

City of Broken Arrow
Meeting Agenda
Broken Arrow Municipal Authority

Chairperson Craig Thurmond
Vice Chair Scott Eudey
Trustee Johnnie Parks
Trustee Debra Wimpee
Trustee Christi Gillespie

Tuesday, November 5, 2019

Council Chambers
220 South 1st Street
Broken Arrow, OK

A M E N D E D A G E N D A

TIME: Immediately following the City Council Meeting which begins at 6:30 p.m.

1. Call to Order

2. Roll Call

3. Consideration of Consent Agenda

- A. [19-1366](#) Approval of the Broken Arrow Municipal Authority Special Work Session Minutes of October 10, 2019
- B. [19-45](#) Approval of the Broken Arrow Municipal Authority Meeting Minutes of October 15, 2019
- C. [19-1341](#) Approval of and authorization to execute a Professional Consultant Agreement with Cowan Group Engineering, LLC for design of Elm Creek Trunk Line Improvements
- D. [19-1314](#) Approval of and authorization to execute a Professional Consultant Agreement with HDR Engineering, Inc. for Raw Water Pump Station Air Conditioning System Replacement and Sodium Hypochlorite Supply Water Chillers (Project Numbers 195410 & 195409)
- E. [19-1340](#) Approval of and authorization to execute Change Order #2 with Belt Construction, Inc. for construction contract S.1609; County Line Trunk Sewer - Phase 1
- F. [19-1306](#) Approval to reject bids for the purchase of one (1) Rubber Tracked Mini Excavator and to find that the best interest of the City of Broken Arrow will be served by the rejection
- G. [19-1294](#) Approval of and authorization to purchase two (2) 2020 Chevrolet Traverse's with options 1 through 4 from Vance Chevrolet pursuant to the

Oklahoma Statewide Vehicle Contract for the Engineering and Construction Department

- H. [19-1376](#) Approval of authorizing a 15 day extension to award bids for good cause shown for the purchase of one (1) Firehouse D1 Dump Body Truck for the Stormwater Division of the Streets and Stormwater Department
- I. [19-1344](#) Acknowledgement of submittal of the Broken Arrow Municipal Authority's Water Supply Report for the month of September 2019
- J. [19-1345](#) Acknowledgement of submittal of the Broken Arrow Municipal Authority's Wastewater Discharge Monitoring Report for the month of September 2019
- K. [18-1469](#) Ratification of the Claims List Check Register dated 10/29/2019

4. Consideration of Items Removed from Consent Agenda

5. Public Hearings, Appeals, Presentations, Recognitions, Awards - NONE

6. General Authority Business

- A. [19-1359](#) Consideration, discussion, and possible action regarding the recommendations from the Citizens' Recycle Committee and the recommendations from the City Manager and possible direction to staff to proceed with implementation
- B. [19-1348](#) Consideration, discussion, and possible approval of and authorization to execute Resolution #1280, a Resolution authorizing the Broken Arrow Municipal Authority (the "Authority") to issue its Utility System and Sales Tax Revenue Note, Taxable Series 2019 (the "Note") in the aggregate principal amount of not to exceed \$5,800,000; waiving competitive bidding and authorizing the Note to be sold on a negotiated basis; approving and authorizing execution of a Supplemental Note Indenture authorizing the issuance and securing the payment of the Note; providing that the organizational document creating the authority is subject to the provisions of the Indenture; ratifying and confirming a Lease Agreement by and between the City of Broken Arrow, Oklahoma (the "City") and the Authority pertaining to the City's water, sanitary sewer, and solid waste disposal systems; ratifying and confirming a Security Agreement by and between the City and the Authority pertaining to pledge of certain sales tax revenues, and approving and authorizing execution of a Sales Tax Agreement; authorizing and directing the distribution of information in connection with the placement of the Note and authorizing the execution of the Note and other documents relating to the transaction, including professional services agreements and an escrow agreement; and containing other provisions relating thereto
- C. [19-1371](#) Consideration, discussion and possible approval to reject bids for the purchase of one (1) Dump Truck and find that the best interest of the City

of Broken Arrow will be served by the rejection

- D. [19-1309](#) Consideration, discussion, and possible approval to reject bids for the Broken Arrow Expressway fence repair contract and to find that the best interest of the City of Broken Arrow will be served by the rejection

7. Remarks and Updates by City Manager and Staff

8. Executive Session - NONE

9. Adjournment

NOTICE:

If you wish to speak at this evening's meeting, please fill out a "Request to Speak" form. The forms are available from the City Clerk's table or at the entrance door. Please turn in your form prior to the start of the meeting. Topics are limited to items on the currently posted agenda, or relevant business.

All cell phones and pagers must be turned OFF or operated SILENTLY during meetings.

Exhibits, petitions, pictures, etc., shall be received and deposited in case files to be kept at the Broken Arrow City Hall. If you are a person with a disability and need some accommodation in order to participate in this meeting, please contact the City Clerk at 918-259-2400 Ext. 5418 to make arrangements.

POSTED this ____ day of _____, _____, at _____
a.m./p.m.

City Clerk



City of Broken Arrow

Request for Action

File #: 19-1366, **Version:** 2

Broken Arrow Municipal Authority
Meeting of: 11-05-2019

Title:

Approval of the Broken Arrow Municipal Authority Special Work Session Minutes of October 10, 2019

Background:

Minutes recorded for the Broken Arrow Municipal Authority Special Work Session.

Cost: Approx. \$225

Funding Source: City Clerk Operational Fund

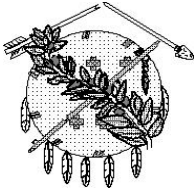
Requested By: Russell Gale, Assistant City Manager of Administration

Approved By: City Manager's Office

Attachments: 10 10 19 BAMA Special Work session minutes

Recommendation:

Approve the minutes of October 10, 2019 for the Broken Arrow Municipal Authority Special Work session.



City of Broken Arrow
Minutes
Broken Arrow Municipal Authority
Special Work Session

City Hall
220 S 1st Street
Broken Arrow OK
74012

Chairperson Craig Thurmond
Vice Chair Scott Eudey
Trustee Johnnie Parks
Trustee Debra Wimpee
Trustee Christi Gillespie

Thursday, October 10, 2019

Council Chambers

1. Call to Order

Chairperson Craig Thurmond called the meeting to order at approximately 5:15 p.m.

2. Roll Call

Present: 4 - Christi Gillespie, Johnnie Parks, Scott Eudey, Craig Thurmond
Absent: 1 - Debra Wimpee

3. General Authority Business

A. 19-1261 Presentation and discussion regarding the Broken Arrow Pilot Project Report and recommendation of the Citizen Recycle Committee

Chairperson Thurmond stated the presentation regarding the Broken Arrow Pilot Project and Report had already been heard; the purpose of this Special Work Session was discussion.

City Manager Michael Spurgeon thanked City Council, the Recycling Committee and Kate Vasquez with GBB Consulting. He asked Mr. Russell Gale to speak.

Assistant City Manager of Administration, Russell Gale, reviewed a brief history of the Recycling Project which started in 2016 with surveys, continued research, Committee organization, Pilot Programs, results and Committee recommendations. He noted the Committee recommended converting from twice a week to once a week pickup, providing one 96 gallon recycling cart to each customer, allowing customers to opt-out of recycling service without fee reduction, reducing bag vouchers by 50% upon recycling cart implementation, issuance of trash carts within three years of recycling cart distribution, and replenishment of the sanitary truck fleet with automated trash trucks. He reported if the Authority (BAMA) chose to approve these recommendations Staff and BAMA would be required to identify a date to implement trash cart usage and eliminate the trash bag voucher program, decide whether the City would offer multiple size trash carts, determine service levels for seniors and those with disabilities, address green waste services and bulk waste services, and design an implementation calendar. He noted BAMA could chose to implement trash cart service at the same time as recycling cart service. He discussed the challenges the City would face if the current sanitary service continued unchanged. He noted the Broken Arrow sanitary customer base was growing by 1.7% annually.

City Manager Spurgeon reported he chose to keep his opinions to himself during this process in an effort to enable the process to run its course organically and better enable others to form unprejudiced opinions. He stated he was kept fully updated during the entire process. He indicated this was an important public policy decision and the Authority had a

responsibility to be deliberate in its decision making. He commended the Recycling Committee for its efforts.

City Manager Spurgeon reported he had experience with solid waste service transitions and would be able to ensure any transition was smooth and efficient. He stated there was community support for recycling services, as well as new trash service. He indicated manual trash collection, as was currently conducted by the City of Broken Arrow, was not sustainable. He stated it had been more than thirty years since cities began transitioning to automated trash pickup. He noted trash service was the only City service provided which had not evolved in an effort to be more efficient and effective. He stated it was time to consider alternative ways of conducting trash service. He discussed the difficulties with the current trash service.

City Manager Spurgeon stated his recommendation to the Authority was built upon the Citizen Advisory Committee recommendations: 1) Provide recycling carts to all customers. 2) Transition to once a week pickup for trash and recycling. 3) Stop providing trash bags immediately and utilize the bag funds for cart purchase, as well as trucks and other necessary equipment. 4) Implement trash carts immediately. He stated he believed moving from twice a week pickup to once a week pickup with continued bag use would cause difficulties with trash bag build-up. He discussed these difficulties including personal trash cart purchase, garbage odor, etc. 5) Direct Staff to develop a plan for disposal of green waste. 6) Remove trash from General Services and institute a separate Sanitary Department. He recommended hiring a Director of Sanitary Services to run the Department.

Chairperson Thurmond indicated he agreed with City Manager Spurgeon's recommendations. He stated he felt it was important to add a smaller cart option as many residents complained the carts were difficult to maneuver. He stated he agreed Broken Arrow was "behind the times" regarding solid waste services. City Manager Spurgeon noted it would not be difficult to provide cart size options; however, it was important to ensure the automated trucks would be able to pickup and tip the various carts. Ms. Kate Vasquez noted with the use of rear lift trucks a smaller cart was not a problem operationally; however, side arm lifts, as used with recycling trucks, struggled with smaller carts.

City Manager Spurgeon stated the City would accommodate those with special needs and those who simply could not manage the carts.

Trustee Johnnie Parks stated he had served on the City Council 25 years ago when the Council first considered updating the trash service. He stated the trash service currently provided by Broken Arrow was seriously outdated at this point. He stated as it stood the current trash service was unsustainable and as such, the City would eventually be required to move towards privatization which he did not wish to see. He indicated he supported these changes and the recommendations of the Recycling Committee; however, he felt it was important to implement trash carts and recycling carts concurrently. He noted he would support a decision to implement the trash carts within three years if this was the direction the Authority chose. He noted he would also support concurrent implementation of recycling carts and trash carts if City Manager Spurgeon felt this would ensure the ease of transition to a cart system. He stated the City had spent a considerable amount of time asking and answering pertinent questions regarding recycling, recycling services and trash services and he felt it would be beneficial to post these questions and answers online for public perusal. He noted if the City was forced to move to a private system carts would be implemented. He stated there was currently a good market for recyclables and even if the City could not make money by collecting recyclables, at least the community would not be wasteful.

Vice Chair Scott Eudey stated he served as the City's Trustee for the Metropolitan Environmental Trust (the Met) and residents had asked him why a curbside recycling service was necessary when Broken Arrow had the Met; however, a large number of residents wished to have a curbside recycling program. He stated he was initially concerned for the well being of the Met upon implementation of a curbside recycling program; however, Graham Brannin, the Director of the Met, supported the notion of curbside recycling and wished to be involved in public education regarding recycling. He noted the Met wished to increase its efforts regarding glass recycling and wished to install satellite locations for glass collection. He stated the Met wished to partner with Broken Arrow in the recycling effort. He reported the Met was not concerned about a curbside recycling program negatively affecting the Met. He stated the Met was able to recycle many items a curbside recycling program could not, including electronics, motor oil, etc. He discussed the reasons he felt recycling was important. He stated he wished to immediately eliminate the bag voucher system; he felt this was a wasteful use of City funds. He indicated while he was not overly excited about switching to carts, he did wish to ease the burden upon the sanitation workers, reduce workers compensation claims, and reduce labor costs without eliminating workers. He noted he did not wish to see Broken Arrow transition to private trash service.

Chairperson Thurmond stated he was not necessarily a huge fan of carts either; however, the current system was not sustainable and a change was needed.

Trustee Gillespie stated she fully supported recycling. She stated her constituents' main concern was the transition from twice a week pickup to once a week pickup. She stated she understood City Manager Spurgeon felt the current trash service was unsustainable; however, she was attempting to determine if transitioning to a dual cart system would be more or less expensive than the current system. She wondered if it would be possible to make pickups twice a week: trash pickup early in the week and recycling pickup later in the week. She wondered if this might encourage recycling.

Ms. Vasquez noted private sector customers commonly had trash pickup twice weekly with recycling pickup on one of the trash pickup days. She stated she would not be comfortable with trash pickup one day a week and recycling pickup on another day. She explained this had been tried in the past and it seemed to discourage recycling. She stated converting to once a week pickup for both trash and recycling would encourage participation in the recycling program as it necessitated siphoning off recyclables into the recycling cart to make room for garbage in the garbage cart. She noted that continuing with twice a week trash pickup and adding a recycling route would add expense. She stated once a week pickup worked well in the pilot programs and worked well in many cities. She reported approximately 5 out of every 6 cities with a population of more than 10,000 residents utilized once a week pickup.

Trustee Gillespie asked if there was any way to keep twice a week pickup, add recycling and eliminate trash bag vouchers. Vice Chair Eudey stated the difficulties arose with running basically three routes (two for trash and one for recycling), as well as with staffing; extra staff would be needed to accommodate this type of system. Mr. Russell Gale stated GBB modeled the system which was presented to the Authority. He explained transitioning from twice a week trash pickup to once a week pickup the number of employees per trash truck could be reduced from three to two; this freed Sanitary Staff to man the recycling trucks and no temporary employees would be required (temp employees were currently often needed). He noted this did not include green waste pickup. He stated having twice a week trash pickup and once a week recycling pickup would increase the number of trucks and staffing needed. Ms. Vasquez noted if the City wished to keep twice a week trash pickup the fleet size would have to be increased to accommodate the new system.

Trustee Gillespie asked about once a week trash and once a week recycling. She stated she believed residents would still be cognizant of recycling in an effort to create space in the trash cart. City Manager Spurgeon stated he worried residents would forget to set out the recycling cart if it was taken up on a different day than the trash. Trustee Gillespie disagreed as she felt residents were used to putting trash out twice a week. Vice Chair Eudey stated Trustee Gillespie's solution would not alleviate resident's concerns regarding garbage buildup with once a week trash pickup. Trustee Parks noted the Recycling Committee researched the possibility of once a week trash pickup and separate once a week recycling pickup and it was discovered recycling became too contaminated with this method. Ms. Vasquez concurred; this method had been tried in the past and a large amount of trash was often found in the recycling bins and/or residents simply would not recycle to avoid bringing the cart to the curb twice a week. Trustee Parks stated he recycled regularly and as such, has not had a need for twice a week trash pickup in the past twenty years. He stated the residents who experienced difficulty with trash buildup would be the residents who refused to recycle.

Trustee Parks reported most residents generated a large amount of trash over the weekends. He asked if it was possible for trash pickup to be conducted in the beginning of the week rather than the end of the week. Ms. Vasquez responded in the affirmative; pickup could be conducted Monday through Thursday or Monday through Wednesday. Mr. Gale reported the shorter the work week was, the longer the route would become, and/or the more trucks would be needed. City Manager Spurgeon stated he would research the cost of Monday through Thursday versus Monday through Wednesday trash pickup.

Discussion ensued regarding removing recycling carts from customers who repeatedly misused the recycling carts and continuously contaminated recycling materials, who would be responsible for keeping track of recycling contamination, educating customers regarding recycling contamination, not storing recycling materials in trash bags, storing trash in trash bags before placing in the cart to reduce smell, the non-sustainability of twice a week trash pickup, researching the cost of following the Committee's recommendations with City Manager Spurgeon's modifications for presentation to City Council, the 20 year life expectancy of the carts, and reallocating trash bag funds.

Chairperson Thurmond asked if the Authority could give direction to Staff at this point. Assistant City Attorney Kim Slinkard indicated the Authority could not give direction to Staff, but could ask Staff questions.

Trustee Gillespie asked about planning for green waste. City Manager Spurgeon stated Staff would thoroughly research the green waste situation and hold discussions with Kate Vasquez, Lee Zirk and Russell Gale regarding possible solutions. Chairperson Thurmond stated only a small percentage of residents put out green waste regularly; however, those residents needed to be accommodated in some way.

Vice Mayor Eudey agreed with Chairperson Thurmond. He stated it was also very important to have a plan in place to accommodate the elderly and residents with disabilities. He stated any decisions regarding recycling and trash needed to include a plan for accommodation, as well as green waste, or at least include clear language indicating a plan would be developed for both.

Trustee Parks noted small amounts of green waste could be placed in trash carts; a separate pickup should not be made for small amounts of green waste.

City Manager Spurgeon stated he would look into green waste and return to the Authority

with information and suggestions.

Chairperson Thurmond stated the BAMA Meeting on November 5, 2019 would include recycling and trash. City Manager Spurgeon noted he would present his findings regarding cost models and green waste at the Meeting on November 5, 2019.

Vice Chair Eudey noted residents would be provided an opportunity to speak regarding recycling and trash at the Meeting on November 5, 2019.

4. Adjournment

The meeting adjourned at approximately 6:21 p.m.

MOTION: A motion was made by Christi Gillespie, seconded by Johnnie Parks.

Move to adjourn

The motion carried by the following vote:

Aye: **4 -** Christi Gillespie, Johnnie Parks, Scott Eudey, Craig Thurmond

Chairman

Secretary



City of Broken Arrow

Request for Action

File #: 19-45, Version: 1

**Broken Arrow Municipal Authority
Meeting of: 11-05-2019**

Title:

Approval of the Broken Arrow Municipal Authority Meeting Minutes of October 15, 2019

Background:

Minutes recorded for the Broken Arrow Municipal Authority Meeting.

Cost: \$0

Funding Source: City Clerk Operational Fund

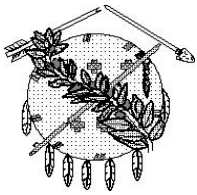
Requested By: Russell Gale, Assistant City Manager of Administration

Approved By: City Manager's Office

Attachments: 10 15 19 BAMA Meeting minutes

Recommendation:

Approve the minutes of October 15, 2019 for the Broken Arrow Municipal Authority meeting.



City of Broken Arrow
Minutes
Broken Arrow Municipal Authority

City Hall
220 S 1st Street
Broken Arrow OK
74012

Chairperson Craig Thurmond
Vice Chair Scott Eudey
Trustee Johnnie Parks
Trustee Debra Wimpee
Trustee Christi Gillespie

Tuesday, October 15, 2019

Council Chambers

1. Call to Order

Vice Chair Scott Eudey called the meeting to order at approximately 7:12 p.m.

2. Roll Call

Present: 4 - Christi Gillespie, Debra Wimpee, Johnnie Parks, Scott Eudey
Absent: 1 - Craig Thurmond

3. Consideration of Consent Agenda

- A. 19-44 Approval of the Broken Arrow Municipal Authority Meeting Minutes of October 1, 2019**
- B. 19-1271 Acknowledgement of submittal of the Broken Arrow Municipal Authority's Wastewater Discharge Monitoring Report for the month of August 2019**
- C. 19-1264 Acknowledgement of submittal of the Broken Arrow Municipal Authority's Water Supply Report for the month of August 2019**
- D. 19-1282 Approve and authorize execution Amendment No. 2 to the Agreement for Professional Engineering Services for Haikey Creek Operation & Maintenance Capital Equipment Replacements RMUA Project No. WPC 18-2 with Holloway, Updike and Bellen, Inc.**
- E. 19-1246 Award the most advantageous bid to GNC Concrete Products, Inc. for reinforced concrete culvert boxes to GNC Concrete Products, Inc. for the Streets and Stormwater Department**
- F. 19-1267 Award the most advantageous bid to Summit Truck Group for the purchase of one (1) dump truck with a dump body, tow hooks and accessories for the Water Division**
- G. 18-1466 Ratification of the Claims list dated 10/11/2019**

Vice Chair Eudey indicated Item 3F was to be removed for discussion. He asked if there were any other items to be removed from the Consent Agenda. There were none.

MOTION: A motion was made by Johnnie Parks, seconded by Christi Gillespie.

Move to approve the Consent Agenda with the exception of Item 3F

The motion carried by the following vote:

Aye: 4 - Christi Gillespie, Debra Wimpee, Johnnie Parks, Scott Eudey

4. Consideration of Items Removed from Consent Agenda

Assistant City Manager Russell Gale reported this Item was on the Consent Agenda. Staff recommended BAMA award the bid to the lowest bidder Summit Truck Group; however, Mr. Josh Rhodes with Premier Truck Group wished to speak with the Authority regarding this Item.

Mr. Josh Rhodes stated his address was 5104 W. 60th Street, Tulsa. He stated he was with

Premier Truck Group who represented Freightliner, the second lowest bidder on this project. He indicated Premier Truck Group (PTG) was the number one commercial chassis supplier to the City of Broken Arrow. He stated Summit Truck Group (who represented International) bid a dump bed price of \$18,200 dollars while Premier Truck Group and Rush Truck Centers bid a dump bed price of \$18,950 dollars. He explained the bids differed by \$750 dollars due to PTG including the requested Allison automatic transmission; this was not included in the Summit bid. He noted the City requested inclusion of an Allison automatic transmission in the bid documents. He stated PTG also bid a \$3,750 dollar option for live load scales which enabled the operators to tell whether the truck was overweight while in the field. He indicated Mr. Lee Zirk felt this was essential for refuse trucks; however, this option could be removed which would lower the bid. He discussed other bid variations and options and noted there was only \$687 dollars difference in bid price which was nominal. He reported Premier Truck Group provided free training to technicians and was available for technical support. He stated he understood the City of Broken Arrow had experienced difficulties with Summit regarding ambulance purchases which had to be retired early due to the ambulances failing to perform properly. He indicated PTG had an excellent relationship with Broken Arrow, provided proven service and products, and there was a very minimal cost difference between the two bids. He asked the Authority to consider awarding the bid to PTG.

Vice Chair Eudey stated he noted Summit Group offered a five year unlimited warranty and PTG offered a two year unlimited warranty. Mr. Rhodes indicated Summit offered a five year unlimited warranty on cab corrosion only; the warranty did not include chassis wiring components. He stated PTG bid an engine which exceeded the City's torque specifications; this was a higher performing engine than the engine bid by Summit.

Mr. Russell Gale indicated the bid tab reflected a \$4,600 dollar difference between the Summit bid and the PTG bid. He asked the Broken Arrow Purchasing Manager, Mr. Patrick Harrison, to review the bid tabs.

Mr. Harrison discussed the bid review and selection process.

Trustee Gillespie stated it sounded as if the bid totals did not compare as "apples to apples" as the Premier Truck Group wrote in an option for \$3,700 dollars. Mr. Harrison agreed, but noted even if this option was removed Summit was still the lowest bidder.

Vice Chair Eudey asked about the bid request for an automatic transmission. Mr. Harrison stated Summit indicated it would fulfill the request for an automatic transmission with its bid. Trustee Gillespie asked about the Allison Transmission. Mr. Harrison responded Allison was a brand of transmission. Assistant City Attorney Slinkard asked if the bid specs specifically requested an Allison Transmission. Mr. Harrison responded in the specs requested a 4,500 RDS transmission which was an Allison Transmission. Ms. Slinkard asked if Summit was providing an Allison 4,500 RDS Transmission. Mr. Harrison responded in the affirmative.

Trustee Gillespie stated it made sense to have the same type of transmission for all fleet trucks. Discussion ensued regarding the transmission, the need for the larger 4,500 transmission, and Rush (the third bidder) failing to meet specs due to the 3,500 RDS transmission.

Trustee Parks asked if Summit truck was in fact the lowest bid which met specifications. Mr. Gale responded in the affirmative. Trustee Parks stated if this was the case the Authority was required to award the bid to Summit. He asked if this was correct. Ms. Slinkard responded in the affirmative; the Authority was required to award the bid to the

lowest and most advantageous bid. She explained unless there was a valid reason why the lowest bidder was not the most advantageous bidder, the lowest bidder would be awarded the bid. Vice Chair Eudey asked if there was any reason why the lowest bid in this case would not be advantageous to the City. Ms. Slinkard responded in the negative; however, due to the past difficulties with Summit ambulances this Item could be tabled and the Legal Department and Staff could research the situation. Vice Chair Eudey stated this was his biggest concern; if the City had troubles with a provider it should be considered in future agreements.

Mr. Gale asked if Broken Arrow currently used Summit Truck Group (International brand) vehicles. The Fleet Manager, Mr. Mike Bradley, responded in the affirmative. Mr. Gale asked if these vehicles were problematic. Mr. Bradley responded in the affirmative; the International brand trucks were extremely problematic. He explained the electrical systems were terrible in these vehicles. Ms. Slinkard recommended tabling this Item. She stated she would meet with the Fleet Manager, Purchasing Manager and Mr. Lee Zirk to determine which bid was in fact most advantageous.

Vice Chair Eudey stated he agreed, generally speaking, the lowest bid became the most advantageous bid and the Authority had no choice but to award the lowest bidder; however, it was important to take into consideration the quality of a product as well. He agreed the Item should be tabled to enable Ms. Slinkard and Staff to fully research the situation.

MOTION: A motion was made by Johnnie Parks, seconded by Debra Wimpee.

Move to table Item 3F

The motion carried by the following vote:

Aye: 4 - Christi Gillespie, Debra Wimpee, Johnnie Parks, Scott Eudey

5. Public Hearings, Appeals, Presentations, Recognitions, Awards

There were no Public Hearings, Appeals, Presentations, Recognitions or Awards.

6. General Authority Business

There was no General Authority Business.

7. Remarks and Updates by City Manager and Staff

There were no Remarks and Updates by City Manager and Staff.

8. Executive Session

There was no Executive Session.

9. Adjournment

The meeting adjourned at approximately 7:27 p.m.

MOTION: A motion was made by Christi Gillespie, seconded by Debra Wimpee.

Move to adjourn

The motion carried by the following vote:

Aye: 4 - Christi Gillespie, Debra Wimpee, Johnnie Parks, Scott Eudey

Chairman

Secretary



City of Broken Arrow

Request for Action

File #: 19-1341, **Version:** 1

Broken Arrow Municipal Authority
Meeting of: 11-05-2019

Title:

Approval of and authorization to execute a Professional Consultant Agreement with Cowan Group Engineering, LLC for design of Elm Creek Trunk Line Improvements

Background:

This project consists of replacing existing 12-inch, 15-inch, 18-inch and 24-inch collector sewer due to capacity limitations during the 5-year design storm between West Florence Street, under the Creek Turnpike and to the Indian Springs Country Club Lift Station. The existing sewer carries flow from the far western portion of the Lynn Lane basin and is not adequately sized for wet weather flows. Backups from the limited capacity cause predicted manhole surcharge in upstream segments during a 5-year storm. The Wastewater System Management Plan identified this project as I.D. LL-GS02, to replace approximately 11,000 linear feet of sanitary sewer trunk line within the Elm Creek basin from just south of the Creek Turnpike to the existing Indian Springs Country Club Lift Station.

Engineering and Construction Department negotiated a Professional Consultant Agreement with Cowan Group Engineering, LLC design these improvements. The negotiated amount is \$387,800.00.

Cost: \$387,800.00

Funding Source: OWRB Loan #2015FAP Loan

Requested By: Kenneth D. Schwab P.E. CFM, Assistant City Manager- Operations

Approved By: City Manager's Office

Attachments: Professional Consultant Agreement

Recommendation:

Approve and authorize execution of a Professional Consultant Agreement with Cowan Group Engineering, LLC for design of Elm Creek Trunk Line Improvements

**AGREEMENT SUMMARY
FOR
PROFESSIONAL CONSULTING SERVICES
BETWEEN
BROKEN ARROW MUNICIPAL AUTHORITY
AND
COWAN GROUP ENGINEERING, LLC
FOR
ELM CREEK TRUNK LINE IMPROVEMENTS
PROJECT NO. S.1606**

1.0 Professional Consulting Firm:

- 1.1 Name: Cowan Group Engineering, LLC.
- 1.2 Telephone No.: 918-949-6171
- 1.3 Address: 5416 S. Yale Ave., Suite 210, Tulsa, OK 74135

2.0 Project Name/Location: ELM CREEK TRUNK LINE Improvements

- 3.0 Statement of Purpose:** This project consists of replacing existing 12-inch, 15-inch, 18-inch and 24-inch collector sewer due to capacity limitations during the 5-year design storm between West Florence Street, under the Creek Turnpike and to the Indian Springs Country Club Lift Station. The existing sewer carries flow from the far western portion of the Lynn Lane basin and is not adequately sized for wet weather flows. Backups from the limited capacity cause predicted manhole surcharge in upstream segments during a 5-year storm. The Wastewater System Master Plan identified this project as I.D. LL-GS02, to replace approximately 11,000 linear feet of sanitary sewer trunk line within the Elm Creek basin from just south of the Creek Turnpike to the existing Indian Springs Country Club Lift Station.

4.0 Agreement Summary:

4.1 Agreement Amount:

Lump Sum	\$307,800.00
<u>Environmental NTE</u>	<u>\$ 80,000.00</u>
Total	\$387,800.00

- 4.2 Agreement Time:** 205 calendar days

- 4.3 Estimated Construction Cost:** \$7,000,000.00

5.0 Contract Documents and Priority: The City of Broken Arrow (OWNER), represented by the City Manager, and the Professional Consulting firm, (CONSULTANT), identified in paragraph 1.0 agree to perform this AGREEMENT in strict accordance with the clauses, provisions, and the documents identified as below, all of which are made part of this Contract. In the event of conflict, these documents shall be interpreted in the following order:

- 5.1** AGREEMENT with corresponding Attachments;
- 5.2** Duly authorized Amendments to the AGREEMENT;
- 5.3** AGREEMENT Summary;
- 5.4** Specific project written correspondence mutually recognized; and
- 5.5** Specific project verbal instructions mutually recognized.

6.0 Agreement Approved by the Owner on: _____

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**AGREEMENT
FOR
PROFESSIONAL CONSULTANT SERVICES
BETWEEN
BROKEN ARROW MUNICIPAL AUTHORITY
AND
COWAN GROUP ENGINEERING, LLC
FOR
ELM CREEK TRUNK LINE IMPROVEMENTS**

This AGREEMENT, including Attachment A through Attachment E, between the Broken Arrow Municipal Authority (OWNER) and Cowan Group Engineering, LLC, (CONSULTANT);

WITNESSETH:

WHEREAS, OWNER intends to evaluate feasible design alternatives for the rehabilitation of the Old Adams Creek Lift station (PROJECT) for which OWNER has requested that CONSULTANT provide certain professional services as required and,

WHEREAS, CONSULTANT is qualified and capable to provide the professional services required;

NOW, therefore, in consideration of the promises contained in this AGREEMENT, OWNER and CONSULTANT agree as follows:

ARTICLE 1 - EFFECTIVE DATE

The effective date of this AGREEMENT shall be the ____day of _____20____.

ARTICLE 2 - GOVERNING LAW

This AGREEMENT shall be governed by the laws of the State of Oklahoma and venue for any action concerning this Agreement shall be in the District Court of Tulsa County, Oklahoma.

ARTICLE 3 - SERVICES TO BE PERFORMED BY CONSULTANT

CONSULTANT shall perform the SERVICES described in Attachment A, Scope of Services. If construction phase services are included, the CONSULTANT shall be the OWNER'S agent and representative to observe, record and report with respect to all services that are required or authorized by the construction documents.

ARTICLE 4 – ORGANIZATION OF SUBMITAL DOCUMENTS

CONSULTANT shall prepare the documents as described in Attachment B as part of this Agreement.

ARTICLE 5 - COMPENSATION

OWNER shall pay CONSULTANT in accordance with Attachment C, Compensation.

ARTICLE 6 - OWNER'S RESPONSIBILITIES

OWNER shall be responsible for all matters described in Attachment D, OWNER'S Responsibilities and Special Conditions.

ARTICLE 7 - STANDARD OF CARE

CONSULTANT shall perform the SERVICES undertaken in a manner consistent with the prevailing accepted standard for similar services with respect to projects of comparable function and complexity, and with the applicable state laws, as well as the specific codes, regulations,

design criteria and construction specifications adopted by the owner and other governing policies published and generally considered authoritative by CONSULTANT'S profession that are in effect at the time of performance of these SERVICES. CONSULTANT is obligated to perform professional services in accordance with the foregoing standard with respect to the laws, codes, regulations, design criteria and construction specifications that are applicable pursuant to this AGREEMENT.

ARTICLE 8 - LIABILITY

8.1 General. Having considered the potential liabilities that may exist during the performance of these SERVICES, the benefits of the PROJECT, and CONSULTANT'S fee for the SERVICES; and in consideration of the promises contained in this AGREEMENT, OWNER and CONSULTANT agree to allocate and limit such liabilities in accordance with Article 10.

8.2 Indemnification. CONSULTANT agrees to indemnify, and hold harmless OWNER, and its agents and employees, from and against legal liability for all claims, losses, damages, and expenses to the extent such claims, losses, damages, or expenses are caused by the negligent or intentional acts, errors, or omissions of CONSULTANT, its agents or employees. In the event claims, losses, damages, or expenses are caused by the joint or concurrent negligence of OWNER and CONSULTANT, or their agents or employees, then they shall be borne by each party in proportion to each entity's own negligence.

8.3 Consequential Damages. OWNER shall not be liable to CONSULTANT for any special, indirect, or consequential damages resulting in any way from the performance of the SERVICES such as, but not limited to, loss of use, loss of revenue, or loss of anticipated profits.

8.4 Survival. Upon completion of all SERVICES, obligations, and duties provided for in this AGREEMENT, or if this AGREEMENT is terminated for any reason, the terms and conditions of this Article 8 shall survive.

ARTICLE 9 - INSURANCE

During the performance of the SERVICES under this AGREEMENT, CONSULTANT shall maintain the following insurance:

- (1) General Liability Insurance, with a combined single limit of \$1,000,000 for each occurrence and \$1,000,000 in the aggregate;
- (2) Automobile Liability Insurance, with a combined single limit of not less than \$1,000,000 for each person, not less than \$1,000,000 for each accident and not less than \$1,000,000 for property damage; and
- (3) Professional Liability Insurance, with a limit of \$1,000,000 annual aggregate.

CONSULTANT shall furnish OWNER certificates of insurance, which shall include a provision that such insurance shall not be canceled without at least thirty (30) days written notice to OWNER. All PROJECT sub-consultants shall be required to name OWNER and CONSULTANT as certificate holders on their certificate of insurance for the PROJECT, and shall be required to indemnify OWNER and CONSULTANT to the same extent. CONSULTANT shall be held responsible to submit certificates of insurance for sub-consultants to OWNER prior to the sub-consultant's release to commence work.

ARTICLE 10 - LIMITATIONS OF RESPONSIBILITY

CONSULTANT shall not be responsible for: (1) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the construction of the PROJECT; or (2) procuring permits, certificates, and licenses required for any construction unless such responsibilities are specifically assigned to CONSULTANT in Attachment A, Scope of Services.

ARTICLE 11 - LIMITATIONS OF RESPONSIBILITIES FOR ACTS OF OTHERS

CONSULTANT shall not at any time supervise, direct, control or have authority over any work performed by any employee, contractor or other agent of OWNER. CONSULTANT shall not be responsible for the acts or omissions of any employee, contractor or other agent associated with the PROJECT except for its own employees, subcontractors and other agents.

ARTICLE 12 - OPINIONS OF COST AND SCHEDULE

Since CONSULTANT has no control over the cost of labor, materials, or equipment furnished by others, or over the resources provided by others to meet PROJECT schedules, CONSULTANT'S opinion of probable costs and of PROJECT schedules shall be made on the basis of experience and qualifications as a professional. CONSULTANT does not guarantee that proposals, bids, or actual PROJECT costs will conform to OWNER'S cost estimates or that actual schedules will conform to OWNER'S projected schedules.

ARTICLE 13 - REUSE OF DOCUMENTS

All documents, including, but not limited to, drawings, specifications, and details, reports, etc. prepared by CONSULTANT pursuant to this AGREEMENT are instruments of service in respect to the PROJECT. They are not intended or represented to be suitable for reuse by CONSULTANT or others on extensions of the PROJECT or on any other project. Any reuse or adaptation without prior written verification by the OWNER for the specific purpose intended will be at CONSULTANT'S sole risk and without liability or legal exposure to the OWNER. CONSULTANT shall defend, indemnify, and hold harmless the OWNER against all claims, losses, damages, injuries, and expenses, including attorney's fees, arising out of or resulting from such reuse.

ARTICLE 14 - OWNERSHIP OF DOCUMENTS AND INTELLECTUAL PROPERTY

Except as otherwise provided herein, engineering documents, drawings, and specifications prepared by CONSULTANT as part of the SERVICES shall become the property of OWNER. CONSULTANT shall retain its rights in its standard drawing details, specifications, data bases, computer software, and other proprietary property. CONSULTANT shall not be held liable for reuse of documents or modifications thereof by the OWNER or its representatives for any purpose other than the original intent of this AGREEMENT, without written authorization of and appropriate compensation to CONSULTANT. Rights to intellectual property developed, utilized, or modified in the performance of the SERVICES shall remain the property of CONSULTANT, but shall be provided to the OWNER, at no additional expense to the OWNER.

ARTICLE 15 - TERMINATION

This AGREEMENT may be terminated by either party upon written notice in the event of substantial failure by the either party to perform in accordance with the terms of this AGREEMENT. The non-performing party shall have fifteen (15) calendar days from the date of the termination notice to cure or to submit a plan for cure acceptable to the other party.

OWNER may suspend performance of this AGREEMENT for OWNER'S convenience upon written notice to CONSULTANT. Upon restart, an equitable adjustment may be made to CONSULTANT'S compensation, if the period of suspension has created an economic hardship for the CONSULTANT.

ARTICLE 16 - DELAY IN PERFORMANCE

Neither OWNER nor CONSULTANT shall be considered in default of this AGREEMENT for delays in performance caused by circumstances beyond the reasonable control of the non-performing party. For purposes of this AGREEMENT, such circumstances include, but are not limited to, abnormal weather conditions such as floods, earthquakes, fire; civil disturbances such as war, riots, or other civil epidemic; power outages, strikes, lockouts, work slowdowns, or other labor disturbances; sabotage; judicial restraint, and inability to procure permits, licenses, or authorizations from any local, state, or federal agency for any of the supplies, materials, accesses, or services required to be provided by either OWNER or CONSULTANT under this AGREEMENT.

Should such circumstances occur, the non-performing party shall, within a reasonable time of being prevented from performing, give written notice to the other party describing the circumstances preventing continued performance and the efforts being made to resume performance of this AGREEMENT.

ARTICLE 17 - WAIVER

A waiver by either OWNER or CONSULTANT of any breach of this AGREEMENT shall be in writing. Such a waiver shall not affect the waiving party's rights with respect to any other or further breach.

ARTICLE 18 - SEVERABILITY

The invalidity, illegality, or unenforceability of any provision of this AGREEMENT or the occurrence of any event rendering any portion or provision of this AGREEMENT void shall in no way affect the validity or enforceability of any other portion or provision of this AGREEMENT. Any void provision shall be deemed severed from this AGREEMENT, and the balance of this AGREEMENT shall be construed and enforced as if this AGREEMENT did not contain the particular portion or provision held to be void. The parties further agree to amend this AGREEMENT to replace any stricken provision with a valid provision that comes as close as possible to the intent of the stricken provision. The provisions of this Article shall not prevent this entire AGREEMENT from being void should a provision which is of the essence of this AGREEMENT be determined void.

ARTICLE 19 - INTEGRATION

This AGREEMENT represents the entire and integrated AGREEMENT between OWNER and CONSULTANT. It supersedes all prior and contemporaneous communications, representations, and agreements, whether oral or written, relating to the subject matter of this AGREEMENT.

ARTICLE 20 - SUCCESSORS AND ASSIGNS

To the extent permitted by Article 22, OWNER and CONSULTANT each binds itself and its successors and assigns to the other party to this AGREEMENT.

ARTICLE 21 - ASSIGNMENT

Neither OWNER nor CONSULTANT shall assign its duties under this AGREEMENT without the prior written consent of the other party. Unless otherwise stated in the written consent to an assignment, no assignment will release or discharge the assignor from any obligation under this AGREEMENT. Nothing contained in this Article shall prevent CONSULTANT from employing independent sub-consultants, associates, and sub-contractors to assist in the performance of the SERVICES. However, third party entities must comply with Article 9.

ARTICLE 22 - THIRD PARTY RIGHTS

Nothing in this AGREEMENT shall be construed to give any rights or benefits to anyone other than OWNER and CONSULTANT.

ARTICLE 23 - COMPLETION

CONSULTANT shall complete the services within the time frame outlined on Attachment E, Schedule, subject to conditions which are beyond the control of the CONSULTANT.

ARTICLE 24 - IMMIGRATION COMPLIANCE

24.1 Consultant shall demonstrate that he:

24.1.1 Has complied, and shall at all times during the term of this Contract, comply in all respects with all immigration-related laws, statutes, ordinances and regulations including without limitation, the Immigration and Nationality Act, as amended, the Immigration Reform and

Control Act of 1986, as amended, and the Oklahoma Taxpayer and Citizen Protection Act of 2007 (Oklahoma HB 1804) and any successor laws, ordinances or regulations (collectively, the Immigration Laws"); and

24.1.2 Has properly maintained, and shall at all times during the term of this Contract, maintain any and all employee records required by the U.S. Department of Homeland Security ("DHS"), including, without limitation, properly completed and maintained Form I-9s for each of the Consultants employees; and

24.1.3 Has verified the employment eligibility for all employees hired on or after July 1, 2008 through DHS's E-Verify system, and shall at all times continue to verify the employment eligibility of all employees hired during the term of this Contract; and

24.1.4 Has required, and will at all times during the term of this Contract, require any sub-contractor utilized, hired or sub-contracted for by Consultant for the completion or undertaking of any duties, tasks or responsibilities under this Contract, to comply the requirements and obligations imposed by the Immigration Laws and set forth in Paragraph (l), parts (a), (b) and (c), above, with regards to each of the sub-contractor's employees.

24.2 Consultant will indemnify, defend and hold harmless City against any loss, cost, liability, expense (including, without limitation, costs and expenses of litigation and reasonable attorney's fees) demands, claims, actions, causes of action, liabilities, suits, damages, including special and consequential damages that arise from or in connection with, directly or indirectly, Consultants failure, deliberate or negligent, to fulfill its obligations and representations regarding verifying the employment eligibility of its employees and the employees of any subcontractor utilized by Contractor as set forth more fully in Paragraph 24.1 above.

ARTICLE 25 - COMMUNICATIONS

Any communication required by this AGREEMENT shall be made in writing to the address specified below:

OWNER: Broken Arrow Municipal Authority
485 N. Poplar Street
Broken Arrow, OK 74012
Contact: Mr. Roger D. Hughes, P.E.
Engineering Division Manager

CONSULTANT: Cowan Group Engineering, LLC
5416 S. Yale Ave., Suite 210
Tulsa, OK 74135
Contact Name: Mr. Ethan Edwards, P.E.
Operations Manager

Nothing contained in this Article shall be construed to restrict the transmission of routine communications between representatives of OWNER and CONSULTANT.

IN WITNESS WHEREOF, the City Manager of the City of Broken Arrow, Oklahoma has hereunto set his hand, for and on behalf of the City of Broken Arrow and the CONSULTANT has signed, or caused his name to be signed, and seal affixed by proper authority, the day and year first above written and these presents have been executed in triplicate counterparts.

OWNER:

Broken Arrow Municipal Authority

CONSULTANT:

Cowan Group Engineering, LLC

Approved as to form:

By *[Signature]*
Assistant City Attorney

By *[Signature]* *Jeff Cowan, managing member*
Date *10/16/19*

By _____
Michael L. Spurgeon, City Manager

(CORPORATE SEAL) If applicable

Date _____

Attest:

Attest:

By _____
Curtis Green, City Clerk

By *[Signature]*
Date *10/16/19*

Date _____

VERIFICATION

State of *Oklahoma*)
County of *Oklahoma*) §

Before me, a Notary Public, on this *16th* day of *October*, 2019, personally appeared *Jeff Cowan*, known to be to be the (President, Vice-President, Corporate Officer, Member, or Other: *Managing Member*) of Cowan Group Engineering, LLC, Inc., and to be the identical person who executed the within and foregoing instrument, and acknowledged to me that he/she executed the same as his/her free and voluntary act and deed for the uses and purposes therein set forth.

My Commission Expires:

04/04/2021
[Signature]
Notary Public



**ATTACHMENT A
TO
AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN
CITY OF BROKEN ARROW
AND
COWAN GROUP ENGINEERING, LLC
FOR
ELM CREEK TRUNK LINE IMPROVEMENTS
PROJECT NO. S.1606**

SCOPE OF SERVICES

The following scope of services shall be made a part of the AGREEMENT dated the 5th day of November, 2019.

1.0 PROJECT UNDERSTANDING

CONSULTANT understands that the OWNER has retained their professional services in order to prepare construction documents for bidding purposes for improvements to Elm Creek Trunk Line Improvements. These documents shall include, but not be limited to, the following: a design manual including all numerical calculations supporting the intent of the design, as well as providing the basis for bid document quantities; construction plans detailing the intent of the project; standard details and standard drawings associated with the project specifics; construction specifications; general conditions, and special conditions.

In addition, the CONSULTANT understands that the OWNER will apply for a loan for construction of this project upon completion of the design. The CONSULTANT is required to keep the OWNER apprised of the PROJECT costs and advise the OWNER of necessary cost reduction measures, if required, during the course of the PROJECT.

Furthermore, CONSULTANT understands: This project is identified in the Wastewater System Master Plan as I.D. LL-GS02, to replace approximately 11,000 linear feet of sanitary sewer trunk line within the Elm Creek basin from just south of the Creek Turnpike to the existing Indian Springs Country Club Lift Station. The project consists of replacing existing 12-inch, 15-inch, 18-inch, and 24-inch collector sewer lines due to capacity limitations during the 5-year design storm between West Florence Street, under the Creek Turnpike and to the existing Indian Springs Country Club Lift Station. The existing sewer carries flow from the far western portion of the Lynn Lane basin and is not adequately sized for wet weather flows. Backups from the limited capacity cause predicted manhole surcharge in upstream segments during a 5-year storm.

2.0 PROJECT SCOPE

CONSULTANT shall perform civil design to properly design sewer collector line sizes to adequately handle anticipated wet weather flows as identified in the Wastewater System Master Plan. The CONSULTANT will verify calculations made in the Wastewater System Master Plan to double check the pipe sizes.

The project includes completion of construction plans for design. The project shall also include services for the following: identification of right-of-way/easement needs, preparation of right-of-way/easement documents, identification of utility relocation needs, construction cost estimates, coordination of utility relocations, and all services required to obtain a Clean Water Act Section 404 Nationwide/Individual Permit from the US Army Corps of Engineers. The not to exceed contract amount will be utilized to hire subconsultants as needed to meet the US Army Corps of Engineers requirements.

3.0 SCOPE OF SERVICES

3.1 ADMINISTRATIVE/MANAGERIAL DUTIES: CONSULTANT shall be responsible to perform the following tasks throughout the course of the PROJECT:

- 3.1.1 Document all meetings, conferences, coordination, phone conversations, etc. and send documentation to OWNER within three (3) calendar days.
- 3.1.2 Meet with the Owner in a Pre-Design Conference in order to determine design criteria, requirements and codes and other critical design features of the Project such as preferred alignment as well as project schedule and milestone dates. All designs shall meet current City of Broken Arrow codes, regulations and design criteria as found in the latest versions of the Engineering Design Criteria Manual, Land Subdivision Code, Zoning Code, Traffic Control Manual, Standard Construction Specifications, City Ordinances and Comprehensive Plan.
- 3.1.3 Provide Owner with a list of all proposed sub-consultants and tasks sub-consultants are responsible to perform.
- 3.1.4 Meet with the Owner to discuss review comments on each phase of the project and incorporate appropriate comments into following phase.

3.2 PRELIMINARY DESIGN PHASE: Upon receiving the written Notice to Proceed, the CONSULTANT shall perform the following tasks in accordance with the schedule provided in Attachment E:

- 3.2.1 Coordinate and attend one (1) project kick-off meeting with Cowan Group Engineering (CGE) and COBA staff about entire project.
- 3.2.2 Gather and review existing conditions, conceptual plans (prepared by others), and record drawings.
- 3.2.3 Review existing survey data with respect to proposed conceptual alignment (prepared by others).
- 3.2.4 Prepare Environmental Information Document (EID) for the project and submit to the Oklahoma Water Resources Board (OWRB) for approval.
- 3.2.5 Provide all necessary coordination and attend meetings with the US Army Corps of Engineers (USACE).
- 3.2.6 Prepare all necessary information/documentation for obtaining a Clean Water Act Section 404 Nationwide Permit/Individual Permit.

- 3.2.7 Hire/coordinate subconsultants for necessary environmental surveys including but not limited to: Endangered Species (bats/beetles), Archeological, Cultural, Historical, and Wetlands delineation.
 - o Environmental Surveys will have an allowance of \$80,000.00. Any funds used from this allowance must first be approved by BAMA.
- 3.2.8 Prepare preliminary construction cost estimate.
- 3.2.9 Prepare preliminary plan submittal.
- 3.2.10 Prepare and deliver ten (10) hard copies (11x17) and preliminary contract documents electronic PDF format.
- 3.2.11 Attend one (1) review meeting with COBA staff about entire project.
- 3.2.12 Perform necessary Right of Way/Easement and Property/Ownership research and gather current legal deeds, rights-of-way, and easements with respect to the proposed project.

3.3 FINAL DESIGN PHASE: Following approval of the Preliminary Design, and upon receiving the written Notice to Proceed, the Consultant shall perform the following tasks in accordance with the schedule provided in Attachment E:

- 3.3.1 Concur an incorporate OWNER comments from Preliminary Design Phase.
- 3.3.2 Prepare final construction drawings and specifications to be approved and permitted by the Oklahoma Department of Environmental Quality.
- 3.3.3 Prepare final construction drawings, contract documents, and project cost estimate. Drawings shall include, but not limited to the final construction drawing sheets:
 - o Cover Sheet
 - o Pay Quantities and Notes
 - o Survey Data
 - o Summary Sheets
 - o Sanitary Sewer Plan and Profile Sheets
 - o Standard Details
 - o Special Details
 - o Erosion Control
 - o Construction Phasing
- 3.3.8 Prepare and submit construction drawings and contract documents along with ODEQ reports, permits and applications, including but not limited to:
 - o ODEQ Construction Permit Application
 - o Environmental Information Documents
 - o FACT format Engineering Report
- 3.3.9 Prepare final quantities and construction cost estimate.
- 3.3.10 Deliver ten (10) hard copy drawings (11x17) and contract documents, and electronic PDF.
- 3.3.11 Attend one (1) review meeting with Owner and project team.
- 3.3.12 Incorporate comments into Bidding Documents.

3.4 ASSISTANCE DURING BIDDING PHASE: Upon receiving the written Notice to Proceed, the Consultant shall perform the following tasks in accordance with the schedule provided in Attachment E:

- 3.4.1 Provide the Owner services during advertisement of the Project for

bid (i.e. providing plans in pdf format along with one hard copy, specifications, written project description, electronic bid proposal, and cost estimate for the construction of the project).

- 3.4.2 Attend and conduct a pre-bid conference as required by Owner.
- 3.4.3 Serve as the technical question point of contact to answer requests for information during bidding and draft any necessary addenda to clarify Contract documents.
- 3.4.4 Assist in preparing addenda and addenda plan sheets as required.

3.5 PROJECT CLOSE-OUT PHASE:

Upon receiving the written Notice to Proceed, the Consultant shall perform the following tasks in accordance with the schedule provided in Attachment E:

- 3.5.1 Incorporate changes into the drawings and produce Record Drawings.
- 3.5.2 Submit record drawings on electronic media (AutoCAD 2018 or earlier version and pdf).
- 3.5.3 Submit any revisions to the Design Manual caused by construction changes.

3.6 CONSTRUCTION ASSISTANCE PHASE (ADDITIONAL SERVICES):

Construction Assistance is considered an additional service not included in the Scope of Services and will be negotiated with the CONSULTANT as necessary.

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**ATTACHMENT B
TO
AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN
CITY OF BROKEN ARROW
AND
COWAN GROUP ENGINEERING, LLC
FOR
ELM CREEK TRUNK LINE IMPROVEMENTS
PROJECT NO. S.1606**

ORGANIZATION OF SUBMITTAL DOCUMENTS

The following constitutes a list of project deliverables, as required, and shall be made a part of the AGREEMENT dated the 5th day of November, 2019.

1.0 CONSTRUCTION PLANS: The CONSULTANT shall submit in-full, in accordance with this AGREEMENT, the following plan sheets (AS REQUIRED):

- 1.1 Cover Sheet
- 1.2 Pay Quantities and Notes
- 1.3 Survey Data
- 1.4 Summary Sheets
- 1.5 Sanitary Sewer Plan and Profile Sheets
- 1.6 Standard Details
- 1.7 Special Details
- 1.8 Erosion Control
- 1.9 Construction Phasing

2.0 RIGHT-OF-WAY / EASEMENT DOCUMENTS: The CONSULTANT shall submit in-full, in accordance with this AGREEMENT, the following documents:

- 2.1 Right-of-Way/Easement Plans;
- 2.2 Individual Legal Description Documents for permanent and temporary construction easements;
- 2.3 Individual Easement Detailed Drawing with Existing Easements Shown
- 2.4 Closure Report;
- 2.5 Surveyor's Certification Document;
- 2.6 Ownership Certification Report; and;
- 2.7 Provide easement and temporary construction easement staking as required for acquisition purposes (assumed one staking per parcel required, **assumed forty (40) parcels**, at agreed upon unit price \$200.00 per parcel).

3.0 TECHNICAL SPECIFICATIONS: The CONSULTANT shall submit in-full, in accordance with this AGREEMENT, technical specifications to be included in the bidding documents and construction contract:

4.0 CONTRACT DOCUMENTS: The CONSULTANT shall submit in-full, in accordance with this AGREEMENT, the following documents:

5.1 Bid Documents:

- 5.1.1 Electronic bid proposal in format provided.
- 5.1.2 Written description of construction project.
- 5.1.3 Construction duration in calendar days.

5.2 Project Conditions:

- 5.2.1 Special Conditions.

5.3 Construction Specifications

5.0 RECORD DRAWINGS: The CONSULTANT shall submit in-full, in accordance with this AGREEMENT, the following documents:

6.1 Drawings:

- 6.1.1 CAD files (AutoCAD Version 18 or earlier) for project construction drawings reflecting red-line markups from the construction contractor and the City Contract Administrator.
- 6.1.2 Adobe Acrobat (pdf) files of CAD drawings.

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**ATTACHMENT C
TO
AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN
CITY OF BROKEN ARROW
AND
COWAN GROUP ENGINEERING, LLC
FOR
ELM CREEK TRUNK LINE IMPROVEMENTS
PROJECT NO. S.1606**

OWNER'S RESPONSIBILITIES AND SPECIAL CONDITIONS

The following list of special OWNER'S responsibilities and contract special conditions shall be made a part of this AGREEMENT dated the 5th day of November, 2019.

1.0 OWNER'S RESPONSIBILITIES

- 1.1 OWNER shall furnish to CONSULTANT all available information pertinent to the PROJECT including previous reports and any other data relative to design and construction of the PROJECT;
- 1.2 OWNER shall furnish to CONSULTANT all public utility information available relative to the design and construction of the PROJECT. Consultant topographical survey shall locate all utilities above and below ground for exact location;
- 1.3 OWNER shall furnish to CONSULTANT list of codes adopted by the municipality as well as subdivision regulations, design criteria and construction standards and specifications that may be pertinent to the design and construction of the PROJECT;
- 1.4 OWNER shall be responsible for all permit fees and for all reproduction costs associated with the bidding of the final approved construction documents required for the construction of this PROJECT;
- 1.5 OWNER shall be responsible for all land/easement acquisition costs and filing of the required legal documents, if necessary; and
- 1.6 OWNER shall examine all studies, reports, sketches, estimates, specifications, plan drawings, proposals, and other documents presented by the CONSULTANT and render in writing decisions pertaining thereto within a reasonable time so as not to delay the SERVICES of the CONSULTANT.

2.0 SPECIAL CONDITIONS

- 2.1 None

**ATTACHMENT D
TO
AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN
CITY OF BROKEN ARROW
AND
COWAN GROUP ENGINEERING, LLC
FOR
ELM CREEK TRUNK LINE IMPROVEMENTS
PROJECT NO. S.1606**

COMPENSATION AND ADDITIONAL SERVICES

The following compensation and hourly rates shall apply as described in Attachment D and shall be made a part of the AGREEMENT dated the 5th day of November, 2019.

1.0 BASIC COMPENSATION

The basic compensation for the Professional Consultant to perform all duties and responsibilities associated with the Scope of Services as described in Attachment A shall be in accordance with the following payment breakdown:

- 1.1** Task 1. Preliminary Design Phase Payment: The OWNER shall pay the CONSULTANT a lump sum amount of \$ 165,800.00 for the completion of the Preliminary Design Phase. This amount includes all labor, material, overhead and profit associated with the Scope of Services.
- 1.2** Task 1.1. Land Survey Payment: The OWNER shall pay the CONSULTANT a lump sum amount of \$ 20,000.00 (pricing includes one- time staking of an assumed forty (40) parcels priced at \$200.00 per parcel) for the completion of the Land Survey, a component of the Preliminary Design Phase. This amount includes all labor, material, overhead and profit associated with the Scope of Services.
- 1.3** Task 1.2. Environmental Survey Payment: The OWNER shall pay the CONSULTANT an allowance not to exceed \$80,000.00 for the Environmental surveys required. All expenditures from this allowance are to be approved first by BAMA. This amount includes all labor, material, overhead and profit associated with the Scope of Services.
- 1.4** Task 2. Final Design Phase Payment: The OWNER shall pay the CONSULTANT a lump sum amount of \$ 93,600.00 for the completion of the Final Design Phase. This amount includes all labor, material, overhead and profit associated with the Scope of Services.
- 1.5** Task 3. Assistance During Bidding Phase Payment: The OWNER shall pay the CONSULTANT a lump sum amount of \$ 19,600.00 for the Assistance During Bidding Phase. This amount includes all labor, material, overhead and profit associated with the Scope of Services.
- 1.6** Task 4. Project Close-Out Phase Payment: The OWNER shall pay the CONSULTANT a lump sum amount of \$ 8,800.00 for the completion of the Project Closeout Phase. This amount includes all labor, material, overhead and profit associated with the Scope of Services.

- 1.7 Task 5. Construction Assistance Phase Payment (Additional Services): The OWNER may negotiate with CONSULTANT for providing Construction Assistance as additional services beyond original design agreement.

2.0 ADDITIONAL SERVICES BASED ON TIME

The hourly rates set forth below include all salaries, benefits, overhead and other indirect costs including federal, state, and local taxes, plus profit and effective as of January 1, 2019.

Professional Services

Principal Engineer	\$ 226.00
Associate	\$ 180.00
Client Manager	\$ 173.00
Project Manager	\$ 165.00
Project Engineer III	\$ 156.00
Project Engineer II	\$ 147.00
Project Engineer I	\$ 137.00
Engineer Level II	\$ 123.00
Engineer Level I	\$ 113.00
Engineering Technician II	\$ 107.00
Engineering Technician I	\$ 98.00
CAD Technician	\$ 89.00
Survey Technician I	\$ 69.00
Survey Manager	\$ 142.00
Survey Crew	\$ 176.00
Survey Crew Scanner	\$ 270.00
Construction Services Administrator	\$ 132.00
Resident Project Representative II	\$ 104.00
Resident Project Representative I	\$ 97.00
Administrative	\$ 100.00
Clerical	\$ 71.00
Intern	\$ 48.00

3.0 REPRODUCTION

All charges for reproduction shall be included in Basic Compensation Fee of the Professional Consultant. No separate payment will be made for these expenses.

4.0 MILEAGE

All direct costs shall be included in the Basic Compensation of the Professional Consultant. No separate payment will be made for these expenses.

5.0 DIRECT COSTS

All direct costs shall be included in the Basic Compensation of the Professional Consultant. No separate payment will be made for these expenses.

6.0 ADJUSTMENT CLAUSE

The rates and costs described in this AGREEMENT shall not be revised annually, unless mutually agreed upon by both parties.

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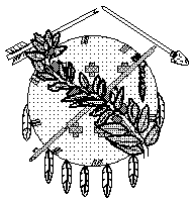
**ATTACHMENT E
TO
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COWAN GROUP ENGINEERING, LLC
FOR
ELM CREEK TRUNK LINE IMPROVEMENTS
PROJECT NO. S.1606**

PROJECT SCHEDULE

The following schedule shall be made a part of the AGREEMENT dated the 5th day of November, 2019. On issuance of notice proceed by the OWNER, the CONSULTANT shall provide the OWNER a Gantt chart schedule, utilizing the phases and durations provided below.

- | | | |
|------------|--|-----------------|
| 1.0 | PRELIMINARY DESIGN PHASE: | 115 Days |
| 1.1 | Notice to Proceed: (5 Days) | |
| 1.2 | Conduct Topographical Surveying: (30 days) | |
| 1.3 | Submit Land Survey & Easements: (45 days) | |
| 1.4 | Review, Prepare, and Submit Preliminary Plans and preliminary cost estimate: (30 days) | |
| 1.5 | Owner Review: (5 days) | |
| | | |
| 2.0 | FINAL DESIGN PHASE: | 90 Days |
| 5.1 | Notice to Proceed: (5 days) | |
| 5.2 | Prepare & Submit final (90%) plans and Specifications for City Review: (60 days) | |
| 5.3 | Prepare final cost estimate: (5 days) | |
| 5.4 | Owner review: (5 days) | |
| 5.5 | Prepare & Submit bid documents (100% plans and specifications): (15 days) | |

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City of Broken Arrow

Request for Action

File #: 19-1314, **Version:** 1

Broken Arrow Municipal Authority
Meeting of: 11-05-2019

Title:

Approval of and authorization to execute a Professional Consultant Agreement with HDR Engineering, Inc. for Raw Water Pump Station Air Conditioning System Replacement and Sodium Hypochlorite Supply Water Chillers (Project Numbers 195410 & 195409)

Background:

The Raw Water Pump Station (RWPS) Air Conditioning System Replacement project consists of having new split air conditioner systems installed to replace the two current units. The two existing wall mounted air conditioners at the RWPS have proven maintenance intensive and have not provided adequate cooling in the station when needed during summer months.

The Sodium Hypochlorite Generator Supply Water Chillers project will provide cooled softened water supply to the sodium hypochlorite generators. These three existing generators have experienced overheating issues during summer months.

Both of these projects should allow for the water treatment plant to run more efficiently and with fewer maintenance issues throughout the summer months.

The Engineering and Construction Department negotiated a Professional Consultant Agreement with HDR Engineering, Inc. to provide engineering services including design and bidding services for the Raw Water Pump Station Air Conditioning Supply System Replacement and Sodium Hypochlorite Supply Water Chillers. The negotiated amount of the contract is \$59,648.00.

Cost: \$59,648.00

Funding Source: Water Treatment Plant Budget

Requested By: Kenneth D. Schwab, P.E., Assistant City Manager - Operations

Approved By: City Manager's Office

Attachments: Professional Consultant Agreement

Recommendation:

Approve and authorize execution of a Professional Consultant Agreement with HDR Engineering, Inc. for Raw Water Pump Station Air Conditioning System Replacement and Sodium Hypochlorite Supply Water Chillers (Project Nos. 195410 & 195409)

AGREEMENT SUMMARY
TO AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN BROKEN ARROW MUNICIPAL AUTHORITY (OWNER)
HDR ENGINEERING, INC. (CONSULTANT)
FOR
RAW WATER PUMP STATION AIR CONDITIONING SYSTEM REPLACEMENT AND
SODIUM HYPOCHLORITE SUPPLY WATER CHILLERS
PROJECT NOS. 195410 & 195409

1.0 Professional Consulting Firm:

- 1.1 Name: HDR Engineering, Inc.
- 1.2 Telephone No.: 972-960-4400
- 1.3 Address: 17111 Preston Road, Suite 300, Dallas, TX 75248-1232

2.0 Project Name/Location: Raw Water Pump Station Air Conditioning System Replacement and Sodium Hypochlorite Supply Water Chillers

3.0 Statement of Purpose: This project consists of improvements to the Raw Water Pump Station Air Conditioning System and Sodium Hypochlorite Supply Water Chillers.

4.0 Agreement Summary:

- 4.1 Agreement Amount:
 - RWPS Air Conditioning Replacement: \$27,043.00
 - Sodium Hypochlorite Generator Supply Water Chillers: \$32,605.00
 - Total: \$59,648.00

- 4.2 Agreement Time: 100 calendar days

5.0 Contract Documents and Priority: The Broken Arrow Municipal Authority (OWNER), represented by the City Manager, and the Professional Consulting firm, (CONSULTANT), identified in paragraph 1.0 agree to perform this AGREEMENT in strict accordance with the clauses, provisions, and the documents identified as below, all of which are made part of this Contract. In the event of conflict, these documents shall be interpreted in the following order:

- 5.1 AGREEMENT with corresponding Attachments;
- 5.2 Duly authorized Amendments to the AGREEMENT;
- 5.3 AGREEMENT Summary;
- 5.4 Specific project written correspondence mutually recognized; and
- 5.5 Specific project verbal instructions mutually recognized.

6.0 Agreement Approved by the Owner on: _____

**AGREEMENT
FOR
PROFESSIONAL CONSULTANT SERVICES
BETWEEN
BROKEN ARROW MUNICIPAL AUTHORITY
AND
HDR ENGINEERING, INC.**

**FOR
RAW WATER PUMP STATION AIR CONDITIONING SYSTEM REPLACEMENT AND
SODIUM HYPOCHLORITE SUPPLY WATER CHILLERS
PROJECT NUMBERS 195410 & 195409**

This AGREEMENT, including Attachment A through Attachment E, between the Broken Arrow Municipal Authority (OWNER) and HDR Engineering, Inc., (CONSULTANT);

W I T N E S S E T H:

WHEREAS, OWNER intends to construct improvements at the Verdigris River Water Treatment Plant to include Raw Water Pump Station air conditioner replacement and the addition of supply water chillers to the sodium hypochlorite generation system (PROJECT) for which OWNER has requested that CONSULTANT provide certain professional services as required and,

WHEREAS, CONSULTANT is qualified and capable to provide the professional services required;

NOW, therefore, in consideration of the promises contained in this AGREEMENT, OWNER and CONSULTANT agree as follows:

ARTICLE 1 - EFFECTIVE DATE

This AGREEMENT shall be effective upon signature of both parties.

ARTICLE 2 - GOVERNING LAW

This AGREEMENT shall be governed by the laws of the State of Oklahoma and venue for any action concerning this Agreement shall be in the District Court of Tulsa County, Oklahoma.

ARTICLE 3 - SERVICES TO BE PERFORMED BY CONSULTANT

CONSULTANT shall perform the SERVICES described in Attachment A, Scope of Services.

ARTICLE 4 – ORGANIZATION OF SUBMITAL DOCUMENTS

CONSULTANT shall prepare the documents as described in Attachment B as part of this Agreement.

ARTICLE 5 - COMPENSATION

OWNER shall pay CONSULTANT in accordance with Attachment C, Compensation.

ARTICLE 6 - OWNER'S RESPONSIBILITIES

OWNER shall be responsible for all matters described in Attachment D, OWNER'S Responsibilities and Special Conditions.

ARTICLE 7 - STANDARD OF CARE

CONSULTANT shall perform the SERVICES undertaken in a manner consistent with the prevailing accepted standard for similar services with respect to projects of comparable function and complexity, and with the applicable state laws, as well as the specific codes, regulations, design criteria and construction specifications adopted by the owner and other governing policies published and generally considered authoritative by CONSULTANT'S profession that are in effect at the time of performance of these SERVICES. CONSULTANT is obligated to perform professional services in accordance with the foregoing standard with respect to the laws, codes, regulations, design criteria and construction specifications that are applicable pursuant to this AGREEMENT.

ARTICLE 8 - LIABILITY

8.1 General. Having considered the potential liabilities that may exist during the performance of these SERVICES, the benefits of the PROJECT, and CONSULTANT'S fee for the SERVICES; and in consideration of the promises contained in this AGREEMENT, OWNER and CONSULTANT agree to allocate and limit such liabilities in accordance with Article 10.

8.2 Indemnification. CONSULTANT agrees to defend, indemnify, and hold harmless OWNER, and its agents and employees, from and against legal liability for all claims, losses, damages, and expenses to the extent such claims, losses, damages, or expenses are caused by the negligent or intentional acts, errors, or omissions of CONSULTANT, its agents or employees. In the event claims, losses, damages, or expenses are caused by the joint or concurrent negligence of OWNER and CONSULTANT, or their agents or employees, then they shall be borne by each party in proportion to each entity's own negligence.

8.3 Consequential Damages. OWNER shall not be liable to CONSULTANT for any special, indirect, or consequential damages resulting in any way from the performance of the SERVICES such as, but not limited to, loss of use, loss of revenue, or loss of anticipated profits.

8.4 Survival. Upon completion of all SERVICES, obligations, and duties provided for in this AGREEMENT, or if this AGREEMENT is terminated for any reason, the terms and conditions of this Article 8 shall survive.

ARTICLE 9 - INSURANCE

During the performance of the SERVICES under this AGREEMENT, CONSULTANT shall maintain the following insurance:

- (1) General Liability Insurance, with a combined single limit of \$1,000,000 for each occurrence and \$1,000,000 in the aggregate;
- (2) Automobile Liability Insurance, with a combined single limit of not less than \$1,000,000 for each person, not less than \$1,000,000 for each accident and not less than \$1,000,000 for property damage; and
- (3) Professional Liability Insurance, with a limit of \$1,000,000 annual aggregate.

CONSULTANT shall furnish OWNER certificates of insurance, which shall include a provision that such insurance shall not be canceled without at least thirty (30) days written notice to OWNER. All PROJECT sub-consultants shall be required to name OWNER and CONSULTANT as certificate holders on their certificate of insurance for the PROJECT, and shall be required to indemnify OWNER and CONSULTANT to the same extent. CONSULTANT shall be held responsible to submit certificates of insurance for sub-consultants to OWNER prior to the sub-consultant's release to commence work.

ARTICLE 10 - LIMITATIONS OF RESPONSIBILITY

CONSULTANT shall not be responsible for: (1) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the construction

of the PROJECT; or (2) procuring permits, certificates, and licenses required for any construction unless such responsibilities are specifically assigned to CONSULTANT in Attachment A, Scope of Services.

ARTICLE 11 - LIMITATIONS OF RESPONSIBILITIES FOR ACTS OF OTHERS

CONSULTANT shall not at any time supervise, direct, control or have authority over any work performed by any employee, contractor or other agent of OWNER. CONSULTANT shall not be responsible for the acts or omissions of any employee, contractor or other agent associated with the PROJECT except for its own employees, subcontractors and other agents.

ARTICLE 12 - OPINIONS OF COST AND SCHEDULE

Since CONSULTANT has no control over the cost of labor, materials, or equipment furnished by others, or over the resources provided by others to meet PROJECT schedules, CONSULTANT'S opinion of probable costs and of PROJECT schedules shall be made on the basis of experience and qualifications as a professional. CONSULTANT does not guarantee that proposals, bids, or actual PROJECT costs will conform to OWNER'S cost estimates or that actual schedules will conform to OWNER'S projected schedules.

ARTICLE 13 - REUSE OF DOCUMENTS

All documents, including, but not limited to, drawings, specifications, and details, reports, etc. prepared by CONSULTANT pursuant to this AGREEMENT are instruments of service in respect to the PROJECT. They are not intended or represented to be suitable for reuse by CONSULTANT or others on extensions of the PROJECT or on any other project. Any reuse or adaptation without prior written verification by the OWNER for the specific purpose intended will be at CONSULTANT'S sole risk and without liability or legal exposure to the OWNER. CONSULTANT shall defend, indemnify, and hold harmless the OWNER against all claims, losses, damages, injuries, and expenses, including attorney's fees, arising out of or resulting from such reuse.

ARTICLE 14 - OWNERSHIP OF DOCUMENTS AND INTELLECTUAL PROPERTY

Except as otherwise provided herein, engineering documents, drawings, and specifications prepared by CONSULTANT as part of the SERVICES shall become the property of OWNER. CONSULTANT shall retain its rights in its standard drawing details, specifications, data bases, computer software, and other proprietary property. Rights to intellectual property developed, utilized, or modified in the performance of the SERVICES shall remain the property of CONSULTANT, but shall be provided to the OWNER, at no additional expense to the OWNER.

ARTICLE 15 - TERMINATION

This AGREEMENT may be terminated by either party upon written notice in the event of substantial failure by the either party to perform in accordance with the terms of this AGREEMENT. The non-performing party shall have fifteen (15) calendar days from the date of the termination notice to cure or to submit a plan for cure acceptable to the other party.

OWNER may suspend performance of this AGREEMENT for OWNER'S convenience upon written notice to CONSULTANT. Upon restart, an equitable adjustment may be made to CONSULTANT'S compensation, if the period of suspension has created an economic hardship for the CONSULTANT.

ARTICLE 16 - DELAY IN PERFORMANCE

Neither OWNER nor CONSULTANT shall be considered in default of this AGREEMENT for delays in performance caused by circumstances beyond the reasonable control of the non-performing party. For purposes of this AGREEMENT, such circumstances include, but are not limited to, abnormal weather conditions such as floods, earthquakes, fire; civil disturbances such as war, riots, or other civil epidemic; power outages, strikes, lockouts, work slowdowns, or other labor disturbances; sabotage; judicial restraint, and inability to procure permits, licenses, or

authorizations from any local, state, or federal agency for any of the supplies, materials, accesses, or services required to be provided by either OWNER or CONSULTANT under this AGREEMENT.

Should such circumstances occur, the non-performing party shall, within a reasonable time of being prevented from performing, give written notice to the other party describing the circumstances preventing continued performance and the efforts being made to resume performance of this AGREEMENT.

ARTICLE 17 - WAIVER

A waiver by either OWNER or CONSULTANT of any breach of this AGREEMENT shall be in writing. Such a waiver shall not affect the waiving party's rights with respect to any other or further breach.

ARTICLE 18 - SEVERABILITY

The invalidity, illegality, or unenforceability of any provision of this AGREEMENT or the occurrence of any event rendering any portion or provision of this AGREEMENT void shall in no way affect the validity or enforceability of any other portion or provision of this AGREEMENT. Any void provision shall be deemed severed from this AGREEMENT, and the balance of this AGREEMENT shall be construed and enforced as if this AGREEMENT did not contain the particular portion or provision held to be void. The parties further agree to amend this AGREEMENT to replace any stricken provision with a valid provision that comes as close as possible to the intent of the stricken provision. The provisions of this Article shall not prevent this entire AGREEMENT from being void should a provision which is of the essence of this AGREEMENT be determined void.

ARTICLE 19 - INTEGRATION

This AGREEMENT represents the entire and integrated AGREEMENT between OWNER and CONSULTANT. It supersedes all prior and contemporaneous communications, representations, and agreements, whether oral or written, relating to the subject matter of this AGREEMENT.

ARTICLE 20 - SUCCESSORS AND ASSIGNS

To the extent permitted by Article 22, OWNER and CONSULTANT each binds itself and its successors and assigns to the other party to this AGREEMENT.

ARTICLE 21 - ASSIGNMENT

Neither OWNER nor CONSULTANT shall assign its duties under this AGREEMENT without the prior written consent of the other party. Unless otherwise stated in the written consent to an assignment, no assignment will release or discharge the assignor from any obligation under this AGREEMENT. Nothing contained in this Article shall prevent CONSULTANT from employing independent sub-consultants, associates, and sub-contractors to assist in the performance of the SERVICES. However, third party entities must comply with Article 9.

ARTICLE 22 - THIRD PARTY RIGHTS

Nothing in this AGREEMENT shall be construed to give any rights or benefits to anyone other than OWNER and CONSULTANT.

ARTICLE 23 - COMPLETION

CONSULTANT shall complete the services within the time frame outlined on Attachment E, Schedule, subject to conditions which are beyond the control of the CONSULTANT.

ARTICLE 24 - IMMIGRATION COMPLIANCE

24.1 Consultant shall demonstrate that he:

- 24.1.1 Has complied, and shall at all times during the term of this Contract, comply in all respects with all immigration-related laws, statutes, ordinances and regulations including without limitation, the Immigration and Nationality Act, as amended, the Immigration Reform and Control Act of 1986, as amended, and the Oklahoma Taxpayer and Citizen Protection Act of 2007 (Oklahoma HB 1804) and any successor laws, ordinances or regulations (collectively, the Immigration Laws"); and
- 24.1.2 Has properly maintained, and shall at all times during the term of this Contract, maintain any and all employee records required by the U.S. Department of Homeland Security ("DHS"), including, without limitation, properly completed and maintained Form I-9s for each of the Consultants employees; and
- 24.1.3 Has verified the employment eligibility for all employees hired on or after July 1, 2008 through DHS's E-Verify system, and shall at all times continue to verify the employment eligibility of all employees hired during the term of this Contract; and
- 24.1.4 Has required, and will at all times during the term of this Contract, require any sub-contractor utilized, hired or sub-contracted for by Consultant for the completion or undertaking of any duties, tasks or responsibilities under this Contract, to comply the requirements and obligations imposed by the Immigration Laws and set forth in Paragraph (I), parts (a), (b) and (c), above, with regards to each of the sub-contractor's employees.
- 24.2 Consultant will indemnify, defend and hold harmless City against any loss, cost, liability, expense (including, without limitation, costs and expenses of litigation and reasonable attorney's fees) demands, claims, actions, causes of action, liabilities, suits, damages, including special and consequential damages that arise from or in connection with, directly or indirectly, Consultants failure, deliberate or negligent, to fulfill its obligations and representations regarding verifying the employment eligibility of its employees and the employees of any subcontractor utilized by Consultant as set forth more fully in Paragraph 24.1 above.

ARTICLE 25 - COMMUNICATIONS

Any communication required by this AGREEMENT shall be made in writing to the address specified below:

OWNER: Broken Arrow Municipal Authority
485 N. Poplar Street
Broken Arrow, OK 74012
Contact: Mr. Roger D. Hughes, P.E.
Engineering Division Manager

CONSULTANT: HDR Engineering, Inc.
17111 Preston Road, Suite 300
Dallas, TX 75248-1232
972-960-4400

Contact Name: Mr. Joel R. Cantwell, P.E.
Vice President

Nothing contained in this Article shall be construed to restrict the transmission of routine communications between representatives of OWNER and CONSULTANT.

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IN WITNESS WHEREOF, the City Manager of the City of Broken Arrow, Oklahoma has hereunto set his hand, for and on behalf of the Broken arrow municipal authority and the CONSULTANT has signed, or caused his name to be signed, and seal affixed by proper authority, the day and year first above written and these presents have been executed in triplicate counterparts.

OWNER:

Broken Arrow Municipal Authority

By: _____

Michael L. Spurgeon, City Manager

Date: _____

CONSULTANT:

HDR Engineering, Inc.

By: _____

Ramon F. Miguez, Vice President

Date: _____

(CORPORATE SEAL, IF APPLICABLE)

Attest: _____

City Clerk [Seal]

Date: _____

Attest: _____

Jenifer Rayshell, Secretary

Date: _____

Approved as to form:

Assistant City Attorney

VERIFICATION

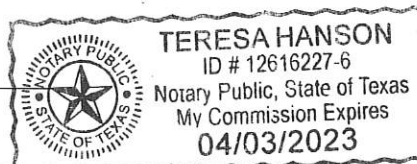
State of Texas)
County of Dallas) §

Before me, a Notary Public, on this 11th day of October, 2019, personally appeared Ramon F. Miguez, known to be to be the (President, Vice-President, Corporate Officer, Member, or Other: _____) of HDR Engineering, Inc., and to be the identical person who executed the within and foregoing instrument, and acknowledged to me that he/she executed the same as his/her free and voluntary act and deed for the uses and purposes therein set forth.

My Commission Expires:

4-3-2023

Notary Public



**ATTACHMENT A
TO
AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN
BROKEN ARROW MUNICIPAL AUTHORITY (OWNER)
AND
HDR ENGINEERING, INC. (CONSULTANT)
FOR
RAW WATER PUMP STATION AIR CONDITIONING SYSTEM REPLACEMENT AND
SODIUM HYPOCHLORITE SUPPLY WATER CHILLERS
PROJECT NUMBERS 195410 & 195409**

SCOPE OF SERVICES

The following scope of services shall be made a part of the AGREEMENT dated the _____ day of _____, 2019.

1.0 PROJECT UNDERSTANDING

The Verdigris River Water Treatment Plant has been in operation since 2014. The OWNER has expressed a desire for CONSULTANT to provide engineering services to address issues related to the following two items:

- 1.1 Raw Water Pump Station (RWPS) Air Conditioning System Replacement. The two existing wall-mounted air conditioners (PAC-1001 and PAC-1002) at the RWPS have proven to be maintenance-intensive and have not provided adequate cooling in the station when needed during summer months. The two units will be replaced with one (or two) new split air conditioner systems with exterior, pad-mounted condensers and interior coil units. The existing wall-mounted units and ductwork will be demolished. A new elevated concrete pad above the 100-year flood elevation will be installed for the outdoor condensing unit(s) and the electrical feed to the new unit(s) will be modified as required.
- 1.2 Sodium Hypochlorite Generator Supply Water Chillers. The three existing sodium hypochlorite generators (GEN-4001, GEN-4002, and GEN-4003) have experienced overheating issues during summer months when the softened water supply to the units exceeds 75 to 80 deg F. To provide cooled, softened water supply to the units, three water chillers will be installed. These units will be designed to reduce the inlet softened water temperature from a maximum of 90 deg F to a range of 55 to 78 deg F. These units will be installed on at-grade concrete pads located on the north side of the Membrane Building. A new electrical panelboard will be installed (fed from panelboard MH-4) to provide 480 VAC, 3-phase power to each unit.

2.0 SCOPE OF SERVICES

CONSULTANT will provide the following services for each of the items described above. The items will be designed, bid, and constructed as two separate projects.

2.1 Design Services

2.1.1 Develop Draft Drawings and Specifications to an 80% level of completion.

2.1.2 Submit the Draft documents to OWNER for review. Address written

comments from OWNER and conduct a conference call to discuss City concerns or to clarify comments.

- 2.1.3 Prepare Final Drawings and Specifications and submit an electronic PDF to OWNER along with an Opinion of Probable Construction Cost (OPCC).
- 2.1.4 OWNER will prepare the front end documents for bidding the project (Division 0). CONSULTANT will assist the OWNER with specific project information such as project description, construction duration, bid proposal items, etc.
- 2.2 Bidding Services. OWNER, without assistance from CONSULTANT, will advertise the project for bids, issue the documents to potential bidders, conduct a pre-bid conference, receive bidder inquiries, conduct the bid opening, tabulate the bids, and award the construction contract. CONSULTANT will provide only specific, limited services, to include the following:
 - 2.2.1 Issue up to two (2) addenda to provide responses to bidder inquiries.
 - 2.2.2 After the bid date, modify the Drawings and Specifications to incorporate the addenda and submit Issued for Construction Drawings and Specifications to OWNER in electronic PDF format.
- 2.3 Construction Services. OWNER will manage the project during construction. CONSULTANT will provide only specific, limited services, to include the following:
 - 2.3.1 Review shop drawings for submittals for equipment, appurtenances, and electrical-related components and provide written review comments to OWNER.
 - 2.3.2 Provide responses to OWNER for Contractor Requests for Information (RFIs) as needed.
 - 2.3.3 Conduct a Substantial Completion site visit (one CONSULTANT employee). Provide a written punch list of items to OWNER that need to be completed by the Contractor prior to OWNER accepting the project.
 - 2.3.4 After project completion, produce Record Drawings using the Contractor's as-built drawings provided by OWNER. Submit an electronic PDF of the Record Drawings to OWNER.

**ATTACHMENT B
TO
AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN
BROKEN ARROW MUNICIPAL AUTHORITY (OWNER)
AND
HDR ENGINEERING, INC. (CONSULTANT)
FOR
RAW WATER PUMP STATION AIR CONDITIONING SYSTEM REPLACEMENT AND
SODIUM HYPOCHLORITE SUPPLY WATER CHILLERS
PROJECT NUMBERS 195410 & 195409**

ORGANIZATION OF SUBMITTAL DOCUMENTS

The CONSULTANT shall prepare the following documents as described as a part of the AGREEMENT dated the _____ day of _____, 2019.

1.0 DESIGN DOCUMENTS: The CONSULTANT shall submit the following documents for each design item:

- 1.1 Draft Drawings and Specifications (80% Complete)
- 1.2 Final Drawings and Specifications

2.0 BID PHASE DOCUMENTS: The CONSULTANT shall submit the following documents for each design item:

- 2.1 Addenda
- 2.2 Conformed Drawings and Specifications

3.0 CONSTRUCTION PHASE DOCUMENTS: The CONSULTANT shall submit the following documents for each design item:

- 3.1 Shop Drawing review comments
- 3.2 RFI responses
- 3.3 Substantial Completion Inspection punch list
- 3.4 Record Drawings

**ATTACHMENT C
TO
AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN
BROKEN ARROW MUNICIPAL AUTHORITY (OWNER)
AND
HDR ENGINEERING, INC. (CONSULTANT)
FOR
RAW WATER PUMP STATION AIR CONDITIONING SYSTEM REPLACEMENT AND
SODIUM HYPOCHLORITE SUPPLY WATER CHILLERS
PROJECT NUMBERS 195410 & 195409**

COMPENSATION AND ADDITIONAL SERVICES

The following compensation and hourly rates shall apply as described in Attachment D and shall be made a part of the AGREEMENT dated the _____ day of _____, 2019.

1.0 BASIC COMPENSATION

The basic compensation for the CONSULTANT to perform all duties and responsibilities associated with the Scope of Services as described in Attachment A shall be in accordance with the following payment breakdown. A detailed breakdown of hours is included as Attachment C-1.

- 1.1 Raw Water Pump Station Air Conditioning System Replacement. The OWNER shall pay the CONSULTANT the following lump sum amounts for the services related to this design item. These amounts include all labor, material, overhead and profit associated with the Scope of Services.

1.1.1	Design Services:	\$17,020
1.1.2	Bidding Services:	\$3,141
1.1.3	Construction Services:	\$6,882

- 1.2 Sodium Hypochlorite Generator Supply Water Chillers. The OWNER shall pay the CONSULTANT the following lump sum amounts for the services related to this design item. These amounts include all labor, material, overhead and profit associated with the Scope of Services.

1.2.1	Design Services:	\$21,754
1.2.2	Bidding Services:	\$3,220
1.2.3	Construction Services:	\$7,631

2.0 ADDITIONAL SERVICES BASED ON TIME

If authorized by OWNER in writing, OWNER shall pay the CONSULTANT for Additional Services on a Time and Materials basis. CONSULTANT shall be paid an amount equal to Direct Labor Costs times a factor of 3.2 and Reimbursable Expenses times a factor of 1.0.

3.0 REPRODUCTION

All charges for reproduction shall be included in Basic Compensation Fee of the Professional Consultant. No separate payment will be made for these expenses.

4.0 MILEAGE

All direct costs shall be included in the Basic Compensation of the Professional Consultant. No separate payment will be made for these expenses.

5.0 DIRECT COSTS

All direct costs shall be included in the Basic Compensation of the Professional Consultant. No separate payment will be made for these expenses.

6.0 ADJUSTMENT CLAUSE

The rates and costs described in this AGREEMENT shall not be revised annually, unless mutually agreed upon by both parties.

**Attachment C-1: Basis of Compensation
Broken Arrow Municipal Authority
Verdigris River WTP - RWPS Air Conditioner Replacement and Sodium Hypochlorite Water Supply Chillers**

Task Description	HDR												
	Labor												
	Project Manager	Project Engineer	Electrical			HVAC			Engin. Assistant	Total Hours	Labor Cost	Expenses	TOTAL
			Sr. Engr.	Jr. Engr.	BIM	Sr. Engr.	Jr. Engr.	BIM					
	<i>Cantwell</i>	<i>Townsend</i>	<i>Davila</i>	<i>Jonguitud</i>	<i>Olivarez</i>	<i>Periberg</i>	<i>Orton</i>	<i>Jeffers</i>	<i>Rayshell</i>				
1. Design Services													
a. RWPS Air Conditioner Replacement	1	6	4	20	26	18	4	44	4	127	\$ 16,524	\$ 496	\$ 17,020
b. Sodium Hypo Supply Water Chillers	1	6	4	28	32	32	4	42	4	153	\$ 21,120	\$ 634	\$ 21,754
Subtotal	2	12	8	48	58	50	8	86	8	280	\$ 37,644	\$ 1,130	\$ 38,774
2a. Bidding Services - RWPS AC													
a. Issue Addenda		2		2	2	2		2	1	11	\$ 1,689	\$ 51	\$ 1,740
b. Conformed Drawings & Specifications		1		2	1	2		2	1	9	\$ 1,360	\$ 41	\$ 1,401
Subtotal	-	3	-	4	3	4	-	4	2	20	\$ 3,049	\$ 92	\$ 3,141
2b. Bidding Services - Chillers													
a. Issue Addenda		2		2	2	2		2	1	11	\$ 1,689	\$ 51	\$ 1,740
b. Conformed Drawings & Specifications		1		2	2	2		2	1	10	\$ 1,437	\$ 43	\$ 1,480
Subtotal	-	3	-	4	4	4	-	4	2	21	\$ 3,126	\$ 94	\$ 3,220
3a. Construction Services - RWPS AC													
a. Review Shop Drawings		1		4		4			6	15	\$ 2,497	\$ 75	\$ 2,572
b. Respond to RFIs		1		3	2	3		2		11	\$ 1,658	\$ 50	\$ 1,708
c. Substantial Completion Inspection		4								4	\$ 1,011	\$ 620	\$ 1,631
d. Record Drawings		1		1	2	1		2		7	\$ 943	\$ 28	\$ 971
Subtotal	-	7	-	8	4	8	-	4	6	37	\$ 6,109	\$ 773	\$ 6,882
3b. Construction Services - Chillers													
a. Review Shop Drawings		1		4		6			6	17	\$ 2,982	\$ 89	\$ 3,071
b. Respond to RFIs		1		3	2	4		2		12	\$ 1,901	\$ 57	\$ 1,958
c. Substantial Completion Inspection		4								4	\$ 1,011	\$ 620	\$ 1,631
d. Record Drawings		1		1	2	1		2		7	\$ 943	\$ 28	\$ 971
Subtotal	-	7	-	8	4	11	-	4	6	40	\$ 6,837	\$ 794	\$ 7,631
TOTAL	2	32	8	72	73	77	8	102	24	398	\$ 56,765	\$ 2,883	\$ 59,648

**ATTACHMENT D
TO
AGREEMENT FOR CONSULTING SERVICES
BETWEEN
BROKEN ARROW MUNICIPAL AUTHORITY (OWNER)
AND
HDR ENGINEERING, INC. (CONSULTANT)
FOR
RAW WATER PUMP STATION AIR CONDITIONING SYSTEM REPLACEMENT AND
SODIUM HYPOCHLORITE SUPPLY WATER CHILLERS
PROJECT NUMBERS 195410 & 195409**

OWNER'S RESPONSIBILITIES AND SPECIAL CONDITIONS

The following list of special OWNER'S responsibilities and contract special conditions shall be made a part of this AGREEMENT dated the _____ day of _____, 2019.

1.0 OWNER'S RESPONSIBILITIES

- 1.1 OWNER shall furnish to CONSULTANT all available information pertinent to the PROJECT including previous reports and any other data relative to design and construction of the PROJECT;
- 1.2 OWNER shall furnish to CONSULTANT all public utility information available relative to the design and construction of the PROJECT. Consultant topographical survey shall locate all utilities above and below ground for exact location;
- 1.3 OWNER shall furnish to CONSULTANT list of codes adopted by the municipality as well as subdivision regulations, design criteria and construction standards and specifications that may be pertinent to the design and construction of the PROJECT;
- 1.4 OWNER shall be responsible for all permit fees and for all reproduction costs associated with the bidding of the final approved construction documents required for the construction of this PROJECT;
- 1.5 OWNER shall be responsible for all land/easement acquisition costs and filing of the required legal documents, if necessary; and
- 1.6 OWNER shall examine all studies, reports, sketches, estimates, specifications, plan drawings, proposals, and other documents presented by the CONSULTANT and render in writing decisions pertaining thereto within a reasonable time so as not to delay the SERVICES of the CONSULTANT.

**ATTACHMENT E
TO
AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN
BROKEN ARROW MUNICIPAL AUTHORITY (OWNER)
AND
HDR ENGINEERING, INC. (CONSULTANT)
FOR
RAW WATER PUMP STATION AIR CONDITIONING SYSTEM REPLACEMENT AND
SODIUM HYPOCHLORITE SUPPLY WATER CHILLERS
PROJECT NUMBERS 195410 & 195409**

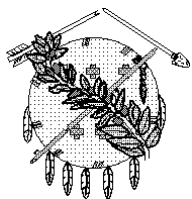
PROJECT SCHEDULE

The following schedule shall be made a part of the AGREEMENT dated the _____ day of _____, 2019.

1.0 DESIGN SERVICES:

- 1.1 Draft Drawings and Specifications shall be submitted to OWNER within 45 calendar days of Notice to Proceed.
- 1.2 Final Drawings and Specifications shall be submitted to OWNER within 30 calendar days of receipt of OWNER comments on the draft documents.

2.0 RECORD DRAWINGS: To be submitted within 30 days after OWNER provides contractor red-lines to CONSULTANT upon completion of construction.



City of Broken Arrow

Request for Action

File #: 19-1340, Version: 1

Broken Arrow Municipal Authority
Meeting of: 11-5-19

Title:

Approval of and authorization to execute Change Order #2 with Belt Construction, Inc. for construction contract S.1609; County Line Trunk Sewer - Phase 1

Background:

The existing County Line Trunk Sewer from the Lynn Lane Wastewater Treatment Plant north to Washington Street is in need of replacement due to the deteriorated condition of the pipeline and inadequate capacity for future growth. The awarded project includes the construction of approximately 5,300 feet of 60-inch, 9,400 feet of 54-inch, and 4,100 feet of 48-inch gravity sanitary sewer interceptor pipelines along and near Broken Arrow Creek and 23rd Street, with new manholes and creek crossing structures. The Base Bid includes construction from the Lynn Lane Wastewater Treatment Plant (LL WWTP) north to the south side of the Creek Turnpike. Additive Alternate No. 1 includes construction north from this point terminating at a connection to the existing pipeline approximately 900 feet north of Florence Street. The project was advertised for bids on April 23 and 30, 2019 with the resulting lowest responsible bidder being Belt Construction, Inc., with a Base Bid of \$12,877,274.25 and an Additive Alternate No. 1 bid of \$3,170,841.61. A notice to proceed was issued for July 15, 2019.

This Change Order #2 addresses the following additions to the contract:

Per the request of the City of Broken Arrow - Engineering and Construction Department, the contractor has provided the attached proposal with costing information and completion date information to accelerate the construction of the additive alternate phase of the County Line Sewer Phase I project. The contractor is hereby directed to start the construction of Phase I of the contract as soon as possible such to have the installation of the sewer line and its components beyond the north side of E. 115th Street, or Station 179+00, no later than March 31, 2020. This work is being advanced due to the pending construction of Fire Station #3. The noted cost proposal is inclusive of all applicable markups and associated costs.

Total Number of Days Added by this Change Order:

- No additional Time Required

The additional cost associated with these changes is as follows:

Previous Change Orders:	\$125,247.00
This Change Order:	\$179,747.35
Total Cost of Change Orders:	\$304,994.35
Original Contract Amount:	\$16,048,115.86
Revised Contract Amount:	\$16,353,110.21
Percent Change in Contract:	1.90%
Applicable to Comp. Bid Act:	1.90%

Cost: \$179,747.35

Funding Source: OWRB loans FAP-17-0004-L & FAP-19-0001-L

Requested By: Kenneth D. Schwab, P.E., CFM, Assistant City Manager - Operations

Approved By: City Manager's Office

Attachments: S.1609 Contract Change Order #2

Recommendation:

Approve and authorize execution of Change Order #2 with Belt Construction, Inc. for construction contract S.1609; County Line Trunk Sewer - Phase 1

Contract Change Order # 2

Project Name: County Line Trunk Sewer - Phase I Project Number: S.1609
Project Location: Between WWTP and 111st Street Date of Application: Thursday, October 10, 2019
Contractor: Belt Construction, Inc. Submitted By: Kyle Bass

Summary of Change in Scope of Work

The following scope of work consisting of work location, work description, established quantities, and timeline for completion has been reviewed and agreed upon by the contractor, the origin funding department, and the Engineering and Construction Department.

Change of Work Items Included in this Change Order:

Per the request of the City of Broken Arrow - Engineering and Construction Department, the contractor has provided the attached proposal with costing information and completion date information to accelerate the construction of the additive alternate phase of the County Line Sewer Phase I project. The contractor is hereby directed to start the construction of Phase I of the contract as soon as possible such to have

- 1) the installation of the sewer line and its components beyond the north side of E. 115th Street, or Station 179+00, no later than **March 31, 2020**. This work is being advanced due to the pending construction of Fire Station #3. The noted cost proposal is inclusive of all applicable markups and associated costs.

Change in Contractual Project Time:

- 1) No additional time requested

Plan Sheets or Additional Documents Attached: ☒ Yes ☐ No ☐ Other: _____

Work Order Quantities

Item#	(Spec)	Item Description	Units	Price	Quantity	Total Amount
CO2-1	an	Add Alternate #1 - Advanced Schedule	LS	\$ 179,747.35	1	\$ 179,747.35

Total Change Cost: \$ 179,747.35

Summary of Project Costs

Total Previous Change Orders:	\$ 125,247.00	Original Contract Amount:	\$ 16,048,115.86
Current Change Order:	\$ 179,747.35	Amended Contract Amount:	\$ 16,353,110.21
Total Cost of Change Orders:	\$ 304,994.35	Percent Change in Contract:	1.90%
Total Cost Applicable to CBA:	\$ 304,994.35	Percent Change Applicable to CBA:	1.90%

Change Order Authorization

Change Order # <u>2</u> in the sum of: \$ <u>179,747.35</u> has been reviewed by all parties and is recommended for approval by:	
Contractor Submitting Change Order:	<div> <div>Kyle Bass</div> <div>Signature</div> <div>10-19-19</div> <div>Date</div> </div>
Construction Division Manager:	<div> <div>Timothy S Robins, PE</div> <div>Signature</div> <div>10/30/19</div> <div>Date</div> </div>
Acting Director of Engineering & Construction:	<div> <div>Mike Kyser, PE</div> <div>Signature</div> <div>10/31/19</div> <div>Date</div> </div>
Assistant City Manager - Operations:	<div> <div>Kenneth D Schwab, PE</div> <div>Signature</div> <div>10-30-19</div> <div>Date</div> </div>
City Manager:	<div> <div>Michael Spurgeon</div> <div>Signature</div> <div></div> <div>Date</div> </div>

This Change is Executed Through:

- ☐ This change to the contract documents is authorized by the City Manager's authority in accordance with the applicable state statutes and COBA Code of Ordinances.
or
☒ This change to the contract documents was approved at the City Council/BAMA meeting held on : Tuesday, November 5, 2019



2507 E. Broad
Texarkana, AR 71854
Office: 870-772-7216
Fax: 870-772-7233

October 10, 2019

Timothy Robins, PE
Construction Division Manager
485 N. Poplar Avenue
Broken Arrow, OK 74012

Re: Remobilization- Additional Crew
County Line Trunk Sewer Improvements Phase 1

Tim,

Below please see the cost to Re-Mobilize an additional crew to start the Alternate portion and lay by Fire Station by March 31, 2020.

Manhole Boxes 2ea	\$30,208.34		
Trench Boxes 2ea	\$39,420.00		
Gravel Box 1ea	\$15,608.79		
Dewatering Equipment	\$ 2,500.00		
Filter Fabric Dispenser	\$ 4,500.00		
Sump Piping	\$ 2,000.00		
Additional Plugs 2ea	\$ 7,640.00		
Steel Plates	\$ 3,000.00		
Laser	\$ 3,000.00		
Slings	\$ 4,000.00		
	Difference	Ownership Rate	Rental Rate
Komatsu 490 Rental 4 Months	\$23,728.72	23,373.68	47,102.40
Komatsu 380 Rental 4 Months	\$19,700.60	14,608.56	34,309.16
Komatsu 238 Rental 4 Months	\$14,827.32	17,530.28	32,357.60
Skid Steer 4 Months	\$ 9,613.56	8,865.12	18,478.68

Total \$179,747.35

Best Regards,



Nick Bass
Vice President



City of Broken Arrow

Request for Action

File #: 19-1306, **Version:** 1

Broken Arrow Municipal Authority
Meeting of: 11-05-2019

Title:

Approval to reject bids for the purchase of one (1) Rubber Tracked Mini Excavator and to find that the best interest of the City of Broken Arrow will be served by the rejection

Background:

A bid was opened for the purchase of one (1) Rubber Tracked Mini Excavator for the Stormwater Division of the Streets and Stormwater Department on September 25, 2019. Bids from six (6) vendors were received. Following the opening of bids, staff discovered that there were some discrepancies in the bid packet. The original bid packet requested eleven (11) options, however some of the bids received only stated ten (10) options on their proposal sheet, while other bidders wrote in the missing option on their proposal sheet. Due to the discrepancies in the bid packet, and to make ensure compliance with a fair and impartial bidding process, staff recommends that all bids be rejected at this time and a new bid prepared and submitted for the purchase on one (1) Rubber Tracked Mini Excavator.

Cost: \$0

Funding Source: Broken Arrow Municipal Authority

Requested By: Rocky Henkel, Director of Streets and Stormwater

Approved By: City Manager's Office

Attachments: Bid Tab 20.110
Supporting documentation

Recommendation:

Reject all bids for the purchase of one (1) Rubber Tracked Mini Excavator and find that rejection is in the best interests of the Citizens of Broken Arrow.

Bid 20,110

13,700-16,000 Lb. Class Rubber Tracked Mini Excavator

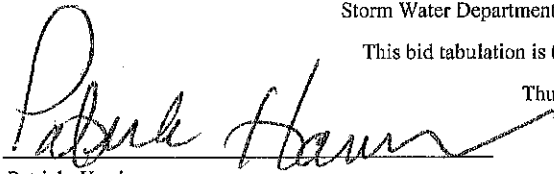
Bid Date 09/25/2019

	Item		Kubota of Northwest Arkansas	White Star	Central Power Systems and Services	Tulsa New Holland	Yellowhouse	Warrencat
	Specification		Kubota KX57-4	Bobcat 55	Doosan DX63-3	New Holland E60C	John Deere 60G	Caterpillar 306
Item Number	Item	Qty.	Each price	Each Price	Each price	Each Price	Each price	Each Price
	Mini Excavator	1	\$61,717.00	\$63,231.96	\$70,867.79	\$69,100.00	\$63,905.00	\$71,711.00
	Options							
1	Add Hydraulic System		Included	Included	Included	Included	Included	Included
2	Add Auxiliary Hydraulics Circuit	1	Included	Included	Included	Included	Included	Included
3	Add Hydraulic Jackhammer	1	\$10,300.00	\$8,678.44	\$8,055.10	\$12,000.00	\$7,780.00	\$9,756.00
4	Add Concrete Hammer Bit	1	\$350.00	Included	Included	Included	\$1,165.00	Included
5	Add Asphalt hammer Bit	1	\$350.00	Included	Included	Included	\$1,165.00	\$229.00
6	Add Quick Change System	1	\$950.00	\$1,310.40	Included	Included	\$3,580.00	Included
7	Add Keyless Start & Stop	1	\$760.00	Included	n/a	n/a	n/a	Included
8	Add Angle Dozer Blade	1	Included	\$2,216.00	n/a	n/a	\$3,220.00	Included
9	Add Tinted Windows	1	\$500.00	\$750.00	Included	n/a	\$350.00	Included
10	Add Online Support	1	Included	Included	Included	n/a	Included	Included
	Total		\$74,927.00	\$76,186.80	\$78,922.89	\$81,100.00	\$81,165.00	\$81,696.00
	Notes:				Option #8, angle dozer blade is not available	Option #8, angle dozer blade is not available	Option 4, 5 is same bit Option #7 is not available	Option 10 good for 1 year
	Meet specs		Yes	Yes	Yes	Yes	Yes	Yes
	List delivery time		90 days	90 days	30 days	120-150 days	120 days	112 days
	Warranty Machine		2yr/2000 hrs.	2yr/2000 hrs.	1yr/1500 hrs.	2yr/3000 hrs.	2yr/2000 hrs.	1yr/1500 hrs.
	Warranty Engine		2yr/2000 hrs.	2yrs /2000 hrs	1yr/1500 hrs.	2yr/3000 hrs.	2yr/2000 hrs.	1yr/1500 hrs.

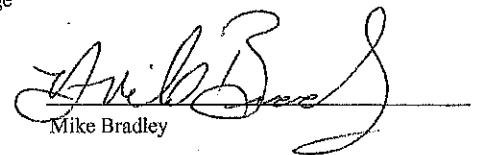
Storm Water Department Project 205311 Bids were sent to 13 vendors

This bid tabulation is true and accurate to the best of my knowledge

Thursday, September 26, 2019



Patrick Harrison
Purchasing Manager



Mike Bradley
Fleet Manager

PROPOSAL SHEET

THIS SHEET MUST BE COMPLETED AND ACCOMPANY BID

Bid Number: 20.110

Item Number	Quantity	Description	Unit Price	Total Bid Amount
1	1	Mini Excavator	\$ 63,231 ⁹⁶	\$ 63,231 ⁹⁶
Vendor's Proposed Make		Bobcat		
		Model	E-55 extendable arm	
Show weight of machine bid		13,750 lbs.		
Show length and width of machine bid		209.9" length 78" width		
Show nearest parts and service facility		12611 E. 60 th St. south Tulsa, OK		
Delivery time required		45 - 60 days		
Warranty machine		2 years or 2000 hrs.		
Warranty engine		2 years or 3000 hrs.		

Options

Cost

- | | |
|---------------------------------|--|
| 1) Auxiliary hydraulic system. | included |
| 2) Auxiliary hydraulics circuit | included |
| 3) Hydraulic jack hammer | \$ 8678 ⁴⁴ |
| 4) Concrete hammer bit | { same bit } |
| 5) Asphalt hammer bit | { included w/hammer } |
| 6) Quick change system | \$ 1310 ⁴⁰ |
| 7) Keyless start & stop | included |
| 8) Angle dozer blade | \$ 2216 ⁰⁰ |
| 9) Tinted windows | \$ 750 ⁰⁰ |
| 10) Online support | |
| 11) hydraulic Thumb | Factory teleomatic are standard
\$ 2224 ⁰⁰ |

Cab

Type

Ignition keys

Door keys

Cab structure

Windshield wiper

AC/Heater

Radio

Seat

Cab grab handles

Fully enclosed-lockable

10 each, ignition and door keyed alike (delete if keyless option selected)

10 each

ROPS/FOPS

Required

Required

AM/FM

Adjustable w/retractable seat belts and arm rests

Required

COMPLIES WITH THIS SECTION

YES ☒NO ☐**Other**

Brochures

Other

Brochure of machine bid showing specifications to be included with bid

All components or features not specifically mentioned, which are necessary to provide a complete unit or that is standard equipment, shall be included in the bid

COMPLIES WITH THIS SECTION

YES ☒NO ☐**Manuals**

Operator manual

Work shop manual/s

Parts manual

2 required, 1 must be in book form

1 required to include: Electrical, Undercarriage, Hydraulics, Engine, Cab

1 required for entire machine

(Note: workshop and parts manual may be CD or online)

COMPLIES WITH THIS SECTION

YES ☒NO ☐**End of Specifications****Additional optional equipment**

The following list represents the additional equipment options that may be ordered under this contract.

Bidder shall furnish with their bid, the price to be added/deducted from the base bid for each of the following options.

1) Auxiliary hydraulic system

Auxiliary hydraulic system, with sufficient GPM and pressure for a jack hammer and/or other hydraulic attachment operation

Show GPM and pressure: 20 GPM @ 3,045 PSI

2) Auxiliary hydraulic circuit

Auxiliary hydraulic circuit on end of arm with quick disconnect fittings for hydraulic jack hammer and other hydraulic attachment operation *(end of boom)*

3) Hydraulic powered jack hammer

Hydraulic powered jack hammer for concrete and asphalt removal

Include brochure for jack hammer.

Show manufacture and model:

Robert HB 1180

4) Jack hammer bit

For concrete removal

5) Jack hammer bit

For asphalt removal

- 6) Quick change system
- 7) Keyless start & stop
- 8) Angle dozer blade

- 9) Hydraulic operated thumb
- 10) Tinted windows
- 11) Online support

Hydraulic operated, bucket / tool quick change system

Keyless start and stop

Dozer blade with hydraulic operated, right / left, angle operation

Show angle, Left 25° Right 25°

Hydraulic operated thumb

Tinted windows on all cab glass

Annual or monthly subscription cost

End of options

PROPOSAL SHEET

THIS SHEET MUST BE COMPLETED AND ACCOMPANY BID

Bid Number: 20.110

Item Number	Quantity	Description	Unit Price	Total Bid Amount
1	1	Mini Excavator	\$ 61,717.99	\$ 61,717.99

Vendor's Proposed Make Kubota Model KX57-4

Show weight of machine bid 12,400 LBS

Show length and width of machine bid 18' 1" x 6' 5"

Show nearest parts and service facility 7747 State Hwy 66, Tulsa, OK 74131

Delivery time required 90 days

Warranty machine 24 months or 2000 hours whichever occurs first

Warranty engine 24 months or 2000 hours whichever occurs first

Options

Cost

1) Auxiliary hydraulic system

included in base machine cost

2) Auxiliary hydraulics circuit

included in base machine cost

3) Hydraulic jack hammer

\$10,300.00

4) Concrete hammer bit

\$ 350.00

5) Asphalt hammer bit

\$ 350.00

6) Quick change system

\$ 950.00

7) Keyless start & stop

\$ 760.00

8) Angle dozer blade

included in base machine cost

9) Tinted windows

\$ 500.00

10) Online support

included in base machine cost

Cab	
Type	Fully enclosed-lockable
Ignition keys	10 each, ignition and door keyed alike (delete if keyless option selected)
Door keys	10 each
Cab structure	ROPS/FOPS
Windshield wiper	Required
AC/Heater	Required
Radio	AM/FM
Seat	Adjustable w/retractable seat belts and arm rests
Cab grab handles	Required

COMPLIES WITH THIS SECTION YES X NO

Other	
Brochures	Brochure of machine bid showing specifications to be included with bid
Other	All components or features not specifically mentioned, which are necessary to provide a complete unit or that is standard equipment, shall be included in the bid

COMPLIES WITH THIS SECTION YES X NO

Manuals	
Operator manual	2 required, 1 must be in book form
Work shop manual/s	1 required to include: Electrical, Undercarriage, Hydraulics, Engine, Cab
Parts manual	1 required for entire machine
	(Note: workshop and parts manual may be CD or online)

COMPLIES WITH THIS SECTION YES X NO

End of Specifications

Additional optional equipment

The following list represents the additional equipment options that may be ordered under this contract. Bidder shall furnish with their bid, the price to be added/deducted from the base bid for each of the following options.

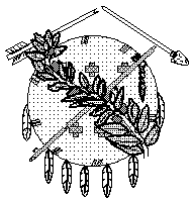
- | | |
|----------------------------------|--|
| 1) Auxiliary hydraulic system | Auxiliary hydraulic system, with sufficient GPM and pressure for a jack hammer and/or other hydraulic attachment operation
Show GPM and pressure: <u>#1-19.8 gpm/ #2- 9.8 gpm</u> |
| 2) Auxiliary hydraulic circuit | Auxiliary hydraulic circuit on end of arm with quick disconnect fittings for hydraulic jack hammer and other hydraulic attachment operation |
| 3) Hydraulic powered jack hammer | Hydraulic powered jack hammer for concrete and asphalt removal
Include brochure for jack hammer.
Show manufacture and model:
<u>kubota - BR510</u> |
| 4) Jack hammer bit | For concrete removal |
| 5) Jack hammer bit | For asphalt removal |

- 6) Quick change system
- 7) Keyless start & stop
- 8) Angle dozer blade

- 9) Hydraulic operated thumb
- 10) Tinted windows
- 11) Online support

Hydraulic operated, bucket / tool quick change system
Keyless start and stop
Dozer blade with hydraulic operated, right / left, angle operation
Show angle, Left -° Right 25°
Hydraulic operated thumb
Tinted windows on all cab glass
Annual or monthly subscription cost

End of options



City of Broken Arrow

Request for Action

File #: 19-1294, **Version:** 1

Broken Arrow Municipal Authority
Meeting of: 11-05-2019

Title:

Approval of and authorization to purchase two (2) 2020 Chevrolet Traverse's with options 1 through 4 from Vance Chevrolet pursuant to the Oklahoma Statewide Vehicle Contract for the Engineering and Construction Department

Background:

The Engineering and Construction Department has budgeted for the purchase of two mid-size utility vehicles for the department. These vehicles are in addition to the current fleet.

These vehicles will be purchased under the Oklahoma Statewide Contract Cars, Passenger Vans, Trucks, SUV's, Cargo Vans, Police vehicles, and CNG vehicles, SW035. All State Departments, Boards, Commissions, Agencies, and Institutions, as well as Counties, School Districts and Municipalities may purchase vehicles from this contract. Pricing under this contract is good until November 12, 2019

The bid tabulation includes the lowest bidding vendors for all the brands of mid-size utility vehicles under this contract. Base pricing and selected options are reflected in the attached bid tabulation. Staff recommends that the Council award the lowest responsible bid to Vance Chevrolet for the purchase of two (2) 2020 Chevrolet Traverse's.

Cost: \$56,028.00

Funding Source: 020-5205-419.70-02 Project numbers 205207 and 205208

Requested By: Kenneth D. Schwab, P.E., Assistant City Manager - Operations

Approved By: City Manager's Office

Attachments: Bid Tabulation

Recommendation:

Approve the purchase of two (2) 2020 Chevrolet Traverse's with options 1 through 4 from Vance Chevrolet pursuant to the Oklahoma State Contract for the Engineering and Construction Department

Mid Size Utility Vehicle

State Contract 1000009364

Expires 11/14/2019

	Vendor		Vance Chevrolet	Bill Knight Ford	Bob Howard Dodge
	Specification		2020 Chevrolet Traverse	2020 Ford Explorer	2020 Dodge Durango SXT
Item Number	Item	Qty.	Each Price	Each Price	Each Price
	Mid Size Utility Vehicle	2	\$24,665.00	\$26,940.00	\$24,978.00
	Options				
1	Add 4 Wheel Drive	2	\$2,268.00	\$2,005.00	\$1,366.00
2	Add Extra Keys	2	\$189.00	\$250.00	\$295.00
3	Add Rubber Mats	2	\$250.00	\$114.00	\$105.00
4	Add Power Driver Seat	2	\$642.00	included	\$2,970.00
5	Add Full Size Spare Tire	2	n/a	\$425.00	\$375.00
	Total		\$28,014.00	\$29,734.00	\$30,089.00
	Totals (Quantity of Two)		<u>\$56,028.00</u>	\$59,468.00	\$60,178.00
	Delivery		120 days	120 days	120 days
	Warranty Bumper to Bumper		3yr/36K	3yr/36K	3yr/36K
	Warranty Drive Train		5yr/100K	5yr/60K	5yr/100K

Engineering Projects 205207 and 205208

This did tabulation is true and accurate to the best of my knowledge

Monday, October 14, 2019

Patrick Harrison

Purchasing Manager



City of Broken Arrow

Request for Action

File #: 19-1376, Version: 1

Broken Arrow Municipal Authority

Meeting of: 11-05-2019

Title:

Approval of authorizing a 15 day extension to award bids for good cause shown for the purchase of one (1) Firehouse D1 Dump Body Truck for the Stormwater Division of the Streets and Stormwater Department

Background:

The Streets and Stormwater Department has budgeted for the purchase of one (1) Firehouse D1 Dump Body Trucks for the Stormwater Division of the Streets and Stormwater Department. Funds for this purchase are available in the Broken Arrow Municipal Authority (BAMA) fund in the amount of \$150,000 (Project No. 205310, Account No. 020-5305-438.70-02).

The Purchasing Department solicited bids from eleven (11) vendors and three (3) bids were received.

Per the purchasing manual, the Streets and Stormwater Department is requesting a 15 day extension for good cause to review all pertinent information pertaining to this purchase.

Cost: \$ 0

Funding Source: Broken Arrow Municipal Authority

Requested By: Rocky Henkel, Director of Streets and Stormwater

Approved By: City Manager's Office

Attachments: NA

Recommendation:

Approve and authorize a 15 day extension to awards bids for good cause shown for the purchase of one (1) Firehouse D1 Dump Body Truck.



City of Broken Arrow

Request for Action

File #: 19-1344, **Version:** 1

Broken Arrow Municipal Authority
Meeting of: 11-05-2019

Title:

Acknowledgement of submittal of the Broken Arrow Municipal Authority's Water Supply Report for the month of September 2019

Background:

In an effort to provide the Authority and the Public more information with respect to our community's water usage, the Utilities Department staff has prepared a Total Water Supply Report that records total daily water usage, as well as monthly water volume delivered to the community.

The Average Day usage through the end of September is 13.1 MGD. Total water treated at the plant up to the end of September is 393.3 million gallons (MG). Total water purchased from Tulsa for the month of September is 5.7 MG.

This report will be updated on a monthly basis. Staff recommends the Authority acknowledge submittal of the Report.

Cost: None

Funding Source: None

Requested By: Charles Vokes, Utilities Director

Approved By: City Manager's Office

Attachments: Total Water Usage Report-September 2019

Recommendation:

Acknowledge submittal of the September 2019 Monthly Water Usage Report.

Total Water Usage - 2019												
Day\Mon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	7.8	8.2	7.7	8.6	9.1	11.1	14.7	15.6	11.0			
2	8.5	8.4	8.3	8.2	9.3	12.0	15.0	13.3	13.9			
3	7.7	8.8	8.2	9.2	8.6	10.5	14.3	12.3	12.6			
4	8.4	8.8	8.7	8.0	8.1	9.6	14.7	13.8	15.0			
5	9.3	8.1	8.9	8.5	9.5	10.8	14.2	15.9	14.1			
6	9.9	8.5	8.7	8.5	9.9	9.3	11.9	15.9	15.1			
7	8.3	7.8	8.5	9.3	9.2	9.1	11.6	16.4	14.9			
8	8.0	8.5	8.9	9.7	8.5	9.9	13.7	12.7	15.2			
9	8.6	8.4	8.4	9.8	8.9	10.0	13.2	12.8	15.4			
10	7.8	8.4	8.2	9.8	8.9	10.9	14.3	11.9	14.4			
11	7.3	8.2	8.6	10.1	8.6	10.4	12.8	14.3	15.1			
12	8.0	8.4	8.2	9.0	8.6	11.1	15.4	15.6	13.8			
13	8.0	8.1	8.0	8.5	10.1	11.3	15.0	14.7	12.1			
14	8.6	8.4	8.4	8.1	9.5	10.8	15.4	15.0	11.4			
15	7.2	8.3	8.6	9.3	10.4	10.4	15.3	15.8	13.3			
16	8.0	8.0	8.6	9.5	10.8	10.3	16.0	17.4	15.0			
17	8.9	8.5	8.2	9.4	11.0	10.2	16.6	17.5	13.7			
18	7.8	8.5	8.5	9.1	9.0	10.3	17.2	15.1	15.0			
19	7.2	8.1	7.5	9.7	9.5	10.2	18.3	17.0	14.2			
20	9.2	8.4	7.1	10.8	9.0	11.2	18.1	9.9	13.1			
21	7.7	8.1	7.2	10.9	11.5	12.9	17.9	13.4	12.0			
22	8.5	8.0	7.5	10.3	9.5	11.8	13.8	11.0	11.9			
23	7.7	8.4	6.4	9.6	9.1	9.9	14.7	11.8	13.1			
24	9.0	8.7	7.1	10.3	10.4	10.2	16.9	11.5	10.8			
25	7.3	8.2	8.9	10.1	9.9	10.6	16.3	11.8	11.5			
26	9.0	8.2	7.9	11.0	8.2	12.5	18.2	11.6	10.2			
27	8.1	8.0	8.1	11.4	9.7	12.7	16.3	10.7	10.7			
28	8.3	8.1	9.1	11.4	10.2	14.2	18.0	9.7	11.3			
29	8.2		7.8	9.8	8.7	14.0	15.2	10.8	11.4			
30	8.2		8.0	7.9	8.8	14.7	14.9	11.3	12.1			
31	8.1		8.4		10.6		18.2	11.0				
Mon. Total	254.6	232.5	252.6	285.8	293.1	332.9	478.1	417.5	393.3			
Plant Avg. Day	8.2	8.3	8.1	9.5	9.5	11.1	15.4	13.5	13.1			
Monthly Purchase	0.5	0.4	5.5	4.3	5.2	2.2	2.5	11.7	5.7			
Total Month	255.1	232.9	258.1	290.1	298.3	335.1	480.6	429.2	399.0			
Total Avg. Day	8.2	8.3	8.3	9.7	9.6	11.2	15.5	13.8	13.3			

Verdigris Finished Water (MG): 2,940.4 Plant Annual Max. Day (MGD): 18.3
 Tulsa Purchase Water (MG) ⁽¹⁾: 38.1 Plant Annual Avg. Day (MGD): 10.7
 Total Finished Water (MG): 2,978.5 Plant Annual Min. Day (MGD): 6.4
 Total System Annual Avg. Day (MGD): 10.9

Notes:

(1) Actual take is calculated from the billing records for the individual month.

Prepared by: Jimmy Helms
 Water Plant Manager
 10/28/2019



City of Broken Arrow

Request for Action

File #: 19-1345, **Version:** 1

Broken Arrow Municipal Authority
Meeting of: 11-05-2019

Title:

Acknowledgement of submittal of the Broken Arrow Municipal Authority's Wastewater Discharge Monitoring Report for the month of September 2019

Background:

In an effort to provide the Authority and the Public more information with respect to our community's wastewater collection and treatment at the City's Lynn Lane Wastewater Treatment Plant, the Utilities Department staff is attaching a copy of the September 2019 Oklahoma Department of Environmental Quality (ODEQ) Discharge Monitoring Report (DMR) submitted to ODEQ on October 15, 2019.

Over the course of the month of September 2019, the total wastewater collected, treated and discharged is 149.546 million gallons (MG). The average flow was 3.174 MG.

This report will be updated on a monthly basis. Staff recommends the Authority acknowledge submittal of the Report.

Cost: None

Funding Source: None

Requested By: Charles Vokes, Utilities Director

Approved By: City Manager's Office

Attachments: September Discharge Monitoring Report
September Monthly Operational Report

Recommendation:

Acknowledge submittal of the September 2019 Monthly Discharge Monitoring Report

**National Pollutant Discharge Elimination System (NPDES)
Oklahoma Department of Environmental Quality Discharge Monitoring Report (DMR)**

PERMITTEE NAME: Broken Arrow, City of
MAILING ADDRESS: NESESES11T17NR14EIM
Broken Arrow, OK 74013
FACILITY: Broken Arrow WWT
LOCATION: NESESES11T17NR14EIM
Broken Arrow, OK 74013

PERMIT NUMBER: OK0040053

MONITORING POINT: 001A

COUNTY:

Tulsa

Monitoring Period: 2019-09-01 To: 2019-09-30

NO DISCHARGE FROM SITE: ()

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
BOD, 5-DAY (20 DEG. C)	Sample Measurement	145.40	*****	26 lbs/day	*****	5.36	5.60	19 mg/l	0	Five Per Week	COMP12
PARAM CODE: 00310 Stage Code: 1 Effluent Gross	Permit Requirement	2001.6 Monthly Average	*****		*****	30 Monthly Average	45 Weekly Average			Five Per Week	COMP12
PH	Sample Measurement	*****	*****		7.4	*****	7.8	12 S.U.	0	Daily	GRAB
PARAM CODE: 00400 Stage Code: 1 Effluent Gross	Permit Requirement	*****	*****		6.5 Minimum	*****	9.0 Maximum			Daily	GRAB
SOLIDS, TOTAL SUSPENDED	Sample Measurement	70.55	*****	26 lbs/day	*****	2.64	3.20	19 mg/l	0	Five Per Week	COMP12
PARAM CODE: 00530 Stage Code: 1 Effluent Gross	Permit Requirement	2001.6 Monthly Average	*****		*****	30 Monthly Average	45 Weekly Average			Five Per Week	COMP12
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	Sample Measurement	3.174	4.970	03 MGD	*****	*****	*****		0	Daily	TOTALZ
PARAM CODE: 50050 Stage Code: 1 Effluent Gross	Permit Requirement	Report Monthly Average	Report Maximum Daily		*****	*****	*****			Daily	TOTALZ
CHLORINE, TOTAL RESIDUAL	Sample Measurement	*****	*****		*****	*****	< 0.05	19 mg/l	0	Daily	GRAB
PARAM CODE: 50060 Stage Code: A Disinfection, Process Complete	Permit Requirement	*****	*****		*****	*****	0.099 Instantaneous Maximum			Daily	GRAB
E.COLI	Sample Measurement	*****	*****		*****	1.1	3.0	30 MPN/100mL	0	Twice Every Week	GRAB
PARAM CODE: 51040 Stage Code: 1 Effluent Gross	Permit Requirement	*****	*****		*****	126 Geometric Mean	406 Maximum Daily			Twice Every Week	GRAB
SOLIDS, TOTAL DISSOLVED-180 DEG.C	Sample Measurement	13285	*****	26 lbs/day	*****	435	435	19 mg/l	0	Monthly	COMP12
PARAM CODE: 70300 Stage Code: 1 Effluent Gross	Permit Requirement	77929 Monthly Average	*****		*****	1168 Monthly Average	1168 Maximum Daily			Monthly	COMP12

Name/Title of Principal Executive Officer Or Authorized Agent	I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.	Signature of Principal Executive Officer Or Authorized Agent	Telephone No
WRRF Mgr.		David Handy	918-455-4762

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

**National Pollutant Discharge Elimination System (NPDES)
Oklahoma Department of Environmental Quality Discharge Monitoring Report (DMR)**

PERMITTEE NAME: Broken Arrow, City of
MAILING ADDRESS: NESESES11T17NR14EIM
Broken Arrow, OK 74013
FACILITY: Broken Arrow WWT
LOCATION: NESESES11T17NR14EIM
Broken Arrow, OK 74013

PERMIT NUMBER: OK0040053

MONITORING POINT: 001A

COUNTY: Tulsa

Monitoring Period: 2019-09-01 To: 2019-09-30

NO DISCHARGE FROM SITE: ()

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
MERCURY, TOTAL (AS HG)	Sample Measurement	0.0015	*****	26 lbs/day	*****	0.05	0.05	28 ug/l	0	Monthly	COMP12
PARAM CODE: 71900 Stage Code: 1 Effluent Gross	Permit Requirement	0.0635 Monthly Average	*****		*****	0.952 Monthly Average	1.9 Maximum Daily			Monthly	COMP12
Name/Title of Principal Executive Officer Or Authorized Agent		I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.					Signature of Principal Executive Officer Or Authorized Agent		Telephone No		
WRRF Mgr.							David Handy		918-455-4762		

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)



MONTHLY OPERATIONAL REPORT

City of Broken Arrow Lynn Lane Water Reclamation Facility

September-19

WEATHER				INFLUENT									OXIDATION DITCH					SLUDGE				FINAL EFFLUENT														STREAM SURVEILLANCE														
Date	Day	°F	Rain	Cloud Conditions	Flow (MGD)	RAS (MGD)	°C	pH	Alk.	Sett. Solids	TSS (mg/L)	BOD (mg/L)	D.O. (mg/L)	30 Min. Settlt.	SVI (ml/gm)	MLSS (mg/L)	Sl. Age (Days)	WAS (MGD)	CAKE (%)	LANDFILL (Tons)	LANDFILL (D.M. Tons)	°C	D.O. (mg/L)	TDS (mg/L)	TDS (lbs)	pH	Alk.	TSS (mg/L)	TSS (lbs)	BOD (mg/L)	BOD (lbs)	Hg	Hg (lbs.)	E.Coli	Cl2 Res	Flow (MGD)	°C Upstr.	°C Dnstr.	D.O. Upstr.	D.O. Dnstr.	pH Upstr.	pH Dnstr.	App. Upstr.	App. Dnstr.	Fec. Coli. Upstr.	Fec. Coli. Dnstr.	Hrds.			
1	Sun	99	0.00	Clear	6.087	4.244	24	7.3	271	12			0.7	200				0.230				24	7.1			7.5	166	3.00	96.05	8.00	256.14				0.05	3.839														
2	Sat	95	0.00	Clear	5.347	3.606	24	7.4	313	13	198	193	0.2	200				0.209				24	6.9			7.4	166	2.00	56.35	4.00	112.69				0.05	3.378														
3	Mon	95	0.00	P.Cloudy	5.888	3.688	24	7.3	285	16	140	191	0.2	220	69	3,175	15	0.223	18	38.98	6.81	24	6.8	435	13,285	7.5	185	3.00	91.62	5.00	152.71	0.00005	0.0015	1.0	0.05	3.662														
4	Tue	96	0.00	Clear	5.369	3.725	24	7.5	306	17	258	254	0.2	260	103	2,520	7	0.228	19	18.17	3.35	25	7.0			7.4	182	1.00	23.99	4.00	95.98				0.05	2.877														
5	Wed	96	0.00	P.Cloudy	5.052	3.632	24	7.4	303	18	312	268	0.1	210	53	3,957	10	0.214	17	16.44	2.71	23	6.8			7.7	189	2.00	53.21	5.00	133.02				0.05	3.190														
6	Thu	97	0.00	P.Cloudy	4.926	3.675	23	7.3	267	15	360	237	0.5	210	99	2,119	5	0.222	17	18.40	3.03	24	7.0			7.4	188								0.05	3.124														
7	Fri	96	0.00	Clear	4.632	3.560	24	7.3	275	17			0.2	230				0.212				24	6.9			7.4	179								0.05	2.942														
8	Sat	96	0.00	Clear	4.860	3.413	23	7.3	268	18			0.2	230				0.219				24	6.8			7.5	173	2.00	51.64	5.00	129.10				0.05	3.096														
9	Sun	93	0.00	Clear	4.836	3.468	24	6.9	325	17	270	241	0.1	210	77	2,744	8	0.230	19			24	6.8			7.4	176	3.00	79.61	7.00	185.77				0.05	3.182														
10	Mon	91	0.00	Clear	4.731	3.414	23	7.4	268	15	116	171	0.2	230	88	2,625	19	0.222	19	32.99	6.08	23	6.9			7.5	181	4.00	99.68	5.00	124.60				0.05	2.988														
11	Tue	92	0.00	Clear	4.553	3.463	24	7.4	313	14	184	200	0.2	200	75	2,680	13	0.222	17	35.67	5.88	24	7.1			7.5	180	4.00	96.68	6.00	145.02				0.05	2.898														
12	Wed	93	0.35	Clear	4.688	3.335	24	7.5	312	16	200	242	0.2	210				0.223	17	34.16	5.63	24	6.8			7.5	188	3.00	74.16	5.00	123.60				0.05	2.964														
13	Thu	81	0.14	Cloudy	4.935	3.172	24	7.4	281	19	196	237	0.3	210	92	2,280	9	0.224	17	33.34	5.50	24	6.8			7.5	185								0.05	3.127														
14	Fri	92	0.01	Cloudy	4.817	3.166	23	7.3	265	18			0.2	200				0.218				23	6.1			7.5	172								0.05	3.023														
15	Sat	91	0.00	Clear	4.660	3.246	22	7.2	255	20			0.3	220				0.222				23	6.6			7.5	169	3.00	75.54	6.00	151.07				0.05	3.019														
16	Sun	93	0.00	Clear	4.847	3.247	24	7.4	317	15	174	226	0.2	180	89	2,030	10	0.210	17	35.28	5.82	25	6.9			7.5	183	3.00	77.26	6.00	154.52				0.05	3.088														
17	Mon	93	0.00	Clear	4.644	3.152	24	7.5	316	21	296	244	0.1	190	97	1,950	6	0.227	18	34.11	5.96	24	6.5			7.5	183	2.00	49.32	5.00	123.31				0.05	2.957														
18	Tue	94	0.00	Clear	4.564	3.822	23	7.5	356	20	246	220	0.2	170	59	2,879	10	0.228	17	34.26	5.65	23	6.7			7.8	192	2.00	48.02	4.00	96.04				0.05	2.879														
19	Wed	90	0.00	Clear	4.497	3.747	24	7.4	309	17	182	194	0.2	190	101	1,885	9	0.221	15	36.81	5.36	25	6.8			7.5	192	3.00	68.93	5.00	114.88				0.05	2.755														
20	Thu	81	0.03	Cloudy	4.449	3.720	24	7.3	257	21	272	277	0.2	190				0.219				25	6.7			7.4	200								0.05	2.429														
21	Fri	87	0.05	Cloudy	4.232	3.643	24	7.3	285	20			0.2	210				0.221				25	6.7			7.5	191								0.05	2.488														
22	Sat	83	0.00	Cloudy	4.433	3.581	24	7.4	277	21			0.1	200				0.218				24	6.8			7.5	184	3.00	70.53	4.00	94.04				0.05	2.819														
23	Sun	89	0.00	P.Cloudy	4.621	3.590	24	7.4	313	20	258	219	0.2	190	106	1,790	6	0.227	15	18.77	2.73	25	6.8			7.5	187	4.00	97.91	6.00	146.87				0.05	2.935														
24	Mon	77	0.38	Cloudy	4.705	3.614	25	7.4	293	20	298	288	0.2	200	106	1,880	5	0.227	17	18.46	3.04	25	6.7			7.5	202	2.00	49.09	5.00	122.72				0.05	2.943	PARTIAL WEEKLY AVG.NO.'s													
25	Tue	93	0.00	Cloudy	5.488	3.635	25	7.4	317	17	250	240	0.2	200	103	1,950	6	0.225	16	31.53	4.89	24	6.8			7.5	186	2.00	57.08	5.00	142.70				0.05	3.422	Date	Week No.	TSS	BOD										
26	Wed	80	1.92	Cloudy	5.529	3.077	24	6.9	175	18	76	158	0.2	180	70	2,575	25	0.214	16	52.40	8.13	25	6.4			7.5	192	2.00	58.20	5.00	145.49				0.05	3.489														
27	Thu	90	0.00	Clear	6.798	3.263	24	7.3	256	10	200	195	0.2	210	95	2,205	6	0.223	16	8.36	1.30	24	6.9			7.5	173								0.05	4.207														
28	Fri	87	0.24	Cloudy	5.376	3.188	24	7.4	283	15			0.1	170				0.209				24	6.7			7.5	210								0.05	3.350														
29	Sat	86	0.00	Cloudy	4.970	3.188	24	7.4	281	15			0.2	200				0.228				25	6.7			7.5	183	3.00	124.35	7.00	290.15				0.05	4.970														
30	Sun	88	0.00	P.Cloudy	5.012	3.292	24	7.4	311	15	180	198	0.1	170	88	1,9																																		

REMARKS :

Electrical Costs :	20,539.72
Labor Costs :	40,491.46
Chemicals, Lab Supplies & Services :	22,363.42
Repairs, Maint., Services & Admin. :	48,331.24
Sludge (Generation & Transportation) :	15,316.09
TOTAL COSTS :	147,041.93
COST / TRTD. 1000 GAL :	1.54



City of Broken Arrow

Request for Action

File #: 18-1469, **Version:** 1

**Broken Arrow Municipal Authority
Meeting of: 11/5/2019**

Title:

Ratification of the Claims List Check Register dated 10/29/2019

Background:

Council on September 3, 2019 approved Ordinance No. 3601 to allow ratification of the claims list. This claims list is for the period from October 14, 2019 through October 25, 2019. Checks, V-Cards or ACH were processed for a total of \$6,185,588.36.

(Total Includes BAMA and BAEDA)

A summary by funds and detail are attached.

Cost: \$3,662,093.09

Funding Source: BAMA Operational and Capital accounts

Requested By: Cynthia S. Arnold, Finance Director

Approved By: City Manager's Office

Attachments: Check Register dated October 29, 2019.

Recommendation: Approve Ratification of Claims List Check Register dated 10/29/2019

BANK	NAME	FUND	AMOUNT
01	Arkansas Valley State Bank	010 GENERAL FUND	215,689.79
		020 BAMA	3,662,093.09
		027 CONVENTION&VISITOR BUREAU	791.94
		030 SALES TAX CAPITAL IMPROV	55,461.40
		031 POLICE ENHANCEMENT	725.00
		032 PARK AND RECREATION	6,752.68
		035 HOUSING URBAN DEVELOPMENT	5,217.75
		042 STREET LIGHT FUND	478.69
		043 STREET SALES TAX	1,906.87
		044 PUBLIC SAFETY SALES TAX	168,920.20
		045 PUBLIC SAFETY SALES TAX	115,572.41
		060 WORKMANS COMP	45,748.96
		061 GROUP HEALTH AND LIFE	103,878.74
		082 AGENCY	3,610.00
		087 BAEDA	604.32
		092 2014 GO BOND ISSUE	676,949.92
		093 2018 GO BOND ISSUE	19,118.88
		900 PAYROLL FUND	1,102,067.72
		Total	6,185,588.36 *
		Grand Total	6,185,588.36 *

CHECK DATE	CHECK NUMBER	VENDOR	NAME	INVOICE	DESCRIPTION	G/L NUMBER	PROJECT	PERIOD/ YEAR	AMOUNT
10/14/2019	263156	6347	COX COMMUNICATIONS	066260701 066381301	MONTHLY SERVICE 9/29/19 MONTHLY SERVICE 9/29/19	020-5410-435.50-23 020-5100-437.50-22		4/2020 4/2020 Total	98.99 663.54 762.53
10/18/2019	263171	10010	PSI WATER TECHNOLOGIES	INW0003628 1	WATER SUPPLY AND SEWAGE	020-5405-434.60-45		3/2020 Total	15,286.35 15,286.35
10/25/2019	263177	2673	ACCURATE ENVIRONMENTAL	BJ07046 B125092	STUDY M.B.WTR ANALYSIS SIMPLATE WATER ANALYSIS	020-5405-434.30-34 020-5405-434.30-34		4/2020 4/2020 Total	960.00 132.00 1,092.00
10/25/2019	263179	99999	ADAMS, JEREMAH	000238811	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	45.00 45.00
10/25/2019	263180	5904	ADCO ELECTRIC INC.	23788	ELECTRICAL EQUIP & SUPPLY	020-5415-435.40-28		4/2020 Total	2,150.00 2,150.00
10/25/2019	263181	99999	ADKINS CADDY, CARLA	000189733	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	34.58 34.58
10/25/2019	263183	9700	ADVANCED INDUSTRIAL SOL	253720 253720BO 253720BO1 253819 253931 253931BO 254046	PAPER & PLASTIC DISPOSABLE PAPER & PLASTIC DISPOSABLE JANITORIAL SUPPLIES JANITORIAL SUPPLIES PAPER & PLASTIC DISPOSABLE PAPER & PLASTIC DISPOSABLE LAUNDRY/ DRY CLEANING SUPL	020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00		4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 Total	1,545.96 2,371.80 91.80 462.70 1,151.15 295.87 488.40 6,407.68
10/25/2019	263184	370	AIRGAS USA LLC	9093605555 9965400346	BLANKET ORDERS BLANKET ORDERS	020-5130-437.60-23 020-5120-437.60-23		4/2020 4/2020 Total	25.00 684.70 709.70
10/25/2019	263185	8539	ALL MAINTENANCE SUPPLY	00085826-01	JANITORIAL SUPPLIES	020-0000-141.00-00		4/2020 Total	121.20 121.20
10/25/2019	263186	22	ALLIED FENCE CO OF TULS	838884 838926	ROADSIDE, GROUNDS, SERVICES GROUNDS & PARK SERVICES	020-5305-438.40-28 020-5305-438.40-28		4/2020 4/2020 Total	650.00 1,976.00 2,626.00
10/25/2019	263187	442	AMERICAN ELECTRIC POWER	95527789010	9588213380 10/10/19	020-5405-434.50-25		4/2020 Total	59,858.58 59,858.58
10/25/2019	263188	8997	AMERICAN MUNICIPAL SERV	44021	COLLECTION FEE- SEPT 19	020-0000-229.16-00		4/2020 Total	1,012.89 1,012.89
10/25/2019	263190	37	ANCHOR STONE CO	192178409	BLANKET ORDERS	020-5305-438.60-27		4/2020 Total	873.97 873.97
10/25/2019	263192	42	ARROW SAFE AND LOCK INC	73884 73891 73899 73917	HARDWARE, AND ALLIED ITEMS HARDWARE, AND ALLIED ITEMS HARDWARE, AND ALLIED ITEMS HARDWARE, AND ALLIED ITEMS	020-5415-435.60-27 020-5305-438.60-23 020-5130-437.60-23 020-5400-434.60-23		4/2020 4/2020 4/2020 4/2020	22.70 26.70 9.75 7.90

CHECK DATE	CHECK NUMBER	VENDOR NAME	INVOICE	DESCRIPTION	G/L NUMBER	PROJECT	PERIOD YEAR	AMOUNT
Total								67.05
10/25/2019	263198	8512 AT&T MOBILITY	287260663054/ 09	ACCT#287260663054	10/2019	020-5120-437.50-22	4/2020	108.84
			287260663054/ 09	ACCT#287260663054	10/2019	020-5200-419.50-22	4/2020	270.11
			287260663054/ 09	ACCT#287260663054	10/2019	020-5200-419.50-54	4/2020	276.30
			287260663054/ 09	ACCT#287260663054	10/2019	020-5215-419.50-54	4/2020	93.67
			287260663054/ 09	ACCT#287260663054	10/2019	020-5305-438.50-54	4/2020	317.93
			287260663054/ 09	ACCT#287260663054	10/2019	020-5400-434.50-54	4/2020	174.74
			287260663054/ 09	ACCT#287260663054	10/2019	020-5408-434.50-54	4/2020	112.13
			287260663054/ 09	ACCT#287260663054	10/2019	020-5415-435.50-22	4/2020	43.24
			287260663054/ 09	ACCT#287260663054	10/2019	020-5415-435.50-54	4/2020	1,402.17
			287286573508/ 09	ACCT#287286573508	10/2019	020-5410-435.50-22	4/2020	54.10
Total								2,851.23
10/25/2019	263199	10469 ATLAS COPCO COMPRESSORS	1119153987	COMPRESSOR REPAIR	020-5405-434.40-55		4/2020	260.00
Total								260.00
10/25/2019	263201	6375 ATWOOD DISTRIBUTING LP	001800/ M	BLANKET ORDERS	020-5305-438.70-15	SWM909	4/2020	91.76
			001801/ M	SHOES AND BOOTS	020-5125-436.60-10		4/2020	125.00
			001804/ M	BLANKET ORDERS	020-5120-437.60-20		4/2020	10.58
			001805/ M	BLANKET ORDERS	020-5120-437.60-23		4/2020	7.49
			001811/ M	BLANKET ORDERS	020-5400-434.60-23		4/2020	3.29
			001812/ M	SHOES AND BOOTS	020-5125-436.60-10		4/2020	30.00
			001813/ M	BLANKET ORDERS	020-5305-438.60-23		4/2020	17.99
			001814/ M	WATER TREATING CHEMICALS	020-0000-141.00-00		4/2020	159.20
			001815/ M	FOODS: PERISHABLE	020-0000-141.00-00		4/2020	167.16
			001816/ M	BLANKET ORDERS	020-5305-438.60-23		4/2020	49.99
			001817/ M	BLANKET ORDERS	020-5405-434.60-23		4/2020	224.96
			011885/ M	SHOES AND BOOTS	020-5305-438.60-10		4/2020	125.00
			020448/ M	SHOES AND BOOTS	020-5400-434.60-10		4/2020	125.00
			1831/ 21	FOODS: PERISHABLE	020-0000-141.00-00		4/2020	167.16
Total								1,244.58
10/25/2019	263202	47 AUTOMATIC ENGINEERING I	5458658	ELECTRICAL EQUIP & SUPPLY	020-5410-435.60-45		4/2020	2,498.00
			5462156	WATER SUPPLY AND SEWAGE	020-5415-435.40-29		3/2020	763.17
Total								3,261.17
10/25/2019	263203	40 AVB	SEPTEMBER	SEPT 2019 DEBITS (DRAFTS)	020-0503-415.50-28		4/2020	482.64
Total								482.64
10/25/2019	263207	11761 BELT CONSTRUCTION INC	3	CONSTRUCTION	020-5415-435.70-15	S.1609	4/2020	524,862.60
			3 VENDOR PYMTS	CONSTRUCTION	020-5415-435.70-15	S.1609	4/2020	36,354.50
Total								488,508.10
10/25/2019	263208	60 BLOSS EQUIPMENT CO	102751	BELTS	020-0000-141.00-00		4/2020	42.11
Total								42.11
10/25/2019	263210	7367 BOKF N.A.	20190930	LOCKBOX SEPTEMBER 2019	020-0503-415.50-28		4/2020	2,411.49
Total								2,411.49
10/25/2019	263214	8 BRENNITAG SOUTHWEST INC	BSW38064	WATER TREATING CHEMICALS	020-5410-435.60-34		4/2020	841.13
			BSW38065	WATER TREATING CHEMICALS	020-5405-434.60-34		4/2020	1,799.36
			BSW38066	WATER TREATING CHEMICALS	020-5405-434.60-34		4/2020	2,255.00

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10/25/2019	263214	8	BRENNTAG SOUTHWEST INC	BSW40248 BSW41715 BSW42739 BSW42740 BSW42741 BSW44954 BSW44955 BSW45416	WATER TREATING CHEMICALS WATER TREATING CHEMICALS WATER TREATING CHEMICALS WATER TREATING CHEMICALS WATER TREATING CHEMICALS WATER TREATING CHEMICALS WATER TREATING CHEMICALS WATER TREATING CHEMICALS	020-5410-435.60-34 020-5405-434.60-34 020-5410-435.60-34 020-5410-435.60-34 020-5405-434.60-34 020-5405-434.60-34 020-5410-435.60-34 020-5410-435.60-34		4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 Total	2,454.76 2,225.00 841.13 6,946.00 6,776.42 2,230.00 841.13 957.50 28,167.43
10/25/2019	263217	71	BROKEN ARROW ELECTRIC S	S2578969001	BLANKET ORDERS	020-5120-437.60-18		4/2020 Total	27.54 27.54
10/25/2019	263218	74	BROKEN ARROW LAWN & GARDEN	19220 19594 20496 20503	BLANKET ORDERS BLANKET ORDERS BLANKET ORDERS BLANKET ORDERS	020-5305-438.60-20 020-5305-438.60-23 020-5305-438.60-23 020-5305-438.60-23		4/2020 4/2020 4/2020 4/2020 Total	34.30 192.00 73.80 47.06 253.04
10/25/2019	263222	1109	CAMFIL USA INC	30121193	AIR CONDITIONING & HEATING	020-5410-435.60-23		4/2020 Total	191.56 191.56
10/25/2019	263223	99999	CARDER, MICHAEL J	000207307	UBOR REFUND-FINALS	020-0000-225.01-00		4/2020 Total	12.72 12.72
10/25/2019	263224	11211	CAROLLO ENGINEERS INC	0181369 0181370	CONSTRUCTION CONSTRUCTION	020-5400-434.70-16 020-5400-434.70-16	195424 195427	4/2020 4/2020 Total	23,110.00 1,777.75 24,887.75
10/25/2019	263231	2668	CHEMETRICS INC	471928	CHEMICAL LAB EQUIP & SUPP	020-5415-435.60-34		4/2020 Total	103.08 103.08
10/25/2019	263232	10502	CHEMTRADE CHEMICALS US	92736264	WATER TREATING CHEMICALS	020-5405-434.60-34		4/2020 Total	4,048.75 4,048.75
10/25/2019	263233	4728	CHICKASAW TELECOM INC	51948 52427	RADIO AND TELECOMMUNICATIONS COMPUTERS, DP & WORD PROC	020-5210-419.70-19 020-5120-437.70-17	195208 205102	4/2020 4/2020 Total	398.10 2,052.48 2,450.58
10/25/2019	263235	7296	CHRISTIAN NIKEL CHRYSLER JE	351445	EQUIPMENT MAINT/REPAIR	020-5200-419.40-20		4/2020 Total	179.48 179.48
10/25/2019	263239	120	CINTAS CORPORATION	5014820299 5014915606 5014915607 5014941937 5014941942	FIRST AID & SAFETY EQUIP FIRST AID & SAFETY EQUIP FIRST AID & SAFETY EQUIP FIRST AID & SAFETY EQUIP FIRST AID & SAFETY EQUIP	020-5405-434.40-28 020-5130-437.60-23 020-5100-437.60-23 020-5410-435.40-07 020-5305-438.60-23		4/2020 4/2020 4/2020 4/2020 4/2020 Total	155.37 147.42 91.47 352.46 148.58 895.30
10/25/2019	263245	9151	CLEAN THE UNIFORM CO OK	50088985 50090060 50090062 50090715	RENTAL RENTAL RENTAL RENTAL	211526 9/27/2019 211526 10/04/19 211525 10/04/19 211522 10/09/19	020-5405-434.40-31 020-5405-434.40-31 020-5410-435.40-31 020-5200-419.40-31	4/2020 4/2020 4/2020 4/2020	68.90 78.70 14.22 6.77

CHECK DATE	CHECK NUMBER	VENDOR	NAME	INVOICE	DESCRIPTION	GL NUMBER	PROJECT	PERIOD YEAR	AMOUNT
10/25/2019	263245	9151	CLEAN THE UNIFORM COCK	50090716	RENTAL	215969 10/09/19	020-1700-419.40-33	4/2020	2.25
				50090716	RENTAL	215969 10/09/19	020-5100-437.40-33	4/2020	15.00
				50090716	RENTAL	215969 10/09/19	020-5115-437.40-31	4/2020	39.60
				50090716	RENTAL	215969 10/09/19	020-5120-437.40-31	4/2020	82.50
				50090716	RENTAL	215969 10/09/19	020-5120-437.40-33	4/2020	25.00
				50090716	RENTAL	215969 10/09/19	020-5125-436.40-31	4/2020	273.43
				50090716	RENTAL	215969 10/09/19	020-5130-437.40-31	4/2020	9.37
				50090716	RENTAL	215969 10/09/19	020-5400-434.40-31	4/2020	111.07
				50090716	RENTAL	215969 10/09/19	020-5406-434.40-31	4/2020	45.81
				50090716	RENTAL	215969 10/09/19	020-5415-435.40-31	4/2020	75.39
				50091377	RENTAL	215970 10/11/19	020-5305-438.40-31	4/2020	154.72
				50091377	RENTAL	215970 10/11/19	020-5305-438.40-33	4/2020	2.60
				50091382	RENTAL	211526 10/11/19	020-5405-434.40-31	4/2020	68.90
				50091383	RENTAL	211525 10/11/19	020-5410-435.40-31	4/2020	29.53
				50091801	RENTAL	211522 10/16/19	020-5100-437.40-33	4/2020	4.00
				50091801	RENTAL	211522 10/16/19	020-5200-419.40-31	4/2020	6.77
				50091802	RENTAL	215969 10/16/19	020-1700-419.40-33	4/2020	2.25
				50091802	RENTAL	215969 10/16/19	020-5120-437.40-31	4/2020	82.50
				50091802	RENTAL	215969 10/16/19	020-5120-437.40-33	4/2020	25.00
				50091802	RENTAL	215969 10/16/19	020-5130-437.40-31	4/2020	9.37
				50091802	RENTAL	215969 10/16/19	020-5400-434.40-31	4/2020	106.06
				50091802	RENTAL	215969 10/16/19	020-5406-434.40-31	4/2020	45.81
				50091802	RENTAL	215969 10/16/19	020-5415-435.40-31	4/2020	75.39
				50091807	RENTAL	211523 10/16/19	020-1700-419.40-33	4/2020	4.80
				50092246	RENTAL	215970 10/18/19	020-5305-438.40-31	4/2020	157.83
				50092246	RENTAL	215970 10/18/19	020-5305-438.40-33	4/2020	2.60
								Total	1,626.14
10/25/2019	263249	5936	CONTINENTAL BATTERY CO	10931004191312	AUTO & TRUCK MAINT. ITEMS	020-0000-141.00-00		4/2020	133.44
				10931010190830	AUTO & TRUCK MAINT. ITEMS	020-0000-141.00-00		4/2020	133.44
				10931015191418	AUTO & TRUCK MAINT. ITEMS	020-0000-141.00-00		4/2020	309.00
				10931017190822	AUTO & TRUCK MAINT. ITEMS	020-0000-141.00-00		4/2020	540.75
				10931018190854	AUTO & TRUCK MAINT. ITEMS	020-0000-141.00-00		4/2020	65.46
				15321008190834	AUTO & TRUCK MAINT. ITEMS	020-0000-141.00-00		4/2020	309.00
								Total	1,491.09
10/25/2019	263250	8679	CORE & MAIN	L193843	PLUMBING EQUIPMENT	020-5400-434.60-23		4/2020	56.20
				L297939	WATER SUPPLY AND SEWAGE	020-5406-434.70-04	185434	4/2020	66,366.50
				L331737	WATER SUPPLY AND SEWAGE	020-0000-141.00-00		4/2020	413.18
				L333429	WATER SUPPLY AND SEWAGE	020-0000-141.00-00		4/2020	413.18
								Total	67,249.06
10/25/2019	263252	99999	CORNERSTONE HOME LENDING	000227999	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020	71.53
								Total	71.53
10/25/2019	263254	99999	COWEN CONSTRUCTION	000115381	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020	19.34
								Total	19.34
10/25/2019	263255	99999	COWEN CONSTRUCTION	000115381	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020	70.12
								Total	70.12
10/25/2019	263259	575	CRAWFORD & ASSOCIATES,	12797	2019 AUDIT	020-0503-415.30-81		4/2020	97.50
								Total	97.50

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10/25/2019	263260	99999 CRAWFORD, ANGELA K	000205843	UB OR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	15.88 15.88
10/25/2019	263261	141 CUMMINS SOUTHERN PLAINS	9116505	ELECTRICAL EQUIP & SUPPLY	020-5415-435.60-20		4/2020 Total	620.04 620.04
10/25/2019	263263	4730 DELL MARKETING L.P.	10345123374	COMPUTERS, DP & WORD PROC	020-5100-437.60-24		4/2020 Total	817.36 817.36
10/25/2019	263264	11828 DISCOUNT RAMPS	116162	WATER SUPPLY AND SEWAGE	020-5405-434.60-23		4/2020 Total	2,469.74 2,469.74
10/25/2019	263271	8099 EMERGENCY POWER SYSTEMS	19016391 19016421 19016424 19016429	EQUIPMENT MAINT & REPAIR EQUIPMENT MAINT & REPAIR EQUIPMENT MAINT / REPAIR EQUIPMENT MAINT / REPAIR	020-5415-435.60-20 020-5415-435.60-20 020-5415-435.40-20 020-5415-435.40-20		4/2020 4/2020 4/2020 4/2020 Total	422.25 532.00 695.25 263.50 1,913.00
10/25/2019	263274	11376 ENLOW AND SONS EQUIPMENT	10182019 1	ROAD/HWY HEAVY EQUIPMENT	020-0000-141.00-00		4/2020 Total	25.00 25.00
10/25/2019	263275	9784 EUROFINIS EATON ANALYTICAL	0474502	MISCELLANEOUS PROF. SERV.	020-5405-434.30-34		4/2020 Total	600.00 600.00
10/25/2019	263276	10526 EXPRESS PRESS	40113A 40113B	CLOTHING & APPAREL CLOTHING & APPAREL	020-5404-434.60-10 020-5401-434.60-10		4/2020 4/2020 Total	180.55 47.18 227.73
10/25/2019	263277	99999 FARR, DOUGLAS	000248567	UB OR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	29.48 29.48
10/25/2019	263280	205 FERGUSON WATERWORKS #18	0619228-6 0625491 0628977 0628993 0629332	PO 107770 BELT CONSTRUCTN PO 107770 BELT CONSTRUCTN PO 107770 BELT CONSTRUCTN PO 107770 BELT CONSTRUCTN PO 107770 BELT CONSTRUCTN	020-5415-435.70-15 S.1609 020-5415-435.70-15 S.1609 020-5415-435.70-15 S.1609 020-5415-435.70-15 S.1609 020-5415-435.70-15 S.1609		4/2020 4/2020 4/2020 4/2020 4/2020 Total	33,680.00 592.18 397.70 164.00 20.62 34,854.50
10/25/2019	263281	99999 FLETCHER, STEVE D	000247743	UB OR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	26.81 26.81
10/25/2019	263282	99999 FORBES, THELMA P	000234495	UB OR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	40.58 40.58
10/25/2019	263283	6478 FORTILINE INC	4735186 4743561 4744782 4755712 4757081 4757095 4759539 4760104	WATER SUPPLY AND SEWAGE WATER SUPPLY AND SEWAGE WATER SUPPLY AND SEWAGE WATER SUPPLY AND SEWAGE FIRE PROTECTION EQUIP/SUP FIRE PROTECTION EQUIP/SUP WATER SUPPLY AND SEWAGE PLUMBING EQUIPMENT	020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-5400-434.60-40		4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 Total	6,527.90 7,999.20 5,078.00 6,060.00 277.20 418.00 1,940.00 518.00 28,263.90

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10/25/2019	263286	99999	FREEMAN, JOHN E	000108641	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	48.32 48.32
10/25/2019	263288	99999	GALLAGHER, GENE	000012521	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	20.52 20.52
10/25/2019	263296	10420	GERSHMAN, BRI CKNER & BRA	19-10-6728	CURBSIDE PI LOT PROJECT	020-5125-436.70-17	165114	4/2020 Total	9,694.38 9,694.38
10/25/2019	263299	9892	GOODYEAR COMMERCIAL TIR	2541014864 2541014871 2541014998 2541015009 2541015120	TIRES AND TUBES TIRES AND TUBES TIRES AND TUBES TIRES AND TUBES TIRES AND TUBES	020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00		4/2020 4/2020 4/2020 4/2020 4/2020 Total	313.50 104.50 2,141.92 1,070.96 1,417.86 5,048.74
10/25/2019	263302	240	GRAINGER	9274658526 9291540517 9294128617 9295516646	CHEMICAL LAB EQUIP & SUPP WATER SUPPLY AND SEWAGE PLUMBING EQUIPMENT FIRST AID & SAFETY EQUIP	020-5410-435.60-45 020-5405-434.60-45 020-0000-141.00-00 020-5410-435.60-23		4/2020 4/2020 4/2020 4/2020 Total	175.64 70.84 574.56 441.52 1,262.56
10/25/2019	263303	244	GREEN ACRE SOD FARMS DB	114381	BLANKET ORDERS	020-5305-438.60-23		4/2020 Total	23.80 23.80
10/25/2019	263304	6955	GREENHILL MATERIALS	155015 155015	BLANKET ORDERS BLANKET ORDERS	020-5305-438.60-27 020-5415-435.60-27		4/2020 4/2020 Total	130.25 525.05 655.30
10/25/2019	263305	99999	GSA INC	000247037	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	30.77 30.77
10/25/2019	263307	5042	H G FLAKE SUPPLY CO	03702691N 03703971N 03704491N 03708591N 03708991N	BLANKET ORDERS BLANKET ORDERS BLANKET ORDERS BLANKET ORDERS BLANKET ORDERS	020-5405-434.60-23 020-5405-434.60-23 020-5405-434.60-23 020-5405-434.60-23 020-5405-434.60-23		4/2020 4/2020 4/2020 4/2020 4/2020 Total	86.38 37.04 274.12 187.08 11.80 596.42
10/25/2019	263309	327	HACH COMPANY	11643865 11658072 11658478 11659477 11663792	WATER TREATING CHEMICALS WATER TREATING CHEMICALS WATER TREATING CHEMICALS WATER TREATING CHEMICALS WATER TREATING CHEMICALS	020-5410-435.60-34 020-5405-434.60-34 020-5405-434.60-34 020-5405-434.60-34 020-5405-434.60-34		4/2020 4/2020 4/2020 4/2020 4/2020 Total	1,246.05 1,476.56 168.39 86.36 58.25 3,035.61
10/25/2019	263310	4997	HARRIS CORPORATI ON	PSPC 93324922	RADIO AND TELECOMMUNICATN	020-0000-141.00-00		4/2020 Total	181.30 181.30
10/25/2019	263311	10596	HATFIELD AND COMPANY	06-909866	WATER SUPPLY AND SEWAGE	020-5405-434.60-45		4/2020 Total	229.29 229.29
10/25/2019	263312	2227	HAYNES EQUIPMENT CO	8122116-1N	REPAIR BASS PRO BOOSTER	020-5415-435.40-28		4/2020	86.45

CHECK DATE	CHECK NUMBER	VENDOR NAME	INVOICE	DESCRIPTION	G/L NUMBER	PROJECT	PERIOD YEAR	AMOUNT
10/25/2019	263312	2227 HAYNES EQUIPMENT CO	81221641 N	PLUMBING EQUIPMENT	020-5415-435.60-41		4/2020 Total	6,306.28 6,392.73
10/25/2019	263313	8019 HDR, INC	1200216672 1200216673 1200216674 1200216675 1200216676	CONSTRUCTION ARCHITECT-ENG DESIGN SERV CONSTRUCTION CONSTRUCTION BLANKET ORDERS	020-5405-434.70-16 020-5405-434.70-16 020-5410-435.70-16 020-5410-435.70-16 020-5400-434.70-16	175436 175437 165420 165423 195425	4/2020 4/2020 4/2020 4/2020 4/2020 Total	8,143.76 1,680.00 4,427.36 4,427.36 50,155.99 68,834.47
10/25/2019	263315	99999 HIGHERBERGER, LAUREN	000228971	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	16.14 16.14
10/25/2019	263317	340 HILTI INC	4614552345 4614654621	TOOLS, HAND (NOT CLASSED) TOOLS, HAND (NOT CLASSED)	020-5415-435.60-24 020-5400-434.60-24		4/2020 4/2020 Total	1,310.02 229.34 1,539.36
10/25/2019	263318	8935 HOLLY MATERIAL HANDLING	140009338	EQUIPMENT MAINT / REPAIR	020-5410-435.40-20		4/2020 Total	445.45 445.45
10/25/2019	263319	99999 HOOPER, JAMES W	000038777	UB CR REFUND	020-0000-225.01-00		4/2020 Total	204.00 204.00
10/25/2019	263321	9794 IMPERIAL INC.	947672	COFFEE SERVICE	020-5305-438.60-23		4/2020 Total	47.20 47.20
10/25/2019	263322	1634 IMPROVED CONSTRUCTION M	41000338 41000373 41000396	FIRST AID & SAFETY EQUIP PAINT, COATINGS, WALLPAPER FIRST AID & SAFETY EQUIP	020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00		4/2020 4/2020 4/2020 Total	332.50 458.50 266.00 1,057.00
10/25/2019	263323	355 INCOG	223152 223160	2ND QTR COALITION 19/20 2ND QTR MEMBERSHIP 19/20	020-1700-419.30-85 020-1700-419.30-85		4/2020 4/2020 Total	1,886.37 10,131.62 12,017.99
10/25/2019	263324	1530 INDUSTRIAL WELDING & TO	35128449	HARDWARE, AND ALLIED ITEMS	020-0000-141.00-00		4/2020 Total	765.52 765.52
10/25/2019	263328	11757 JAM DISTRIBUTING CO	JAM19-295248 JAM19-299807 JAM19-299812 JAM19297273	FUEL, OIL, GREASE & LUBRIC FUEL, OIL, GREASE & LUBRIC AUTO SHOP EQUIPMENT & SUP FUEL, OIL, GREASE & LUBRIC	020-0000-141.00-00 020-0000-141.00-00 020-5120-437.60-23 020-0000-141.00-00		4/2020 4/2020 4/2020 4/2020 Total	80.88 544.50 401.50 1,019.70 2,046.58
10/25/2019	263329	9813 JAMSON AUTO GLASS LLC	4812	BLANKET ORDERS	020-5415-435.60-20		4/2020 Total	245.00 245.00
10/25/2019	263331	99999 JMC RANCH BROKEN ARROW	000246327	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	90.24 90.24
10/25/2019	263336	7497 JPMORGAN CHASE BANK N A	SEPT19	ELOCKBOX FEE SEPT 2019	020-0503-415.50-28		4/2020 Total	1,185.37 1,185.37

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10/25/2019	263339	377	KIMS INTERNATIONAL	01153471 N	HOSE, ALL KIDS	020-5400-434.60-23		4/2020		45.66
				01154571 N	HOSE, ALL KIDS	020-5305-438.60-20		4/2020		7.58
				01155331 N	HOSE, ALL KIDS	020-5405-434.60-23		4/2020		157.00
				01156001 N	HOSE, ALL KIDS	020-5400-434.60-23		4/2020		38.03
								Total		248.27
10/25/2019	263342	10699	KUBOTA CENTER WEST TULS	P25827	ROAD EQUIP EARTH HANDLING	020-5305-438.60-20		4/2020		204.64
								Total		204.64
10/25/2019	263343	10301	KUBOTA CONSTRUCTION EQUI	10399T	ROAD EQUIP EARTH HANDLING	020-5305-438.60-20		4/2020		334.77
								Total		334.77
10/25/2019	263344	4959	LANDPLAN CONSULTANTS, I	6390002	COMMUNICATIONS/MEDIA SERV	020-5205-419.70-16	195212	4/2020		4,319.50
								Total		4,319.50
10/25/2019	263351	399	LOCKE SUPPLY COMPANY	3828696500	BLANKET ORDERS	020-5410-435.60-45		4/2020		2.39
				3833998100	BLANKET ORDERS	020-5410-435.60-18		4/2020		2.43
				3834284700	BLANKET ORDERS	020-5410-435.60-18		4/2020		6.80
								Total		11.62
10/25/2019	263362	5941	LOWES	01016 91719	BLANKET ORDERS	020-5405-434.60-23		4/2020		303.34
				01086 10919	BLANKET ORDERS	020-5120-437.60-18		4/2020		48.44
				01113 10919	BLANKET ORDERS	020-5400-434.60-23		4/2020		68.86
				01226 101419	BLANKET ORDERS	020-5405-434.60-23		4/2020		148.06
				01314 101019	BLANKET ORDERS	020-5405-434.60-23		4/2020		78.82
				01409 92419	BLANKET ORDERS	020-5305-438.60-23		4/2020		14.98
				01426 92419	BLANKET ORDERS	020-5405-434.60-23		4/2020		129.60
				01509 93019	BLANKET ORDERS	020-5400-434.60-23		4/2020		15.15
				01545 92519	BLANKET ORDERS	020-5410-435.60-18		4/2020		5.12
				01557 092519	BLANKET ORDERS	020-5305-438.60-27		4/2020		105.05
				01670 100119	BLANKET ORDERS	020-5405-434.60-23		4/2020		214.50
				01681 92519	BLANKET ORDERS	020-5305-438.60-23		4/2020		69.23
				01787 92619	BLANKET ORDERS	020-5305-438.60-23		4/2020		191.03
				01879 91719	BLANKET ORDERS	020-5400-434.60-27		4/2020		12.08
				01891 92719	BLANKET ORDERS	020-5410-435.60-18		4/2020		23.00
				01903 100319	BLANKET ORDERS	020-5400-434.60-20		4/2020		54.23
				01968 10819	BLANKET ORDERS	020-5405-434.60-23		4/2020		145.78
				01989 10819	BLANKET ORDERS	020-5405-434.60-23		4/2020		94.90
				02273 92519	BLANKET ORDERS	020-5400-434.60-23		4/2020		19.46
				02289 10819	BLANKET ORDERS	020-5100-437.60-18		4/2020		8.82
				02362 92519	BLANKET ORDERS	020-5400-434.60-23		4/2020		8.70
				02422 92619	BLANKET ORDERS	020-5305-438.60-23		4/2020		39.20
				02500 92619	BLANKET ORDERS	020-5305-438.60-23		4/2020		300.34
				02505 92619	BLANKET ORDERS	020-5405-434.60-23		4/2020		33.70
				02631 92319	BLANKET ORDERS	020-5305-438.60-23		4/2020		69.34
				02671 101019	BLANKET ORDERS	020-5100-437.60-18		4/2020		3.42
				02693 92319	BLANKET ORDERS	020-5410-435.60-23		4/2020		34.66
				02754 92719	BLANKET ORDERS	020-5405-434.60-23		4/2020		57.43
				02774 92719	BLANKET ORDERS	020-5400-434.60-23		4/2020		27.04
				02838 92319	BLANKET ORDERS	020-5400-434.60-23		4/2020		19.44
				02876 100219	BLANKET ORDERS	020-1700-419.60-23		4/2020		11.37
				02914 92419	BLANKET ORDERS	020-5305-438.60-23		4/2020		153.39
				02915 92419	BLANKET ORDERS	020-5305-438.60-23		4/2020		11.91

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10/25/2019	263362	5941 LOWES	02927 101519	BLANKET ORDERS	020-5415-435.60-23		4/2020	36.64
			11791 101119	BLANKET ORDERS	020-5415-435.60-23		4/2020	57.92
			11960 93019	BLANKET ORDERS	020-5415-435.60-23		4/2020	41.16
			12700 92619	BLANKET ORDERS	020-5130-437.60-23		4/2020	62.64
			13252 92519	BLANKET ORDERS	020-5125-436.60-23		4/2020	98.46
			13730 10819	BLANKET ORDERS	020-5205-419.60-23		4/2020	67.08
			13826 10119	BLANKET ORDERS	020-5120-437.60-23		4/2020	29.80
			13831 10119	BLANKET ORDERS	020-5400-434.60-23		4/2020	10.28
			13985 101619	BLANKET ORDERS	020-5415-435.60-23		4/2020	3.39
			78024 25 101019	BLANKET ORDERS	020-5405-434.60-23		4/2020	105.85
							Total	3,009.79
10/25/2019	263365	7418 MATTHEWS FORD	F4CS241136	EQUIPMENT MAINT/REPAIR	020-5305-438.40-20		4/2020	736.11
							Total	736.11
10/25/2019	263367	99999 MCCARVER, LANCE	000200109	UB CR REFUND-FINALS	020-0000-225.01-00		4/2020	35.94
							Total	35.94
10/25/2019	263371	99999 MILLER, JERRY			020-0000-229.05-00		4/2020	1,165.00
							Total	1,165.00
10/25/2019	263372	9923 MILTY'S BOYS SEPTIC	2348	CITRIC ACID WASTE HAULING	020-5405-434.40-28		4/2020	750.00
							Total	750.00
10/25/2019	263373	99999 MINER REV TRUST	000245895	UB CR REFUND-FINALS	020-0000-225.01-00		4/2020	55.97
							Total	55.97
10/25/2019	263376	9822 MORTON SALT INC	5401923772	WATER TREATING CHEMICALS	020-5405-434.60-34		4/2020	6,000.54
			5401936823	WATER TREATING CHEMICALS	020-5405-434.60-34		4/2020	6,194.28
							Total	12,194.82
10/25/2019	263377	427 MOTOROLA SOLUTIONS INC	16073426	COMPUTERS, DP & WORD PROC	020-5125-436.70-18	205111	4/2020	7,059.54
			16073426	COMPUTERS, DP & WORD PROC	020-5305-438.70-18	205303	4/2020	4,706.36
			16073785	RADIO AND TELECOMMUNICATION	020-0000-141.00-00		4/2020	4,706.36
							Total	16,472.26
10/25/2019	263378	11283 MUNICIPALH2O	9297 OCT	WWTP OPDES #OK0040053	020-5410-435.30-87		4/2020	350.00
							Total	350.00
10/25/2019	263379	1249 MYERS TIRE SUPPLY INC	95019086	AUTO SHOP EQUIPMENT & SUP	020-5120-437.60-23		4/2020	74.60
			95019204	AUTO SHOP EQUIPMENT & SUP	020-5120-437.60-24		4/2020	667.13
							Total	741.73
10/25/2019	263387	90 NAPA AUTO PARTS	2210944765	ROAD/HGVY HEAVY EQUIPMENT	020-0000-141.00-00		4/2020	47.06
			2210944828	BLANKET ORDERS	020-5410-435.60-45		4/2020	59.88
			2210944849	ROAD/HGVY HEAVY EQUIPMENT	020-0000-141.00-00		4/2020	65.26
			2210944902	AUTO SHOP EQUIPMENT & SUP	020-0000-141.00-00		4/2020	168.00
			2210944914	AUTO SHOP EQUIPMENT & SUP	020-0000-141.00-00		4/2020	1.60
			2210944939	BLANKET ORDERS	020-5410-435.60-45		4/2020	20.93
			2210945043	BLANKET ORDERS	020-5415-435.60-20		4/2020	9.84
			2210945111	BLANKET ORDERS	020-5406-434.60-20		4/2020	3.43
			2210945369	BLANKET ORDERS	020-5305-438.60-20		4/2020	43.38
			2210945414	BLANKET ORDERS	020-5415-435.60-20		4/2020	54.35

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10/25/2019	263387	90 NAPA AUTO PARTS	2210945426	BLANKET ORDERS	020-5415-435.60-20		4/2020	34.79
			2210945444	BLANKET ORDERS	020-5415-435.60-20		4/2020	9.52
			2210945462	BLANKET ORDERS	020-5125-438.60-20		4/2020	10.47
			2210945478	BLANKET ORDERS	020-5120-437.60-23		4/2020	35.50
			2210945499	BLANKET ORDERS	020-5305-438.60-20		4/2020	91.34
			2210945507	BLANKET ORDERS	020-5305-438.60-20		4/2020	9.00
			2210945526	BLANKET ORDERS	020-5305-438.60-21		4/2020	28.58
			2210945572	BLANKET ORDERS	020-5305-438.60-20		4/2020	21.99
			2210945797	BLANKET ORDERS	020-5120-437.60-20		4/2020	12.49
			2210945812	BLANKET ORDERS	020-5305-438.60-20		4/2020	8.58
			2210945850	ROAD/HWAY HEAVY EQUI PMNT	020-0000-141.00-00		4/2020	406.75
			2210945978	ROAD/HWAY HEAVY EQUI PMNT	020-0000-141.00-00		4/2020	98.04
			2210946041	ROAD/HWAY HEAVY EQUI PMNT	020-0000-141.00-00		4/2020	132.50
			2210946147	ROAD/HWAY HEAVY EQUI PMNT	020-0000-141.00-00		4/2020	531.72
			2210946235	ROAD/HWAY HEAVY EQUI PMNT	020-0000-141.00-00		4/2020	90.22
			2210946415	ROAD/HWAY HEAVY EQUI PMNT	020-0000-141.00-00		4/2020	190.91
			2210946530	ROAD/HWAY HEAVY EQUI PMNT	020-0000-141.00-00		4/2020	74.35
			2210946626	ROAD/HWAY HEAVY EQUI PMNT	020-0000-141.00-00		4/2020	232.99
			2210946628	AUTO & TRUCK MAINT. ITEMS	020-0000-141.00-00		4/2020	7.48
			2210946723	ROAD/HWAY HEAVY EQUI PMNT	020-0000-141.00-00		4/2020	376.64
			2210946810	ROAD/HWAY HEAVY EQUI PMNT	020-0000-141.00-00		4/2020	132.60
			2210947014	ROAD/HWAY HEAVY EQUI PMNT	020-0000-141.00-00		4/2020	125.35
			2210947310	ROAD/HWAY HEAVY EQUI PMNT	020-0000-141.00-00		4/2020	368.33
			2210947368	ROAD/HWAY HEAVY EQUI PMNT	020-0000-141.00-00		4/2020	71.06
							Total	3,553.73
10/25/2019	263389	5060 NICKS TREE SERVICE INC	4396	CONSTRUCTION	020-5415-435.70-15	205439	4/2020	1,000.00
							Total	1,000.00
10/25/2019	263391	99999 NRT PROPERTY MGMT OKLAH	000243959	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020	58.49
							Total	58.49
10/25/2019	263392	99999 NRT PROPERTY MGMT OKLAH	000243959	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020	58.49
							Total	58.49
10/25/2019	263393	99999 NRT PROPERTY MGMT OKLAH	000243959	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020	58.49
							Total	58.49
10/25/2019	263394	99999 NRT PROPERTY MGMT OKLAH	000243959	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020	22.61
							Total	22.61
10/25/2019	263395	99999 NRT PROPERTY MGMT OKLAH	000243959	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020	58.49
							Total	58.49
10/25/2019	263401	319 OKLAHOMA MUNICIPAL LEAG	033841	MEMBERSHIP DUES	020-5401-434.30-85		4/2020	100.00
							Total	100.00
10/25/2019	263402	309 OKLAHOMA NATURAL GAS CO	110016445	MONTHLY SERVICE 10/14/19	020-5120-437.50-24		4/2020	110.81
			179009782	MONTHLY SERVICE 10/14/19	020-5100-437.50-24		4/2020	110.81
			220544536	MONTHLY SERVICE 10/17/19	020-5415-435.50-24		4/2020	29.07
			253747127	MONTHLY SERVICE 10/16/19	020-5415-435.50-24		4/2020	38.74
			254035382	MONTHLY SERVICE 10/16/19	020-5415-435.50-24		4/2020	21.82
			257659209	MONTHLY SERVICE 10/17/19	020-5415-435.50-24		4/2020	46.89

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10/25/2019	263402	309 OKLAHOMA NATURAL GAS CO	257977409	MONTHLY SERVICE 10/17/19	020-5415-435.50-24		4/2020 Total	103.12 461.26
10/25/2019	263406	99999 OZERQJLU, HIKMET	000197457	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	58.49 58.49
10/25/2019	263407	7803 P&K EQUIPMENT	3447892 3465227 3465239	TRACTOR, PARTS TRACTOR, PARTS TRACTOR, PARTS	020-0000-141.00-00 020-0000-141.00-00 020-5305-438.60-20		4/2020 4/2020 4/2020 Total	36.48 177.20 112.58 326.26
10/25/2019	263411	11737 PETROCHOCIE	11373209	FUEL, OIL, GREASE & LUBRIC	020-0000-141.00-00		4/2020 Total	838.45 838.45
10/25/2019	263412	10233 PETROLEUM TRADERS CORP	1462801 1464062 1465941	FUEL, OIL, GREASE & LUBRIC FUEL, OIL, GREASE & LUBRIC FUEL, OIL, GREASE & LUBRIC	020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00		4/2020 4/2020 4/2020 Total	15,057.15 14,475.12 15,012.71 44,544.98
10/25/2019	263413	299 PGS COMPANIES, INC.	747592	AUTO SHOP EQUIPMENT & SUP	020-0000-141.00-00		4/2020 Total	153.12 153.12
10/25/2019	263417	888 PREFERRED BUSINESS SYST	INV67952 INV67952 INV67952 INV67952 INV67952 INV67952 067952 067952 067952 067952	COPIER OVERAGES 9/30/19 COPIER OVERAGES 9/30/19 COPIER OVERAGES 9/30/19 COPIER OVERAGES 9/30/19 COPIER OVERAGES 9/30/19 COPIER OVERAGES 9/30/19 COPIER OVERAGES 9/30/19 COPIER OVERAGES 9/30/19 COPIER OVERAGES 9/30/19 COPIER OVERAGES 9/30/19	020-0503-415.40-55 020-5305-438.40-55 020-5400-434.40-55 020-5405-434.40-55 020-5406-434.40-55 020-5410-435.40-55 020-5100-437.40-55 020-5120-437.40-55 020-5130-437.40-55 020-5205-419.40-55		4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 Total	107.07 27.54 61.08 11.55 20.47 25.58 57.62 95.51 157.33 415.82 979.57
10/25/2019	263418	6768 PREMIER COLLISION CENTE	2597	EQUIPMENT MAINT./REPAIR	020-5305-438.40-20		4/2020 Total	3,340.54 3,340.54
10/25/2019	263419	5371 PREMIER TRUCK GROUP	125286283 125286671 125287059	AUTO MAJOR TRANSPORTATION AUTO & TRUCK MAINT. ITEMS AUTO & TRUCK MAINT. ITEMS	020-5415-435.60-20 020-5125-436.60-20 020-5305-438.60-20		4/2020 4/2020 4/2020 Total	102.33 258.58 75.51 436.42
10/25/2019	263429	4462 REGIONAL METROPOLITAN U	419598	HAIKEY CREEK LIFT STATION	020-5410-435.70-15	HC1802	4/2020 Total	2,536,590.97 2,536,590.97
10/25/2019	263430	99999 REIMER, KYLE	000224209	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	37.64 37.64
10/25/2019	263432	349 RICH MIX PRODUCTS DBA Q	19218667	BUILDERS SUPPLIES	020-0000-141.00-00		4/2020 Total	1,124.90 1,124.90
10/25/2019	263433	9876 RITZ/LONE STAR SAFETY &	5835647 5841300	FIRST AID & SAFETY EQUIP SHOES AND BOOTS	020-0000-141.00-00 020-0000-141.00-00		4/2020 4/2020	444.58 1,023.60

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10/25/2019	263433	9876 RITZ/ LONE STAR SAFETY &	5845136	SHOES AND BOOTS	020-0000-141.00-00		4/2020 Total	1,329.50 2,797.68
10/25/2019	263435	10949 ROUTEWARE INC.	INV000107 INV000295	COMMUNICATIONS/ MEDIA SERV TELEVISION EQUIP/ ACCESS	020-5125-436.40-55 020-0000-141.00-00		4/2020 4/2020 Total	210.00 625.00 835.00
10/25/2019	263436	677 ROYAL PRINTING	52645 52645 52645	CITY NAME TAG CITY NAME TAG CITY NAME TAG	020-5200-419.60-23 020-5205-419.60-23 020-5210-419.60-23		4/2020 4/2020 4/2020 Total	15.50 62.00 15.50 93.00
10/25/2019	263437	10122 RUSH TRUCK CENTERS OF O	3016938824	AUTO MAJOR TRANSPORTATION	020-5305-438.60-20		4/2020 Total	91.60 91.60
10/25/2019	263438	255 SAFETY GLOVE INC	910685-00 910685-01 910685-02	CLOTHING & APPAREL JANITORIAL SUPPLIES FOODS, STAPLE GROCERY	020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00		4/2020 4/2020 4/2020 Total	477.04 547.46 780.87 1,805.37
10/25/2019	263439	257 SAFETY KLEEN CORP	80967510	PICKUP AND RECYCLING	020-5120-437.40-55		4/2020 Total	120.00 120.00
10/25/2019	263442	99999 SCHOENENBERGER, EDUARDO	000236137	UB CR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	34.03 34.03
10/25/2019	263450	253 SIGNALTEK INC	16392	MARKERS, PLAQUES, SIGN, TRAF	020-0000-141.00-00		4/2020 Total	678.45 678.45
10/25/2019	263453	1409 SMITH FARM & GARDEN CO	861289 863873 864736 865315	BLANKET ORDERS BLANKET ORDERS AUTO & TRUCK MAINT. ITEMS BLANKET ORDERS	020-5405-434.60-20 020-5305-438.60-20 020-0000-141.00-00 020-5305-438.60-20		4/2020 4/2020 4/2020 4/2020 Total	108.08 20.72 230.38 120.80 479.98
10/25/2019	263459	5980 SOFTWARE HOUSE INTERNAT	B10513530 B10513530 B10513530 B1061400 B1061400 B1061400 B1061400 B1061400 B1061400 B1061400 B1061400 B1061400 B1061400 B1061400 B1061400 B1061400	COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC COMPUTERS, DP & WORD PROC	020-5406-434.40-55 020-5410-435.40-55 020-5415-435.40-55 020-0503-415.40-55 020-5115-437.40-55 020-5120-437.40-55 020-5125-436.40-55 020-5130-437.40-55 020-5205-419.40-55 020-5305-438.40-55 020-5400-434.40-55 020-5401-434.40-55 020-5405-434.40-55		4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 Total	1,740.36 1,814.46 2,345.18 2,150.92 2,120.92 4,079.84 6,759.73 1,487.94 5,485.78 5,272.79 6,657.74 1,325.96 3,181.88 44,403.50
10/25/2019	263460	11007 SOURCEONE	15218	STORMWATER GROUNDS MAINT	020-5305-438.40-28		4/2020 Total	3,154.00 3,154.00

CHECK DATE	CHECK NUMBER	VENDOR	NAME	INVOICE	DESCRIPTION	G/L NUMBER	PROJECT	PERIOD YEAR	AMOUNT
10/25/2019	263464	11332	STAND-BY PERSONNEL	215241 216007 216325	TEMP EMPS WEEK OF 9/22/19 TEMP EMPLOYEE 10/6/19 TEMP EMPLOYEES 10-13-19	020-5125-436.50-37 020-5125-436.50-37 020-5125-436.50-37		4/2020 4/2020 4/2020 Total	1,002.70 614.20 584.60 2,201.50
10/25/2019	263465	11385	STANDARD MATERIALS GROUP	2000040579 2000041189	PO 107770 BELT CONSTRUCTN PO 107770 BELT CONSTRUCTN	020-5415-435.70-15 020-5415-435.70-15	S.1609 S.1609	4/2020 4/2020 Total	1,000.00 500.00 1,500.00
10/25/2019	263469	11857	STEWART TANK CONSULTING 1074		WATER SUPPLY AND SEWAGE	020-5400-434.40-28		4/2020 Total	2,450.00 2,450.00
10/25/2019	263470	99999	STOP N GO UMA MAHESWAR	000236255	UB CR REFUND-FINALS	020-0000-225.01-00		4/2020 Total	85.93 85.93
10/25/2019	263475	225	SUMMIT TRUCK GROUP	CM411193056 411191032 411192101 411192699 411192728 411192782 411192997 411193049 411193056 411193077 411193167 411193253 411193286 411193291 411219937C	AUTO & TRUCK MAINT. ITEMS AUTO & TRUCK MAINT. ITEMS AUTO & TRUCK MAINT. ITEMS ROAD/HGWAY HEAVY EQUIPMNT ROAD/HGWAY HEAVY EQUIPMNT AUTO & TRUCK MAINT. ITEMS AUTO & TRUCK MAINT. ITEMS ROAD/HGWAY HEAVY EQUIPMNT AUTO & TRUCK MAINT. ITEMS ROAD/HGWAY HEAVY EQUIPMNT AUTO & TRUCK MAINT. ITEMS ROAD/HGWAY HEAVY EQUIPMNT AUTO & TRUCK MAINT. ITEMS AUTO & TRUCK MAINT. ITEMS EQUIPMENT MAINT./REPAIR	020-5125-436.60-20 020-5410-435.60-20 020-5125-436.60-20 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-5125-436.60-20 020-0000-141.00-00 020-5125-436.60-20 020-0000-141.00-00 020-5125-436.60-20 020-5125-436.60-20 020-5125-436.40-20		4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 Total	75.90- 119.58 90.74 66.57 155.43 318.96 132.62 241.84 433.92 199.71 31.01 155.43 84.28 27.88 322.52 2,304.59
10/25/2019	263476	574	SUPERIOR, LLC	251064	AUG 2019 AGREEMENT	020-0503-415.50-28		4/2020 Total	150.00 150.00
10/25/2019	263479	99999	TANNER, KATHLEEN	000000769	UB CR REFUND-FINALS	020-0000-225.01-00		4/2020 Total	42.92 42.92
10/25/2019	263480	601	TETRA TECH INC	51501855	CONSTRUCTION	020-5410-435.70-16	165422	4/2020 Total	9,695.00 9,695.00
10/25/2019	263481	3964	THE ARROW GROUP	75015 83981	NEW BOND (BOND#106823224) RENEWAL (BOND#106406563)	020-1700-419.50-76 020-1700-419.50-76		4/2020 4/2020 Total	50.00 50.00 100.00
10/25/2019	263484	7782	TIGER, INC.	0919533161 0919533185	AUG&SEP MONTHLY SERVICE AUG&SEP MONTHLY SERVICE	020-5120-437.50-24 020-5100-437.50-24		4/2020 4/2020 Total	3.06 3.05 6.11
10/25/2019	263485	176	TIMMONS OIL COMPANY INC	W10803 W10804 W10826	FUEL, OIL, GREASE & LUBRICON FUEL, OIL, GREASE & LUBRICON FUEL, OIL, GREASE & LUBRICON	020-5410-435.60-21 020-0000-141.00-00 020-0000-141.00-00		4/2020 4/2020 4/2020 Total	250.80 250.80 376.20 877.80

CHECK DATE	CHECK NUMBER	VENDOR	NAME	INVOICE	DESCRIPTION	G/L NUMBER	PROJECT	PERIOD YEAR	AMOUNT
10/25/2019	263486	179	TRANS CONTINENTAL SUPPL	1037229 1037273 1037336 1037440	HARDWARE, AND ALLIED ITEMS TOOLS, HAND (NOT CLASSED) TOOLS, HAND (NOT CLASSED) TOOLS, HAND (NOT CLASSED)	020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00		4/2020 4/2020 4/2020 4/2020 Total	478.60 1,292.50 350.20 231.16 2,352.46
10/25/2019	263489	4315	TULSA CITY COUNTY HEALTH	35802 35823	OPDES#CK0040053 PERM T OPDES#CK0040053 PERM T	020-5410-435.30-34 020-5410-435.30-34		4/2020 4/2020 Total	3,063.00 754.00 3,817.00
10/25/2019	263490	6671	TULSA CLEANING SYSTEMS	66675	AUTO SHOP EQUIPMENT & SUP	020-5120-437.60-23		4/2020 Total	353.75 353.75
10/25/2019	263491	9539	TULSA HEALTH DEPARTMENT	35611	WATER ANALYSIS	020-5405-434.30-34		4/2020 Total	107.00 107.00
10/25/2019	263493	6822	TULSA WINNELSON COMPANY	14386601 14457201 14472201 14472801	BLANKET ORDERS BLANKET ORDERS BLANKET ORDERS BLANKET ORDERS	020-5410-435.60-18 020-5410-435.60-18 020-5410-435.60-18 020-5410-435.60-18		4/2020 4/2020 4/2020 4/2020 Total	168.42 97.59 294.99 6.21 567.21
10/25/2019	263495	1057	TULSA WORLD	590851 590859 594581 594587 595129 595173 596345	BID NUMBER 20.109 BID NUMBER 20.110 BID NUMBER 20.112 BID NUMBER 20.114 RFP 20.115 RFP 20.115 ADDENDUM 1/ RFP 20.115	020-5130-437.50-05 020-5130-437.50-05 020-5130-437.50-05 020-5130-437.50-05 020-5130-437.50-05 020-5130-437.50-05 020-5130-437.50-05		4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 4/2020 Total	84.87 87.33 84.87 87.33 189.73 84.87 72.96 691.96
10/25/2019	263496	10214	TULSA'S GREEN COUNTRY S	74417	TEMP HELP 9-30-10-6/19	020-5125-436.50-37		4/2020 Total	6,821.10 6,821.10
10/25/2019	263499	130	UNITED ENGINES INC	2168668 2170222 4101298	AUTO & TRUCK MAINT. ITEMS ROAD/HWAY HEAVY EQUIPMENT EQUIPMENT MAINT./REPAIR	020-5410-435.60-20 020-0000-141.00-00 020-5410-435.60-20		4/2020 4/2020 4/2020 Total	99.65 93.31 308.09 501.05
10/25/2019	263500	4311	UNITED FORD	3318192 3402722 3406483 3412633	052319 BLANKET ORDERS AUTO & TRUCK MAINT. ITEMS AUTO & TRUCK MAINT. ITEMS AUTO & TRUCK MAINT. ITEMS	020-5305-438.60-20 020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00		4/2020 4/2020 4/2020 4/2020 Total	99.12 21.00 68.68 57.45 246.25
10/25/2019	263502	133	UTILITY SUPPLY	131414 131491 131528 131682	PLUMBING EQUIPMENT PLUMBING EQUIPMENT PLUMBING EQUIPMENT PLUMBING EQUIPMENT	020-0000-141.00-00 020-5406-434.60-38 020-0000-141.00-00 020-0000-141.00-00		4/2020 4/2020 4/2020 4/2020 Total	2,269.40 229.30 576.81 553.80 3,629.31
10/25/2019	263506	10376	VOSS ELECTRIC CO DBA VO	3018580300	ELECTRICAL EQUIP & SUPPLY	020-0000-141.00-00		4/2020 Total	597.00 597.00

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CITY OF BROKEN ARROW
 CHECK REGISTER BY FUND

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CHECK DATE	CHECK NUMBER	VENDOR NAME	INVOICE	DESCRIPTION	G/L NUMBER	PROJECT	PERIOD/ YEAR	AMOUNT
10/25/2019	263508	10137 WAGNER CO RRWD DISTRICT 052		SEPT 2019 SERVICES	020-0503-415.50-28		4/2020 Total	150.00 150.00
10/25/2019	263513	8454 WASTE MANAGEMENT QUARRY	005414021856 2239785-1006-1	2-70303-630001 9-1-30/19 22-35596-93001 9-16-30/19	020-5410-435.40-30 020-5410-435.40-30		4/2020 4/2020 Total	14,950.39 86.28 15,036.67
10/25/2019	263514	9706 WATER TECH INC	80978	WATER TREATING CHEMICALS	020-5405-434.60-34		4/2020 Total	4,566.60 4,566.60
10/25/2019	263516	9779 WECO, INC	8653093019	EQUIPMENT MAINT / REPAIR	020-5120-437.40-29		4/2020 Total	720.00 720.00
10/25/2019	263518	92 WHITE STAR MACHINERY &	07209303 07209672 07210007	ROAD EQUIP EARTH HANDLING ROAD EQUIP EARTH HANDLING ROAD EQUIP EARTH HANDLING	020-5305-438.60-20 020-5305-438.60-20 020-5305-438.60-20		4/2020 4/2020 4/2020 Total	699.68 23.45 86.69 809.82
10/25/2019	263520	7724 WINDSTREAM	9183572491 OCT 9184513524 OCT	ACCT 100979352 OCT 2019 ACCT 101035457 OCT 2019	020-5415-435.50-22 020-5415-435.50-22		4/2020 4/2020 Total	69.98 74.08 144.06
10/25/2019	263522	99999 WRIGHT, DENNIS	000187061	LIB CR REFUND- FINALS	020-0000-225.01-00		4/2020 Total	56.81 56.81
10/25/2019	263523	9089 YELLOWHOUSE MACHINERY CO	474080	ROAD/HGVW HEAVY EQUIPMENT	020-0000-141.00-00		4/2020 Total	127.89 127.89
10/25/2019	263527	8940 911 CUSTOM	38370 38540 38656	AUTO & TRUCK ACCESSORIES RADIO AND TELECOMMUNICATION AUTO & TRUCK ACCESSORIES	020-0000-141.00-00 020-0000-141.00-00 020-0000-141.00-00		4/2020 4/2020 4/2020 Total	662.96 122.30 97.16 882.42
10/29/2019	263528	6789 GREEN COUNTRY TESTING	67638	SAMPLING #CK0040053	020-5404-434.30-34		4/2020 Total	2,403.13 2,403.13
10/29/2019	263530	556 OFFICE TEAM	54351205	TEMP EMPLOYEE 9/20/19	020-0503-415.50-37		4/2020 Total	478.08 478.08
10/29/2019	263533	11332 STAND-BY PERSONNEL	214985	CLEAR CREDIT	020-5125-436.50-37		4/2020 Total	1,124.80 1,124.80
					159 Checks	** Fund Total		3,662,093.09



City of Broken Arrow

Request for Action

File #: 19-1359, **Version:** 1

Broken Arrow Municipal Authority
Meeting of: 11-05-2019

Title:

Consideration, discussion, and possible action regarding the recommendations from the Citizens' Recycle Committee and the recommendations from the City Manager and possible direction to staff to proceed with implementation

Background:

At the September 17, 2019 meeting the Authority members received and accepted the Curbside Recycling Pilot Project report from GGB, Inc. Included in that report was the recommendations from the Citizens' Recycle Committee. The Committee recommended the following:

1. Convert the entire City to once a week collection via rerouting;
2. Issue all customers a 96 gallon blue recycling cart with the option to opt-out;
3. Continue collection of garbage and yard waste in bags with a 50% reduction in bags to each customer;
4. Consider beginning to replenish truck fleet with automated trucks for collecting recyclables; and,
5. Within 3 years of the date of implementation of the recycling program implement trash carts and eliminate the trash bag program.

In addition to accepting the report the Authority directed staff to schedule a work session for further discussion. That work session was held on October 10, 2019.

City Manager Michael Spurgeon shared his recommendations with the Authority at the work session. He and the staff suggested the following be considered by the Authority:

1. Adopt the Citizen Recycling Committee recommendations with two amendments:
 - A. Rather than implement trash carts within 3 years of implementing the recycling program, provide a trash cart simultaneous to providing the recycling cart. Customers would be provided options regarding size of the trash cart.
 - B. Rather than provide a reduced amount of trash bags, eliminate providing trash bags, immediately.
 - C. Prior to implementation of the carts the staff would develop and submit to the Authority for consideration updated policies regarding yard waste disposal and hose side services for elderly and disabled customers.
 - D. Consider separating the Sanitation Division from the General Services Department and establish it as a separate department.

Cost: With the full implementation of the proposed action steps regarding rerouting and elimination of trash bags it is anticipated that operational and capital costs would not increase.

Funding Source: BAMA revenues

Requested By: Lee Zirk, General Service Director

Approved By: City Manager's Office

Attachments: September 17, 2019 Curbside Recycling Pilot Project Report and the
October 10, 2019 BAMA Work Session Minutes

Recommendation:

Adopt the recommendations of the Citizens' Recycling Committee with the amendments proposed by the City Manager and staff. Direct the staff to proceed with implementation.



**SOLID WASTE
MANAGEMENT
CONSULTANTS**

MEMORANDUM

TO: Russell Gale, Assistant City Manager, Administration, City of Broken Arrow, OK

FROM: Kate Vasquez, Project Manager, Gershman, Brickner & Bratton, Inc. (GBB)

CC: Lee Zirk, General Services Director, City of Broken Arrow, OK
Tom Reardon, Sr. Vice President, Gershman, Brickner & Bratton, Inc.

DATE: September 12, 2019

RE: Results of Recycling Pilot Project and Recommendations for Implementation

1. Introduction

In January 2016, the City of Broken Arrow (City) and the Broken Arrow Municipal Authority (BAMA) contracted with Gershman, Brickner & Bratton, Inc., (GBB) and GBB's partner, ShapardResearch, to conduct a randomized, statistically significant telephone survey of the residents of Broken Arrow about their attitudes, behaviors, and engagement regarding their curbside garbage service, recycling, and the bag voucher system. The intent of the project was to gather information that could be used in decision-making about future revisions to the solid waste collection system in Broken Arrow. The survey was administered in May 2016, and the results presented to BAMA in August 2016.

Overall, the survey revealed that residents of Broken Arrow were positive about the current bag-based collection system. They were not, however, opposed to some change. Residents agreed that their limited access to recycling is "behind the times." And while 48 percent of people said they don't recycle at all, 82.4 percent said they would likely make an effort to recycle more and generate less trash for landfilling if they had curbside service. They also acknowledged that adding more direct service—i.e., curbside recycling—would likely have a cost associated with it, and about 40 percent said they were willing to pay additional dollars on their utility bills to add recycling.

In the survey, responsiveness to the idea of waste carts varied among groups. Over half of residents were favorable regarding the idea, with more than a quarter saying they were "extremely favorable." Long-term residents, older people, and those who described themselves as retired or disabled tended to be more unfavorable. GBB finds that this is typical, particularly for older people who generate less trash per household and who may find the carts difficult to manage, physically. In the survey, newer residents (fewer than 10 years in town), households of 4 or 5 people (presumably many of which are families), and self-described homemakers tended to be more favorable towards the carts.

After considering the survey results, the BAMA created a Citizens' Committee regarding the implementation of curbside recycling collection from residential customers in Broken Arrow. From October 2016 to August 2017, GBB worked with the City supporting the Committee. This included a

Gershman, Brickner & Bratton, Inc.

2010 Corporate Ridge, Suite 510
McLean, VA 22102

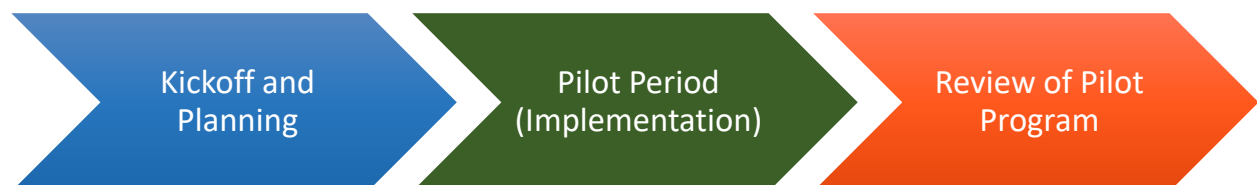
Phone: 703-573-5800 Fax: 703-698-1306
www.gbbinc.com

presentation of the Committee's work to BAMA on August 2, 2017. In the report, the Committee recommended to BAMA that the City conduct a pilot project of two methods for collecting recyclables at the curb: Scenario 1, as described by the Committee, involves a two-cart system whereby residents set out recyclables in one rolling cart and garbage in another; Scenario 2 involves using one cart for setting out recyclables and allowing residents to continue to set out garbage in plastic bags on the ground. In addition, the Committee advised that customers in the pilot projects, as they would during the ultimate implementation, would receive collection once-weekly, with all materials collected on the same day. Furthermore, at the time any subsequent recycling program should be fully implemented, the Committee recommended that the City would discontinue distribution of the "free" black plastic bags in which residents currently set out their waste.

The City requested that GBB prepare a detailed cost estimate for conducting the pilot programs as recommended by the Committee, along with some alternate possibilities. This included costs for consulting support and for other vendors (public relations, survey services, and truck routing). The City gave its recommendations to BAMA, and on December 5, 2017, the City was directed to proceed with a pilot project that would involve two pilot collection areas—one with a 2-cart collection system and one with a 1-cart collection system—each with approximately 500 homes. As described in further detail herein, planning for the pilot project took place throughout 2018, and the pilot period ran for four months from January 24 through May 25, 2019. Two audits were conducted of collected materials, and three surveys were administered to participants. The results are discussed in the following sections of this report.

The Pilot Project

As approved by BAMA on December 5, 2017, the City's pilot project involved two pilot collection areas, each with approximately 500 homes. The project was divided into three phases:



The members of the pilot project team included:

- GBB, solid waste consultants, including a project manager, subject matter experts, and senior executives;
- C2Logix, a computerized routing firm that previously assisted with routing and resource allocation in Broken Arrow;
- ShapardResearch, a national survey firm located in Oklahoma and continuing partner, to solicit meaningful opinion surveys from the pilot participants;
- Propeller Communications, a Tulsa-based public relations firm that provided creative content and expert outreach messaging;
- Tulsa Refuse & Transfer (also known as American Waste Control), whose Material Recovery Facility (MRF) processed the collected recyclables; and,
- City staff from the General Services Department, the City Manager's Office, and other agencies as needed.

As the two types of service to be piloted were decided by BAMA, the first steps in the planning process were to select the participating neighborhoods and to procure necessary equipment.

Selection of Participants

Great effort was made by the team in selecting the participating neighborhoods, one for Thursday and one for Friday,¹ roughly 500 homes each. The following criteria were outlined to start:

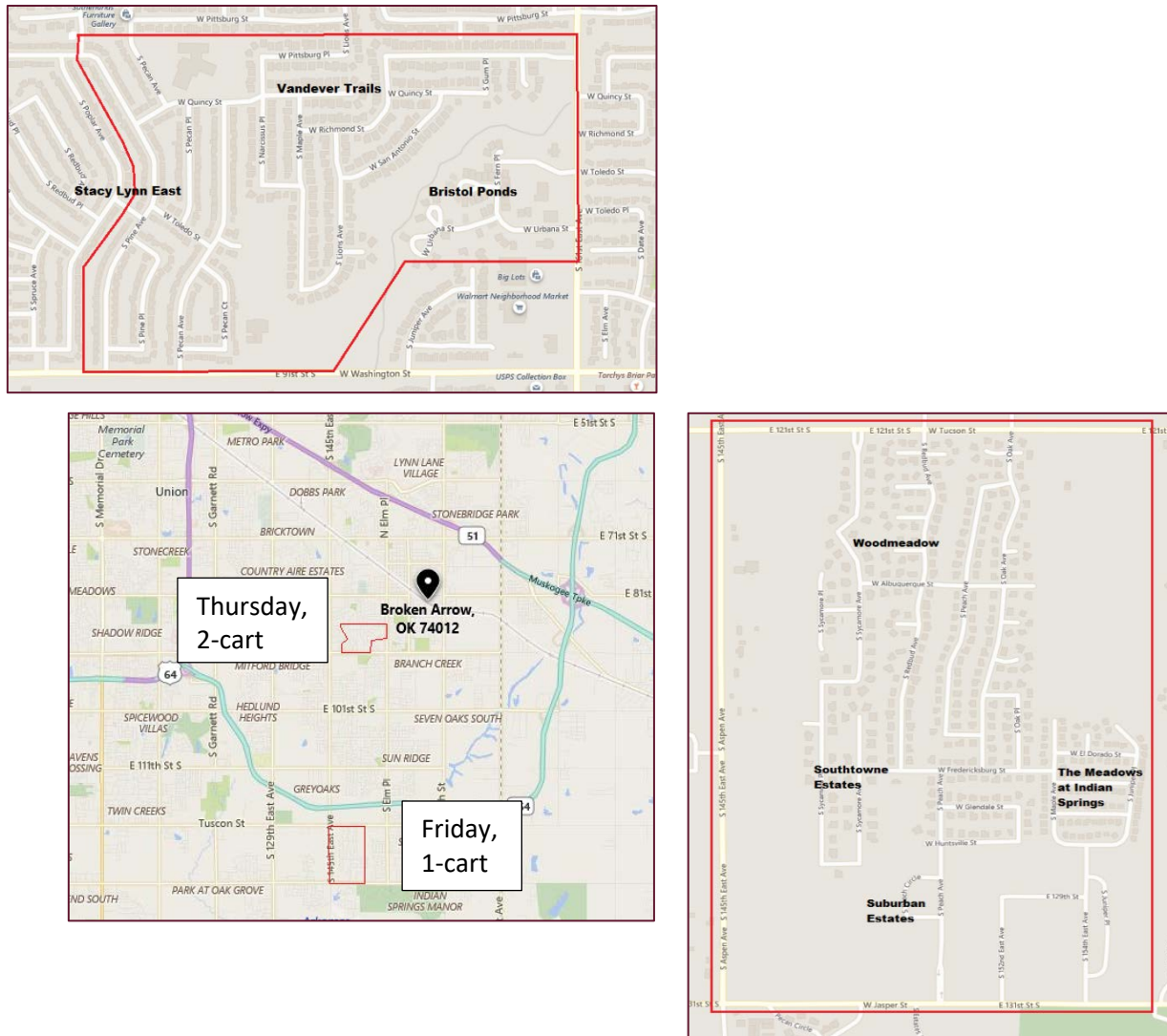
- A pilot area that was fashioned from within an existing route, so as to minimize the impact on the collections in the non-pilot areas;
- A combination of homes representative of more than one type of housing stock (or value) and home type (lot size, house size);
- Inclusion of enough collection challenges to allow for learning on the part of the drivers and helpers—e.g., cul de sacs, dead-ends, “country stops” of widely spaced properties, and other special conditions;
- Housing additions that were geographically contiguous, or nearly so; and,
- Clearly delineated or “natural” dividing lines at the edge of the areas, such as roads or gates.

Ultimately, an area of 579 homes in Ward 2 was chosen for the 2-cart pilot (Thursdays) and an area of 514 homes in Ward 3 was chosen for the 1-cart pilot (Fridays). The maps in Figure 1 show the location of the two areas in the city and also show details of the streets and additions in the pilot.

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¹ That is to say, one pilot area from the existing Monday/Thursday customer areas and one pilot area from the existing Tuesday/Friday customer areas, so as to have one pilot area per day. This was part of the planning to minimize the impact of the pilot project on the collection areas in the rest of the city.

Figure 1 – Pilot Areas for Thursday and Friday



Description of the Pilot Project Services

The Thursday pilot group received two rolling carts—a bright blue one for recyclables and a black one for refuse, or garbage and trash. The Friday pilot group received a blue rolling cart for the separation of recyclables and was instructed to continue to set out their refuse in plastic bags.² The City collected from both pilot groups once-weekly, which was a change from the previous schedule of twice-weekly collection. The City collected recycling and refuse on the same day. Set-out and collection of yard waste and bulky items remained unchanged in the pilot program, and would likely remain largely unchanged in the future, except for improvements to routing and scheduling.

² While it was anticipated (and has come to fruition) that most pilot project participants would use the heavy-duty City-issued bags they already had, the Citizen's Committee has recommended discontinuing distribution of the bags as part of implementing curbside recycling Citywide.

The carts were delivered over a period of four days, January 16 – 19, 2019. Collection using the carts began on Thursday, January 24, and Friday, January 25, accordingly.

Outreach and Education

The plan for notifying residents of their selection of the pilot program and for educating them on how to participate started with information in the general press after the decision was made in December 2017 to go forward. The participants received their first notice in October 2018, via a letter sent directly to each home with an active waste collection account. The letter laid out the most basic aspects of the pilot, including which pilot they were in (1-cart or 2-carts), when it would start, and the fact that collection would now be just once-weekly. Signed under the name of the City Manager, the letters also invited residents to an “open house” in their neighborhoods, where they could see samples of the carts and ask questions about the project or recycling.

The open houses were held on November 13 and 14. At the open houses, the City had sample carts so residents could get an idea of what would be delivered in a couple months’ time. There were also some initial print materials made available, which residents were welcome to take with them. Turnout exceeded expectations, and response from attendees was generally positive.

Over the course of the three months from the original notification in October 2018 up to and including the delivery of the carts in January 2019, the following information was delivered to participants:

- 2 post cards: one to encourage residents to sign up for automatic reminders about their collection day and one to advise them to expect surveying about the pilot;
- A customized brochure on how to use the cart (or carts) and what material to put in the recycling cart; and,
- A customized “cart sheet” which was attached to the recycling carts when they were delivered to the houses.

The figures below show the outreach materials that were sent to participants in the pilot project.

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Figure 2 – Postcards about Pick-up Day Reminders and Customer Surveys

 <p>The postcard features a yellow background with a blue recycling bin in the center. The bin is labeled 'Recycle BA' in blue and 'Chicken Noodle' in red. Below the bin, the text 'sign up for pick-up day reminders.' is written in blue. At the bottom, the Broken Arrow logo is displayed with the tagline 'Where opportunity lives'.</p>	<p>The City of Broken Arrow offers a convenient way for you to get reminders about your trash and recycling pick-up day. Subscribing to both methods will help you stay on top of the new schedule. They also provide a convenient way to ask questions and report any problems.</p> <ul style="list-style-type: none">1 Visit BrokenArrowOK.gov/alert and sign up to receive automated phone calls. These weekly messages will remind you of your pickup day and other basic instructions. You can unsubscribe via the website at any time.2 Visit ActionCenterBA.com and download the Action Center BA App to your mobile device. <ul style="list-style-type: none">→ Use the app to report concerns and ask questions throughout the pilot program.→ When reporting an issue or question, be sure to select Recycling under Issue Title/Category.→ Requests are continually monitored during business hours, and responses are typically sent within 24 hours. <p>RecycleBA.com</p>
 <p>The postcard features a green background with a blue recycling bin in the center. The bin is labeled 'Recycle BA' in blue. Below the bin, the text 'pilot program survey.' is written in blue. At the bottom, the Broken Arrow logo is displayed with the tagline 'Where opportunity lives'.</p>	<p>In the next few weeks, you will receive a phone call from the pilot project's survey firm to connect you to the customer feedback panel.</p> <p>This is the same firm we used in the past to gather resident feedback about recycling.</p> <p>Please take a few moments and respond to this call — they will help sign you up so you can easily and immediately give your feedback over the course of the pilot project.</p> <p>RecycleBA.com</p>

Figure 3 – Tri-fold Brochure About the Pilot (Front and Reverse)



Figure 4 – Cart Sheet that Accompanied the Recycling Carts upon Delivery

Recycle These



Cans, glass, plastic and paper from the kitchen, laundry and bath.



Cans

Aluminum & Steel



Plastic

Bottles, Jars & Tubs



Glass

Bottles & Jars



Paper & Cardboard

Flattened & Dry

Trash These

Anything from the garage, shed or yard.



Tanglers

Hoses, Chains & Wire



Diapers

& Other Soiled Items



Clothing

Consider Donating



Styrofoam



Plastic bags

Using Your Cart

Set out your cart(s) by 7:00 am on your collection day. The handle should be facing the house and the wheels should be against the curb. The best place is at the end of your driveway. Allow 3 feet of space between the cart and any other objects, including cars. Take care not to crowd your mailbox! During the week, the cart should be stored beside or behind your house.

Questions or Concerns?

918-259-8373
recycle@brokenarrowok.gov

Watch **how-to videos**,
Read **FAQs** and Sign up for
pickup reminders on our website.

RecycleBA.com

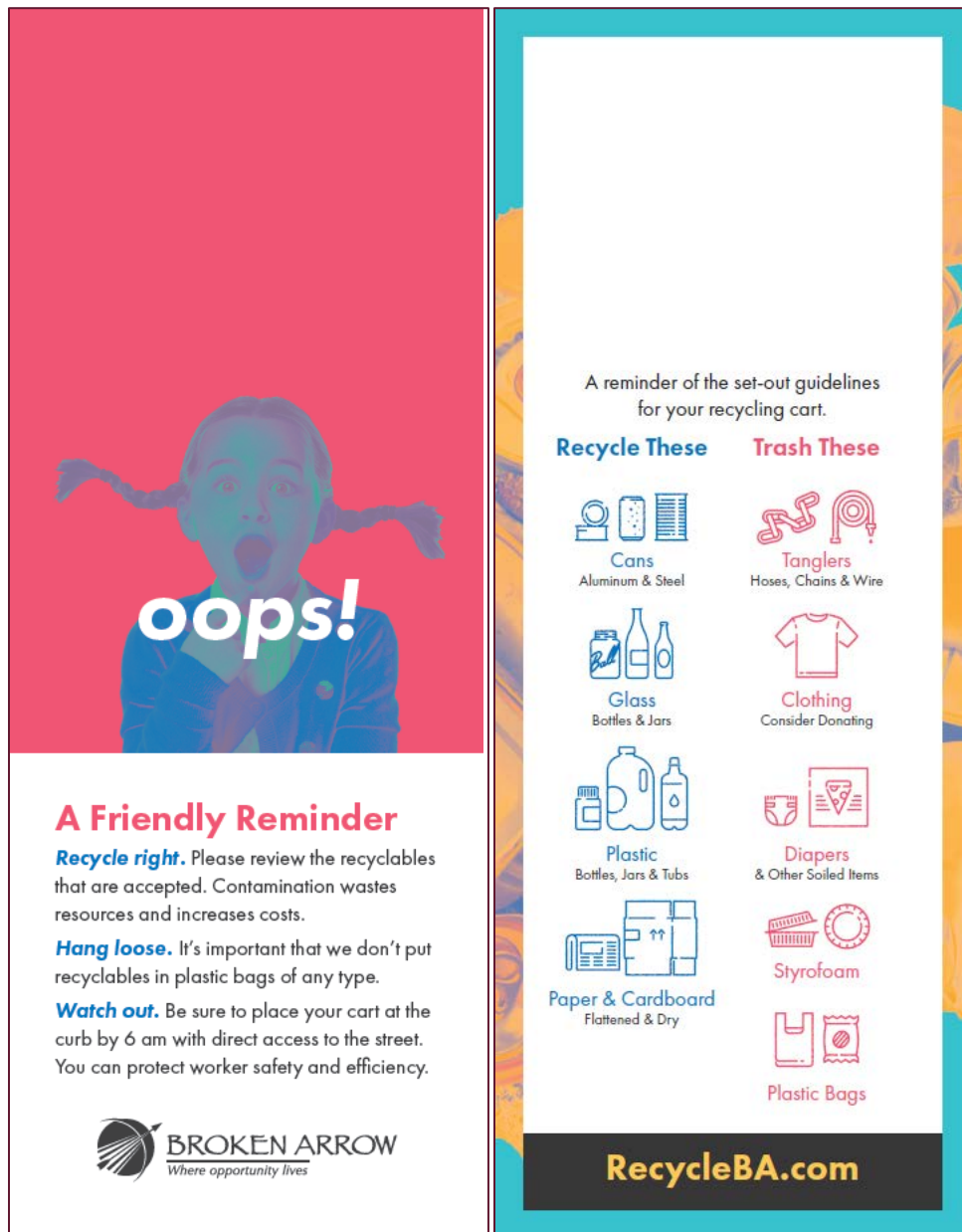
Five weeks after the start of the pilot, the City delivered to each participant a reusable bag for collecting their recyclables and transporting them to the carts, intended to educate and encourage them not to tie their recyclables up in a plastic bag. The bag also contained a simple black-and-white flier congratulating the residents on their success at recycling thus far and reminding them about recycling right.

Figure 5 – Reusable Bag for Collecting Recyclables



Around the same time, the City started using colorful, light-hearted “Oops!” hangtags. These are paper die-cut to form a hanger, with a humorous picture and the word “Oops!” on one side and reminder information about how to recycle on the reverse side.

Figure 6 – “OOPS!” Tag for Improperly Prepared Recycling Carts



Field staff began putting “Oops!” tags on improperly prepared recycling carts in early March; however, for the purposes of evaluating the performance of the pilot, all recycling carts were collected regardless of contamination or preparation.

2. Findings

When considering the numerical reporting from this pilot project, it is important for the reader to keep in mind the size of the two groups of participants. A 1 percent difference in number of houses, for example, represents about 5 houses. A variation in the pounds of recyclables of 1 percent represents about 34 to

37 pounds, spread out over more than 500 homes. In a larger population—for example, the entire city—smaller percentages are more significant; in this case, however, small percentage differences could be accounted for by the actions of only a few people.

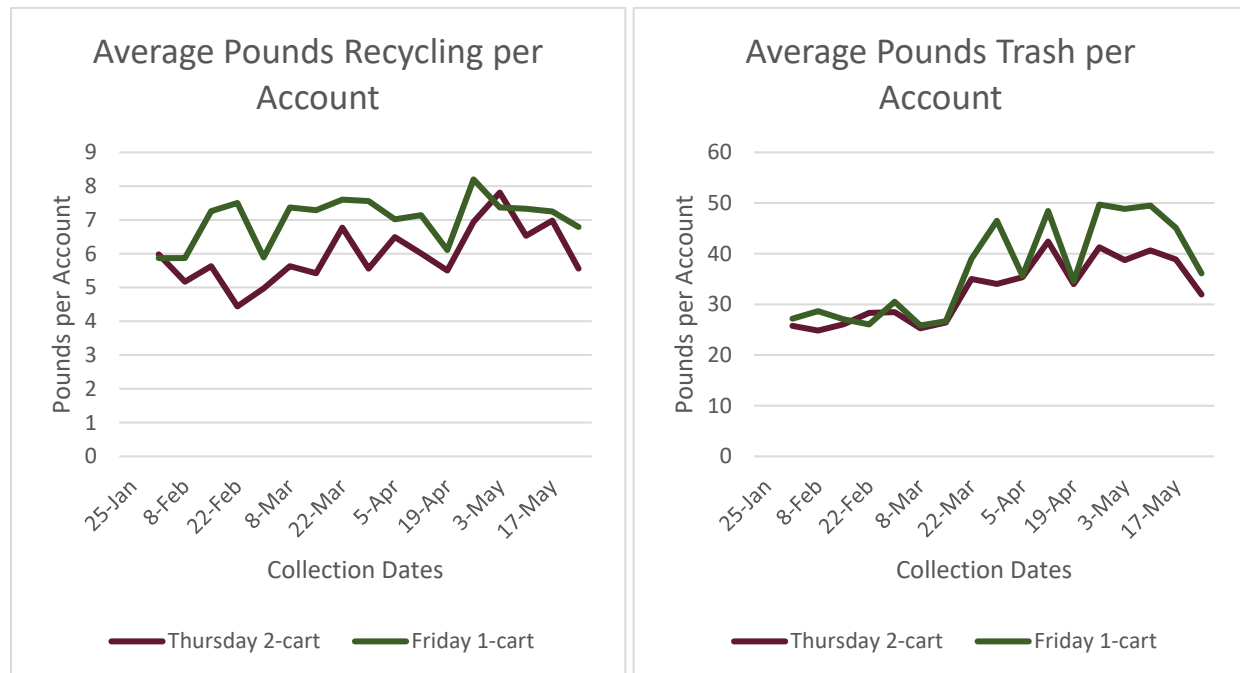
Levels of participation and amounts of recyclables set out by participants

Participation in setting out recyclables was tracked by the City drivers, using the new in-truck computer equipment. Each combined load of recyclables was weighed by the processor when it was taken to the MRF (individual carts were not weighed). Tracking the tonnage on each weight ticket and dividing tonnages by the number of set-outs counted using the in-truck computers, the City was able to accurately gauge the average pounds per customer and the average pounds per set-out. At the same time, by delivering the pilot area loads of refuse separately to Covanta—i.e., not commingling with other routes—the City was able to track that information and generate the average pounds per customer set out as refuse. These two values were used by GBB to calculate a tons-over-tons recycling rate for the pilot participants in each area. Summary statements and figures depicting the results of this data management are shown below.

THE FRIDAY (1-CART) CUSTOMERS SET OUT SLIGHTLY MORE POUNDS PER HOUSE OF BOTH RECYCLABLES AND GARBAGE THAN DID THE THURSDAY (2-CART) CUSTOMERS.

As shown in Figure 7, during most weeks, the customers on the Friday routes—the ones with only a recycling cart—put out slightly more waste for both recycling and garbage.

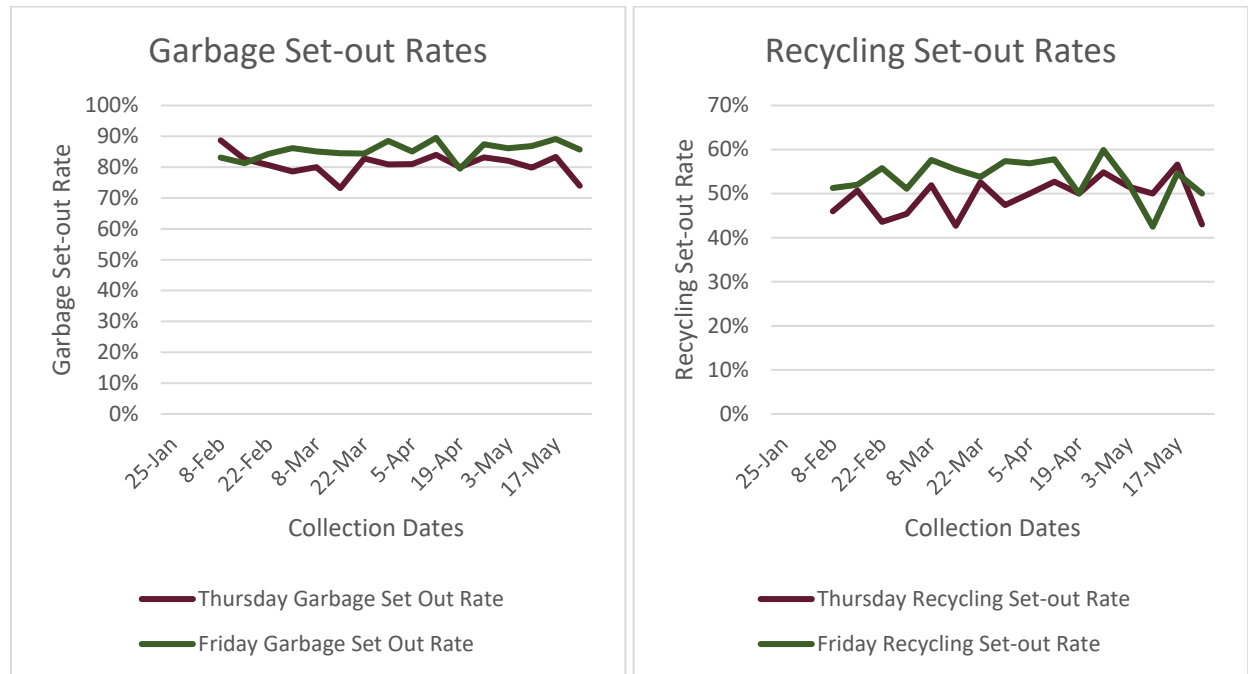
Figure 7 – Pounds per Account (House) Set Out During Pilot Project



THE FRIDAY (1-CART) CUSTOMERS SET OUT THEIR RECYCLING CARTS WITH SLIGHTLY GREATER INCIDENCE THAN THE THURSDAY (2-CART) CUSTOMERS.

As shown in Figure 8, in most weeks, a slightly greater proportion of the Friday (1-cart) customers set out garbage than did Thursday (2-cart) customers. Similarly, in most weeks, a slightly greater proportion of the Friday (1-cart) customers set out their recycling cart than did Thursday (2-cart) customers.

Figure 8 – Set-out Rates for Garbage and for Recycling During the Pilot Period

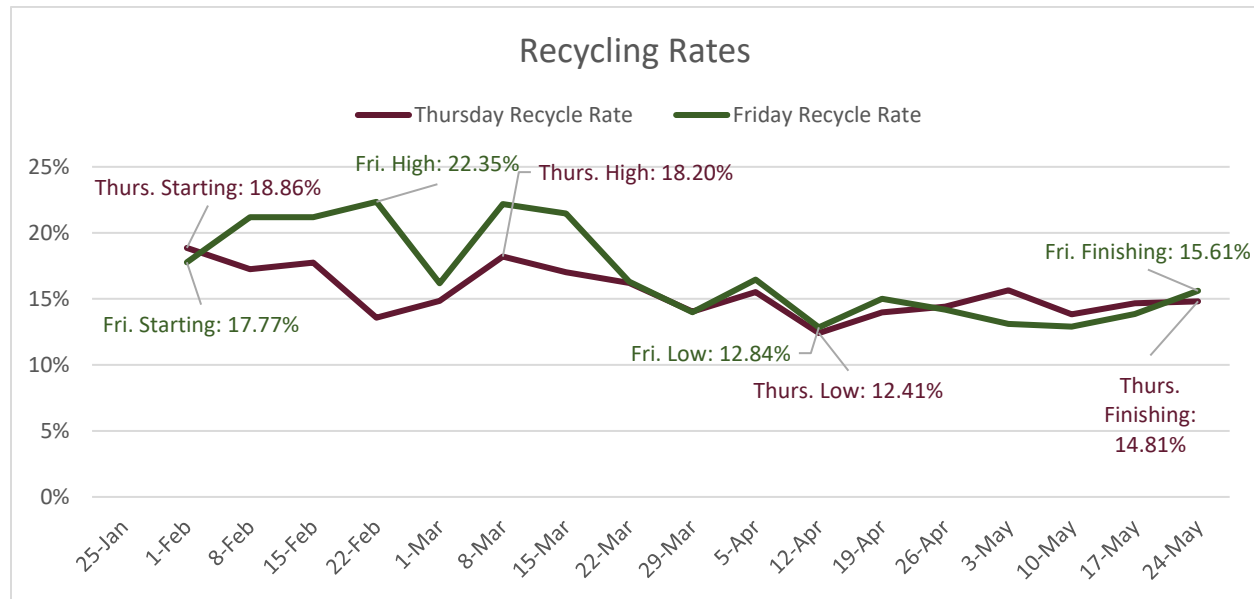


IN THE INITIAL WEEKS, THE FRIDAY (1-CART) CUSTOMERS HAD A SLIGHTLY HIGHER RECYCLING RATE THAN THE THURSDAY (2-CART) CUSTOMERS; BY THE MIDDLE OF MARCH, HOWEVER, THEY WERE VIRTUALLY IDENTICAL.

Each pilot area started with virtually the same recycling rate, which was calculated simply by dividing the recycling weights by the sum of the recycling and the garbage weights ($R / [R+G]$). Over the course of the first month, the Friday customers climbed steadily to more than 20 percent. The Thursday customers never broke the 20 percent barrier. The recycling rate in both pilot areas began to fall in March. This is typical in communities where yard waste is not collected separately from garbage. Mathematically, when the growing season begins and residents begin generating yard waste, those tons “tank” the recycling rate because they increase the denominator in the aforementioned equation. In the Friday routes, for example, the pounds of garbage nearly doubled from January to April and May.

At the close of the measurement period, the two pilot areas had virtually the same recycling rate. This needs to be considered in conjunction with the information shown in Figure 7, which shows that the spike in garbage set-outs in March in April were steeper in the Friday routes than in the Thursday routes. It’s possible, although unverifiable, that the homes on the Friday routes happen to set out more yard waste per house than the homes in Thursday routes. If the impact of the yard waste could be isolated, it might show a greater difference between the recycling rates of the two pilot project areas. Also, the notable

increase in trash/rejects going into recycling carts in the Thursday routes (see Figure 9 and related discussion, below) is also belying the differences in the quality of recycling activity between the two pilot methods. In other words, in May, a great production of yard waste could be dragging down the rate for the Friday 1-cart pilot area while improper materials in the recycling carts could be falsely boosting the mathematical recycling rate in the Thursday 2-cart pilot area.



Contamination in the Recycling Cart

The contamination level in the recycling carts is an important factor in determining the success of a curbside recycling program, and during the pilot project the City evaluated the amount of trash that was placed in the recycling carts. The recyclables processor conducted an audit of the recyclables from each pilot area twice during the pilot period: once shortly after the start of the program, in March, and once in the final two weeks, in May. This is important because lower contamination rates mean cleaner material and therefore fewer resources expended to sort the material after collection.

OVER TIME, THE THURSDAY (2-CART) CUSTOMERS PUT INCREASING POUNDS OF NON-RECYCLABLE OR NON-PROGRAM MATERIALS IN THEIR RECYCLING CARTS, WITHOUT INCREASING THE AMOUNT OF PROPER RECYCLABLES.

THE FRIDAY (1-CART) CUSTOMERS PUT ALMOST EXACTLY THE SAME NUMBER OF POUNDS IN THEIR RECYCLING CARTS, BUT OVER TIME, THE MATERIAL WAS SLIGHTLY MORE CONTAMINATED.

As shown in Figure 9, between March and May, the Thursday 2-cart customers were putting more than 2.7 times as much trash and rejects in their recycling carts. In fact, it nearly accounts for the entirety of the increase in the Thursday recycling pounds. In the Friday 1-cart pilot, the overall weight in the recycling carts was almost exactly the same from March to May, but contamination inched up from a very good rate of 13 percent to a less-acceptable rate of 21 percent contamination.³

³ This is a generalization as compared to contractual contamination rates at MRFs around the country. Acceptable rates range from 10 to 15 percent; 20 percent requires action. These rates are also based on prior market conditions, and the affordability of recyclables processing in 2019 would greatly benefit from lower contamination rates.

Figure 9 – Audit Results for Good Recyclables versus Trash/Rejects, By Pilot Area and Audit Month

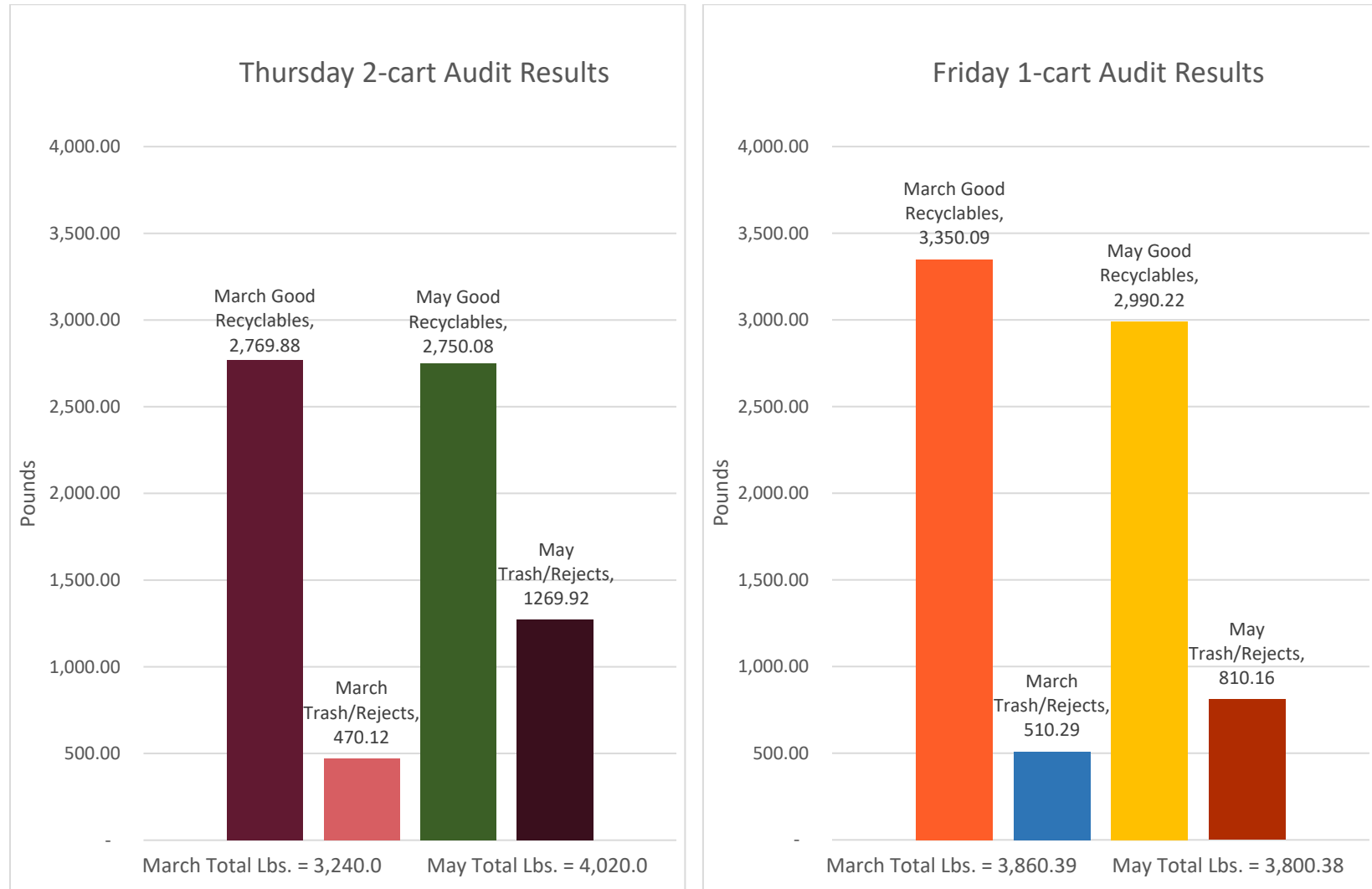
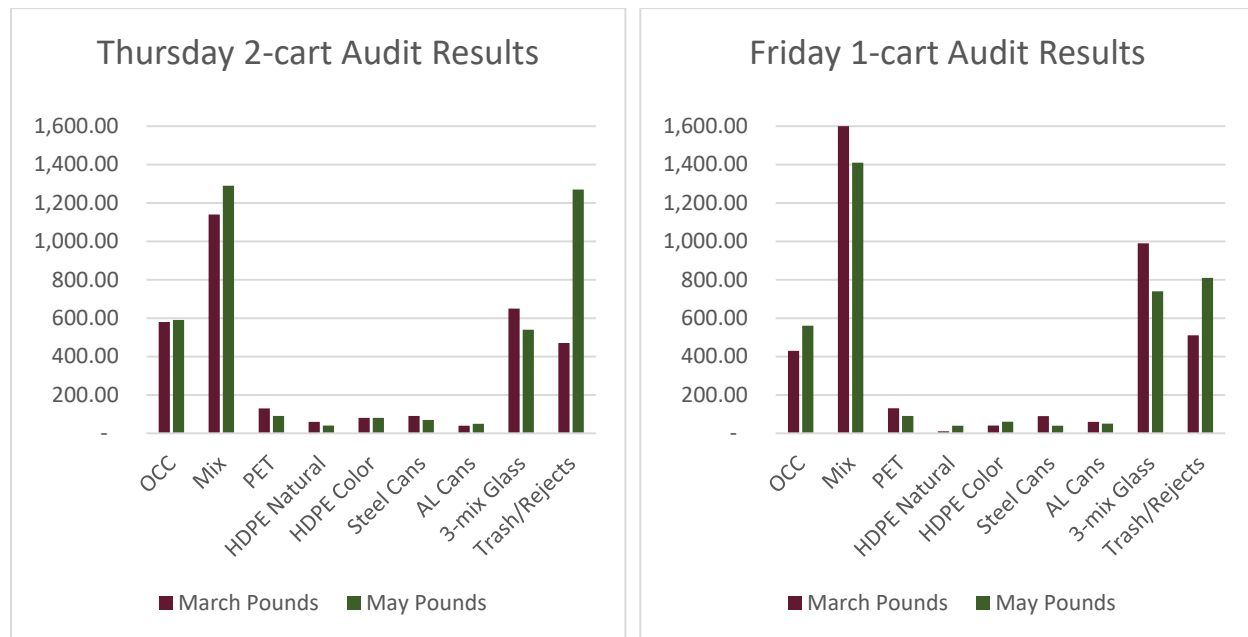


Figure 10 shows the results of the audits in detail, by pilot area. The Thursday 2-cart audits reiterate that most program materials stayed about the same over time, but many more pounds of trash/rejects were put in the recycling carts. The Friday 1-cart audits show that most of the moderate decrease in program materials was in mixed paper and glass containers, and the uptick in trash/rejects over time.

Figure 10 – Audit Results, by Pilot Area, March and May 2019



Following the March audit, the recyclables processor noted that the loads from the Thursday 2-cart pilot had fewer incidents of bagged items than the Friday 1-cart pilot, but the bags that were in those Thursday carts were more likely to be garbage. Most of the bagged items pulled from the Friday 1-cart pilot were improperly prepared recyclables. The Thursday 2-cart pilot instead had more loose bags (non-program items like dog food bags, retail bags, newspaper sleeve bags, packaging bags) and film plastics (heat shrink plastic used for bottled water and sheet plastic) than the Friday 1-cart pilot. The Team has discussed that pet owners may be an audience to consider reaching out to with messaging. Products such as canned food, extra-large plastic buckets of litter, etc., and some containers are very good to recycle while others aren't. See Figure 11 and Figure 12 for pictures from the March audits.

By the May audit, as has already been noted, contamination by weight was considerably higher in the Thursday 2-cart pilot area and somewhat higher in the Friday 1-cart pilot area. The Thursday 2-cart pilot area continued to have large amounts of plastic bags and film, along with a much higher incidence of non-program materials like carpet remnants and many other textiles, yard waste, large plastic items, and even window blinds. The processor characterized some of it as coming from the "yard, shed, or garage," a messaging point given to participants previously. The rejected items from the Friday 1-cart pilot area consisted mainly of bagged recyclables and household trash. See Figure 13 and Figure 14 for pictures from the May audits.

Figure 11 – Trash and Rejects from Thursday 2-cart pilot, March 7

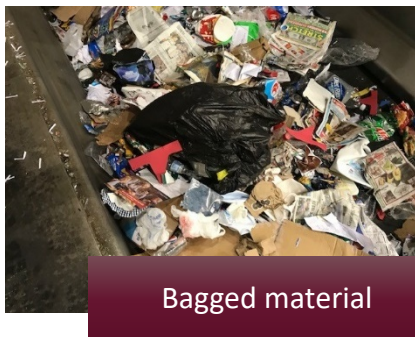


Figure 12 – Trash and Rejects from Friday 1-cart pilot, March 8

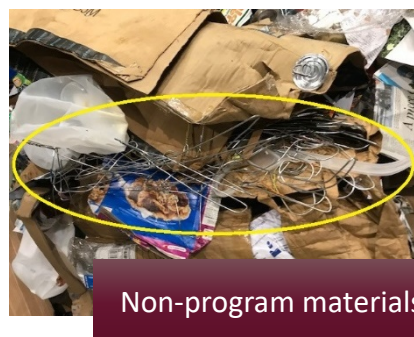
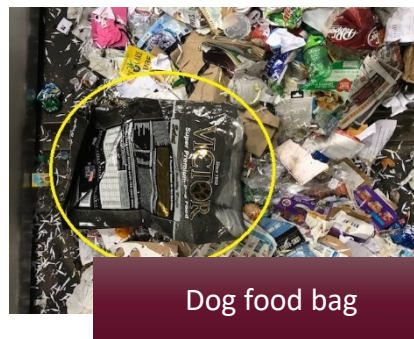
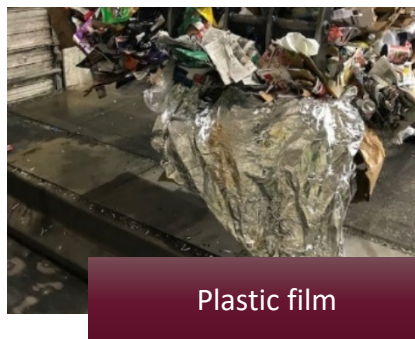


Figure 13 – Trash and Rejects from Thursday 2-cart pilot, March 16



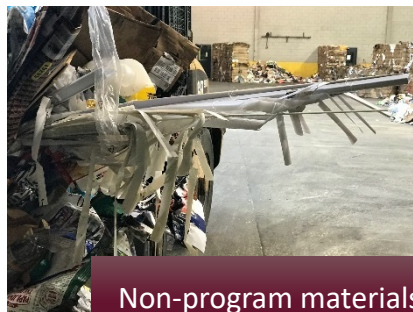
Plastic film, carpet, and garden hose



Bag textiles--i.e., trash



Non-program materials



Non-program materials

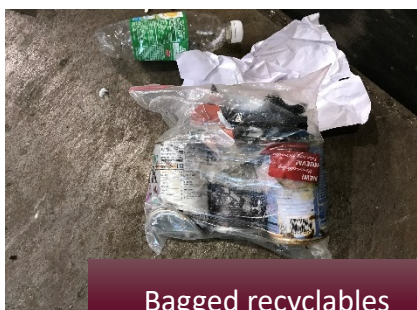
Figure 14 – Trash and Rejects from Friday 1-cart pilot, March 17



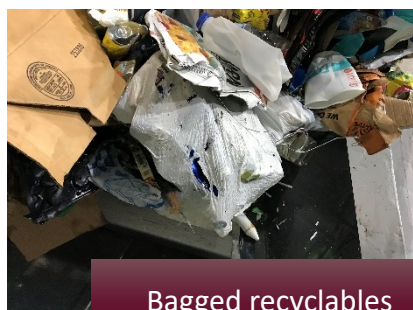
"Shed and Yard" non-program materials



Bagged garbage



Bagged recyclables



Bagged recyclables

Field Observations

On April 11, and 12, the GBB Project Manager came to Broken Arrow to meet with the project team and to observe the two collection pilot areas first-hand. On the morning of Thursday, April 11, the team toured the 2-cart pilot area. The team spot-checked carts for participation quality and quantity. The team observed the following:







- Participation was widespread throughout the different neighborhoods in the pilot area (see Figure 15).

Figure 15 – Curbside set-outs on Thursday April 11 (left) and Friday April 12 (right)



- Carts that were spot-checked varied in the quality of their recyclables, and residents seem to be getting the message that recyclables should not be bagged when they are put in the cart.
- As confirmed by the March audit at the MRF,⁴ a large amount of plastic wrap—for example, overwrap from cases of bottled beverages—was getting put into otherwise well-prepared carts (see Figure 16).
 - The team noted this as a messaging point to stress in the future. The team later decided to ask about it in the next survey and noted it in the concluding letter to the participants at the end of May.

Figure 16 – Examples of Materials in Recycling Carts, April 11 and 12

					
Very Good: All program materials, no bags or film visible	Good: Some film, some non-program materials, all materials loose	Okay: About half program materials, half plastic film	Not Okay: Bagged materials, plastic film, contaminated paper	Bad: All materials bagged	Poor: All non-program materials, appears to be used for trash

⁴ This preceded the May audit.

- Most homes seemed to have plenty of set-out capacity for a typical week's worth of waste (not counting bulky set-outs and amounts that were consistent with a clean-out project). See Figure 17. Residents did frequently have "extra bags" beside their carts for collection, but there often was plenty of space in the cart for those bags. An inspection showed that many of the "extra bags" were bagged yard trash. For some reason, these residents were not putting bagged yard waste in the carts.
 - The team noted this as another information point to message residents about, as they represent unnecessary bending and lifting for the helpers—and time that could be saved.

Figure 17 – Trash and Recycling Carts from a Sample Home (same house) with 1 Week of Material



- Residents were setting out their carts in a variety of locations: on the driveway apron, on the grass strip up on the curb, and in the street along the curb. Few to none were obstructing vehicle traffic or sidewalk traffic.
- The trucks were servicing both sides of the street at the same time, as they had done prior to the pilot period and as they do in other areas of the City. Sometimes the truck weaves from side to side, in a way *guarding* the workers; other times, the truck stays on the right-hand side and the workers cross the street. GBB advised that both-sides service is not best practice, and that when considering a city-wide roll-out of carts and once-weekly service, the City should at least look at the possibility of single-side routing, as it is much safer for the workers and for motorists and pedestrians.
- Helpers on the trucks reported that although the slower pace of the cart collection is sometimes mentally fatiguing, they like the carts and lifts because their backs do not hurt as much at the end of their day. They also feel safer maneuvering the carts than when they were walking around with bags—as if drivers notice them more when they are holding a cart, especially the blue recycling cart. They also said they have less litter and spills they have to clean up, and they think there is less mess because bags don't get broken into by animals.

- On the morning of Friday, April 12, the team toured the 1-cart pilot area. GBB had been processing information the City had been sending and had identified several customers who on one or more occasions had set out a recycling cart but not trash bags. It was suspected that these customers might be using their recycling carts as trash carts.
 - Of the stops identified, about half may or may not have been doing so—it could not be confirmed. Some homes the team suspected the data was erroneous—e.g., the home might have set out their bags in close proximity to a neighbor and gotten marked as a “not-out” by mistake; however, a few of the houses did, indeed, have their recycling carts full of inappropriate material.
 - The team also realized that this data manipulation would not reveal every problem: if a customer was using their recycling cart for trash, but then put even one bag of trash on the ground beside it, the data being captured would not reveal them. It is only when they can fit everything in the cart that they stand out. The team put “oops” tags on several carts they spot-checked that had contaminants, and the City staff made a note to encourage the field personnel to continue to use the oops tags.
 - The team discussed that in the future, it might be necessary to tag and leave such contaminated carts. Also, in other cities, more spot-checking of carts and coaching of individual residents has been shown to improve participation or identify candidates for cart removal.⁵

Participant Opinion Surveys

The surveying partner, ShapardResearch (also known as SoonerPoll) conducted three surveys over the course of the pilot period. The participants in the survey pool were recruited from the pilot area residents by using telephone calls, print mail, and door visits to build a list of email and phone contacts of people who opted-in to participate. In all three surveys, roughly two-thirds of the responses were captured by phone and one-third were captured electronically. In this case, since the population was finite and relatively small as considered in the field of statistics, electronic capture of the information was deemed acceptable. All the responses were verified as being from participants in the pilot area.

Figure 18 – Examples of Over- and Under-represented Demographic Groups
Yellow/Light bar shows 2016 Citywide Demographics; Blue/Dark bar shows average from 2019 pilot project surveys



⁵ This is the practice of simply removing from service the recycling cart when the resident is unwilling or unable to use it properly.

Unlike the 2016 telephone survey, the responses were not balanced, or “weighted,” to reflect the actual demographic composition for the communities or for Broken Arrow. As a result, the demographic make-up of the respondent population varies somewhat from the population overall. Figure 18 (above) shows the five demographic categories with the greatest discrepancies from the 2016 survey. The categories of Age, Household Size, Employment, and Identity illustrate the well-known industry condition that certain individuals—namely, people who have retired and people who identify themselves as female—tend to participate in surveys at higher incidences. A fifth category, Income, over-represents the middle bands for income level, and under-represents both the highest and the lowest bands in Broken Arrow. This could be another example of the impact of the disproportionate number of retirees who responded, who can be on fixed incomes. It could also be a reflection of the neighborhoods that were participating—in general terms, they were family homes representing the middle price bands of the real estate market in Broken Arrow. For this project, it was determined that these discrepancies were an acceptable condition, as the responses would still yield valuable information, and this was the most efficient way to capture the greatest number of opinions. The absence of randomness is also why such great effort was taken to diversify the pilot areas as much as possible.

Overall, respondents to the opinion survey were positive about the curbside recycling program. The complete report from ShapardResearch is in Appendix 1 to this report. Participants added their endorsement to the frequency of collection, and to having curbside recycling. They confirmed the 96-gallon size for the carts; when asked, they were not interested in a smaller garbage or recycling cart, and most indicated that they have space to store the carts. Most respondents with garbage carts said they preferred the carts to the bag system. Certain concerns about the carts were captured, which is typical in studies such as this one. Crosstab

Data in Action

Interestingly, people who identified as Retired gave noticeably different opinions regarding the size of the carts, depending on the pilot project in which they participated.

In February, 33 retired persons in the 2-cart pilot answered a question about their favorability of smaller carts. Just 27% said smaller carts would be better, 55% said smaller carts would not be better, and 18% said they were uncertain. Two months later, 30 retired persons answered the same question. This time, 50% said smaller carts were preferable, 47% still said they were not, and now only 3% were uncertain.

In the 1-cart pilot, of the 70 retired persons who answered in February, 63% said a smaller cart would be preferable, 33% said it would not, and 4% were uncertain. In April, 72 retired persons responded, and not a lot changed. Now, 61% said a smaller cart was preferable, 33% said it was not, and 6% were uncertain.

What effect does the presence of 2 carts have on these participants’ opinions? Were people in the 2-cart pilot waiting to see how the capacity of the trash cart applied to their needs? Is their opinion influenced by the fact that they have 2 carts to store and manage? Distributing smaller carts is one way the City could accommodate people who struggle with the large carts; but if the retirees don’t feel that a smaller cart is a solution, that is useful for planning accommodation programs.

comparisons showed that those who identified as retired or in the older age bands were the most likely to express those concerns. Other cities that have implemented cart collection programs use various accommodation programs to ensure that all residents can use their city services safely and conveniently. Any planning process for implementing larger use of carts would include analysis related to accommodation programs and the creation of such a program.

Participation in the recycling program varied some across different demographic groups, but not much. The youngest age bands and the newer residents participated at slightly higher rates. Newer residents also had the strongest preference for the carts versus the bags. The highest income bands participated at slightly higher rates, but no income band was below 66 percent participation. There was no notable variation across household sizes, except that the largest households had 100 percent participation and set-out. Those who identified as Homemakers expressed the greatest satisfaction with the pilot service and placed the greatest amount of importance on having recycling. Regarding the bag program, most Homemakers said they greatly or somewhat prefer the carts to bags; those working full-time outside the home mostly preferred the bags greatly or were neutral.

3. Additional Information

Changes to Program Costs from 2017 to 2019

Since the original estimations for the cost of adding recycling collection in Broken Arrow were first analyzed in 2016 and 2017, worldwide recyclables values are being strongly influenced by importation changes. This affects the costs to process the recyclables, and the revenues from the sale of the commodities in which the City can share. In Oklahoma, processors are somewhat insulated from these impacts because of their greater reliance on domestic buyers, as opposed to on the coasts. There are still ripple effects, however, and the price per ton to process recyclables has increased more than \$20 since this project began.

In recent years, much of the recyclables produced in the U.S. had been exported to other counties, like China. The Chinese Government's increasingly restrictive policies have had a strong negative effect on commodity markets. The policies have effectively closed the largest receiver of source-separated recyclables to mixed paper (magazines, office paper, junk mail, newspapers) due to an unattainable level of acceptable contamination (a fraction of 1 percent). The commodity pricing in the U.S. for cardboard and for aluminum cans have also dropped precipitously.

In 2018, it became national news when some processors in the U.S.—especially on the coasts—found themselves in a position of being unable to export material they had already processed and baled because it would have been rejected at the ports in China. It is unsafe and, in many cases, illegal to have waste or recyclables sitting around for long periods of time. Unable to find someone to buy their bales in a timely fashion, as they had been prepared, some buyers were forced to dispose of the material rather than market it. In the nearly 12 months since that time, processors have been working to find different buyers AND to adjust and improve how they sort materials, so that their bales are more attractive in the marketplace.

As mentioned, processors in Oklahoma are somewhat insulated from the export problems because much of the recyclable material produced in this part of the country is sold and used domestically, rather than being exported. In fact, the processor that Broken Arrow is presently using markets all of their recovered

materials in Oklahoma and the U.S. Currently, the processor has 92 percent of all Cardboard and Paper sold to buyers in Oklahoma. The remaining 8 percent is sold to buyers in Texas and Louisiana. Recent information shows 72.65 percent of their glass jars & bottles are sold to buyers in Oklahoma, with the remaining 27.35 percent sold in Texas to be used in the manufacturing of blown-in or encapsulated insulation. Plastic bottles & containers, Aluminum Cans and Steel Cans are sold to buyers throughout the Midwest and the South (AL, KY, IL, IN, MI, TN, LA).

Predictions for the future of the markets in 2019, and now 2020, are mixed. Across the industry, consultants, processors, and scrap dealers foresee the value of mixed paper recovering somewhat. This is because MRFs and paper mills around the country are working frantically to respond to the glut of paper that has been collected but cannot be exported. Industry experts are, however, telling their customers that they can expect to have a negative composite value in 2019—i.e., per ton processing costs will exceed the customers' share of the revenues from recyclables.⁶

Despite this outlook, there is cautious optimism in the industry and in the long-term, markets should recover. The current situation is not a case of *market collapse*. There is a *price crash* on low-quality paper which is temporarily dragging down the *composite value* of a ton of collected recyclables, because mixed paper and cardboard constitute about 60 percent of recyclables, by weight. In fact, while paper prices were crashing, the value of high-quality plastics actually increased. Overall, the current market challenges have to do with the *quality of product* (a technical problem that is already being worked on) and a *market disruption* (the second-largest economy in the world withdrew from the scrap market). The fact is that the economic value of scrap metal and good quality recovered paper fiber is real, not intangible. These commodities are wanted and needed by manufacturers, and when the market adjusts, values should recover.

Discussion about Glass

Another commodity value that has changed in recent years is glass. Over the past several years, the cost to process it—i.e., the deduction from revenue shares—has increased significantly in the Tulsa metro area. Even within the past six months, since the start of the pilot, the cost increased by \$5.00 per ton. If glass recycling is going to continue to be more expensive than landfilling rejects when the City procures processing for the entire City, BAMA might want to re-consider including or excluding glass in the new citywide curbside program. Based on industry experience,⁷ in non-glass curbside recycling programs, glass constitutes 3 to 5 percent of the material that goes to the MRF (i.e., people are putting it in there anyway) as opposed to about 20 percent, which is what Broken Arrow is sending currently from the pilot areas, and which is typical. Combined with a glass drop-off at the M.e.t, the City might be better off removing glass, even if the City has to pay the M.e.t. to provide this service. Otherwise, the City will be paying a processor about \$68.00 per ton to process it plus another -\$10.00 per ton for the negative impact on the revenue sharing, plus the space and weight the glass is taking up in the curbside program. If there weren't glass in the curbside program, for example, each truck could service more houses per trip.

The current processor has stated that they don't expect to see the charge for processing dropping more than \$5.00 to \$10.00 per ton, if at all. The negative revenue share for the City is related to the costs to transport the glass, primarily. The carrier that takes the glass to be recycled has been increasing the rate

⁶ These statements are based on conversations GBB has had with processors and other experts and written opinions in trade publications, in addition to GBB's own perspective.

⁷ GBB and AWCOK, specifically.

to haul it. The carrier is attributing these costs to the increased difficulty in obtaining and or retaining drivers. The market for drivers is very competitive currently, mainly due to a lack of drivers. The truck driver shortage is a nationwide phenomenon affecting transportation businesses across the country. The carrier also cites increasing costs of trucks as a source of expense. Tulsa Refuse & Transfer sees this as a trend for the past five years. Their tracking of prices shows an increase or decrease once every six to twelve months, with the price (charge) increasing more often than decreasing. The processor added that if glass is removed as a program material, the volume in the recyclables stream would drop to the point that it is not economical to recover (as stated, 3 to 5 percent by weight), and glass would count as a reject or trash, and be charged as such.

The processor also notes that a significant challenge for Broken Arrow to removing glass as a program material is the fact that all the surrounding communities allow glass in the recycle cart. Broken Arrow residents will see other education material from those cities, which could result in confusion.

Some communities found that when they launched glass-only drop-off programs in partnership with the processor, their glass recycling tonnages increased. For example,

- Salt Lake County, UT, accepts glass separately at drop off locations or residents can subscribe directly to the contractor for monthly curbside collection for about \$8 per month. The glass is processed into cullet and developed into many recycled bottles or other products.⁸ From 2014 to 2016, the Salt Lake County recycling rate increased 6 points to 22 percent.⁹
- Kansas City, MO, collects glass separately at drop off centers and in its curbside program. The contractor processes about 40,000 tons of glass annually into cullet. This represents about 20 percent of the glass in the waste stream; when the glass was collected commingled with other materials, the glass recycling rate was 5 percent¹⁰ In 2016, Kansas City residents recycled more than 30,000 tons of waste, keeping 30 percent of household trash out of landfills.¹¹
- Boise, ID, removed glass from its recycling program in 1996 due to marketing difficulties. In 2009, they developed a partnership with an abrasive manufacturer to offer free glass drop off or optional monthly curbside collection of glass for an additional fee. Since 2011, the program has collected about 37,000 cubic yards of glass. The City estimates that it gets more glass now than when it previously collected it commingled, and the quality is far superior. The City's recycling rate varies seasonally from 27 to 32 percent, which does not include any organics diversion.¹²

Unlike many other cities, Broken Arrow is able to recycle glass. It is not being used as alternate daily cover in a landfill, it is being made into one or more new products. Also, although it has a negative value at present, it is not prohibitively expensive—i.e., it's not a "deal-breaker" for the recycling program. Combined with the strong drive people feel to recycle glass and in the interest of consistency with the region, **it is recommended that a curbside single stream recycling program in Broken Arrow include container glass.**

⁸ <http://utah.momentumrecycling.com/products-made-from-recycled-glass/>

⁹ <https://slco.org/uploadedFiles/depot/publicWorks/recycle/resources/recyclePamphlet.pdf>

¹⁰ <http://www.bizjournals.com/kansascity/news/2016/09/14/ripple-glass-growth.html>

¹¹ <http://kcmo.gov/news/2017/city-celebrates-earth-day-with-recycling-event-april-22/>

¹² <http://curbit.cityofboise.org/other-services/glass-collection/> and phone conversation with Boise Solid Waste Program Manager Katherine Chertudy on June 6, 2017.

Feedback from the Citizens' Committee

After the results of the pilot program and the surveys were analyzed, the City provided the members of the Citizens' Recycling Committee with an initial draft of this report and asked them to convene to discuss the results of the pilot project they had recommended and to give their subsequent recommendation for BAMA regarding a citywide recycling program. The Committee convened on August 5, 2019, and the discussion was sufficiently extensive that a second meeting was convened to complete the work on August 19, 2019. A summary of the meetings is provided in this section; complete official minutes are provided in the attachments to this report.

August 5, 2019

For the most part, this meeting was spent going over the draft report and the results of the pilot project. The consultant reviewed the outcomes of the recycling activity and of the pilot participant surveys, as discussed in Section 1 and Section 2, above. The Committee members asked questions as the group went through the report. Beyond reviewing the content of this report, points of discussion included:

- When referring to recyclable materials, "properly prepared" means lightly rinsed and not put in the cart inside a plastic bag.
- The committee asked about removing recycling carts from the homes of people who do not participate properly on an ongoing basis. The consultant noted that this is a common practice in other cities and would be recommended in Broken Arrow, also. This is usually established with an ordinance confirming that the carts are the property of the City, and that they may not be used for any purpose other than setting out recyclables.
- An acceptable target rate for contamination is 15 percent. A contamination rate of 10 percent is considered very good, but it is achievable.
- Emphasizing that trash goes to energy production, not a landfill, might encourage or reassure people about putting materials in the proper cart.
- In a discussion about glass, it was noted that it is "easier" to add a new program material in the future than to remove one in the future. The consultant suggested if glass were not in the curbside program, perhaps a drop-off center for glass could be operated by The Met. Mr. Brannin of the Met responded in the affirmative, and that The Met is already considering this.
- The Committee asked if the initiation of a curbside program would negatively affect The Met. Mr. Brannin responded that they did not anticipate that happening. When Tulsa implemented its recycling program, The Met was not negatively affected. The Met accepts many recyclable items which are not accepted in curbside programs, such as batteries, liquids, electronics, etc. They also serve small businesses and people who live in multifamily properties. The consultant added that it is very common for communities with curbside recycling to also have busy drop-off centers.
- The consultant shared that preliminary (at that time) cost estimations indicated that the current fleet level might possibly provide recycling service, through re-routing and other operational changes. This would mean no significant change to the per-unit solid waste costs. The consultant noted that while the Committee was not charged with considering costs, this information should let them consider the options freely without worrying about the costs.
- The Committee asked if cities normally purchase or lease carts. The consultant responded that it varies from one city to another. Broken Arrow typically chooses to own and manage equipment rather than lease or contract out service; however, leasing is possible.

- The consultant noted there were many positive reasons to support the addition of recycling; there was good participation, good tonnage, and good set out, as well as demonstrated interest from the public at-large and the Committee. She stated in regards to which recycling process was the best choice, if looking strictly at the data, the one cart system was optimal; however, if a household chose not to recycle, said household would have a week's worth of garbage in bags which could be problematic. She noted in the pilot program the residents were still utilizing the high quality City-issued bags; however, if these bags were no longer distributed, the use of regular kitchen bags or even grocery sacks could be problematic due to animals, breakage, etc. She noted cart and bag pickup was a slow process for the sanitary workers; however, there would always be bag pickup regardless of single cart/dual cart use, unless yard waste was picked up separately.
- The consultant laid out the four scenarios discussed in Section 4, below, and discussion ensued. She noted that GBB does not recommend the scenario of re-routing for once-weekly without adding garbage carts AND without adding recycling service, as there would be too much trash material set out in bags. There was also a scenario for re-routing for once-weekly collection of trash in a cart without adding recycling. This would not be in keeping with all the previous intentions expressed by the Committee, BAMA, and the opinion survey.
- In a discussion about the bags that the City currently distributes, the consultant surmised that if Broken Arrow no longer provided bags, residents would be placing kitchen bags and possibly grocery bags with garbage curbside; therefore, Broken Arrow might still need to provide garbage bags to residents if the one cart and trash bag system was chosen; however, the City would not need to supply as many bags. The Chair noted that during the City Council Meeting discussion of the recycling pilot programs many residents indicated a preference for garbage bag pickup. He noted residents appreciated not having to bring a cart back up to the house at the end of trash pickup day. Discussion ensued regarding residents currently utilizing personal carts for trash, bags becoming problematic if not being provided by the City, the number of bags currently being distributed by the City, workers compensation complaints with bag pickup, cart utilization significantly reducing workers comp complaints, trash bag pickup no longer being sustainable due to bag cost and personnel cost, the difficulty in hiring personnel willing to pick up trash bags. Further, the Committee discussed the benefits and efficiency of a two cart system, the possibility of rolling out a two cart system over several years, side loading trucks versus rear loading trucks, Tulsa's trash and recycling collecting system, using one truck for both recycling and trash by collecting trash first, dumping, and then collecting the recycling, side loading trucks being difficult to maneuver in cul-de-sacs, and utilizing smaller trucks in tighter neighborhoods.
- The consultant stated that their recommendation of the 1-cart system was primarily due to it begin easier to get going in a shorter time frame and the data from the pilot, in which the 1-cart customers had less contamination. If the City wants to do a 2-cart system, the consultant expressed confidence that could also be successful, as it is in many cities across the U.S.
- The City's current trash bag vendor, Waste Zero, presented the idea of a bag + bag recycling program, in which recyclables would be placed in a different color bag for collection, rather than a cart. Garbage would continue to be set out in the bags, as currently. Waste Zero runs systems like this in other communities. He noted that over fifty communities in Texas have bag give-away programs. He reviewed drawbacks of carts, including costs and the challenges for older residents to use them. He also talked about a co-collection program with one vehicle collecting both types of bags, and sorting them out later. He said he knows from talking with the firm that AWCOK does

not have a bag breaker than can handle the City's volume; therefore, Waste Zero would look to finance a larger bag breaker for use there.

- In response, a Committee member noted that the two-bag system was considered early on and set aside. The Committee did not feel it was in the interest of the workforce, and did not see how it could improve any part of the operations.
- Regarding carts, generally, another Committee member stated he received feedback from his residents. He noted the biggest complaint he received regarding the cart system was difficulty to store and roll. He noted in his neighborhood a large portion of the residents were older and had difficulty with the carts; his neighbor experienced an accident pushing the cart which resulted in a trip to the hospital with a broken nose, broken glasses, facial abrasions and skinned knees, elbows, and knuckles. He stated he personally felt the cart was poorly designed and unbalanced, as well as too large and difficult to store. He indicated the carts should be smaller and have four wheels rather than two.
- A representative of AWCOK spoke about their operations. He noted in an effort to curb contamination his company allowed residents to opt out of recycling. He explained most residents who did not wish to recycle would utilize the recycling cart for garbage or storage/personal use. He noted allowing residents to opt out of recycling would also bring the initial cost of carts down. He noted approximately 5% to 7% of households in the community would opt out of recycling. He went over what they have learned about education and information programs. He noted residents wanted to recycle glass; however, keeping glass out of the curbside recycling stream and recycling glass separately would keep recycling costs lower. He noted citizens could take glass recyclables to the Met depot.
- The representative from AWCOK was asked about a dual-bag program. He expressed concern because bags of recyclables that look contaminated are tossed in the trash before they are even broken open, whereas loose recyclables are all sorted. This results in more recyclables making it into bales. He also called installation of a bag breaker for this purpose a large capital investment for very little gain. He noted that the breaker itself is not the only cost; rather there are additional labor positions required to run it, which drive up operations costs. He said it is a method better suited for commercial waste rather than residential.

As the Committee adjourned and scheduled a follow-up meeting to form their recommendations, the Assistant City Manager noted that the Committee already recommended switching to once a week pickup and Broken Arrow Municipal Authority adopted this recommendation; therefore, the Committee Members should keep this in mind while reviewing and considering the presented information.

August 19, 2019

After the Chair briefly reviewed the previous meeting and the Committee approved the minutes, the goal was set to continue discussion and make a recommendation to BAMA. The consultant had been asked in the intervening weeks to prepare some additional information, to address questions the staff and some Committee members had shared.

- In response to concerns about accommodating customers who cannot safely manage a waste cart, whether for garbage or recyclables, the consultant presented information on programs and methods used in other cities. She discussed them in terms of complication of administration, impacts on operations, and degree of accommodation for the customer.

- The first policy question is whether to restrict access to the accommodation to certain qualified individuals, or to allow anyone who wants to pay extra to have such service. It was advised that allowing special service for a fee would be a lot to administer. Some cities require a doctor's note, and perhaps a follow-up visit to the home to make an assessment of the property and how to service it. Other communities allow anyone over a certain age to have the accommodation.
- The next decision point is whether to allow for different container sizes or alternatives, such as smaller carts, bins, boxes, bags, or even reusable bags issued by the City. If not, then the carts would be required to be used, but they wouldn't have to be rolled out to the curb, sometimes referred to as "back door," "front door," or "garage door" service, where the resident can keep the cart near the house and on service days, an employee will retrieve for emptying and then return it to the designated spot. Front-door or garage-door, which require the resident to set-out the cart in a designated spot, is more time-efficient because if the cart is not in position, the collector can keep moving. When back-door service, the collector has to go to the cart every time, no matter what, because it is never in a set-out spot. This takes much more time.
- Accommodation with a smaller cart size still requires residents to bring a cart to the street; however, for garbage carts, the same truck and lift could be used with any change to routing. The same would not be true for recycling carts, if the City started using automated side loading trucks, which cannot handle small-capacity rolling carts very well. Allowing a bin presents the same collection problems.
- The consultant noted that these methods and choices are not mutually exclusive; for example, "front door" service with the regular cart could be an accommodation for anyone over a certain age, and "back door" service could be reserved for those with the most severe need, such as people with disabilities.
- A committee member asked what is the most common method of accommodation. The consultant said "garage door" is the easiest and most straightforward method. "Back door" is more common when there are properties with long driveways, and smaller trucks are used to get up the driveways and pick up the carts.
- The General Services Director, when asked, stated that currently all trash is required to be brought to the street, except for nine individuals who are granted a special accommodation due to their health. The consultant noted that this number would obviously increase with the initiation of carts, but that it is still usually a single-digit percentage of the population receiving an accommodation.
- A Committee member asked if the consultant recommended uniform cart size with "garage door" accommodation service. She responded the City could start with this type of program and adjust it to the needs of the residents; for example severely disabled individuals could be permitted to set bags outside the garage door for pickup if carts were too difficult.
- Discussion turned to opting out of recycling by customers. The consultant described several different philosophies and approaches. She recommended the system used by some other cities where full distribution occurs on the front-end, and then residents can ask to have them picked up if they don't want them. This is different than the recommendation by AWCOK, who recommended allowing opt-out in the beginning; however, the consultant felt that based on experience in other cities, and in Broken Arrow, it would be better to distribute first and then re-

collect. When asked, the consultant advised that since two-thirds of the cost is in collection, the City should not allow a reduction in fees for those who might opt out of recycling.

- A Committee Member recommended a four wheel cart design as a low cost alternative for better maneuverability and cart stability. The consultant stated she looked into this option and discovered there were four wheeled carts; however, these carts were designed for indoor use as there was a risk of four wheeled carts rolling into the street.
- The consultant noted she was asked to discuss how her firm came to the recommendation of the one-cart system. She explained after reviewing the data collected during the pilot program, she met with her VP and an associate with 30 years of experience in curbside pickup to review and discuss the data collected and Broken Arrow as a community. She stated it was decided the one cart and bag system would be the simplest system to roll out most readily. She explained data supported the one cart and bag system while there would be major capital needs to initialize a new dual cart curbside system, including the necessity of more carts and possibly truck purchases. She stated if the one cart system was chosen the City could begin immediately; tippers would only need to be installed on six more trucks. She stated there had been some concerning contamination in the two cart pilot; however, this could be addressed through targeted education. She discussed potential targeted education messages. She indicated trash pickup would be slow until the City decided to switch to fully automated trucks; however, fully automated trucks could not be used while yard waste was picked up as trash. She noted with the one cart system the City would still need to distribute bags. She explained while the one cart system was not perfect, the firm felt it could be successful and could be implemented the most readily. She stated whichever program was implemented, education would be required. She reported the residents in both pilot programs demonstrated a desire to recycle and participate at a high level of engagement. This choice would allow for reconsideration in the future and the addition of garbage carts as appropriate.
- The Committee discussed at length how the 1-cart system might work and what might happen as people adopted and adapted to the program. Several problems were anticipated, including vectors, complaints, and people setting out garbage in their own cart or can, which would slow down operations.
- The Committee asked the consultant and staff questions about the financing and costs of transitioning to a recycling program. At the end, the consultant noted if the City chose to move immediately into the two cart system, the cost was not tremendously more expensive. She believed the Committee would be making a sound recommendation with the recommendation of a two cart system, even though it was different than her firm's recommendation. A Committee member noted that the consultant's recommendation actually was the one-cart system with an eventual transition to the two-cart system, as the two-cart system is the best practice. The consultant noted that if Broken Arrow had not had the current bag system in place, the recommendation would have been a two-cart system.
- The consultant had been asked to bring in formation about one-weekly and twice-weekly collection in cities. She shared that her firm maintains a database of communities with over 100,000 residents. Upon review of the communities which used internal collection services, it was noted 271 communities picked up trash weekly while 54 communities picked up trash twice weekly.

The Committee members then began an intensive discussion to work through to their recommendation. Initially, the group was somewhat split as to whether to start with a 1-cart system or to go straight to a 2-cart system. Ultimately, the recommendation of the Citizens' Recycling Committee was:

Convert the entire City to once a week collection via rerouting, issue all customers a 96 gallon blue recycling cart with the option to opt-out, continue collection of garbage and yard waste in bags with a 50% reduction in bags to each customer, consider beginning to replenish truck fleet with automated trucks for collecting recyclables, and within three years of the date of implementation of the recycling program implement trash carts and eliminate the free trash bag program.

This is intended to construe that the two-cart system is the goal, with the one-cart system being part of a transition process to allow time to adapt and to spread out capital costs. The members also noted that "opting-out" applied only to the recycling cart, and doing so would not result in a discount or rebate for the monthly rate.

Potential Costs of the Program

To estimate the costs associated with a revised solid waste collection system in Broken Arrow, a cost model was developed. Assumptions and inputs for the model were assembled collaboratively by the team. If first-hand cost information was not available, GBB and the City worked from comparable data to which GBB has primary access, such as other clients or best practices. Many inputs were derived from recent operations in Broken Arrow or from long-term trend data.

Methodology

The routing subcontractor, C2Logix, used real-world route statistics from Broken Arrow as inputs for its Resource Estimator software. The Resource Estimator uses costs for labor (salaries and wages plus benefits), truck operations, fuel, maintenance, and also inputs for time, distance, set-out rate, pounds per household, and staffing levels. It calculates how many routes are needed to service an area, and then estimates the costs to operate those routes. This was one of the most important parts of the cost modeling, because transportation (trucks and drivers) is usually two-thirds of the cost of operation, in addition to capital costs if Broken Arrow would need to expand its fleet to add recycling.

The Resource Estimator exercise included the assumption that the City would make the following changes to current operations:

- The entire customer base would be transitioned to once-weekly collection.
- Collection of recyclables would use 96-gallon carts, and collection of refuse was modeled in two different ways, as in the pilot.
- Computerized routing would be used to make the new routes as efficient as possible.
- The City would collect from one side of the street at a time, also known as "single-side" or "dual pass" collection.¹³ This change would mean that each rear-loading truck would need only one worker on the back of the truck instead of two as in current operations.

¹³ Presently, City trucks perform one "pass" down each street, pulling bags from both sides of the street at the same time. In "dual pass" collection, the truck would go down a street twice and collect material from a "single side"—i.e., the right-hand curb—on each pass. This is a safer practice and requires less labor per hour.

- Recyclables collection would ultimately be performed using automated side-loading (ASL) trucks which require only one employee to operate them.

The three-year transition model includes the following operational assumptions:

- The three sanitation vehicles tentatively approved in the FY20 budget would be ordered with cart tipplers on the back, for use in collection of either refuse or recyclables.
- Annual capital expenditures for the three year transition period would be higher than the average annual capital expenditures in order to build up and modify the fleet; at the same time, two or three of the current “back-up” trucks would have their life extended by one year beyond the current operations, in order to allow the fleet transition to be spread across three years. This will result in slightly higher annual maintenance costs during the transition period, as some older trucks are in use; after the transition period, the pattern of retiring trucks after seven years will remove that temporary increase.¹⁴
- Generally, annual cost increases of five percent were applied to the Year 1 data; salaries were increased at 2.5 percent per year; per-ton disposal fees at Covanta were increased 4.5 percent annually; and, waste tonnage was increased at 3 percent annually.
- Three new positions would be created in the Sanitation Department: two Field Supervisors¹⁵ whose primary job responsibilities are to manage daily operations on the routes and an Area Manager¹⁶ who is responsible for operations, fleet management, and resource allocation.¹⁷ Budget allocations were also made for supplies and equipment for these positions.
- Distribution of black trash bags would be reduced by fifty percent in years 1 and 2, and in year 3 would be 25 percent of the current level. The Citizens’ Recycling Committee has recommended eventually doing away with bag distribution entirely.
- Rolling carts would be financed and amortized over ten years; retrofitted tipplers on trucks would be financed and amortized over seven years OR the remaining useful life of the truck, whichever is shorter.
- A per-customer expenditure of \$3.00 each was used to fund an outreach and education program. This would include instruction to customers on how to participate in curbside collection, and also educational communications such as the messages referred to in this report (e.g., details for pet owners, details about recycling plastic film, etc.). The resulting line item could be used to fund one or more positions to perform duties related to this program, which has proven impactful in other cities, along with printed materials and other consumables.

Results of Cost Modeling

The Resource Estimator calculated that Broken Arrow would need 26 routes per week to collect garbage in bags or 39 collection routes per week to collect garbage in carts. It also calculated 32 routes per week to collect recyclables in a cart. As shown in Table 1, the number of routes was spread out across a 4-day work week, meaning that Broken Arrow would need 6 or 7 trucks per day to collect garbage in bags, 9 or

¹⁴ FY Maintenance \$577,000; values of \$900,000 and \$800,000 are used during the transition period.

¹⁵ City job classification is “Sanitation Supervisor.”

¹⁶ City job classification is “Assistant Sanitation Manager.”

¹⁷ The current position of “Sanitation Manager” would become more of a Superintendent, which is an administrative officer or business manager providing agency leadership and making senior-level decisions.

10 trucks per day to collect garbage in carts, and 8 trucks per day to collect recyclables in carts. For the purposes of planning the cost model, this fleet of 18 trucks was used (8 garbage, 8 recycling, and 2 spares).

Table 1 – Routes to Collect Trash and Recyclables with Existing Staff Schedule¹⁸ (Source: C2Logix Resource Estimator)

Day	Recycling Routes	Garbage Bag Routes	Garbage Cart Routes
Monday	8 per day	6 per day	10 per day
Tuesday	8 per day	7 per day	10 per day
Thursday	8 per day	7 per day	10 per day
Friday	8 per day	6 per day	9 per day
Total	32 routes per week	26 routes per week	39 routes per week

This fleet would be closely comparable in overall size—i.e., number of trucks—to the current fleet. This means that maintenance, fuel, and other related costs should also be comparable. The re-routing to computerized routes and the staffing change to 2 employees for rear-loading packer trucks and 1 employee for ASL trucks mean significant savings in labor. This can be accomplished by reducing or eliminating spending on temporary labor, and (if necessary) reducing the number of permanent positions through attrition—i.e., it should not be necessary to conduct a reduction in force (RIF). After the transition period, beginning in FY24, the City should be able to resume its pattern of purchasing (on average) two trucks every two years.

There are some new per-unit costs associated with adding recyclables collection and the other operational changes. Approximately 20 percent of waste by weight—that which is source-separated by residents for recycling—will be processed at a MRF. The cost used in the model for this processing was the rate currently paid by the City at AWCOK.¹⁹ In the first year, the new budget line item is about \$427,000. For now and the foreseeable near future, the per-ton cost to process recyclables will likely exceed the cost to dispose of the material at Covanta. Another new budget line item will be amortization for rolling carts, and an annual expenditure for repairing and maintaining the carts. In the first two years, with only recycling carts, this would be about \$290,000 to \$295,000; in the third year, with the addition of recycling carts, those cost increase to about \$480,000. There are also costs associated with amortizing the tippers retrofitted onto the existing rear-loading packer trucks; this decreases each year, starting at \$25,200 in FY20 and FY21, then \$14,700 in FY22, then \$7,700 in FY23, and \$4,200 in the final year, FY24.

As described above, at least three new staff positions are created in the three-year transition model—two Field Supervisors and one Area Manager. The monies designated for outreach and for cart maintenance might also be used to create up to 1 full-time-equivalent, each.

Despite some increases in costs and the new line items, during the transition period the impact is greatly mitigated by savings that will be realized. The first is reducing the bag purchase. Halving the bag buy in FY21 results in significant reductions in expenditures—more than \$300,000 in each of the first two years,

¹⁸ The cost model assumed that the current work week of four 10-hour days would continue. If a 5-day work week were adopted, each route would be somewhat shorter but the workload would be spread across five days. There is the possibility that the fleet size could be smaller by one or two routes, overall, resulting in some cost savings.

¹⁹ This price is appropriate for the volume and contract length as procured in 2018. It is possible that a longer contract and a competitive procurement could result in a somewhat less-expensive price; in the interest of conservatism, GBB used this price rather than pricing from any contracts from other cities.

and more than \$460,000 in the third year. Furthermore, the need for temporary labor should nearly be eliminated—in FY20, more than \$350,000 is allocated for this line item. As described throughout this section, the reduction in labor needs for sanitation collectors (“helpers”) results in significant cost savings. The re-routing project, combined with the adoption of “single-side” collection, results in a net savings of about \$416,500 in the first year.²⁰ Each successive year of the transition, as more ASL trucks are added to the fleet, additional marginal savings in labor are realized. By the end of the transition period, labor costs for collection operations would be more than \$650,000 less than in the FY20 budget.

The major budget line item increases and savings discussed above are summarized in Table 2. Based on the assumptions and information available, adding recyclables collection should not result in an increase to the annual Sanitation Department budget.

Table 2 Summary of Major Budget Line Item Increases and Savings Over Transition Period

Line Item	FY20 Allocation	Year 1 (FY21) Projection	Year 2 (FY22) Projection	Year 3 (FY23) Projection	Approximate Overall Impact After Transition ²¹
Salaries, Wages, & Benefits	\$2,969,700.00	\$2,553,197.92	\$2,473,759.60	\$2,315,328.63	(\$654,371.37)
Waste Processing (Disposal and Recycling, combined)	\$589,600.00	\$1,069,321.53	\$1,125,219.34	\$1,184,612.60	\$595,012.60
Temporary Labor	\$353,000.00	\$0	\$0	\$0	(\$353,000.00)
Plastic Bags	\$620,000.00	\$318,301.46	\$318,301.46	\$159,150.73	(\$460,849.27)
Amortization and Maintenance of Carts	\$0	\$290,013.45	\$294,951.08	\$480,399.34	\$480,399.34
Retrofitting Tippers	\$25,200.00	\$25,200.00	\$14,700.00	\$7,700.00	Goes to \$0 in FY25

The complete cost model for the 3-year transition and all the assumptions can be found in Appendix 2.

4. Possible Scenarios for Future System

GBB was instructed that in the wake of what has been learned in the pilot project, the City will almost certainly reroute and convert the entire residential customer base to once-weekly collection. The volumes are manageable, and responses to weekly collection by the pilot participants have mostly been support, acceptance, or ambivalence.

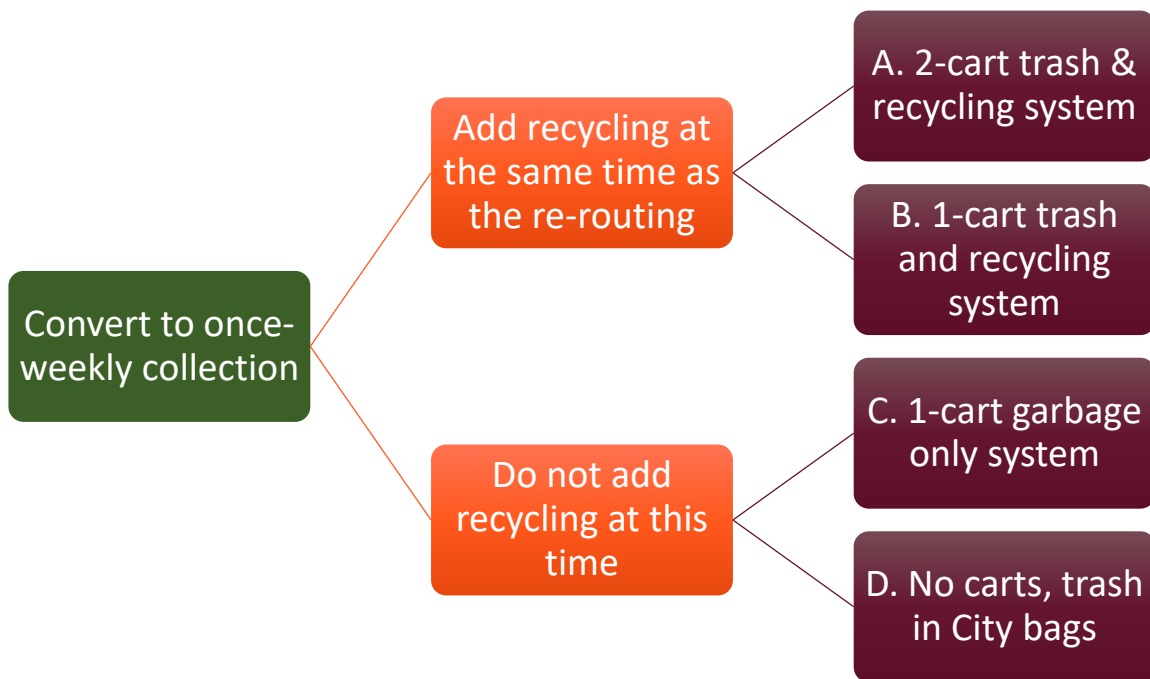
²⁰ Net savings includes the funding of three new field positions.

²¹ Costs are increased annually but dollar amounts are not corrected for inflation and are therefore approximate.

The next question to consider is whether recycling will be added at this time. Residents are supportive of the opportunity. Processing costs are volatile, but other operational changes the City will undertake provide significant savings opportunities, which help offset that impact. Industry experts expect that the conditions will normalize, and the commodities will regain their economic value. In fact, when values return to 2016 levels, as at the beginning of this process, the recycling rebates could once again make disposal the more-expensive option.

If the decision is made to adopt a curbside recycling program, the third question is which of the piloted programs (or perhaps some other) would be adopted: 1 cart or 2 carts. If the decision is made not to adopt recycling at this time, the City must decide whether to implement trash carts or continue with the bag program largely as-is, benefitting from the efficiency improvements of re-routing. This decision process is shown in Figure 19.

Figure 19 – Decision Tree for Curbside Recycling



A. 2-cart trash and recycling system

This is the scenario, or system, that was piloted in the Thursday route area. It requires the largest cart purchase. Some of the benefits—i.e., efficiencies—of utilizing carts is foregone in Broken Arrow because bags must still be collected manually due to the allowance of extra bags and the absence of a separate yard waste program. As a result, some additional efficiency typically associated with the servicing of carts using ASL trucks is also foregone on the garbage routes. The recycling routes, however, could use ASL trucks, and this is what was assumed in the cost modeling, as described in Section 3. Furthermore, in the pilot program, the recycling performance of the 2-cart pilot was slightly more contaminated and, more importantly, was trending toward greater contamination. A 2-cart system is considered a best practice standard in the U.S., and it provides the best sanitation due to storing and setting-out refuse in a cart.

B. 1-cart trash and recycling system

This is the system that was piloted in the Friday route area. It requires a smaller supply of carts, and keeps the time efficiency of collecting the trash in bags. This system keeps open the possibility of adding garbage carts at some point in the future. Diversifying the collection fleet having two types of trucks in the fleet—rear-loaders for trash and side-loaders for recycling—is a possibility. This adds some administrative complication, but it also allows each type of waste to be collected in the most efficient manner. During the pilot period, participants in the 1-cart system had lower and relatively stable levels of contamination. In the intervening months since the evaluation period ended, some of these customers have complained that hotter temperatures make storing waste in bags for up to a week problematic. This is the biggest operational challenge with a 1-cart system.

C. 1-cart garbage-only system

This system is a variation on the current curbside program, adding carts for the collection of the garbage. Extra bags could be allowed, either as presently allowed and charged, or under some new regulations. It keeps open the possibility of adding recycling at some point in the future. This system requires purchasing a smaller supply of carts than the 2-cart system. If the City is going to convert to once-weekly collection and not add recycling in a cart at this time, it is advisable to provide a cart, rather than having residents pile up their entire week's worth of waste (refuse and recycling) in bags.

D. No cart, garbage only

This system is not advised. It has the least cost of acquisition, as it requires no carts, but it would result in a week's worth of waste piled at the curb. The seconds per stop would be greater than in the 1-cart recycling pilot and greater than what is currently done in the twice-weekly collection program. Residents would have to store bagged trash in the garages or personal storage containers until collection day, and then bring it to the curb. It is reasonable to assume that this system would also attract far more vectors than using a cart.

GBB recommendations

GBB initially recommended to staff and to the Citizens' Recycling Committee that the City pursue its inclination to re-route the City for once-weekly collection, adding recycling with a 96-gallon blue cart at the same time. The process would be as follows:



* For the foreseeable future, until the recycling program is well-established, and carts can be reconsidered.

This course of action would have yielded the following benefits:

1. The better-performing recycling program from the pilot project.
2. Less capital costs for purchasing carts, as compared to a 2-cart system.
3. Opportunity to reduce the number and cost of bags purchased and distributed to residents.
4. Keep the time efficiency of the bagged waste system, blunting the impact on the fleet capacity caused by adding recycling.

The following challenges would have existed:

1. The need to use field work and enforcement to identify customers who are abusing their recycling carts and design a solution for such behavior other than a week's worth of waste piled at the curb in bags.
2. The obligation of the City to provide or require appropriate bags for curbside set-out and week-long storage.
3. Increased risk of vectors due to waste being stored for up to a week in bags; and/or, residents purchasing their own carts or cans for storing the waste, and then setting out using those carts or cans. This slows down collection times and increases risk to workers.

5. Conclusions

Residents, leaders, and stakeholders in Broken Arrow have expressed strong interest through their words and actions to divert material from disposal and recover resources for recycling. The region is relatively strong for recycling markets, because it has not been dependent on the export market. Households in the two pilot areas participated at rates that are considered very good, and the material they put in their recycling carts was good. **The 1-cart pilot performed slightly better in terms of contamination, but most of the issues observed in both pilot areas can be addressed with education about not bagging recyclables, leaving out plastic film, and sticking to the list of program materials.**

The 1-cart system would have lower costs to initiate, due to the smaller number of carts purchased and the fact that the City includes capital expenditures in per-customer costs. **That being said, the operational costs of a 2-cart system and a 1-cart system are virtually identical; in fact, because the cost modeling for the 2-cart system assumes purchasing half as many bags as the 1-cart system, those operations costs are actually less.** Adopting a 2-cart system also opens up the opportunity to phase out the bag program entirely, while the 1-cart system would require some sort of bag program continue or greater regulation be implemented, in the interest of sanitation.

The cost modeling, in the broadest terms, indicates the following conclusions:

1. With the efficiencies gained from re-routing, once-weekly collection, and reducing the bag purchase, **per-unit costs should remain stable even with the addition of new recycling service.**
2. Conclusion 1 holds true for both collection systems tested in the pilot—the projected monthly per-unit costs are within 25¢ of each other. This indicates that **there is, in actuality, no financial indicator for choosing one system over the other.**

Cost modeling and industry experience indicate that the recommendation from the Citizens' Recycling Committee is sound, and can be accomplished in a three-year time frame. The recommended action receives the benefit of both faster initialization and spreading out the capital purchases. It can be adopted into a plan to get all residents of Broken Arrow access to curbside recycling collection in FY21 and work relatively quickly towards national best practice.

GBB – Broken Arrow Waste & Recycle Study

Weeks 3-4

n=152, MoE $\pm 7.56\%$

Fielding from February 11th – 20th, 2019

Weeks 11-12

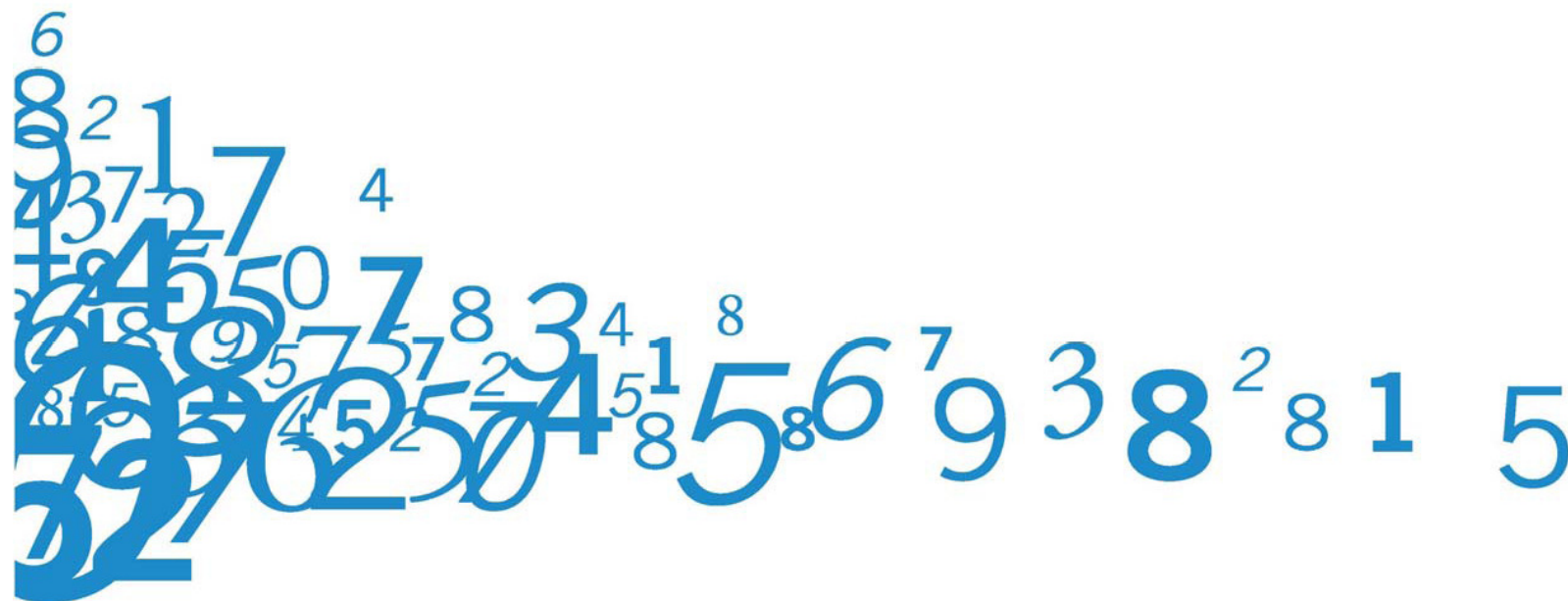
n=162, MoE $\pm 7.05\%$

Fielding from April 15th – 23rd, 2019

Post-Project Evaluation

n=141, MoE $\pm 7.71\%$

Fielding from May 30th – June 14th, 2019



Methodology

For the first part of this study, we collected a total of one hundred fifty two (152) responses. Ninety four (94) of these responses were collected by live callers via phone. Fifty eight (58) responses were collected online. Data collection for this portion of the study was conducted from February 11th – 20th, 2019.

For the second part of this study, we collected a total of one hundred sixty two (162) responses. One hundred twenty (120) of these responses were collected by live callers via phone. Forty two (42) responses were collected online. Data collection for this portion of the study was conducted from April 15th – 23rd, 2019.

For the third part of this study, we collected a total of one hundred forty one (141) response. Fifty eight (58) of these responses were collected by live callers via phone. Eighty three (83) responses were collected online. Data collection for this portion of the study was conducted from May 30th – June 14th, 2019.

All responses for this study were collected from residents in select neighborhoods in Broken Arrow who have been taking part in the recycling pilot program.

For the phone portion of this research, SoonerPoll's own interviewers, who are predominantly female ages 30 to 60, conducted the survey from Oklahoma City with an interviewer to supervisor ratio of 4 to 1. A one hour training session was conducted prior to fielding the survey and recognized research standards were followed in order to minimize all types of research bias and errors.

Data collection was conducted by SoonerPoll on behalf of GBB and Broken Arrow.

The above methodology meets the disclosure standard as prescribed by the Marketing Research Association (MRA).

Key Takeaways

- **Out of the 141 responses collected, 86.5% said that they had put recyclables into the cart that week.**
 - This is 1.6% higher than in weeks 3-4 of the pilot program and 5% higher than in weeks 11-12.
 - Only 13.5% said that they had not put anything into the recycling cart that week.
- **86.5% said that they had set out their recycling cart this week.**
 - This is 8.9% higher than in weeks 3-4 of the pilot program and 13.7% higher than in weeks 11-12.
- **39.7% of respondents told us they set out their recycling cart every week.**
 - 17% set it out 3 out of 4 weeks every month and 25.5% set it out every other week.
 - 16.3% said they only set out their recycling cart 1 week of every month.
- **38.3% said they would like to have a smaller recycling cart. This is down about 10% from weeks 3-4 and 11-12.**
 - 51.8% would NOT like to have a smaller cart.
- 68.1% of respondents said they have less trash now that they are recycling.
- 88.7% of respondents said they believe that recycling is important in their community and only 6.4% said they did not believe it to be important.
- **86.5% of respondents are currently satisfied with their recycling service through the pilot program.**
 - Only 6.4% of respondents are not satisfied with their recycling service.
- About 3 in 4 respondents (76.6%) spend less than 30 minutes per week preparing recycling.
 - About 1 in 5 respondents (20.6%) spend 30-60 minutes per week on recycling.
 - Less than 2% spend more than 30 minutes on recycling.
- Only 8.5% said that they had questions about what items should go into the recycling cart. This number has steadily decreased from 24.3% in weeks 3-4 and then 17.9% in weeks 11-12.
- About 70% said they would never take recyclable items to the MET or other drop off location before they had curbside recycling.
 - About 30% said they would take recyclables to the MET or other drop off location about 1 – 2 times a week before curbside recycling.
- **61.9% of those who had taken recyclables to the MET or other drop off location before did believe that they were recycling more now than before due to curbside recycling.**
- 69.1% of respondents from the neighborhood who had only recycling carts said they were setting out about 1-2 bags of trash on average.
 - 18.5% of respondents said they set out about 3-4 bags on average per week.

- **60.5% of respondents from the neighborhood with only recycling carts said this was less trash than they had before the pilot program started. This is an increase of 30.2% since weeks 3-4 of the pilot program.**
 - 37% said they thought it was about the same amount of trash.
- **2 out of 3 respondents from the neighborhood with both recycling and trash carts said their trash cart was half or three quarters full when they took it to the curb.**
 - 18.3% said their cart was completely full and 5% said their cart was full plus some extra bags of trash.
- **55% of respondents from the neighborhood with both recycling and trash carts said this was less trash than before the pilot program started.**
 - 36.7% said they thought it was about the same amount of trash.
- From the neighborhood with both trash and recycling carts, a combined 63.4% said they greatly or somewhat prefer the carts to the bags.
 - A combined 33.4% said they somewhat or greatly preferred the bags to the carts.
- 98.3% of respondents from the neighborhood with trash and recycling carts said they believe one recycling cart is enough for their needs and 96.7% believe that one trash cart is enough.
- Of those that believed one trash cart was enough for their household needs, 68.3 said that they would not like a smaller recycling cart and 26.7 would like a smaller cart.
- In the neighborhood with both trash and recycling carts, only 8.3% reported that they have had a problem in the past week.
 - Some of the reported problems include
 - Carts being too large or bulky to move around easily, especially for elderly citizens.
 - Steeper driveways make controlling a cart full of trash harder to control.
 - Cart lids don't seal well and will blow open
 - Carts end up in street, either by workers leaving them there or wind blowing them
- **In the neighborhood with recycling carts only, 76.6% combined said were either very or somewhat favorable of the recycling cart with 56.8% of that being very favorable.**
 - 14.8% combined said they were unfavorable of the recycling cart.
- In the neighborhood with recycling carts only, 93.8% said they believe one cart is enough to meet their needs.
- Also in the neighborhood with recycling carts only, only 6.2% reported that they had a problem with the cart that week.
 - Most of the problems reported were the same, but also included residents having questions about what to do if they were not home on collection days.
- **When asked if they would also like a trash cart now that they had a chance to experience the recycling cart, 43.2% said they would and 54.3% said they would not.**

- **62.4% of respondents had used the reusable B.A. tote bag that was provided to them in February.**
- 86.5% said that they were aware that re-sealable bags and the overwrap on plastic bottles such as Gatorade was not recyclable.
- **Most people said they had gotten their information from the City, either via flyer, mailer, email, or something handed to them at a meeting prior to the program.**
 - A few people reported getting their information from the MET, online, or by calling the City or water dept.
 - Of those that went online for information on their recycling program, Most went to recycleba.org, others used the MET website or their water department website.
- 58.2% said they were aware of the recycleba.org website and of that 58.2%, 56.4% had visited the site.

Broken Arrow – Refuse & Recycle Pilot Program Evaluation Study
May 30th – June 14th, 2019
After Completion of Pilot Program

Sample: Residents in TWO select Broken Arrow neighborhoods on the pilot program
(n=141) Margin of Error: $\pm 7.71\%$

Introduction:

Hello, I'm _____ with SoonerPoll! We're simply gathering opinions about the Broken Arrow recycling pilot program in which your neighborhood is participating. Can you help me with a moment of your time to answer some questions? Please be assured that we are not trying to sell you anything and your individual responses are confidential.

Section 1 – Questions about recycling

[FOR ALL CUSTOMERS]

Let's talk briefly about your experience with the addition of recycling and your recycling habits.

- | | | | |
|----|--|-----|------|
| 1. | Did you put out any recyclable materials into the cart this week? | | |
| | 1. Yes | 122 | 86.5 |
| | 2. No | 19 | 13.5 |
| 2. | Did you set out your recycling cart at the curb this week? | | |
| | 1. Yes | 122 | 86.5 |
| | 2. No | 19 | 13.5 |
| 3. | How many weeks per month do you set out the recycling cart out on the curb for collection? | | |
| | 1. 1 week out of the month | 23 | 16.3 |
| | 2. 2 weeks out of the month | 36 | 25.5 |
| | 3. 3 week out of the month | 24 | 17.0 |
| | 4. 4 weeks out of the month | 56 | 39.7 |
| | 5. Don't remember [DNR] | 2 | 1.4 |
| 4. | Would a smaller RECYCLING cart be preferable for your household over the current 96-gallon cart that you have? | | |
| | 1. Yes | 54 | 38.3 |
| | 2. No | 73 | 51.8 |
| | 3. Don't know [DNR] | 14 | 9.9 |
| 5. | Do you feel like your household has LESS TRASH now that you have curbside recycling? | | |
| | 1. Yes | 96 | 68.1 |
| | 2. No | 37 | 26.2 |
| | 3. Don't know [DNR] | 8 | 5.7 |

6.	How IMPORTANT or UNIMPORTANT do you believe recycling is in your community?		
1.	Very important	107	75.9
2.	Somewhat important	18	12.8
3.	DK/Neutral [DNR]	7	5.0
4.	Somewhat unimportant	3	2.1
5.	Very unimportant	6	4.3
7.	How SATISFIED or UNSATISFIED are you with this recycling service?		
1.	Very satisfied	106	75.2
2.	Somewhat satisfied	16	11.3
3.	DK/Neutral [DNR]	10	7.1
4.	Somewhat dissatisfied	2	1.4
5.	Very dissatisfied	7	5.0
8.	How much time per week do you spend preparing recycling?		
1.	Less than 30 minutes	108	76.6
2.	30 – 60 minutes	29	20.6
3.	60 – 90 minutes	1	0.7
4.	90 – 120 minutes	0	0.0
5.	More than 120 minutes	1	0.7
6.	Don't know [DNR]	2	1.4
9.	Do you have any questions about what items should go into the recycling cart?		
1.	Yes	12	8.5
2.	No	129	91.5
10.	How many times a week did you take recyclables to the MET or other location, before you had curbside recycling?		
1.	0	99	70.2
2.	1 – 2	41	29.1
3.	3 – 4	1	0.7
4.	5 or more	0	0.0
5.	Don't remember	0	0.0
11.	[IF 1 OR MORE IN Q10] Thinking about how much you recycled prior to the pilot program, do you find that you are recycling more now than before?		
1.	Yes	26	61.9
2.	No	16	38.1
12.	[IF YES IN Q11] How much more?		
1.	About 10 additional items a week than before	4	15.4
2.	About 20 additional items a week than before	10	38.5
3.	About 30 additional items a week than before	2	7.7
4.	About 40 additional items a week than before	4	15.4
5.	About 50 additional items a week than before	1	3.8
6.	More than 50 additional items a week	5	19.2
7.	Don't know [DNR]	0	0.0

[FOR CUSTOMERS WITH RECYCLING CARTS ONLY]

13.	On average, how many bags of trash do you set out for collection since the pilot program started? [RECORD VERBATIM]		
1.	1	24	29.6
2.	2	32	39.5
3.	3	10	12.3
4.	4	5	6.2
5.	5	5	6.2
6.	6	2	2.5
7.	7	1	1.2
8.	9	1	1.2
9.	10	1	1.2
14.	Is this amount MORE or LESS than the number of bags of trash you set out BEFORE the pilot program started?		
1.	More	2	2.5
2.	Less	49	60.5
3.	About the same	30	37.0

[FOR CUSTOMERS WITH TRASH CART & RECYCLING CARTS]

15.	When you do put your trash cart out for collection, on average, how full is it.		
1.	Quarter full	8	13.3
2.	Halfway full	18	30.0
3.	Three quarters full	20	33.3
4.	Full	11	18.3
5.	Full cart and then some more bags of trash	3	5.0
6.	Don't know [DNR]	0	0.0
16.	Is this amount MORE or LESS trash than you set out BEFORE the pilot program started?		
1.	More	5	8.3
2.	Less	33	55.0
3.	About the same	22	36.7

Section 2 – Questions about carts**[FOR CUSTOMERS WITH TRASH CART & RECYCLING CART]**

17.	Compared to the trash bags, how do you like the trash and recycle carts?		
1.	I greatly prefer the carts to the bags	31	51.7
2.	I somewhat prefer the carts to the bags	7	11.7
3.	DK/Neutral [DNR]	2	3.3
4.	I somewhat prefer the bags to the carts	10	16.7
5.	I greatly prefer the bags to the carts	10	16.7

18.	Do you feel like one RECYCLING cart is enough to meet your trash needs for an average week?		
1.	Yes	59	98.3
2.	No	1	1.7
3.	Don't know [DNR]	0	0.0
19.	Do you feel like one TRASH cart is enough to meet your trash needs for an average week?		
1.	Yes	58	96.7
2.	No	2	3.3
3.	Don't know [DNR]	0	0.0
20.	[IF YES IN Q19] Would a smaller TRASH cart be preferable for your household?		
1.	Yes	16	26.7
2.	No	41	68.3
3.	Don't know [DNR]	3	5.0
21.	Did you have any problems this week getting the carts to the curb on collection day and then back to the house after they had been emptied?		
1.	Yes	5	8.3
2.	No	55	91.7
22.	[IF YES IN Q22] What problem did you have moving the carts? [RECORD VERBATIM]		
1.	Carts too big/Cumbersome	4	80.0
2.	Workers leave carts in the street	1	20.0

[FOR CUSTOMERS WITH RECYCLING CART ONLY]

23.	Do you have a FAVORABLE or UNFAVORABLE opinion of the recycling cart?		
1.	Very favorable	46	56.8
2.	Somewhat favorable	16	19.8
3.	DK/Neutral [DNR]	7	8.6
4.	Somewhat unfavorable	7	8.6
5.	Very unfavorable	5	6.2
24.	Do you feel like one RECYCLING cart is enough to meet your trash needs for an average week?		
1.	Yes	76	93.8
2.	No	2	2.5
3.	Don't know [DNR]	3	3.7
25.	Did you have any problems this week getting the cart to the curb on collection day and then back to the house after it had been emptied?		
1.	Yes	5	6.2
2.	No	76	93.8

26.	[IF YES IN Q25] What problems did you have moving the cart? [RECORD VERBATIM]		
	1. Steep driveway makes it difficult	2	40.0
	2. Workers leave cart in street	1	20.0
	3. Storm blew open lid and cart filled with water	1	20.0
	4. Not home on collection day	1	20.0
27.	Now that you've had a recycling cart, do you think you would like to have a trash cart as well?		
	1. Yes	35	43.2
	2. No	44	54.3
	3. Don't know [DNR]	2	2.5
28.	[IF YES IN Q27] What about a trash cart would be beneficial for your household? [RECORD VERBATIM]		
	1. Helps keep trash contained/Cleaner/Away from animals	17	51.5
	2. Wheels make it easier to haul trash to curb	8	24.2
	3. Gives somewhere to store trash until collection	6	18.2
	4. Only have to make 1 trip to curb	1	3.0
	5. Would save on plastic bags	1	3.0
29.	[IF NO IN Q27] Why would having a trash cart not be beneficial for your household? [RECORD VERBATIM]		
	1. Like the bags	11	25.6
	2. No room to store it	9	20.9
	3. Carts are difficult to move	8	18.6
	4. Already purchased a trash cart	6	14.0
	5. Don't produce enough trash to need a cart	4	9.3
	6. Residents leave on curb for extended periods of time	3	7.0
	7. Produce too much yard waste to fit in a trash cart	2	4.7
30.	[IF NO IN Q27] One idea being considered is discontinuing distribution of the heavy-duty black bags for setting out garbage. If that change were made, and the City were to no longer provide the heavy-duty black bags to set out garbage, would that change your opinion about also having a trash cart?		
	1. Yes	11	25.0
	2. No	29	65.9
	3. Don't know [DNR]	4	9.1

Section 3 – Questions about Recycling Knowledge

[FOR ALL CUSTOMERS]

In February you were given a reusable B.A. tote bag to collect your recyclables in and then dump into your recycle cart. The side of the bag has some instructions for some items that can be recycled.

31.	Have you used the reusable B.A. tote bag?		
	1. Yes	88	62.4
	2. No	53	37.6

32.	Did you know that plastic items such as re-sealable bags, and the overwrap on plastic soda and water bottles is not recyclable?		
	1. Yes	122	86.5
	2. No	19	13.5
33.	Where in your community do you get information on what items are recyclable? [RECORD VERBATIM]		
	1. Info provided by the city	29	23.6
	2. Online	28	22.8
	3. On the cart or tote bag	22	17.9
	4. Flyers/Mailers	21	17.1
	5. Meeting at beginning of pilot program	8	6.5
	6. From past recycling experience	4	3.3
	7. Called the city	3	2.4
	8. On TV	2	1.6
	9. From the MET	1	0.8
	10. Homeowners meeting	1	0.8
	11. Call BA Sanitation	1	0.8
	12. Newspaper	1	0.8
34.	Where online would you get information on what items are recyclable? [RECORD VERBATIM]		
	1. Recycleba.org	46	88.5
	2. MET website	2	3.8
	3. Brokenarrowok.gov	2	3.8
	4. Google	2	3.8
35.	Are you aware of the recycling website Broken Arrow has, recycleba.com?		
	1. Yes	82	58.2
	2. No	59	41.8
36.	[IF YES IN Q35] Have you ever visited recycleba.com?		
	1. Yes	53	56.4
	2. No	41	43.6
37.	One more question before we get some quick demographics information. Now that the evaluation period has concluded, the City will be preparing a report on the pilot project. Is there anything else you would like to add about your experience using the recycling system, changing your set-outs, having the carts, etc.? [RECORD VERBATIM]		

Section 4: Demographics

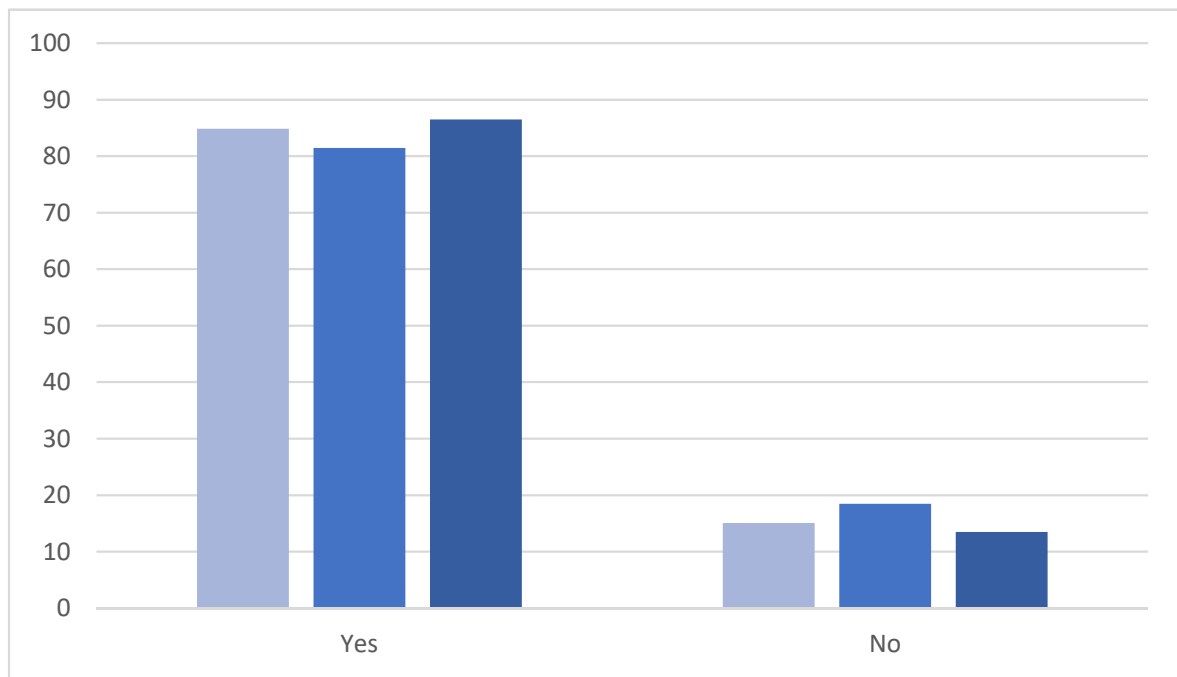
We're almost done. Now for some questions about demographics, these are for classification purposes only.

D1.	Into which of the following categories does you age fall?		
	1. 18-24	1	0.7
	2. 25-34	7	5.0
	3. 35-44	16	11.3
	4. 45-54	18	12.8
	5. 55-64	37	26.2
	6. 65 and over	62	44.0
D2.	Which of the following broad categories best describes your annual household income?		
	1. Under \$15,000	2	1.4
	2. \$15,000 to \$24,999	9	6.4
	3. \$25,000 to \$34,999	11	7.8
	4. \$35,000 to \$49,999	19	13.5
	5. \$50,000 to \$74,999	28	19.9
	6. \$75,000 to \$99,999	32	22.7
	7. \$100,000 to \$125,000	13	9.2
	8. Over \$125,000	15	10.6
	9. Dk/Refused [DNR]	12	8.5
D3.	Including you, how many people are currently living in your household?		
	1. One	29	20.6
	2. Two	65	46.1
	3. Three	19	13.5
	4. Four	14	9.9
	5. Five	8	5.7
	6. More than five	5	3.5
	7. Refused [DNR]	1	0.7
D4.	How long have you lived at this address?		
	1. Less than 1 year	2	1.4
	2. 1 – 5 years	31	22.0
	3. 6 – 10 years	26	18.4
	4. 11 – 15 years	21	14.9
	5. 15 – 20 years	16	11.3
	6. Over 20 years	44	31.2
	7. DK/Refused [DNR]	1	0.7
D5.	Have you ever previously lived in an area that offered curbside recycling?		
	1. Yes	29	20.6
	2. No	112	79.4

D6.	Are you married?		
1.	Yes	95	67.4
2.	No	46	32.6
D7.	Which of the following categories best describes your work status?		
1.	Full-time	55	39.0
2.	Part-time	10	7.1
3.	Self-employed	10	7.1
4.	Homemaker	9	6.4
5.	Retired	56	39.7
6.	Unemployed	1	0.7
D8.	Are you:		
1.	Male	52	36.9
2.	Female	89	63.1

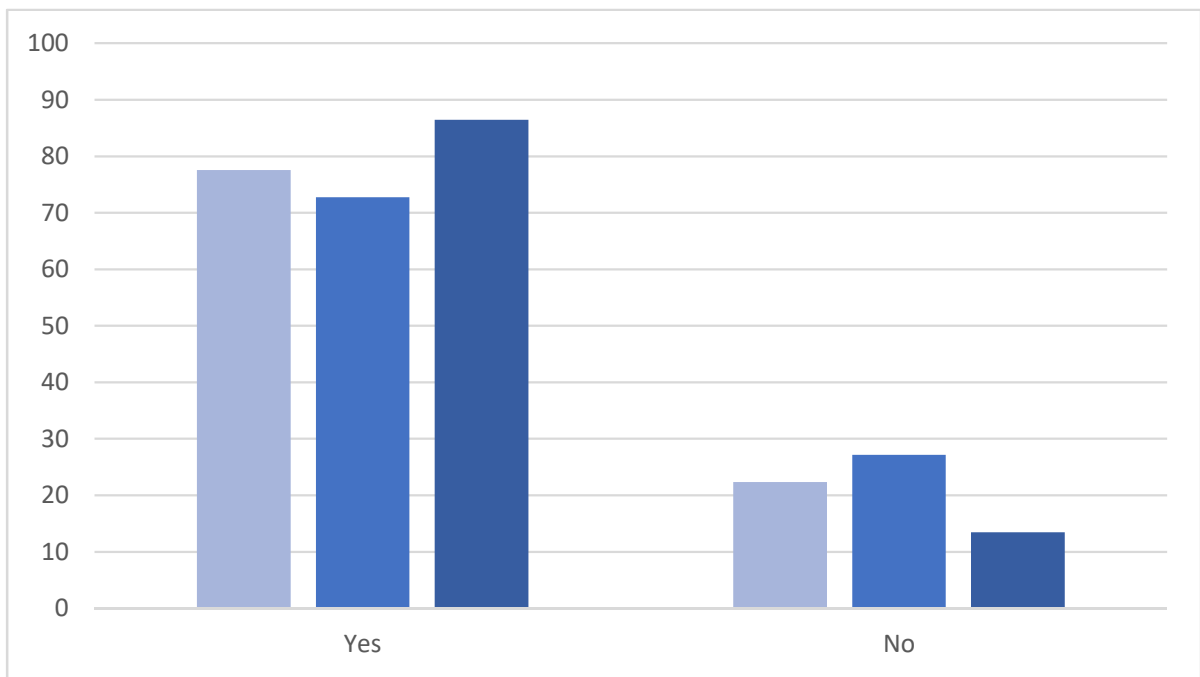
Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
Q1. Did you put out any recyclable material into the cart this week?	Weeks 3-4	Weeks 11-12	Post-Project Completion
Yes	84.9	81.5	86.5
No	15.1	18.5	13.5



Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
Q2. Did you set out your recycling cart at the curb this week?	Weeks 3-4	Weeks 11-12	Post-Project Completion
Yes	77.6	72.8	86.5
No	22.4	27.2	13.5



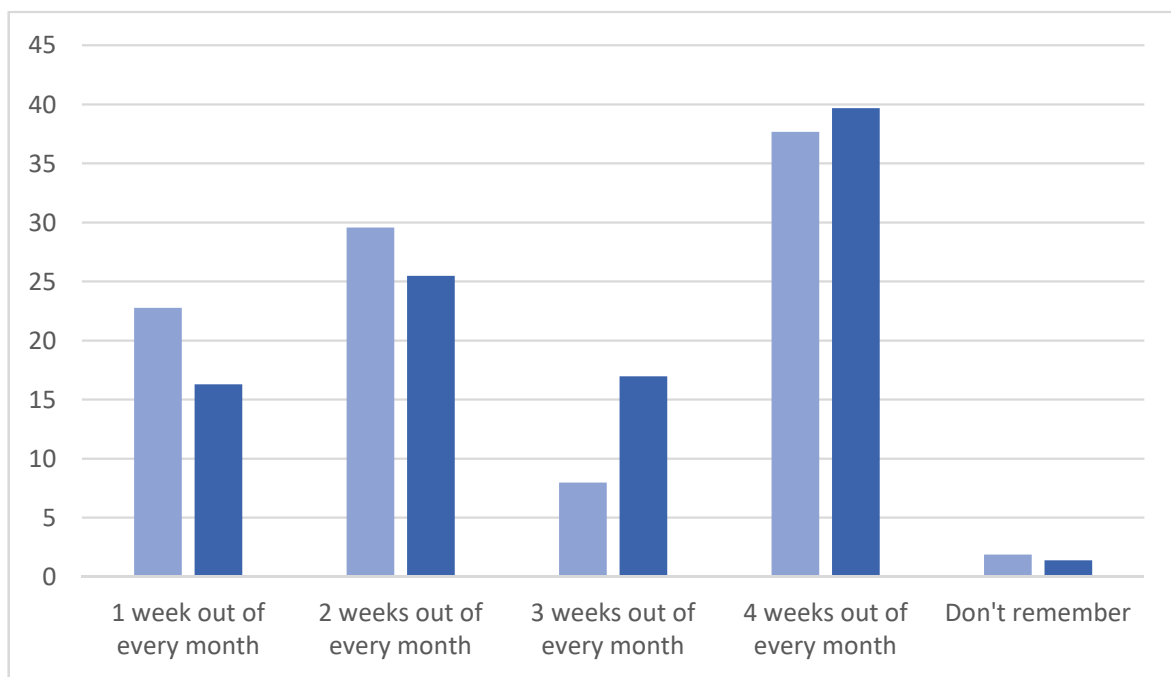
Broken Arrow Waste & Refuse Analysis

n=162

n=141

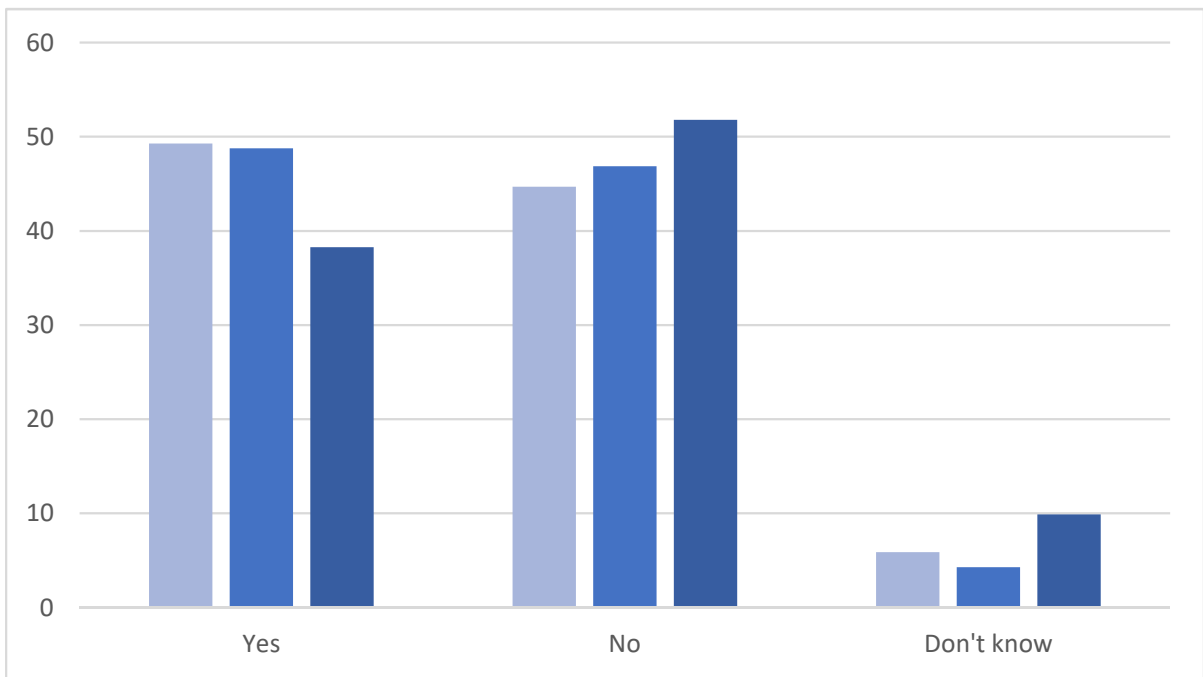
Q3. How many weeks per month do you set the recycling cart out on the curb for collection?

	Weeks 11-12	Post-Project Completion
1 week out of every month	22.8	16.3
2 weeks out of every month	29.6	25.5
3 weeks out of every month	8.0	17.0
4 weeks out of every month	37.7	39.7
Don't remember	1.9	1.4



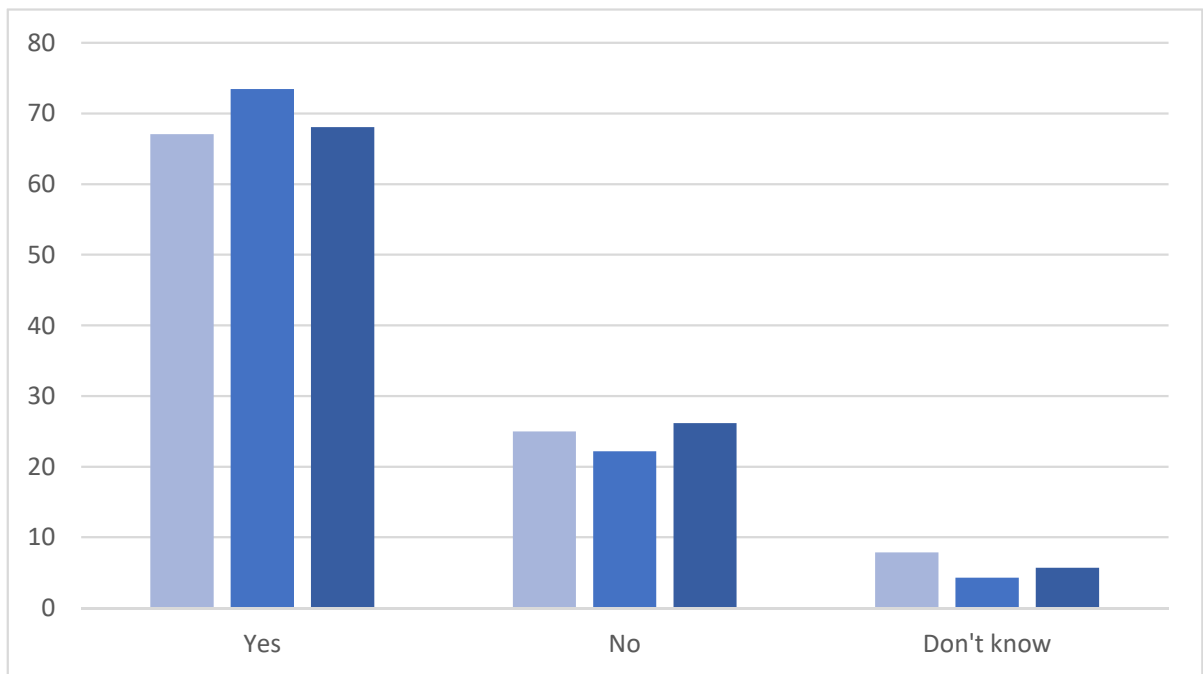
Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
Q4. Would a smaller RECYCLING cart be preferable for your household over the current 96 gallon cart that you have?			
	Weeks 3-4	Weeks 11-12	Post-Project Completion
Yes	49.3	48.8	38.3
No	44.7	46.9	51.8
Don't know	5.9	4.3	9.9



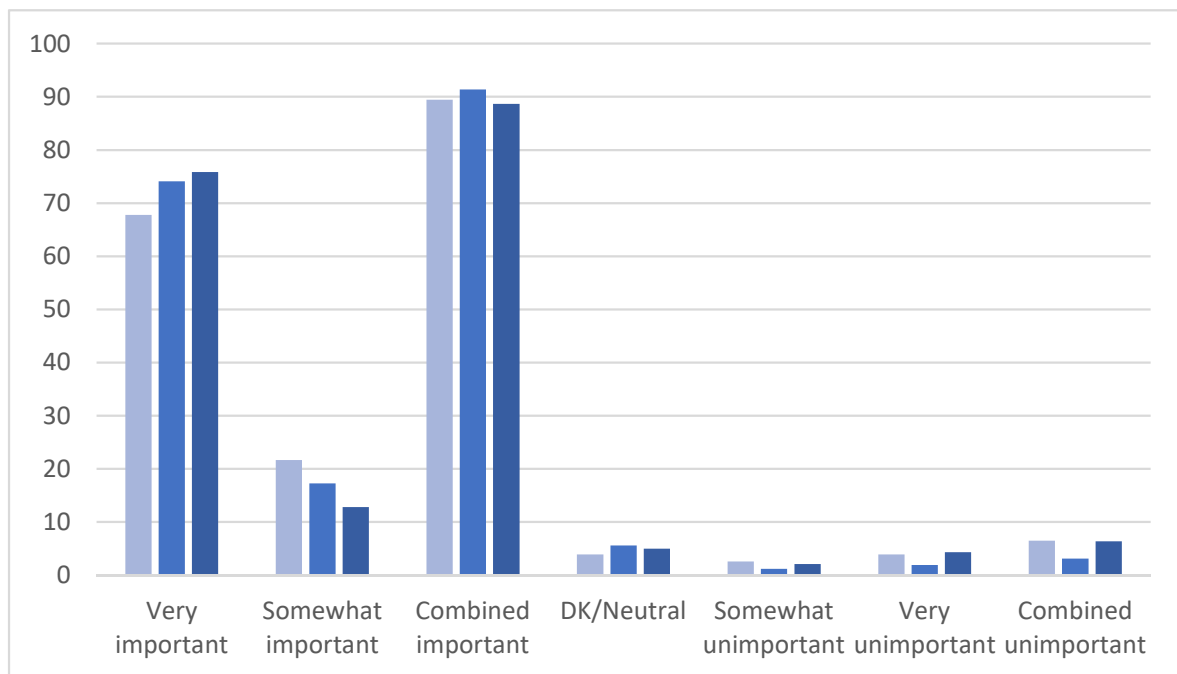
Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
Q5. Do you feel like your household has LESS TRASH now that you have curbside recycling?	Weeks 3-4	Weeks 11-12	Post-Project Completion
Yes	67.1	73.5	68.1
No	25.0	22.2	26.2
Don't know	7.9	4.3	5.7



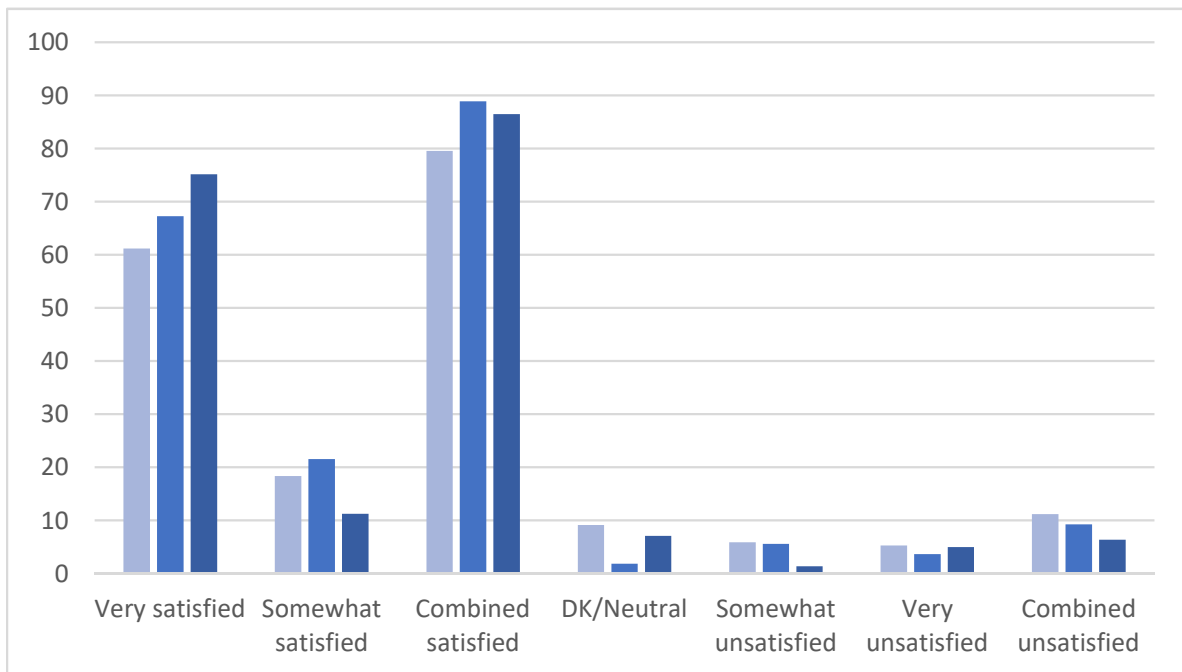
Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
Q6. How IMPORTANT or UNIMPORTANT do you believe recycling is in your community?	Weeks 3-4	Weeks 11-12	Post-Project Completion
Very important	67.8	74.1	75.9
Somewhat important	21.7	17.3	12.8
Combined important	89.5	91.4	88.7
DK/Neutral	3.9	5.6	5.0
Somewhat unimportant	2.6	1.2	2.1
Very unimportant	3.9	1.9	4.3
Combined unimportant	6.5	3.1	6.4



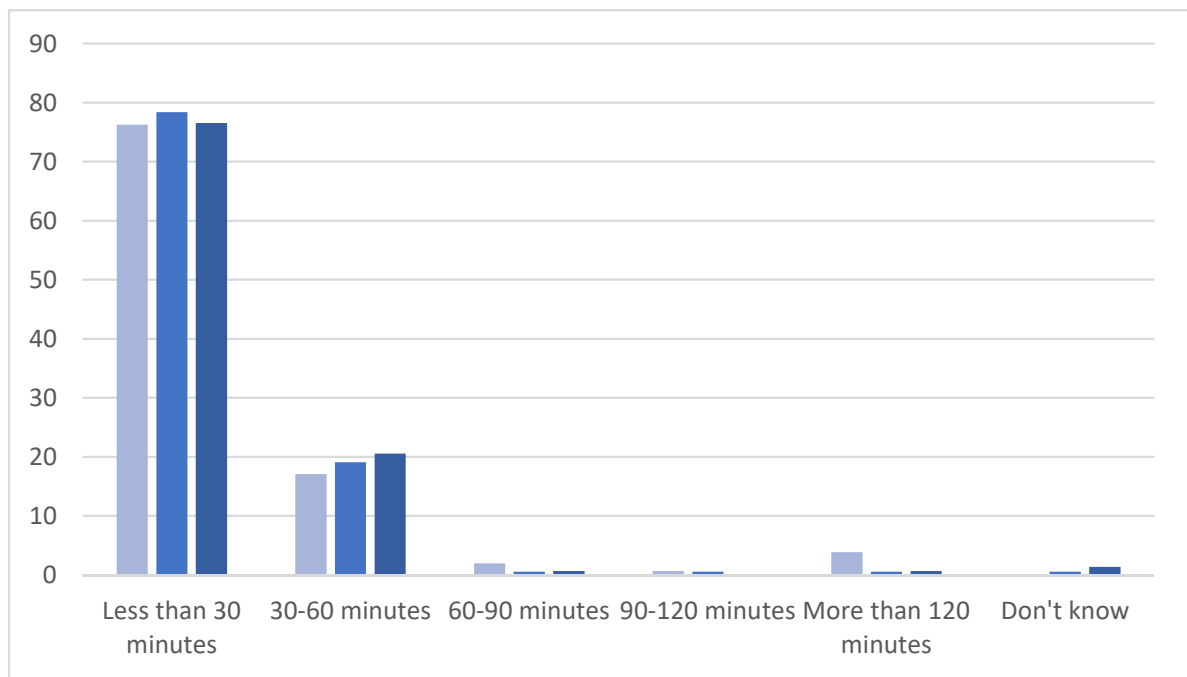
Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
Q7. How SATISFIED or UNSATISFIED are you with this recycling service?	Weeks 3-4	Weeks 11-12	Post-Project Completion
Very satisfied	61.2	67.3	75.2
Somewhat satisfied	18.4	21.6	11.3
Combined satisfied	79.6	88.9	86.5
DK/Neutral	9.2	1.9	7.1
Somewhat unsatisfied	5.9	5.6	1.4
Very unsatisfied	5.3	3.7	5.0
Combined unsatisfied	11.2	9.3	6.4



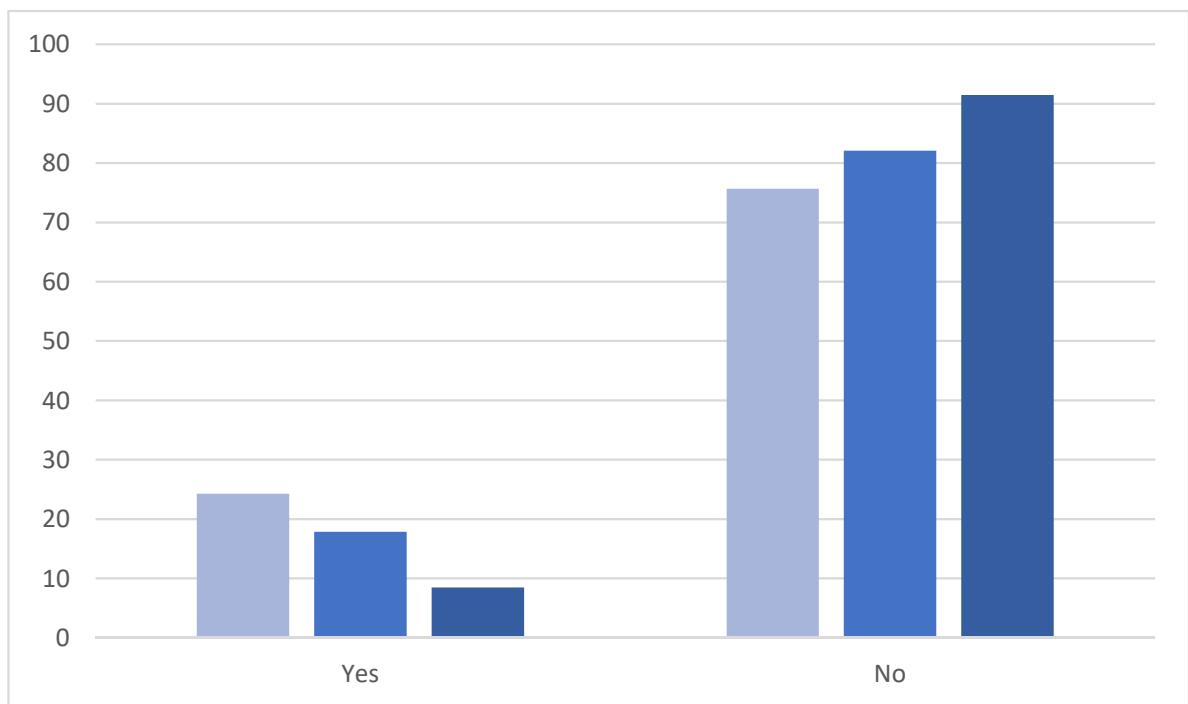
Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
Q8. How much time per week do you spend preparing recycling?			Post-Project
	Weeks 3-4	Weeks 11-12	Completion
Less than 30 minutes	76.3	78.4	76.6
30-60 minutes	17.1	19.1	20.6
60-90 minutes	2.0	0.6	0.7
90-120 minutes	0.7	0.6	0.0
More than 120 minutes	3.9	0.6	0.7
Don't know	0.0	0.6	1.4



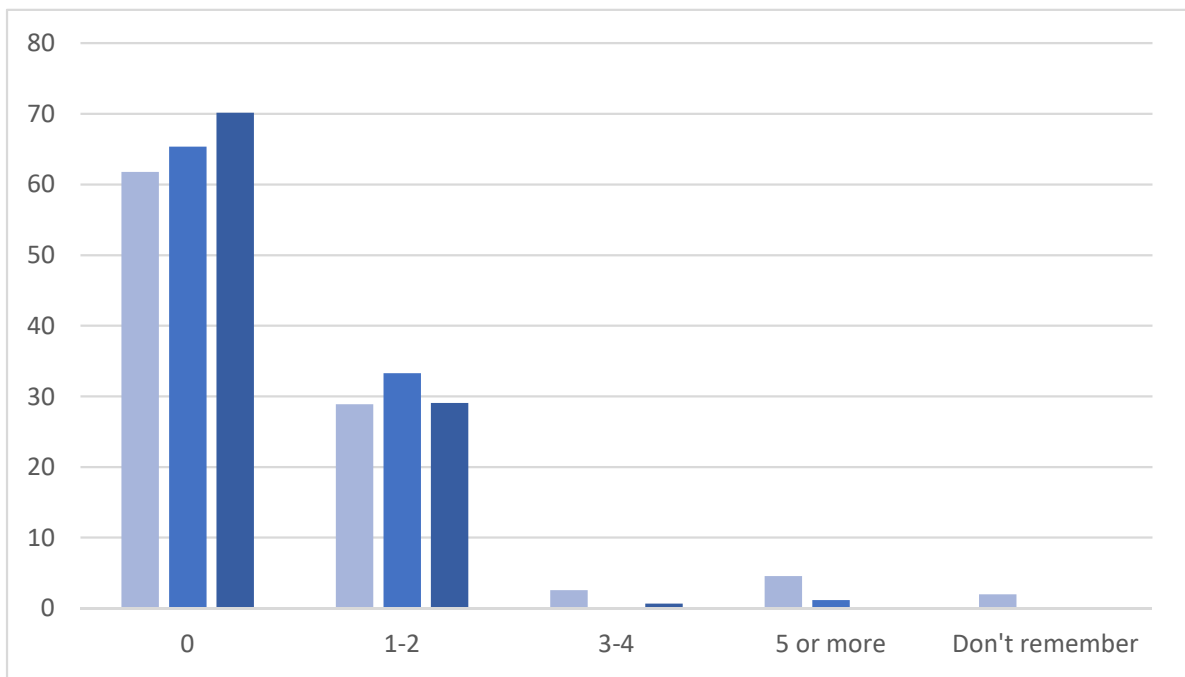
Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
Q9. Do you have any questions about what items should go into the recycling cart?	Weeks 3-4	Weeks 11-12	Post-Project Completion
Yes	24.3	17.9	8.5
No	75.7	82.1	91.5



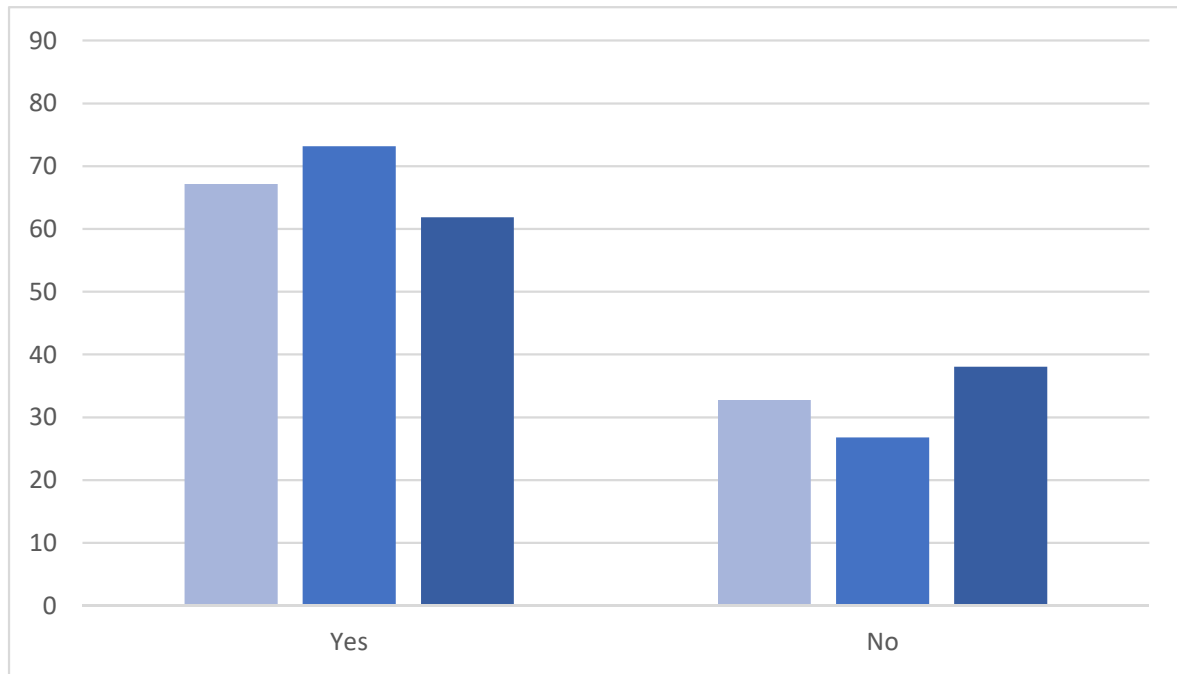
Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
Q10. How many times a week did you take recyclables to the MET or other location before you had curbside recycling?			
	Weeks 3-4	Weeks 11-12	Post-Project Completion
0	61.8	65.4	70.2
1-2	28.9	33.3	29.1
3-4	2.6	0.0	0.7
5 or more	4.6	1.2	0.0
Don't remember	2.0	0.0	0.0



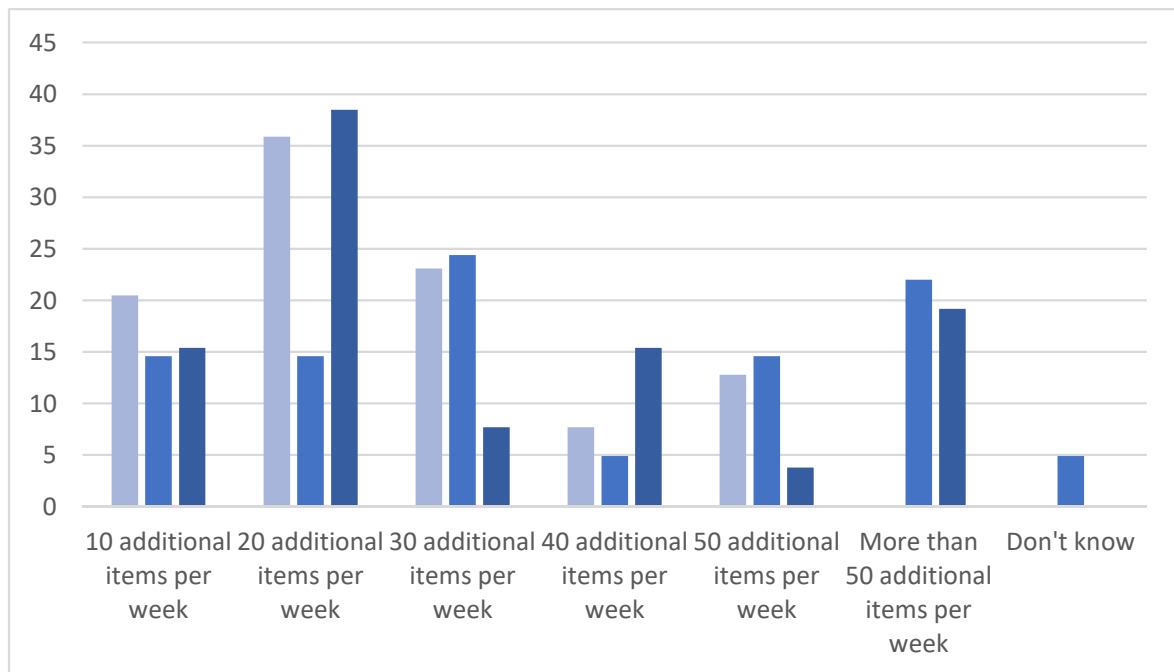
Broken Arrow Waste & Refuse Analysis

	n=58	n=56	n=42
Q11. [IF 1 OR MORE IN Q10] Thinking about how much you recycled prior to the pilot program, do you find that you are recycling more now than before?			Post-Project
	Weeks 3-4	Weeks 11-12	Completion
Yes	67.2	73.2	61.9
No	32.8	26.8	38.1



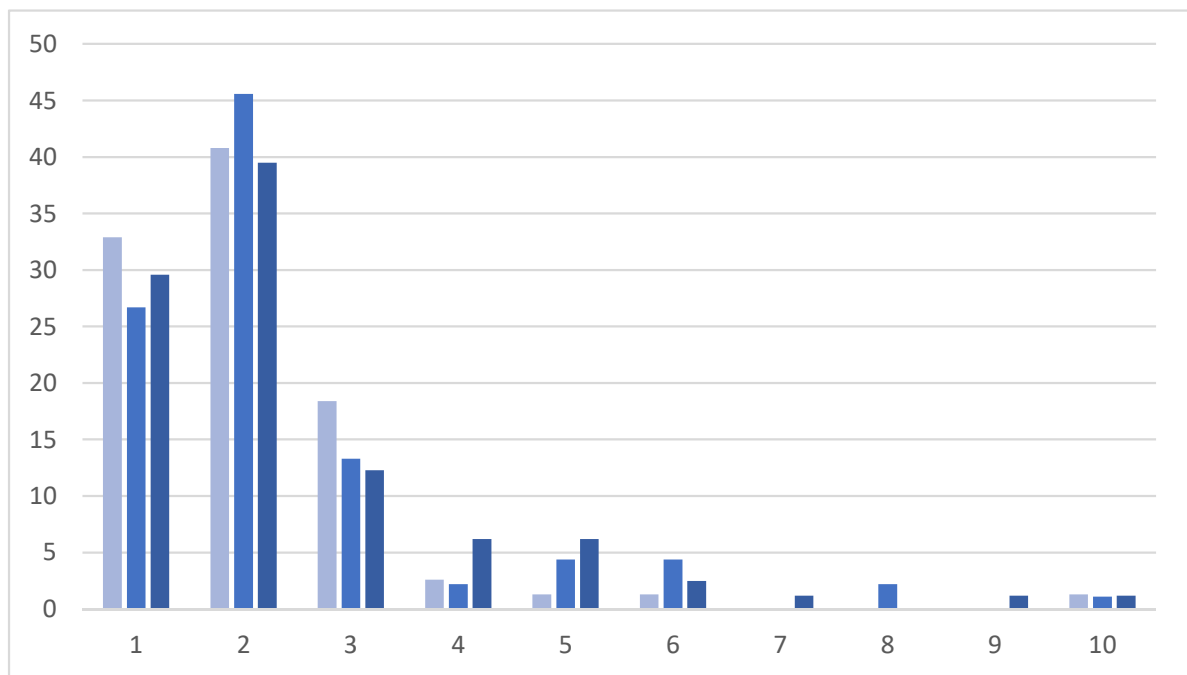
Broken Arrow Waste & Refuse Analysis

	n=39	n=41	n=26
			Post-Project
Q12. [IF YES IN Q11] How much more?	Weeks 3-4	Weeks 11-12	Completion
10 additional items per week	20.5	14.6	15.4
20 additional items per week	35.9	14.6	38.5
30 additional items per week	23.1	24.4	7.7
40 additional items per week	7.7	4.9	15.4
50 additional items per week	12.8	14.6	3.8
More than 50 additional items per week	0.0	22.0	19.2
Don't know	0.0	4.9	0.0



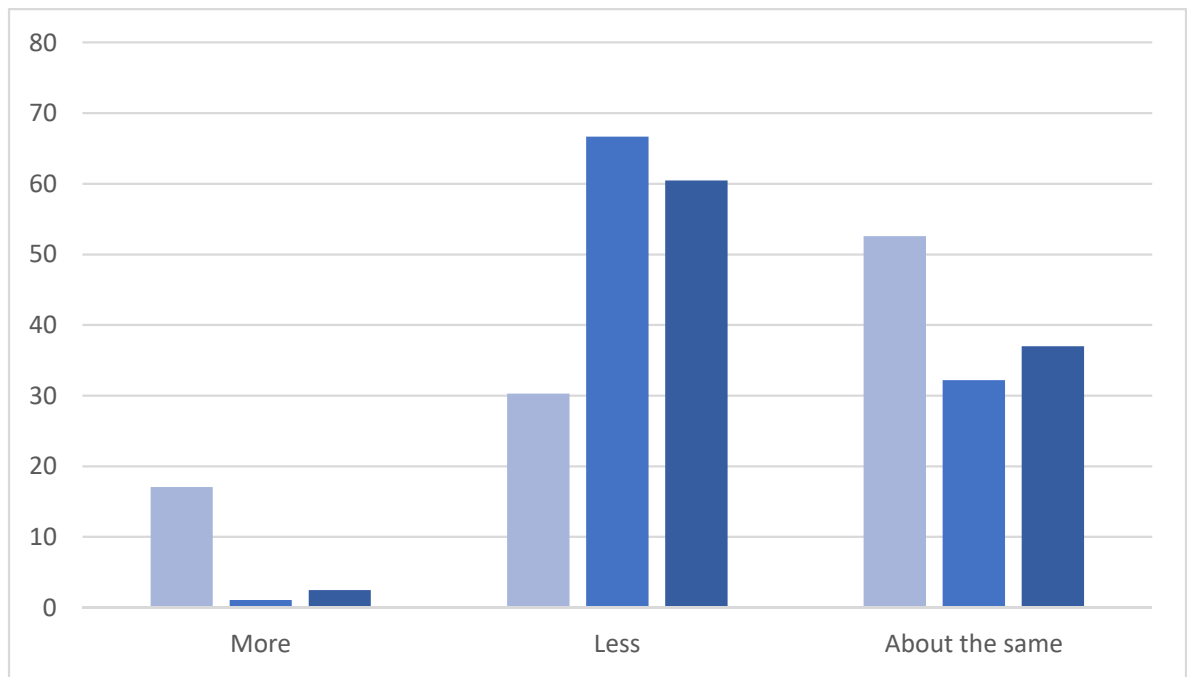
Broken Arrow Waste & Refuse Analysis

	n=76	n=90	n=81
Q13. On average, how many bags of trash do you set out for collection since the pilot program started? [RECORD VERBATIM]			
[RECYCLE CART ONLY]	Weeks 3-4	Weeks 11-12	Post-Project Completion
1	32.9	26.7	29.6
2	40.8	45.6	39.5
3	18.4	13.3	12.3
4	2.6	2.2	6.2
5	1.3	4.4	6.2
6	1.3	4.4	2.5
7	0.0	0.0	1.2
8	0.0	2.2	0.0
9	0.0	0.0	1.2
10	1.3	1.1	1.2



Broken Arrow Waste & Refuse Analysis

	n=76	n=90	n=81
Q14. Is this amount MORE or LESS than the number of bags of trash you set out BEFORE the pilot program started? [RECYCLE CART ONLY]	Weeks 3-4	Weeks 11-12	Post-Project Completion
More	17.1	1.1	2.5
Less	30.3	66.7	60.5
About the same	52.6	32.2	37.0



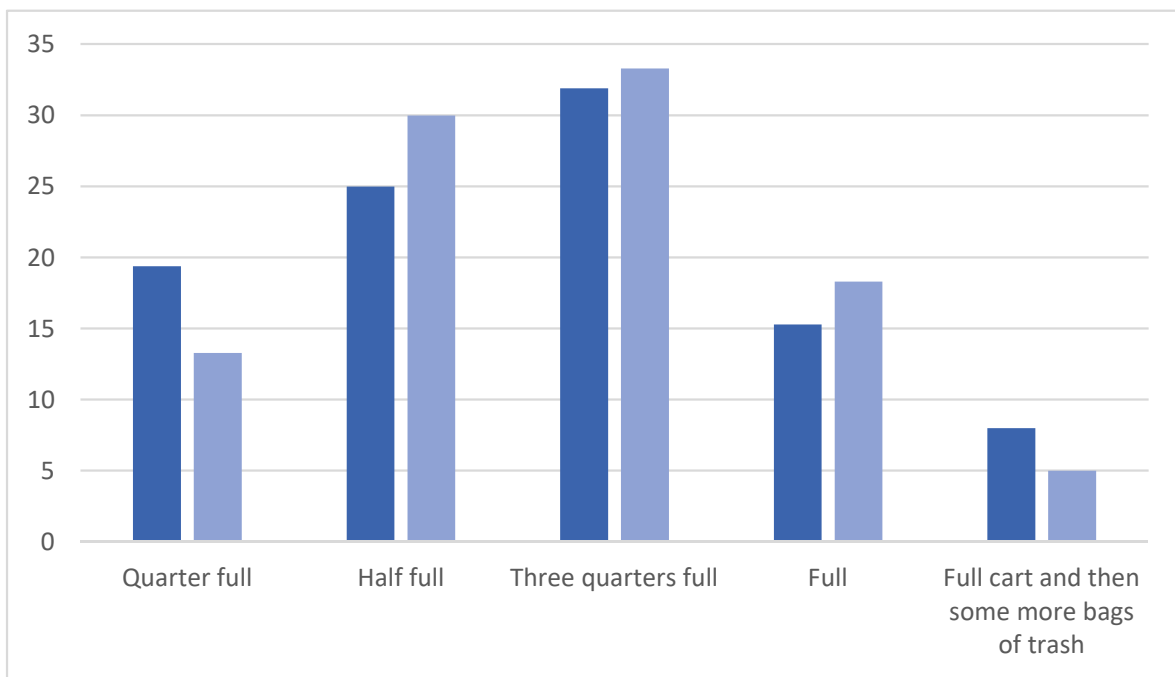
Broken Arrow Waste & Refuse Analysis

n=72

n=60

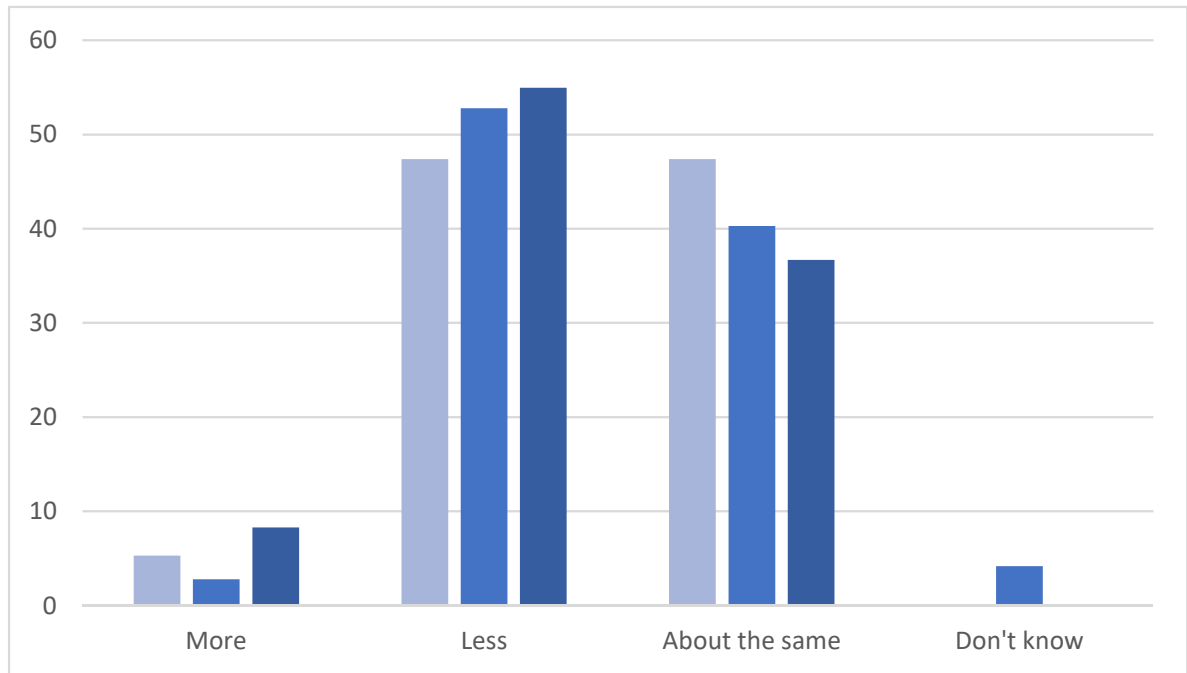
Q15. When you do put your trash cart out for collection, on average, how full it it? [TRASH AND RECYCLE CARTS]

	Weeks 11-12	Post-Project Completion
Quarter full	19.4	13.3
Half full	25.0	30.0
Three quarters full	31.9	33.3
Full	15.3	18.3
Full cart and then some more bags of trash	8.0	5.0



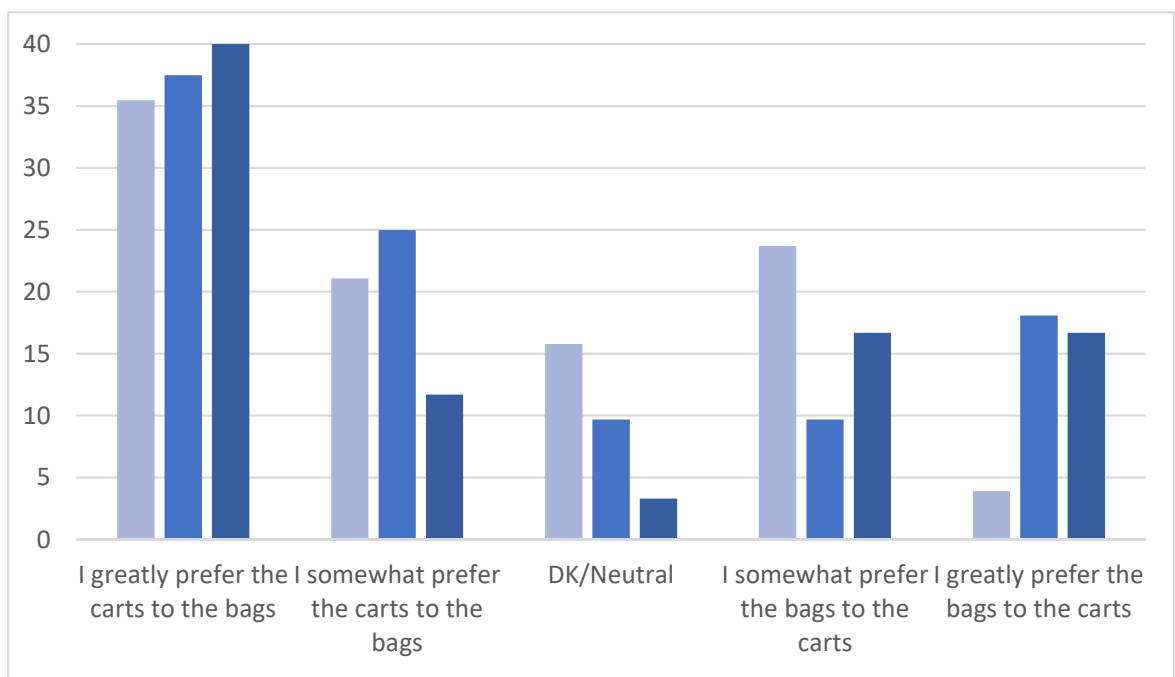
Broken Arrow Waste & Refuse Analysis

	n=76	n=72	n=60
Q16. Is this amount MORE or LESS trash than you set out BEFORE the pilot program started?			
[TRASH AND RECYCLE CARTS]	Weeks 3-4	Weeks 11-12	Post-Project Completion
More	5.3	2.8	8.3
Less	47.4	52.8	55.0
About the same	47.4	40.3	36.7
Don't know	0.0	4.2	0.0



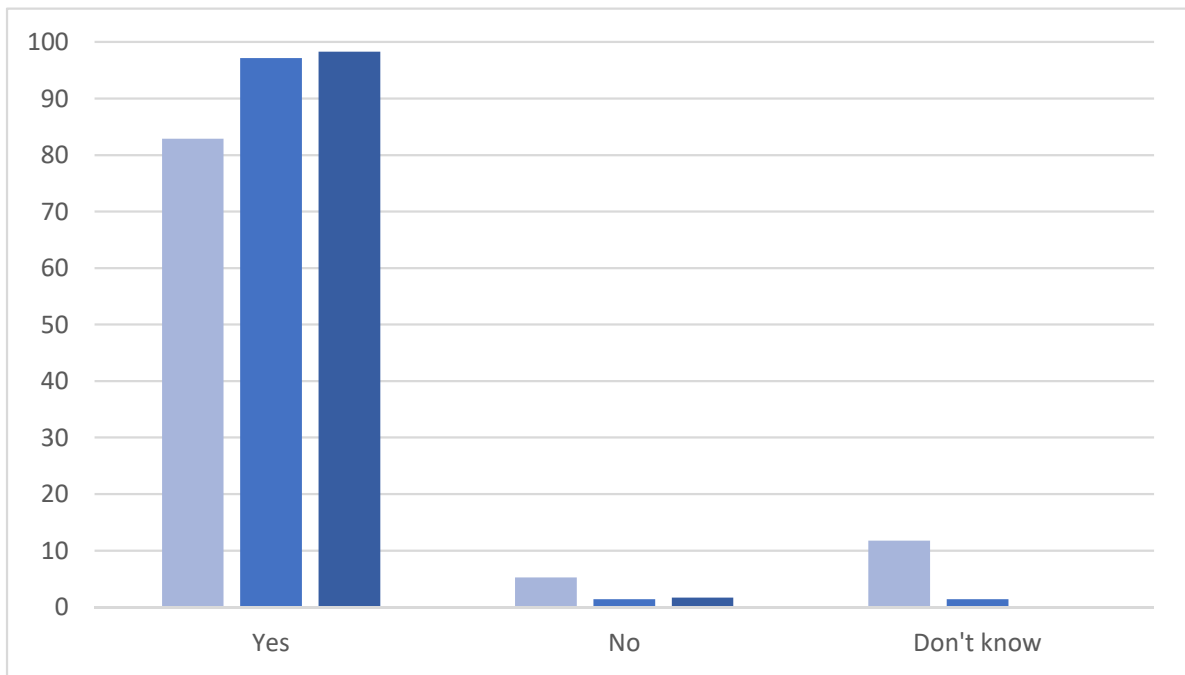
Broken Arrow Waste & Refuse Analysis

	n=76	n=72	n=60
Q17. Compared to the trash bags, how do you like the trash and recycle carts? [TRASH AND RECYCLE CARTS]	Weeks 3-4	Weeks 11-12	Post-Project Completion
I greatly prefer the carts to the bags	35.5	37.5	51.7
I somewhat prefer the carts to the bags	21.1	25.0	11.7
DK/Neutral	15.8	9.7	3.3
I somewhat prefer the bags to the carts	23.7	9.7	16.7
I greatly prefer the bags to the carts	3.9	18.1	16.7



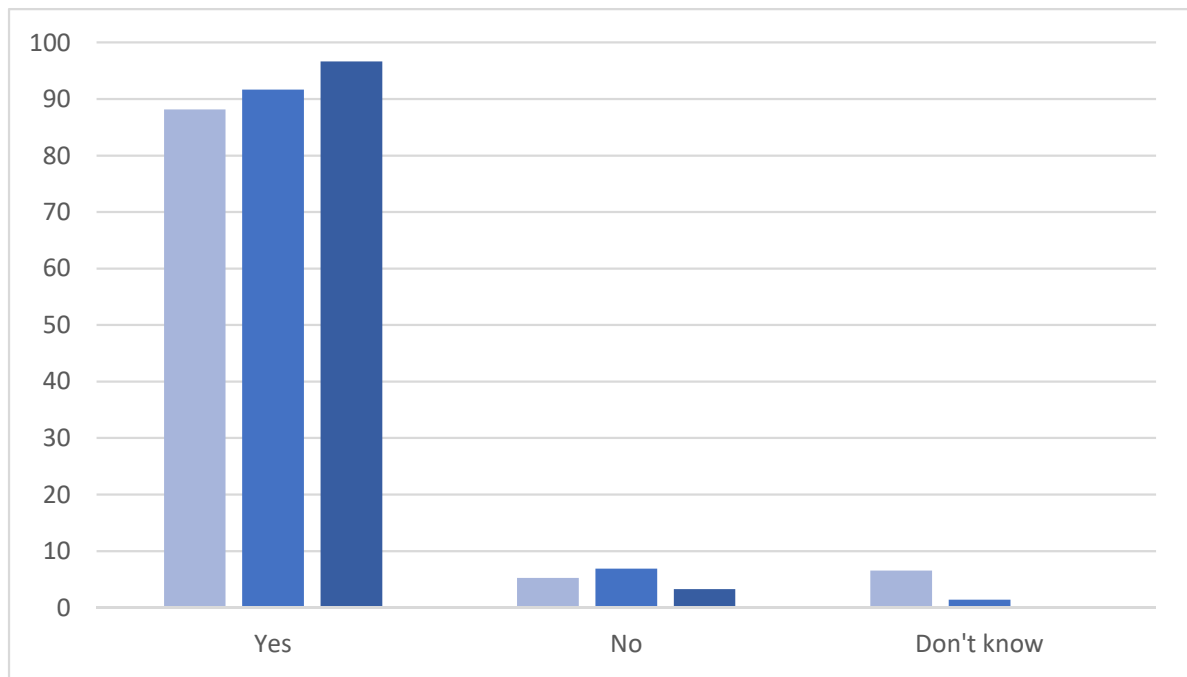
Broken Arrow Waste & Refuse Analysis

	n=76	n=72	n=60
Q18. Do you feel like one RECYCLING cart is enough to meet your needs for an average week? [TRASH AND RECYCLING CARTS]			
	Weeks 3-4	Weeks 11-12	Post-Project Completion
Yes	82.9	97.2	98.3
No	5.3	1.4	1.7
Don't know	11.8	1.4	0.0



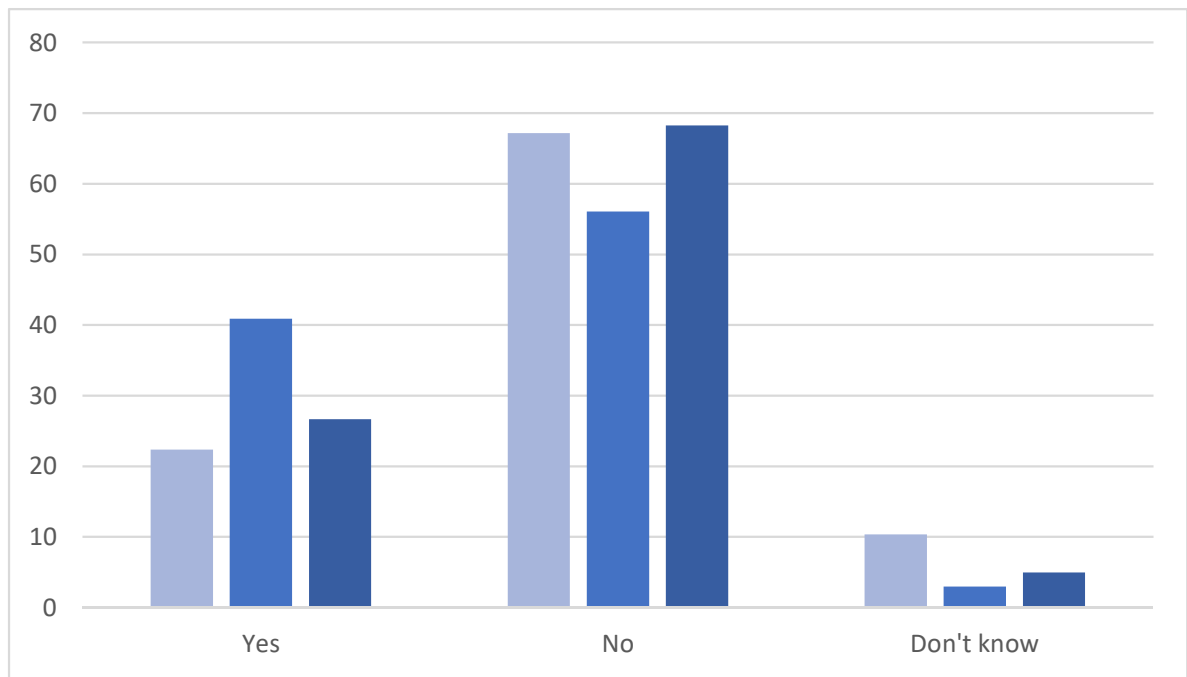
Broken Arrow Waste & Refuse Analysis

	n=76	n=72	n=60
Q19. Do you feel like one TRASH cart is enough to meet your trash needs for an average week?			
[TRASH AND RECYCLE CARTS]	Weeks 3-4	Weeks 11-12	Post-Project Completion
Yes	88.2	91.7	96.7
No	5.3	6.9	3.3
Don't know	6.6	1.4	0.0



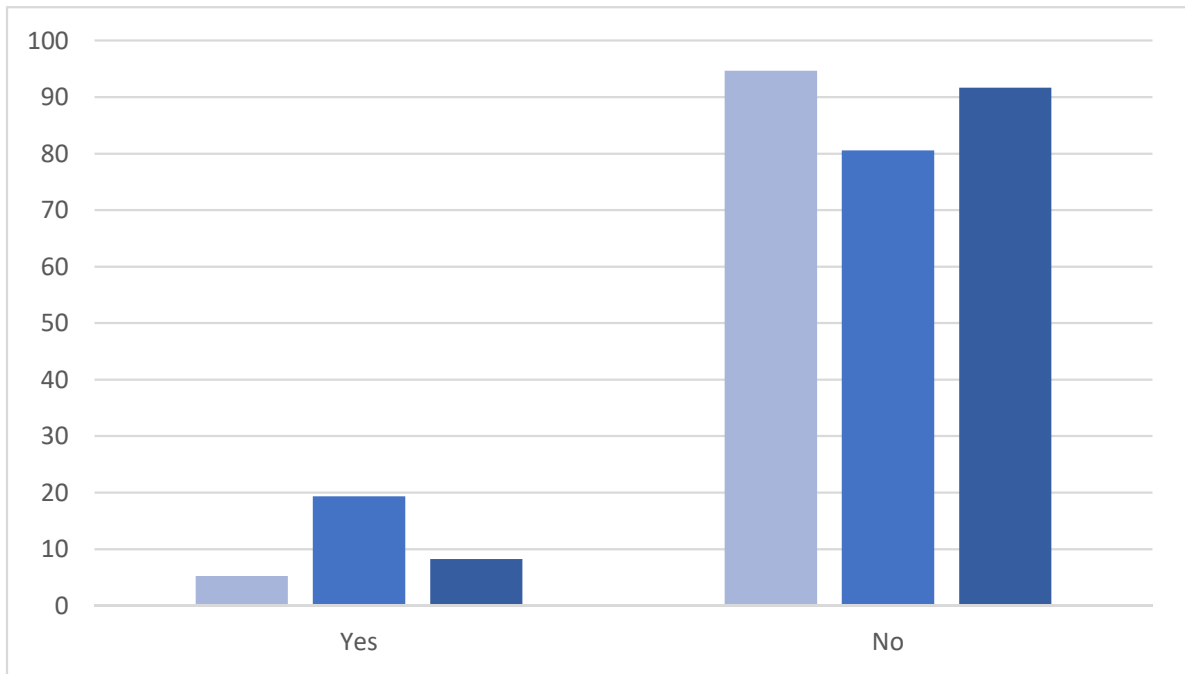
Broken Arrow Waste & Refuse Analysis

	n=67	n=66	n=60
Q20. [IF YES IN Q19] Would a smaller TRASH cart be preferable for your household? [TRASH AND RECYCLE CARTS]			
	Weeks 3-4	Weeks 11-12	Post-Project Completion
Yes	22.4	40.9	26.7
No	67.2	56.1	68.3
Don't know	10.4	3.0	5.0



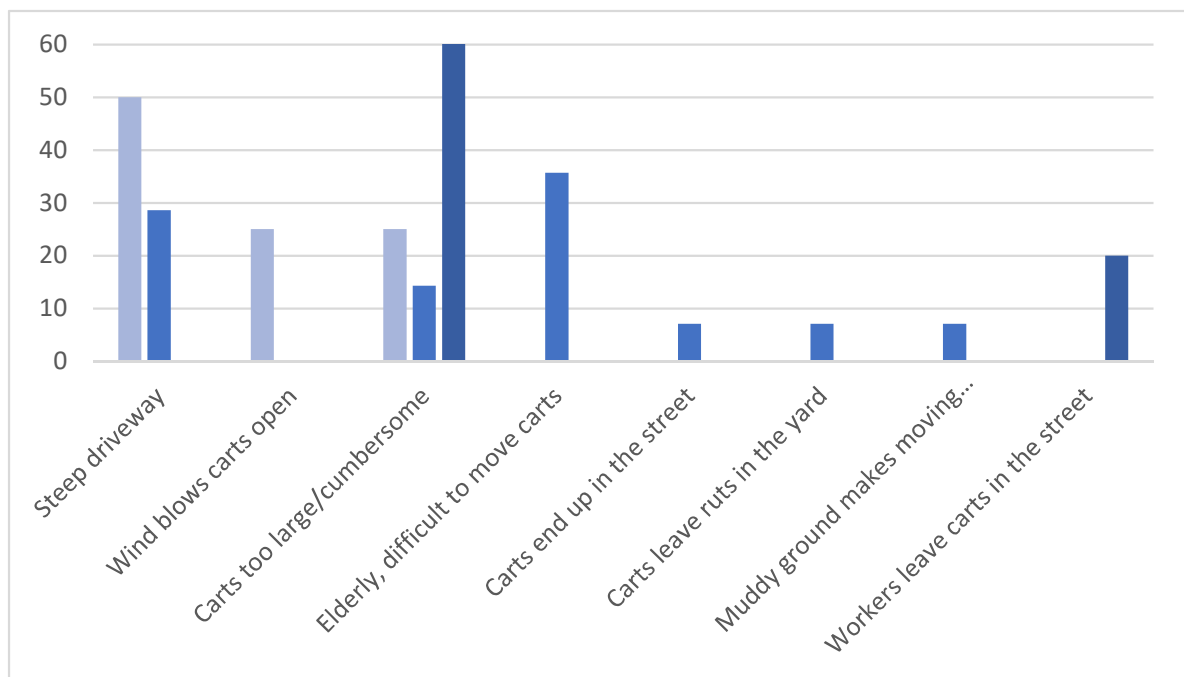
Broken Arrow Waste & Refuse Analysis

	n=76	n=72	n=60
Q21. Did you have any problems this week getting the carts to the curb on collection day and then back to the house after they had been emptied? [TRASH AND RECYCLE CARTS]			Post-Project
	Weeks 3-4	Weeks 11-12	Completion
Yes	5.3	19.4	8.3
No	94.7	80.6	91.7



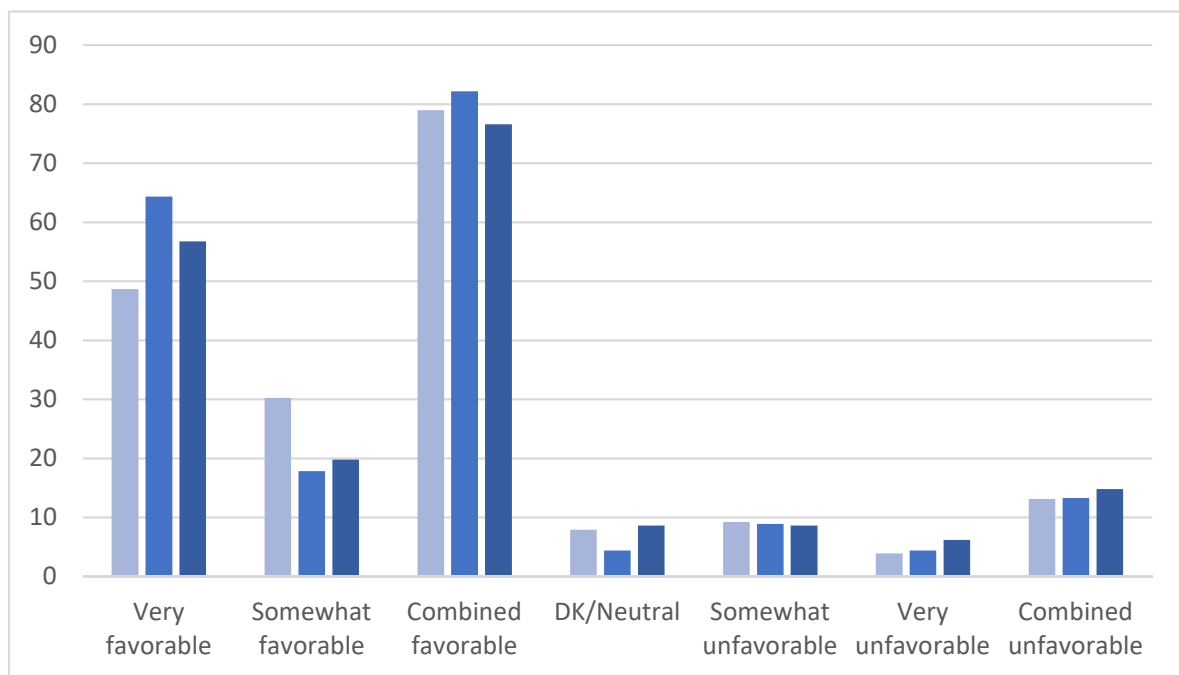
Broken Arrow Waste & Refuse Analysis

	n=4	n=14	n=5
Q22. [IF YES IN Q22] What problem did you have moving the carts [TRASH AND RECYCLE CARTS]	Weeks 3-4	Weeks 11-12	Post-Project Completion
Steep driveway	50.0	28.6	0.0
Wind blows carts open	25.0	0.0	0.0
Carts too large/cumbersome	25.0	14.3	80.0
Elderly, difficult to move carts	0.0	35.7	0.0
Carts end up in the street	0.0	7.1	0.0
Carts leave ruts in the yard	0.0	7.1	0.0
Muddy ground makes moving carts difficult	0.0	7.1	0.0
Workers leave carts in the street	0.0	0.0	20.0



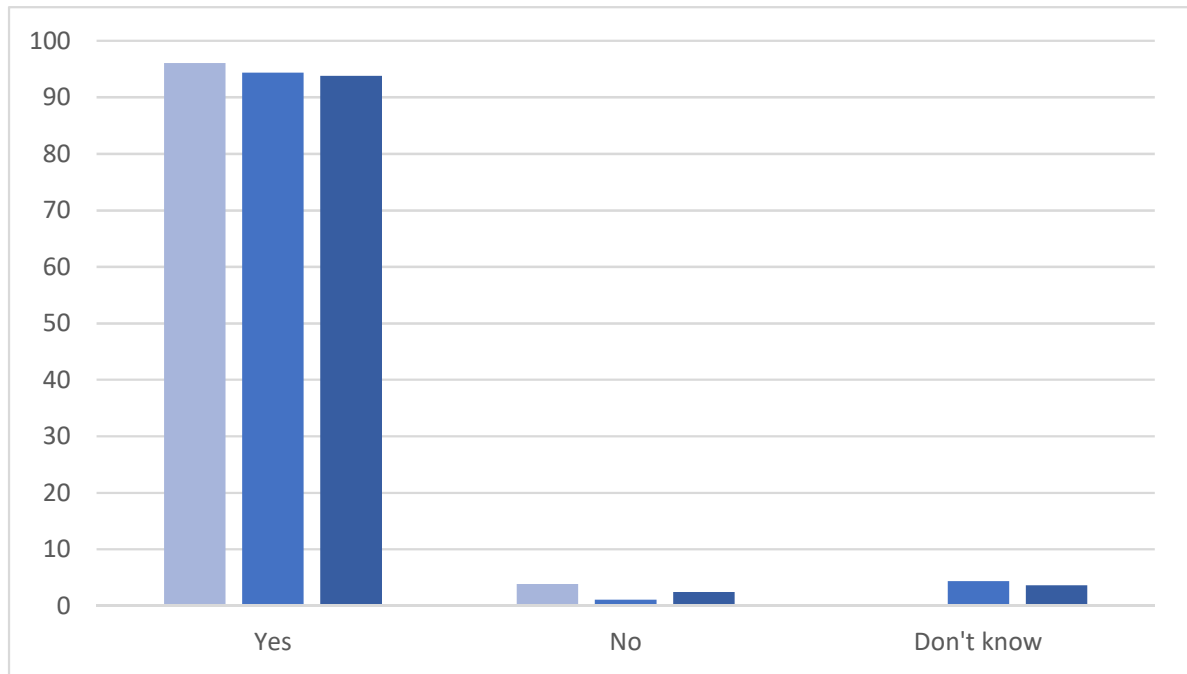
Broken Arrow Waste & Refuse Analysis

	n=76	n=90	n=81
Q23. Do you have a FAVORABLE or UNFAVORABLE opinion of the recycling cart?			
[RECYCLE CART ONLY]			Post-Project
	Weeks 3-4	Weeks 11-12	Completion
Very favorable	48.7	64.4	56.8
Somewhat favorable	30.3	17.8	19.8
Combined favorable	79.0	82.2	76.6
DK/Neutral	7.9	4.4	8.6
Somewhat unfavorable	9.2	8.9	8.6
Very unfavorable	3.9	4.4	6.2
Combined unfavorable	13.1	13.3	14.8



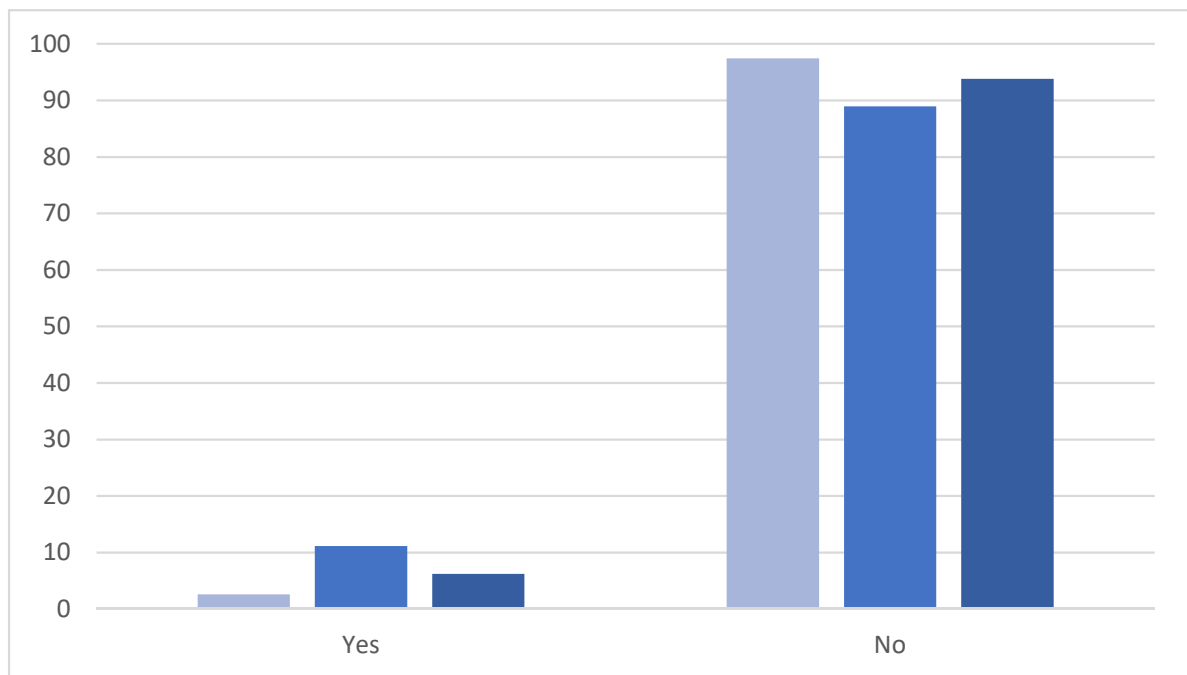
Broken Arrow Waste & Refuse Analysis

	n=76	n=90	n=81
Q24. Do you feel like one RECYCLING cart is enough to meet your trash needs for an average week? [RECYCLE CART ONLY]			
	Weeks 3-4	Weeks 11-12	Post-Project Completion
Yes	96.1	94.4	93.8
No	3.9	1.1	2.5
Don't know	0.0	4.4	3.7



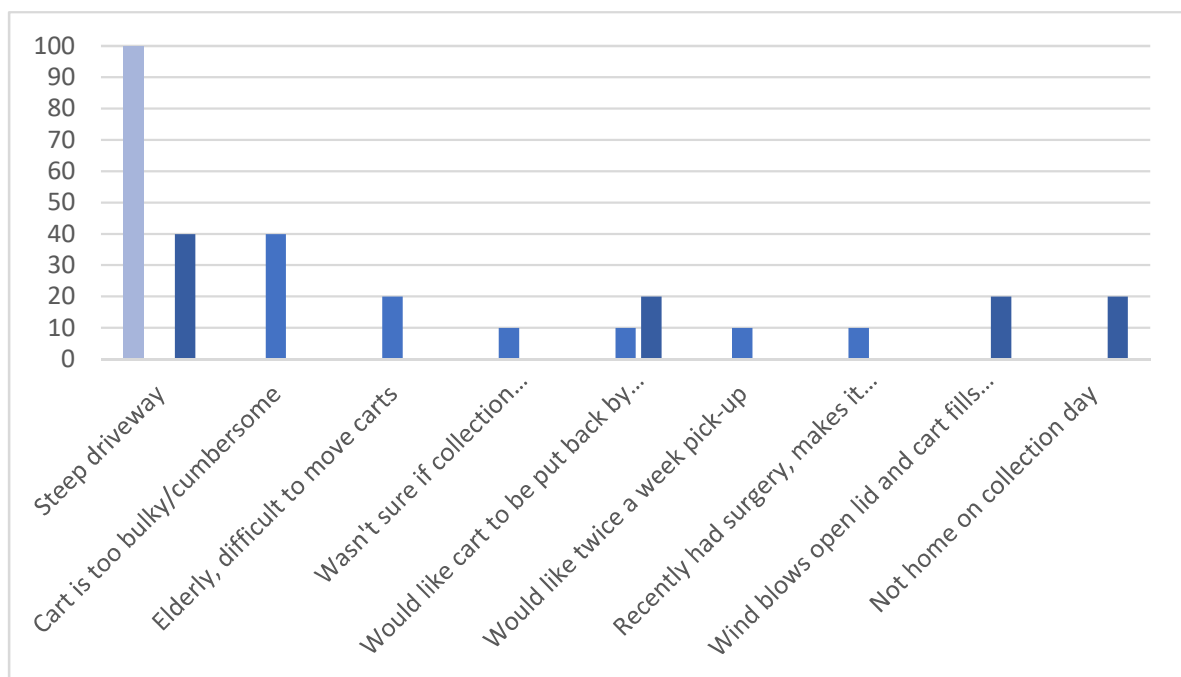
Broken Arrow Waste & Refuse Analysis

	n=76	n=90	n=81
Q25. Did you have any problems this week getting the cart to the curb on collection day and then back to the house after it had been emptied? [RECYCLE CART ONLY]			Post-Project
	Weeks 3-4	Weeks 11-12	Completion
Yes	2.6	11.1	6.2
No	97.4	88.9	93.8



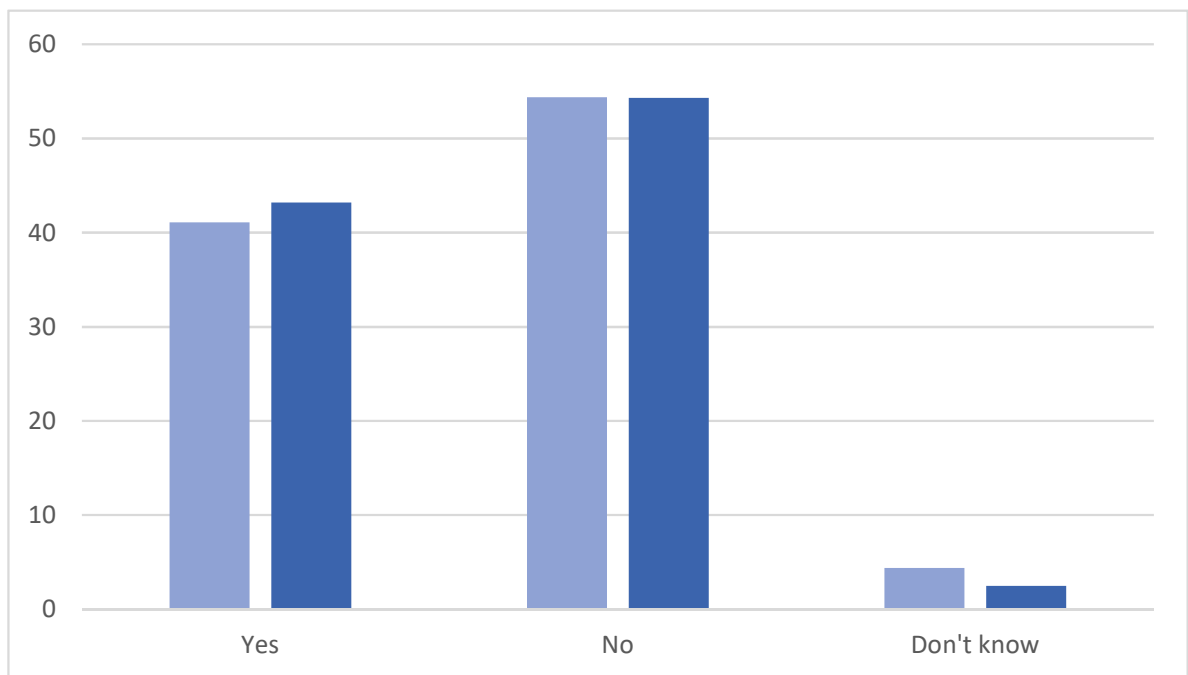
Broken Arrow Waste & Refuse Analysis

	n=2	n=10	n=5
Q26. [IF YES IN Q25] What problems did you have moving the cart? [RECORD VERBATIM]			
[RECYCLE CART ONLY]			
	Weeks 3-4	Weeks 11-12	Post-Project Completion
Steep driveway	100.0	0.0	40.0
Cart is too bulky/cumbersome	0.0	40.0	0.0
Elderly, difficult to move carts	0.0	20.0	0.0
Wasn't sure if collection available on holidays	0.0	10.0	0.0
Would like cart to be put back by house after colle	0.0	10.0	20.0
Would like twice a week pick-up	0.0	10.0	0.0
Recently had surgery, makes it difficult	0.0	10.0	0.0
Wind blows open lid and cart fills with water	0.0	0.0	20.0
Not home on collection day	0.0	0.0	20.0



Broken Arrow Waste & Refuse Analysis

	n=90	n=81
Q27. Now that you've had a recycling cart, do you think you would like to have a trash cart as well?		
	Weeks 11-12	Post-Project Completion
Yes	41.1	43.2
No	54.4	54.3
Don't know	4.4	2.5

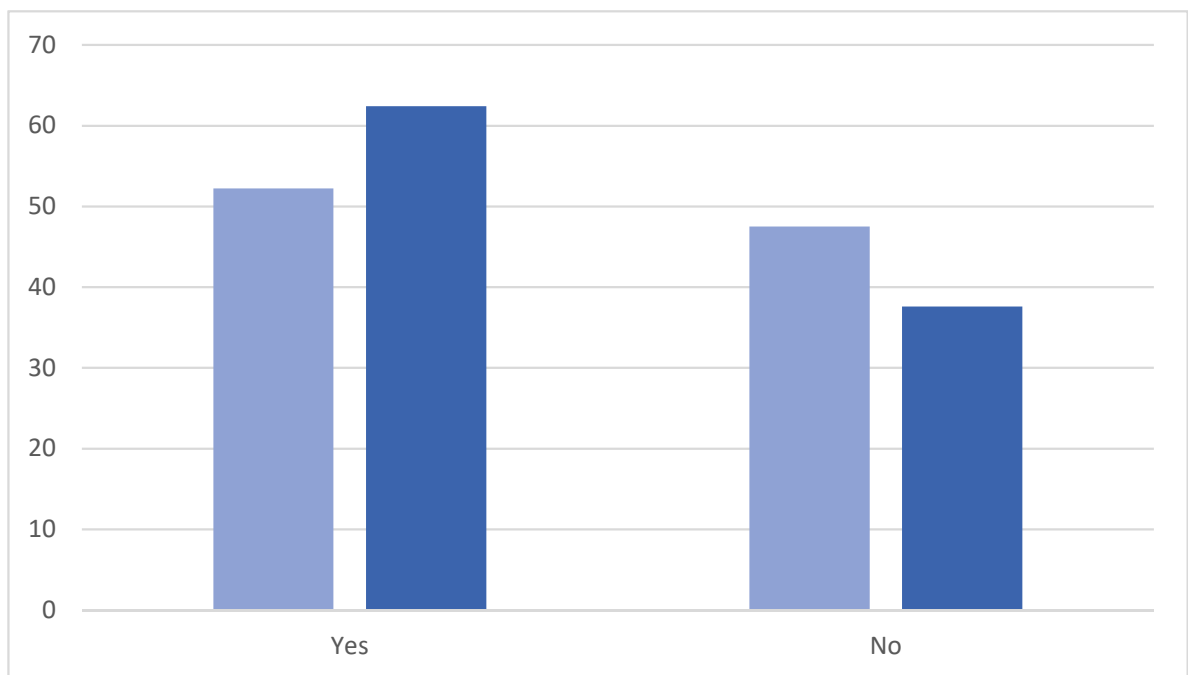


Broken Arrow Waste & Refuse Analysis

n=162

n=141

Q31. Have you used the reusable B.A. tote bag?	Post-Project	
	Weeks 11-12	Completion
Yes	52.2	62.4
No	47.5	37.6



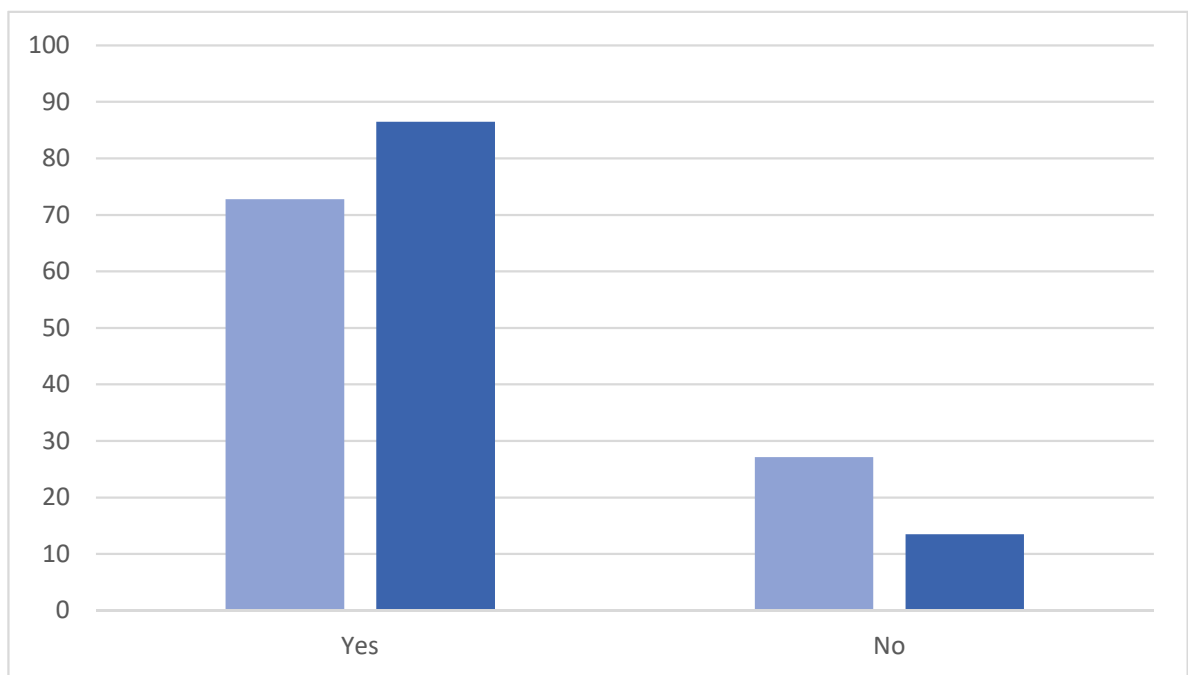
Broken Arrow Waste & Refuse Analysis

n=162

n=141

Q32. Did you know that plastic items such as re-sealable bags, and the overwrap on plastic soda and water bottles is not recyclable?

	Weeks 11-12	Post-Project Completion
Yes	72.8	86.5
No	27.2	13.5



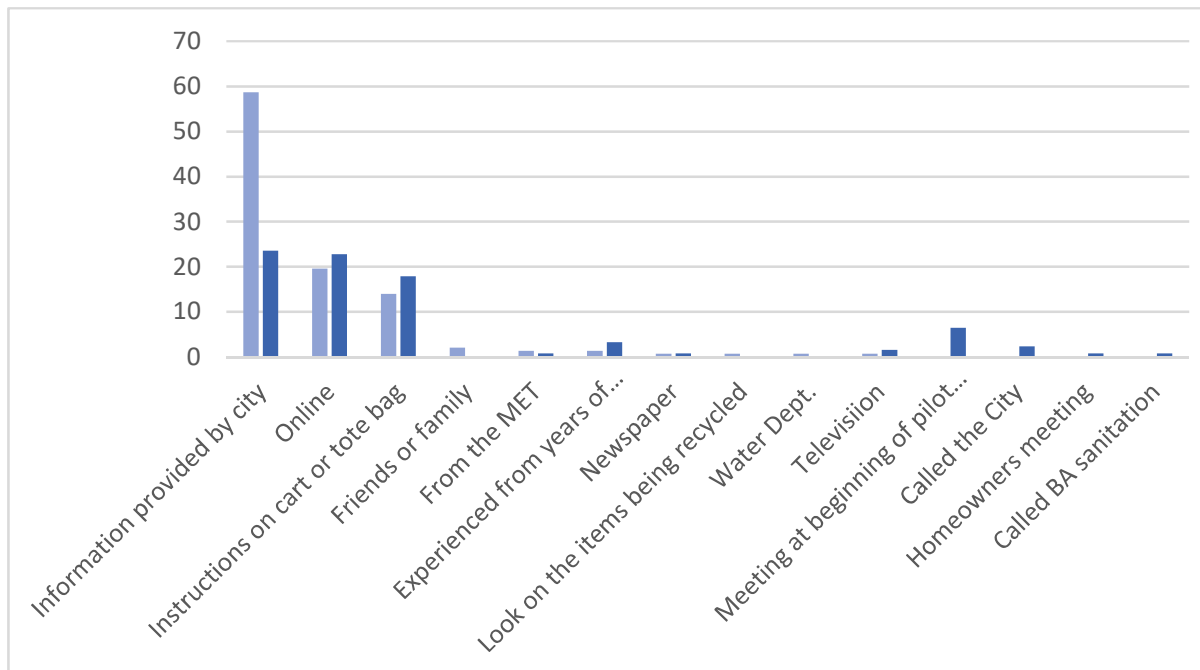
Broken Arrow Waste & Refuse Analysis

n=143

n=121

Q33. Where in your community do you get information on what items are recyclable?

	Weeks 11-12	Post-Project Completion
Information provided by city	58.7	23.6
Online	19.6	22.8
Instructions on cart or tote bag	14.0	17.9
Friends or family	2.1	0.0
From the MET	1.4	0.8
Experienced from years of recycling	1.4	3.3
Newspaper	0.7	0.8
Look on the items being recycled	0.7	0.0
Water Dept.	0.7	0.0
Television	0.7	1.6
Meeting at beginning of pilot program	0.0	6.5
Called the City	0.0	2.4
Homeowners meeting	0.0	0.8
Called BA sanitation	0.0	0.8



Broken Arrow Waste & Refuse Analysis

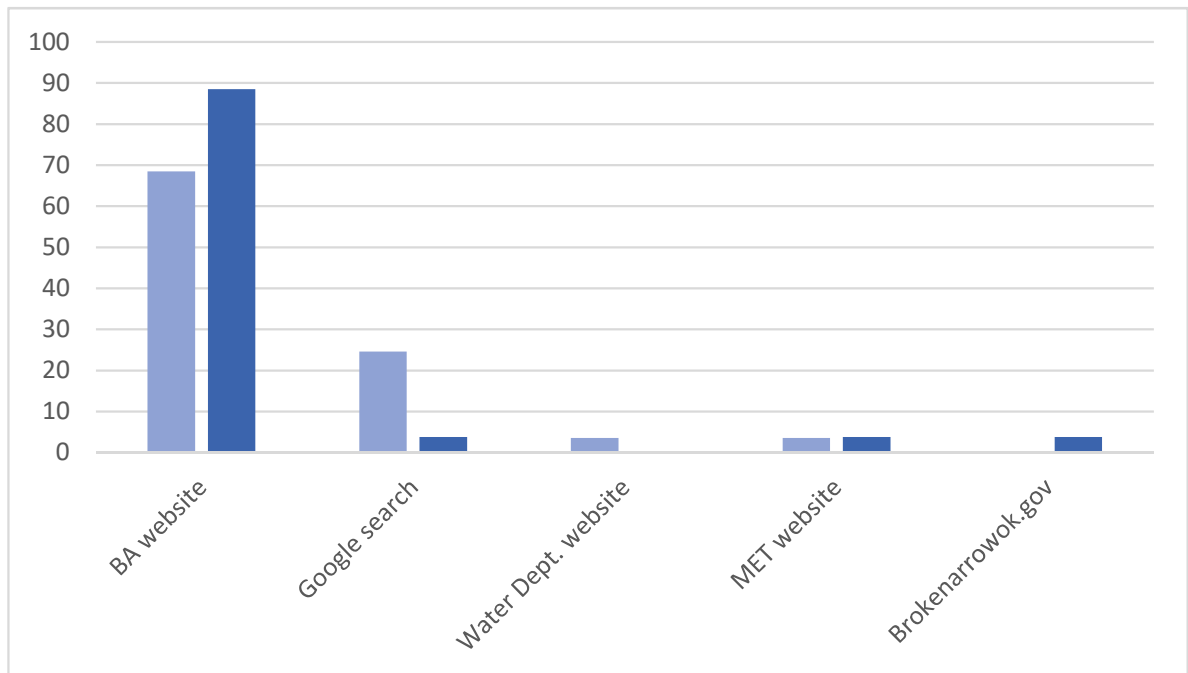
n=48

n=52

Q34. Where online would you get information on what items are recyclable?

**Weeks 11-12 Post-Project
Completion**

BA website	68.4	88.5
Google search	24.6	3.8
Water Dept. website	3.5	0.0
MET website	3.5	3.8
Brokenarrowok.gov	0.0	3.8



Broken Arrow Waste & Refuse Analysis

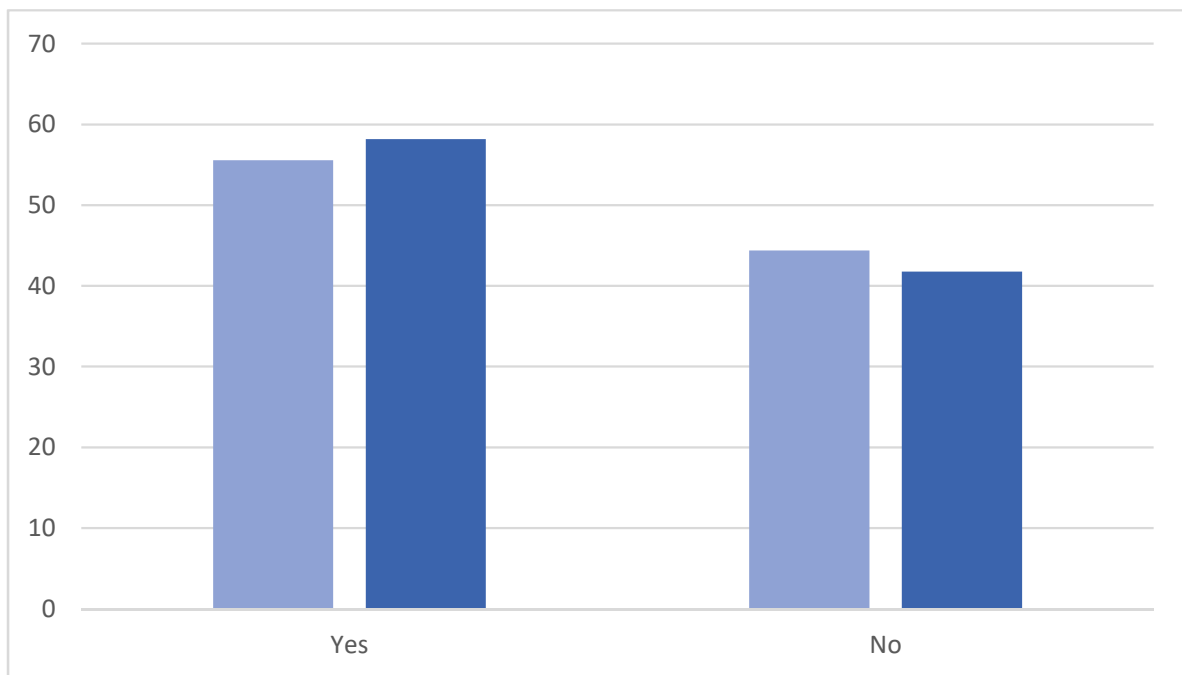
n=162

n=141

**Q35. Are you aware of the recycling website
Broken Arrow has, recycleba.com?**

**Post-Project
Weeks 11-12 Completion**

Yes	55.6	58.2
No	44.4	41.8

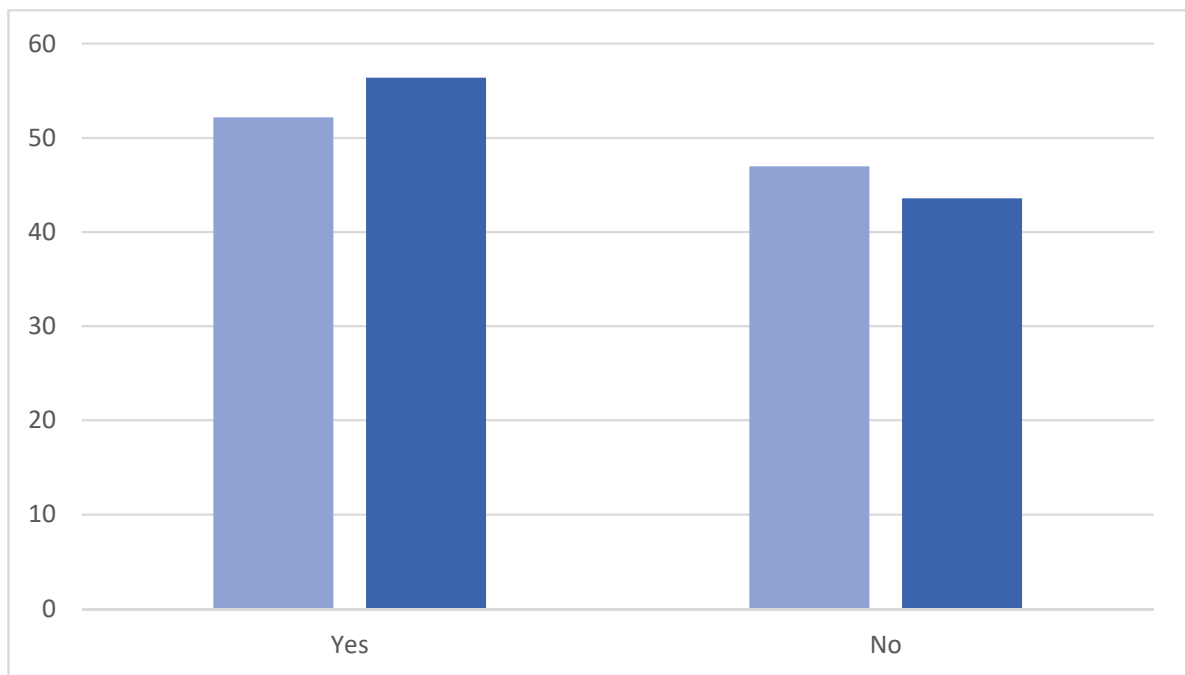


Broken Arrow Waste & Refuse Analysis

n=90

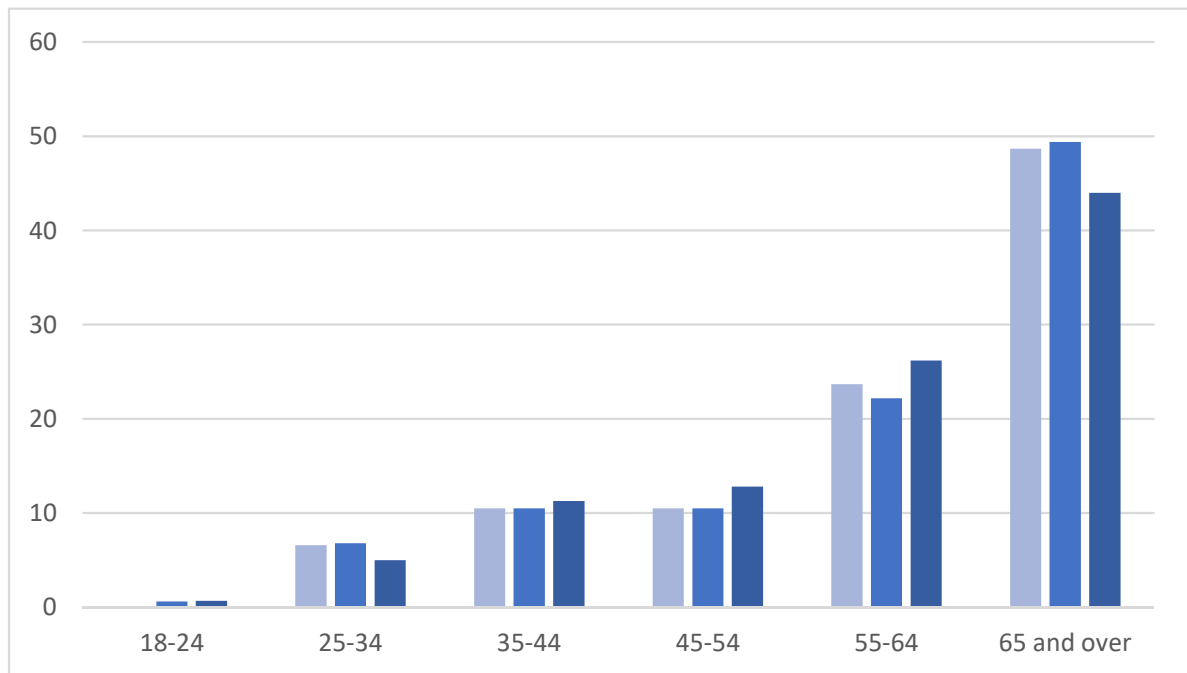
n=94

Q36. Have you ever visited recycleba.com	Post-Project	
	Weeks 11-12	Completion
Yes	52.2	56.4
No	47.0	43.6



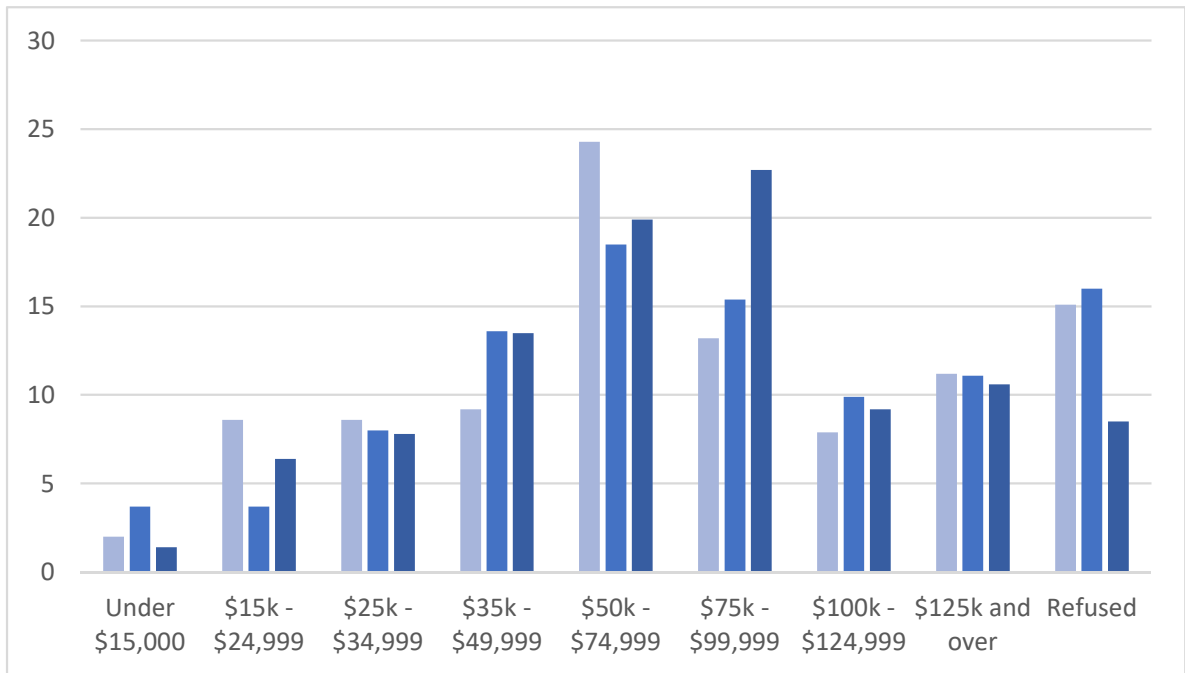
Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
D1. Into which of the following categories does your age fall?	Weeks 3-4	Weeks 11-12	Post-Project Completion
18-24	0.0	0.6	0.7
25-34	6.6	6.8	5.0
35-44	10.5	10.5	11.3
45-54	10.5	10.5	12.8
55-64	23.7	22.2	26.2
65 and over	48.7	49.4	44.0



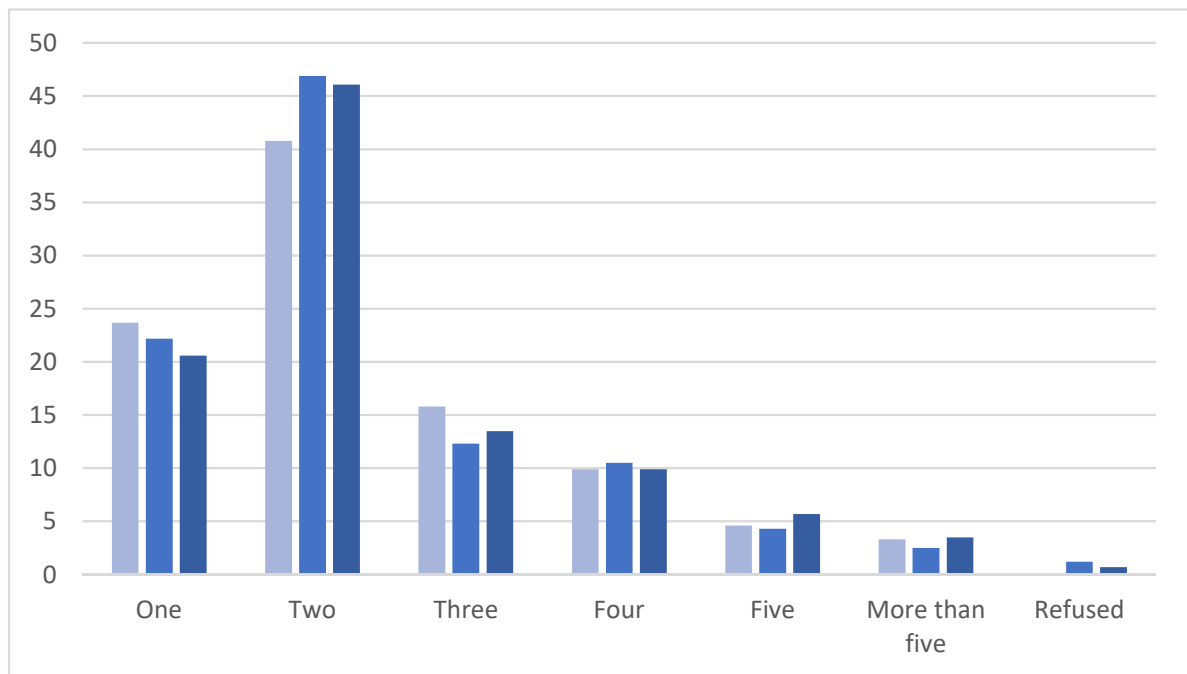
Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
D2. Which of the following broad categories best best describes your annual household	Weeks 3-4	Weeks 11-12	Post-Project Completion
Under \$15,000	2.0	3.7	1.4
\$15k - \$24,999	8.6	3.7	6.4
\$25k - \$34,999	8.6	8.0	7.8
\$35k - \$49,999	9.2	13.6	13.5
\$50k - \$74,999	24.3	18.5	19.9
\$75k - \$99,999	13.2	15.4	22.7
\$100k - \$124,999	7.9	9.9	9.2
\$125k and over	11.2	11.1	10.6
Refused	15.1	16.0	8.5



Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
D3. Including you, how many people are currently living in your household?	Weeks 3-4	Weeks 11-12	Post-Project Completion
One	23.7	22.2	20.6
Two	40.8	46.9	46.1
Three	15.8	12.3	13.5
Four	9.9	10.5	9.9
Five	4.6	4.3	5.7
More than five	3.3	2.5	3.5
Refused	0.0	1.2	0.7



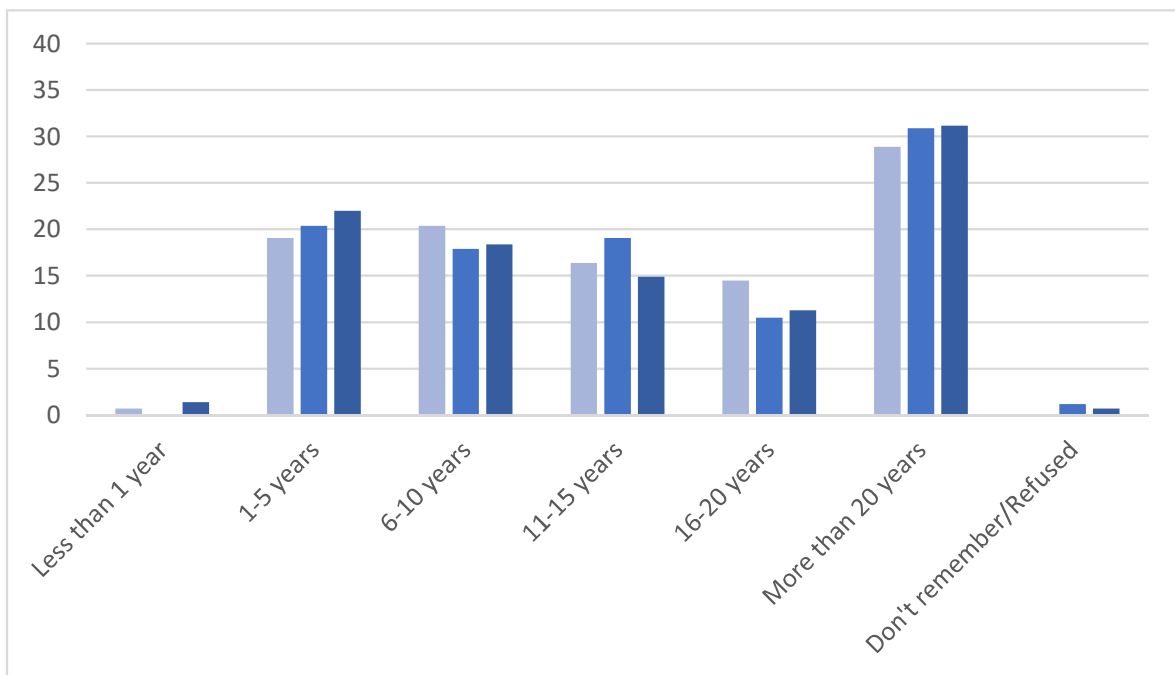
Broken Arrow Waste & Refuse Analysis

n=152

n=162

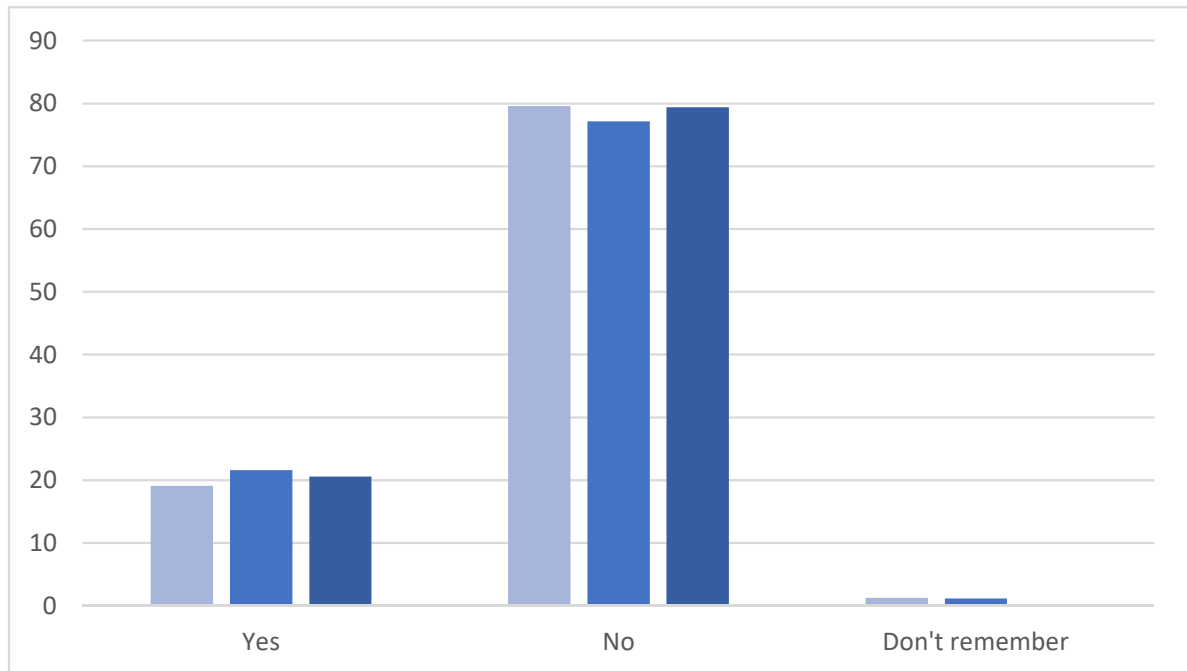
n=141

D4. How long have you lived at this address?	Post-Project		
	Weeks 3-4	Weeks 11-12	Completion
Less than 1 year	0.7	0.0	1.4
1-5 years	19.1	20.4	22.0
6-10 years	20.4	17.9	18.4
11-15 years	16.4	19.1	14.9
16-20 years	14.5	10.5	11.3
More than 20 years	28.9	30.9	31.2
Don't remember/Refused	0.0	1.2	0.7



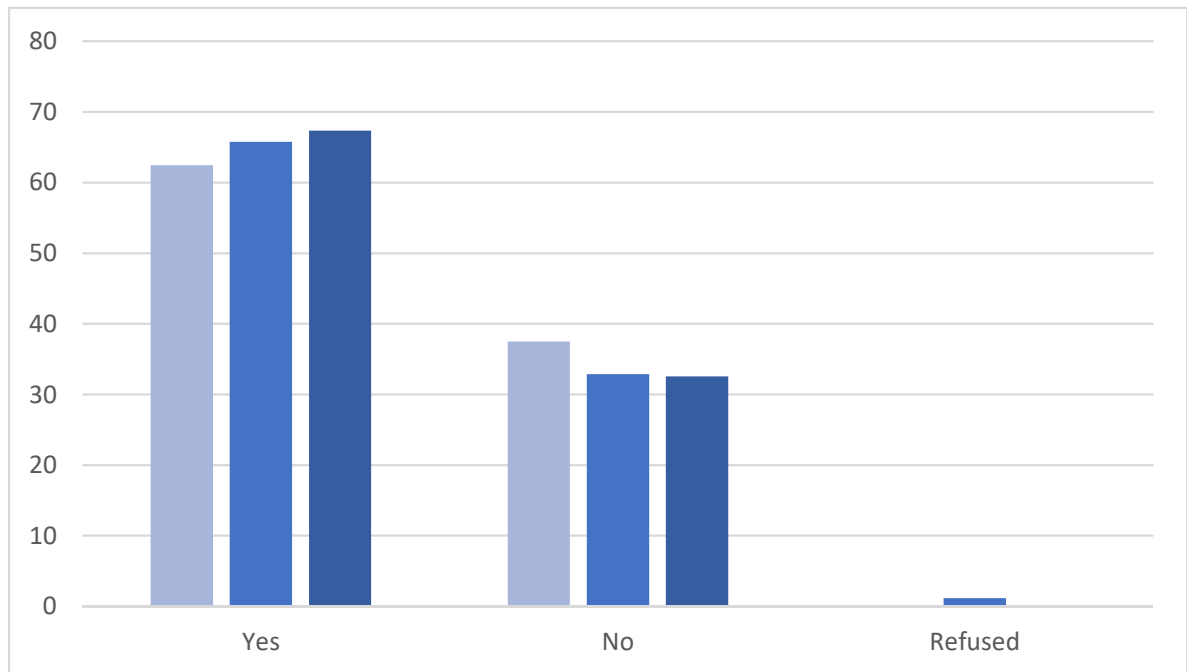
Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
D5. Have you ever previously lived in an area that offered curbside recycling?	Weeks 3-4	Weeks 11-12	Post-Project Completion
Yes	19.1	21.6	20.6
No	79.6	77.2	79.4
Don't remember	1.3	1.2	0.0



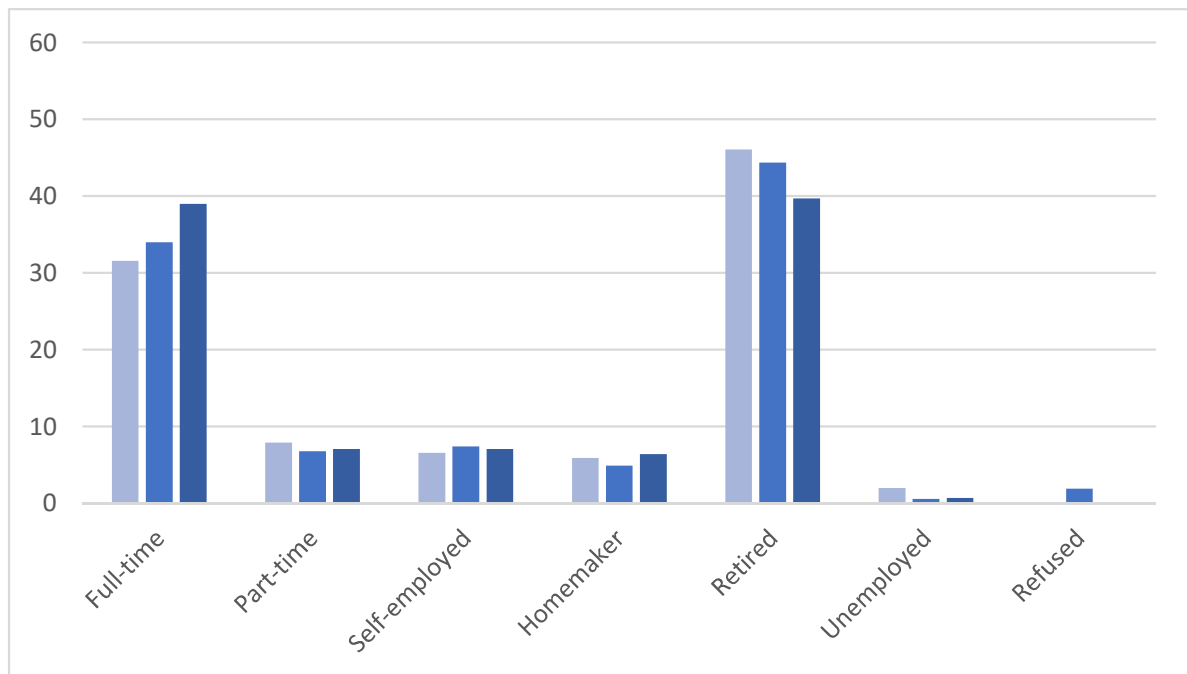
Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
			Post-Project
D6. Are you married	Weeks 3-4	Weeks 11-12	Completion
Yes	62.5	65.8	67.4
No	37.5	32.9	32.6
Refused	0.0	1.2	0.0



Broken Arrow Waste & Refuse Analysis

	n=152	n=162	n=141
D7. Which of the following categories best describes your work status?			Post-Project
	Weeks 3-4	Weeks 11-12	Completion
Full-time	31.6	34.0	39.0
Part-time	7.9	6.8	7.1
Self-employed	6.6	7.4	7.1
Homemaker	5.9	4.9	6.4
Retired	46.1	44.4	39.7
Unemployed	2.0	0.6	0.7
Refused	0.0	1.9	0.0



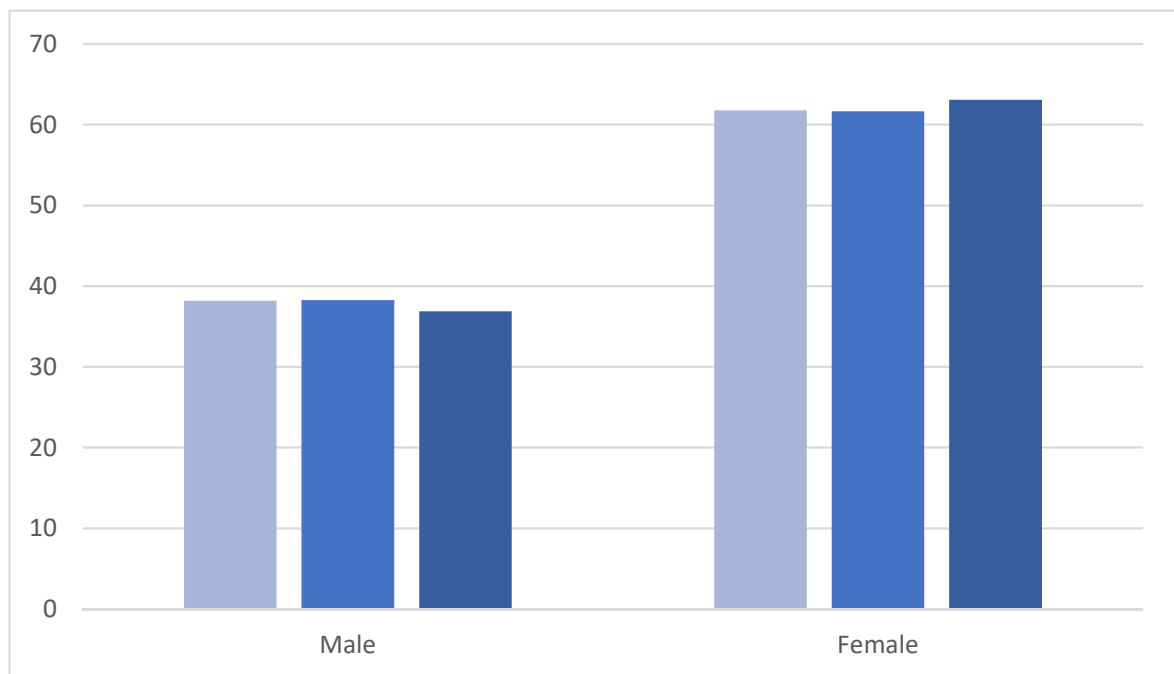
Broken Arrow Waste & Refuse Analysis

n=152

n=162

n=141

D8. Are you:	Post-Project		
	Weeks 3-4	Weeks 11-12	Completion
Male	38.2	38.3	36.9
Female	61.8	61.7	63.1



Q37. One more question before we get some quick demographics information. Now that the evaluation period has concluded, the City will be preparing a report on the pilot project. Is there anything else you would like to add about your experience using the recycling system, changing your set-outs, having the carts etc.? [RECORD VERBATIM]

I much prefer this pilot system than just having plastic bags at our curb twice a week.

I love it. Please don't take it away!

It's great

Recycling program is great and much welcomed. Seems to have been embraced by entire neighborhood. May be beneficial to outline more items that are commonly but incorrectly put into recycling.

HATE the carts. Bring back bags and 2x trash pick up. Take away these awful carts. We were promised they would be picked up after pilot program. Come get them!!

There is not enough information on what can be recycled. There is a number on most plastics but the number system is not used on the Cities website. It should be used uniformly for information on recycling. I know not every article can be listed but I'm even unsure what paper products can be used.

Only problem i have seen is where the collectors leave carts sometimes too far out in the street. Otherwise i love recycling.

I am recycling more items because I have a recycle trash can in kitchen so it is easy to recycle.

Just give us the trash carts.

I think it was awesome and it would be very popular throughout the city

I absolutely love, love, love this program!!!! The cart is awesome, the tote bag is awesome, the trash cart is soooooo much better than having bags on the curb

I love the program.

WE LOVE IT!!!!

The current system works well for us. I doubt we would do it without this service

I think it's a good thing.

I would like to know just how the recyclables are handled, where they go. I have read that plastic is not being recycled in may cities now in that China will no long import. Some cities are now incinerating which can be much worse for the environment. Also, if the city is using this program to go to a once at week collection of trash why not be truthful and just state the fact.

Today the recycle is much later (if it has even come yet) than the trash pick up. I like it better when they are close to the same time. I can adjust where I set them if this is going to now be the norm though. Thank you.

I live alone and smaller carts would be easier for me to handle; also, I keep my recycling cart in my garage, so a smaller one would be more convenient.

Q37. One more question before we get some quick demographics information. Now that the evaluation period has concluded, the City will be preparing a report on the pilot project. Is there anything else you would like to add about your experience using the recycling system, changing your set-outs, having the carts etc.? [RECORD VERBATIM]

The carts are awkward and unwieldy, and more so as they get heavier. I really dislike the bright blue on the recycling cart. It takes away from the looks of the property. The trash cart can get really foul-smelling after four or five days.

Think In summer and warm weather months should have 2 trash pick up days

smaller carts

I love the bins. Without them we didn't recycle. We have the tote next to the trash can in the kitchen, it's really convenient.

Leave it at bags. We like our city looking good.

I think the program is very beneficial for those not recycling. The only issue I have is that the current cart is too big. One about half their size would probably be better for me.

We greatly appreciate the recycling program. We want to keep it. This has reduced the volume and frequency of trips to MET for the items BA does not accept.

Really need a smaller cart as well as a full size trash cart

I love the carts instead of hauling bags to the curb. A little smaller containers would work. Once a week pickup is great. I now recycle since the program started.

I'm sure it's already decided, but I would rather NOT have a trash cart, and keep using the heavy duty black trash bags with the recycling cart. ðŸ˜Š

Need 2 times a week pickup for trash

I love everything about the program! The only thing I've wondered with the change to once a week trash pickup is if our neighborhoods will get smelly with the trash sitting in 110 degree heat for a week. But that might not be a reason to change anything--we might just have to freeze raw chicken parts instead of trash them right away! :-)

I don't care for the carts. Too clumsy to move and streets too narrow to leave in streets.

Like the pilot project as is, no changes needed.

Love the recycling, hate that you tell people to throw away items that you don't recycle but other places do.

Don't want two carts. Everything else is good.

PLEASE KEEP THE PROGRAM

1. Do not like once a week trash pickup. 2. Totally unfair having to pay full price and getting only once a week trash pickup vs those not in the pilot program. 3. Since two trucks come by one day per week how is that saving City money vs 1 truck twice a week?

Q37. One more question before we get some quick demographics information. Now that the evaluation period has concluded, the City will be preparing a report on the pilot project. Is there anything else you would like to add about your experience using the recycling system, changing your set-outs, having the carts etc.? [RECORD VERBATIM]

A few points of clarification first. Question 4, I wanted to mark 0 weeks, but that was not given as an option. Question 12, when I say we set out 9 bags of trash, I mean 9 13-gallon kitchen-sized bags. Questions 15, 16, 17 make assumptions about us that are not true, mostly that we like and participate in and wish to continue recycling. We do not. On to our experience: Though our family never requested a recycling program and we were put off by the city's ill-informed and condescending moralizing over the benefits of recycling, we gave it our best for several weeks. We posted the info on our fridge, mulled over every act of disposal, and cleaned out our cans and glass bottles. Then one day upon retrieving our recycling cart from the curb, we found a note communicating to us, "Oops!" we had put improper items in the recycling cart. No indication of what the offending items were, just a general, "You're terrible at recycling. Do better." That is the moment we decided no longer to participate in the program. It had been a burden to participate in the first place, and the notice made it clear to us it was not worth it to expend the effort since it wouldn't be accepted. We have five children, two of which still wear diapers, and although we've adopted a minimalist lifestyle, our trash piles up all week, stinking up our garage. But at least we no longer expend our time and mental resources pondering each disposal decision and cleaning our trash in preparation to recycle. Let me be absolutely clear, WE WANT BROKEN ARROW TO DISCONTINUE THE RECYCLING PROGRAM. The bad communication is one thing, but we have since found information that city recycling is a waste of taxpayer money. It may even be more wasteful for the environment to recycle than to simply throw out all trash and create new items entirely from raw materials. Other cities have found their recycling programs so financially unsustainable, they have had to eliminate them. Unless subsidized it is cheaper and more efficient for those cities to throw all disposed items in the landfill or burn them. Recycling is not cost-neutral for our family or anyone since it requires we give our time and mental energy to deciding what should be recycled and prepping items to go in the bin. We pay more of our money for the hot water we use to clean recyclable items, and we expect to spend more in the form of taxes since similar programs have proven financially inefficient. Furthermore, once-a-week pick-up is a hardship for our family since it requires us to devote more space on our property to accumulating trash, and the smell grows worse over the longer waiting period.

Carts need better lids. They do not shut tightly

I love the program

Want twice a week pickup for garbage back.

Miss twice a week trash pickup

Cart for trash would b awesome!!

I had to get a physician report, as I am handicapped and cannot haul the carts to the curb. I have been pleased with the workers being able to come up my driveway to get and return my carts to the front of my garage door. However, last week, they happened to return the carts to the opposite side than I keep them, thus blocking my path when trying to drive my car out of the garage. It presented quite a problem, but I finally got them moved to the proper spot. It will always help if they return the carts to exactly from where they retrieved them! This was a one-time incident, so perhaps they were just in a hurry, etc. I do appreciate the handicap permit, as I would not be able to participate in the cart program without it!

Pick up trash twice a week and recyclables every other week.

Would prefer smaller carts, though love the program!

Q37. One more question before we get some quick demographics information. Now that the evaluation period has concluded, the City will be preparing a report on the pilot project. Is there anything else you would like to add about your experience using the recycling system, changing your set-outs, having the carts etc.? [RECORD VERBATIM]

I think it was good. We recycled before so this saves us time. Once a week is OK too. The cart works for about 2 weeks of recyclables for our household.

I do not like the once a week pickup. Thus far the pilot program was in cold or cool weather. When the weather gets really hot the odor from the trash bin sitting in the garage will be very disagreeable.

I love that the Broken Arrow community sees a need to recycle and is using the curbside system!!! It is so much more convenient and I find my entire family recycles more as a result!!! The reusable tote has been a huge help! We are able to place it near our trash can and take it out to dump when we take out the trash! Super convenient and helpful!!! I am proud to be apart of a community that cares about our environment!!! ðŸ˜ŠðŸ˜ŠðŸ˜Š

No changes. PLEASE CONTINUE THE PROGRAM.

Like it, but occasionally. Too much trash accumulates by Thursfay trash day, especially over holiday weekends, etc

I do not like the trash pickup. It needs to be picked up more than once a week

I miss twice a week trash pickup, especially in hot weather. I'm in poor health & unable to pull the cart down my very long driveway, so I'm not participating in the recycling pilot program at all.

My only complaint is where the workers put the carts when they are done. The rules are very specific about where we put cart (on the curb) but the workers are not careful to put them back on the curb which causes problems.

I did have a scare as bins were missing.

plz plz plz keep it!!!

		Age											
		18 - 24		25 - 34		35 - 44		45 - 54		55 - 64		65 and over	
Put recyclables out this week	Yes	0	0.0%	6	85.7%	15	93.8%	17	94.4%	33	89.2%	51	82.3%
	No	1	100.0%	1	14.3%	1	6.3%	1	5.6%	4	10.8%	11	17.7%
Set out recycling cart this week	Yes	0	0.0%	6	85.7%	14	87.5%	14	77.8%	26	70.3%	45	72.6%
	No	1	100.0%	1	14.3%	2	12.5%	4	22.2%	11	29.7%	17	27.4%
Times per week set out recycling	1 week out of month	1	100.0%	1	14.3%	1	6.3%	0	0.0%	5	13.5%	15	24.2%
	2 weeks out of month	0	0.0%	2	28.6%	1	6.3%	5	27.8%	10	27.0%	18	29.0%
	3 weeks out of month	0	0.0%	0	0.0%	3	18.8%	5	27.8%	9	24.3%	7	11.3%
	4 months out of month	0	0.0%	4	57.1%	11	68.8%	8	44.4%	13	35.1%	20	32.3%
	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.2%
Smaller recycling cart preferable	Yes	1	100.0%	3	42.9%	1	6.3%	2	11.1%	15	40.5%	32	51.6%
	No	0	0.0%	4	57.1%	11	68.8%	14	77.8%	20	54.1%	24	38.7%
	Don't know	0	0.0%	0	0.0%	4	25.0%	2	11.1%	2	5.4%	6	9.7%
Household has less trash now	Yes	0	0.0%	5	71.4%	13	81.3%	16	88.9%	26	70.3%	36	58.1%
	No	1	100.0%	1	14.3%	2	12.5%	2	11.1%	8	21.6%	23	37.1%
	Don't know	0	0.0%	1	14.3%	1	6.3%	0	0.0%	3	8.1%	3	4.8%
Recycling importance	Very important	1	100.0%	4	57.1%	12	75.0%	18	100.0%	28	75.7%	44	71.0%
	Somewhat important	0	0.0%	3	42.9%	2	12.5%	0	0.0%	5	13.5%	8	12.9%
	DK/Neutral	0	0.0%	0	0.0%	1	6.3%	0	0.0%	0	0.0%	6	9.7%
	Somewhat unimportant	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	2.7%	2	3.2%
	Very unimportant	0	0.0%	0	0.0%	1	6.3%	0	0.0%	3	8.1%	2	3.2%
Recycling service satisfaction	Very satisfied	1	100.0%	6	85.7%	14	87.5%	17	94.4%	26	70.3%	42	67.7%
	Somewhat satisfied	0	0.0%	1	14.3%	0	0.0%	1	5.6%	6	16.2%	8	12.9%

		Age											
		18 - 24		25 - 34		35 - 44		45 - 54		55 - 64		65 and over	
Time per week spend on recycling	DK/Neutral	0	0.0%	0	0.0%	1	6.3%	0	0.0%	2	5.4%	7	11.3%
	Somewhat unsatisfied	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.2%
	Very unsatisfied	0	0.0%	0	0.0%	1	6.3%	0	0.0%	3	8.1%	3	4.8%
	Less than 30 minutes	1	100.0%	6	85.7%	12	75.0%	15	83.3%	26	70.3%	48	77.4%
	30 - 60 minutes	0	0.0%	1	14.3%	4	25.0%	3	16.7%	9	24.3%	12	19.4%
	60 - 90 minutes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	2.7%	0	0.0%
	90 - 120 minutes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	More than 120 minutes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	2.7%	0	0.0%
Questions about recycling cart	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.2%
	Yes	0	0.0%	0	0.0%	2	12.5%	0	0.0%	4	10.8%	6	9.7%
Recyclables to MET before curbside	No	1	100.0%	7	100.0%	14	87.5%	18	100.0%	33	89.2%	56	90.3%
	0	0	0.0%	7	100.0%	13	81.3%	10	55.6%	29	78.4%	40	64.5%
	1 - 2	1	100.0%	0	0.0%	3	18.8%	8	44.4%	7	18.9%	22	35.5%
	3 - 4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	2.7%	0	0.0%
Recycle more now	5 or more	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Yes	0	0.0%	0	0.0%	1	33.3%	7	87.5%	7	87.5%	11	50.0%
	No	1	100.0%	0	0.0%	2	66.7%	1	12.5%	1	12.5%	11	50.0%
	About 10 additional items a week	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	14.3%	3	27.3%
How much more recycling	About 20 additional items a week	0	0.0%	0	0.0%	1	100.0%	3	42.9%	3	42.9%	3	27.3%

		Age											
		18 - 24		25 - 34		35 - 44		45 - 54		55 - 64		65 and over	
Average number of bags set out (RO)	About 30 additional items a week	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	14.3%	1	9.1%
	About 40 additional items a week	0	0.0%	0	0.0%	0	0.0%	2	28.6%	0	0.0%	2	18.2%
	About 50 additional items a week	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	14.3%	0	0.0%
	More than 50 additional items a week	0	0.0%	0	0.0%	0	0.0%	2	28.6%	1	14.3%	2	18.2%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	1	0	0.0%	2	40.0%	0	0.0%	2	25.0%	7	30.4%	13	34.2%
	2	0	0.0%	1	20.0%	3	50.0%	2	25.0%	9	39.1%	17	44.7%
	3	0	0.0%	2	40.0%	0	0.0%	2	25.0%	3	13.0%	3	7.9%
	4	1	100.0%	0	0.0%	0	0.0%	0	0.0%	2	8.7%	2	5.3%
	5	0	0.0%	0	0.0%	0	0.0%	2	25.0%	1	4.3%	2	5.3%
	6	0	0.0%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	1	2.6%
	7	0	0.0%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%
	9	0	0.0%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%
	10	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	4.3%	0	0.0%
More or less than before (RO)	More	0	0.0%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	1	2.6%
	Less	0	0.0%	5	100.0%	2	33.3%	5	62.5%	17	73.9%	20	52.6%
	About the same amount	1	100.0%	0	0.0%	3	50.0%	3	37.5%	6	26.1%	17	44.7%
How full is cart upon setout (TAR)	Quarter full	0	0.0%	0	0.0%	2	20.0%	0	0.0%	2	14.3%	4	16.7%
	Half full	0	0.0%	2	100.0%	2	20.0%	5	50.0%	2	14.3%	7	29.2%
	Three quarters full	0	0.0%	0	0.0%	5	50.0%	3	30.0%	4	28.6%	8	33.3%

		Age											
		18 - 24		25 - 34		35 - 44		45 - 54		55 - 64		65 and over	
More or less than before (TAR)	Full	0	0.0%	0	0.0%	0	0.0%	1	10.0%	6	42.9%	4	16.7%
	Full cart and then some more bags of trash	0	0.0%	0	0.0%	1	10.0%	1	10.0%	0	0.0%	1	4.2%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	More	0	0.0%	0	0.0%	0	0.0%	1	10.0%	1	7.1%	3	12.5%
	Less	0	0.0%	1	50.0%	6	60.0%	8	80.0%	8	57.1%	10	41.7%
Bags or cart preference (TAR)	About the same	0	0.0%	1	50.0%	4	40.0%	1	10.0%	5	35.7%	11	45.8%
	Greatly prefer carts	0	0.0%	1	50.0%	9	90.0%	7	70.0%	7	50.0%	7	29.2%
	Somewhat prefer carts	0	0.0%	0	0.0%	0	0.0%	1	10.0%	3	21.4%	3	12.5%
	DK/Neutral	0	0.0%	0	0.0%	0	0.0%	2	20.0%	0	0.0%	0	0.0%
	Somewhat prefer bags	0	0.0%	1	50.0%	1	10.0%	0	0.0%	2	14.3%	6	25.0%
One recycle cart enough (TAR)	Greatly prefer bags	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	14.3%	8	33.3%
	Yes	0	0.0%	2	100.0%	9	90.0%	10	100.0%	14	100.0%	24	100.0%
	No	0	0.0%	0	0.0%	1	10.0%	0	0.0%	0	0.0%	0	0.0%
One trash cart enough (TAR)	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Yes	0	0.0%	2	100.0%	10	100.0%	10	100.0%	14	100.0%	22	91.7%
	No	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	8.3%
Smaller trash cart preferable (TAR)	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Yes	0	0.0%	1	50.0%	0	0.0%	1	10.0%	3	21.4%	11	45.8%
	No	0	0.0%	1	50.0%	10	100.0%	9	90.0%	10	71.4%	11	45.8%
Problmes this week (TAR)	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	7.1%	2	8.3%
	Yes	0	0.0%	0	0.0%	1	10.0%	0	0.0%	1	7.1%	3	12.5%
	No	0	0.0%	2	100.0%	9	90.0%	10	100.0%	13	92.9%	21	87.5%

		Age											
		18 - 24		25 - 34		35 - 44		45 - 54		55 - 64		65 and over	
What problems	Carts too big/Cumbersome	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	3	100.0%
	Workers leave carts in the street	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Recycling cart favorability (RO)	Very favorable	0	0.0%	3	60.0%	4	66.7%	8	100.0%	13	56.5%	18	47.4%
	Somewhat favorable	0	0.0%	2	40.0%	1	16.7%	0	0.0%	3	13.0%	10	26.3%
	DK/Neutral	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	13.0%	4	10.5%
	Somewhat unfavorable	1	100.0%	0	0.0%	0	0.0%	0	0.0%	3	13.0%	3	7.9%
	Very unfavorable	0	0.0%	0	0.0%	1	16.7%	0	0.0%	1	4.3%	3	7.9%
One recycling cart enough (RO)	Yes	1	100.0%	5	100.0%	5	83.3%	8	100.0%	22	95.7%	35	92.1%
	No	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	4.3%	1	2.6%
	Don't know	0	0.0%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	2	5.3%
Problems this week (RO)	Yes	1	100.0%	0	0.0%	0	0.0%	0	0.0%	2	8.7%	2	5.3%
	No	0	0.0%	5	100.0%	6	100.0%	8	100.0%	21	91.3%	36	94.7%
What problems	Steep driveway makes it difficult	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	100.0%
	Workers leave cart in street	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%
	Storm blew open lid and cart filled with water	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Not home on collection day	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%

		Age											
		18 - 24		25 - 34		35 - 44		45 - 54		55 - 64		65 and over	
Like a trash cart as well (RO)	Yes	0	0.0%	3	60.0%	4	66.7%	7	87.5%	9	39.1%	12	31.6%
	No	1	100.0%	1	20.0%	2	33.3%	1	12.5%	14	60.9%	25	65.8%
	Don't know	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	1	2.6%
Why do you want a trash cart (RO)	Only have to make 1 trip to the curb	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	10.0%
	Helps keep trash contained/Cleaner/Away from animals	0	0.0%	2	66.7%	2	50.0%	4	57.1%	3	33.3%	6	60.0%
	Wheels make it easier to haul trash to curb	0	0.0%	1	33.3%	0	0.0%	2	28.6%	3	33.3%	2	20.0%
	Gives somewhere to store trash until collection	0	0.0%	0	0.0%	2	50.0%	1	14.3%	3	33.3%	0	0.0%
	Would save on plastic bags	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	10.0%
Why do you not want a trash cart (RO)	No room to store it	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	8	32.0%
	Carts are difficult to move	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	23.1%	5	20.0%
	Residents leave on curb for extended periods of time	1	100.0%	0	0.0%	0	0.0%	0	0.0%	2	15.4%	0	0.0%
	Already purchased a trash cart	0	0.0%	1	100.0%	1	50.0%	0	0.0%	1	7.7%	3	12.0%
	Don't produce enough trash to need a cart	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	15.4%	2	8.0%
	Like the bags	0	0.0%	0	0.0%	1	50.0%	0	0.0%	5	38.5%	5	20.0%
	Produce too much yard waste to fit in a cart	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	8.0%

		Age											
		18 - 24		25 - 34		35 - 44		45 - 54		55 - 64		65 and over	
Discontinue distribution of bags	Yes	0	0.0%	1	100.0%	0	0.0%	0	0.0%	2	14.3%	8	32.0%
	No	0	0.0%	0	0.0%	2	100.0%	1	100.0%	12	85.7%	14	56.0%
	Don't know	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	12.0%
Used reusable BA tote bag	Yes	0	0.0%	5	71.4%	10	62.5%	15	83.3%	22	59.5%	36	58.1%
	No	1	100.0%	2	28.6%	6	37.5%	3	16.7%	15	40.5%	26	41.9%
Know that some plastics not recyclable	Yes	1	100.0%	6	85.7%	13	81.3%	15	83.3%	33	89.2%	54	87.1%
	No	0	0.0%	1	14.3%	3	18.8%	3	16.7%	4	10.8%	8	12.9%
Where in community do you get your info	Info provided by the city	0	0.0%	0	0.0%	4	26.7%	2	14.3%	6	17.6%	17	31.5%
	Homeowners meeting	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.9%
	Online	0	0.0%	1	20.0%	6	40.0%	3	21.4%	12	35.3%	6	11.1%
	Flyers/Mailers	0	0.0%	3	60.0%	2	13.3%	4	28.6%	4	11.8%	8	14.8%
	From past recycling experience	0	0.0%	0	0.0%	0	0.0%	1	7.1%	1	2.9%	2	3.7%
	On TV	0	0.0%	0	0.0%	1	6.7%	0	0.0%	0	0.0%	1	1.9%
	On the cart on tote bag	1	100.0%	1	20.0%	0	0.0%	3	21.4%	8	23.5%	9	16.7%
	Meeting at beginning of pilot program	0	0.0%	0	0.0%	1	6.7%	0	0.0%	1	2.9%	6	11.1%
	Call BA sanitation	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	2.9%	0	0.0%
	Newspaper	0	0.0%	0	0.0%	1	6.7%	0	0.0%	0	0.0%	0	0.0%
	From the MET	0	0.0%	0	0.0%	0	0.0%	1	7.1%	1	2.9%	0	0.0%
	Word of mouth	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.9%
	Called the city	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	5.6%

		Age											
		18 - 24		25 - 34		35 - 44		45 - 54		55 - 64		65 and over	
Where online do you get your info	recycleba.org	0	0.0%	2	100.0%	4	57.1%	6	75.0%	16	94.1%	18	100.0%
	MET website	0	0.0%	0	0.0%	2	28.6%	0	0.0%	0	0.0%	0	0.0%
	brokenarrowok.gov	0	0.0%	0	0.0%	1	14.3%	1	12.5%	0	0.0%	0	0.0%
	Google	0	0.0%	0	0.0%	0	0.0%	1	12.5%	1	5.9%	0	0.0%
Aware of recycleba.com	Yes	0	0.0%	3	42.9%	11	68.8%	9	50.0%	23	62.2%	36	58.1%
	No	1	100.0%	4	57.1%	5	31.3%	9	50.0%	14	37.8%	26	41.9%
Used recycleba.com	Yes	0	0.0%	2	66.7%	10	90.9%	6	60.0%	18	72.0%	17	37.8%
	No	0	0.0%	1	33.3%	1	9.1%	4	40.0%	7	28.0%	28	62.2%

		Income													
		Under \$25k		\$25k - \$34,999		\$35k - \$49,999		\$50k - \$74,999		\$75k - \$99,999		\$100k - \$124,999		\$125k and over	
Put recyclables out this week	Yes	8	72.7%	9	81.8%	19	100.0%	26	92.9%	28	87.5%	11	84.6%	14	93.3%
	No	3	27.3%	2	18.2%	0	0.0%	2	7.1%	4	12.5%	2	15.4%	1	6.7%
Set out recycling cart this week	Yes	7	63.6%	9	81.8%	17	89.5%	23	82.1%	22	68.8%	9	69.2%	12	80.0%
	No	4	36.4%	2	18.2%	2	10.5%	5	17.9%	10	31.3%	4	30.8%	3	20.0%
Times per week set out recycling	1 week out of month	4	36.4%	3	27.3%	2	10.5%	2	7.1%	6	18.8%	3	23.1%	1	6.7%
	2 weeks out of month	3	27.3%	1	9.1%	7	36.8%	8	28.6%	9	28.1%	2	15.4%	2	13.3%
	3 weeks out of month	1	9.1%	3	27.3%	4	21.1%	2	7.1%	5	15.6%	3	23.1%	5	33.3%
	4 months out of month	3	27.3%	4	36.4%	6	31.6%	16	57.1%	12	37.5%	5	38.5%	7	46.7%
	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Smaller recycling cart preferable	Yes	5	45.5%	6	54.5%	9	47.4%	10	35.7%	9	28.1%	5	38.5%	3	20.0%
	No	5	45.5%	4	36.4%	8	42.1%	14	50.0%	20	62.5%	6	46.2%	11	73.3%
	Don't know	1	9.1%	1	9.1%	2	10.5%	4	14.3%	3	9.4%	2	15.4%	1	6.7%
Household has less trash now	Yes	6	54.5%	6	54.5%	16	84.2%	25	89.3%	21	65.6%	8	61.5%	10	66.7%
	No	5	45.5%	4	36.4%	2	10.5%	2	7.1%	8	25.0%	4	30.8%	4	26.7%
	Don't know	0	0.0%	1	9.1%	1	5.3%	1	3.6%	3	9.4%	1	7.7%	1	6.7%
Recycling importance	Very important	9	81.8%	9	81.8%	18	94.7%	23	82.1%	21	65.6%	8	61.5%	12	80.0%
	Somewhat important	1	9.1%	1	9.1%	1	5.3%	1	3.6%	5	15.6%	3	23.1%	2	13.3%
	DK/Neutral	0	0.0%	1	9.1%	0	0.0%	2	7.1%	2	6.3%	1	7.7%	0	0.0%
	Somewhat unimportant	0	0.0%	0	0.0%	0	0.0%	1	3.6%	2	6.3%	0	0.0%	0	0.0%
	Very unimportant	1	9.1%	0	0.0%	0	0.0%	1	3.6%	2	6.3%	1	7.7%	1	6.7%

		Income													
		Under \$25k		\$25k - \$34,999		\$35k - \$49,999		\$50k - \$74,999		\$75k - \$99,999		\$100k - \$124,999		\$125k and over	
Recycling service satisfaction	Very satisfied	8	72.7%	9	81.8%	17	89.5%	26	92.9%	22	68.8%	9	69.2%	10	66.7%
	Somewhat satisfied	3	27.3%	0	0.0%	1	5.3%	0	0.0%	4	12.5%	2	15.4%	3	20.0%
	DK/Neutral	0	0.0%	2	18.2%	1	5.3%	1	3.6%	4	12.5%	1	7.7%	0	0.0%
	Somewhat unsatisfied	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	1	6.7%
	Very unsatisfied	0	0.0%	0	0.0%	0	0.0%	1	3.6%	1	3.1%	1	7.7%	1	6.7%
Time per week spend on recycling	Less than 30 minutes	8	72.7%	8	72.7%	15	78.9%	22	78.6%	21	65.6%	12	92.3%	13	86.7%
	30 - 60 minutes	3	27.3%	3	27.3%	4	21.1%	6	21.4%	9	28.1%	1	7.7%	2	13.3%
	60 - 90 minutes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%
	90 - 120 minutes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	More than 120 minutes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%
Questions about recycling cart	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Yes	0	0.0%	0	0.0%	4	21.1%	4	14.3%	2	6.3%	1	7.7%	1	6.7%
	No	11	100%	11	100%	15	78.9%	24	85.7%	30	93.8%	12	92.3%	14	93.3%
Recyclables to MET before curbside	0	8	72.7%	8	72.7%	12	63.2%	20	71.4%	27	84.4%	11	84.6%	8	53.3%
	1 - 2	3	27.3%	3	27.3%	7	36.8%	8	28.6%	4	12.5%	2	15.4%	7	46.7%
	3 - 4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%
	5 or more	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Recycle more now	Yes	2	66.7%	3	100%	5	71.4%	3	37.5%	5	100%	0	0.0%	4	57.1%
	No	1	33.3%	0	0.0%	2	28.6%	5	62.5%	0	0.0%	2	100.0%	3	42.9%

		Income													
		Under \$25k		\$25k - \$34,999		\$35k - \$49,999		\$50k - \$74,999		\$75k - \$99,999		\$100k - \$124,999		\$125k and over	
How much more recycling	About 10 additional items a week	1	50.0%	1	33.3%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%
	About 20 additional items a week	0	0.0%	0	0.0%	4	80.0%	2	66.7%	0	0.0%	0	0.0%	3	75.0%
	About 30 additional items a week	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%
	About 40 additional items a week	1	50.0%	1	33.3%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%
	About 50 additional items a week	0	0.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	More than 50 additional items a week	0	0.0%	1	33.3%	0	0.0%	1	33.3%	2	40.0%	0	0.0%	1	25.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Average number of bags set out (RO)	1	1	33.3%	4	80.0%	4	36.4%	4	33.3%	5	21.7%	1	16.7%	2	18.2%
	2	2	66.7%	1	20.0%	5	45.5%	6	50.0%	8	34.8%	1	16.7%	5	45.5%
	3	0	0.0%	0	0.0%	0	0.0%	2	16.7%	4	17.4%	1	16.7%	3	27.3%
	4	0	0.0%	0	0.0%	1	9.1%	0	0.0%	1	4.3%	0	0.0%	0	0.0%
	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	13.0%	1	16.7%	1	9.1%
	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	4.3%	1	16.7%	0	0.0%
	7	0	0.0%	0	0.0%	1	9.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	9	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	16.7%	0	0.0%
	10	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	4.3%	0	0.0%	0	0.0%

		Income													
		Under \$25k		\$25k - \$34,999		\$35k - \$49,999		\$50k - \$74,999		\$75k - \$99,999		\$100k - \$124,999		\$125k and over	
More or less than before (RO)	More	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	4.3%	1	16.7%	0	0.0%
	Less	2	66.7%	4	80.0%	8	72.7%	8	66.7%	15	65.2%	3	50.0%	5	45.5%
	About the same amount	1	33.3%	1	20.0%	3	27.3%	4	33.3%	7	30.4%	2	33.3%	6	54.5%
How full is cart upon setout (TAR)	Quarter full	1	12.5%	1	16.7%	0	0.0%	3	18.8%	1	11.1%	2	28.6%	0	0.0%
	Half full	4	50.0%	2	33.3%	2	25.0%	5	31.3%	2	22.2%	1	14.3%	1	25.0%
	Three quarters full	1	12.5%	2	33.3%	5	62.5%	4	25.0%	3	33.3%	2	28.6%	2	50.0%
	Full	2	25.0%	1	16.7%	1	12.5%	3	18.8%	2	22.2%	1	14.3%	1	25.0%
	Full cart and then some more bags of trash	0	0.0%	0	0.0%	0	0.0%	1	6.3%	1	11.1%	1	14.3%	0	0.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
More or less than before (TAR)	More	1	12.5%	0	0.0%	1	12.5%	0	0.0%	2	22.2%	0	0.0%	1	25.0%
	Less	2	25.0%	4	66.7%	5	62.5%	11	68.8%	5	55.6%	2	28.6%	3	75.0%
	About the same	5	62.5%	2	33.3%	2	25.0%	5	31.3%	2	22.2%	5	71.4%	0	0.0%
Bags or cart preference (TAR)	Greatly prefer carts	5	62.5%	3	50.0%	6	75.0%	6	37.5%	5	55.6%	3	42.9%	2	50.0%
	Somewhat prefer carts	1	12.5%	1	16.7%	0	0.0%	2	12.5%	0	0.0%	2	28.6%	1	25.0%
	DK/Neutral	0	0.0%	0	0.0%	0	0.0%	1	6.3%	1	11.1%	0	0.0%	0	0.0%
	Somewhat prefer bags	1	12.5%	0	0.0%	2	25.0%	3	18.8%	2	22.2%	2	28.6%	0	0.0%
	Greatly prefer bags	1	12.5%	2	33.3%	0	0.0%	4	25.0%	1	11.1%	0	0.0%	1	25.0%

		Income													
		Under \$25k		\$25k - \$34,999		\$35k - \$49,999		\$50k - \$74,999		\$75k - \$99,999		\$100k - \$124,999		\$125k and over	
One recycle cart enough (TAR)	Yes	8	100%	5	83.3%	8	100.0%	16	100.0%	9	100%	7	100.0%	4	100.0%
	No	0	0.0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
One trash cart enough (TAR)	Yes	8	100%	6	100%	8	100.0%	16	100.0%	8	88.9%	7	100.0%	3	75.0%
	No	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	11.1%	0	0.0%	1	25.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Smaller trash cart preferable (TAR)	Yes	2	25.0%	1	16.7%	2	25.0%	7	43.8%	2	22.2%	2	28.6%	0	0.0%
	No	6	75.0%	5	83.3%	6	75.0%	9	56.3%	6	66.7%	5	71.4%	3	75.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	11.1%	0	0.0%	1	25.0%
Problems this week (TAR)	Yes	0	0.0%	1	16.7%	0	0.0%	2	12.5%	1	11.1%	1	14.3%	0	0.0%
	No	8	100%	5	83.3%	8	100.0%	14	87.5%	8	88.9%	6	85.7%	4	100.0%
What problems	Carts too big/Cumbersome	0	0.0%	1	100%	0	0.0%	1	50.0%	1	100%	1	100.0%	0	0.0%
	Workers leave carts in the street	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
Recycling cart favorability (RO)	Very favorable	1	33.3%	2	40.0%	7	63.6%	8	66.7%	15	65.2%	2	33.3%	8	72.7%
	Somewhat favorable	0	0.0%	2	40.0%	4	36.4%	3	25.0%	3	13.0%	2	33.3%	1	9.1%
	DK/Neutral	0	0.0%	1	20.0%	0	0.0%	0	0.0%	3	13.0%	1	16.7%	1	9.1%
	Somewhat unfavorable	1	33.3%	0	0.0%	0	0.0%	1	8.3%	2	8.7%	0	0.0%	0	0.0%
	Very unfavorable	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	16.7%	1	9.1%

		Income													
		Under \$25k		\$25k - \$34,999		\$35k - \$49,999		\$50k - \$74,999		\$75k - \$99,999		\$100k - \$124,999		\$125k and over	
One recycling cart enough (RO)	Yes	3	100%	5	100%	11	100.0%	11	91.7%	23	100%	5	83.3%	10	90.9%
	No	0	0.0%	0	0.0%	0	0.0%	1	8.3%	0	0.0%	0	0.0%	1	9.1%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	16.7%	0	0.0%
Problems this week (RO)	Yes	0	0.0%	0	0.0%	1	9.1%	0	0.0%	1	4.3%	0	0.0%	0	0.0%
	No	3	100%	5	100%	10	90.9%	12	100.0%	22	95.7%	6	100.0%	11	100.0%
What problems	Steep driveway makes it difficult	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Workers leave cart in street	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100%	0	0.0%	0	0.0%
	Storm blew open lid and cart filled with water	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Like a trash cart as well (RO)	Yes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	No	2	66.7%	1	20.0%	5	45.5%	4	33.3%	12	52.2%	2	33.3%	7	63.6%
	Don't know	1	33.3%	4	80.0%	6	54.5%	8	66.7%	10	43.5%	4	66.7%	4	36.4%
Why do you want a trash cart (RO)	Only have to make 1 trip to the curb	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	4.3%	0	0.0%	0	0.0%
	Helps keep trash contained/Cleaner/Away from animals	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	8.3%	0	0.0%	0	0.0%
	Wheels make it easier to haul trash to curb	1	100%	0	0.0%	2	40.0%	3	75.0%	4	33.3%	1	50.0%	6	85.7%
		0	0.0%	1	100%	2	40.0%	0	0.0%	4	33.3%	0	0.0%	1	14.3%

		Income													
		Under \$25k		\$25k - \$34,999		\$35k - \$49,999		\$50k - \$74,999		\$75k - \$99,999		\$100k - \$124,999		\$125k and over	
Why do you not want a trash cart (RO)	Gives somewhere to store trash until collection	0	0.0%	0	0.0%	1	20.0%	1	25.0%	3	25.0%	1	50.0%	0	0.0%
	Would save on plastic bags	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	No room to store it	0	0.0%	2	50.0%	2	33.3%	2	25.0%	2	22.2%	0	0.0%	0	0.0%
	Carts are difficult to move	0	0.0%	1	25.0%	1	16.7%	1	12.5%	2	22.2%	0	0.0%	1	25.0%
	Residents leave on curb for extended periods of time	0	0.0%	0	0.0%	0	0.0%	1	12.5%	0	0.0%	0	0.0%	1	25.0%
	Already purchased a trash cart	0	0.0%	0	0.0%	2	33.3%	0	0.0%	2	22.2%	1	25.0%	0	0.0%
	Don't produce enough trash to need a cart	1	100%	1	25.0%	0	0.0%	1	12.5%	0	0.0%	0	0.0%	0	0.0%
	Like the bags	0	0.0%	0	0.0%	1	16.7%	2	25.0%	3	33.3%	2	50.0%	2	50.0%
	Produce too much yard waste to fit in a cart	0	0.0%	0	0.0%	0	0.0%	1	12.5%	0	0.0%	1	25.0%	0	0.0%
Discontinue distribution of bags	Yes	0	0.0%	1	25.0%	1	16.7%	4	50.0%	3	30.0%	1	25.0%	1	25.0%
	No	1	100%	2	50.0%	5	83.3%	4	50.0%	7	70.0%	2	50.0%	3	75.0%
	Don't know	0	0.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%
Used reusable BA tote bag	Yes	7	63.6%	8	72.7%	11	57.9%	17	60.7%	20	62.5%	6	46.2%	12	80.0%
	No	4	36.4%	3	27.3%	8	42.1%	11	39.3%	12	37.5%	7	53.8%	3	20.0%

		Income													
		Under \$25k		\$25k - \$34,999		\$35k - \$49,999		\$50k - \$74,999		\$75k - \$99,999		\$100k - \$124,999		\$125k and over	
Know that some plastics not recyclable	Yes	7	63.6%	10	90.9%	18	94.7%	25	89.3%	27	84.4%	11	84.6%	14	93.3%
	No	4	36.4%	1	9.1%	1	5.3%	3	10.7%	5	15.6%	2	15.4%	1	6.7%
Where in community do you get your info	Info provided by the city	1	11.1%	4	36.4%	5	27.8%	4	16.7%	7	28.0%	3	27.3%	4	28.6%
	Homeowners meeting	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	4.0%	0	0.0%	0	0.0%
	Online	3	33.3%	1	9.1%	7	38.9%	5	20.8%	5	20.0%	3	27.3%	2	14.3%
	Flyers/Mailers	1	11.1%	2	18.2%	3	16.7%	6	25.0%	2	8.0%	1	9.1%	2	14.3%
	From past recycling experience	0	0.0%	1	9.1%	0	0.0%	1	4.2%	1	4.0%	1	9.1%	0	0.0%
	On TV	0	0.0%	1	9.1%	0	0.0%	0	0.0%	1	4.0%	0	0.0%	0	0.0%
	On the cart on tote bag	2	22.2%	1	9.1%	1	5.6%	6	25.0%	4	16.0%	1	9.1%	4	28.6%
	Meeting at beginning of pilot program	1	11.1%	1	9.1%	1	5.6%	1	4.2%	3	12.0%	0	0.0%	1	7.1%
	Call BA sanitation	1	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Newspaper	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	9.1%	0	0.0%
	From the MET	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	9.1%	1	7.1%
	Word of mouth	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	4.0%	0	0.0%	0	0.0%
	Called the city	0	0.0%	0	0.0%	1	5.6%	1	4.2%	0	0.0%	0	0.0%	0	0.0%
Where online do you get your info	recycleba.org	5	83.3%	2	100%	12	100.0%	8	100.0%	11	100%	3	60.0%	2	50.0%
	MET website	1	16.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%

		Income													
		Under \$25k		\$25k - \$34,999		\$35k - \$49,999		\$50k - \$74,999		\$75k - \$99,999		\$100k - \$124,999		\$125k and over	
Aware of recycleba.com	brokenarrowok.gov	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	1	25.0%
	Google	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%
	Yes	6	54.5%	7	63.6%	14	73.7%	14	50.0%	20	62.5%	7	53.8%	9	60.0%
	No	5	45.5%	4	36.4%	5	26.3%	14	50.0%	12	37.5%	6	46.2%	6	40.0%
	Used recycleba.com	4	50.0%	3	33.3%	10	66.7%	9	52.9%	12	57.1%	6	75.0%	6	60.0%
	No	4	50.0%	6	66.7%	5	33.3%	8	47.1%	9	42.9%	2	25.0%	4	40.0%

		Number of residents													
		One		Two		Three		Four		Five		More than five		Refused	
Put recyclables out this week	Yes	23	79.3%	54	83.1%	19	100%	14	100%	8	100%	4	80.0%	0	0.0%
	No	6	20.7%	11	16.9%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	1	100%
Set out recycling cart this week	Yes	18	62.1%	44	67.7%	17	89.5%	14	100%	8	100%	4	80.0%	0	0.0%
	No	11	37.9%	21	32.3%	2	10.5%	0	0.0%	0	0.0%	1	20.0%	1	100%
Times per week set out recycling	1 week out of month	6	20.7%	12	18.5%	3	15.8%	0	0.0%	0	0.0%	1	20.0%	1	100%
	2 weeks out of month	12	41.4%	15	23.1%	5	26.3%	3	21.4%	0	0.0%	1	20.0%	0	0.0%
	3 weeks out of month	6	20.7%	8	12.3%	4	21.1%	4	28.6%	2	25.0%	0	0.0%	0	0.0%
	4 months out of month	4	13.8%	29	44.6%	7	36.8%	7	50.0%	6	75.0%	3	60.0%	0	0.0%
	Don't remember	1	3.4%	1	1.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Smaller recycling cart preferable	Yes	14	48.3%	29	44.6%	7	36.8%	2	14.3%	1	12.5%	0	0.0%	1	100%
	No	11	37.9%	33	50.8%	10	52.6%	9	64.3%	7	87.5%	3	60.0%	0	0.0%
	Don't know	4	13.8%	3	4.6%	2	10.5%	3	21.4%	0	0.0%	2	40.0%	0	0.0%
Household has less trash now	Yes	19	65.5%	41	63.1%	16	84.2%	11	78.6%	6	75.0%	3	60.0%	0	0.0%
	No	9	31.0%	20	30.8%	3	15.8%	2	14.3%	1	12.5%	1	20.0%	1	100%
	Don't know	1	3.4%	4	6.2%	0	0.0%	1	7.1%	1	12.5%	1	20.0%	0	0.0%
Recycling importance	Very important	23	79.3%	47	72.3%	14	73.7%	12	85.7%	8	100%	2	40.0%	1	100%
	Somewhat important	3	10.3%	9	13.8%	4	21.1%	1	7.1%	0	0.0%	1	20.0%	0	0.0%
	DK/Neutral	2	6.9%	4	6.2%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%
	Somewhat unimportant	0	0.0%	2	3.1%	1	5.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Very unimportant	1	3.4%	3	4.6%	0	0.0%	1	7.1%	0	0.0%	1	20.0%	0	0.0%
Recycling service satisfaction	Very satisfied	21	72.4%	46	70.8%	14	73.7%	13	92.9%	8	100%	3	60.0%	1	100%
	Somewhat satisfied	5	17.2%	6	9.2%	5	26.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

		Number of residents													
		One		Two		Three		Four		Five		More than five		Refused	
Time per week spend on recycling	DK/Neutral	3	10.3%	6	9.2%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%
	Somewhat unsatisfied	0	0.0%	2	3.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Very unsatisfied	0	0.0%	5	7.7%	0	0.0%	1	7.1%	0	0.0%	1	20.0%	0	0.0%
	Less than 30 minutes	23	79.3%	48	73.8%	13	68.4%	10	71.4%	8	100%	5	100%	1	100%
	30 - 60 minutes	5	17.2%	15	23.1%	5	26.3%	4	28.6%	0	0.0%	0	0.0%	0	0.0%
	60 - 90 minutes	0	0.0%	1	1.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	90 - 120 minutes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	More than 120 minutes	0	0.0%	0	0.0%	1	5.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Questions about recycling cart	Don't remember	1	3.4%	1	1.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Yes	3	10.3%	7	10.8%	0	0.0%	1	7.1%	0	0.0%	1	20.0%	0	0.0%
Recyclables to MET before curbside	No	26	89.7%	58	89.2%	19	100%	13	92.9%	8	100%	4	80.0%	1	100%
	0	23	79.3%	44	67.7%	14	73.7%	7	50.0%	6	75.0%	5	100%	0	0.0%
	1 - 2	6	20.7%	21	32.3%	4	21.1%	7	50.0%	2	25.0%	0	0.0%	1	100%
	3 - 4	0	0.0%	0	0.0%	1	5.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	5 or more	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Recycle more now	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Yes	5	83.3%	10	47.6%	3	60.0%	6	85.7%	2	100%	0	0.0%	0	0.0%
	No	1	16.7%	11	52.4%	2	40.0%	1	14.3%	0	0.0%	0	0.0%	1	100%
How much more recycling	About 10 additional items a week	1	20.0%	3	30.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	About 20 additional items a week	1	20.0%	3	30.0%	0	0.0%	4	66.7%	2	100%	0	0.0%	0	0.0%

		Number of residents													
		One		Two		Three		Four		Five		More than five		Refused	
Average number of bags set out (RO)	About 30 additional items a week	0	0.0%	2	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	About 40 additional items a week	1	20.0%	1	10.0%	1	33.3%	1	16.7%	0	0.0%	0	0.0%	0	0.0%
	About 50 additional items a week	0	0.0%	1	10.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	More than 50 additional items a week	2	40.0%	0	0.0%	2	66.7%	1	16.7%	0	0.0%	0	0.0%	0	0.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	1	5	41.7%	12	28.6%	3	25.0%	2	33.3%	2	40.0%	0	0.0%	0	0.0%
	2	6	50.0%	15	35.7%	6	50.0%	2	33.3%	1	20.0%	2	66.7%	0	0.0%
	3	1	8.3%	6	14.3%	3	25.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	4	0	0.0%	3	7.1%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	1	100%
	5	0	0.0%	4	9.5%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%
	6	0	0.0%	1	2.4%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%
	7	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%
	9	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%
	10	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
More or less than before (RO)	More	0	0.0%	1	2.4%	0	0.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%
	Less	8	66.7%	25	59.5%	8	66.7%	4	66.7%	2	40.0%	2	66.7%	0	0.0%
	About the same amount	4	33.3%	16	38.1%	4	33.3%	2	33.3%	2	40.0%	1	33.3%	1	100%
How full is cart upon setout (TAR)	Quarter full	3	17.6%	5	21.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Half full	8	47.1%	6	26.1%	3	42.9%	0	0.0%	1	33.3%	0	0.0%	0	0.0%

		Number of residents													
		One		Two		Three		Four		Five		More than five		Refused	
More or less than before (TAR)	Three quarters full	2	11.8%	6	26.1%	3	42.9%	6	75.0%	2	66.7%	1	50.0%	0	0.0%
	Full	4	23.5%	5	21.7%	1	14.3%	1	12.5%	0	0.0%	0	0.0%	0	0.0%
	Full cart and then some more bags of trash	0	0.0%	1	4.3%	0	0.0%	1	12.5%	0	0.0%	1	50.0%	0	0.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	More	0	0.0%	3	13.0%	0	0.0%	2	25.0%	0	0.0%	0	0.0%	0	0.0%
	Less	10	58.8%	11	47.8%	4	57.1%	5	62.5%	2	66.7%	1	50.0%	0	0.0%
	About the same	7	41.2%	9	39.1%	3	42.9%	1	12.5%	1	33.3%	1	50.0%	0	0.0%
Bags or cart preference (TAR)	Greatly prefer carts	8	47.1%	10	43.5%	4	57.1%	5	62.5%	3	100%	1	50.0%	0	0.0%
	Somewhat prefer carts	2	11.8%	2	8.7%	2	28.6%	1	12.5%	0	0.0%	0	0.0%	0	0.0%
	DK/Neutral	0	0.0%	0	0.0%	1	14.3%	1	12.5%	0	0.0%	0	0.0%	0	0.0%
	Somewhat prefer bags	3	17.6%	6	26.1%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%
One recycle cart enough (TAR)	Greatly prefer bags	4	23.5%	5	21.7%	0	0.0%	1	12.5%	0	0.0%	0	0.0%	0	0.0%
	Yes	16	94.1%	23	100%	7	100%	8	100%	3	100%	2	100%	0	0.0%
	No	1	5.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
One trash cart enough (TAR)	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Yes	17	100%	21	91.3%	7	100%	8	100%	3	100%	2	100%	0	0.0%
	No	0	0.0%	2	8.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Smaller trash cart preferable (TAR)	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Yes	4	23.5%	10	43.5%	1	14.3%	1	12.5%	0	0.0%	0	0.0%	0	0.0%
	No	13	76.5%	11	47.8%	6	85.7%	7	87.5%	2	66.7%	2	100%	0	0.0%
	Don't know	0	0.0%	2	8.7%	0	0.0%	0	0.0%	1	33.3%	0	0.0%	0	0.0%

		Number of residents													
		One		Two		Three		Four		Five		More than five		Refused	
Problems this week (TAR)	Yes	1	5.9%	2	8.7%	2	28.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	No	16	94.1%	21	91.3%	5	71.4%	8	100%	3	100%	2	100%	0	0.0%
What problems	Carts too big/Cumbersome	1	100%	2	100%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Workers leave carts in the street	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Recycling cart favorability (RO)	Very favorable	4	33.3%	24	57.1%	8	66.7%	5	83.3%	4	80.0%	1	33.3%	0	0.0%
	Somewhat favorable	4	33.3%	8	19.0%	2	16.7%	0	0.0%	1	20.0%	1	33.3%	0	0.0%
	DK/Neutral	1	8.3%	5	11.9%	1	8.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Somewhat unfavorable	1	8.3%	3	7.1%	1	8.3%	1	16.7%	0	0.0%	0	0.0%	1	100%
	Very unfavorable	2	16.7%	2	4.8%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%
One recycling cart enough (RO)	Yes	11	91.7%	39	92.9%	12	100%	6	100%	5	100%	2	66.7%	1	100%
	No	0	0.0%	2	4.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Don't know	1	8.3%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%
Problems this week (RO)	Yes	0	0.0%	3	7.1%	1	8.3%	0	0.0%	0	0.0%	0	0.0%	1	100%
	No	12	100%	39	92.9%	11	91.7%	6	100%	5	100%	3	100%	0	0.0%
What problems	Steep driveway makes it difficult	0	0.0%	2	66.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Workers leave cart in street	0	0.0%	0	0.0%	1	100%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Storm blew open lid and cart filled with water	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100%
	Not home on collection day	0	0.0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

		Number of residents													
		One		Two		Three		Four		Five		More than five		Refused	
Like a trash cart as well (RO)	Yes	5	41.7%	18	42.9%	3	25.0%	3	50.0%	5	100%	1	33.3%	0	0.0%
	No	6	50.0%	24	57.1%	9	75.0%	2	33.3%	0	0.0%	2	66.7%	1	100%
	Don't know	1	8.3%	0	0.0%	0	0.0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%
Why do you want a trash cart (RO)	Only have to make 1 trip to the curb	0	0.0%	1	5.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Helps keep trash contained/Cleaner/Away from animals	3	75.0%	10	58.8%	1	33.3%	0	0.0%	3	60.0%	0	0.0%	0	0.0%
	Wheels make it easier to haul trash to curb	0	0.0%	3	17.6%	2	66.7%	1	33.3%	1	20.0%	1	100%	0	0.0%
	Gives somewhere to store trash until collection	1	25.0%	2	11.8%	0	0.0%	2	66.7%	1	20.0%	0	0.0%	0	0.0%
	Would save on plastic bags	0	0.0%	1	5.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Why do you not want a trash cart (RO)	No room to store it	5	83.3%	4	17.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Carts are difficult to move	0	0.0%	7	30.4%	1	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

		Number of residents													
		One		Two		Three		Four		Five		More than five		Refused	
	Residents leave on curb for extended periods of time	0	0.0%	1	4.3%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	1	100%
	Already purchased a trash cart	0	0.0%	2	8.7%	2	22.2%	1	50.0%	0	0.0%	1	50.0%	0	0.0%
	Don't produce enough trash to need a cart	1	16.7%	2	8.7%	1	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Like the bags	0	0.0%	6	26.1%	4	44.4%	0	0.0%	0	0.0%	1	50.0%	0	0.0%
	Produce too much yard waste to fit in a cart	0	0.0%	1	4.3%	1	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Discontinue distribution of bags	Yes	0	0.0%	7	29.2%	4	44.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	No	5	83.3%	15	62.5%	5	55.6%	2	100%	0	0.0%	2	100%	0	0.0%
	Don't know	1	16.7%	2	8.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100%
Used reusable BA tote bag	Yes	18	62.1%	40	61.5%	13	68.4%	9	64.3%	4	50.0%	4	80.0%	0	0.0%
	No	11	37.9%	25	38.5%	6	31.6%	5	35.7%	4	50.0%	1	20.0%	1	100%
Know that some plastics not recyclable	Yes	24	82.8%	58	89.2%	16	84.2%	13	92.9%	6	75.0%	4	80.0%	1	100%
	No	5	17.2%	7	10.8%	3	15.8%	1	7.1%	2	25.0%	1	20.0%	0	0.0%
Where in community do you get your info	Info provided by the city	9	33.3%	15	26.3%	1	7.1%	1	9.1%	1	12.5%	2	40.0%	0	0.0%
	Homeowners meeting	1	3.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Online	4	14.8%	12	21.1%	5	35.7%	3	27.3%	3	37.5%	1	20.0%	0	0.0%
	Flyers/Mailers	3	11.1%	9	15.8%	3	21.4%	5	45.5%	0	0.0%	1	20.0%	0	0.0%
	From past recycling experience	1	3.7%	1	1.8%	1	7.1%	0	0.0%	1	12.5%	0	0.0%	0	0.0%
	On TV	0	0.0%	1	1.8%	0	0.0%	1	9.1%	0	0.0%	0	0.0%	0	0.0%

		Number of residents													
		One		Two		Three		Four		Five		More than five		Refused	
Where online do you get your info	On the cart on tote bag	5	18.5%	11	19.3%	2	14.3%	1	9.1%	1	12.5%	1	20.0%	1	100%
	Meeting at beginning of pilot program	3	11.1%	3	5.3%	1	7.1%	0	0.0%	1	12.5%	0	0.0%	0	0.0%
	Call BA sanitation	0	0.0%	1	1.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Newspaper	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	12.5%	0	0.0%	0	0.0%
	From the MET	0	0.0%	1	1.8%	1	7.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Word of mouth	1	3.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Called the city	0	0.0%	3	5.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	recycleba.org	12	92.3%	22	91.7%	6	100%	4	100%	1	33.3%	1	50.0%	0	0.0%
	MET website	0	0.0%	2	8.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	brokenarrowok.gov	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	1	50.0%	0	0.0%
	Google	1	7.7%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	0	0.0%	0	0.0%
	Aware of recycleba.com														
	Yes	18	62.1%	39	60.0%	14	73.7%	5	35.7%	5	62.5%	1	20.0%	0	0.0%
	No	11	37.9%	26	40.0%	5	26.3%	9	64.3%	3	37.5%	4	80.0%	1	100%
Used recycleba.com	Yes	11	45.8%	24	57.1%	9	60.0%	4	57.1%	4	80.0%	1	100%	0	0.0%
	No	13	54.2%	18	42.9%	6	40.0%	3	42.9%	1	20.0%	0	0.0%	0	0.0%

		Lived at address											
		Less than 1 year		1 - 5 years		6 - 10 years		11 - 15 years		16 - 20 years		Over 20 years	
Put recyclables out this week	Yes	1	50.0%	29	93.5%	22	84.6%	19	90.5%	14	87.5%	37	84.1%
	No	1	50.0%	2	6.5%	4	15.4%	2	9.5%	2	12.5%	7	15.9%
Set out recycling cart this week	Yes	1	50.0%	25	80.6%	19	73.1%	16	76.2%	8	50.0%	36	81.8%
	No	1	50.0%	6	19.4%	7	26.9%	5	23.8%	8	50.0%	8	18.2%
Times per week set out recycling	1 week out of month	1	50.0%	1	3.2%	4	15.4%	4	19.0%	2	12.5%	10	22.7%
	2 weeks out of month	0	0.0%	10	32.3%	8	30.8%	2	9.5%	5	31.3%	11	25.0%
	3 weeks out of month	0	0.0%	5	16.1%	5	19.2%	5	23.8%	4	25.0%	5	11.4%
	4 months out of month	1	50.0%	15	48.4%	9	34.6%	10	47.6%	5	31.3%	16	36.4%
	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	4.5%
Smaller recycling cart preferable	Yes	0	0.0%	9	29.0%	10	38.5%	7	33.3%	6	37.5%	21	47.7%
	No	1	50.0%	18	58.1%	13	50.0%	11	52.4%	9	56.3%	21	47.7%
	Don't know	1	50.0%	4	12.9%	3	11.5%	3	14.3%	1	6.3%	2	4.5%
Household has less trash now	Yes	0	0.0%	24	77.4%	18	69.2%	15	71.4%	10	62.5%	29	65.9%
	No	1	50.0%	4	12.9%	7	26.9%	5	23.8%	5	31.3%	14	31.8%
	Don't know	1	50.0%	3	9.7%	1	3.8%	1	4.8%	1	6.3%	1	2.3%
Recycling importance	Very important	1	50.0%	24	77.4%	20	76.9%	17	81.0%	12	75.0%	32	72.7%
	Somewhat important	0	0.0%	4	12.9%	3	11.5%	1	4.8%	1	6.3%	9	20.5%
	DK/Neutral	0	0.0%	1	3.2%	2	7.7%	1	4.8%	2	12.5%	1	2.3%
	Somewhat unimportant	0	0.0%	1	3.2%	0	0.0%	2	9.5%	0	0.0%	0	0.0%
	Very unimportant	1	50.0%	1	3.2%	1	3.8%	0	0.0%	1	6.3%	2	4.5%
Recycling service satisfaction	Very satisfied	1	50.0%	24	77.4%	19	73.1%	19	90.5%	13	81.3%	29	65.9%
	Somewhat satisfied	0	0.0%	5	16.1%	3	11.5%	0	0.0%	0	0.0%	8	18.2%

		Lived at address											
		Less than 1 year		1 - 5 years		6 - 10 years		11 - 15 years		16 - 20 years		Over 20 years	
Time per week spend on recycling	DK/Neutral	0	0.0%	1	3.2%	1	3.8%	1	4.8%	2	12.5%	5	11.4%
	Somewhat unsatisfied	0	0.0%	0	0.0%	1	3.8%	1	4.8%	0	0.0%	0	0.0%
	Very unsatisfied	1	50.0%	1	3.2%	2	7.7%	0	0.0%	1	6.3%	2	4.5%
	Less than 30 minutes	2	100.0%	24	77.4%	21	80.8%	18	85.7%	12	75.0%	30	68.2%
	30 - 60 minutes	0	0.0%	7	22.6%	5	19.2%	3	14.3%	3	18.8%	11	25.0%
	60 - 90 minutes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	6.3%	0	0.0%
	90 - 120 minutes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	More than 120 minutes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	2.3%
	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	4.5%
Questions about recycling cart	Yes	1	50.0%	3	9.7%	2	7.7%	2	9.5%	1	6.3%	3	6.8%
	No	1	50.0%	28	90.3%	24	92.3%	19	90.5%	15	93.8%	41	93.2%
Recyclables to MET before curbside	0	2	100.0%	26	83.9%	17	65.4%	14	66.7%	10	62.5%	30	68.2%
	1 - 2	0	0.0%	5	16.1%	9	34.6%	7	33.3%	6	37.5%	13	29.5%
	3 - 4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	2.3%
	5 or more	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Recycle more now	Yes	0	0.0%	4	80.0%	5	55.6%	4	57.1%	3	50.0%	10	71.4%
	No	0	0.0%	1	20.0%	4	44.4%	3	42.9%	3	50.0%	4	28.6%
How much more recycling	About 10 additional items a week	0	0.0%	0	0.0%	2	40.0%	0	0.0%	0	0.0%	2	20.0%
	About 20 additional items a week	0	0.0%	1	25.0%	3	60.0%	0	0.0%	2	66.7%	4	40.0%

		Lived at address											
		Less than 1 year		1 - 5 years		6 - 10 years		11 - 15 years		16 - 20 years		Over 20 years	
Average number of bags set out (RO)	About 30 additional items a week	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	20.0%
	About 40 additional items a week	0	0.0%	3	75.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%
	About 50 additional items a week	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%
	More than 50 additional items a week	0	0.0%	0	0.0%	0	0.0%	2	50.0%	1	33.3%	2	20.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	1	0	0.0%	3	16.7%	3	20.0%	0	0.0%	3	60.0%	15	44.1%
	2	0	0.0%	8	44.4%	6	40.0%	4	57.1%	0	0.0%	14	41.2%
	3	0	0.0%	3	16.7%	4	26.7%	0	0.0%	1	20.0%	2	5.9%
	4	0	0.0%	1	5.6%	2	13.3%	0	0.0%	0	0.0%	1	2.9%
	5	0	0.0%	2	11.1%	0	0.0%	2	28.6%	0	0.0%	1	2.9%
	6	0	0.0%	0	0.0%	0	0.0%	1	14.3%	0	0.0%	1	2.9%
	7	0	0.0%	1	5.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	9	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	10	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	20.0%	0	0.0%
More or less than before (RO)	More	0	0.0%	0	0.0%	0	0.0%	1	14.3%	0	0.0%	1	2.9%
	Less	0	0.0%	12	66.7%	8	53.3%	3	42.9%	4	80.0%	22	64.7%
	About the same amount	1	100.0%	6	33.3%	7	46.7%	3	42.9%	1	20.0%	11	32.4%
How full is cart upon setout (TAR)	Quarter full	0	0.0%	4	30.8%	0	0.0%	1	7.1%	3	27.3%	0	0.0%
	Half full	0	0.0%	3	23.1%	5	45.5%	6	42.9%	3	27.3%	1	10.0%

		Lived at address											
		Less than 1 year		1 - 5 years		6 - 10 years		11 - 15 years		16 - 20 years		Over 20 years	
More or less than before (TAR)	Three quarters full	1	100.0%	4	30.8%	4	36.4%	6	42.9%	3	27.3%	2	20.0%
	Full	0	0.0%	2	15.4%	1	9.1%	1	7.1%	2	18.2%	5	50.0%
	Full cart and then some more bags of trash	0	0.0%	0	0.0%	1	9.1%	0	0.0%	0	0.0%	2	20.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	More	0	0.0%	0	0.0%	2	18.2%	2	14.3%	0	0.0%	1	10.0%
	Less	1	100.0%	11	84.6%	5	45.5%	8	57.1%	5	45.5%	3	30.0%
	About the same	0	0.0%	2	15.4%	4	36.4%	4	28.6%	6	54.5%	6	60.0%
Bags or cart preference (TAR)	Greatly prefer carts	1	100.0%	7	53.8%	5	45.5%	7	50.0%	7	63.6%	4	40.0%
	Somewhat prefer carts	0	0.0%	1	7.7%	2	18.2%	2	14.3%	1	9.1%	1	10.0%
	DK/Neutral	0	0.0%	0	0.0%	0	0.0%	1	7.1%	0	0.0%	1	10.0%
	Somewhat prefer bags	0	0.0%	4	30.8%	2	18.2%	1	7.1%	1	9.1%	2	20.0%
One recycle cart enough (TAR)	Greatly prefer bags	0	0.0%	1	7.7%	2	18.2%	3	21.4%	2	18.2%	2	20.0%
	Yes	1	100.0%	12	92.3%	11	100.0%	14	100.0%	11	100.0%	10	100.0%
	No	0	0.0%	1	7.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
One trash cart enough (TAR)	Yes	1	100.0%	13	100.0%	11	100.0%	13	92.9%	11	100.0%	9	90.0%
	No	0	0.0%	0	0.0%	0	0.0%	1	7.1%	0	0.0%	1	10.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Smaller trash cart preferable (TAR)	Yes	0	0.0%	3	23.1%	5	45.5%	4	28.6%	4	36.4%	0	0.0%
	No	1	100.0%	10	76.9%	6	54.5%	9	64.3%	6	54.5%	9	90.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	1	7.1%	1	9.1%	1	10.0%

		Lived at address											
		Less than 1 year		1 - 5 years		6 - 10 years		11 - 15 years		16 - 20 years		Over 20 years	
Problems this week (TAR)	Yes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	18.2%	3	30.0%
	No	1	100.0%	13	100.0%	11	100.0%	14	100.0%	9	81.8%	7	70.0%
What problems	Carts too big/Cumbersome	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	3	100.0%
	Workers leave carts in the street	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%
Recycling cart favorability (RO)	Very favorable	0	0.0%	12	66.7%	7	46.7%	4	57.1%	3	60.0%	20	58.8%
	Somewhat favorable	0	0.0%	2	11.1%	4	26.7%	2	28.6%	0	0.0%	8	23.5%
	DK/Neutral	0	0.0%	3	16.7%	1	6.7%	0	0.0%	2	40.0%	1	2.9%
	Somewhat unfavorable	0	0.0%	0	0.0%	3	20.0%	1	14.3%	0	0.0%	2	5.9%
	Very unfavorable	1	100.0%	1	5.6%	0	0.0%	0	0.0%	0	0.0%	3	8.8%
One recycling cart enough (RO)	Yes	0	0.0%	17	94.4%	15	100.0%	6	85.7%	5	100.0%	32	94.1%
	No	0	0.0%	1	5.6%	0	0.0%	1	14.3%	0	0.0%	0	0.0%
	Don't know	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	5.9%
Problems this week (RO)	Yes	0	0.0%	1	5.6%	2	13.3%	0	0.0%	1	20.0%	0	0.0%
	No	1	100.0%	17	94.4%	13	86.7%	7	100.0%	4	80.0%	34	100.0%
What problems	Steep driveway makes it difficult	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%
	Workers leave cart in street	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Storm blew open lid and cart filled with water	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Not home on collection day	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%

		Lived at address											
		Less than 1 year		1 - 5 years		6 - 10 years		11 - 15 years		16 - 20 years		Over 20 years	
Like a trash cart as well (RO)	Yes	0	0.0%	13	72.2%	7	46.7%	4	57.1%	1	20.0%	10	29.4%
	No	1	100.0%	4	22.2%	8	53.3%	3	42.9%	4	80.0%	23	67.6%
	Don't know	0	0.0%	1	5.6%	0	0.0%	0	0.0%	0	0.0%	1	2.9%
Why do you want a trash cart (RO)	Only have to make 1 trip to the curb	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%
	Helps keep trash contained/Cleaner/Away from animals	0	0.0%	7	58.3%	4	57.1%	2	50.0%	0	0.0%	4	44.4%
	Wheels make it easier to haul trash to curb	0	0.0%	2	16.7%	1	14.3%	0	0.0%	1	100.0%	4	44.4%
	Gives somewhere to store trash until collection	0	0.0%	2	16.7%	2	28.6%	1	25.0%	0	0.0%	1	11.1%
	Would save on plastic bags	0	0.0%	1	8.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Why do you not want a trash cart (RO)	No room to store it	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	8	34.8%
	Carts are difficult to move	0	0.0%	0	0.0%	2	25.0%	1	33.3%	1	33.3%	4	17.4%

		Lived at address											
		Less than 1 year		1 - 5 years		6 - 10 years		11 - 15 years		16 - 20 years		Over 20 years	
Discontinue distribution of bags	Residents leave on curb for extended periods of time	0	0.0%	1	25.0%	1	12.5%	0	0.0%	0	0.0%	0	0.0%
	Already purchased a trash cart	0	0.0%	2	50.0%	1	12.5%	1	33.3%	0	0.0%	2	8.7%
	Don't produce enough trash to need a cart	0	0.0%	0	0.0%	1	12.5%	0	0.0%	0	0.0%	3	13.0%
	Like the bags	1	100.0%	1	25.0%	3	37.5%	1	33.3%	1	33.3%	4	17.4%
	Produce too much yard waste to fit in a cart	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	8.7%
	Yes	0	0.0%	0	0.0%	2	25.0%	1	33.3%	1	25.0%	7	30.4%
	No	1	100.0%	3	75.0%	6	75.0%	2	66.7%	3	75.0%	14	60.9%
	Don't know	0	0.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%	2	8.7%
	Used reusable BA tote bag	2	100.0%	17	54.8%	21	80.8%	15	71.4%	9	56.3%	24	54.5%
	No	0	0.0%	14	45.2%	5	19.2%	6	28.6%	7	43.8%	20	45.5%
	Know that some plastics not recyclable	2	100.0%	29	93.5%	21	80.8%	16	76.2%	16	100.0%	37	84.1%
	No	0	0.0%	2	6.5%	5	19.2%	5	23.8%	0	0.0%	7	15.9%
	Where in community do you get your info	1	50.0%	1	3.7%	6	26.1%	8	42.1%	4	26.7%	9	25.0%
	Homeowners meeting	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	2.8%
	Online	0	0.0%	5	18.5%	5	21.7%	4	21.1%	4	26.7%	10	27.8%
	Flyers/Mailers	0	0.0%	5	18.5%	3	13.0%	3	15.8%	4	26.7%	6	16.7%
	From past recycling experience	1	50.0%	1	3.7%	1	4.3%	0	0.0%	0	0.0%	1	2.8%
	On TV	0	0.0%	1	3.7%	0	0.0%	0	0.0%	0	0.0%	1	2.8%

		Lived at address											
		Less than 1 year		1 - 5 years		6 - 10 years		11 - 15 years		16 - 20 years		Over 20 years	
Where online do you get your info	On the cart on tote bag	0	0.0%	7	25.9%	5	21.7%	1	5.3%	2	13.3%	6	16.7%
	Meeting at beginning of pilot program	0	0.0%	5	18.5%	0	0.0%	1	5.3%	0	0.0%	2	5.6%
	Call BA sanitation	0	0.0%	0	0.0%	1	4.3%	0	0.0%	0	0.0%	0	0.0%
	Newspaper	0	0.0%	0	0.0%	0	0.0%	1	5.3%	0	0.0%	0	0.0%
	From the MET	0	0.0%	1	3.7%	0	0.0%	0	0.0%	1	6.7%	0	0.0%
	Word of mouth	0	0.0%	1	3.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Called the city	0	0.0%	0	0.0%	2	8.7%	1	5.3%	0	0.0%	0	0.0%
	recycleba.org	0	0.0%	9	90.0%	11	91.7%	7	87.5%	6	75.0%	13	92.9%
	MET website	0	0.0%	0	0.0%	0	0.0%	1	12.5%	1	12.5%	0	0.0%
	brokenarrowok.gov	0	0.0%	0	0.0%	1	8.3%	0	0.0%	0	0.0%	1	7.1%
	Google	0	0.0%	1	10.0%	0	0.0%	0	0.0%	1	12.5%	0	0.0%
Aware of recycleba.com	Yes	0	0.0%	20	64.5%	14	53.8%	11	52.4%	10	62.5%	27	61.4%
	No	2	100.0%	11	35.5%	12	46.2%	10	47.6%	6	37.5%	17	38.6%
Used recycleba.com	Yes	0	0.0%	11	50.0%	10	58.8%	9	64.3%	8	72.7%	15	50.0%
	No	0	0.0%	11	50.0%	7	41.2%	5	35.7%	3	27.3%	15	50.0%

		Lived in area with curbside				Marriage				Gender			
		Yes		No		Yes		No		Male		Female	
Put recyclables out this week	Yes	27	93.1%	95	84.8%	84	88.4%	38	82.6%	44	84.6%	78	87.6%
	No	2	6.9%	17	15.2%	11	11.6%	8	17.4%	8	15.4%	11	12.4%
Set out recycling cart this week	Yes	21	72.4%	84	75.0%	75	78.9%	30	65.2%	38	73.1%	67	75.3%
	No	8	27.6%	28	25.0%	20	21.1%	16	34.8%	14	26.9%	22	24.7%
Times per week set out recycling	1 week out of month	2	6.9%	21	18.8%	15	15.8%	8	17.4%	9	17.3%	14	15.7%
	2 weeks out of month	7	24.1%	29	25.9%	20	21.1%	16	34.8%	13	25.0%	23	25.8%
	3 weeks out of month	6	20.7%	18	16.1%	14	14.7%	10	21.7%	10	19.2%	14	15.7%
	4 months out of month	14	48.3%	42	37.5%	45	47.4%	11	23.9%	19	36.5%	37	41.6%
	Don't remember	0	0.0%	2	1.8%	1	1.1%	1	2.2%	1	1.9%	1	1.1%
Smaller recycling cart preferable	Yes	12	41.4%	42	37.5%	35	36.8%	19	41.3%	23	44.2%	31	34.8%
	No	15	51.7%	58	51.8%	53	55.8%	20	43.5%	27	51.9%	46	51.7%
	Don't know	2	6.9%	12	10.7%	7	7.4%	7	15.2%	2	3.8%	12	13.5%
Household has less trash now	Yes	20	69.0%	76	67.9%	65	68.4%	31	67.4%	31	59.6%	65	73.0%
	No	8	27.6%	29	25.9%	24	25.3%	13	28.3%	17	32.7%	20	22.5%
	Don't know	1	3.4%	7	6.3%	6	6.3%	2	4.3%	4	7.7%	4	4.5%
Recycling importance	Very important	24	82.8%	83	74.1%	68	71.6%	39	84.8%	33	63.5%	74	83.1%
	Somewhat important	2	6.9%	16	14.3%	14	14.7%	4	8.7%	10	19.2%	8	9.0%
	DK/Neutral	0	0.0%	7	6.3%	5	5.3%	2	4.3%	3	5.8%	4	4.5%
	Somewhat unimportant	2	6.9%	1	0.9%	3	3.2%	0	0.0%	2	3.8%	1	1.1%
	Very unimportant	1	3.4%	5	4.5%	5	5.3%	1	2.2%	4	7.7%	2	2.2%
Recycling service satisfaction	Very satisfied	22	75.9%	84	75.0%	71	74.7%	35	76.1%	32	61.5%	74	83.1%
	Somewhat satisfied	5	17.2%	11	9.8%	9	9.5%	7	15.2%	9	17.3%	7	7.9%

		Lived in area with curbside				Marriage				Gender			
		Yes		No		Yes		No		Male		Female	
Time per week spend on recycling	DK/Neutral	1	3.4%	9	8.0%	6	6.3%	4	8.7%	4	7.7%	6	6.7%
	Somewhat unsatisfied	1	3.4%	1	0.9%	2	2.1%	0	0.0%	1	1.9%	1	1.1%
	Very unsatisfied	0	0.0%	7	6.3%	7	7.4%	0	0.0%	6	11.5%	1	1.1%
	Less than 30 minutes	19	65.5%	89	79.5%	72	75.8%	36	78.3%	39	75.0%	69	77.5%
	30 - 60 minutes	9	31.0%	20	17.9%	20	21.1%	9	19.6%	11	21.2%	18	20.2%
	60 - 90 minutes	1	3.4%	0	0.0%	1	1.1%	0	0.0%	1	1.9%	0	0.0%
	90 - 120 minutes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	More than 120 minutes	0	0.0%	1	0.9%	1	1.1%	0	0.0%	0	0.0%	1	1.1%
Questions about recycling cart	Don't remember	0	0.0%	2	1.8%	1	1.1%	1	2.2%	1	1.9%	1	1.1%
	Yes	2	6.9%	10	8.9%	10	10.5%	2	4.3%	1	1.9%	11	12.4%
Recyclables to MET before curbside	No	27	93.1%	102	91.1%	85	89.5%	44	95.7%	51	98.1%	78	87.6%
	0	22	75.9%	77	68.8%	65	68.4%	34	73.9%	39	75.0%	60	67.4%
	1 - 2	7	24.1%	34	30.4%	29	30.5%	12	26.1%	13	25.0%	28	31.5%
	3 - 4	0	0.0%	1	0.9%	1	1.1%	0	0.0%	0	0.0%	1	1.1%
	5 or more	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Recycle more now	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Yes	3	42.9%	23	65.7%	18	60.0%	8	66.7%	6	46.2%	20	69.0%
	No	4	57.1%	12	34.3%	12	40.0%	4	33.3%	7	53.8%	9	31.0%
How much more recycling	About 10 additional items a week	0	0.0%	4	17.4%	2	11.1%	2	25.0%	1	16.7%	3	15.0%
	About 20 additional items a week	2	66.7%	8	34.8%	9	50.0%	1	12.5%	5	83.3%	5	25.0%

		Lived in area with curbside				Marriage				Gender			
		Yes		No		Yes		No		Male		Female	
Average number of bags set out (RO)	About 30 additional items a week	1	33.3%	1	4.3%	1	5.6%	1	12.5%	0	0.0%	2	10.0%
	About 40 additional items a week	0	0.0%	4	17.4%	2	11.1%	2	25.0%	0	0.0%	4	20.0%
	About 50 additional items a week	0	0.0%	1	4.3%	1	5.6%	0	0.0%	0	0.0%	1	5.0%
	More than 50 additional items a week	0	0.0%	5	21.7%	3	16.7%	2	25.0%	0	0.0%	5	25.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	1	3	14.3%	21	35.0%	17	28.3%	7	33.3%	8	23.5%	16	34.0%
	2	9	42.9%	23	38.3%	23	38.3%	9	42.9%	15	44.1%	17	36.2%
	3	3	14.3%	7	11.7%	9	15.0%	1	4.8%	5	14.7%	5	10.6%
	4	2	9.5%	3	5.0%	4	6.7%	1	4.8%	2	5.9%	3	6.4%
	5	3	14.3%	2	3.3%	3	5.0%	2	9.5%	1	2.9%	4	8.5%
More or less than before (RO)	6	0	0.0%	2	3.3%	2	3.3%	0	0.0%	1	2.9%	1	2.1%
	7	0	0.0%	1	1.7%	0	0.0%	1	4.8%	1	2.9%	0	0.0%
	9	0	0.0%	1	1.7%	1	1.7%	0	0.0%	0	0.0%	1	2.1%
	10	1	4.8%	0	0.0%	1	1.7%	0	0.0%	1	2.9%	0	0.0%
How full is cart upon setout (TAR)	More	0	0.0%	2	3.3%	2	3.3%	0	0.0%	0	0.0%	2	4.3%
	Less	12	57.1%	37	61.7%	36	60.0%	13	61.9%	19	55.9%	30	63.8%
	About the same amount	9	42.9%	21	35.0%	22	36.7%	8	38.1%	15	44.1%	15	31.9%
How full is cart upon setout (TAR)	Quarter full	1	12.5%	7	13.5%	5	14.3%	3	12.0%	5	27.8%	3	7.1%
	Half full	1	12.5%	17	32.7%	8	22.9%	10	40.0%	6	33.3%	12	28.6%
	Three quarters full	4	50.0%	16	30.8%	14	40.0%	6	24.0%	4	22.2%	16	38.1%

		Lived in area with curbside				Marriage				Gender			
		Yes		No		Yes		No		Male		Female	
More or less than before (TAR)	Full	2	25.0%	9	17.3%	5	14.3%	6	24.0%	2	11.1%	9	21.4%
	Full cart and then some more bags of trash	0	0.0%	3	5.8%	3	8.6%	0	0.0%	1	5.6%	2	4.8%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	More	1	12.5%	4	7.7%	4	11.4%	1	4.0%	3	16.7%	2	4.8%
	Less	4	50.0%	29	55.8%	17	48.6%	16	64.0%	7	38.9%	26	61.9%
Bags or cart preference (TAR)	About the same	3	37.5%	19	36.5%	14	40.0%	8	32.0%	8	44.4%	14	33.3%
	Greatly prefer carts	4	50.0%	27	51.9%	18	51.4%	13	52.0%	7	38.9%	24	57.1%
	Somewhat prefer carts	1	12.5%	6	11.5%	4	11.4%	3	12.0%	0	0.0%	7	16.7%
	DK/Neutral	0	0.0%	2	3.8%	1	2.9%	1	4.0%	0	0.0%	2	4.8%
	Somewhat prefer bags	2	25.0%	8	15.4%	7	20.0%	3	12.0%	7	38.9%	3	7.1%
One recycle cart enough (TAR)	Greatly prefer bags	1	12.5%	9	17.3%	5	14.3%	5	20.0%	4	22.2%	6	14.3%
	Yes	8	100%	51	98.1%	35	100%	24	96.0%	17	94.4%	42	100%
	No	0	0.0%	1	1.9%	0	0.0%	1	4.0%	1	5.6%	0	0.0%
One trash cart enough (TAR)	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Yes	8	100%	50	96.2%	33	94.3%	25	100.0%	16	88.9%	42	100%
	No	0	0.0%	2	3.8%	2	5.7%	0	0.0%	2	11.1%	0	0.0%
Smaller trash cart preferable (TAR)	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Yes	2	25.0%	14	26.9%	11	31.4%	5	20.0%	8	44.4%	8	19.0%
	No	6	75.0%	35	67.3%	21	60.0%	20	80.0%	7	38.9%	34	81.0%
Problmes this week (TAR)	Don't know	0	0.0%	3	5.8%	3	8.6%	0	0.0%	3	16.7%	0	0.0%
	Yes	0	0.0%	5	9.6%	4	11.4%	1	4.0%	3	16.7%	2	4.8%
	No	8	100%	47	90.4%	31	88.6%	24	96.0%	15	83.3%	40	95.2%

		Lived in area with curbside				Marriage				Gender			
		Yes		No		Yes		No		Male		Female	
What problems	Carts too big/Cumbersome	0	0.0%	4	80.0%	3	75.0%	1	100.0%	2	66.7%	2	100%
	Workers leave carts in the street	0	0.0%	1	20.0%	1	25.0%	0	0.0%	1	33.3%	0	0.0%
Recycling cart favorability (RO)	Very favorable	12	57.1%	34	56.7%	36	60.0%	10	47.6%	17	50.0%	29	61.7%
	Somewhat favorable	5	23.8%	11	18.3%	11	18.3%	5	23.8%	7	20.6%	9	19.1%
	DK/Neutral	3	14.3%	4	6.7%	5	8.3%	2	9.5%	3	8.8%	4	8.5%
	Somewhat unfavorable	1	4.8%	6	10.0%	5	8.3%	2	9.5%	4	11.8%	3	6.4%
	Very unfavorable	0	0.0%	5	8.3%	3	5.0%	2	9.5%	3	8.8%	2	4.3%
One recycling cart enough (RO)	Yes	20	95.2%	56	93.3%	56	93.3%	20	95.2%	32	94.1%	44	93.6%
	No	1	4.8%	1	1.7%	2	3.3%	0	0.0%	1	2.9%	1	2.1%
	Don't know	0	0.0%	3	5.0%	2	3.3%	1	4.8%	1	2.9%	2	4.3%
Problems this week (RO)	Yes	1	4.8%	4	6.7%	4	6.7%	1	4.8%	2	5.9%	3	6.4%
	No	20	95.2%	56	93.3%	56	93.3%	20	95.2%	32	94.1%	44	93.6%
What problems	Steep driveway makes it difficult	0	0.0%	2	50.0%	2	50.0%	0	0.0%	0	0.0%	2	66.7%
	Workers leave cart in street	1	100%	0	0.0%	1	25.0%	0	0.0%	1	50.0%	0	0.0%
	Storm blew open lid and cart filled with water	0	0.0%	1	25.0%	0	0.0%	1	100.0%	0	0.0%	1	33.3%
	Not home on collection day	0	0.0%	1	25.0%	1	25.0%	0	0.0%	1	50.0%	0	0.0%

		Lived in area with curbside				Marriage				Gender			
		Yes		No		Yes		No		Male		Female	
Like a trash cart as well (RO)	Yes	13	61.9%	22	36.7%	23	38.3%	12	57.1%	13	38.2%	22	46.8%
	No	8	38.1%	36	60.0%	36	60.0%	8	38.1%	20	58.8%	24	51.1%
	Don't know	0	0.0%	2	3.3%	1	1.7%	1	4.8%	1	2.9%	1	2.1%
Why do you want a trash cart (RO)	Only have to make 1 trip to the curb	1	8.3%	0	0.0%	1	4.5%	0	0.0%	1	7.7%	0	0.0%
	Helps keep trash contained/Cleaner/Away from animals	7	58.3%	10	47.6%	9	40.9%	8	72.7%	5	38.5%	12	60.0%
	Wheels make it easier to haul trash to curb	2	16.7%	6	28.6%	6	27.3%	2	18.2%	4	30.8%	4	20.0%
	Gives somewhere to store trash until collection	2	16.7%	4	19.0%	5	22.7%	1	9.1%	3	23.1%	3	15.0%
	Would save on plastic bags	0	0.0%	1	4.8%	1	4.5%	0	0.0%	0	0.0%	1	5.0%
Why do you not want a trash cart (RO)	No room to store it	1	14.3%	8	22.2%	5	14.3%	4	50.0%	4	21.1%	5	20.8%
	Carts are difficult to move	0	0.0%	8	22.2%	8	22.9%	0	0.0%	4	21.1%	4	16.7%
	Residents leave on curb for extended periods of time	0	0.0%	3	8.3%	2	5.7%	1	12.5%	2	10.5%	1	4.2%
	Already purchased a trash cart	2	28.6%	4	11.1%	4	11.4%	2	25.0%	1	5.3%	5	20.8%
	Don't produce enough trash to need a cart	1	14.3%	3	8.3%	3	8.6%	1	12.5%	1	5.3%	3	12.5%
	Like the bags	3	42.9%	8	22.2%	11	31.4%	0	0.0%	5	26.3%	6	25.0%
	Produce too much yard waste to fit in a cart	0	0.0%	2	5.6%	2	5.7%	0	0.0%	2	10.5%	0	0.0%

		Lived in area with curbside				Marriage				Gender			
		Yes		No		Yes		No		Male		Female	
Discontinue distribution of bags	Yes	1	12.5%	10	27.8%	10	27.8%	1	12.5%	4	20.0%	7	29.2%
	No	6	75.0%	23	63.9%	25	69.4%	4	50.0%	15	75.0%	14	58.3%
	Don't know	1	12.5%	3	8.3%	1	2.8%	3	37.5%	1	5.0%	3	12.5%
Used reusable BA tote bag	Yes	18	62.1%	70	62.5%	62	65.3%	26	56.5%	30	57.7%	58	65.2%
	No	11	37.9%	42	37.5%	33	34.7%	20	43.5%	22	42.3%	31	34.8%
Know that some plastics not recyclable	Yes	27	93.1%	95	84.8%	82	86.3%	40	87.0%	49	94.2%	73	82.0%
	No	2	6.9%	17	15.2%	13	13.7%	6	13.0%	3	5.8%	16	18.0%
Where in community do you get your info	Info provided by the city	3	11.5%	26	26.8%	20	24.7%	9	21.4%	8	19.0%	21	25.9%
	Homeowners meeting	0	0.0%	1	1.0%	1	1.2%	0	0.0%	1	2.4%	0	0.0%
	Online	5	19.2%	23	23.7%	21	25.9%	7	16.7%	9	21.4%	19	23.5%
	Flyers/Mailers	6	23.1%	15	15.5%	15	18.5%	6	14.3%	8	19.0%	13	16.0%
	From past recycling experience	3	11.5%	1	1.0%	1	1.2%	3	7.1%	1	2.4%	3	3.7%
	On TV	1	3.8%	1	1.0%	2	2.5%	0	0.0%	0	0.0%	2	2.5%
	On the cart on tote bag	4	15.4%	18	18.6%	12	14.8%	10	23.8%	10	23.8%	12	14.8%
	Meeting at beginning of pilot program	1	3.8%	7	7.2%	4	4.9%	4	9.5%	3	7.1%	5	6.2%
	Call BA sanitation	0	0.0%	1	1.0%	0	0.0%	1	2.4%	0	0.0%	1	1.2%
	Newspaper	0	0.0%	1	1.0%	1	1.2%	0	0.0%	0	0.0%	1	1.2%
	From the MET	2	7.7%	0	0.0%	1	1.2%	1	2.4%	2	4.8%	0	0.0%
	Word of mouth	0	0.0%	1	1.0%	0	0.0%	1	2.4%	0	0.0%	1	1.2%
	Called the city	1	3.8%	2	2.1%	3	3.7%	0	0.0%	0	0.0%	3	3.7%

		Lived in area with curbside				Marriage				Gender			
		Yes		No		Yes		No		Male		Female	
Where online do you get your info	recycleba.org	12	100%	34	85.0%	31	86.1%	15	93.8%	16	94.1%	30	85.7%
	MET website	0	0.0%	2	5.0%	2	5.6%	0	0.0%	0	0.0%	2	5.7%
	brokenarrowok.gov	0	0.0%	2	5.0%	2	5.6%	0	0.0%	0	0.0%	2	5.7%
	Google	0	0.0%	2	5.0%	1	2.8%	1	6.3%	1	5.9%	1	2.9%
Aware of recycleba.com	Yes	15	51.7%	67	59.8%	55	57.9%	27	58.7%	32	61.5%	50	56.2%
	No	14	48.3%	45	40.2%	40	42.1%	19	41.3%	20	38.5%	39	43.8%
Used recycleba.com	Yes	9	56.3%	44	56.4%	39	65.0%	14	41.2%	19	55.9%	34	56.7%
	No	7	43.8%	34	43.6%	21	35.0%	20	58.8%	15	44.1%	26	43.3%

		Employed											
		Full-time		Part-time		Self employed		Homemaker		Retired		Unemployed	
Put recyclables out this week	Yes	52	94.5%	10	100.0%	9	90.0%	8	88.9%	42	75.0%	1	100.0%
	No	3	5.5%	0	0.0%	1	10.0%	1	11.1%	14	25.0%	0	0.0%
Set out recycling cart this week	Yes	45	81.8%	7	70.0%	9	90.0%	7	77.8%	36	64.3%	1	100.0%
	No	10	18.2%	3	30.0%	1	10.0%	2	22.2%	20	35.7%	0	0.0%
Times per week set out recycling	1 week out of month	4	7.3%	1	10.0%	0	0.0%	2	22.2%	16	28.6%	0	0.0%
	2 weeks out of month	13	23.6%	4	40.0%	4	40.0%	2	22.2%	13	23.2%	0	0.0%
	3 weeks out of month	13	23.6%	3	30.0%	3	30.0%	0	0.0%	5	8.9%	0	0.0%
	4 months out of month	25	45.5%	2	20.0%	3	30.0%	5	55.6%	20	35.7%	1	100.0%
	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.6%	0	0.0%
Smaller recycling cart preferable	Yes	15	27.3%	5	50.0%	5	50.0%	3	33.3%	26	46.4%	0	0.0%
	No	36	65.5%	4	40.0%	4	40.0%	4	44.4%	25	44.6%	0	0.0%
	Don't know	4	7.3%	1	10.0%	1	10.0%	2	22.2%	5	8.9%	1	100.0%
Household has less trash now	Yes	42	76.4%	9	90.0%	8	80.0%	5	55.6%	31	55.4%	1	100.0%
	No	10	18.2%	1	10.0%	2	20.0%	2	22.2%	22	39.3%	0	0.0%
	Don't know	3	5.5%	0	0.0%	0	0.0%	2	22.2%	3	5.4%	0	0.0%
Recycling importance	Very important	49	89.1%	9	90.0%	8	80.0%	4	44.4%	36	64.3%	1	100.0%
	Somewhat important	4	7.3%	0	0.0%	0	0.0%	3	33.3%	11	19.6%	0	0.0%
	DK/Neutral	0	0.0%	0	0.0%	0	0.0%	1	11.1%	6	10.7%	0	0.0%
	Somewhat unimportant	0	0.0%	1	10.0%	1	10.0%	0	0.0%	1	1.8%	0	0.0%
	Very unimportant	2	3.6%	0	0.0%	1	10.0%	1	11.1%	2	3.6%	0	0.0%
Recycling service satisfaction	Very satisfied	47	85.5%	10	100.0%	7	70.0%	7	77.8%	34	60.7%	1	100.0%
	Somewhat satisfied	6	10.9%	0	0.0%	1	10.0%	0	0.0%	9	16.1%	0	0.0%

		Employed											
		Full-time		Part-time		Self employed		Homemaker		Retired		Unemployed	
Time per week spend on recycling	DK/Neutral	0	0.0%	0	0.0%	1	10.0%	1	11.1%	8	14.3%	0	0.0%
	Somewhat unsatisfied	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.6%	0	0.0%
	Very unsatisfied	2	3.6%	0	0.0%	1	10.0%	1	11.1%	3	5.4%	0	0.0%
	Less than 30 minutes	41	74.5%	8	80.0%	7	70.0%	8	88.9%	43	76.8%	1	100.0%
	30 - 60 minutes	13	23.6%	2	20.0%	3	30.0%	1	11.1%	10	17.9%	0	0.0%
	60 - 90 minutes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%
	90 - 120 minutes	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	More than 120 minutes	1	1.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Questions about recycling cart	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.6%	0	0.0%
	Yes	1	1.8%	0	0.0%	0	0.0%	2	22.2%	9	16.1%	0	0.0%
Recyclables to MET before curbside	No	54	98.2%	10	100.0%	10	100.0%	7	77.8%	47	83.9%	1	100.0%
	0	40	72.7%	8	80.0%	6	60.0%	7	77.8%	37	66.1%	1	100.0%
	1 - 2	14	25.5%	2	20.0%	4	40.0%	2	22.2%	19	33.9%	0	0.0%
	3 - 4	1	1.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	5 or more	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Recycle more now	Don't remember	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Yes	10	66.7%	2	100.0%	3	75.0%	2	100.0%	9	47.4%	0	0.0%
	No	5	33.3%	0	0.0%	1	25.0%	0	0.0%	10	52.6%	0	0.0%
How much more recycling	About 10 additional items a week	0	0.0%	1	50.0%	1	33.3%	0	0.0%	2	22.2%	0	0.0%
	About 20 additional items a week	6	60.0%	0	0.0%	1	33.3%	1	50.0%	2	22.2%	0	0.0%

		Employed											
		Full-time		Part-time		Self employed		Homemaker		Retired		Unemployed	
Average number of bags set out (RO)	About 30 additional items a week	1	10.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%
	About 40 additional items a week	1	10.0%	0	0.0%	1	33.3%	0	0.0%	2	22.2%	0	0.0%
	About 50 additional items a week	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	11.1%	0	0.0%
	More than 50 additional items a week	2	20.0%	1	50.0%	0	0.0%	0	0.0%	2	22.2%	0	0.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	1	8	26.7%	1	50.0%	0	0.0%	1	16.7%	14	36.8%	0	0.0%
	2	11	36.7%	1	50.0%	3	60.0%	3	50.0%	14	36.8%	0	0.0%
	3	6	20.0%	0	0.0%	1	20.0%	1	16.7%	2	5.3%	0	0.0%
	4	1	3.3%	0	0.0%	0	0.0%	0	0.0%	4	10.5%	0	0.0%
	5	2	6.7%	0	0.0%	1	20.0%	0	0.0%	2	5.3%	0	0.0%
	6	1	3.3%	0	0.0%	0	0.0%	0	0.0%	1	2.6%	0	0.0%
	7	1	3.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	9	0	0.0%	0	0.0%	0	0.0%	1	16.7%	0	0.0%	0	0.0%
	10	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	2.6%	0	0.0%
More or less than before (RO)	More	1	3.3%	0	0.0%	0	0.0%	0	0.0%	1	2.6%	0	0.0%
	Less	20	66.7%	2	100.0%	3	60.0%	4	66.7%	20	52.6%	0	0.0%
	About the same amount	9	30.0%	0	0.0%	2	40.0%	2	33.3%	17	44.7%	0	0.0%
How full is cart upon setout (TAR)	Quarter full	4	16.0%	1	12.5%	0	0.0%	0	0.0%	3	16.7%	0	0.0%
	Half full	9	36.0%	0	0.0%	1	20.0%	0	0.0%	7	38.9%	1	100.0%

		Employed											
		Full-time		Part-time		Self employed		Homemaker		Retired		Unemployed	
More or less than before (TAR)	Three quarters full	8	32.0%	5	62.5%	2	40.0%	1	33.3%	4	22.2%	0	0.0%
	Full	3	12.0%	2	25.0%	1	20.0%	1	33.3%	4	22.2%	0	0.0%
	Full cart and then some more bags of trash	1	4.0%	0	0.0%	1	20.0%	1	33.3%	0	0.0%	0	0.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	More	1	4.0%	0	0.0%	4	80.0%	0	0.0%	0	0.0%	0	0.0%
	Less	16	64.0%	7	87.5%	1	20.0%	2	66.7%	7	38.9%	0	0.0%
	About the same	8	32.0%	1	12.5%	0	0.0%	1	33.3%	11	61.1%	1	100.0%
Bags or cart preference (TAR)	Greatly prefer carts	18	72.0%	5	62.5%	2	40.0%	1	33.3%	4	22.2%	1	100.0%
	Somewhat prefer carts	1	4.0%	1	12.5%	1	20.0%	0	0.0%	4	22.2%	0	0.0%
	DK/Neutral	1	4.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%
	Somewhat prefer bags	3	12.0%	0	0.0%	0	0.0%	1	33.3%	6	33.3%	0	0.0%
	Greatly prefer bags	2	8.0%	2	25.0%	1	20.0%	1	33.3%	4	22.2%	0	0.0%
One recycle cart enough (TAR)	Yes	24	96.0%	8	100.0%	5	100.0%	3	100.0%	18	100.0%	1	100.0%
	No	1	4.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
One trash cart enough (TAR)	Yes	24	96.0%	8	100.0%	4	80.0%	3	100.0%	18	100.0%	1	100.0%
	No	1	4.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Smaller trash cart preferable (TAR)	Yes	3	12.0%	4	50.0%	2	40.0%	1	33.3%	6	33.3%	0	0.0%
	No	20	80.0%	4	50.0%	2	40.0%	2	66.7%	12	66.7%	1	100.0%
	Don't know	2	8.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%

		Employed											
		Full-time		Part-time		Self employed		Homemaker		Retired		Unemployed	
Problems this week (TAR)	Yes	2	8.0%	0	0.0%	0	0.0%	0	0.0%	3	16.7%	0	0.0%
	No	23	92.0%	8	100.0%	5	100.0%	3	100.0%	15	83.3%	1	100.0%
What problems	Carts too big/Cumbersome	1	50.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%	0	0.0%
	Workers leave carts in the street	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Recycling cart favorability (RO)	Very favorable	23	76.7%	0	0.0%	3	60.0%	4	66.7%	16	42.1%	0	0.0%
	Somewhat favorable	4	13.3%	1	50.0%	0	0.0%	1	16.7%	10	26.3%	0	0.0%
	DK/Neutral	0	0.0%	0	0.0%	1	20.0%	0	0.0%	6	15.8%	0	0.0%
	Somewhat unfavorable	2	6.7%	1	50.0%	1	20.0%	0	0.0%	3	7.9%	0	0.0%
	Very unfavorable	1	3.3%	0	0.0%	0	0.0%	1	16.7%	3	7.9%	0	0.0%
One recycling cart enough (RO)	Yes	29	96.7%	2	100.0%	5	100.0%	5	83.3%	35	92.1%	0	0.0%
	No	1	3.3%	0	0.0%	0	0.0%	0	0.0%	1	2.6%	0	0.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	1	16.7%	2	5.3%	0	0.0%
Problems this week (RO)	Yes	0	0.0%	0	0.0%	1	20.0%	0	0.0%	4	10.5%	0	0.0%
	No	30	100.0%	2	100.0%	4	80.0%	6	100.0%	34	89.5%	0	0.0%
What problems	Steep driveway makes it difficult	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	50.0%	0	0.0%
	Workers leave cart in street	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
	Storm blew open lid and cart filled with water	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%
	Not home on collection day	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%

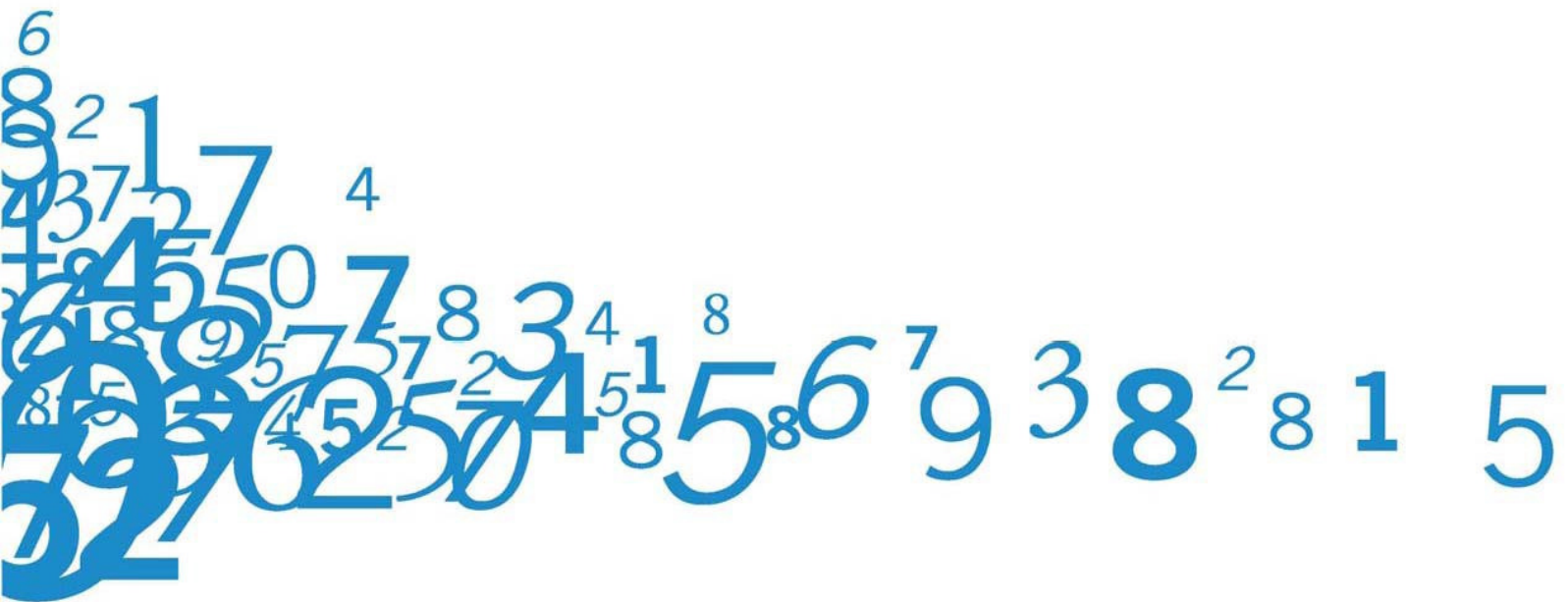
		Employed											
		Full-time		Part-time		Self employed		Homemaker		Retired		Unemployed	
Like a trash cart as well (RO)	Yes	16	53.3%	1	50.0%	2	40.0%	3	50.0%	13	34.2%	0	0.0%
	No	14	46.7%	1	50.0%	3	60.0%	2	33.3%	24	63.2%	0	0.0%
	Don't know	0	0.0%	0	0.0%	0	0.0%	1	16.7%	1	2.6%	0	0.0%
Why do you want a trash cart (RO)	Only have to make 1 trip to the curb	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	8.3%	0	0.0%
	Helps keep trash contained/Cleaner/Away from animals	9	56.3%	1	100.0%	0	0.0%	0	0.0%	7	58.3%	0	0.0%
	Wheels make it easier to haul trash to curb	3	18.8%	0	0.0%	2	100.0%	1	50.0%	2	16.7%	0	0.0%
	Gives somewhere to store trash until collection	4	25.0%	0	0.0%	0	0.0%	1	50.0%	1	8.3%	0	0.0%
	Would save on plastic bags	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	8.3%	0	0.0%
Why do you not want a trash cart (RO)	No room to store it	3	21.4%	1	100.0%	0	0.0%	0	0.0%	5	21.7%	0	0.0%
	Carts are difficult to move	2	14.3%	0	0.0%	0	0.0%	0	0.0%	6	26.1%	0	0.0%

		Employed											
		Full-time		Part-time		Self employed		Homemaker		Retired		Unemployed	
Discontinue distribution of bags	Residents leave on curb for extended periods of time	1	7.1%	0	0.0%	1	33.3%	0	0.0%	1	4.3%	0	0.0%
	Already purchased a trash cart	1	7.1%	0	0.0%	1	33.3%	1	50.0%	3	13.0%	0	0.0%
	Don't produce enough trash to need a cart	2	14.3%	0	0.0%	0	0.0%	0	0.0%	2	8.7%	0	0.0%
	Like the bags	4	28.6%	0	0.0%	1	33.3%	1	50.0%	5	21.7%	0	0.0%
	Produce too much yard waste to fit in a cart	1	7.1%	0	0.0%	0	0.0%	0	0.0%	1	4.3%	0	0.0%
	Yes	3	21.4%	0	0.0%	0	0.0%	1	50.0%	7	29.2%	0	0.0%
	No	10	71.4%	1	100.0%	3	100.0%	1	50.0%	14	58.3%	0	0.0%
	Don't know	1	7.1%	0	0.0%	0	0.0%	0	0.0%	3	12.5%	0	0.0%
	Used reusable BA tote bag	36	65.5%	7	70.0%	8	80.0%	7	77.8%	29	51.8%	1	100.0%
	No	19	34.5%	3	30.0%	2	20.0%	2	22.2%	27	48.2%	0	0.0%
Know that some plastics not recyclable	Yes	50	90.9%	10	100.0%	9	90.0%	7	77.8%	46	82.1%	0	0.0%
	No	5	9.1%	0	0.0%	1	10.0%	2	22.2%	10	17.9%	1	100.0%
Where in community do you get your info	Info provided by the city	9	18.8%	4	44.4%	1	12.5%	2	25.0%	13	26.5%	0	0.0%
	Homeowners meeting	1	2.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Online	12	25.0%	2	22.2%	2	25.0%	3	37.5%	9	18.4%	0	0.0%
	Flyers/Mailers	10	20.8%	1	11.1%	1	12.5%	2	25.0%	6	12.2%	1	100.0%
	From past recycling experience	3	6.3%	0	0.0%	0	0.0%	0	0.0%	1	2.0%	0	0.0%
	On TV	1	2.1%	0	0.0%	0	0.0%	0	0.0%	1	2.0%	0	0.0%

		Employed											
		Full-time		Part-time		Self employed		Homemaker		Retired		Unemployed	
Where online do you get your info	On the cart on tote bag	8	16.7%	1	11.1%	3	37.5%	1	12.5%	9	18.4%	0	0.0%
	Meeting at beginning of pilot program	1	2.1%	1	11.1%	0	0.0%	0	0.0%	6	12.2%	0	0.0%
	Call BA sanitation	0	0.0%	0	0.0%	1	12.5%	0	0.0%	0	0.0%	0	0.0%
	Newspaper	1	2.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	From the MET	2	4.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Word of mouth	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	2.0%	0	0.0%
	Called the city	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	6.1%	0	0.0%
	recycleba.org	18	78.3%	4	100.0%	3	100.0%	3	75.0%	17	100.0%	1	100.0%
	MET website	2	8.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	brokenarrowok.gov	1	4.3%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	0	0.0%
	Google	2	8.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Aware of recycleba.com	Yes	34	61.8%	5	50.0%	6	60.0%	4	44.4%	33	58.9%	0	0.0%
	No	21	38.2%	5	50.0%	4	40.0%	5	55.6%	23	41.1%	1	100.0%
Used recycleba.com	Yes	25	69.4%	4	57.1%	3	42.9%	4	100.0%	17	42.5%	0	0.0%
	No	11	30.6%	3	42.9%	4	57.1%	0	0.0%	23	57.5%	0	0.0%

SoonerPoll.com

820 NE 63rd Street
Oklahoma City, OK 73105
405.607.4664



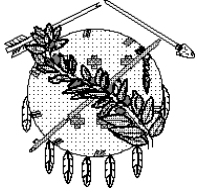
3-year transition plan for Broken Arrow Recycling	FY20		FY21	
	Planning year: Fall 2019 - Fall 2020		Year 1: Fall 2020 - Fall 2021	
	Re-route entire city to once weekly and single-side service		All customers receive recycling cart	
	Services continue status quo during planning year		All 8 garbage routes serviced by REL trucks (8 drivers, 8 helpers)	
	2 pick-up trucks are purchased for Field Supervisors (this is a revision to FY20 budget)		5 recycling routes are serviced by REL trucks (5 drivers, 5 helpers)	
	3 ASL trucks are ordered (paid for next year)		3 recycling routes are serviced by ASL trucks (3 drivers, 0 helpers)	
	3 new REL trucks ordered with tippers; 9 additional REL trucks are retrofitted with lifts; 0 new additional new trucks ordered beyond 36,000 recycling carts are ordered		2 ASL trucks are ordered (paid for next year; brings fleet to 5)	
			1 REL truck is ordered (paid for next year)	
			1 Cart Recycling Collection: Bags + Recycle Cart	
COLLECTION OPERATIONS	Budgeted FY20			
Salaries, Wages & Benefits for Collection, Manager/Superintendent, and Dispatcher	\$	2,969,700.00	\$	2,294,543.68
Salaries, Wages & Benefits for new Field Supervisors (2) and Area Manager (1)	\$	-	\$	258,654.24
Total Prof & Tech Services	\$	159,900.00	\$	50,000.00
Total Property Services LESS Disposal or Processing	\$	102,300.00	\$	102,300.00
Contract Landfill Services (includes Covanta)	\$	589,600.00		
Covanta only	\$	-	\$	480,978.62
WM Landfill only	\$	-	\$	32,897.56
Contract MRF Recycling Processing Services @\$69.50 per ton	\$	-	\$	555,445.35
Total Other Services LESS Temporary Services	\$	669,000.00	\$	133,350.00
Temporary Services	\$	353,000.00	all labor included above	
Uniforms	\$	10,800.00	\$	11,340.00
Tires & Tubes	\$	213,900.00		
Vehicle Repair Parts	\$	134,000.00		
Fuel & Lubricants	\$	250,000.00		
Material & Supplies	\$	6,000.00	\$	402,383.15
Operations costs for pick-ups and grapple trucks			\$	6,746.25
Other Equipment		11,500.00	\$	12,075.00
Sanitation Trash Bags	\$	620,000.00	\$	318,301.46
Trash Containers	\$	2,400.00	\$	2,520.00
Radio Maintenance	\$	1,000.00	\$	1,000.00
Recycle Center Maint	\$	1,000.00	\$	1,000.00
Motor Vehicle (Budgeted)	\$	577,000.00	\$	900,000.00
Construction (Budgeted)	\$	20,000.00	\$	-
Misc Capital Outlay (Budgeted)	\$	-	\$	50,000.00
Communication Equipment (Budgeted)	\$	15,000.00	\$	15,000.00
Office Equipment	\$	-	\$	4,000.00
Operations	\$	6,094,100.00	\$	4,663,535.32
Plus Budgeted Amounts for Motor Vehicle, Misc Cap, and Comm	\$	613,000.00	\$	969,000.00
Minus Pilot consulting	\$	(159,900.00)		
Total Operations and Capital Cost	\$	6,547,200.00	\$	5,632,535.32

3-year transition plan for Broken Arrow Recycling	FY20		FY21	
	Planning year: Fall 2019 - Fall 2020		Year 1: Fall 2020 - Fall 2021	
Additional Costs		Budgeted FY2020	1 Cart Recycling Collection: Bags + Recycle Cart	
Annual Amortization of Carts	\$	-	\$	173,772.00
Annual Maintenance of Carts	\$	-	\$	109,725.00
Annual Interest Expenses on Cart Purchase	\$	-	\$	6,516.45
Annual Amortization of Tippers	\$	25,200.00	\$	25,200.00
Annual Interest Expenses on Tipper Purchase	\$	945.00	\$	945.00
Recycling Outreach and Education	\$	-	\$	113,016.75
Total Additional Costs	\$	60,000.00	\$	429,175.20
Additional Revenues		Budgeted FY2020	1 Cart Recycling Collection: Bags + Recycle Cart	
Recycling Rebate	\$	-	\$	-
Total Costs		Budgeted FY2020	1 Cart Recycling Collection: Bags + Recycle Cart	
Current Operations		6,607,200.00		
Operations Costs with Recycling			\$	6,061,710.52
Per Household Costs, Per Month		Budgeted FY2020	1 Cart Recycling Collection: Bags + Recycle Cart	
Current Operations		15.73		
Operations Costs with Recycling			\$	14.01

		FY22	FY23	FY24
3-year transition plan for Broken Arrow Recycling		Year 2: Fall 2021 - Fall 2022	Year 3: Fall 2022 - 2023	
		All customers continue with recycling cart	All customers transition to 2-cart system	All customers on 2-cart system
		All 8 garbage routes serviced by REL trucks (8 drivers, 8 helpers)	All 8 garbage routes serviced by REL trucks (8 drivers, 8 helpers)	All garbage serviced by REL trucks
		3 recycling routes are serviced by REL trucks (3 drivers, 3 helpers)	0 recycling routes are serviced by REL trucks	
		5 recycling route is serviced by ASL trucks (5 drivers, 0 helpers)	All 8 recycling routes are serviced by ASL trucks (8 drivers, 0 helpers)	All recycling serviced by ASL trucks
		3 ASL trucks are ordered (paid for next year; brings fleet to 8)	1 ASL truck is ordered (paid for next year; creates back-up)	
				Review fleet condition to determine purchases for this year
		0 REL trucks are ordered	1 REL truck is ordered	
		36,000 garbage carts are ordered		
		1 Cart Recycling Collection: Bags + Recycle Cart	2 Cart Recycling Collection: Cart + Cart	
COLLECTION OPERATIONS				
Salaries, Wages & Benefits for Collection, Manager/Superintendent, and Dispatcher	\$	2,208,639.00	\$	2,043,580.02
Salaries, Wages & Benefits for new Field Supervisors (2) and Area Manager (1)	\$	265,120.60	\$	271,748.61
Total Prof & Tech Services	\$	50,000.00	\$	50,000.00
Total Property Services LESS Disposal or Processing	\$	107,415.00	\$	112,785.75
Contract Landfill Services (includes Covanta)				
Covanta only	\$	517,701.34	\$	557,227.84
WM Landfill only	\$	35,409.29	\$	38,112.79
Contract MRF Recycling Processing Services @\$69.50 per ton	\$	572,108.71	\$	589,271.97
Total Other Services LESS Temporary Services	\$	140,017.50	\$	147,018.38
Temporary Services	all labor included above		all labor included above	
Uniforms	\$	11,907.00	\$	12,502.35
Tires & Tubes	\$	422,502.31	\$	443,627.43
Vehicle Repair Parts				
Fuel & Lubricants				
Material & Supplies				
Operations costs for pick-ups and grapple trucks	\$	7,083.56	\$	7,437.74
Other Equipment	\$	12,678.75	\$	13,312.69
Sanitation Trash Bags	\$	318,301.46	\$	159,150.73
Trash Containers	\$	2,646.00	\$	2,778.30
Radio Maintenance	\$	1,000.00	\$	1,000.00
Recycle Center Maint	\$	1,000.00	\$	1,000.00
Motor Vehicle (Budgeted)	\$	800,000.00	\$	900,000.00
Construction (Budgeted)	\$	-	\$	-
Misc Capital Outlay (Budgeted)	\$	50,000.00	\$	50,000.00
Communication Equipment (Budgeted)	\$	15,000.00	\$	15,000.00
Office Equipment	\$	1,000.00	\$	1,000.00
Operations		\$ 4,673,530.52	\$ 4,450,554.58	
Plus Budgeted Amounts for Motor Vehicle, Misc Cap, and Comm	\$	866,000.00	\$	966,000.00
Minus Pilot consulting				
Total Operations and Capital Cost	\$	5,539,530.52	\$	5,416,554.58

3-year transition plan for Broken Arrow Recycling	FY22 Year 2: Fall 2021 - Fall 2022	FY23 Year 3: Fall 2022 - 2023	FY24
Additional Costs	1 Cart Recycling Collection: Bags + Recycle Cart	2 Cart Recycling Collection: Cart + Cart	
Annual Amortization of Carts	\$ 173,772.00	\$ 347,544.00	
Annual Maintenance of Carts	\$ 114,662.63	\$ 119,822.44	
Annual Interest Expenses on Cart Purchase	\$ 6,516.45	\$ 13,032.90	
Annual Amortization of Tippers	\$ 14,700.00	\$ 7,700.00	
Annual Interest Expenses on Tipper Purchase	\$ 551.25	\$ 288.75	
Recycling Outreach and Education	\$ 121,645.58	\$ 130,933.22	
Total Additional Costs	\$ 431,847.90	\$ 619,321.31	
Additional Revenues	1 Cart Recycling Collection: Bags + Recycle Cart	2 Cart Recycling Collection: Cart + Cart	
Recycling Rebate		\$ -	
Total Costs	1 Cart Recycling Collection: Bags + Recycle Cart	2 Cart Recycling Collection: Cart + Cart	
Current Operations			
Operations Costs with Recycling	\$ 5,971,378.43	\$ 6,035,875.90	
Per Household Costs, Per Month	1 Cart Recycling Collection: Bags + Recycle Cart	2 Cart Recycling Collection: Cart + Cart	
Current Operations			
Operations Costs with Recycling	\$ 13.40	\$ 13.15	

Assumption	Value	Source	Year 1 increase	Year 2 increase	Year 3 increase
Annual Tonnage Increase, trendline over time	1.03	City of Broken Arrow data			
Number of customers	35,000	Summer 2019 figure, City of Broken Arrow	36,050.00	37,131.50	38,245.45
Cart purchase FOB	\$ 48.27	2018 cart purchase from RP			
Cart maintenance: annual, per cart	\$ 3.00	Baton Rouge, LA, current contract is \$2.64	\$ 3.14	\$ 3.28	\$ 3.42
Recycling Carts	36,000	1 cart per household, plus 1000 spare			
Interest on purchases	3.75%	City of Broken Arrow			
Outreach expenditures: annual, per household	\$ 3.00	GBB	\$ 3.00	\$ 3.00	\$ 3.00
Solid Waste Disposal at Covanta \$ per ton	\$ 12.93	City of Broken Arrow FY19, includes tip fee of \$11.68 plus \$1.25 DEQ fee	\$ 13.51	\$ 14.12	\$ 14.76
Solid Waste Disposal at WM \$ per ton	\$ 25.47	City of Broken Arrow FY19, includes tip fee of \$24.22 plus \$1.25 DEQ fee	\$ 26.62	\$ 27.81	\$ 29.07
Solid Waste Diversion %	20.0%	2019 Broken Arrow Pilot			
FY19 Tons MSW Disposed at Covanta	39,000.00	City of Broken Arrow FY19 data	\$ 40,170.00	\$ 41,375.10	\$ 42,616.35
FY19 Tons MSW Disposed at WM	4,200.00	City of Broken Arrow FY19 data	\$ 4,326.00	\$ 4,455.78	\$ 4,589.45
Solid Waste Potential Diversion TPY	8,640.00	20% of 2019 Broken Arrow combined MSW tons disposed, rounded off	\$ 8,899.20	\$ 9,166.18	\$ 9,441.16
Solid Waste Potential Disposal	34,560.00	80% of 2019 Broken Arrow combined MSW tons disposed, rounded off	\$ 35,596.80	\$ 36,664.70	\$ 37,764.65
Residential Bulky tons to WM	600	City of Broken Arrow	\$ 618.00	\$ 636.54	\$ 655.64
Street Spoils tons to WM	600	City of Broken Arrow	\$ 618.00	\$ 636.54	\$ 655.64
Maintenance Center Open-tops - Annual Cost (budgeted)	\$ 8,000.00	City of Broken Arrow	\$ 8,400.00	\$ 8,820.00	\$ 9,261.00
Free Dump Days - Annual Cost (budgeted)	\$ 26,000.00	City of Broken Arrow	\$ 27,300.00	\$ 28,665.00	\$ 30,098.25
Net Recyclables Processing Cost per Ton	\$ (62.42)	2019 Broken Arrow Pilot	\$ (62.42)	\$ (62.42)	\$ (62.42)
Annual maintenance on half-ton pick-up truck	\$ 700.00	City of Broken Arrow	\$ 735.00	\$ 771.75	\$ 810.34
Annual maintenance on three-quarter-ton pick-up truck	\$ 700.00	City of Broken Arrow	\$ 735.00	\$ 771.75	\$ 810.34
Annual maintenance on smaller grapple truck	\$ 1,700.00	City of Broken Arrow	\$ 1,785.00	\$ 1,874.25	\$ 1,967.96
Annual maintenance on 2017 grapple truck (smaller + 20%)	\$ 2,040.00	City of Broken Arrow	\$ 2,142.00	\$ 2,249.10	\$ 2,361.56
1-cart recycling: Routes per Day: Recycling	8	C2Logix Resource Estimator			
1-cart recycling: Routes per Day: Garbage	7	C2Logix Resource Estimator			
1-cart recycling: Combined # Routes per Day	15	C2Logix Resource Estimator			
2-cart recycling: Routes per Day: Recycling	8	C2Logix Resource Estimator			
2-cart recycling: Routes per Day: Garbage	10	C2Logix Resource Estimator			
2-cart recycling: Combined # Routes per Day	18	C2Logix Resource Estimator			
Cost to retrofit trucks	\$ 7,000.00	City of Broken Arrow			
2-cart garbage Fleet: Prime Trucks (need to retrofit)	6	City of Broken Arrow			
Sanitation Truck Maintenance Operations per mile (Average)	\$ 1.54				
			Year 1 wage increase	Year 2 wage increase	Year 3 wage increase
Field Supervisor (at least 2)	\$ 27.82		\$ 28.52	\$ 29.23	\$ 29.96
with 40% for benefits	\$ 38.95	Broken Arrow, Sanitation Supervisor	\$ 39.92	\$ 40.92	\$ 41.94
Annual	\$ 81,016.00		\$ 83,041.40	\$ 85,117.44	\$ 87,245.37
Area Manager (1 position)	\$ 31.01		\$ 31.79	\$ 32.58	\$ 33.40
with 40% for benefits	\$ 43.42	Broken Arrow, Assistant Sanitation Manager	\$ 44.51	\$ 45.62	\$ 46.76
Annual	\$ 90,313.60		\$ 92,571.44	\$ 94,885.73	\$ 97,257.87
Dispatcher (1 position)	\$ 25.94	City of Broken Arrow	\$ 26.58	\$ 27.25	\$ 27.93
with 40% for benefits	\$ 36.31		\$ 37.22	\$ 38.15	\$ 39.10
Annual	\$ 75,524.80		\$ 77,412.92	\$ 79,348.24	\$ 81,331.95
Superintendent (1 position)	\$ 37.51	City of Broken Arrow	\$ 38.44	\$ 39.41	\$ 40.39
with 40% for benefits	\$ 52.51	Broken Arrow, Sanitation Manager	\$ 53.82	\$ 55.17	\$ 56.55
Annual	\$ 109,220.80		\$ 111,951.32	\$ 114,750.10	\$ 117,618.86
Refuse Collection Driver	\$ 25.06	City of Broken Arrow	\$ 25.68	\$ 26.33	\$ 26.98
Annual	\$ 35.08		\$ 35.96	\$ 36.86	\$ 37.78
	\$ 72,966.40		\$ 74,790.56	\$ 76,660.32	\$ 78,576.83
Refuse Collector (helper)	\$ 23.41	City of Broken Arrow	\$ 24.00	\$ 24.60	\$ 25.21
Annual	\$ 32.78		\$ 33.60	\$ 34.44	\$ 35.30
	\$ 68,182.40		\$ 69,886.96	\$ 71,634.13	\$ 73,424.99
New Automated Side loader	\$ 300,000.00				



City of Broken Arrow
Meeting Agenda
Broken Arrow Municipal Authority

Chairperson Craig Thurmond
Vice Chair Scott Eudey
Trustee Johnnie Parks
Trustee Debra Wimpee
Trustee Christi Gillespie

Thursday, October 10, 2019

5:15 PM

**CITY HALL MAIN
CONFERENCE ROOM**

NOTICE AND AGENDA OF SPECIAL MEETING

1. Call to Order

2. Roll Call

3. General Authority Business

- A. [19-1261](#) Presentation and discussion regarding the Broken Arrow Pilot Project
Report and recommendation of the Citizen Recycle Committee

4. Adjournment

**PLEASE NOTE: FOR THIS MEETING, PUBLIC COMMENTS/QUESTIONS WILL NOT
BE TAKEN.**

POSTED this _____ day of _____, _____, at _____ a.m./p.m.

City Clerk



City of Broken Arrow

Request for Action

File #: 19-1348, Version: 1

**Broken Arrow Municipal Authority
Meeting of: 11/05/2019**

Title:

Consideration, discussion, and possible approval of and authorization to execute Resolution #1280, a Resolution authorizing the Broken Arrow Municipal Authority (the "Authority") to issue its Utility System and Sales Tax Revenue Note, Taxable Series 2019 (the "Note") in the aggregate principal amount of not to exceed \$5,800,000; waiving competitive bidding and authorizing the Note to be sold on a negotiated basis; approving and authorizing execution of a Supplemental Note Indenture authorizing the issuance and securing the payment of the Note; providing that the organizational document creating the authority is subject to the provisions of the Indenture; ratifying and confirming a Lease Agreement by and between the City of Broken Arrow, Oklahoma (the "City") and the Authority pertaining to the City's water, sanitary sewer, and solid waste disposal systems; ratifying and confirming a Security Agreement by and between the City and the Authority pertaining to pledge of certain sales tax revenues, and approving and authorizing execution of a Sales Tax Agreement; authorizing and directing the distribution of information in connection with the placement of the Note and authorizing the execution of the Note and other documents relating to the transaction, including professional services agreements and an escrow agreement; and containing other provisions relating thereto

Background:

The City has two Oklahoma Water Resources Board (OWRB) loans (a 2009 Drinking Water State Revolving Fund and a 2011 Clean Water State Revolving Fund loans) that have interest rates of 3.11% and 2.85% respectively. The outstanding combined balance is \$5,675,000. The OWRB is refunding the bonds that back these loans and they have given the City permission to pay off the notes. Staff believes it is in the best interest of the Authority to refinance. The attached resolution is written with a not to exceed interest rate of 2.6%. Bids for the interest rate will be opened on Tuesday, November 5th and it is anticipated a lower interest rate below the not to exceed rate will be submitted. Should the bid rate come in at the not to exceed rate the City would save \$90,000 after all costs.

Cost: Estimated \$66,000 in issuance costs

Funding Source: Proceeds from the refunding of the OWRB loans

File #: 19-1348, **Version:** 1

Requested By: Cynthia S. Arnold, Finance Director

Approved By: City Manager's Office

Attachments: Resolution #1280, Public Finance Law Group Contract, and Municipal Finance Services Inc Contract

Recommendation:

Approve and authorize execution of Resolution # 1280.

RESOLUTION NO. 1280

A RESOLUTION AUTHORIZING THE BROKEN ARROW MUNICIPAL AUTHORITY (THE "AUTHORITY") TO ISSUE ITS UTILITY SYSTEM AND SALES TAX REVENUE NOTE, TAXABLE SERIES 2019 (THE "NOTE") IN THE AGGREGATE PRINCIPAL AMOUNT OF NOT TO EXCEED \$5,800,000; WAIVING COMPETITIVE BIDDING AND AUTHORIZING THE NOTE TO BE SOLD ON A NEGOTIATED BASIS; APPROVING AND AUTHORIZING EXECUTION OF A GENERAL BOND INDENTURE AND SUPPLEMENTAL NOTE INDENTURE AUTHORIZING THE ISSUANCE AND SECURING THE PAYMENT OF THE NOTE; PROVIDING THAT THE ORGANIZATIONAL DOCUMENT CREATING THE AUTHORITY IS SUBJECT TO THE PROVISIONS OF THE INDENTURE; RATIFYING AND CONFIRMING A LEASE AGREEMENT BY AND BETWEEN THE CITY OF BROKEN ARROW, OKLAHOMA (THE "CITY") AND THE AUTHORITY PERTAINING TO THE CITY'S WATER, SANITARY SEWER, AND SOLID WASTE DISPOSAL SYSTEMS; RATIFYING AND CONFIRMING A SECURITY AGREEMENT BY AND BETWEEN THE CITY AND THE AUTHORITY PERTAINING TO PLEDGE OF CERTAIN SALES TAX REVENUES, AND APPROVING AND AUTHORIZING EXECUTION OF A SALES TAX AGREEMENT; AUTHORIZING AND DIRECTING THE DISTRIBUTION OF INFORMATION IN CONNECTION WITH THE PLACEMENT OF THE NOTE AND AUTHORIZING THE EXECUTION OF THE NOTE AND OTHER DOCUMENTS RELATING TO THE TRANSACTION, INCLUDING PROFESSIONAL SERVICES AGREEMENTS, A PARITY AGREEMENT, AND AN ESCROW AGREEMENT; AND CONTAINING OTHER PROVISIONS RELATING THERETO.

NOW, THEREFORE, BE IT RESOLVED BY THE TRUSTEES OF THE BROKEN ARROW MUNICIPAL AUTHORITY:

SECTION 1. INDEBTEDNESS AUTHORIZED. The Broken Arrow Municipal Authority (the "Authority") is authorized to incur an indebtedness by the issuance of its Utility System and Sales Tax Revenue Note, Taxable Series 2019 for and on behalf of the City of Broken Arrow, Oklahoma (the "City"), in the aggregate principal amount of not to exceed \$5,800,000 (the "Note") for the purpose of providing funds to (i) refinance the outstanding amount of the Authority's Series 2009 Drinking Water SRF Promissory Note to Oklahoma Water Resources Board dated December 29, 2009, issued in the original principal amount of \$4,000,000.00, and the Authority's Series 2011 Clean Water SRF Promissory Note to Oklahoma Water Resources Board dated July 20, 2011, issued in the original principal amount of \$4,680,000.00; and (ii) pay certain costs associated with the issuance of the Note. The Note shall bear interest at the rate of not to exceed 2.60% per annum, and shall mature not later than April 1, 2032. The purchaser, principal amount, principal installments, interest rate, and maturity date shall be set forth in a Certificate of Determination to be executed by the Chairman or Vice-Chairman of the Authority prior to closing the Note.

SECTION 2. COMPETITIVE BIDDING WAIVED. Competitive bidding on the sale of said Note is waived and the Note is authorized to be sold to a financial institution, at a price of par.

The purchaser of the Note shall be designated in the Certificate of Determination referenced in Section 1 herein.

SECTION 3. INDENTURE. The General Bond Indenture, as supplemented and amended by a Series 2019 Supplemental Note Indenture, all by and between BOKF, NA, as Trustee (the “Trustee”) and the Authority (collectively referred to herein as the “Indenture”), authorizing the issuance of and securing the payment of the Note approved in Section 1 hereof, is hereby approved and the Chairman or Vice Chairman and Secretary or Assistant Secretary of the Authority are authorized and directed to execute and deliver same for and on behalf of the Authority.

SECTION 4. ORGANIZATIONAL DOCUMENT SUBJECT TO THE INDENTURE. The organizational document creating the Authority is subject to the provisions of the Indenture referenced in Section 3 hereof.

SECTION 5. LEASE AGREEMENT. The Lease Agreement and Operation and Maintenance Contract dated as of August 1, 1979 (the “Lease Agreement”), whereby the City leases its presently existing and hereafter acquired water, sanitary sewer, and solid waste disposal systems to the Authority and the Authority agrees to operate the same, is hereby ratified and confirmed and the term of said Lease Agreement shall extend until the Note is paid.

SECTION 6. SALES TAX AGREEMENT. The Security Agreement dated as of June 1, 1992, by and between the City and the Authority pertaining to the City’s agreement to annually appropriate and pay all sales tax proceeds derived from City Ordinance 714 over the Authority to be used exclusively for the purposes set out in said Ordinance, is hereby ratified and confirmed; provided however, the Chairman or Vice Chairman and Secretary or Assistant Secretary of the Authority are authorized and directed to execute and deliver a Sales Tax Agreement by and between the City and the Authority to replace and supersede said Security Agreement, as directed by Bond Counsel.

SECTION 7. EXECUTION OF NECESSARY DOCUMENTS. The Authority authorizes Municipal Finance Services, Inc., as Financial Advisor, to distribute information to interested financial institutions in connection with the proposed placement of the Note. Authority Staff are authorized to direct the Financial Advisor to negotiate directly with an interested financial institution(s). The Chairman or Vice-Chairman and Secretary or Assistant Secretary of the Authority are hereby authorized and directed on behalf of the Authority to execute and deliver the Note to a financial institution as designated in the Certificate of Determination referenced in Section 1 hereof, upon receipt of the purchase price and are further authorized and directed to execute all necessary documentation and closing and delivery papers required by Bond Counsel, including professional services agreements with Municipal Finance Services, Inc., as Financial Advisor, with The Public Finance Law Group PLLC, as Bond Counsel, and with a placement agent (if determined necessary by the Authority Staff) with respect to the Note, a Parity Agreement by and among the Authority, the Trustee, and the Oklahoma Water Resources Board, and an Escrow Agreement by and between the Authority and BOKF, NA (if determined to be appropriate by Bond Counsel); to approve the disbursement of the proceeds of the Note, including any costs of issuance; to approve and make any changes to the documents approved by this Resolution, for and on behalf of the Authority, the execution and delivery of such documents being conclusive as to the approval of any changes contained therein by the Authority; and to execute, record and file any and all the necessary financing

statements and security instruments, including but not limited to the documents approved hereby, and to consummate the transaction contemplated hereby.

[Remainder of Page Intentionally Left Blank]

PASSED AND APPROVED THIS 5TH DAY OF NOVEMBER, 2019.

BROKEN ARROW MUNICIPAL AUTHORITY

(SEAL)

Chairman

ATTEST:

Secretary

CERTIFICATE
OF
AUTHORITY ACTION

I, the undersigned, hereby certify that I am the duly qualified and acting Secretary of the Broken Arrow Municipal Authority.

I further certify that the Trustees of the Authority held a Regular Meeting at 6:30 o'clock p.m. on November 5, 2019, after due notice was given in full compliance with the Oklahoma Open Meeting Act.

I further certify that attached hereto is a full and complete copy of a Resolution that was passed and approved by said Trustees at said meeting as the same appears in the official records of my office and that said Resolution is currently in effect and has not been repealed or amended as of this date.

I further certify that below is listed those Trustees present and absent at said meeting; those making and seconding the motion that said Resolution be passed and approved, and those voting for and against such motion:

PRESENT:

ABSENT:

MOTION MADE BY:

MOTION SECONDED BY:

AYE:

NAY:

WITNESS MY HAND THIS 5TH DAY OF NOVEMBER, 2019.

BROKEN ARROW MUNICIPAL AUTHORITY

(SEAL)

Secretary of Authority



**MUNICIPAL
FINANCE
SERVICES, INC.**
est. 1990

mfsok.com

P: 405.340.1727

F: 405.340.3607

3933 E. Covell Road
Edmond, OK 73034

P.O. Box 747
Edmond, OK 73083-0747

October 28, 2019

MUNICIPAL ADVISOR SERVICES AGREEMENT

THIS AGREEMENT is entered into by and among MUNICIPAL FINANCE SERVICES, INC. ("MFSOK") and BROKEN AROW MUNICIPAL AUTHORITY (the "Client").

The Client desires to engage MFSOK as Municipal Advisor in connection with refunding the Client's Series 2009 Drinking Water SRF Promissory Note to Oklahoma Water Resources Board and Series 2011 Drinking Water SRF Promissory Note to Oklahoma Water Resources Board (the "Financing"), and agrees as follows:

I. Scope of Services.

MFSOK will render the following services as Municipal Advisor to the Client:

- A. Review recommendations made by other parties to the Client with respect to the Financing
- B. Evaluate options or alternatives with respect to the Financing
- C. Provide financial analysis to the Client to assist in understanding the costs and benefits of the proposed Financing.
- D. Review financial and other information regarding the Client, the proposed Financing and source of repayment of or security for the Financing
- E. Coordinate as appropriate with Client staff, legal representatives, government agencies, accountants, auditors, engineers, consultants, rating agencies, lenders, placement agents, trustees, paying agents, bond insurers and other credit enhancers, to facilitate the Financing.
- F. Represent the Client in negotiating terms and conditions of the Financing with potential lenders including but not limited to commercial banks, bond underwriters, and the Oklahoma Water Resource Board.
- G. Review financing proposal from potential lenders and make recommendations.
- H. Review documents related to the Financing.
- I. Coordinate closing of the Financing with Client and other parties.

MFSOK and the Client acknowledge that the Client shall be represented by appropriate legal counsel on the transaction under separate contract or contracts.

Neither MFSOK as Municipal Advisor nor its Municipal Advisor Representatives are licensed to engage in the practice of law and, consequently, will offer no legal advice. None of the fee for services under this Agreement relates to legal services. If such legal services are necessary, it shall be the responsibility of the Client to obtain them.

MFSOK's services are limited to those specifically set forth herein. MFSOK's services do not extend past the closing of the Financing. Examples of some of the services that are not included are assistance with Client's continuing disclosure obligations, if any; assistance with investment of proceeds of the Financing; and assistance with arbitrage rebate calculations.

II. Compensation and Reimbursements

- A. Compensation for Municipal Advisor Services. For services as Municipal Advisor to the Client, MFSOK shall be paid at the time of closing a fee calculated as follows:

\$25,000.00 plus

0.50% of amount over \$5,000,000 up to and including \$10,000,000, plus

0.25% of amount \$10,000,001 up to and including \$15,000,000, plus

0.125% of amount over \$15,000,000.

- B. Expenses. MFSOK shall also be paid a fixed amount of \$2,000.00 per transaction to cover expenses incurred as part of the transaction, provided that any filing, publication, recording or printing costs or similar third-party costs required in connection with the Financing shall be paid directly by the Client.

- C. Payment and Contingency. Payment for all fees and expenses hereunder shall be made at closing from proceeds of the Financing or from other available funds of the Client and shall be contingent upon closing of the Financing.

III. Term and Termination

- A. Term of Agreement. Unless terminated as provided herein, the term of this Agreement shall be the closing date of the Financing.

- B. Termination of Agreement and Services. This Agreement and all Municipal Advisor services to be rendered hereunder may be terminated at any time by written notice from either party, with or without cause. In that event, all finished and unfinished documents prepared for the Client, shall, at the option of Client, become its property and shall be delivered to it or any party it may designate, provided that MFSOK shall have no liability whatsoever for any subsequent use of such documents.

IV. Successors and Assigns

MFSOK may not assign its obligations under this Agreement without the written consent of Client except to a successor partnership or corporation to which all or substantially all of the assets and operations of MFSOK are transferred. Client may assign its rights and obligations under this Agreement to (but only to) any other public entity that incurs the loan. Client shall not otherwise assign its rights and obligations under this Agreement without written consent of MFSOK. All references to MFSOK and Client in this Agreement shall be deemed to refer to

any successor of MFSOK and to any such assignee of Client and shall bind and inure to the benefit of such successor and assignee whether so expressed or not.

V. Municipal Advisor Registration and Acknowledgement

Pursuant to Municipal Securities Rulemaking Board Rule (MSRB) G-10, on Investor and Municipal Advisory Client Education and Protection, Municipal Advisors are required to provide certain written information to their municipal advisory client and/or obligated person clients which include the following:

Municipal Finance Services, Inc. is currently registered as a Municipal Advisor with the U.S. Securities and Exchange Commission (SEC) and the MSRB. MFSOK is also registered as an Investment Advisor with the State of Oklahoma.

Within the MSRB website at www.msrb.org, the Client may obtain the Municipal Advisory client brochure that is posted on the MSRB website. The brochure describes the protections that may be provided by the MSRB Rules along with how to file a complaint with financial regulatory authorities.

VI. Conflict of Interest Statement

As of the date of this agreement, MFSOK has performed a reasonable diligence to determine if there are any conflicts of interest that should be brought to the attention of the Client. During the diligence process, MFSOK has determined that no material conflict of interest has been identified.

Since the compensation arrangement included in Section II includes a component that is based on the completion of a transaction, this may be viewed as a conflict of interest regarding our ability to provide unbiased advice to enter into such transaction. This viewed conflict of interest will not impair MFSOK's ability to render unbiased and competent advice to the Client. The fee paid to MFSOK increases the cost of borrowing to the Client. The increased cost occurs from compensating MFSOK for municipal advisory services provided.

MFSOK serves a wide variety of other clients that may from time to time have interests that could have a direct or indirect impact on the interests of another MFSOK client. For example, MFSOK serves as municipal advisor to other advisory clients and, in such cases, owes a regulatory duty to such other clients just as it does to the Client. These other clients may, from time to time and depending on the specific circumstances, have competing interests. In acting in the interests of its various clients, MFSOK could potentially face a conflict of interest arising from these competing client interests. MFSOK fulfills its regulatory duty and mitigates such conflicts through dealing honestly and with the utmost good faith with its clients.

If MFSOK becomes aware of any, actual or potential conflict of interest not mentioned above during this agreement, MFSOK will promptly provide the Client a supplement written disclosure with sufficient details of the change, if any, which will allow the Client to evaluate the situation.

VII. Legal Events and Disciplinary History

A regulatory disclosure action has been made on MFSOK's Form MA and on Form MA-I for two of MFSOK's municipal advisory personnel relating to a 2017 U.S. Securities and Exchange Commission ("SEC") order. The details of which are available in Item 9; C (2), C (4), C (5) and the corresponding regulatory action DRP section on Form MA and Item 6: C (2), C (4), C (5), C (6) and the corresponding regulatory action DRP section on Form MA-I for both Rick A. Smith and Jon Wolff. In addition, the Oklahoma Department of Securities adopted the above proceedings which are identified in Item 9; D (2), D (4) and the corresponding regulatory action DRP section on Form MA.

The Client may electronically access MFSOK's most recent Form MA and each most recent Form MA-I filed with the Commission at the following website:

www.sec.gov/edgar/searchedgar/companysearch.html.

There has been no change to any legal or disciplinary event that has been disclosed on MFSOK's SEC registration for MA filings since December 18, 2017.

VIII. Fiduciary Duty

MFSOK is registered as a Municipal Advisor with the SEC and MSRB. As such, MFSOK has a Fiduciary duty to the Client and must provide both a Duty of Care and a Duty of Loyalty that entails the following.

Duty of Care:

- A. exercise due care in performing its municipal advisory activities;
- B. possess the degree of knowledge and expertise needed to provide the Client with informed advice;
- C. make a reasonable inquiry as to the facts that are relevant to the Client's determination as to whether to proceed with a course of action or that form the basis for any advice provided to the Client; and
- D. undertake a reasonable investigation to determine that MFSOK is not forming any recommendation on materially inaccurate or incomplete information; MFSOK must have a reasonable basis for:
 - a. any advice provided to or on behalf of the Client;
 - b. any representations made in a certificate that it signs that will be reasonably foreseeably relied upon by the Client, any other party involved in the municipal securities transaction or municipal financial product, or investors in the Client's securities; and
 - c. any information provided to the Client or other parties involved in the municipal securities transaction in connection with the preparation of an official statement.

Duty of Loyalty:

MFSOK must deal honestly and with the utmost good faith with the Client and act in the Client's best interests without regard to the financial or other interests of MFSOK. MFSOK will eliminate or provide full and fair disclosure (included herein) to Client about each material conflict of interest (as applicable). MFSOK will not engage in municipal advisory activities with the Client as a municipal entity, if it cannot manage or mitigate its conflicts in a manner that will permit it to act in the Client's best interests. As of the date of receipt of this attachment, MFSOK has performed a reasonable diligence to determine if there are any conflicts of interest that should be brought to the attention of the Client.

IX. Recommendations

If MFSOK makes a recommendation of a municipal securities transaction or municipal financial product or if the review of a recommendation of another party is requested in writing by the Client and is within the scope of the engagement, MFSOK will determine, based on the information obtained through reasonable diligence of MFSOK whether a municipal securities transaction or municipal financial product is suitable for the Client. In addition, MFSOK will inform the Client of:

- A. the evaluation of the material risks, potential benefits, structure, and other characteristics of the recommendation;
- B. the basis upon which MFSOK reasonably believes that the recommended municipal securities transaction or municipal financial product is, or is not, suitable for the Client; and
- C. whether MFSOK has investigated or considered other reasonably feasible alternatives to the recommendation that might also or alternatively serve the Client's objectives.

If the Client elects a course of action that is independent of or contrary to the advice provided by MFSOK, MFSOK is not required on that basis to disengage from the Client.

X. Record Retention

Pursuant to SEC, MSRB and the Oklahoma Department of Securities record retention regulations, Municipal Finance Services, Inc. will maintain in writing, all communication and created documents between Municipal Finance Services, Inc. and the Client for six (6) years.

XI. Notices

Any and all notices pertaining to this Agreement shall be sent by U.S. Postal Service, first class, postage prepaid to:

MFSOK:

Municipal Finance Services, Inc.
Attn: Rick A. Smith
3933 E. Covell Road
Edmond, OK 73034

CLIENT:

Broken Arrow Municipal Authority
Attn: Chairman
P.O. Box 610
Broken Arrow, OK 74013-0610

Acceptance

If there are any questions regarding the above, please do not hesitate to contact MFSOK. If the foregoing terms meet with your approval, please indicate your acceptance by executing all original copies of this letter and keeping one copy for your file.

By signing this agreement, the Client acknowledges the provisions set forth in the agreement and understands its respective rights, duties, and responsibilities. Furthermore, the Scope of Services contained herein have been reviewed and are hereby approved. In addition, the Client acknowledges receipt of the Form ADV Part 2A Brochure and Part 2B Brochure Supplement.

Client and MFSOK have entered into this Agreement by the duly authorized representatives which was approved on November 5, 2019, at a meeting duly called and held in full compliance with the Oklahoma Open Meeting Act.

MUNICIPAL FINANCE SERVICES, INC.

By: _____
Rick A. Smith

BROKEN ARROW MUNICIPAL AUTHORITY

By: _____
Chairman

APPROVED AS TO FORM:



Deputy City Attorney



t 405.235.3413 • f 405.235.2807
5657 N. CLASSEN BOULEVARD, SUITE 100 • OKLAHOMA CITY, OK 73118

AGREEMENT FOR BOND COUNSEL SERVICES

BROKEN ARROW MUNICIPAL AUTHORITY UTILITY SYSTEM AND SALES TAX REVENUE NOTE, TAXABLE SERIES 2019

THIS AGREEMENT is entered into as of November 5, 2019, by and among THE PUBLIC FINANCE LAW GROUP PLLC ("PFLG"), and the BROKEN ARROW MUNICIPAL AUTHORITY (the "Issuer"), a public trust with the City of Broken Arrow, Oklahoma (the "City") as its beneficiary, as follows:

RECITALS

WHEREAS, the Issuer desires to engage PFLG as bond counsel in connection with the refinancing of the Issuer's Series 2009 Drinking Water SRF Promissory Note to Oklahoma Water Resources Board dated December 29, 2009, issued in the original principal amount of \$4,000,000.00, and the Issuer's Series 2011 Clean Water SRF Promissory Note to Oklahoma Water Resources Board dated July 20, 2011, issued in the original principal amount of \$4,680,000.00 (collectively, the "Project"); and

WHEREAS, to finance all or a portion of the costs of the Project, the Issuer intends to issue or cause to be issued its Utility System and Sales Tax Revenue Note, Taxable Series 2019 in the principal amount of not to exceed \$5,800,000 (the "Note"); and

WHEREAS, PFLG possesses the necessary professional capabilities and resources to provide the legal services required by Issuer as described in this Agreement.

AGREEMENTS

1. Scope of Services.

A. *Bond Counsel Services.* PFLG will render the following services as bond counsel to the Issuer:

- (1) Consultation with representatives of the Issuer and the City, including the manager of the Issuer/City (in this specific case, the City Manager of the City), City Attorney, Issuer's Counsel, Finance Director, financing and accounting staff, financial advisors, and others, with respect to the timing, terms and legal structure of the proposed financing.

- (2) Preparation of loan, security and other authorizing documents (the "Financing Documents").
- (3) Review of documentation with respect to any letter of credit, bond insurance and/or reserve fund surety policy provided in connection with the Note, if any.
- (4) Attendance at such meetings or hearings of the Issuer and the City and working group meetings or conference calls as the Issuer may request, and assistance to the Issuer staff in preparation of such explanations or presentations to the governing body of the Issuer and the City as they may request.
- (5) Preparation of final closing papers to be executed by the Issuer required to effect delivery of the Note and coordination of the Note closing.
- (6) Rendering of bond counsel's customary final legal opinion on the validity of the securities and, with respect to tax-exempt securities, the exemption from gross income for federal income tax purposes and from Oklahoma personal income tax of interest thereon.

PFLG and Issuer acknowledge that Issuer shall be represented by the City Attorney's Office ("Issuer's Counsel") for the purpose of rendering day-to-day and ongoing general counsel legal services. PFLG shall circulate documents to and coordinate its services with Issuer's Counsel to the extent requested by Issuer or Issuer's Counsel.

PFLG and Issuer further acknowledge that the Issuer shall be represented by Municipal Finance Services, Inc., a municipal advisor pursuant to the terms of SEC Rule 15Ba1-1 (referred to herein as an "Independent Registered Municipal Advisor" or "IRMA"). PFLG is a firm of attorneys who provide legal advice or services of a traditional legal nature to a client, and PFLG and its attorneys do not represent themselves to be a financial advisor or financial expert. Therefore, PFLG is excluded from the definition of Municipal Advisor, and PFLG does not intend to provide any advice with respect to municipal financial products or the issuance of municipal securities outside of the scope of traditional legal services and advice customarily rendered by bond counsel in public finance transactions. Notwithstanding the foregoing, in the event certain advice may be construed as beyond the scope of traditional legal services, the Issuer specifically acknowledges that PFLG may avail itself of the IRMA exemption under SEC Rule 15Ba1-1 on the basis that (i) the Issuer is represented by an Independent Registered Municipal Advisor not associated with PFLG, (ii) the Issuer hereby advises PFLG that the Issuer is represented by and will rely on the advice of its duly retained Independent Registered Municipal Advisor, and (iii) the Issuer has been advised that PFLG is not a municipal advisor and PFLG owes no federal statutory fiduciary duty to the Issuer.

In rendering opinions and performing legal services under this Agreement, PFLG shall be entitled to rely on the accuracy and completeness of information provided, certifications made by, and opinions provided by counsel to, Issuer, the Independent Registered Municipal Advisor, property owners and other parties and consultants, without independent investigation or verification.

PFLG's services are limited to those specifically set forth above. PFLG's services do not include representation of Issuer or any other party to the transaction in any litigation or other legal or administrative proceeding involving the Note, the Project or any other matter. PFLG's services also do not include any responsibility for compliance with state blue sky, environmental, land use, real estate or similar laws or for title to or perfection of security interests in real or personal property. PFLG will not be responsible for preparing, reviewing, or opining with respect to the Issuer's Official Statement and/or any Continuing Disclosure Undertakings (if any) for the Note, including but not limited to the accuracy, completeness or sufficiency of the Official Statement, Continuing Disclosure Undertaking, or other offering material relating to the Note. PFLG's services do not include any financial advice or analysis. PFLG will not be responsible for the services performed or acts or omissions of any other participant. Also, PFLG's services will not extend past the date of issuance of the Note and will not, for example, include services related to rebate compliance or continuing disclosure or otherwise related to the Note, proceeds of the Note, or the Project after issuance of the Note.

2. Compensation and Reimbursements.

A. *Compensation for Bond Counsel Services.* For services as bond counsel to the Issuer, PFLG shall be paid a fixed fee at the time of issuance of the Note of one-half of one percent (0.5%) of the principal amount of the Note.

B. *Expenses.* PFLG shall also be paid a fixed amount of \$2,000.00 to cover expenses and transcript production and distribution, provided, that filing, publication, recording or printing costs or similar third party costs required in connection with the Note shall be paid directly by the Issuer, but if paid by PFLG on behalf of the Issuer, shall be reimbursed to PFLG on demand.

C. *Payment.* Fees and expenses shall be payable by Issuer at the time of issuance of the Note. Payment of all fees and expenses hereunder shall be made at closing from proceeds of the Note and shall be entirely contingent upon issuance of the Note.

D. *Termination of Agreement and Legal Services.* This Agreement and all legal services to be rendered under it may be terminated at any time by written notice from either party, with or without cause. In that event, all finished and unfinished documents prepared for adoption or execution by Issuer, shall, at the option of Issuer, become its property and shall be delivered to it or to any party it may designate; provided that PFLG shall have no liability whatsoever for any subsequent use of such documents. In the event of termination by Issuer, PFLG shall be paid for all satisfactory work, unless the termination is made for cause, in which event compensation, if any, shall be adjusted in the light of the particular facts and circumstances involved in the termination. If not sooner terminated as aforesaid, this Agreement and all legal services to be rendered under it shall terminate upon issuance of the Note; provided that Issuer shall remain liable for any unpaid compensation or reimbursement due under Section 2 hereof. Upon termination, PFLG shall have no future duty of any kind to or with respect to the Note or the Issuer.

3. Nature of Engagement; Relationships With Other Parties.

The role of bond counsel, generally, is to prepare or review the procedures for issuance of the bonds, notes or other evidence of indebtedness and to provide an expert legal opinion with respect to the validity thereof and other subjects addressed by the opinion. Consistent with the historical origin and unique role of such counsel, and reliance thereon by the public finance market, PFLG's role as bond counsel under this Agreement is to provide an opinion and related legal services that represent an objective judgment on the matters addressed rather than the partisan position of an advocate.

In performing its services in connection with the Note, PFLG will act as special counsel to Issuer with respect to issuance of the Note; i.e., PFLG will assist the Issuer's Counsel in representing Issuer but only with respect to validity of the Note and the Financing Documents, and the tax status of interest on the Note, in a manner not inconsistent with the role of bond counsel described above.

Issuer acknowledges that PFLG regularly performs legal services for many private and public entities in connection with a wide variety of matters. For example, PFLG has represented, is representing or may in the future represent other public entities, underwriters, trustees, rating agencies, insurers, credit enhancement providers, lenders, contractors, suppliers, financial and other consultants/advisors, accountants, investment providers/brokers, providers/brokers of derivative products and others who may have a role or interest in the Note financing or the Project or that may be involved with or adverse to Issuer in this or some other matter. PFLG agrees not to represent any such entity in connection with the Note financing, during the term of this Agreement, without the consent of Issuer. Given the special, limited role of bond counsel described above, Issuer acknowledges that no conflict of interest exists or would exist, and waives any conflict of interest that might appear actually or potentially to exist, now or in the future, by virtue of this Agreement or any such other attorney-client relationship that PFLG may have had, have or enter into, and Issuer specifically consents to any and all such relationships.

4. Limitation of Rights to Parties; Successor and Assigns.

Nothing in this Agreement or in any of the documents contemplated hereby, expressed or implied, is intended or shall be construed to give any person other than Issuer and PFLG, any legal or equitable right or claim under or in respect of this Agreement, and this Agreement shall inure to the sole and exclusive benefit of Issuer and PFLG.

PFLG may not assign its obligations under this Agreement without written consent of Issuer except to a successor partnership or corporation to which all or substantially all of the assets and operations of PFLG are transferred. Issuer may assign its rights and obligations under this Agreement to (but only to) any other public entity that issues the Note (if not the Issuer). Issuer shall not otherwise assign its rights and obligations under this Agreement without written consent of PFLG. All references to PFLG and Issuer in this Agreement shall be deemed to refer to any

such successor of PFLG and to any such assignee of Issuer and shall bind and inure to the benefit of such successor and assignee whether so expressed or not.

5. Counterparts.

This Agreement may be executed in any number of counterparts and each counterpart shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same Agreement.

6. Notices.

Any and all notice pertaining to this Agreement shall be sent by U.S. Postal Service, first class, postage prepaid to:

PFLG:

The Public Finance Law Group PLLC
5657 N. Classen Boulevard, Suite 100
Oklahoma City, OK 73118
Attention: Allan A. Brooks, III or Nathan D. Ellis

ISSUER:

Broken Arrow Municipal Authority
220 South 1st Street
P.O. Box 610
Broken Arrow, OK 74013-0610
Attention: City Manager

[Remainder of Page Left Blank Intentionally]

Issuer and PFLG have executed this Agreement by their duly authorized representatives as of the date provided above.

THE PUBLIC FINANCE LAW GROUP PLLC

By: _____
Nathan D. Ellis

BROKEN ARROW MUNICIPAL AUTHORITY

By: _____
Title: Chairman
Date: November 5, 2019

APPROVED AS TO FORM:

Deputy City Attorney



City of Broken Arrow

Request for Action

File #: 19-1371, **Version:** 1

Broken Arrow Municipal Authority
Meeting of: 11-05-2019

Title:

Consideration, discussion and possible approval to reject bids for the purchase of one (1) Dump Truck and find that the best interest of the City of Broken Arrow will be served by the rejection

Background:

A bid was opened for the purchase of one (1) Dump Truck for the Water Utilities Department on September 11, 2019. The award request was brought to the Authority on October 15, 2019. Ultimately, the agenda item was tabled.

The City's Purchasing Manual states the award of a bid shall be made within 30 days after the opening of the bids unless the City by formal recorded action, and for good cause, may extend the award not more than 15 days.

This particular bid already exceeded the 30 day award requirement when it was presented to the Authority and a formal request to extend the award was not made.

In keeping with the time requirement of bid awards as directed in the Purchasing Manual, staff recommends that all bids be rejected at this time. This truck can be purchased under another similar dump truck bid solicitation for the Street and Stormwater Department.

Cost: \$0

Funding Source: None

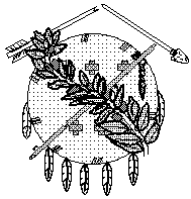
Requested By: Lee Zirk, General Services Director

Approved By: City Manager's Office

Attachments: None

Recommendation:

Reject all bids for the purchase of one (1) Dump Truck and find that rejection is in the best interests of the citizens of Broken Arrow



City of Broken Arrow

Request for Action

File #: 19-1309, **Version:** 1

Broken Arrow Municipal Authority
Meeting of: 11-05-2019

Title:

Consideration, discussion, and possible approval to reject bids for the Broken Arrow Expressway fence repair contract and to find that the best interest of the City of Broken Arrow will be served by the rejection

Background:

A bid was opened for a contract to repair the fence along the Broken Arrow Expressway for the Stormwater Division of the Streets and Stormwater Department on September 11, 2019. Bids from two (2) vendors were received. Following the opening of bids, staff discovered that the lowest bid from Stronghand LLC did not meet specifications, as they failed to submit the required insurance information. The next bid from Aaron Fence Co. exceeded the estimate substantially, and therefore not advantageous to the citizens of Broken Arrow. For these reasons, staff recommends that all bids be rejected at this time and a new bid prepared and submitted for a contract to repair the fence along the Broken Arrow Expressway.

Cost: \$0

Funding Source: Broken Arrow Municipal Authority

Requested By: Rocky Henkel, Director of Streets and Stormwater

Approved By: City Manager's Office

Attachments: Bid Tab 20.108

Recommendation:

Reject bids for the Broken Arrow Expressway fence repair contract and find that the rejection best serves the Citizens of Broken Arrow.

Bid 20.108

Fence Repairs for Broken Arrow Expressway

Bid Date 09/11/2019

	Vendor	Stronghand LLC	Aaron Fence Co.
Item Number	Item	Each price	Each price
	Fence Repairs Broken Arrow Expressway	Price per linear foot	Price per linear foot
1	Labor to repair existing 6' chain link fence	\$7.26	\$13.00
2	Labor to install new 6' chain link fence with 2 barbwire	\$7.26	\$12.00
3	Labor to repair existing 4' chain link fence	\$6.05	\$12.00
4	Labor to install new 4' chain link fence with 1 barbwire	\$6.05	\$11.50
5	Labor to repair existing 4-string barbwire fence	\$4.84	\$7.00
6	Labor to install new 4-string barbwire fence	\$4.84	\$7.00
7	Labor to repair Hogwire fence with 2 barbwire	\$6.05	\$7.00
8	Labor to install new Hogwire fence with 2 barbwire	\$6.05	\$7.00
9	Price for concrete for post installation (each)	\$10.89	\$12.00
	Total	<u>\$59.29</u>	\$88.50
	Warranty	1 year	1 year

Street & Stormwater Department SW1923 Bids were sent to 9 vendors

This bid tabulation is true and accurate to the best of my knowledge

Wednesday, September 11, 2019

Patrick Harrison
Purchasing Manager