately 25 percent of citywide waste generation (HDR, 2011). ARR provides a range of landfill and waste diversion services, such as trash, recycling, bulk, yard trimmings, and household hazardous waste collection. Organic materials represent approximately 30 percent of municipal solid waste stream and diversion of organics from landfills will be crucial to achieving zero waste goals (ARR, 2015b). Organics materials include yard trimmings, food scraps, and food-soiled paper.

The City of Austin uses ordinances and programs to influence approximately 68 percent of citywide waste generation from multi-family residential and commercial properties (HDR, 2011). Landfill diversion in the private collection sector is critical to the city's zero waste efforts. However, this report will primarily focus on direct organics collection service provision by the City of Austin.

In 2013, ARR conducted a curbside organics collection pilot program to assess potential citywide organics collection service. Now, Austin Resource Recovery is moving forward to provide curbside organics collection for all city solid waste service customers.

PROBLEM STATEMENT

Austin generates approximately 1.4 million tons of waste (HDR, 2011). Municipal solid waste consists of items that citizens and business consume and then dispose. Recycling and composting of waste reduces the amount of landfilled and incinerated material, saves energy, reduces greenhouse gas emissions, and conserves land and natural resources (EPA, 2015). These external environmental costs to the public are not accounted for in the provision of landfill solid waste service.

Despite sustained efforts, the City of Austin has not met the Austin Resource Recovery Master Plan goal of 50 percent waste diversion from landfills and incinerators by 2015 (HDR, 2011). The master plan also called for citywide curbside organics collection by 2015 (HDR, 2011). In FY 2015, ARR achieved a diversion rate of 39.95 percent (Directors Report, 2016). Fiscal Year 2016 diversion goal is 43.27 percent (Directors Report, 2016). The 2015 City-Serviced Residential Waste Characterization Study documented that 61,000 tons of organics, or 47 percent of materials, are landfilled each year (CB&I, 2015).

POLICY BACKGROUND

City of Austin Landfill Diversion Policy Development

The City of Austin implemented a number of solid waste management policies over the past three decades that strove to expand recycling access and landfill diversion in the city of Austin.

In 1994, the City of Austin initiated its first curbside recycling program for single family homes (Chronicle, 2014). Shortly thereafter, the City of Austin passed the Commercial and Multi-Family Recycling Ordinance in 1998, which required limited recycling at apartments, businesses, and institutions (Chronicle, 2014). The signing of the 2005 U.N. Environmental Accords signaled more municipal focus on landfill diversion activities, such as recycling and composting (Chronicle, 2014). Reflecting the increased focus on landfill diversion, the Austin City Council adopted a resolution that committed the City to a 20 percent reduction of per capita solid waste disposal to landfills and incinerators by 2012 (COA, 2005). In 2008, the City of Austin began collecting single-stream recycling and rolled out large

96-gallon recycling collection bins (Chronicle, 2014). Furthermore, the City of Austin adopted the Austin, Texas Zero Waste Strategic Plan in 2009 as a guiding document for further landfill diversion policy development (Chronicle, 2014). To that end, the Austin City Council adopted the Universal Recycling Ordinance in 2010, which requires recycling at multi-family and commercial properties serviced by the private sector (COA, 2014b). In 2011, reflecting a shift from sanitation to sustainable materials management, the City of Austin Solid Waste Services Department changed its name to Austin Resource Recovery and adopted the Austin Resource Recovery Master Plan (Chronicle, 2014). The master plan detailed the 30-year path of interrelated policy initiatives to achieve the ultimate zero waste goal of 90 percent landfill and incinerator diversion (HDR, 2011).

The shift to sustainable materials management and a zero waste philosophy, changes traditional sanitation management emphasis on a linear, cradle-to-grave waste management, which the majority of waste material is destined for a landfill or incinerator. Instead, zero waste emphasizes a lifecycle approach to sustainable materials management. Materials are recovered by recycling or composting and are available as feedstocks for new products.

The strategic plan called for expanded organics landfill diversion programs and an updated and expanded commercial and multi-family recycling ordinance as a part of a larger zero waste plan of landfill diversion (Liss, 2009). In 2014, the City updated the Universal Recycling Ordinance requiring properties with food service permits to provide organic waste collection by 2016. In 2013, ARR conducted an organics collection pilot program for single-family homes. Currently, ARR is in the planning phase of citywide curbside organics collection for all single-family residential customers.

Curbside Organics Collection Pilot Program

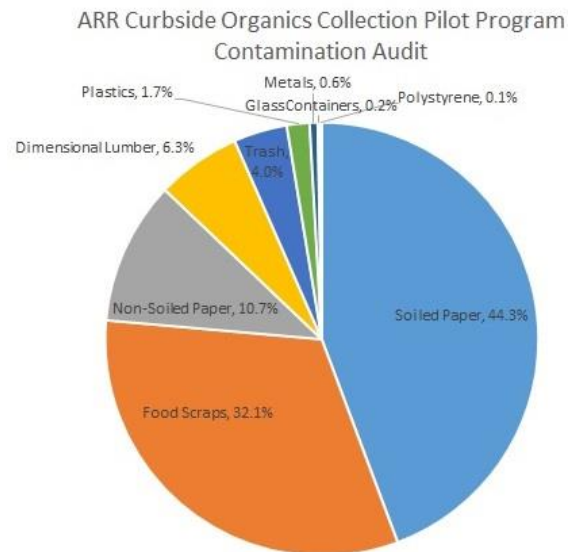
To assess curbside organics collection service provision, ARR conducted a yearlong curbside organics collection pilot program in 2013. The pilot program's goals were to assess program operation, participation, challenges, and processing capacity (ARR, 2013). The pilot program followed similar

organic waste best management practices for collection program development as prepared for the Houston-Galveston Area Council (RW Beck, 2009).

The pilot program serviced 14,000 households in ten geographic areas representing the city's demographics (ARR, 2015b). The program provided pilot participants instructional and educational materials (ARR, 2015b). Pilot participants received a third 96-gallon cart for disposal of organic waste, including yard trimmings. Organic waste was collected as a part of existing weekly yard trimming routes (ARR, 2015b). Lastly, ARR evaluated the pilot program results in order to plan for citywide roll-out.

Curbside Organics Collection Pilot Results

The pilot revealed curbside organics collection program opportunities and challenges. The program results showed a 39% average increase of organic waste diversion (ARR, 2013). Although, the pilot found that 9.94 pounds of organics per week per household, on average, was collected out of 12.5 pounds of potential weekly average organic waste generation (ARR, 2015b). The average set out rates of organics carts on the curb was 27.4 percent and the average overall set out rate of trash, recycling, and organic carts was 55.4 percent (ARR, 2015b). In addition, a pilot waste stream audit documented a 12.9% contamination rate, as well as 10.7% of non-soiled paper in organics carts that could have been diverted to a higher and better use through recycling (ARR, 2013). The pilot also tested collection operations issues and found a need for semi-automated collection due to additional yard trimmings set out at the curb in paper bags (ARR, 2015b). In addition, the pilot showed the need for smaller and more numerous collection routes due to the volume of organic materials (ARR, 2015b). Lastly, the pilot demonstrated that customers have varied educational needs to encourage participation (ARR, 2015b).



ARR is committed to accommodating alternative forms of organics landfill diversion through backyard composting and alternative collection. ARR plans to continue to encourage backyard composting through rebates and vouchers for backyard composting systems (ARR, 2015a). ARR is recommending administrative rules adoption to allow for alternative organics collection that supports the community by encouraging community agriculture, as well as reduces the carbon footprint of collection (ARR, 2015b). ARR submitted an intent document for administrative rules adoption to the Zero Waste Advisory Commission to allow for such alternative organics collection for residential properties with less than five dwelling units that receive city service.

IMPACT TO CITY

Programmatic

ARR plans to roll-out citywide curbside organics collection to single-family residential customers over four years, starting in fiscal year 2016 (ARR, 2015b). The roll-out will convert three existing yard trimming routes to eight organics routes each year (ARR, 2015b). By 2020, the collection program will be operating citywide with 32 weekly routes servicing 210,600 households (ARR, 2015b). In addition, citywide collection will require educational activities to promote participation in the program, such as increasing organics cart set-out rate and proper organics separation without contamination.

Fiscal

The program will require additional collection vehicles and one organics cart per household. The expansion of the number of routes will also necessitate additional management, operations, and support staff time. A significant cost of the program will be five-year competitive contracts for the processing of organics into compost. In addition, processing costs may rise if there are significant contamination rates. ARR would spend approximately \$863,460 a year to operate an organics curbside collection program according to the Texas Campaign for the Environment (TCE, 2016). On the other hand, if all 61,000 tons of organics were composted, the City could avoid \$1,302,960 in landfill tipping fees.

Backyard composting and alternative organics collection supports ARR's zero waste goals. However, alternative organic landfill diversion opportunities may fiscally impact curbside collection if opting out of curbside collection in favor of backyard composting or alternative organics collection gains significant popularity.

Environmental

Organics landfill diversion is critical to achieving the City's zero waste goals. Citywide curbside organics collection will contribute the greatest diversion increase for the ARR (CB&I, 2015). Citywide curbside organics collection has the potential to divert 61,000 tons of waste from area landfills, thus extending area landfill life. The processing of organics into compost will create nutrient-rich soil when applied to the ground decreasing run-off and improves soil health. Backyard composting and alternative organics collection programs will reduce the carbon footprint of City curbside collection.

IMPACT TO COMMUNITY

Programmatic

Household participation in curbside organics collection is crucial to the program's success. The pilot program demonstrated that resident participation requires changes in household solid waste management behaviors. Some residents perceive the collection of organics as "yucky" and inviting to insects and other pests (ARR, 2015b). The pilot found that households had varied educational needs to overcome the "yuck" factor, encourage participation, and communicate proper separation of organics (ARR, 2015b).

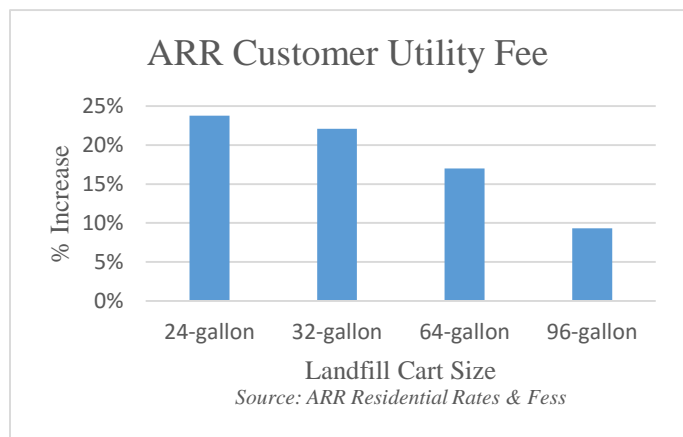
The pilot found additional operational challenges that impact the community and require educational efforts. With citywide organics collection, customers will be expected to bring three carts to the curb. The pilot documented that customers set-out their organics carts at a 28 percent lower rate than the overall set-out rate (ARR, 2015b). The pilot found that customers prefer organics collection carts smaller than 96-gallons (ARR, 2015b). Inorganic contamination of the organics waste stream was also documented (ARR,

2015). For these reasons, the pilot documented that households did not collection the total potential amount of organic waste (ARR, 2015b).

Fiscal

Affordability is a large concern for the Austin community. Austin residents are experiencing increasing utility costs for most city utility departments. ARR uses a Pay-As-You-Throw rate schedule, meaning that customers pay more for larger landfill cart sizes. Recycling, yard trimmings, and other curbside collection services are included in the landfill cart rate. The intent of Pay-As-You-Throw is to incentivize households to reduce their landfill cart size and potentially reduce the amount the household’s landfill waste generation through recycling collection.

Texas Campaign for the Environment estimates that organics curbside collection will cost each household \$4.10 (TCE, 2016). If households do not reduce trash cart sizes, households will see a total fee increase between 9 percent and 24 percent (ARR, 2016a). Advocates and city staff assert that



curbside organics collection will incentivize households to reduce the landfill trash cart size. For example, downsizing from a 96-gallon trash cart to the smallest size of 24-gallons would save a household \$24.95 a month and \$299.40 a year.

		Monthly Cost	Cart Size Change			
			24-gallon	32-gallon	64-gallon	96-gallon
Cart Size	24-gallon	\$ 16.90	\$ -	\$ 1.25	\$ 6.40	\$ 24.95
	32-gallon	\$ 18.15	\$ (1.25)	\$ -	\$ 5.15	\$ 23.70
	64-gallon	\$ 23.30	\$ (6.40)	\$ (5.15)	\$ -	\$ 18.55
	96-gallon	\$ 41.85	\$ (24.95)	\$ (23.70)	\$ (18.55)	\$ -

Source: ARR Residential Rates & Fees

Currently, two large-scale organics processors are in the Austin area—Organics by Gosh and Texas Disposal Systems. The increase in organics material supply may be a business opportunity for organics processors. As the organics material supply increases, the City needs to consider the capacity of area organics processing service providers.

Environmental

The Austin community shares similar environmental benefits of curbside organics collection as the city at-large, such as conserving landfill space and reducing energy consumption. Alternative collection of organic waste provides additional community benefits, such as the use of organics for community agriculture or reduction of carbon footprints with alternative collection vehicles (ARR, 2016b). In fact, a local Austin company, Compost Pedallers, currently offers private curbside organics collection that is delivered to community gardens on bicycles. Similarly, backyard composting reduces collection carbon footprint and supports compost application on household soils.

POLICY FINDINGS

Finding 1: Austin Resource Recovery’s curbside organics collection pilot program was effective.

The pilot program effectively explored best management practices for a citywide roll-out of curbside organics collection service. ARR was able to ascertain key lessons regarding collection routes, cart sizes, customer participation, processing capacity, and educational efforts.

Finding 2: The pilot program documented customer participation challenges.

The pilot program found that organics cart set-out rates were lower than overall set-out rates, which reduces collection route efficiency. In addition, the pilot program documented contamination was present in organics collection containers indicating a need for more customer education. On average, households did not divert as much organics as possible.

Finding 3: Curbside organics collection may increase cost to customers.

The addition of curbside organics collection to City solid waste service provision may increase Austin Resource Recovery utility costs to customers unless customers downsize their landfill cart. Customers currently using the smallest landfill cart will see an increased cost regardless. In effect, households generating the least amount of landfill waste will experience increased cost for curbside organics collection.

Finding 4: Additional collection routes may increase ARR’s transportation carbon footprint.

The pilot program results indicated a need to increase 12 current yard trimmings collection routes to 32 organics collection routes. The conversion of yard trimmings collection routes to organics collection route may increase ARR’s overall transportation carbon footprint.

Finding 5: 68 percent of waste is generated outside the City’s direct control.

The City utilizes ordinances to influence landfill diversion at multi-family and commercial properties not receiving City solid waste service. In particular, the Universal Recycling Ordinance requires organics collection at properties with food service permits. ARR offers up to \$1,800 in rebates to multi-family and commercial properties to establish, expand, or improve recycling and organics collection programs (ARR, 2016).

POLICY RECOMMENDATIONS

Recommendation 1: Support roll-out of citywide curbside organics collection as planned by ARR.

The Austin City Council and City Management should support citywide organics collection in order to reach City of Austin zero waste goals. The pilot program effectively assessed citywide program planning, management, and viability. On average, households increased the curbside organics collection rate by 39 percent—demonstrating significant participation in the program (ARR, 2013).

Recommendation 2: Continue educational efforts and economic incentives.

ARR should continue its varied educational efforts to improve organics cart set-out rates and to reduce contamination. In particular, ARR may consider targeting educational efforts towards customers with the largest landfill carts and individual collection routes with low recycling or set-out rates. ARR may consider revising the Pay-As-You-Throw rate schedule to encourage downsizing of landfill carts by expanding the cost differentials between the smallest and largest landfill carts.

Recommendation 3: Balance affordability with curbside organics collection service provision.

ARR may consider revising its fee structure and billing statements to show customers line item cost for landfill, recycling, and organics collection service. This information may more effectively communicate to customers the cost of landfill service in relation to recycling and organics collection. Thus, customers may reduce solid waste service costs by reducing landfill cart sizes. To mitigate the cost increase to households using the smallest landfill cart, ARR may target backyard composting rebates and vouchers outreach to 24-gallon customers. ARR should allow for backyard composters to opt-out of curbside organics collection and to receive a rebate on their utility bill.

Recommendation 4: Support city and alternative collection that reduces program carbon footprint.

ARR may conduct a carbon cost analysis of organics collection routes in order to get a complete analysis of the program's carbon footprint. To reduce the program's overall collection carbon footprint, ARR should continue to support backyard composting and finalize administrative rules for alternative organics collection programs.

Recommendation 5: Expand URO Business Outreach Team staff and budget resources.

To reach city-wide zero waste goals, ARR needs to effectively encourage organics collection at multi-family and commercial properties. Universal Recycling Ordinance Business Outreach Team staff and budget resources should be expanded to provide technical assistance and rebates to such properties.

CONCLUSION

Austin Resource Recovery's curbside organics collection pilot program established the operational and managerial foundations for a citywide roll-out of curbside organics collection. The City of Austin will realize environmental benefit from such a program. Austin residents will enjoy the citywide environmental benefits and may potentially see costs savings from lower landfill cart fees. Yet, some issues of customer participation and program affordability remain. The recommendations of this report will assist in balancing customers' challenges with the opportunity to divert significant amounts of organic waste from area landfills.

REFERENCES

- Austin Chronicle. (2014). *Significant Dates in Austin Zero Waste History*. Austin, TX.
<http://www.austinchronicle.com/news/2014-11-14/significant-dates-in-austin-zero-waste-history/>
- Austin Resource Recovery. (2016a). *Directors Report*.
<http://www.austintexas.gov/edims/document.cfm?id=251767>
- Austin Resource Recovery. (2016b) *Intent Document Organics Collection and Management Programs*.
<http://www.austintexas.gov/edims/document.cfm?id=228583>
- Austin Resource Recovery. (2016c). *Zero Waste Business Rebate*. Austin, TX.
<http://austintexas.gov/zwbizrebate>
- Austin Resource Recovery. (2015a). *Home Composting Rebate Program*. Austin, TX.
<https://www.austintexas.gov/composting>
- Austin Resource Recovery. (2015b). *Organics Collection Discussion*.
<http://www.austintexas.gov/edims/document.cfm?id=226030>
- Austin Resource Recovery. (2015c). *Residential Rates & Fees*. Austin, TX.
<http://www.austintexas.gov/department/residential-rates-fees>
- Austin Resource Recovery. (2013). *Organics Collection Pilot Program 6 Month Update*.
<http://www.austintexas.gov/edims/document.cfm?id=198628>
- CB&I Environmental & Infrastructure, Inc. (2015). *City-Serviced Residential Waste Characterization Study*. Austin, TX. http://austintexas.gov/sites/default/files/files/Final_Report_-_Austin_City-Serviced_Waste_Characterization_Study_2015-04-14.pdf
- City of Austin. (2015). *Curbside Organics Collection Pilot*. Austin, TX.
<https://austintexas.gov/austincomposts>
- City of Austin. (2014). *Universal Recycling Ordinance No. 20140612-010*. Austin, TX.
https://www.austintexas.gov/sites/default/files/files/Resource_Recovery/URO_Adopted_06-12-14.pdf
- Gary Liss and Associates. (2008) *Austin, Texas Zero Waste Strategic Plan*. Austin, TX.
https://austintexas.gov/sites/default/files/files/Trash_and_Recycling/Zero_Waste_Plan_-_full_version_-_Council_Adopted_w-resolution.pdf
- HDR and Austin Resource Recovery. (2011). *Austin Resource Recovery Master Plan*. Austin, TX.
https://www.austintexas.gov/sites/default/files/files/Trash_and_Recycling/MasterPlan_Final_12.30.pdf
- RW Beck. (2009). *Organic Waste Best Management Practices*. Houston-Galveston Area Council.
https://www.h-gac.com/community/solid-waste-management/documents/organics-bmp_study.pdf
- Texas Campaign for the Environment. (2016) *Budget for composting in Austin Petition*.
<https://www.texasenvironment.org/petition/budget-for-composting-in-austin/>



For comments or questions, please contact:

Brent W. Perdue

brent.w.perdue@utexas.edu

